APPENDIX E

Agency Coordination

Recent Agency Coordination



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE Southeast Regional Office 263 13th Avenue South St. Petersburg, Florida 33701-5505 http://sero.nmfs.noaa.gov

January 13, 2017

F/SER47:KH/pw

(Sent via Electronic Mail)

Mr. Chad Long Archaeologist/NEPA Coordinator S.C. Dept. Of Transportation, P.O. Box 191 Columbia, South Carolina 29201

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201

Attention: Nicole Riddle

Dear Mr. Long and Mr. Belcher:

NOAA's National Marine Fisheries Service (NMFS) reviewed the letter dated, December 19, 2016, from the South Carolina Department of Transportation (SCDOT) and Federal Highway Administration (FHWA) responding to essential fish habitat (EFH) conservation recommendations the NMFS provided for the proposed U.S. Highway (US) 17 widening and bridge over the Back River¹. By letter dated December 1, 2016, the NMFS provided four conservation recommendations to protect EFH:

- 1. The project design should further avoid and minimize impacts to EFH by reducing the amount of fill and shading in wetlands areas.
- 2. The existing, undersized culvert on the north end of the project should be replaced with a bridge.
- 3. In-water turbidity and sedimentation control methods and noise attenuation methods should be used to avoid and minimize impacts to EFH, federally managed fisheries and their prey, and anadromous fishes and their habitat from in-water work activities.
- 4. The SCDOT should adjust mitigation calculations to reflect excess impacts from two bridge structures and pursue on-site, permittee responsible mitigation.

The SCDOT has agreed to implement recommendation 3 and 4, and has agreed to replace the existing, undersized culvert on the north end of the project (recommendation 2). Specifically, the selected contractor will be required to minimize potential stormwater impacts through implementation of construction stormwater best management practices (BMPs), reflecting policies contained in the National Pollutant Discharge Elimination System (NPDES), 23 CFR 650 B and SCDOT's Supplemental Specifications on Seed and Erosion Control Measures (latest edition). The design and implementation of these BMPs will be evaluated by the South Carolina



¹ SCDOT Project ID: P025999: Located in Jasper County, SC and Chatham County, GA

Department of Health and Environmental Control to meet the NPDES permit requirements, and these requirements will include the use of turbidity curtains where practicable. Additionally, between October 1 and April 15, SCDOT will require the contractor to implement a noise reduction technique for all pile-driving activities, which will be submitted to the SCDOT Environmental Services Office for review prior to implementation. Furthermore, the SCDOT will account for additional shading impacts that the bridge may cause from being in close proximity to the existing bridge during final design. The SCDOT will use these updated calculations when determining the wetland credits needed for mitigation.

The SCDOT also agrees to replace the existing, undersized culvert on the north end of the project. Due to the cost of constructing a bridge at this location, SCDOT plans to replace the existing culvert with two twin-box culverts. The exact size and dimensions will be determined in final design. While the proposed culverts are less damaging to the environment than those currently in place, the NMFS continues to prefer a bridge at this location to reduce impacts to EFH, federally managed species, and their prey. Bridges typically require less fill and channel alteration, lead to less bank and bed instability, and maintain greater ecological connectivity and organism passage than culverts. The NMFS recommends SCDOT select a culvert design that promotes ecological connectivity, aquatic organism passage, and normative physical processes. Various publications from the FHWA and NMFS detail these principles and design elements². The NMFS also encourages the SCDOT to coordinate with the USACE Savannah District regarding culvert design and installation/construction.

Regarding recommendation 1, SCDOT's response focuses on constructability issues and design standards. The SCDOT selected the proposed alignment due to the need to maintain traffic throughout the project, avoid additional wetlands impacts of approximately eight acres, safely stage construction, and accommodate drainage during construction. Additionally, the shift in alignment had to be a certain distance away from the existing roadway in order to perform necessary geotechnical ground modifications in order to construct the new two-lane section, without influencing the existing roadway. Furthermore, the 36-foot median is the narrowest median possible to maintain a safe rural connector and the outside shoulder widths will accommodate bike lanes. The NMFS understands safety, functionality, and maintenance of traffic issues, and understands preliminary design impacts outlined in the draft Environmental Assessment represent a "worst case scenario." However, further avoidance and minimization measures appear practicable. The NMFS recommends SCDOT further avoid and minimize impacts to EFH by reducing fill and/or shading during refinement of the final design. Suggestions for how this might occur include decreasing inside roadway shoulder widths (where bike lanes are not planned), steepening side slopes of the roadway and bridge approaches, reducing approach fills for the bridge over the Back River, using mechanically stabilized earth (MSE) walls, utilizing deep-depth guardrails, or a combination of these.

² Culvert design for aquatic organism passage. FHWA. 2010.

https://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=204&id=145

Hydraulic design of highway culverts, Third Edition. FHWA. 2012.

https://www.fhwa.dot.gov/engineering/hydraulics/library_arc.cfm?pub_number=7&id=13

Anadromous salmonid passage facility design. NMFS, 2011; Guidelines for salmonid passage at stream crossings. NMFS, 2001. http://www.westcoast.fisheries.noaa.gov/publications/

The NMFS appreciates the opportunity to provide these comments. Please direct related questions or comments to the attention of Keith M. Hanson at our Charleston Area Office, 219 Fort Johnson Road, Charleston, South Carolina 29412-9110, Keith.Hanson@noaa.gov or by phone at (843)762-8622.

Sincerely,

Pace Willer

/ for

Virginia M. Fay Assistant Regional Administrator Habitat Conservation Division

cc: SCDOT, LongCC@scdot.org, RiddleNL@scdot.org FHWA, Jeffrey.Belcher@dot.gov SCDNR, DavisS@dnr.sc.gov EPA, Laycock.Kelly@epa.gov FWS, Karen_Mcgee@fws.gov F/SER4, David.Dale@noaa.gov F/SER47, Keith.Hanson@noaa.gov

Murphy, Gordon

From: Sent: To: Subject: Long, Chad C. <LongCC@scdot.org> Tuesday, January 31, 2017 8:16 AM Cemprola, Danielle; Murphy, Gordon FW: US 17 Back River Bridge information request

From: Frierson, Ed W
Sent: Monday, January 09, 2017 9:57 AM
To: Long, Chad C.
Subject: FW: US 17 Back River Bridge information request

See below.

Edward W. Frierson SCDOT NEPA Coordinator/Biologist 803-737-1861

From: David Rydene - NOAA Federal [mailto:david.rydene@noaa.gov] Sent: Thursday, January 05, 2017 10:49 AM To: Frierson, Ed W Subject: Re: US 17 Back River Bridge information request

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hi Ed,

Happy New Year. The letter is under review by an attorney here (the final stage of review before Front office signature). They usually want to change something here or there in the letter, but I don't forsee anything major. I expect it will get signed some time this month.

- Dave

On Thu, Jan 5, 2017 at 8:48 AM, Frierson, Ed W <<u>FriersonEW@scdot.org</u>> wrote:

Dave,

Hope you had great holidays. What is the present status of the letter?

Thanks,

Edward W. Frierson

SCDOT NEFA Coordinator | Biologist

From: David Rydene - NOAA Federal [mailto:<u>david.rydene@noaa.gov</u>] **Sent:** Thursday, December 15, 2016 9:12 AM **To:** Frierson, Ed W

Cc: Andrew Herndon - NOAA Federal; Bill Post **Subject:** Re: US 17 Back River Bridge information request

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hi Ed,

I guess the question now is do you want to use noise reduction (contained bubble curtains or isolation casing) for the 540 piles (24-inch by 24-inch square concrete) that were originally proposed, or are drilled shafts still a possibility? My past experience has been that compared to standard impact-driven piles, there would be fewer drilled shafts but they have a larger diameter than regular piles. I would need the information on the possible maximum size (diameter) and total number of the drilled shafts and details of the expected installation methods. I would need to include an analysis of that in the letter.

Thanks, Dave

On Wed, Dec 14, 2016 at 2:54 PM, Frierson, Ed W <<u>FriersonEW@scdot.org</u>> wrote:

Dave,

We like Option 2. Thanks for all you consideration and help with this. When do you think the ESA letter will be signed?

Edward W. Frierson

SCDOT NEPA Coordinator | Biologist

<u>803-737-1861</u>

From: David Rydene - NOAA Federal [mailto:<u>david.rydene@noaa.gov]</u>
Sent: Wednesday, December 14, 2016 1:40 PM
To: Frierson, Ed W
Cc: Andrew Herndon - NOAA Federal; Bill Post

Subject: Re: US 17 Back River Bridge information request

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hi Ed,

Based on the coordination between NMFS and SCDNR (the email that Andy Herndon sent an hour and a half ago) it looks like 2 options are available. Option 1 would be to go with the in-water work moratorium that NMFS proposed (October 1-April 15) in which case no noise reduction techniques would be needed. Option 2 would be to allow in-water work during that time period, but require the use of a noise reduction technique for impact driving or go with drilled shafts instead with no noise reduction. If SCDOT wants to go with bubble curtains it will have to be some kind of contained bubble curtain technique to keep the bubbles from being swept out of place by tidal or river currents. Another option is de-watered isolation casings (sometimes called temporary noise attenuation piles or TNAPs). TNAP are basically hollow casings that are a bit larger diameter than the piles. The pile is placed inside the TNAP which is then de-watered before impact driving, and then pulled out when driving is finished. Let me know how you would like to proceed.

Thanks, Dave

On Tue, Dec 13, 2016 at 4:03 PM, Frierson, Ed W <<u>FriersonEW@scdot.org</u>> wrote:

Dave,

I have talked to Bill Post about some of his data that he has obtained from the Back River. His sturgeon counts generally reveal only one or two juvenile fish in the river in October and November. Given that fact and given that bubble curtains have been effective in other states in reducing noise (according Bill Post), what do you think about our contractor working throughout the moratorium period while utilizing bubble curtains for all bent placing work. We could also use drilled shafts, thereby reducing vibration. Let me know what you think.

Thanks,

Edward W. Frierson

SCDOT NEPA Coordinator | Biologist

From: David Rydene - NOAA Federal [mailto:<u>david.rydene@noaa.gov</u>] **Sent:** Tuesday, December 13, 2016 8:47 AM

To: Frierson, Ed W **Subject:** Re: US 17 Back River Bridge information request

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hi Ed,

This week I am available today (Tuesday 12/13) until 3:30 PM, Wednesday (12/14) from 8:30 AM until 2:30 PM, Thursday (12/15) from 8:30 AM until 3:00 PM, and Friday (12/16) from 8:30 AM until 11:00 AM.

- Dave

On Mon, Dec 12, 2016 at 4:23 PM, Frierson, Ed W <<u>FriersonEW@scdot.org</u>> wrote:

Dave,

We have some questions we would like to ask you later this week.

Edward W. Frierson

SCDOT NEFA Coordinator/Biologist

<u>803-737-1861</u>

From: David Rydene - NOAA Federal [mailto:<u>david.rydene@noaa.gov</u>]
Sent: Wednesday, December 07, 2016 8:57 AM
To: Frierson, Ed W
Subject: Re: US 17 Back River Bridge information request

*** This is an EXTERNAL email. Please do not click on a link or open any attachments unless you are confident it is from a trusted source. ***

Hi Ed,

Any feedback on the proposed change to the in-water work closed season for the US 17 Back River Bridge replacement?

Thanks, Dave

On Fri, Dec 2, 2016 at 11:13 AM, David Rydene - NOAA Federal <<u>david.rydene@noaa.gov</u>> wrote:

Hi Ed,

I am trying to finish getting the US 17 Back River Bridge ESA letter through our review process so it can be signed. Some questions came up regarding the timeframe of in-water work moratorium based on the latest habitat usage data we have. After speaking with our shortnose/Atlantic sturgeon Coordinator here, NMFS Habitat Conservation Division staff in Charleston, and emailing Bill Post at SCDNR, we are requesting that the in-water work moratorium run from October 1-April 15 (rather than the December 1-April 30). This would also put it closer to the moratorium that the Habitat Conservation Division is asking for due to American Shad as well.

Thanks, Dave

On Thu, Nov 17, 2016 at 2:09 PM, Frierson, Ed W <<u>FriersonEW@scdot.org</u>> wrote:

Dave,

In regard to your phone call. There will be between 6 and 8 piles at each bent. Let me know if you need any additional information.

Edward W. Frierson

SCDOT NEFA Coordinator/Biologist

From: David Rydene - NOAA Federal [mailto:<u>david.rydene@noaa.gov]</u>
Sent: Tuesday, October 18, 2016 2:06 PM
To: Frierson, Ed W
Subject: Re: US 17 Back River Bridge information request

Hi Ed,

I noticed one other thing in the responses you sent. Under my question regarding "The number of piles driven per day", the response says "16 per day (based on eight hour workday and two hours per pile)". That does not add up, as eight hours of pile driving each day with each pile requiring two hours of driving would only seem to total 4 piles installed per day. I think the numbers got multiplied (8 x 2 = 16), rather than being divided (8/2 = 4). Can you check on this?

Thanks, Dave

On Thu, Sep 22, 2016 at 2:24 PM, Frierson, Ed W <<u>FriersonEW@scdot.org</u>> wrote:

David,

I apologize for the long delay, but I have attached the information you requested back in November of 2014. Let me know if you need anything else.

Thanks,

Edward W. Frierson

SCDOT NEFA Coordinator/Biologist

<u>803-737-1861</u>

From: David Rydene - NOAA Federal [mailto:<u>david.rydene@noaa.gov</u>]
Sent: Monday, November 03, 2014 9:41 AM
To: Frierson, Ed W
Subject: US 17 Back River Bridge information request

Hi Ed,

The attached document shows what types of pile driving information we need to do the ESA consultation.

Thanks, Dave

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David Rydene, Ph.D. Fish Biologist National Marine Fisheries Service Habitat Conservation Division 263 13th Avenue South St. Petersburg, FL 33701 Office (727) 824-5379 Cell (813) 992-5730 Fax (727) 824-5300

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David Rydene, Ph.D. Fish Biologist National Marine Fisheries Service Habitat Conservation Division 263 13th Avenue South St. Petersburg, FL 33701 Office (727) 824-5379 Cell (813) 992-5730 Fax (727) 824-5300 David Rydene, Ph.D. Fish Biologist National Marine Fisheries Service Habitat Conservation Division 263 13th Avenue South St. Petersburg, FL 33701 Office (727) 824-5379 Cell (813) 992-5730 Fax (727) 824-5300

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David Rydene, Ph.D. Fish Biologist National Marine Fisheries Service Habitat Conservation Division 263 13th Avenue South St. Petersburg, FL 33701 Office (727) 824-5379 Cell (813) 992-5730 Fax (727) 824-5300

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--David Rydene, Ph.D. Fish Biologist National Marine Fisheries Service Habitat Conservation Division 263 13th Avenue South St. Petersburg, FL 33701 Office (727) 824-5379 Cell (813) 992-5730 Fax (727) 824-5300



December 19, 2016

Virginia Fay National Oceanic and Atmospheric Administration National Marine Fisheries Service, Habitat Conservation Division Southeast Regional Office 263 13th Avenue South St. Petersburg, Florida 33701-5505

Re: US 17 Widening and Bridge Replacement over Back River in Jasper County, SC and Chatham County, GA: PIN 39168RD01; Response to NOAA-NMFS letter regarding conservation recommendations for EFH

Attention: Keith Hanson

Dear Virginia Fay:

The South Carolina Department of Transportation (SCDOT) in coordination with the Federal Highway Administration (FHWA) is issuing this joint response to your December 1, 2016 letter which included EFH Conservation Recommendations for the proposed US 17 Widening and Bridge Replacement over Back River in Jasper County, SC and Chatham County, GA.

In response to your recommendation: "The NMFS recommends reducing the amount of permanent fill associated with the proposed project by using a combination of east and west widening (asymmetrical widening) that would concentrate impacts in existing upland areas and avoid impacts to wetlands. Additionally, the NMFS recommends further reducing the amount of permanent impacts by reducing the bridge width, decreasing inside and/or outside roadway shoulder widths, decreasing the median width, and by steepening side slopes of the roadway and bridge approaches, or a combination of these."

The original design for the widening project had the widening centered in the R/W corridor but problems were encountered with staging construction and accommodating drainage during The road design group and traffic engineering worked together to improve construction. constructability and determined a 16' shift would provide the ability to maintain traffic while still staging construction and reducing the impacts to adjacent wetlands. A 16' shift right was considered but the impacts to the wetlands were approximately 8 acres higher than doing a 16' shift to the left. Also as part of the project is the geotechnical ground modifications and the shift in alignment had to be far enough away from the existing roadway to construction the new 2 lane section ground improvements without influencing the existing roadway. The widening to each side creates a constructability issue and with the presence of wetlands on each side of the roadway is minimized to the greatest extent possible with the current alignment. Additionally, the 36' median is the narrowest median possible to maintain a safe rural connector condition. The safety concerns with reducing the median further are far too great for it to be a plausible alternative. The outside shoulder widths cannot be reduced due to the presence of the stripped bike lanes.



In response to your recommendation: "The NMFS also recommends replacing the undersized culvert on the north end of the project with a bridge to avoid further adverse impacts to habitats and species and to restore ecological connectivity and habitat function to the surrounding area; bridging this tidal creek would also reduce the amount of permanent fill."

SCDOT has plans to replace the existing culvert with two 'twin' box culverts. The exact size and dimensions will be determined in final design. Constructing a bridge at this location is too costly.

In response to your recommendation: "The SCDOT should include In-water turbidity and sedimentation control methods and noise attenuation methods should be used to avoid and minimize impacts to EFH, federally managed fisheries and their prey, and anadromous fishes and their habitat from in-water work activities."

Stormwater control measures, both during construction and post-construction, are required for SCDOT projects with land disturbance. The selected contractor would be required to minimize potential stormwater impacts through implementation of construction best management practices (BMP's), reflecting policies contained in the NPDES, 23 CFR 650 B and SCDOT's Supplemental Specifications on Seed and Erosion Control Measures (latest edition). The design and implementation of these BMP's will be evaluated by SCDHEC to meet the NPDES permit requirements, and these requirements will include the use of turbidity curtain where practicable. Additionally, between October 1-April 15, SCDOT will require the contactor to implement a noise reduction technique for all pile-driving activities. The proposed minimization techniques will be submitted to the SCDOT Environmental Services Office for review prior to implementation.

In response to your recommendation: The SCDOT should adjust mitigation calculations to reflect excess impacts from two bridge structures and pursue on-site, permittee responsible mitigation.

SCDOT will account for additional shading impacts that the bridge may cause from being in close proximity to the existing bridge during final design. SCDOT will use these updated calculations when determining the wetland credits needed for mitigation.

We appreciate your agency's cooperation throughout the development of this project. Please let me know if you have any comments or concerns related to this response. I can be reached at (803) 737-0841.

Sincerely,

Rice fiddle

Nicole Riddle EFH Coordinator



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE Southeast Regional Office 263 13th Avenue South St. Petersburg, Florida 33701-5505 http://sero.nmfs.noaa.gov

December 1, 2016

F/SER47:KH/pw

(Sent via Electronic Mail)

Mr. Chad Long Archaeologist/NEPA Coordinator S.C. Dept. of Transportation, P.O. Box 191 Columbia, South Carolina 29201

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201

Attention: Nicole Riddle

Dear Mr. Long and Mr. Belcher:

NOAA's National Marine Fisheries Service (NMFS) reviewed the Essential Fish Habitat (EFH) Assessment¹, dated September 2016, and draft Environmental Assessment, dated November 2016, prepared by the South Carolina Department of Transportation (SCDOT) for the proposed U.S. Highway (US) 17 widening and bridge over the Back River in Jasper County, SC, and Chatham County, GA (SCDOT Project ID: P025999). In an email dated September 22, 2016, the SCDOT stated it was submitting the EFH Assessment on behalf of the Federal Highway Administration. The SCDOT's initial determination is the project would adversely affect EFH or federally managed fishery species. As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, the NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act.

Description of the Proposed Project

The SCDOT proposes to improve US 17 from Hutchinson Island in Savannah, GA, to South Carolina Highway 315 (South Okatie Highway) southwest of Bluffton, SC, by widening US 17 from two to four travel lanes, adding a 36-foot grassed median, and constructing a new bridge over the Back River. The total approximate project length is 4.2 miles, with approximately 3,000 feet in GA and 3.6 miles in SC. In 2015, the Georgia Department of Transportation (GDOT) replaced the existing structurally deficient bridge over the Back River with a new 3,289-foot long bridge north (west) of the existing bridge featuring two 12-foot travel lanes and 8-foot shoulders; the existing bridge was later demolished. The SCDOT proposes to construct a new two-lane bridge parallel to the GDOT Bridge in order to tie into the four-lane section of the Talmadge Memorial Bridge over the Savannah River. The proposed SCDOT Bridge would be approximately 58.5 feet wide, featuring two 12-foot travel lanes, two 10-foot shoulders, a 10-foot multi-use path, and three 1.5-foot parapets (barriers). The current preferred alternative for the project would widen US 17 to the west (north) and the proposed bridge would be constructed 35 feet or 60 feet east of the centerline of the new GDOT Bridge, partially in the same footprint as the previous bridge. The



¹ The EFH Assessment was completed using conceptual designs and typical construction methods.

proposed bridge would be approximately the same length as the current GDOT Bridge. Upon completion, the GDOT Bridge would accommodate southbound traffic, and the SCDOT Bridge northbound traffic.

Proposed project activities would consist of placing clean fill material to widen the roadway and establish bridge approaches. Silt fences would be installed along the toe-of-fill prior to fill placement, which would require mechanical clearing. Work would be completed from uplands outward towards wetland areas as much as possible, but timber mats may also be used when upland access is not feasible. Geotechnical reinforcement may be required along the proposed roadway shoulder, which would require access from wetland areas and additional timber mats. Widening activities would necessitate extending an existing culvert located in a tidal creek on the north end of the project. Bridge construction would likely be completed using pile driving, which would occur from upland areas, to the extent practicable. In deep water areas, pile driving would take place from barges, while two temporary work trestles (approximately 300 feet and 800 feet in length) would likely be used over tidal marsh and portions of unconsolidated bottom habitat. Approximately 335 24-inch steel piles would be used for the temporary work trestle and approximately 540 24-inch pre-stressed concrete piles will be used for the permanent bridge. Temporary piles would be installed and removed using a vibratory hammer over 670 hours; permanent piles would be installed using a diesel impact hammer over 1080 hours².

Essential Fish Habitat and Anadromous Fish in the Project Area

The site of the proposed project includes tidal freshwater (palustrine) emergent wetlands and forested areas, and tidal salt marsh habitat, specifically estuarine emergent wetlands, intertidal non-vegetated flats, tidal creeks, and unconsolidated bottom. The South Atlantic Fishery Management Council (SAFMC) identifies these tidal palustrine habitats, estuarine emergent wetlands, and intertidal non-vegetated flats as EFH for penaeid shrimp, including white shrimp (*Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus aztecus*). These habitats are EFH because larvae and juveniles concentrate and feed extensively and shelter within these habitats. As a consequence, growth rates are high and predation rates are low, which makes these habitats effective nursery areas. The SAFMC also identifies estuarine emergent vegetated wetlands, tidal creeks and unconsolidated bottom as EFH for estuarine-dependent species of the snapper-grouper complex. The SAFMC provides additional information on EFH for federally managed species in Volume IV of the *Fishery Ecosystem Plan of the South Atlantic Region*³.

The waters of the Back River, tidal creeks connected to it, and the surrounding coastal marsh also serve as nursery and forage habitat for other species, such as red drum (*Sciaenops ocellatus*), black drum (*Pogonias cromis*), Atlantic menhaden (*Brevoortia tyrannus*), and blue crab (*Callinectes sapidus*). Many of these species are prey for other fish managed under the Magnuson-Stevens Act, such as mackerels, snappers, groupers, billfish, and sharks. Red drum is an important state-managed fishery, and estuarine wetlands within the project area provide habitat necessary for several life stages of red drum. Furthermore, the Back River includes foraging and migration habitat for several anadromous fish species, including shortnose sturgeon (*Acipenser brevirostrum*), Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), and American shad (*Alosa sapidissima*), within, upstream, and downstream of the proposed bridge crossing.

Impacts to Essential Fish Habitat and Anadromous Fish

The proposed project would result in 20.17 acres of permanent impacts and 7.942 acres of temporary impacts to EFH. Specifically, the proposed project would permanently fill 13.076 acres of estuarine emergent wetlands or intertidal flats, or a combination of these habitats, 0.063 acres of tidal creek, 0.026 acres of unconsolidated bottom, 0.037 acres of palustrine emergent wetlands and 6.423 acres of palustrine

 $^{^{2}}$ The SCDOT has assumed a "worst-case bridge construction scenario" for environmental impact analysis.

³ Available at *http://safmc.net/EcosystemLibrary/FEPVolumeIV*

forested areas. The proposed project would also result in the permanent shading of 0.545 acres of estuarine emergent wetlands. Additionally, the proposed project would temporarily fill 0.024 acres of estuarine emergent wetlands, intertidal flats, or unconsolidated bottom, or a combination of these habitats, and temporarily clear 5.347 acres of estuarine emergent wetlands, 0.014 acres of palustrine emergent wetlands and 2.557 acres of palustrine forested areas.

Permanently filled habitats would not provide nursery and foraging habitat for fishery species and their prey. Additionally, as light energy drives the photosynthetic process, which in turn controls plant growth and survival, permanently shaded areas would have lower primary productivity and reduced vegetation compared to non-shaded areas. This reduction in vegetation can lead to sediment erosion and decreased diversity and densities of benthic prey species⁴. Areas shaded by temporary elevated work structures for multiple growing seasons may also experience these adverse impacts, though recovery would likely occur following removal of structures. Furthermore, the presence of in-water structures, such as temporary and permanent piles, can alter hydrodynamic processes and sediment transport and deposition, degrading surrounding habitats. These processes and others have been altered and surrounding habitats degraded as a result of the existing culvert on the north end of the project, which is undersized. Undersized culverts can adversely impact habitats and species by decreasing ecological connectivity and increased erosion up and downstream of the culvert. Lastly, permanent impacts, including those from shading, will likely be greater for two bridges as opposed to a single, larger bridge due to the excess impacts.

Sediment input into aquatic habitats, mainly rivers and streams, is a major threat to anadromous fishes and their habitat and can reduce the quality of EFH and adversely affect federally managed species and their prey. This input can directly impact individuals and spawning aggregations as well as permanently eliminate migration and spawning habitat. Additionally, impacts from noise, vibrations, and other elements associated with construction activities can adversely affect anadromous fish spawning, foraging, migratory patterns and behavior, and can reduce the value of EFH.

Avoidance and Minimization

The SCDOT has taken steps to avoid or minimize impacts to EFH from the proposed project, including selecting Alternative 1, which constituted the least impacts to EFH of the four build alternatives. Topdown construction strategies would be used. Appropriate erosion and sedimentation control Best Management Practices (BMPs) would be installed, inspected, and maintained throughout all stages of construction in accordance with local and state stormwater guidelines and bridge construction would occur from temporary work trestles and upland areas, to the maximum extent practicable. Furthermore, the new SCDOT Bridge over the Back River will utilize, to the greatest extent possible, the same approaches and embankments of the previous and newly constructed GDOT Bridges.

While the NMFS appreciates SCDOT's avoidance and minimization efforts, further avoidance and minimization measures appear practicable. The NMFS recommends reducing the amount of permanent fill associated with the proposed project by using a combination of east and west widening (asymmetrical widening) that would concentrate impacts in existing upland areas and avoid impacts to wetlands. Additionally, the NMFS recommends further reducing the amount of permanent impacts by reducing the bridge width, decreasing inside and/or outside roadway shoulder widths, decreasing the median width,

⁴Whitcraft, C.R. and L.A. Levin. 2007. Regulation of benthic algal and animal communities by salt marsh plants: Impact of shading. *Ecology* 88:904-917.

Alexander, C. 2012. *Field Assessment and Simulation of Shading from Alternative Dock Materials*. Final report to the NOAA Office of Ocean and Coastal Resource Management under grant award #NA08NOS4190461. 114 pages.

Alexander, C. and M. Robinson. 2006. *Quantifying the Ecological Significance of Marsh Shading: The Impact of Private Recreational Docks in Coastal Georgia*. Final report to the Coastal Resources Division, GADNR. 47 pages.

and by steepening side slopes of the roadway and bridge approaches, or a combination of these. The NMFS also recommends replacing the undersized culvert on the north end of the project with a bridge to avoid further adverse impacts to habitats and species and to restore ecological connectivity and habitat function to the surrounding area; bridging this tidal creek would also reduce the amount of permanent fill.

The NMFS also recommends SCDOT avoid construction practices that adversely impact habitats and species. The NMFS has documented the impacts to salt marsh vegetation from barge grounding and timber mats lasting longer than three years at numerous project sites in coastal SC. If barge grounding and timber mats are used in salt marsh, temporary and permanent impact forecasts should be adjusted. Floating work barges and low ground bearing pressure track equipment can be used in combination with temporary work trestles in salt marsh habitat in lieu of barge grounding and timber mats. The NMFS also recommends the SCDOT utilize methods to avoid and minimize turbidity, sedimentation, and acoustic impacts to EFH, federally managed species and their prey, and anadromous fishes and their habitat. To the maximum extent practicable, vibratory hammers and cast-in-place (drilled-shaft) piles should be used to install piles. If impact hammers are necessary, vibratory hammers should be used to first drive the pile as deep as possible. Additionally, sound attenuation methods should be used to reduce in-water noise levels generated by pile installation activities, including air bubble curtains, isolation casings, coffer dams, proprietary methods, or a combination of these. Some sound attenuation methods can also control turbidity and sedimentation, but silt curtains are also recommended for this purpose. Additionally, installing piles during periods of low tide, when sediments are exposed, will further minimize turbidity, sedimentation and acoustic impacts. Lastly, the SCDOT should conduct work affecting salt marsh habitats during periods of low biological use (October 15 to January 31), to the extent practicable, and restrict in-water work in the Back River to daylight hours from April 16 to August 31 of each year (i.e., no in-water work conducted between September 1 and April 15). Conducting work during these periods would minimize impacts to EFH, federally managed species and their prey, and anadromous fish species.

Compensatory Mitigation

For unavoidable impacts to EFH from the proposed project, SCDOT stated an EFH Mitigation Plan would be developed in coordination with the NMFS during the U.S. Army Corps of Engineers (USACE) Section 404 permitting process. The SCDOT stated potential mitigation options include purchasing credits from Clydesdale Mitigation Bank (CMB; SC) and Salt Creek Mitigation Bank (SCMB; GA) for estuarine impacts (approximately 348.36 credits) and Sweetleaf Swamp Mitigation Bank (SSMB; SC) for palustrine impacts (approximately 108.38 credits). The impact site (HUC 03060109) and CMB and SSMB sites are located in the same watersheds, while the SCMB site is located one watershed away (HUC 03060204); the sites share similar hydrological and biological characteristics. The NMFS has expressed numerous concerns with the service area, amount of functional lift, habitat value, and resource types provided by CMB from the conversion of fully functional freshwater wetlands to salt marsh habitat. However, due to the extremely close proximity of the project site and the bank, as well as the types of impacts, the NMFS does not object to using CMB in this specific instance. Furthermore, the NMFS does not object to SCDOT using SSMB to offset impacts to tidal freshwater wetlands. However, because SSMB does not provide tidal freshwater credits, SCDOT should recognize this is out-of-kind and adjust the mitigation calculations accordingly. Lastly, the NMFS recommends SCDOT adjust credit calculations to reflect excess impacts from two bridge structures and pursue on-site, permittee-responsible mitigation as one component of a larger EFH Mitigation Plan. The NMFS will assist SCDOT by providing preliminary reviews of the mitigation plan during its development.

EFH Conservation Recommendations

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

- The project design should further avoid and minimize impacts to EFH by reducing the amount of fill and shading in wetlands areas. Suggestions for how this might occur are provided above.
- The existing, undersized culvert on the north end of the project should be replaced with a bridge.
- In-water turbidity and sedimentation control methods and noise attenuation methods should be used to avoid and minimize impacts to EFH, federally managed fisheries and their prey, and anadromous fishes and their habitat from in-water work activities.
- The SCDOT should adjust mitigation calculations to reflect excess impacts from two bridge structures and pursue on-site, permittee responsible mitigation.

Section 305(b)(4)(B) of the Magnuson-Stevens Act and implementing regulation at 50 CFR Section 600.920(k) require the FHWA and SCDOT to provide a written response to this letter within 30 days of its receipt. If it is not possible to provide a substantive response within 30 days, an interim response should be provided to the NMFS. A detailed response then must be provided ten days prior to final approval of the action. The detailed response must include a description of measures proposed by the FHWA and SCDOT to avoid, mitigate, or offset the adverse impacts of the activity. If the response is inconsistent with an EFH conservation recommendation, a substantive discussion justifying the reasons for not following the recommendation must be provided.

In accordance with section 7 of the Endangered Species Act of 1973, as amended, it is the responsibility of the Federal Highway Administration to review and identify any proposed activity that may affect endangered or threatened species and their designated critical habitat. Determinations involving species under the NMFS jurisdiction should be reported to the NMFS Protected Resources Division at the letterhead address.

The NMFS also encourages the SCDOT to coordinate with the Savannah District, USACE regarding potential impacts from the proposed project. As a result of the Savannah Harbor Expansion Project, the Savannah District has numerous mitigation commitments in the area of the proposed project.

The NMFS appreciates the opportunity to provide these comments. Please direct related questions or comments to the attention of Keith M. Hanson at our Charleston Area Office, 219 Fort Johnson Road, Charleston, South Carolina 29412-9110, Keith.Hanson@noaa.gov or by phone at (843)762-8622.

Sincerely,

Pace Willer

/ for

Virginia M. Fay Assistant Regional Administrator Habitat Conservation Division

cc: SCDOT, LongCC@scdot.org, RiddleNL@scdot.org FHWA, Jeffrey.Belcher@dot.gov SCDNR, DavisS@dnr.sc.gov EPA, Laycock.Kelly@epa.gov FWS, Karen_Mcgee@fws.gov F/SER4, David.Dale@noaa.gov F/SER47, Keith.Hanson@noaa.gov



United States Department of the Interior

Fish and Wildlife Service 105 West Park Drive, Suite D Athens, Georgia 30606 Phone: (706) 613-9493 Fax: (706) 613-6059

West Georgia Sub-Office Post Office Box 52560 Fort Benning, Georgia 31995-2560 Phone: (706) 544-6428 Fax: (706) 544-6419

Coastal Sub-Office 4980 Wildlife Drive Townsend, Georgia 31331 Phone: (912) 832-8739 Fax: (912) 832-8744

September 22, 2016

Ms. Nicole Riddle South Carolina Department of Transportation Post Office Box 191 Columbia, South Carolina 29202-0191

RE: USFWS Log Number 2016-I-1844

Dear Ms. Riddle:

Thank you for your correspondence initiating informal consultation for South Carolina Department of Transportation (SCDOT) U. S. Highway 17 project in Chatham County, Georgia and Jasper County, South Carolina. This project is also known by its Georgia Department of Transportation (GDOT) project number NH000-0009-02(092), PI 522920. The proposed project would widen U. S. 17 and construction of a new bridge over the Back River. The proposed project is located in the Lower Savannah River Watershed, Hydrologic Unit Code (HUC) 03070109. These comments are provided in accordance with the provisions of the Endangered Species Act (ESA) of 1973, as amended; (16 U.S.C. 1531 et seq.) to further the conservation of fish and wildlife resources and their habitats.

The proposed project would construct a new bridge parallel to an existing U. S. 17 bridge and widen the approaches from two to four lanes. The field surveys of the project corridor identified suitable habitat for species listed under the ESA. The proposed project would impact estuarine tidal river habitats within the Back River, wetlands, bottomland hardwood forests, and upland natural communities. These habitats are utilized by the West Indian manatee (Trichechus manatus) U. S. Fish and Wildlife Service (Service) concurrence for "not likely to adversely affect" determinations: December 2009, May 2012, July 2014, and August 2014); wood stork (*Mycteria americana*) Service concurrence for "not likely to adversely affect" determination: May 2012); and red knot (*Calidris canutus rufa*).

The red knot is a transient migratory species that may utilize habitats found within the project action area. Red knots may winter on the coastal barrier islands and sandbars, but occasionally use mud flats. Loss of habitat as a result of the proposed action is negligible. While shorebird flocks using the mud flats could be disturbed by construction activities, they would be expected to acclimate or find other suitable habitats nearby. Most red knot activity in the winter is concentrated on the barrier islands. It is unlikely that the project action will result in adverse effect to this species. Based on the information provided in SCDOT's August 2016 Biological Assessment, we concur with your determination of "not likely to adversely affect" for the red knot. The requirements of section 7 of the ESA have been satisfied and no further consultation is required. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this assessment; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

We appreciate the opportunity to comment on your project. If you have any additional questions, please write or call our Coastal Georgia Sub Office staff biologist, Christopher Coppola, at 912-832-8739 extension 6.

Sincerely,

Strant Colwell

Strant T. Colwell Coastal Georgia Supervisor

cc: FHWA, Atlanta, Jennifer Giersch GDOT, Atlanta, Georgia, David Hedeen GDOT, Atlanta, Georgia, Chris Goodson



DEPARTMENT OF THE ARMY SAVANNAH DISTRICT, CORPS OF ENGINEERS 100 W. OGLETHORPE AVENUE SAVANNAH, GEORGIA 31401-3604

AUGUST 3 1 2016

Regulatory Division SAS-2007-01163

Mr. Will McGoldrick South Carolina Department of Transportation Post Office Box 191 Columbia, South Carolina 29202

Dear Mr. McGoldrick:

I refer to a letter dated March 1, 2016, submitted on your behalf by Michael Baker International, Inc., requesting a Jurisdictional Determination (JD) for your site located along State Route 404/U.S. Highway 17 at the Back River Bridge, approximately one mile north of Savannah, Georgia (Latitude 32.0979, Longitude -81.0918). This project has been assigned number SAS-2007-01163 and it is important that you refer to this number in all communication concerning this matter.

We have completed a preliminary JD for the site. The wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

The wetlands/other waters on the subject property may be waters of the United States within the jurisdiction of Section 404 of the Clean Water Act (33 United States Code (U.S.C.) 1344) and/or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). The enclosed Global Positioning System (GPS) delineation entitled "Wetland Survey Prepared for Jasper County; Georgia State Line to SC 315, Jasper County, South Carolina", dated January 22, 2016, is an accurate delineation of all the jurisdictional boundaries on the site. This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date. The placement of dredged or fill material into any waterways and/or their adjacent wetlands or mechanized land clearing of those wetlands would require prior Department of the Army authorization pursuant to Section 404.

Preliminary JDs are advisory in nature and may not be appealed (see 33 Code of Federal Regulations 331.2). If you are not in agreement with this preliminary JD, then you may request an approved JD for your project site or review area.

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

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

A copy of this letter is being provided to the following parties: Mr. David Hedeen, Georgia Department of Transportation, 600 West Peachtree Street NW, Atlanta, Georgia 30308; Mr. Ed Smail, Michael Baker International, 4401 Belle Oaks Drive, Suite 105 North Charleston, South Carolina 29409; and Mr. Chris Mimms, U.S. Army Corps of Engineers, 69A Hagood Avenue, Charleston, South Carolina 29403-5103.

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

If you have any questions, please contact me at 912-652-5349.

Sincerely,

K. Brian Moore Project Manager, Coastal Branch

Enclosures

NOTIFICATION OF AD	MINISTRATIVE APPEAL OPTIONS	AND PROCESS
Applicant: Mr. Will McGoldrick South Carolina DOT	File Number: SAS-2007-0	1163 Date: August 30, 2016
Attached is:		See Section below
INITIAL PROFFERED PERMIT (Standard F	Permit or Letter of permission)	A
PROFFERED PERMIT (Standard Permit or	Letter of permission)	В
PERMIT DENIAL		C
APPROVED JURISDICTIONAL DETERMIN	NATION	D
X PRELIMINARY JURISDICTIONAL DETERM	MINATION	E
SECTION I - The following identifies your rights	and options regarding an administr	ative appeal of the above decision.
Additional information may be found at <u>http://ww</u> 33 CFR Part 331	ww.usace.army.mil/CECW/Pages/re	g materials.aspx or Corps regulations a
 A: INITIAL PROFFERED PERMIT: You may an ACCEPT: If you received a Standard Permit, you inal authorization. If you received a Letter of Performant on the Standard Permit or accept all rights to appeal the permit, including its terms the permit. DBJECT: If you object to the permit (Standard or hat the permit be modified accordingly. You multiple orfeit your right to appeal the permit in the future objections and may: (a) modify the permit to add objections, or (c) not modify the permit having devaluating your objections, the district engineer section B below. 3: PROFFERED PERMIT: You may accept or section authorization. If you received a Letter of Performant on the Standard Permit, you inal authorization. If you received a Letter of Performant on the Standard Permit or acception in the standard Permit or acception is appeal the permit, including its terms the permit. 	ccept or object to the permit. bu may sign the permit document ar ermission (LOP), you may accept the otance of the LOP means that you are s and conditions, and approved juris or LOP) because of certain terms are the district engineer within 60 days of e. Upon receipt of your letter, the di- dress all of your concerns, (b) modifi- etermined that the permit should be will send you a proffered permit for y appeal the permit. bu may sign the permit document an ermission (LOP), you may accept the tance of the LOP means that you ac s and conditions, and approved juris	nd return it to the district engineer for e LOP and your work is authorized. ccept the permit in its entirety, and waive adictional determinations associated with and conditions therein, you may request nd return the form to the district of the date of this notice, or you will istrict engineer will evaluate your y the permit to address some of your issued as previously written. After your reconsideration, as indicated in d return it to the district engineer for e LOP and your work is authorized. ccept the permit in its entirety, and waive dictional determinations associated with
PPEAL: If you choose to decline the proffered ou may appeal the declined permit under the Co of this form and sending the form to the division ays of the date of this notice.	permit (Standard or LOP) because orps of Engineers Administrative Ap engineer. This form must be receive	of certain terms and conditions therein, opeal Process by completing Section II ed by the division engineer within 60
PERMIT DENIAL: You may appeal the denia y completing Section II of this form and sending ivision engineer within 60 days of the date of the transformer within 60 days of the date of the	al of a permit under the Corps of En the form to the division engineer. is notice.	gineers Administrative Appeal Process This form must be received by the
: APPROVED JURISDICTIONAL DETERMINA Iformation. CCEPT: You do not need to notify the Corps to ate of this notice means that you accept the app	ATION: You may accept or appeal to b accept an approved JD. Failure to proved JD in its entirety, and waive a	the approved JD or provide new o notify the Corps within 60 days of the all rights to appeal the approved JD.
PPEAL: If you disagree with the approved JD, dministrative Appeal Process by completing Se ivision engineer must receive this form within 60	you may appeal the approved JD un ction II of this form and sending the D days of the date of this notice.	nder the Corps of Engineers form to the division engineer. The
: PRELIMINARY JURISDICTIONAL DETERMI reliminary JD. The Preliminary JD is not appeal	NATION: You do not need to response lable. If you wish, you may request	an approved JD (which may be

SECTION IL REQUEST FOR APPEAL OF OBJECTION	S TO AN INITIAL PROFFERED PERMIT
SECTION II. REQUESTEOR APPEAL OF OBJECTIONS: (Describe initial proffered permit in clear concise statements. You reasons or objections are addressed in the administrative	STO AN INITIAL PROFFERED PERMIT a your reasons for appealing the decision or your objections to an may attach additional information to this form to clarify where your e record.)
ADDITIONAL INFORMATION: The appeal is limited to a the record of the appeal conference or meeting, and any needed to clarify the administrative record. Neither the a record. However, you may provide additional information administrative record.	review of the administrative record, the Corps memorandum for supplemental information that the review officer has determined is ppellant nor the Corps may add new information or analyses to the to clarify the location of information that is already in the
POINT OF CONTACT FOR QUESTIONS OR INFORMA-	TION
f you have questions regarding this decision and/or the appeal process you may contact: Wr. Brian Moore JS Army Corps of Engineers, Savannah District 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3604 912-652-5349	If you only have questions regarding the appeal process you may also contact: Administrative Appeal Review Officer CESAD-PDS-O US Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801
RIGHT OF ENTRY: Your signature below grants the right consultants, to conduct investigations of the project site during and will have the approximation and will have the approximation.	t or entry to Corps of Engineers personnel, and any government uring the course of the appeal process. You will be provided a 15- odupity to participate in all site investigations

	Date:	Telephone number:
Signature of appellant or agent.		





DEPARTMENT OF THE ARMY CHARLESTON DISTRICT, CORPS OF ENGINEERS 69A HAGOOD AVENUE CHARLESTON, SOUTH CAROLINA 29403-5107 AUG 2 5 2016

Regulatory Division

Mr. Will McGoldrick South Carolina Department of Transportation P O Box 191 Columbia, South Carolina 29202

Dear Mr. McGoldrick:

This letter is in response to your request for a Preliminary Jurisdictional Determination (SAC-2015-01627) received in our office on November 30, 2015, for a 153.455-acre site located along US 17 near the Back River and the Georgia State boundary, Jasper County, South Carolina (Latitude: 32.15794°N, Longitude: -81058624°W). The site in question is depicted on the enclosed survey plat entitled "GEORGIA STATE LINE TO SC 315" and dated January 15, 2014, and revised January 19, 2016, prepared by Gary Blair Burgess. A Preliminary JD is used to indicate that this office has identified wetlands and/or other waters on the property, and that in lieu of making an Approved Jurisdictional Determination, relies on the presumption of jurisdiction pursuant to 33 CFR 328.3(a) for the purpose of expediting the request for a Preliminary JD.

Based on an on-site inspection on December 10, 2015, a review of aerial photography, topographic maps, National Wetlands Inventory maps, and soil survey information, and Wetland Determination Data Form(s), it has been concluded that the boundaries shown on the referenced plat are an accurate representation of the wetlands and/or other waters found within the site. The site in question contains approximately 75.466 acres of federally defined wetlands and other waters.

You should be aware that a permit from this office may be required for certain activities in the areas identified as wetlands and/or other presumed waters of the United States, and these areas may be subject to restrictions or requirements of other state or local government entities. In order for a definitive determination of jurisdiction to be provided, you must submit a request for an Approved Jurisdictional Determination (Approved JD). Enclosed is a Preliminary Jurisdictional Determination Form describing the areas in question and clarifying the option to request an Approved JD.

Please note that this is a Preliminary JD, and as such is not an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. If a permit application is forthcoming as a result of this Preliminary JD, a copy of this letter, as well as the plat should be submitted as part of the application. Otherwise, a delay could occur in confirming that a Preliminary JD was performed for the proposed project area.

This Preliminary JD is a non-binding action and as such has no expiration until it is superseded by an Approved JD. If you intend to request an Approved JD in the future, you are

advised not to commence work in these wetlands and/or waters prior to receiving the Approved JD. Please note that the accuracy of the boundaries of wetlands and/or other waters shown on the attached plat are valid for a period of five years from the date of this letter. Beyond five years from the date of this letter this office will consider those boundaries to be a reasonable approximation and therefore subject to change.

This delineation/determination has been conducted pursuant to Corps of Engineers regulatory authority for the purpose of identifying the geographic extent of waters on the particular site identified in this request. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

Enclosed are two copies of the Preliminary Jurisdictional Determination Form signed by our office. Please sign both copies, retain one copy for your records and return one signed copy to this office in the enclosed self-addressed envelope.

Your cooperation in the protection and preservation of our navigable waters and natural resources is appreciated. In all future correspondence concerning this matter, please refer to file number SAC-2015-01627. A copy of this letter is being forwarded to certain State and/or Federal agencies for their information. If you have any questions concerning this matter, please contact Christopher D. Mims, Project Manager, at 843-329-8154.

Sincerely,

thwith

Elizabeth Ğ. Williams Chief, Special Projects Branch

Enclosures: Preliminary Jurisdictional Determination Form Notification of Appeal Options Self-addressed envelope

Copies Furnished:

Mr. Blair Williams South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405

ATTACHMENT

Sec.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

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

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Applicant:

Mr. Will McGoldrick South Carolina Department of Transportation P O Box 191 Columbia, South Carolina 29202 **Consultant:** Mr. Ed Smail Michael Baker International 4401 Belle Oaks Drive, Suite 105 North Charleston, South Carolina 29409

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: SAC-2015-01627 U.S. Route 17 Widening and Bridge over Back River

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: The project is located on U.S. Highway 17 at Back River at the location of an existing bridge structure and roadway.

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: South Carolina County/parish/borough: Jasper County City: Center coordinates of site (lat/long in degree decimal format): Lat. 32.15794 N, Long. -81.058624 W.

Universal Transverse Mercator: Name of nearest waterbody: Back River

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 3.834 acres tidal open water (0.417 acre open water canal 17 and 3.417 acres Back River open water.

Cowardin Class:

Stream Flow:

Wetlands: 53.663 acres tidal wetlands, 17.969 freshwater wetlands. Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters: Tidal: 57.498 acres Non-Tidal:

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

Office (Desk) Determination. Date:

Field Determination. Date(s): Elizabeth Williams performed SV on 12-10-2015 1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who

requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply) -

checked items should 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:Michael Baker International, Ed Smail.

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Office concurs with data sheets/delineation report.

Office does not concur with data sheets/delineation report.

Data sheets prepared by the Corps:

- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:

USGS NHD data.

100

USGS 8 and 12 digit HUC maps.

U.S. Geological Survey map(s). Cite scale & quad name: Jasper County, provided by consulting firm, 7.5 min.

USDA Natural Resources Conservation Service Soil Survey. Citation: Jasper County, via NRCS Web Soil Survey.

National wetlands inventory map(s). Cite name:

State/Local wetland inventory map(s):

FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

Photographs: Aerial (Name & Date):Aerial Infrared 2006 SCDNR, provided via Corps ArcGIS database.

or 🗌 Other (Name & Date):

Previous determination(s). File no. and date of response letter:

Other information (please specify):E. Williams Site Visit December 10, 2015.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

MAA-

Signature and date of 9,205-(), Regulatory Project Manager (REQUIRED) Signature and date of person requesting preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

Waters_Name	Cowardin_Cod	Amoun	Units	Latitude	Longitude	Class
Back River (SC)	R1SB45	3.417	ACRE	32.10385025	-81,08685989	Sec 10 non-wetland
J Wet 11	PEM1B	0.331	ACRE	32.15682594	-81.05718164	Non-sec 10 wetland
J Wet 24	PFO1B/E	1.439	ACRE	32.15481016	-81.05547264	Non-sec 10 wetland
J Wet 26	PFO1B	0.303	ACRE	32.15747097	-81.05826118	Non-sec 10 wetland
J Wet 27A	PFO1A	1.524	ACRE	32.15409877	-81.05553521	Non-sec 10 wetland
J Wet 27B	PFO1A	1.105	ACRE	32.15050988	-81.05395058	Non-sec 10 wetland
J Wet 27C	PFO1A	0.528	ACRE	32.14888853	-81.05358843	Non-sec 10 wetland
J Wet 29	PEM1B	0.041	ACRE	32.15303535	-81.05427953	Non-sec 10 wetland
J Wet 30A	PFO/PEM1E	1.636	ACRE	32.15005567	-81.05341507	Non-sec 10 wetland
J Wet 30B	PFO/PEM1E	0.675	ACRE	32.14757807	-81.05287885	Non-sec 10 wetland
J Wet 31A	PEM1B	0.516	ACRE	32.14568931	-81.05250609	Non-sec 10 wetland
J Wet 31B	PEM1B	0.138	ACRE	32.1440513	-81.05221741	Non-sec 10 wetland
J Wet 34	E2EM1N	1.467	ACRE	32.14293975	-81.05249158	Section 10 wetland
J Wet 35A	E2EM1N	0.272	ACRE	32.1430593	-81.05198251	Section 10 wetland
J Wet 35B	E2EM1N	0.529	ACRE	32.14174463	-81.05185922	Section 10 wetland
J Wet 36A	E2EM1N	0.001	ACRE	32.14090395	-81.0523685	Section 10 wetland
J Wet 36B	E2EM1N	0.965	ACRE	32.14004587	-81.05228918	Section 10 wetland
J Wet 36C	E2EM1N	0.792	ACRE	32.13726599	-81.05280166	Section 10 wetland
J Wet 37	E2EM1N	1.300	ACRE	32.1398282	-81.05184594	Section 10 wetland
J Wet 38/43A	E2EM1N	13.688	ACRE	32.1306592	-81.05659447	Section 10 wetland
J Wet 38/43B	PFO4/1	0.338	ACRE	32.12377174	-81.06366667	Non-sec 10 wetland
J Wet 38/43C	PFO4/1	0.167	ACRE	32,12318371	-81.06430697	Non-sec 10 wetland
J Wet 38/43D	E2EM1N	0.112	ACRE	32.12253477	-81.06500896	Section 10 wetland
J Wet 38/43E	PFO4/1	0.384	ACRE	32.12225967	-81.06548074	Non-sec 10 wetland
J Wet 38/43F	E2EM1N	3.538	ACRE	32.12012995	-81.06799684	Section 10 wetland
J Wet 39/40	E2EM1N	3.164	ACRE	32.13392229	-81.05424622	Section 10 wetland
J Wet 41A	PFO1B	1,541	ACRE	32.1296199	-81.05778877	Non-sec 10 wetland
J Wet 41B	PFO1B	3.307	ACRE	32,12610636	-81.06194449	Non-sec 10 wetland
J Wet 42	PFO1B	0.050	ACRE	32.12250335	-81.06627363	Non-sec 10 wetland
J Wet 44	PEM1B	0.098	ACRE	32.11808936	-81.07039488	Non-sec 10 wetland
J Wet 45A-1	E2EM1N	12.763	ACRE	32,11186081	-81.07783006	Section 10 wetland
J Wet 45A-2	E2EM1N	2.456	ACRE	32.10507065	-81.08586326	Section 10 wetland
J Wet 45B	PFO4/1	0.087	ACRE	32.10728883	-81.08335061	Non-sec 10 wetland
J Wet 48A	PEM/PFO1B	0.017	ACRE	32.12224132	-81.06665832	Non-sec 10 wetland
J Wet 48B	PEM/PFO1B	0.296	ACRE	32.12170245	-81.06722486	Non-sec 10 wetland
J Wet 48C	PEM/PFO1B	0.032	ACRE	32.12088717	-81.06819179	Non-sec 10 wetland
J Wet 48D	PEM/PFO1B	0.224	ACRE	32.12036899	-81.06869213	Non-sec 10 wetland
J Wet 48E	PEM/PFO1B	1.716	ACRE	32.11867409	-81.07072557	Non-sec 10 wetland
J Wet 49	PEM1B	1.316	ACRE	32.11702082	-81.07262761	Non-sec 10 wetland
J Wet 50A	PFO1	0.102	ACRE	32.11435679	-81.07559976	Non-sec 10 wetland
J Wet 50B	E2EM1N	9.722	ACRE	32.11246721	-81.07801168	Section 10 wetland
J Wet 50C	E2EM1N	2.009	ACRE	32.10746456	-81.08395563	Section 10 wetland
J Wet 51	PEM1B/H	0.059	ACRE	32.10845691	-81.08268223	non-sec 10 wetland
J Wet 52A	E2EM1N	0.190	ACRE	32.10415711	-81.08614292	Section 10 wetland
J Wet 52B	E2EM1N	0.173	ACRE	32.10431811	-81.08702016	Section 10 wetland
J Wet 52C	E2EM1N	0.520	ACRE	32.10369406	-81.08688613	Section 10 wetland
OW Canal 17	R1AB6	0.417	ACRE	32.13645472	-81.05302945	Sec 10 non-wetland
	1997 - Norfeen Hanner, ann an Anna Anna Anna Anna Anna Anna A	75.466	Total			

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United States Department of the Interior

FISH AND WILDLIFE SERVICE 176 Croghan Spur Road. Suite 200 Charleston, South Carolina 29407



August 22, 2016

Ms. Nicole Riddle Assistant NEPA Coordinator South Carolina Department of Transportation P.O. Box 191 Columbia, SC 29201

Re: Proposed US 17 Widening and Bridge Construction, Back River, Jasper County, South Carolina FWS Log No. 2014-I-0318

Dear Ms. Riddle:

The U.S. Fish and Wildlife Service (Service) has received the Biological Assessment (BA) for the widening of US 17 and bridge construction over the Back River in Jasper County, South Carolina. This BA serves as an addendum to the October 19, 2010, BA of the same project. Please note that the 2010 BA did not include an assessment of the new bridge to be constructed. On December 6, 2010, the Service concurred with the South Carolina Department of Transportation's (SCDOT) findings regarding federally protected threatened and endangered (T&E) species (FWS Log No. 2011-CPA-0073). In addition, on July 1, 2014, the Service provided additional correspondence to SCDOT in response to a new Biological Survey which was conducted due to a change in the project's scope of work (FWS Log No. 2014-CPA-0318). In our July 2014 correspondence, we recognized that a new additional bridge would be constructed as a part of the project. The additional bridge was considered in our consultation at that time.

This newest BA dated August 2016, serves as an addendum in order to address potential impacts to two T&E species not previously considered, the Kirtland's warbler (*Setophaga kirtlandii*) and the red knot (*Calidris canutus rufa*). Upon evaluation of the potential for these species to be in the project area, SCDOT has determined that the proposed US 17 widening and bridge construction is not likely to adversely affect the Kirtland's warbler or the red knot. The Service concurs with this determination. Further, no federally designated critical habitat for these species is present in the project area. Please note that obligations under the ESA must be reconsidered if: (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

In review of this BA, it does not specify what time of year the bridge construction activity will take place. In the event that the applicant intends to perform the proposed bridge replacement work during the warmer months of the year when manatees may be present, the Service recommends that the standard Manatee Protection Guidelines be incorporated into the project's construction plans.

The Service appreciates the opportunity to provide these comments. If you need further clarification regarding these comments, please contact Mr. Mark Caldwell at (843) 727-4707 ext. 215, and reference FWS Log No. 2014-I-0318.

Sincerely,

Jule Kocles for Thomas D. McCoy Field Supervisor

TDM/MAC

.


September 15, 2015

Mr. Travis Hughes US Army Corps of Engineers Regulatory Branch 69A Hagood Street Charleston, South Carolina 29403

RE Proposed U.S. Route 17 Widening and New Bridge over Back River, Jasper County, South Carolina and Chatham County, Georgia, SCDOT PIN 25999; Request for Updated Jurisdictional Determination SAC File # SAC 2009-00631-DJM

Dear Mr. Hughes:

South Carolina Department of Transportation (SCDOT) is requesting an update to the existing Jurisdictional Determination for the above referenced project. An Approved Jurisdictional Determination (SAC 2009-00631-DJM) was issued for the proposed project on October 13, 2010 (refer to Appendix D). Since the original Jurisdictional Determination (JD) was issued, design changes have occurred that modified the previous approval area (shortened overall project length and narrowed project width) and the current construction of the Back River Bridge (SAC 2011-1156-DIJ) modified the original wetland limits due to the impact footprint (refer to Appendix E).

All wetlands from the SAC 2009-00631-DJM Jurisdictional Determination (in South Carolina) were re-marked in the field in 2013 and 2014 and the boundaries were surveyed by a Professional Land Surveyor to create a plat for all freshwater and tidal wetlands within the project area. With the creation of the plat, SCDOT is requesting approval of the wetland limits as shown on the attached plat as an Accurate-Approved Jurisdictional Determination.

A new DHEC-OCRM Critical Line Plat request is being submitted to DHEC-OCRM for review and approval. Site visits will be coordinated with me and Michael Baker, our agent who is handling the JD and permitting for this project. Once the USACE and DHEC-OCRM concur on the plat, multiple copies will be submitted to DHEC-OCRM for signature and one of the signed copies will be provided to the US ACE for final approval of the JD.

Please find attached a Jurisdictional Determination Request Form, Project Site Mapping and Reference Wetland Mapping (Appendix A), Wetland Plat (Appendix B) Wetland Determination Dataforms (Appendix B), Approved Jurisdictional Determination Forms (Appendix C), Jurisdictional Determination SAC 2009-00631-DJM (Appendix D), and Jurisdictional Determination and Permit SAC 2011-1156-DIJ (Appendix E).

Sincerely,

Will Mithles

Phone: (803) 737-2314 TTY: (803) 737-3870

AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER Mr. Travis Hughes September 15, 2015 Page 2 of 2

> Will McGoldrick Environmental Permits Coordinator

WRM/es

enclosures

Jurisdictional Determination Request Form, Project Site Mapping and Reference Wetland Mapping (Appendix A) Wetland Plat (Appendix B) Wetland Determination Dataforms (Appendix B) Approved Jurisdictional Determination Forms (Appendix C) Jurisdictional Determination SAC 2009-00631-DJM (Appendix D) Jurisdictional Determination and Permit SAC 2011-1156-DIJ (Appendix E)

- cc: Tess Trumbull, SCDHEC-OCRM Ed Smail, Michael-Baker
- ec: Sean Connolly, SCDOT

File: Env/RPG1

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

APPLICANT:
Name (First Last) South Carolina Department of Transportation, Attn: Will McGoldrick
Address P.O. Box 191
City Columbia State SC Zip Code 29202
Phone (803) 737 _ 1326 Fax (Email mcgoldriwr@scdot.org
PROPERTY OWNER: Same as Applicant
Name (First Last) Georgia Department of Transportation, Attn: Eric Duff
Address 600 West Peachtree Street
City Atlanta State GA Zip Code 30308
Phone (404) 631 - 1447 Fax () - Email eduff@dot.ga.gov
AGENT/CONSULTANT: (if applicable)
Name (First Last) Ed Smail, Michael Baker International
Address 4401 Belle Oaks Drive, Suite 105
City North Charleston State SC Zip Code 29405
Phone (843) 745 _ 8808 Fax (843) 329 _ 0055 Email esmail@mbakerintl.com
PROPERTY LOCATION:
Location/Address/Subdivision US Highway 17 from SC 315 to International Drive.
City (in/near) Savannah, GA County Chatham
Directions from nearest interstate (use additional sheet(s) if needed) From I-95 North take Exit 109 toward GA-30/Port Wentworth and merge onto GA-21S. Proceed 9.75 miles and merge onto I-16 E/GA-404 at Exit 5 toward US-17/Savannah. Proceed 1.86 miles and take US-17/GA-404/Gwinnett Street at Exit 166 toward Louisville Road/ Charleston. Proceed 0.12 miles and merge onto US-17N/ Ga-404 Spur E. Continue on for 2.3 miles. Project starts at International Drive/ Savannah Harbor Parkway interchange on Hutchinson Island
Latitude 32 . 117488 Longitude - 81 . 071572
(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) 214 AC total = 60.5 AC GA and 153.5 AC SC
Nearest named waterbody (Stream/River/Lake) Back River

10/15/2010

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.

<u>Preliminary Jurisdictional Determination</u> - 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.

<u>Approved Jurisdictional Determination</u> - 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.)

L Eric Duff

Print Name

, request a jurisdictional

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.

hin Duff SIGNED

2/02/16 DATE

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

Appendix D (Revised January 4, 2013)

EXPANDED PRELIMINARY JURISDICTIONAL DETERMINATION (JD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR EXPANDED PRELIMINARY JD:

B. NAME AND ADDRESS OF PERSON REQUESTING EXPANDED PRELIMINARY JD:

Doug Chamblin, GDOT, 600 West Peachtree Street, Atlanta GA, 30308

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

Savannah

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: GA County/parish/borough: Chatham City: Savannah Center coordinates of site (lat/long in degree decimal format): Lat. 32.1175

Universal Transverse Mercator:

, Long. -81.0716

Name of nearest waterbody: Back River

Identify (estimate) amount of waters in the review area: Non-wetland waters: 2,480.0(linear feet: 350.00 width (ft) and/or 19.9000 acres. Cowardin Class: Riverine Stream Flow: Perennial Wetlands: 8.5500 acres. Cowardin Class: Emergent

Name of any water bodies on the site that have been identified as Section 10 waters: Tidal: Back River Non-Tidal:

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

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

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this expanded preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this expanded preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a expanded preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the expanded preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a expanded preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a expanded preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional

issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This expanded preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for expanded preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

\checkmark	Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Michael Baker International, Inc.
	Survey Signed by Registered Land Surveyor
	GPS Survey with GPS Datasheet
\checkmark	Data sheets prepared/submitted by or on behalf of the applicant/consultant. Michael Baker International, Inc.
	Office concurs with data sheets/delineation report.
Π	Office does not concur with data sheets/delineation report.
\Box	Data sheets prepared by the Corps: . Corps navigable waters' study:
\Box	Geological Survey Hydrologic Atlas:
_	USGS NHD data.
	USGS 8 and 12 digit HUC maps.
	Geological Survey map(s). Cite scale & quad name:
\checkmark	USDA Natural Resources Conservation Service Soil Survey. Citation: Chatham County, GA
\checkmark	National wetlands inventory map(s). Cite name: Savannah GA
	State/Local wetland inventory map(s):
	FEMA/FIRM maps:
	100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
\checkmark	Photographs: 🗹 Aerial (Name & Date):
	✓ Other (Name & Date):
\checkmark	Previous determination(s). File no. and date of response letter:
\checkmark	Other information (please specify): SAC2011-1156-DIJ, 11/14/11; SAC2009-00631-DJM, 10/13/10

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and date of Regulatory Project Manager (REQUIRED) Signature and date of person requesting expanded preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

SAMPLE

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
Stream 3	32.10072 +	-81.0895649	R1SB45	19.7 ac; 360 LF	TNW
W 52	32.10292	-81.0882077	E2EM1N	0.87 ac	Tidal Wetland
W 53	32.097837	-81.0918615	E2EM1N	2.25 ac	Tidal Wetland
W 54	32.096880	-81.09372122	E2EM1N	2.87 ac	Tidal Wetland
W 55	32.09604	-81.092271	E2EM1N	2.52 ac	Tidal Wetland
OW 20	32.09680+	-81.0917740	R1SB56	0.05 ac; 182 lf	Tidal Open Water

Appendix A Project Mapping





SOURCE: USGS 7.5' Topographic Quadrangle Map, Jasper County, SC





	Project Title: U.S. Highway 17 Wid	ening			
	Project Location: Jasper County, S.C.				
	Applicant: SCDOT				
	Authorized Agent: Michael Baker, Jr., Inc.				
	Drawing Scale: 1:36,000	Date: 08/26/2015			
t	Application #:	Figure: 2 of 7			







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1 inch = 3,000 feet

Troject fille. 0.5. filgilway fr wid	ennig
Project Location: Jasper County, S	S.C.
Applicant: SCDOT	
Authorized Agent: Michael Baker,	Jr., Inc.
Drawing Scale: 1:36,000	Date: 08/26/2015
Application #:	Figure: 5 of 7



Michael Baker



Project litle: 0.5. Highway 17 wid	ening		
Project Location: Jasper County, S.C.			
Applicant: SCDOT			
Authorized Agent: Michael Baker,	Jr., Inc.		
Drawing Scale: 1:36,000	Date: 08/26/2015		
Application #:	Figure: 6 of 7		



Appendix B Wetland Mapping









SHEET











SEE SHEET



SEE SHEET

Appendix C Wetland Plat



SHEET 1	AREA TABLE	
ATURE	SQUARE FEET	ACRES
COASTAL AL AREA*	1,351,554	31.027
FER WETLAND	171,219	3.931
ASTAL OPEN BACK RIVER	148,823	3.417
PLAND	1,146,146	26.312
IEET 1 AREA	2,817,742	64.687
ILEI 1 AREA	2,817,742	64.68/





	LINE TABLE	
LINE #	BEARING	LENGTH
L1	N45 ° 14'38"E	33.64'
L2	N45 ° 14'38"E	132.06'
L4	N45 ° 14'38"E	78.41'
L5	N45 ° 14'38"E	266.42'
L6	N45 ° 14'38"E	22.11'
L7	N45 ° 14'38"E	229.66'
L8	N45 ° 14'38"E	64.96'
L9	N45 ° 14'38"E	189.64'
L10	N45 ° 14'38"E	339.64'
L11	N45 ° 14'38"E	74.60'
L12	N45 ° 14'38"E	63.46'
L13	N45°14'38"E	92.58'
L14	N45 ° 14'38"E	47.40'
L15	S79°24'58"E	50.00'
L16	N58°13'58"E	9.32'
L17	S68 * 58'58"W	30.00'
L18	S74 ° 13'58"W	5.00'
L19	S08 * 55'17"E	90.41'
L20	S81°04'43"W	11.00'
L21	S08*55'17"E	314.30'
L22	S08*55'17"E	8.74'
L23	S08*55'17"E	118.03'
L24	S14 * 54'56"E	34.10'
L25	S14 * 54'56"E	108.62'
L26	S14 ° 54'56"E	30.02'
L27	S08 ° 55'17"E	70.07'
L28	S81°52'41"W	10.00'
L29	S79°24'58"E	39.00'
L30	S45 ° 14'38"W	124.36'
L31	S45*14'38"W	24.74'
L32	S45 ° 14'38"W	55.53'
L33	S45°14'38"W	174.54'
L34	S44°49'34"E	32.71'
L35	S24°14'59"E	29.69'
L36	S53°57'58"W	32.65'
L37	N77°24'44"W	12.17'
L38	N36°54'16"W	35.04'
L39	N12°05'08"W	16.40'
L40	N50°22'54"E	35.70'
41	S40°12'01"F	40.04'
L42	S36°18'41"E	49.99'
L43	S37°35'29"W	65.01'
L44	S54°27'54"W	52.69'
L45	S30°15'44"W	42.10'
L46	S42°54'36"W	40.26'
L47	S45°06'49"W	51.35'
L48	S49°55'24"W	46.93'
L49	S44°21'28"W	53.68'
L50	S40°58'38"W	54.15'
L51	S43°22'55"W	48.75'
L52	N41°25'43"F	48.53'
L53	N43°15'19"E	46.22'
L54	S45°16'.30"W	63.71'
L55	S44°28'00"W	111.71'
	S46°05'31"W	53.94'
 L57	S43°45'10"W	48.11'
, L58	S49°27'34"W	42.67'
L59	S45°5.3'48"W	22.86'
	N71°54'07"W	15.45'
L61	S54°38'35"W	22.78'
L62	S23°25'51"W	26.38'
L63	S55°26'49"W	35.71'
	N64°04'37"W	15.18'
L65	S62°40'34"W	29.48'
L66	N89°48'56"W	18.49'
L67	S34°39'47"W	13.66'
L68	S08°51'21"W	21.94'
1.69	S01°24'47"⊑	42 47'
1 70	536°26'27"W	<u>, 2, 7</u> / <u>35</u> 1 3'
71	S42°01'11"\\	43 36'
70	SEULIN M	37 62'
73	500 00 27 W	دن. ۲۰ م
174	540 40 50 W	42.U/
L/4	540°00'04""	51 00'
L/3	549 20 01"W	JI.UU
L/D	54/ 41 U2"W	//.80
L//	540 U2 26"W	0U.0/
L/8	545 52 49"W	59.45 75.00
L/9	342 48 36 W	10.90
	544 40 27"W	04.63
L81	545 ⁻ 28′52"W	119.13'
L82	S43°16'49"W	74.21'
L83	S46°28'21"W	71.82'

	LINE TABLE	
LINE #	BEARING	LENGTH
L84	S45°30'51"W	58.92'
1.86	S44 13 35 W	57.74 87.99'
L87	S47'01'07"W	48.90'
L88	S47°52'27"W	59.38'
L89	S43*08'04"W	58.44'
L90	S45°30'20"W	72.25'
L91	S45*38'06"W	54.99'
L92	S43 * 58'48"W	62.08'
L93	S46 * 26'56"W	57.58'
L94	S47 * 50'19"W	63.39'
L95	S44 ° 18'25"W	66.57'
L96	S46*02'27"W	52.64'
L97	S44*19'10"W	74.18'
L98	S46'48 51 W	58.62
1100	544 50 06 W	71.99 60.79'
L101	S46°08'38"W	53.27'
L102	S41°21'09"W	44.05'
L103	S43*58'03"W	71.57'
L104	S45°21'11"W	86.51'
L105	S43 * 57'19"W	14.92'
L106	S43*47'32"W	105.88'
L107	S46*54'44"W	152.17'
L108	S44°42'14"W	70.51'
L109	S45°13'40"W	118.90'
L110	S46°33'08"W	72.88'
L111	S45°29'54"W	54.74'
L112	S45°27'42"W	64.66'
L113	545*48'56"W	39.43'
LII4 115	504 45 55"W	24.05
116	N44'34'34"W	∠+.40 35 34'
 L117	N42°44'47"W	32.04'
L118	S49°28'18"W	24.47'
L119	S43 ° 34'43"W	58.48'
L120	S48 ° 09'55"W	42.11'
L121	S41°15'41"W	47.00'
L122	S56°40'36"W	24.32'
L123	S75 ° 32'04"E	2.61'
L124	S51°36'24"E	28.99'
L125	S86°11'28"E	27.30'
L126	N58'48'55"E	28.89'
L127	N47°32'56"E	37.26'
L120	N2U 4413″E	21.08 32 30'
L130	S31°18'05"F	16.80'
L131	S71°23'12"E	34.84'
L132	S13°22'24"W	24.85'
L133	S39 ° 56'17"W	28.34'
L134	S45°08'02"W	54.97'
L135	S52°04'50"W	57.94'
L136	S42°34'29"W	47.79'
L137	S39°05'21"W	57.77'
L138	S43°22'25"W	64.51'
L139	S38°30'54"W	51.66'
L140	S46°10'01"W	49.33'
L141	5481820"W	58.85'
L142	571 29 48"W	47.68
L144	S54°0.3'04"W	52.30'
L145	N88°41'04"W	21.49'
L146	N74°10'37"W	8.84'
L147	N22°51'20"W	12.35'
L148	N38°04'18"W	28.49'
L149	N29°54'51"W	26.81'
L150	S20*55'58"E	4.48'
L151	S34°29'55"W	175.68'
L152	S44°30'14"E	43.32'
L153	S45°50'48"W	65.71'
L154	544*46'21"W	81.05'
1156	540'59'09"W	/ 3.97' 71 12'
157	SJU UD DY W	76 73'
L158	S47°56'39"W	64.19'
L159	S36°58'11"W	60.99'
L160	S46°53'02"W	60.74'
L161	S67°03'19"W	51.40'
L162	S32*35'27"W	31.81'
L163	S44°14'54"W	32.94'
L164	S50 ° 31'33"W	43.70'
1165	S60°34'10"W	48.20'

	LINE TABLE	
LINE #	BEARING	LENGTH
L166	S62*50'31"W	30.08'
L167	S3011 11 W	34.01 43.64'
L169	S42 ° 17'20"W	24.71'
L170	N41°35'42"W	23.57 '
L171	N66°19'17"W	11.75'
L172	N84°38'20"E	34.28'
L173	N75°27'30"E	29.27'
L174	N50°43'11"W	15.82'
L176	N79 ° 15'50"E	27.93'
L177	N61°40'35"E	41.02'
L178	N85°17'16"E	69.33 '
L179	S41°29'42"W	46.68'
L180	S38'01'32 W	37.58 64.86'
L182	S60*09'08"W	43.90'
L183	N25 * 29'50"W	42.83'
L184	N04°37'38"E	36.82'
L185	N29°37'18"E	11.81'
L187	S31°29'37"W	28.60'
L188	52020U/E	20.72 32.00'
L190	S85*34'35"W	9.73'
L191	N43°07'46"W	34.61'
L192	N67 ° 14'27"W	21.41'
L193	S10°28'45"E	18.35'
L194	S05*05'05"W	70.81'
L195	558°48'12"W	/9.43' 22 11'
L197	S45°04'17"W	57.27 '
L198	S81°09'46"W	38.97'
L199	S51°43'15"W	56.18 '
L200	S78°25'24"W	38.69'
L201	S23°49'46"E	20.52'
L202	S59'35'29"W	59.70'
L203	S55'51'51"F	+.70 16.28'
L205	S70°21'58"E	31.24'
L206	S29°25'49"W	21.40'
L207	S64°45'51"W	29.94′
L207 L208	S64°45'51"W N69°12'13"W	29.94' 40.24'
L207 L208 L209	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W	29.94' 40.24' 3.63' 8.50'
L207 L208 L209 L210 L211	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W	29.94' 40.24' 3.63' 8.50' 42.95'
L207 L208 L209 L210 L211 L212	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82'
L207 L208 L209 L210 L211 L212 L213	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90'
L207 L208 L209 L210 L211 L212 L213 L214	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57'
L207 L208 L209 L210 L211 L212 L213 L214 L215	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219	S64*45'51"W N69'12'13"W N21'37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220	S64*45'51"W N69'12'13"W N21'37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S47*42'45"W S37*22'41"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S47*42'45"W S37*22'41"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S47*42'45"W S37*22'41"W S37*22'45"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224	S64*45'51"W N69*12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S47*42'45"W S37*22'41"W S37*22'45"W S46*47'21"W S48*32'45"W S39*39'17"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L217 L218 L219 L220 L221 L222 L223 L224 L225	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S41*58'01"W S36*06'02"W S36*06'02"W S34*33'03"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S46*47'21"W S46*47'21"W S48*32'45"W S46*32'44"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 81.32' 65.59' 74.35' 48.99'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L217 L218 L219 L220 L221 L222 L223 L224 L225 L226	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S37*22'41"W S46*47'21"W S46*47'21"W S46*32'44"W S52*16'57"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 81.32' 65.59' 74.35' 48.99' 38.94'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L225 L226 L227	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S37*22'41"W S46*47'21"W S46*47'21"W S46*32'44"W S52*16'57"W S35*57'21"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L226 L227 L228	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S36*06'02"W S34*33'03"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S37*22'41"W S46*47'21"W S46*47'21"W S46*32'44"W S52*16'57"W S35*57'21"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L226 L227 L228 L229 L230	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S46*47'21"W S46*47'21"W S46*32'44"W S52*16'57"W S35*57'21"W S52*16'57"W S52*16'57"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L225 L226 L227 L228 L229 L230 L231	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S46*47'21"W S46*47'21"W S46*32'44"W S52*16'57"W S46*32'44"W S52*16'57"W S52*16'57"W S52*16'57"W S554*45'02"W S45*47'18"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 48.93'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L225 L226 L227 L228 L229 L230 L231	S64*45'51"W N69'12'13"W N21*37'42"W S26*20'38"W S23*27'29"W S34*03'23"W S28*23'04"W S41*58'01"W S28*22'13"W S36*06'02"W S34*33'03"W S34*33'03"W S42*36'19"W S42*36'19"W S42*36'19"W S47*42'45"W S37*22'41"W S46*32'44"W S46*32'44"W S46*32'44"W S52*16'57"W S46*32'44"W S52*16'57"W S46*32'44"W S52*16'57"W S46*32'44"W S52*16'57"W S45*47'18"W S45*47'18"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 45.12' 79.52' 48.93' 105.60'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L225 L225 L226 L227 L228 L229 L230 L231	S64*45'51"W N69'12'13"W N21*37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'22'13"W S34'03'23"W S28'22'13"W S36'06'02"W S34'33'03"W S34'33'03"W S42'36'19"W S42'36'19"W S47'42'45"W S37'22'41"W S46'47'21"W S46'32'44"W S39'39'17"W S46'32'44"W S52'16'57"W S35'57'21"W S62'17'17"W S62'17'17"W S45'47'18"W S41'12'16"W S42'27'41"W S42'27'41"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L224 L225 L226 L227 L228 L229 L220 L221 L223 L231	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'722'41"W S37'22'41"W S37'24'52"W S46'47'21"W S39'39'17"W S46'32'44"W S52'16'57"W S46'32'44"W S55'57'21"W S46'45'02"W S45'47'18"W S45'47'18"W S42'27'41"W S42'27'41"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 45.12' 79.52' 48.93' 105.60' 34.44' 54.72'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L224 L225 L226 L227 L228 L227 L228 L229 L220 L231 L231	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'722'41"W S37'22'41"W S37'24'52"W S46'47'21"W S46'32'44"W S521'6'57"W S46'32'44"W S522'16'57"W S46'32'44"W S552'16'57"W S45'47'18"W S45'47'18"W S42'27'41"W S42'27'41"W S42'27'41"W S42'36'19"W S42'36'17'N S52'16'57"W S45'47'18"W S41'12'16"W S42'27'41"W S23'18'01"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 81.32' 65.59' 74.35' 81.32' 81.32' 48.93' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 45.12' 79.52' 48.93' 105.60' 34.44' 54.72' 23.53'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L224 L225 L226 L227 L228 L229 L220 L221 L223 L231 L232 L231 L232 L235 L236 L235	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'722'41"W S37'22'41"W S37'24'52"W S46'47'21"W S46'47'21"W S46'32'44"W S5216'57"W S46'32'44"W S552'16'57"W S45'47'18"W S45'47'18"W S42'27'41"W S42'19'20"W S42'19'20"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 45.12' 79.52' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L231 L232 L231 L232 L234	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'722'41"W S37'22'41"W S37'24'52"W S46'47'21"W S46'32'44"W S521'6'57"W S46'32'44"W S521'6'57"W S45'47'18"W S45'47'18"W S42'27'41"W S42'27'41"W S42'27'41"W S42'27'41"W S42'36'19"W S42'19'20"W S42'19'20"W S46'59'30"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 48.99' 38.94' 87.78' 45.12' 79.52' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33' 59.70' 44.33' 55.39'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L231 L232 L231 L232 L234	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'722'41"W S37'22'41"W S37'24'52"W S46'47'21"W S46'32'44"W S5216'57"W S46'32'44"W S552'16'57"W S46'32'44"W S552'16'57"W S45'47'18"W S45'47'18"W S42'27'41"W S42'19'20"W S46'59'30"W S46'59'30"W S46'59'30"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33' 55.39'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L223 L224 L225 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L231 L231 L232 L231 L232 L233 L234	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'06'02"W S36'722'41"W S37'22'41"W S37'24'52"W S46'47'21"W S46'32'44"W S52'16'57"W S46'32'44"W S52'16'57"W S46'32'44"W S552'16'57"W S45'47'18"W S45'57'21"W S45'47'18"W S45'47'18"W S41'12'16"W S42'27'41"W S42'27'41"W S42'27'41"W S42'19'20"W S42'19'20"W S46'59'30"W S46'59'30"W S46'59'13"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 59.70' 44.33' 55.39' 42.55' 49.88'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L224 L225 L226 L227 L228 L227 L230 L231 L231	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S34'33'03"W S36'06'02"W S36'06'02"W S36'303"W S36'30'3"W S36'30'3"W S37'22'41"W S37'24'52"W S46'47'21"W S46'32'44"W S52'16'57"W S46'32'44"W S52'16'57"W S45'57'21"W S45'57'21"W S45'57'21"W S45'45'02"W S45'47'18"W S52'16'57"W S45'59'15"W S45'59'18"W S41'12'16"W S42'27'41"W S45'59'13"W S42'19'20"W S46'59'30"W S45'59'13"W S45'24'58"W S45'24'58"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.92' 49.90' 34.07' 45.35' 50.73' 34.07' 45.35' 34.07' 45.35' 65.59' 74.35' 48.99' 38.94' 87.78' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L224 L225 L226 L227 L228 L227 L230 L231 L231	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S34'33'03"W S36'06'02"W S36'06'02"W S36'30'3"W S36'30'3"W S36'30'3"W S37'22'41"W S37'24'52"W S46'47'21"W S46'32'44"W S52'16'57"W S46'32'44"W S52'16'57"W S45'47'18"W S45'57'21"W S45'47'18"W S45'47'18"W S41'12'16"W S42'27'41"W S42'27'41"W S45'47'18"W S41'12'16"W S42'27'41"W S45'47'18"W S42'30'20"W S46'59'30"W S46'59'30"W S45'24'58"W S45'24'58"W S45'24'58"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.73' 34.07' 45.35' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93' 56.85'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L224 L223 L231 L232 L231 L232 L231 L232 L233 L234 L235 L234 L235 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L236 L237 L238 L237 L238 L234 L235 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L237 L238 L237 L240 L240 L241 L242 L243 L247 L247 L248 L247 L248 L247 L248 L247 L248 L247 L248 L	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'22'13"W S34'03'23"W S28'22'13"W S36'06'02"W S34'33'03"W S36'06'02"W S36'06'02"W S36'30'3"W S36'30'1"W S37'22'41"W S37'24'52"W S46'47'21"W S46'47'21"W S46'32'44"W S52'16'57"W S46'32'44"W S52'16'57"W S45'47'18"W S45'47'18"W S45'47'18"W S41'12'16"W S42'30'2"W S45'47'18"W S45'47'18"W S45'59'13"W S46'59'30"W S46'59'30"W S46'59'30"W S48'59'13"W S48'59'13"W S48'59'13"W S58'25'55"W S54'14'03"W	29.9.4' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.73' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93' 56.85' 74.12' 46.17'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L226 L227 L228 L227 L228 L227 L228 L229 L220 L221 L223 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L224 L223 L231 L232 L231 L232 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L236 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L237 L238 L234 L237 L238 L234 L244 L244 L245	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S34'33'03"W S36'06'02"W S34'33'03"W S36'06'02"W S36'06'02"W S37'22'13"W S42'36'19"W S47'42'45"W S37'22'41"W S46'47'21"W S46'32'44"W S46'32'44"W S46'32'44"W S52'16'57"W S46'32'44"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'47'18"W S45'47'18"W S41'12'16"W S42'19'20"W S46'59'30"W S30'02'17"W S46'59'30"W S45'24'58"W S48'59'13"W S48'59'13"W S56'29'01"W S56'29'01"W S56'29'01"W S56'29'01"W S56'29'01"W	29.9.4' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.73' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 54.72' 23.53' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93' 56.85' 74.12' 46.17'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L220 L221 L222 L223 L224 L225 L226 L227 L228 L226 L227 L228 L228 L229 L220 L221 L223 L224 L225 L226 L227 L228 L227 L228 L229 L230 L231 L231 L232 L234 L235 L234 L237 L238 L237 L238 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L236 L237 L238 L237 L238 L234 L235 L234 L235 L234 L235 L236 L237 L236 L237 L236 L237 L236 L237 L236 L237 L238 L237 L238 L234 L235 L234 L236 L237 L238 L237 L238 L234 L235 L236 L237 L238 L237 L240 L241 L242 L243 L244 L245 L246 L246 L247 L246 L247 L248 L247 L248 L247 L248	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S34'33'03"W S36'06'02"W S34'33'03"W S36'06'02"W S36'06'02"W S37'22'13"W S42'36'19"W S47'42'45"W S37'22'41"W S46'47'21"W S46'32'44"W S39'39'17"W S46'32'44"W S52'16'57"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S552'16'57"W S45'47'18"W S45'59'13"W S42'19'20"W S46'59'13"W S45'24'58"W S45'24'58"W S45'24'58"W S58'25'55"W S58'25'55"W S58'25'55"W S58'25'55"W S58'23'10"W S553'23'10"W	29.94' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.73' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93' 56.85' 74.12' 46.17' 59.87' 59.86'
L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L217 L218 L219 L220 L221 L220 L221 L223 L224 L225 L224 L225 L226 L227 L228 L227 L228 L229 L220 L221 L223 L224 L225 L226 L227 L228 L227 L228 L229 L230 L231 L231 L232 L234 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L235 L234 L237 L238	S64*45'51"W N69'12'13"W N21'37'42"W S26'20'38"W S23'27'29"W S34'03'23"W S28'23'04"W S28'23'04"W S28'22'13"W S36'06'02"W S34'33'03"W S36'06'02"W S34'33'03"W S36'06'02"W S36'06'02"W S36'06'02"W S37'22'13"W S42'36'19"W S47'42'45"W S37'24'52"W S46'47'21"W S46'32'44"W S52'16'57"W S46'32'44"W S52'16'57"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S45'57'21"W S54'45'02"W S45'47'18"W S45'59'15"W S42'19'20"W S46'59'13"W S48'59'13"W S48'59'13"W S48'59'13"W S58'25'55"W S58'25'55"W S58'25'55"W S58'23'10"W S58'23'10"W S58'23'10"W S58'23'10"W S58'23'10"W S58'23'10"W S58'23'10"W S58'23'10"W <t< td=""><td>29.9.4' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.73' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93' 56.85' 74.12' 46.17' 59.86' 42.26'</td></t<>	29.9.4' 40.24' 3.63' 8.50' 42.95' 72.82' 49.90' 27.57' 44.17' 45.35' 50.73' 34.07' 45.35' 50.73' 46.06' 50.92' 49.25' 81.32' 65.59' 74.35' 48.99' 38.94' 87.78' 45.12' 79.52' 46.27' 48.93' 105.60' 34.44' 59.70' 44.33' 55.39' 42.55' 49.88' 37.93' 56.85' 74.12' 46.17' 59.86' 42.26'

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LINE #	BEARING	LENGTH
L249	S40 ° 23'25"W	37.65'
L250	S56•55'05"W	35.54'
L251	S62*14'01"W	50.67'
L252	N27*13'53"W	27.30'
L253	N51°31°05"W	1.62
1 2 5 5	N12'19'13"F	13.20
1256	S00°19'59"F	25.39
L257	S34*17'59"W	41.62'
L258	S36'18'16"W	32.12'
L259	S41°24'01"W	74.99'
L260	S43°09'33"W	32.68'
L261	S87 * 52'59"W	17.22'
L262	S48°38'32"W	32.54'
L263	S08°01'01"W	33.80'
L264	S51*43'24"W	58.04'
L265	S47 ° 28'13"W	38.69'
L266	N88*04'41"W	32.10'
L267	S67 ° 11 ' 44"W	38.58'
L268	N87 ° 17'40"W	26.63'
L269	S45°58'08"W	49.54'
L270	S40°32'06"W	27.32 '
L271	S12°20'44"E	23.96'
L272	S23 ° 49'03"W	29.27'
L273	S71°08'47"W	17.95'
L274	S34°52'22"W	14.46'
L275	S20 * 46'17"W	23.86'
L276	S40°37'55"W	46.99'
L277	S48°44'33"W	33.13'
L278	S28'37'42"W	34.64'
L279	S64°00'40"W	21.42'
L280	S45*59'14"W	39.05'
L281	S50°45'44"W	31.31'
L282	S38*55'25"W	30.77
L283	S46'30'47 W	34.14
L204	549 14 45 W	29.56
1.286	N20 40 50 W	40.40
1 287	S50°35'40"W	9.16'
L288	S83°39'04"F	2.75'
L289	S84°37'40"E	49.20'
	\$87 ° 47'11"F	
L290	507 1 7 11 L	25.03
L290 L291	S31°19'50"E	25.03 [′] 26.53 [′]
L290 L291 L292	S31°19'50"E S11°52'58"W	25.03 [′] 26.53 [′] 31.21 [′]
L290 L291 L292 L293	S31*19'50"E S11*52'58"W S18*50'37"W	25.03 ['] 26.53 ['] 31.21 ['] 21.58 [']
L290 L291 L292 L293 L294	S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W	25.03 [°] 26.53 [°] 31.21 [°] 21.58 [°] 30.32 [°]
L290 L291 L292 L293 L294 L295	S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷
L290 L291 L292 L293 L294 L295 L296	S31*19'50"E S31*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷
L290 L291 L292 L293 L294 L295 L296 L297	S31'19'50"E S31'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W	25.03 ['] 26.53 ['] 31.21 ['] 21.58 ['] 30.32 ['] 31.13 ['] 20.84 ['] 21.59 [']
L290 L291 L292 L293 L294 L295 L296 L297 L298	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷
L290 L291 L292 L293 L294 L295 L296 L297 L298 L299	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S18'12'11"W S12'15'06"E S19'22'24"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷
L290 L291 L292 L293 L294 L295 L296 L297 L298 L299 L300	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S42'02'17"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61'
L290 L291 L292 L293 L294 L295 L296 L297 L298 L299 L300 L301	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S18*12'11"W S12*15'06"E S19*22'24"W S42*02'17"W S18*04'49"W S18*04'49"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24'
L290 L291 L292 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S18*12'11"W S12*15'06"E S19*22'24"W S12*15'06"E S19*22'24"W S12*48'51"W S12*48'51"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65'
L290 L291 L292 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'12"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S42'02'17"W S18'04'49"W S12'48'51"W S07'15'12"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S18*12'11"W S12*15'06"E S19*22'24"W S12*15'06"E S19*22'24"W S12*48'51"W S12*48'51"W S07*15'12"W S11*11'18"W S36*38'58"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 26.37 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305 L306	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'48'51"W S12'48'51"W S12'48'51"W S11'11'18"W S36'38'58"W S14'17'35"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 26.37 ⁷ 44.76 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305 L306 L307	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S11'11'18"W S36'38'58"W S14'17'35"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 26.37' 44.76' 31.46'
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305 L304 L305 L306 L307	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S42'02'17"W S18'04'49"W S12'48'51"W S12'48'51"W S11'11'18"W S36'38'58"W S14'17'35"W S24'42'56"W S21'35'41"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 26.37 ⁷ 44.76 ⁷ 31.46 ⁷ 37.49 ⁷
L290 L291 L293 L294 L295 L296 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305 L304 L305 L306 L307 L308	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S18*12'11"W S12*15'06"E S19*22'24"W S12*15'06"E S19*22'24"W S42*02'17"W S12*48'51"W S12*48'51"W S12*48'51"W S12*48'51"W S11*11'18"W S36*38'58"W S14*17'35"W S24*42'56"W S21*35'41"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 26.37' 44.76' 31.46' 37.49' 37.19'
L290 L291 L293 L294 L295 L296 L297 L298 L297 L298 L300 L301 L302 L303 L304 L305 L304 L305 L306 L307 L308 L309 L309	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S18*12'11"W S12*15'06"E S19*22'24"W S12*15'06"E S19*22'24"W S42*02'17"W S12*48'51"W S12*48'51"W S12*48'51"W S12*48'51"W S11*11'18"W S36*38'58"W S14*17'35"W S24*42'56"W S21*35'41"W S24*54'21"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 20.86 ⁷ 26.37 ⁷ 44.76 ⁷ 31.46 ⁷ 37.49 ⁷ 37.19 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L297 L298 L300 L301 L302 L302 L303 L304 L305 L304 L305 L306 L307 L308 L309 L309 L309	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S18*12'11"W S12*15'06"E S19*22'24"W S12*15'06"E S19*22'24"W S42*02'17"W S12*48'51"W S12*48'51"W S12*48'51"W S12*48'51"W S11*11'18"W S36*38'58"W S11*11'18"W S24*42'56"W S24*42'56"W S21*35'41"W S23*40'07"W S115*57'40"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 26.37 ⁷ 44.76 ⁷ 31.46 ⁷ 37.19 ⁷ 35.18 ⁷ 27.63 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L297 L300 L301 L302 L302 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L306 L307 L308 L309 L310 L311	S31*19'50"E S31*19'50"E S11*52'58"W S18*50'37"W S63*33'38"W S35*21'23"W S10*00'59"W S11*12'11"W S12*15'06"E S19*22'24"W S12*15'06"E S19*22'24"W S12*48'51"W S12*48'51"W S12*48'51"W S11*11'18"W S36*38'58"W S11*11'18"W S36*38'58"W S11*17'35"W S24*42'56"W S24*42'56"W S21*35'41"W S22*40'07"W S15*57'40"W S15*57'40"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 20.86 ⁷ 26.37 ⁷ 44.76 ⁷ 31.46 ⁷ 37.49 ⁷ 37.19 ⁷ 35.18 ⁷ 27.63 ⁷ 22.86 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L302 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L305 L306 L307 L308 L307 L308 L308 L309 L310 L311 L312	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S12'12'04"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S11'11'18"W S36'38'58"W S11'11'18"W S24'54'21"W S24'54'21"W S23'40'07"W S15'57'40"W S15'52'38"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 20.86 ⁷ 26.37 ⁷ 44.76 ⁷ 31.46 ⁷ 37.49 ⁷ 37.19 ⁷ 35.18 ⁷ 27.63 ⁷ 22.86 ⁷ 30.80 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L302 L303 L304 L305 L304 L305 L304 L305 L306 L307 L308 L309 L309 L309 L310 L311 L312 L314	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S11'11'18"W S24'42'56"W S21'35'41"W S22'40'07"W S15'57'40"W S15'57'40"W S15'52'38"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ⁷ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 20.86 ⁷ 20.86 ⁷ 31.46 ⁷ 37.19 ⁷ 35.18 ⁷ 27.63 ⁷ 22.86 ⁷ 30.80 ⁷ 22.64 ⁷
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L302 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L305 L305 L306 L307 L308 L307 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L308 L309 L308 L309 L308 L309 L308 L308 L309 L308 L310 L311 L312	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S12'48'51"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S11'11'18"W S24'54'21"W S24'54'21"W S23'40'07"W S15'57'40"W S15'57'40"W S15'57'40"W S15'32'38"W S32'32'57"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 26.37' 44.76' 31.46' 37.49' 37.19' 35.18' 27.63' 22.86' 30.80' 22.64' 17.40'
L290 L291 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L302 L303 L304 L305 L304 L305 L305 L306 L307 L308 L307 L308 L309 L309 L309 L310 L311 L312 L313 L314 L315 L316	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S42'02'17"W S12'48'51"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S24'42'56"W S24'42'56"W S21'35'41"W S23'40'07"W S15'57'40"W S15'57'40"W S15'57'40"W S15'52'38"W S32'32'57"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 26.37' 44.76' 31.46' 37.49' 37.19' 35.18' 27.63' 22.86' 30.80' 22.64' 17.40' 21.60'
 L290 L291 L293 L294 L295 L296 L297 L298 L297 L300 L301 L302 L303 L304 L305 L306 L307 L308 L307 L308 L309 L301 L301 L302 L303 L304 L305 L304 L305 L304 L305 L304 L305 L305 L306 L307 L308 L309 L308 L309 L308 L309 L310 L311 L312 L313 L314 L315 L316 L317 L316 L317 	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S42'02'17"W S42'02'17"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S24'54'21"W S24'42'56"W S21'35'41"W S24'54'21"W S23'40'07"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S58'01'18"W S64'47'56"W S28'17'55"E S06'44'31"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 26.37' 44.76' 31.46' 37.49' 37.19' 35.18' 27.63' 22.86' 30.80' 22.64' 17.40' 21.60' 20.44'
L290 L291 L293 L294 L295 L296 L297 L298 L297 L298 L300 L301 L302 L302 L303 L304 L305 L304 L305 L305 L304 L305 L306 L307 L308 L307 L310 L311 L312 L314 L315 L314 L315 L316 L317 L318	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S42'02'17"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S24'42'56"W S21'35'41"W S24'54'21"W S23'40'07"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'52'38"W S32'32'57"W S58'01'18"W S564'47'56"W S28'17'55"E S06'44'31"W	25.03 ⁷ 26.53 ⁷ 31.21 ⁷ 21.58 ³ 30.32 ⁷ 31.13 ⁷ 20.84 ⁷ 21.59 ⁷ 18.00 ⁷ 29.91 ⁷ 23.61 ⁷ 21.24 ⁷ 68.92 ⁷ 15.65 ⁷ 20.86 ⁷ 20.86 ⁷ 20.86 ⁷ 20.86 ⁷ 37.19 ⁷ 37.19 ⁷ 35.18 ⁷ 27.63 ⁷ 22.86 ⁷ 30.80 ⁷ 22.64 ⁷ 17.40 ⁷ 21.60 ⁷ 20.44 ⁷
L290 L291 L293 L294 L295 L296 L296 L297 L298 L297 L300 L301 L302 L302 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L304 L305 L306 L307 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L309 L308 L310 L311 L312 L313 L314 L315 L316 L316 L317 L318 L318 L318 L319	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S11'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S42'02'17"W S42'02'17"W S12'48'51"W S42'02'17"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S11'11'18"W S36'38'58"W S11'11'18"W S24'42'56"W S21'35'41"W S24'54'21"W S23'40'07"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S15'57'40"W S58'01'18"W S58'01'18"W S64'47'56"W S28'17'55"E S06'44'31"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 26.37' 44.76' 31.46' 37.49' 37.19' 35.18' 22.86' 30.80' 22.64' 17.40' 22.64' 17.40' 22.64' 17.40' 22.64' 17.40' 22.81' 22.81'
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 L290 L291 L293 L294 L295 L296 L297 L298 L297 L298 L297 L303 L301 L302 L304 L305 L304 L305 L304 L305 L306 L307 L308 L307 L308 L309 L307 L308 L309 L301 L311 L312 L313 L314 L315 L316 L317 L318 L316 L317 L318 L316 L317 L318 L316 L321 L321 L323 L324 L325 L326 L327 L328 L329 L328 L329 L329 L321 L328 L329 L328 L329 L320 L321 L328 L329 L321 L328 L329 L321 L328 L329 L321 L328 L329 L323 L329 L323 L324 L325 L326 L327 L328 L329 L320 L323 L323 L323 L324 L325 L326 L327 L328 L329 L320 L320 L321 L323 L323 L324 L325 L325 L326 L327 L328 L329 L320 L320 L321 L323 L324 L325 L325 L326 L327 L328 L329 L320 L321 L323 L323 L324 L325 L325 L326 L327 L328 L329 L320 L320 L320 L321 L325 L325 L326 L327 L328 L329 L320 L320 L321 L324 L325 L325 L325 L326<td>S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S24'42'56"W S14'17'35"W S24'54'21"W S23'40'07"W S15'57'40"W S15'52'38"W S15'52'40"W S28'17'55"E S06'44'31"W S50'23'22"W S06'44'31"W S28'17'55"E S06'44'31"W S28'10'51"W S28'10'51"W S28'22'25"W S36'50'37"W S28'22'25"W S31'43'29"W S11'46'00"W S29'10'07"W S21'34'54"W S29'10'07"W</td><td>25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 20.86' 20.86' 20.86' 31.46' 37.49' 37.19' 35.18' 22.86' 37.49' 37.19' 35.18' 22.86' 30.80' 22.64' 17.40' 22.86' 30.80' 22.86' 30.80' 22.81' 17.40' 22.86' 30.80' 22.81' 17.42' 35.18' 22.81' 17.32' 35.82' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 33.58' 34.08' 32.77' 14.4''</td>	S31'19'50"E S31'19'50"E S11'52'58"W S18'50'37"W S63'33'38"W S35'21'23"W S10'00'59"W S18'12'11"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'15'06"E S19'22'24"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S12'48'51"W S24'42'56"W S14'17'35"W S24'54'21"W S23'40'07"W S15'57'40"W S15'52'38"W S15'52'40"W S28'17'55"E S06'44'31"W S50'23'22"W S06'44'31"W S28'17'55"E S06'44'31"W S28'10'51"W S28'10'51"W S28'22'25"W S36'50'37"W S28'22'25"W S31'43'29"W S11'46'00"W S29'10'07"W S21'34'54"W S29'10'07"W	25.03' 26.53' 31.21' 21.58' 30.32' 31.13' 20.84' 21.59' 18.00' 29.91' 23.61' 21.24' 68.92' 15.65' 20.86' 20.86' 20.86' 20.86' 31.46' 37.49' 37.19' 35.18' 22.86' 37.49' 37.19' 35.18' 22.86' 30.80' 22.64' 17.40' 22.86' 30.80' 22.86' 30.80' 22.81' 17.40' 22.86' 30.80' 22.81' 17.42' 35.18' 22.81' 17.32' 35.82' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 31.97' 36.28' 33.58' 34.08' 32.77' 14.4''

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LINE #	LINE TABLE	LENGTH
L331	S34'40'11"W	29.87'
L332	S24 * 50'22"W	26.14'
L333	S24*34'08"W	35.95 '
L334	S27°18'55"W	43.68'
L335	520 ⁻ 33 ⁻ 42 [°] W	∠8.07′ 29.54 '
L337	S27 34 38 W	106.24'
L338	S32 ° 15'35"W	42.06'
L339	S32°13'08"W	51.78'
L340	S25*15'54"W	31.05 '
L341	S37'02'53"W	40.50'
L342	S33°26'16"W	28.70 [°]
L344	S41°16'54"W	40.36'
L345	S33*52'09"W	42.27 '
L346	S66°01'33"W	39.45'
L347	N04 • 14'39"W	34.51'
L348	N15*59'46"E	65.25 '
L349	N41°03′32″E	23.48'
L350	N17°56'29"E	38.91'
L352	N59°43'44"W	16.06'
L353	S81°00'59"E	21.47'
L354	S67*53'22"E	55.07 '
L355	S24*15'28"E	22.93'
L356	S08°02'48"E	23.04'
L358	S04°24'51"W	25.44'
L359	S25°23'32"W	50.35'
L360	S40°08'39"W	41.53 '
L361	S84*04'21"W	29.73 '
L362	N84°54'25"W	29.23'
L363	N83°09′29″W	36.26'
L365	S18°30'23"E	24.64'
L366	S07°27'15"E	14.32'
L367	S14 ° 12'19"E	30.54'
L368	S12 ° 03'30"W	30.05 '
L369	S17°21'19"W	64.70 '
L370	S06°19'01"E	56.76'
L371	S01 51 27 E	27.55 68.01'
L373	S11°16'40"W	50.81'
L374	S12 * 59'28"W	32.65'
L375	N70°10'52"W	36.73 '
L376	N75°05'40"W	20.34'
L377	N86°23'23"W	27.46'
L378	S74°07'09"E	20.30 57.31'
L380	N14°14'27"W	49.47 '
L381	N05°20'27"E	58.80'
L382	N27°26'46"E	16.26'
L383	S08°40'08"E	40.42'
L385	S02°27'17"W	59.59 64 88'
	/ VV	- ····
L386	S02 ° 45'15"E	76.84'
L386 L387	S02°45'15"E S01°08'05"W	76.84' 58.57'
L386 L387 L388	S02°45'15"E S01°08'05"W S02°26'43"E	76.84' 58.57' 65.56'
L386 L387 L388 L389	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W	76.84' 58.57' 65.56' 33.12'
L386 L387 L388 L389 L390	S02*45'15"E S01*08'05"W S02*26'43"E S03*05'44"W S18*00'29"W S03*37'51"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11'
L386 L387 L388 L389 L390 L391 L392	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09'
L386 L387 L388 L389 L390 L390 L391 L392 L393	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20'
L386 L387 L388 L389 L390 L391 L392 L393 L394	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09' 24.97'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09' 24.97' 17.92'
L386 L387 L388 L389 L390 L390 L391 L392 L393 L394 L395 L396 L397	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S00'11'50"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09' 24.97' 17.92' 28.20'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S00'11'50"W S03'15'03"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09' 24.97' 17.92' 28.20' 42.27' 37.83'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L399	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S00'11'50"W S03'15'03"W S05'51'06"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09' 24.97' 17.92' 28.20' 42.27' 37.83' 34.67'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L400 L401	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S05'40'37"W S00'11'50"W S03'15'03"W S03'15'03"W S12'50'18"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 26.09' 24.97' 17.92' 28.20' 42.27' 37.83' 34.67' 14.86'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L399 L400 L401 L402	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S05'40'37"E S00'11'50"W S03'15'03"W S03'15'03"W S05'51'06"W S12'50'18"W S12'36'38"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 17.92' 28.20' 42.27' 37.83' 34.67' 14.86' 10.88'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L398 L399 L400 L401 L402	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S05'40'37"E S05'40'37"W S03'15'03"W S03'15'03"W S03'15'03"W S05'51'06"W S12'50'18"W S12'36'38"W S45'29'21"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 28.20' 42.27' 37.83' 34.67' 14.86' 10.88' 15.34'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L398 L399 L400 L401 L402 L403 L404	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S05'40'37"E S05'40'37"W S03'15'03"W S03'15'03"W S03'15'03"W S05'51'06"W S12'50'18"W S12'50'18"W S45'29'21"W S48'52'19"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 28.20' 42.27' 37.83' 34.67' 14.86' 14.86' 10.88' 15.34' 16.44'
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L400 L401 L402 L403 L403 L404 L405 L406	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S05'40'37"E S05'40'37"W S03'15'03"W S03'15'03"W S03'15'03"W S03'15'04"W S12'50'18"W S12'50'18"W S12'36'38"W S45'29'21"W S48'52'19"W S61'00'24"W N65'33'34"W	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 17.92' 24.97' 17.92' 24.97' 17.92' 24.97' 17.92' 17
L386 L387 L388 L389 L390 L391 L392 L393 L393 L394 L395 L395 L396 L397 L398 L399 L400 L401 L402 L403 L404 L405 L405 L406	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S00'11'50"W S03'15'03"W S05'51'06"W S12'50'18"W S12'50'18"W S45'29'21"W S61'00'24"W N65'33'34"W S78'50'20"W S26'32'35"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 17.92' 24.97' 17.92' 24.97' 17.92' 24.97' 17.92' 17.92' 24.97' 17.92' 17
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L396 L397 L398 L397 L398 L399 L399 L400 L401 L402 L403 L404 L405 L405 L406 L407 L408	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S00'11'50"W S05'51'06"W S05'51'06"W S12'50'18"W S12'50'18"W S45'29'21"W S61'00'24"W N65'33'34"W S78'50'20"W S26'32'35"E S62'18'34"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 24.97' 28.20' 42.27' 37.83' 37.83' 34.67' 14.86' 10.88' 15.34' 15.34' 16.44' 27.66' 3.65' 3.76' 19.82'
L386 L387 L388 L389 L390 L391 L392 L393 L393 L394 L395 L396 L397 L398 L397 L398 L399 L400 L401 L402 L403 L402 L403 L404 L405 L405 L406 L405	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S05'51'06"W S05'51'06"W S12'50'18"W S12'50'18"W S12'50'18"W S12'50'18"W S61'00'24"W S61'33'34"E S62'18'34"E S43'16'44"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 17.92' 24.97' 37.83' 37.83' 34.67' 14.86' 10.88' 15.34' 15.35' 15
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L397 L398 L399 L400 L401 L402 L403 L403 L404 L405 L404 L405 L406 L407 L408 L409 L410	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S10'00'37"W S05'51'06"W S05'51'06"W S12'50'18"W S12'50'18"W S12'50'18"W S12'50'18"W S12'50'18"W S61'00'24"W N65'33'34"W S26'32'35"E S62'18'34"E S43'16'44"E N29'55'33"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 24.97' 17.92' 24.97' 37.83' 37.83' 37.83' 17.92' 17
L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L397 L398 L399 L400 L401 L402 L403 L403 L404 L403 L404 L405 L404 L405 L406 L407 L408 L407 L408 L409 L410	S02'45'15"E S01'08'05"W S02'26'43"E S03'05'44"W S18'00'29"W S03'37'51"E S10'56'24"W S15'34'29"W S56'25'20"E S05'40'37"E S05'40'37"E S05'40'37"W S03'15'03"W S03'15'03"W S03'15'03"W S03'15'03"W S03'51'06"W S12'50'18"W S12'50'18"W S48'52'19"W S48'52'19"W S48'52'19"W S48'52'19"W S48'52'19"W S48'52'19"W S48'52'19"W S48'52'19"W S61'00'24"W S61'00'24"W S78'50'20"W S26'32'35"E S62'18'34"E S43'16'44"E N29'55'33"E	76.84' 58.57' 65.56' 33.12' 49.83' 38.11' 50.09' 39.20' 24.97' 24.97' 24.97' 24.97' 28.20' 42.27' 37.83' 34.67' 17.92' 37.83' 17.92' 17.92' 28.20' 42.27' 17.92' 37.83' 17.92' 17.92' 37.83' 17.92' 37.83' 17.92' 17.92' 37.83' 17.92' 17

	LINE TABLE	
INE #	BEARING	LENGTH
L413	N60°30'22"E	8.89'
L414	S20°30'36"W	21.23'
L415	S42 ° 49'00"E	27.88'
L416	S77 * 39 ' 40"F	26.10'
417	N23°59'07"F	8.09'
1418	NOQ*42'43"W	78.60'
1 410	NO7*00'00"W	78.00
L419	NUS U9 20 W	60.34
L420	N0/*06*24**W	/2.2/
L421	N09°06'45"W	83.73'
L422	N06 ° 46'35"W	100.25'
L423	N08 ʻ 16'58"W	106.55'
L424	N07 ° 39'04"W	69.49'
L425	N11°39'15"W	80.03'
L426	N05 * 56'23"W	31.04'
L427	N00 ° 08'24"W	7.09'
L428	S80°10'31"E	5.60'
L429	S12 ° 23'41"E	123.68'
L430	S14 ° 25'13"E	78.80'
L431	S03°06'47"E	100.56'
L432	S04 * 53'08"E	89.35'
433	S11°34'05"F	86.73'
1 4 3 4	S02*56'52"W	15 56'
	S00*06'40"=	70.20
L4JD	SUU UD 40 E	10.38
L436	504 45 55 E	48.55
L437	S09°28'38"E	48.40'
L438	S07°54'52"E	60.57'
L439	S14°08'31"E	65.66'
L440	S07 * 32'40"E	65.25 '
L441	S09°42'34"E	84.18'
L442	S08°27'18"E	74.74'
L443	S18•53'47"E	13.74'
L444	S06°54'56"E	51.53'
L445	S01°17'48"W	38.97'
446	N86°08'28"W	22.14'
447	S46°49'06"W	18 78'
1448	S50°41'23"W	13 55'
	550 41 25 W	70.00'
	SIS 28 16 E	36.20
L450	S19'08'39"E	6.61
L451	S37°17′07″W	13.63′
L452	S08°10'40"W	13.98'
L453	S25°15'17"E	16.83'
L454	S10°24'08"E	12.03'
L455	N78°34'32"E	28.18'
L456	N55°04'43"E	7.72'
L457	N39°31'06"E	16.56'
L458	N73°32'53"E	5.14'
L459	S11°32'23"E	33.11'
L460	S07°05'59"E	40.73'
L461	S11°15'56"E	42.88'
L462	S05°13'06"E	49.19'
L463	S09°13'20"E	19.89'
L464	S08°08'02"F	48.32'
L465	S00°38'14"W	21.24'
L466	S06°47'41"F	60.20'
	SU2.7 1 E	37.86'
1 160	SO4"70'75"5	32 64'
1 160	50+ 33 35 E	02.04
L409	SOU 52 17 E	20.39
L4/U	300 43 50 W	23.44
	505 01 45"W	14.12
L4/2	581'30'53"W	17.50'
L473	N20°51'35"W	19.57'
L474	S72 ° 34'33"W	18.99'
L475	N83°54'09"W	10.11'
L476	S81°22'20"W	5.52'
L477	N68°43'34"E	33.14'
L478	S79°22'48"E	36.82'
L479	S08°09'38"E	79.38'
L480	S00°16'06"W	36.99'
L481	S14°07'06"E	56.39'
L482	S06°09'33"E	74.09'
L483	S06°01'03"E	70.59'
L484	N64 ° 06'04"W	10.55'
L485	S11°15'37"W	58.52'
L486	S30°54'50"W	20.23'
L487	S1.3°48' 35"W	20.20'
, 488	S1Q°7/17"	14.67'
	C1 /* / Z' 7 7"'''	7 50'
L+09	314 43 33 W	J.30 1 77'
L490	1103 40 43 E	1./J
L491	309 U3 53 E	52.20
∟492	N19'27'45"W	117.23
∟493	N18°53′48"W	257.55'
∟494	S20°58'25"E	128.55'

	LINE TABLE	
LINE #	BEARING	LENGTH
L495	S23 ° 49'28"E	86.28'
1 4 9 6	\$23 * 32'23"F	51 96'
1407	S20 02 20 E	74.07'
L497	511 52 44 E	34.03
L498	S18º01'45"E	29.92'
L499	S08°08'51"E	32.01'
L500	S24 ° 18'39"E	32.98'
L501	S19*49'50"E	39.09'
L502	S15 ° 49'02"E	74.30'
1503	\$27°00'45"E	13.46'
	527 00 4 5 E	10.40
L504	517 48 36 E	16.17
L505	S05'02'57"W	23.94
L506	S17°25'39"E	74.55'
L507	S15°21'48"E	89.29'
L508	S13 ° 14'34"E	84.49'
L509	S11 ° 54'59"E	56.73 '
L510	S07*15'36"F	47.85'
1 511	\$16*35'59"F	25.92'
1.512	510°06'70"	61 17'
LUIZ	512 26 39 E	61.13
L513	S00°15'20"W	56.92'
L514	S14 ° 29'19"E	15.31'
L515	S34°04'52"W	39.45 '
L516	S68 • 41'17"W	31.10'
L517	N50*51'09"E	35.44'
L518	589'18'50"F	17 40'
1.510	500 10 UU E	50 74
1019	320 47 UU E	JU./4
L520	S34"31'12"E	59.24'
L521	S49 ° 04'40"E	66.04'
L522	S29*04'39"E	74.31 '
L523	S28°17'08"E	56.70 '
L524	S32*50'33"E	41.58'
L525	S27°42'12"F	91.44'
1526	\$29°13'19"F	41 10'
1527	\$25"10 TO E	77 30'
	525 10 50 L	77.02 50.10 ²
1.500	524 49 15 L	04 57'
	529 51 50 E	01.57
L330	526 UZ 42 E	95.38
L531	S20°45 04 E	52.67
L532	S26*43′43″E	64.87
L533	S22"14"00"E	48.77
L534	S12°08′45″E	18.73′
L535	S23°41'43"E	95.78 '
L536	S20°22'10"E	39.88'
L537	S26 ° 32'57"E	43.06'
L538	S05°26'50"E	36.48'
L539	N27°01'03"W	110.80'
L540	N42°46'24"W	57.74 '
L541	S15°35'37"W	38.19'
L542	S08 ° 33'47"E	70.41'
L543	S07°29'41"E	60.83'
L544	S21°14'36"E	48.30'
L545	S13°22'09"E	30.98'
L546	S14°13'54"E	55.80'
L547	S79°59'28"W	12.06'
L548	N22°52'27"W	55.13'
1549	N25°44'07"W	.39.36'
1550	N27°35'21"\	87 17'
1 5 5 4	NZ045'50"	40.442
L001	NJZ 15 52 W	49.14
L552	N17*42′18"W	37.95'
L553	N34°05'28"W	32.15'
L554	N26°14'59"W	79.24'
L555	N27°31'51"W	87.46'
L556	N27 ° 37 ' 22"W	37.30'
L557	N31°25'25"W	75.89'
L558	N36°14'11"W	97.41 '
L559	N19°04'40"W	37.01'
L560	N28°20'04"W	47.05'
L561	N34°28'04"W	57.18 '
L562	N29°23'54"W	76.66'
L563	N35°37'55"W	56.51'
L564	N30°21'12"W	27.62'
L565	N44°54'42"F	13.48'
1566	N29°57'10"⊑	43 20'
1 -000	NAZ907 19 E	TU.29
1567		1 3.13
L567	N4J J1 49 E	70.00'
L567 L568	N37°37'23"W	38.09'
L567 L568 L569	N37'37'23"W	38.09' 41.76'
L567 L568 L569 L570	N37'37'23"W N33'26'06"W N45'07'55"W	38.09' 41.76' 51.91'
L567 L568 L569 L570 L571	N37'37'23"W N33'26'06"W N45'07'55"W N30'30'21"W	38.09' 41.76' 51.91' 66.52'
L567 L568 L569 L570 L571 L572	N45'37'23"W N37'37'23"W N33'26'06"W N45'07'55"W N30'30'21"W N44'15'29"W	38.09' 41.76' 51.91' 66.52' 63.67'
L567 L568 L569 L570 L571 L572 L573	N45'37'23"W N37'37'23"W N33'26'06"W N45'07'55"W N30'30'21"W N44'15'29"W N31'23'51"W	38.09' 41.76' 51.91' 66.52' 63.67' 81.85'
L567 L568 L569 L570 L571 L572 L573 L574	N45'37'23"W N37'37'23"W N45'07'55"W N30'30'21"W N44'15'29"W N31'23'51"W N35'42'02"W	38.09' 41.76' 51.91' 66.52' 63.67' 81.85' 101.57'
L567 L568 L569 L570 L571 L572 L573 L574 L575	N45'51'49'E N37'37'23"W N33'26'06"W N45'07'55"W N30'30'21"W N44'15'29"W N31'23'51"W N35'42'02"W N38'51'37"W	38.09' 41.76' 51.91' 66.52' 63.67' 81.85' 101.57' 50.50'

	LINE TABLE	
LINE #	BEARING	LENGTH
L577	N38 • 45'50"W	70.38 '
L578	N39 ° 07'08"W	173.46
L579	N57 * 59'03"E	17.42'
L580	S38 ° 09'08"E	177.64
L581	S38°17'58"E	64.81'
L582	S40°09'33"E	85.71'
L583	S38•22'05"E	71.20'
L584	S39 ° 15'04"E	59.85'
L585	S36°25'36"E	47.35'
L586	S30°10'37"E	23.77'
L587	S39 * 34'04"F	68.24'
1.588	S33'33'28"F	91 40'
1.589	\$37 ° 50'50"F	65 77'
1 590	S39"17'11"F	56 73'
1 501	S531711 L	67.61'
1502	500 24 02 L	07.01
1507	522 JU 06 W	23.34
1504	552 30 20 E	23.93
L594	539'33'17 E	33.50
L595	S01*59*22*W	55.22
L596	S00°01′09″E	39.03
L597	S00*48'40"E	29.58'
L598	S40°38'32"W	26.90'
L599	N00°34'08"W	80.13'
L600	N17º10'33"E	67.06 '
L601	N57°53'23"W	13.09'
L602	N77°12'55"W	56.07'
L603	N00°02'50"E	30.21'
L604	N13 ° 33'40"W	37.29 '
L605	N09 ° 55'51"W	61.45'
L606	N08°40'06"W	57.86'
L607	N09 ° 39'41"W	120.11'
L608	N07°02'28"W	129.93
L609	N10°22'30"W	94.38 '
L610	N12°31'26"W	111.22'
L611	N12°39'21"W	185.80
L612	N13 ° 58'38"W	111.49'
L613	N19 ° 12'25"W	66.07'
L614	N01°09'03"W	29.56'
L615	N11°31'41"W	27.50'
L616	N17 ° 57'27"W	115.53'
L617	N18 ° 45'03"W	244 29
		2 1 1 2 2 2
L618	N16°42'22"W	105.59
L618	N16°42'22"W	105.59 [°] 56.54 [°]
L618 L619 L620	N16*42'22"W N05*43'10"W S20*55'22"F	105.59 [°] 56.54 [°]
L618 L619 L620 L621	N16*42'22"W N05*43'10"W S20*55'22"E S16*35'24"F	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°]
L618 L619 L620 L621	N16°42'22"W N05°43'10"W S20°55'22"E S16°35'24"E S19°04'55"F	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°]
L618 L619 L620 L621 L622 L623	N16°42'22"W N05°43'10"W S20°55'22"E S16°35'24"E S19°04'55"E S13°42'43"F	105.59 ² 56.54 ² 106.77 ² 72.03 ² 139.23 ³
L618 L619 L620 L621 L622 L623 L624	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"F	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 108.76 [°] 79.32 [°]
L618 L619 L620 L621 L622 L623 L624	N16*42'22"W N05*43'10"W S20*55'22"E S16*35'24"E S19*04'55"E S13*42'43"E S46*52'37"E N88*18'54"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626	N16°42'22"W N05°43'10"W S20°55'22"E S16°35'24"E S19°04'55"E S13°42'43"E S46°52'37"E N88°18'54"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3 32 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626	N16°42'22"W N05°43'10"W S20°55'22"E S16°35'24"E S19°04'55"E S13°42'43"E S46°52'37"E N88°18'54"E N77°23'17"E S35°45'51"W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630	N16°42'22"W N05°43'10"W S20°55'22"E S16°35'24"E S19°04'55"E S13°42'43"E S46°52'37"E N88°18'54"E N77°23'17"E S35°45'51"W S66°51'06"W S09°39'43"E S11°04'47"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L632	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S15'07'58"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 139.23 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L635	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636 L637	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°] 6.11 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636 L637 L638 L637	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S18'03'52"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°] 6.11 [°] 40.55 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636 L637 L638 L639 L639 L639	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E S03'48'47"W S41'18'22"E S15'07'58"E S15'07'58"E S15'07'58"E S15'07'58"E S15'07'58"E S15'07'58"E	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°] 6.11 [°] 40.55 [°] 97.75 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S66'742'23"W N07'23'23'W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°] 6.11 [°] 40.55 [°] 97.75 [°] 44.91 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L635 L636 L635 L636 L637 L638 L639 L640 L641 L641	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S67'42'23"W N07'23'23"W N11'49'27"W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 139.23 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°] 6.11 [°] 40.55 [°] 97.75 [°] 44.91 [°] 87.67 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L638 L639 L640 L641 L642	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S67'42'23"W N07'23'23"W N11'49'27"W N13'24'01"W	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S18'03'52"E S67'42'23"W N07'23'23"W N11'49'27"W N11'49'27"W N09'40'55"W	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S66'51'40"W N07'23'23"W N07'23'23"W N11'49'27"W N11'49'27"W N12'49'07"W	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S18'03'52"W N11'49'27"W N13'24'01"W N09'42'02"W	105.59 [°] 56.54 [°] 106.77 [°] 72.03 [°] 139.23 [°] 139.23 [°] 108.76 [°] 79.32 [°] 24.67 [°] 3.32 [°] 7.06 [°] 36.98 [°] 67.93 [°] 32.65 [°] 54.32 [°] 72.04 [°] 116.28 [°] 43.39 [°] 32.53 [°] 40.16 [°] 6.11 [°] 43.39 [°] 32.53 [°] 40.55 [°] 97.75 [°] 44.91 [°] 87.67 [°] 66.29 [°] 118.93 [°] 46.21 [°] 86.78 [°]
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S66'51'00"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N11'49'27"W N13'24'01"W N09'40'55"W N09'40'55"W N09'40'55"W N09'42'02"W N64'48'27"E	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646 L647	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S66'51'40"W N07'23'23"W N09'40'55"W N11'49'27"W N12'49'07"W N09'42'02"W N09'42'02"W N64'48'27"E S65'24'27"W	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646 L647 L648	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S15'07'58"E S27'11'36"E S18'03'52"E S18'03'52"E S67'42'23"W N07'23'23"W N11'49'27"W N11'49'27"W N13'24'01"W N09'40'55"W N12'49'07"W N09'42'02"W N09'42'02"W N09'42'02"W S65'24'27"W	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 2.23'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L644 L645 L646 L647 L648 L649	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E S46'52'37"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S15'07'58"E S27'11'36"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S667'42'23"W N07'23'23"W N11'49'27"W N13'24'01"W N09'40'55"W N09'42'02"W N09'42'02"W N64'48'27"E S65'51'41"W	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L630 L631 L632 L633 L634 L635 L635 L636 L637 L638 L639 L639 L640 L641 L642 L643 L642 L643 L644 L645 L644 L645 L646 L647 L648 L649 L650	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S66'51'40"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N01'49'27"W N13'24'01"W N09'40'55"W N09'40'55"W N09'40'55"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N12'49'07"W N12'49'07"W N13'24'01"W N09'42'02"W N18'38'23"W	11120 105.59 56.54' 106.77' 72.03' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29'
L618 L619 L620 L621 L622 L623 L624 L625 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L644 L645 L648 L649 L650 L651 L650	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S18'03'52"E S18'03'52"E S66'51'40"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N09'40'55"W N11'49'27"W N09'40'55"W N12'49'07"W N09'42'02"W N09'42'02"W N09'42'02"W N12'49'07"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'01"W N13'24'20"W N14'38'27"E	105.59' 56.54' 106.77' 72.03' 139.23' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 87.67' 66.29' 118.93' 46.21' 87.67' 66.29' 118.93' 46.21' 87.67' 66.29' 118.93' 46.21' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L639 L630 L631 L632 L633 L634 L635 L644 L645 L645 L645 L648 L649 L649 L645 L648	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S15'07'58"E S35'45'51"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S18'03'52"E S66'51'40"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N11'49'27"W N13'24'01"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N13'24'1"W N09'42'02"W N13'149'27"W N09'42'02"W N09'42'02"W N09'42'02"W N064'48'27"E S85'51'41"W N13'12'12"W	105.59' 56.54' 106.77' 72.03' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L635 L636 L637 L638 L639 L637 L638 L639 L640 L641 L642 L643 L644 L645 L644 L645 L646 L647 L648 L649 L650 L651 L653	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E S46'52'37"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S667'42'23"W N07'23'23"W N11'49'27"W N13'24'01"W N13'24'01"W N09'40'55"W N09'42'02"W N09'42'02"W N09'42'02"W N13'24'01"W N13'24'01"W N09'42'02"W N09'42'02"W N09'42'02"W N13'12'12"W N13'12'12"W N13'12'12"W	11120 105.59 56.54' 106.77' 72.03' 139.23' 108.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71' 39.73' 65.77'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636 L637 L638 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646 L647 L648 L649 L648 L649 L650 L651 L652	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S41'37'00"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S18'03'52"E S66'51'40"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N09'40'55"W N09'40'55"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N11'49'27"W N09'42'02"W N09'42'02"W N09'42'02"W N13'12'12"W N06'55'59"W	1.12.5 1.05.59' 56.54' 1.06.77' 72.03' 1.39.23' 1.08.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71' 39.73' 65.77' 60.27'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L634 L635 L636 L637 L638 L637 L638 L639 L640 L641 L642 L643 L644 L645 L645 L645 L648 L649 L645 L645 L651 L655	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S15'07'58"E S15'07'58"E S27'11'36"E S18'03'52"E S67'42'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N09'40'55"W N11'49'27"W N09'40'55"W N12'49'07"W N09'42'02"W N06'548'39"W N12'27'14"W	1.12.5 1.05.59' 56.54' 1.06.77' 72.03' 1.39.23' 1.08.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71' 39.73' 65.77' 60.27' 78.56'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L630 L631 L632 L633 L634 L635 L636 L637 L638 L639 L630 L637 L638 L639 L640 L641 L642 L643 L644 L645 L644 L645 L646 L647 L648 L645 L646 L647 L648 L645 L646 L647 L648 L645 L646 L645 L646 L645 L656 L656 L656	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S15'07'58"E S135'07'58"E S27'11'36"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S18'03'52"E S66'44'40"W N07'23'23"W N07'23'23"W N07'23'23"W N07'23'23"W N07'42'02"W N11'49'27"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N09'42'02"W N06'55'59"W N06'55'59"W N06'55'59"W N06'55'59"W N06'55'59"W N06'36'48"W	1.12.5 1.05.59' 56.54' 1.06.77' 72.03' 1.39.23' 1.08.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71' 39.73' 65.77' 60.227' 78.56' 30.45'
L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L630 L631 L632 L633 L634 L635 L636 L637 L638 L639 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646 L647 L648 L649 L646 L647 L648 L649 L645 L646 L647 L648 L645 L646 L647 L648 L645 L646 L647 L648 L645 L651 L655 L655 L655 L656 L657	N16'42'22"W N05'43'10"W S20'55'22"E S16'35'24"E S19'04'55"E S13'42'43"E S46'52'37"E N88'18'54"E N77'23'17"E S35'45'51"W S66'51'06"W S09'39'43"E S11'04'47"E S11'04'47"E S15'07'58"E S03'48'47"W S41'18'22"E S35'07'58"E S27'11'36"E S18'03'52"E S66'51'40"W N07'23'23"W N07'23'23"W N07'23'23"W N01'49'27"W N09'40'55"W N09'42'02"W N06'55'59"W N06'55'59"W N06'55'59"W N06'55'59"W N06'55'59"W N06'55'59"W N06'55'59"W <	1.1.2.5 1.05.59' 56.54' 1.06.77' 72.03' 1.39.23' 1.08.76' 79.32' 24.67' 3.32' 7.06' 36.98' 67.93' 32.65' 54.32' 72.04' 116.28' 43.39' 32.53' 40.16' 6.11' 40.55' 97.75' 44.91' 87.67' 66.29' 118.93' 46.21' 86.78' 66.60' 21.28' 31.46' 5.29' 60.68' 54.71' 39.73' 65.77' 60.227' 78.56' 30.45' 75.59'

LINE #	BEARING	
L659	N07 ° 13'44"W	
L660	N13 ° 17'18"W	
L661	N71 ° 10'02"E	
L662	N75 * 11'58"W	
L663	S71*56'35"W	
L664	S81*18'20"W	
L665	S89*27'56"W	
L666	N41*44′09″W	
L667	N24*16*55**W	
L668	N10'51'45"W	
L669	N08°40°01° W	
L670	N02*50′50″E	
L6/1	N10'02'2/"W	
L672	N06*57'35"W	
L673	S84*42′54″E	
L674	S07°47′54″E	
L675	S0/*59*13*'E	
L676	S02°41 32 E	
L677	S09*56*40"E	
L678	S07'38'20'E	
L679	S10'39'36 E	
L680	S16'05 52 E	
L681	S06°33°43"E	
L682	542'30'21"E	
L683	N/3°19'21"E	
L684	N/9*52'41"W	
L685	S/8'43'55"W	
L686	S/5*53'22"W	
L687	NU9'42'40"W	
L688	NU9'04'47"W	
L689	N16°10′17″W	
L690	N03°21′06″W	
L691	N14°26'44"W	
L692	N02°05'51"E	
L693	N41°06°23″E	
L694	S66°24°11″E	
L695	N56°17'34"E	
L696	N/0'3/12 W	
L697	S651015 W	
L698	SU/ 53 42 W	
L699	S63°04°24°W	
L700	N09'30'25"E	
L701	N42°03°23°W	
L/02	N0/°00°31"W	
L703	N00°50'33"W	
L704	NU5 26 42 E	
L705	N55 10 22 E	
1707	NO4"5'50"W	
1708	NU4 15 59 W	
1709	307 37 40 E	
1710	N5218'00"W	
1 711	N30°02'18"W	
1712	N02°03'51"E	
171.3	NO1°54'33"W	
L714	N07°55'45"W	
L715	N01°24'23"F	
L716	N04°04'53"F	
L717	N10°54'19"E	
L718	N06°33'23"E	
L719	N01°39'00"W	
L720	N00°07'10"W	
L721	N00°39'28"E	
L722	N02°08'19"E	
L723	N03°29'19"E	
L724	N04°18'12"W	
L725	N02°23'55"E	
L726	N00°49'21"W	
L727	N12°24'36"E	
L728	S68°42'15"E	
L729	N76°29'28"E	
L730	S86°10'46"E	
L731	N41°16'35"W	
L732	N43°07'43"W	
L733	N40°58'05"W	
L734	N22°37'09"E	
L735	N74°24'42"E	
L736	S79 ° 19'16"E	
L737	N09 ° 25'19"W	
L738	N39 ° 13'49"E	
L739	N39°08'39"E	
L740	N45°16'45"E	

		LINE TABLE	
ENGTH	LINE #	BEARING	LENGTH
1.26'	L741	N45*55'58"E	199.81'
8.63'	L742	N59*57'51"E	48.43'
3.05'	L743	N35°12'10"E	37.59'
.08'	L744	N43*20'28"E	100.86'
5.45	L745	N44*52'14″E	81.78'
.43	L/40	N421023 E	41.09
.43	1748	N46°04'41"F	70 94'
., <u>2</u> 1.53'	L749	N46*57'29"E	58.55'
5.92'	L750	N46°09'34"E	94.84'
31.86'	L751	N42 * 44'46"E	108.21'
6.76'	L752	N45°03'36"E	163.18'
0.29'	L753	N45°59'23"E	89.00'
7.85 '	L754	N46°57'12"E	105.27'
.15'	L755	N51*26'04"E	46.43 '
0.66'	L756	N52 ° 21'24"E	37.62'
4.89'	L757	N51 ° 29'03"E	39.64'
6.97'	L758	N50*53'41"E	44.20'
9.48'	L759	S85*53'50"E	29.25'
8.23	L/60	N66'35'56 E	22.45
0.79 1.02'	1762	N66°21'47"F	27.40 31.00'
5.88'	L763	N38°09'18"F	24.46'
3.69'	L764	N19*51'56"F	35.79'
.36'	L765	N07°35'10"E	23.71'
5.06'	L766	N04*49'30"W	35.99'
5.15'	L767	N36°46'33"E	29.26'
6.45'	L768	N44 ° 18'35"E	69.60'
0.96'	L769	N43 ° 51'45"E	51.41'
5.27'	L770	N47 * 32'22"E	58.37'
4.36'	L771	N43°47'06"E	58.64'
1.51'	L772	N47°19'25"E	74.26'
1.12'	L773	N43°39'44"E	57.18'
5.07'	L/74	N43'37'34"E	47.37'
/./U 307'	L//5	N45"17'57"	57.79 [°] 88.01 [°]
3.93 7 72'	1777	N45'28'07"F	73 24'
.36'	L778	N41°44'02"F	69.45'
1.11'	L779	N43°41'14"E	53.52'
.49'	L780	N44°56'46"E	113.06'
2.62'	L781	N42°45'55"E	60.26'
7.94'	L782	N48°08'46"E	59.91'
2.66'	L783	N38°43'21"E	71.43'
4.87'	L784	N40°27'06"E	89.02'
8.90'	L785	N41°08'46"E	72.66'
4.45'	L786	N38°24'14"E	72.84'
2.83'	L787	N40°01'44"E	81.47'
3.84'	L788	N36°23'11"E	83.20'
9.82'	L789	N39°20'09"E	75.80'
5.04'	L/90	N38°43′45″E	64.09'
7.05 6.81'	L/91	N2810'29"	02.08 60 37'
2.40'	L793	N33°19'58"F	132.05'
7.26'	L794	N28°49'14"F	107.74'
3.83'	L795	N33°31'29"E	148.21'
5.19'	L796	N29°14'38"E	136.07'
7.98'	L797	N29°44'29"E	60.55'
9.24'	L798	N30°53'12"E	19.33'
1.76'	L799	N28°01'24"E	159.16'
0.18'	L800	N27°54'30"E	91.80'
4.12'	L801	N25°27'24"E	69.29'
2.53'	L802	N24°12'39"E	105.86'
3.37'	L803	N28°03'03"E	90.48'
3.89'	L804	N21°47'33"E	92.79'
2.47 1 1 z'	L805	N20°24′44″E	52.96'
1.13 8 66'	LOUD	N21°21'55"⊑	/ 4.00 119 60'
4.06'	L808	N18°49'11"F	37.23'
6.01'	L809	N20°39'36"F	31.24'
5.45'	L810	N20°13'28"E	77.82'
6.90'	L811	N18°10'03"E	72.88'
5.58'	L812	N18 ° 30'25"E	78.56'
.82'	L813	N18°42'33"E	56.55'
8.35'	L814	N12°46'58"E	66.35'
3.50'	L815	N16°01'50"E	69.05 '
2.21'	L816	N24°26'54"E	28.49'
2.20'	L817	N12°12'47"E	14.54'
2.57'	L818	N10 ° 47'22"E	51.21'
3.65'	L819	N15°18'11"E	149.31'
4.74'	L820	N13°24'16"E	63.65'
1.0/ 12.26'	L021 822	N11°20'43"E	101 00'
. 2.20		1111 ZU 43 E	01.30

	LINE TABLE	
LINE #	BEARING	LENGTH
L823	N05*52'52"E	131.37'
L824	N16°26'49"E	26.00'
L825	N16*00'01"E	67.98 '
L826	N59 * 50'33"E	15.28'
L827	S70°22'27"E	13.08'
L828	S46 ° 16'17"W	9.79'
L829	S37°18'16"E	22.45'
L830	S05°49'21"W	15.22'
L831	S19 * 42'40"W	27.42'
L832	S77*21'53"W	15.56'
L833	S07 * 41'54"E	12.74'
L834	S08°11'32"W	35.83'
L835	S32*35'10"E	23.70'
L836	S45°36'37"E	24.14'
L837	S73 ° 07'33"W	7.02'
L838	N37 * 52'28"E	57.49'
L839	N25°36'44"E	33.09'
L840	N11*59'51"E	8.14'
L841	N01°18'15"W	38.70'
L842	N41°09'09"E	27.03'
L843	N23°43'01"E	70.92'
L844	N39°20'33"E	86.38'
L845	N67*48'04"E	18.75'
L846	N06 ° 17'05"E	33.05'
L847	N38°31'59"E	27.39'
L848	N63°07'28"E	36.55'
L849	N35°07'06"E	22.11'
L850	N18°22'33"E	21.24'
L851	N49°13'06"E	42.31'
L852	N59°04'56"E	25.57 '
L853	N54°01'53"E	75.46'
L854	N47°32'23"E	56.83'
L855	N28°36'47"E	48.83'
L856	N35°27'22"E	39.94'
L857	N01°46'04"W	20.08'
L858	N17°57'26"E	53.45'
L859	N10°16'05"E	29.04'
L860	S61°00'38"E	37.79'
L861	S64°14'18"E	5.48'
L862	S75°26'41"E	24.90'
L863	N69 * 59'00"E	33.09'
L864	N87 ° 15'03"W	8.18'
L865	S74°22'42"W	24.56'
L866	S83°32'01"W	16.72'
L867	N13°47'21"E	12.62'
L868	N05°45'44"W	67.26'
L869	N47°15'34"E	20.93'
L870	N39°18'37"E	38.88'
L871	N56°30'18"E	37.06'
L872	N61°38'28"E	90.41'
L873	S87°35'34"E	26.55'
L874	N62°21'10"E	40.86'
L875	N36*56'15"W	17.71'
L876	N54°41'36"W	28.50'
L877	N32°24'16"W	25.00'
L878	N14°12'10"E	14.91'
L879	N36°31'23"E	14.15'
L880	N42 ° 45'44"E	87.05'
L881	N52 ° 44'23"E	60.85'
L882	N39°53'12"E	74.04'
L883	N58°02'01"E	39.94'
L884	N36°50'09"E	34.41'
L885	N51°52'56"E	58.97 '
L886	N41°08'38"E	112.89'
L887	N46°05'14"E	63.17'
L888	N43°24'20"E	59.59 '
L889	N48°57'03"E	128.93'
L890	N82°25'58"E	78.17'
L891	N38°56'08"E	51.61'
L892	N23°57'01"W	45.25'
L893	N39°03'11"E	92.02'
L894	N46°10'00"E	74.04'
L895	N42°48'31"E	144.58 '
L896	N43°49'00"E	116.73 '
1 1897		00 77'
	N47°34'25"E	90.75
L898	N47°34'25"E N44°21'39"E	90.73 92.87'
L898 L899	N47°34'25"E N44°21'39"E N45°20'27"E	90.73 92.87' 188.07'
L898 L899 L900	N47°34'25"E N44°21'39"E N45°20'27"E N49°51'33"E	92.87' 188.07' 86.06'
L898 L899 L900 L901	N47°34'25"E N44°21'39"E N45°20'27"E N49°51'33"E N45°57'07"E	92.87' 188.07' 86.06' 55.39'
L898 L899 L900 L901 L902	N47°34'25"E N44°21'39"E N45°20'27"E N49°51'33"E N45°57'07"E N55°16'15"E	92.87' 188.07' 86.06' 55.39' 78.59'
L898 L899 L900 L901 L902 L903	N47°34'25"E N44°21'39"E N45°20'27"E N49°51'33"E N45°57'07"E N55°16'15"E N81°53'23"E	92.87' 188.07' 86.06' 55.39' 78.59' 36.10'



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NE # .905 .906 .907	BEARING	
.905 .906 .907		LENGTH
.906	N65*41'53"F	21.60'
07	N52*50'40"W	1 61'
·	א מ4 ער דרי א איבייביי	+.04
	N59 * 51'28"W	19.36'
	N46 ° 53'09"W	32.35'
	N04°08'09"W	13.70'
	N05*57'20"	10 57'
, 	W 50 17 50 W	
	N60°09'44"E	33.17'
2	S55 * 31'49"E	59.41'
3	S37°15'11"E	14.49'
4	N27°05'24"W	10.06'
-	N27 03 24 W	10.00
5	S73•05'30"W	28.97'
6	N10 ° 14'14"W	52.32'
17	N21 ° 52'55"E	11.31'
8	NO8*12'16"W	17 12'
	1001210 W	17.12
19	N36*26'50"E	111.64
0	N50 ° 45'36"E	129.01'
21	N09°02'28"E	54.39'
2	N63°11'50"F	56.60'
) 7	NZ0*07'C0"-	EC EC'
ა	N32 23 50 E	00.59
4	N47 * 50 ' 15"E	12.07'
5	N82°06'21"E	18.57'
6	S11°58'10"W	20.93'
7	C7047'04"-	25.00
/	57277/24″E	∠5.93′
8	S83°24'45"E	16.12'
9	N61 ° 37'57"E	31.16'
50	N06'40'15"F	14.32'
۲1	NO0*40'04"	40.002
ו <i>ו</i>	1109 42 04 W	40.60
2	N17 ° 06'34"W	27.54'
33	N54°23'51"E	15.17'
54	N47°12'58"F	88 74'
	NA 7°5 5'5 0"	150.10
	1143 33 36 E	159.10
36	N46°17'57"E	109.70'
37	N42 ° 51'31"E	114.00'
38	N44°45'20"F	142.27'
30	N46'75'50"5	140 90'
		170.09
+U	N4213'38"E	152.08'
41	N44 ° 19'18"E	179.45'
2	N46 ° 15'41"E	182.44'
3	N46°52'24"E	144,14'
Л	NA5°50'37"E	192.21'
۲ -	11-0090/E	102.21
.D	N44°30'45"E	240.69'
-6	N45°24'31"E	74.04'
17	N43°15'42"F	75.11'
18	N46"16'37"	138 70'
	1170 10 JJ E	100.79
40	N 1 4	
9	N45°37'10"E	156.54
9	N45°37'10"E N44°32'06"E	156.54 [°] 146.68 [°]
-9 60 51	N45°37'10"E N44°32'06"E N46°20'57"E	156.54 [°] 146.68' 130.14'
9 0 51 2	N45°37'10"E N44°32'06"E N46°20'57"E N44°55'14"F	156.54 [°] 146.68 [°] 130.14 [°] 166.72 [°]
-9 50 51 52	N45°37'10"E N44°32'06"E N46°20'57"E N44°55'14"E	156.54 [°] 146.68 [°] 130.14 [°] 166.72 [°]
49 50 51 52 53	N45°37'10"E N44°32'06"E N46°20'57"E N44°55'14"E N44°22'44"E	156.54 146.68' 130.14' 166.72' 184.93'
19 50 51 52 53 54	N45°37'10"E N44°32'06"E N46°20'57"E N44°55'14"E N44°22'44"E N45°10'49"E	156.54 [°] 146.68 [°] 130.14 [°] 166.72 [°] 184.93 [°] 266.11 [°]
19 50 51 52 53 54 55	N45*37'10"E N44*32'06"E N46*20'57"E N44*55'14"E N44*22'44"E N45*10'49"E N46*21'34"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84'
-9 50 551 52 53 54 55 56	N45°37'10"E N44°32'06"E N46°20'57"E N44°55'14"E N44°22'44"E N45°10'49"E N46°21'34"E N53°15'42"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96'
19 50 51 52 53 54 55 56 57	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N53'15'42"E N40'0.3'07"F	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33'
49 50 51 52 53 54 55 56 57	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N45'10'49"E N46'21'34"E N53'15'42"E N40'03'07"E	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33'
 49 50 51 52 53 54 55 56 57 58 	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N53'15'42"E N40'03'07"E N44'40'56"E	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82'
19 50 51 52 53 54 55 56 57 58 59	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N53'15'42"E N40'03'07"E N44'40'56"E N46'57'52"E	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92'
49 50 51 52 53 54 55 56 57 58 59 50	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N45'10'49"E N46'21'34"E N53'15'42"E N40'03'07"E N44'40'56"E N46'57'52"E N49'21'49"E	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57'
49 50 51 52 53 54 55 56 57 58 59 50 51	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N46'57'52"E N49'21'49"E N45'24'15"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90'
9 0 31 2 3 4 5 6 7 8 9 0 31 2	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N45'10'49"E N46'21'34"E N40'03'07"E N40'03'07"E N44'40'56"E N46'57'52"E N49'21'49"E N45'24'15"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81'
49 50 51 52 53 54 55 56 57 58 59 50 51 52 53 54 55 56 57 58 59 50 51 52 53	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N46'57'52"E N44'40'56"E N46'57'52"E N49'21'49"E N45'24'15"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81'
19 50 51 52 53 54 55 56 57 58 59 50 51 52 53 54 55 56 57 58 59 50 51 52 53 53	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N45'10'49"E N46'21'34"E N40'03'07"E N40'03'07"E N40'03'07"E N46'57'52"E N46'57'52"E N49'21'49"E N45'24'15"E N54'05'45"E	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87'
49 50 51 52 53 54 55 56 57 58 59 60 61 52 53 54	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N46'57'52"E N44'40'56"E N46'57'52"E N49'21'49"E N45'24'15"E N45'48'05"E N45'48'05"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04'
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N45'10'49"E N46'21'34"E N40'03'07"E N40'03'07"E N40'03'07"E N44'40'56"E N46'57'52"E N46'57'52"E N45'24'15"E N45'24'15"E N45'48'05"E N45'48'05"E N47'06'19"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22'
49 50 51 52 53 54 55 57 58 57 58 60 61 62 63 64 65 66	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N44'40'56"E N46'57'52"E N49'21'49"E N45'24'15"E N45'24'15"E N45'48'05"E N45'48'05"E N47'06'19"E N43'22'02"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81'
49 50 51 52 53 54 55 57 58 59 60 61 52 53 54 55 56 57 58 59 60 61 52 53 54 55 56 57 58 59 60 61 52 53 54 55 56 57 58 59 51 52 53 54 55 56 57 58 59 51 52 53 54 55 56	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N45'10'49"E N46'21'34"E N40'03'07"E N40'03'07"E N40'03'07"E N44'40'56"E N46'57'52"E N46'57'52"E N49'21'49"E N45'24'15"E N45'48'05"E N45'48'05"E N45'44'00"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.42'
49 50 51 52 53 54 55 56 57 58 59 50 51 52 53 54 55 56 57 58 50 51 52 53 54 55 56 57 58 57 58 50 57 58 57 58 57 58 57 58 57 58 57 58 57 58 57 58 57 58 57 58 57 58 57	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N44'40'56"E N49'21'49"E N45'24'15"E N45'24'15"E N45'48'05"E N43'22'02"E N43'22'02"E N45'44'00"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.16'
9 0 11 2 3 4 5 6 7 8 9 0 11 2 3 4 5 6 7 8 8 7 8 8	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N44'40'56"E N45'24'15"E N45'24'15"E N45'24'15"E N45'48'05"E N43'22'02"E N43'22'02"E N45'44'00"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.16' 105.13'
9 50 50 51 52 53 54 55 56 57 58 59 50 51 55 56 57 58 59 50 51 52 53 54 55 56 57 58 59 50 57 58 57 58 57 58 59 50 57 58 59 50 57 58 59 50 57 58 59 50 57 58 59 50 50	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N46'21'34"E N46'21'34"E N46'21'34"E N46'57'52"E N46'57'52"E N45'24'15"E N45'24'15"E N45'48'05"E N45'48'05"E N45'48'05"E N43'22'02"E N45'44'00"E N45'44'00"E N45'44'00"E N45'44'00"E N45'44'00"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.16' 105.13' 171.25'
49 50 51 52 53 54 55 56 57 58 59 60 61 52 53 54 55 56 57 58 59 60 61 52 53 54 55 56 57 58 59 50 61 52 53 54 55 56 57 58 59 50 51 52 53 54 55 56 57 58 59 50 57 58 59	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N44'40'56"E N44'40'56"E N45'24'15"E N45'24'15"E N45'48'05"E N45'48'05"E N43'22'02"E N43'22'02"E N43'39'19"E N45'33'49"E N45'58'59"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.16' 105.13' 171.25' 68.12'
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-9 -0 -0 -0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -7 -8 -9 -7 -8 -9 -7 -8 -9 -7 -8 -9 -7 -8 -9 -7 -8 -9 -7 -8 -9 -7 -7 -8 -9 -7 -7 -7 -8 -9 -7 -7 -8 <td>N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N46'57'52"E N45'24'15"E N45'24'15"E N45'24'15"E N45'48'05"E N45'48'05"E N43'22'02"E N45'33'49"E N45'33'49"E N48'59'48"E S45'58'59"E</td> <td>156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.16' 105.13' 171.25' 68.12' 10.27'</td>	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'55'14"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N46'57'52"E N45'24'15"E N45'24'15"E N45'24'15"E N45'48'05"E N45'48'05"E N43'22'02"E N45'33'49"E N45'33'49"E N48'59'48"E S45'58'59"E	156.54 146.68' 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 167.16' 105.13' 171.25' 68.12' 10.27'
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	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N46'21'34"E N40'03'07"E N44'40'56"E N46'57'52"E N46'57'52"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'33'49"E N45'33'49"E N45'59'48"E S45'58'59"E S45'58'59"E S50'11'11"E N41'40'42"E N35'27'12"E S44'45'22"E N51'02'10"E S37'03'49"E S42'59'14"E S19'41'01"W S75'59'57"W N89'57'53"W S81'39'34"W S81'39'34"W	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 167.90' 115.81' 144.87' 134.04' 122.22' 187.81' 144.87' 134.04' 122.22' 187.81' 167.16' 105.13' 171.25' 68.12' 105.13' 171.25' 68.12' 10.27' 30.94' 51.61' 3.39' 64.77' 82.31' 72.15' 85.54' 54.90' 35.13' 114.82' 29.33' 37.74' 32.23'
	N45'37'10"E N44'32'06"E N46'20'57"E N44'55'14"E N44'22'44"E N45'10'49"E N46'21'34"E N40'03'07"E N44'40'56"E N46'57'52"E N46'57'52"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'24'15"E N45'33'49"E N45'33'49"E N45'59'48"E S45'58'59"E S45'58'59"E S50'11'11"E N41'40'42"E S45'58'59"E S50'11'11"E S44'45'22"E S19'41'01"W S75'59'57"W N89'57'53"W N15'54'35"W S81'39'34"W S81'39'34"W	156.54 146.68 130.14' 166.72' 184.93' 266.11' 168.84' 112.96' 153.33' 135.82' 164.92' 126.57' 164.92' 126.57' 167.90' 115.81' 144.87' 144.87' 144.87' 144.87' 144.87' 144.87' 144.87' 144.87' 15.13' 167.16' 105.13' 171.25' 68.12' 10.27' 30.94' 51.61' 3.39' 64.77' 82.31' 72.15' 85.54' 54.90' 35.13' 114.82' 29.33' 37.74' 32.23' 94.55'

CURVE TABLE					
DIUS	DELTA	ARC	CHORD BEARING	CHORD	
'9.58 '	4 ° 25'17"	430.58'	N43 ° 01'59"E	430.47'	
'9.58'	8 • 19'13"	810.25'	N36 ° 39'44"E	809.53'	
'9.58'	15 ° 36'20"	1519.71'	N24 * 41'57"E	1515.02'	
'9.58 '	0°24'46"	40.19'	N16 * 41'24"E	40.19'	
'9.58 '	1 ° 54'18"	185.52'	N15 * 31'52"E	185.51'	
'9.58'	0°23'29"	38.13'	N14 ° 22'58"E	38.13'	
'9.58'	3•36'12"	350.89'	N12 ° 23'08"E	350.83'	
9.58'	0 ° 31'59"	52.37'	N10 ° 19'03"E	52.37 '	
9.58'	4 ° 33'46"	448.33'	N07 ° 46'10"E	448.21'	
9.58'	6 ° 20'56"	623.80'	N02 ° 18'49"E	623.48'	
9.58'	0 ° 10'42"	17.53'	N00*57'00"W	17.53'	
9.58'	0°09'28"	15.51'	N01°07'05"W	15.51'	
9.58'	0 ° 15'25"	25.24'	N01 ° 19'32"W	25.24'	
9.58'	0 ° 07'24"	12.12'	N01 ° 30'56"W	12.12'	
9.58'	1 ° 14'59"	122.79'	N02 * 12'08"W	122.78'	
9.58'	6 ° 05'40"	598.80'	N05*52'27"W	598.52'	
9.58'	0°06'26"	10.52'	N08*58'30"W	11.09'	
9.58'	0 ° 13'31"	22.14'	N09*08'28"W	22.14'	
9.58'	7°30'47"	738.20'	N13*00'37"W	737.67'	
9.58'	5 ° 36'05"	550.36'	N19 * 34'03"W	550.14'	
9.58'	10*39'52"	1047.83'	N27 * 42'02"W	1046.32'	
9.58'	5°55'53"	582.78'	N35*59'54"W	582.52'	
9.58'	4°42'23"	478.86'	S36°36'39"E	478.72'	
9.58'	2°29'25"	253.38'	S33°00'45"E	253.36'	
7.02'	3 ° 37'47"	305.79'	S30°34'56"E	305.74'	
0.58'	1 ° 56'17"	197.57'	S27*47'53"E	197.56'	
0.58'	1 ° 54'38"	194.74'	S25*52'26"E	194.73'	
'5.58'	1 ° 36'47"	165.42'	S21*49'26"E	165.42'	
·5.58'	5°05'00"	518.63'	S18•28'32"E	518.46'	
-5.58'	0°10'00"	17.00'	S15°51'02"E	17.00'	
0.58'	1°35'42"	162.59'	S14*58'11"E	162.58'	
-0.58'	4°28'29"	456.13'	S11°56'06"E	456.02'	
0.58'	0°46'35"	79.13'	S09°18'34"E	79.13'	
0.58'	0°47'57"	81.62'	S08 * 31'18"E	81.61'	
0.58'	0°20'13"	34.36'	S07 * 57'13"E	34.36'	
0.58'	1 ° 51'19"	189.12'	S06°51'27"E	189.12'	
0.58'	3°11'23"	325.16'	S04°20'05"E	325.12'	
0.58'	1°49'23"	185.82'	S01°49'43"E	185.82'	
0.58'	7°40'06"	781.70'	S02*55'02"W	781.12'	
0.58'	3 ° 22'42"	344.39'	S08•26'26"W	344.34'	
0.58'	0 ° 27'15"	46.29'	S10°21'25"W	46.29'	
'9.58 '	34 ° 39'36"	3556.73'	S27°54'50"W	3502.75'	
5.66'	3°46'31"	323.23'	S43°21'23"W	323.18'	
5.66'	1 ° 05'08"	92.93'	S40°45'00"W	92.93'	
5.66'	5°05'54"	436.52'	S37°39'29"W	436.37'	
5.66'	3°39'02"	331.67'	S36*56'03"W	331.61'	
5.66'	6°02'39"	549.15'	S42°13'18"W	548.90'	
5.66'	0°10'34"	15.07'	S41°22'50"W	15.54'	
		•			



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Appendix D Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: US 17 Widening Project	City/County: Jasp	per County	Sampling Date: 04/23-25/2013
Applicant/Owner: SCDOT		State: SC	Sampling Point: <u>J Wet 53 Upland</u>
Investigator(s): Ed Smail and Renee Flinchum-Bowles		Section, Town	ship, Range:
Landform (hillslope, terrace, etc.): hillslope	Local relief (co	oncave, convex, none): <u>co</u>	onvex Slope (%): <u>10-15</u>
Subregion (LRR or MLRA): LRR T La	at: <u>32.097822</u>	Long: -81.0926	669 Datum: <u>NAD 83</u>
Soil Map Unit Name:Tmh		NWI cla	assification:
Are climatic / hydrologic conditions on the site typical for this	time of year? Yes <u>X</u>	No (If no, explain in	Remarks.)
Are Vegetation, Soil, or Hydrology sig	nificantly disturbed?	Are "Normal Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology na	turally problematic?	(If needed, explain any answe	ers in Remarks.)

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

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes NoX Yes NoX Yes NoX	Is the Sampled Area within a Wetland? Yes	No <u>X</u>
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is re	quired; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Marl Deposits (B15) (LRR U) Water Marks (B1) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Drift Deposits (B3) Presence of Reduced Iron (C4) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)		 Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) (C3) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes	No X Depth (inches):	
Water Table Present? Yes	No X Depth (inches):	
Saturation Present? Yes (includes capillary fringe)	NoX Depth (inches): Wetl	and Hydrology Present? Yes NoX
Describe Recorded Data (stream gauge	monitoring well, aerial photos, previous inspections),	if available:
Remarks:		

No hydrology present

Sampling Point: J Wet 53 Up.

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1.	<u>% Cover</u>	Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A
2				Total Number of Dominant
3			<u> </u>	Species Across All Strata: (B
4				Percent of Dominant Species
5			. <u> </u>	That Are OBL, FACW, or FAC:0
8				
1		- Total Ca	or	Prevalence Index worksheet:
Sapling Stratum (Plot size:)				Total % Cover of: Multiply by:
1. Rhus copallinum	10	Yes	NI	OBL species x 1 =
2				FACW species x 2 =
3				FAC species x 3 =
4				FACU species x 4 =
5				UPL species x 5 =
6				Column Totals: (A) (B
7				Prevalence Index = B/A =
	10	= Total C	over	Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size:)				Dominance Test is >50%
1				$\frac{1}{2}$ Prevalence index is <3.0 ¹
2			<u> </u>	Problematic Hydrophytic Vegetation ¹ (Explain)
3				
4				¹ Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Venetation Strates
7			<u> </u>	Demnitions of Vegetation Strata:
Ligh Charters (Distring)	=	= Total Cov	er	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)	25	Vee	NU	(7.6 cm) or larger in diameter at breast height (DBH).
1. <u>Rubus spp.</u>		<u>res</u>		
2			. <u> </u>	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3				than 3 in. (7.6 cm) DBH.
4				Shrub - Woody plants, excluding woody vines
5				approximately 3 to 20 ft (1 to 6 m) in height.
87				Hark All herbassous (non woody) planta induding
0				herbaceous vines, regardless of size. Includes wood
8			. <u> </u>	plants, except woody vines, less than approximately
ə 10				π (1 m) in height.
10				Woody vine – All woody vines, regardless of height.
12				
12.	25	- Total C		
Woody Vine Stratum (Plot size:)			over	
1.				
2.				
3.				
4.				
5.				Hydrophytic
		= Total Cov	er	Vegetation
				Present? Yes <u>X</u> No
Remarks: (If observed list morphological adaptations be	elow)			
	,•			

SOIL

Profile Descr	iption: (Describe to the dept	n needed to document the indicator or confirm	the absence of indicators.)
Depth	Matrix	Redox Features	
(inches)	Color (moist) %	Color (moist) % Type' Loc ²	lexture Remarks
0-12	10 YR 4/6		sandy clay loam
	centration D=Depletion PM=	Peduced Matrix CS=Covered or Costed Sand Gr	ains ² I ocation: PI =Pore Lining M=Matrix
Hydric Soil Ir	idicators:	Reduced Matrix, CS-Covered of Coaled Sand On	Indicators for Problematic Hydric Soils ³ :
 Histosol (Histic Epi Black His Hydrogen Stratified Organic E 5 cm Muc Muck Pre 1 cm Muc Depleted Thick Dar Coast Pra Sandy Mu Sandy Gl Sandy Re Stripped I 	A1) pedon (A2) tic (A3) Sulfide (A4) Layers (A5) Bodies (A6) (LRR P, T, U) kky Mineral (A7) (LRR P, T, U) sence (A8) (LRR U) tk (A9) (LRR P, T) Below Dark Surface (A11) k Surface (A12) airie Redox (A16) (MLRA 150A ucky Mineral (S1) (LRR O, S) eyed Matrix (S4) edox (S5) Matrix (S6)	 Polyvalue Below Surface (S8) (LRR S, T, U Thin Dark Surface (S9) (LRR S, T, U) Loamy Mucky Mineral (F1) (LRR O) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Marl (F10) (LRR U) Depleted Ochric (F11) (MLRA 151) Iron-Manganese Masses (F12) (LRR O, P, Umbric Surface (F13) (LRR P, T, U) Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, 150B) Piedmont Floodplain Soils (F19) (MLRA 144 Anomalous Bright Loamy Soils (F20) (MLRA 	 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Reduced Vertic (F18) (outside MLRA 150A,B) Piedmont Floodplain Soils (F19) (LRR P, S, T) Anomalous Bright Loamy Soils (F20) (MLRA 153B) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) (LRR T, U) Other (Explain in Remarks) T) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. 9A) A 149A, 153C, 153D)
Dark Surf	ace (S7) (LRR P, S, T, U) ayer (if observed):		
Туре:			
Depth (incl	nes):		Hydric Soil Present? Yes NoX
Remarks:			1

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: US 17 Widening Project	City/County: Ja	asper County	Sampling Date: <u>04/23-25/2013</u>		
Applicant/Owner: SCDOT		State:	Sampling Point: J Wet 53		
Investigator(s): Ed Smail and Renee Flinchum-Bowles	Section	n, Township, Range:			
Landform (hillslope, terrace, etc.):	Local relief (conc	ave, convex, none): <u>no</u>	ne Slope (%): <u>0-1</u>		
Subregion (LRR or MLRA): Lat:	32.097848	Long: -81.092			
Soil Map Unit Name: <u>Tmh</u>		NWI c	lassification: E2EM1N		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <u>X</u> No (If no, explain in Remarks.)					
Are Vegetation, Soil, or Hydrology signific	cantly disturbed?	Are "Normal Circumstance	es" present? Yes <u>X</u> No		
Are Vegetation, Soil, or Hydrology natural	lly problematic?	(If needed, explain any and	swers in Remarks.)		
SUMMARY OF FINDINGS – Attach site map show	wing sampling po	int locations, transe	cts, important features, etc.		

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No Yes <u>X</u> No Yes <u>X</u> No	Is the Sampled Area within a Wetland?	Yes X	No	
Remarks:					
This wetland is a brackish system. Also indicative of Wetland 52					

HYDROLOGY

Wetland Hydrology Indicato	vrs:				Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)				Surface Soil Cracks (B6)	
X Surface Water (A1) X Water-Stained Leaves (B9)			Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)		Aquatic Fauna (B1	3)		X Drainage Patterns (B10)
X Saturation (A3)		Marl Deposits (B15	5) (LRR U)		Moss Trim Lines (B16)
X Water Marks (B1)		Hydrogen Sulfide (Odor (C1)		Dry-Season Water Table (C2)
Sediment Deposits (B2)	Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3)			Crayfish Burrows (C8)	
Drift Deposits (B3)	Drift Deposits (B3) Presence of Reduced Iron (C4)			Saturation Visible on Aerial Imagery (C9)	
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6)			Geomorphic Position (D2)		
Iron Deposits (B5)		Thin Muck Surface	e (C7)		Shallow Aquitard (D3)
X Inundation Visible on A	erial Imagery (B7)	Other (Explain in F	Remarks)		FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present?	Yes <u>X</u> No	Depth (inches):	0-24		
Water Table Present?	Yes <u>X</u> No	Depth (inches):	0		
Saturation Present? (includes capillary fringe)	Yes <u>X</u> No	Depth (inches):	0	Wetland	Hydrology Present? Yes <u>X</u> No
Describe Recorded Data (stre	am gauge, monito	ring well, aerial photos, p	previous inspecti	ons), if ava	ailable:
Remarks:					
	Absolute	Dominant	Indicator	Dominance Test worksheet:	
--	----------------	--------------------------------	------------	---	
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: (A)	
2				Total Number of Dominant	
3.				Species Across All Strata: 2 (B)	
4				(-)	
5				Percent of Dominant Species	
				A A A A A A A A A A A A A A A A A A A	
6					
7				Prevalence Index worksheet:	
		= Total Cov	er	Total % Cover of: Multiply by:	
Sapling Stratum (Plot size:)				OBL species x 1 =	
1					
2					
3			. <u> </u>	FAC species x 3 =	
4				FACU species x 4 =	
5				UPL species x 5 =	
6				Column Totals: (A) (B)	
7					
7				Prevalence Index = B/A =	
Shruh Stratum (Plot sizo:		 Fotal Cove 	er	Hydrophytic Vegetation Indicators:	
	10			Dominance Test is >50%	
1. Morella cerifera	10		FAC+	Prevalence Index is ≤3.0 ¹	
2			·	Problematic Hydrophytic Vegetation ¹ (Explain)	
3		·			
4					
5.				Indicators of hydric soil and wetland hydrology must	
6				be present, unless disturbed of problematic.	
7				Definitions of Vegetation Strata:	
1		- Total C			
Herb Stratum (Plot size:	10	= 1 otal C	over	I ree – Woody plants, excluding woody vines,	
1 Sparting cynosuroidos	80	Voc		(7.6 cm) or larger in diameter at breast height (DBH).	
	0	165			
2				Sapling – Woody plants, excluding woody vines,	
3				than 3 in. (7.6 cm) DBH.	
4					
5		·		Shrub – Woody plants, excluding woody vines,	
6				approximately 3 to 20 ft (1 to 6 m) in height.	
7				Herb – All herbaceous (non-woody) plants, including	
8.				herbaceous vines, regardless of size. Includes woody	
9				plants, except woody vines, less than approximately 3	
10			·		
		·	·	Woody vine - All woody vines, regardless of height.	
12					
March March Oberture (DL 1	80	= Total C	over		
Woody Vine Stratum (Plot size:)					
1		·			
2		·			
3					
4.					
5.				Hydronbytic	
		Total Cov		Vegetation	
			51	Present? Yes X No	
Remarks: (If observed, list morphological adaptations be	low).				

SOIL

Profile Desc	ription: (Describe t	o the depth	needed to docur	nent the in	dicator	or confirm	the absence of indicators.)
Depth	Matrix		Redo	x Features			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-12	10 YR 2/1						sandy clay loam
				·			
				·			
							·
1 Type: C=C	ncentration D=Denk	tion RM=R	educed Matrix CS	=Covered (or Coate	d Sand Gr	rains ² I ocation: PI =Pore Lining M=Matrix
Hydric Soil	Indicators:						Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Be	low Surface	e (S8) (I	RRSTU	I) 1 cm Muck (A9) (I BR O)
Histic Ep	pipedon (A2)		Thin Dark Su	rface (S9) (LRR S.	T, U)	2 cm Muck (A10) (LRR S)
Black Hi	stic (A3)		Loamy Muck	y Mineral (F	1) (LRR	0)	Reduced Vertic (F18) (outside MLRA 150A,B)
<u>X</u> Hydrog	gen Sulfide (A4)		Loamy Gleye	d Matrix (F2	2)		Piedmont Floodplain Soils (F19) (LRR P, S, T)
Stratified	d Layers (A5)		Depleted Ma	trix (F3)			Anomalous Bright Loamy Soils (F20)
Organic	Bodies (A6) (LRR P,	T, U)	Redox Dark	Surface (F6)		(MLRA 153B)
5 cm Mu	icky Mineral (A7) (LR	R P, T, U)	Depleted Da	k Surface (F7)		Red Parent Material (TF2)
	esence (A8) (LRR U)		Redox Depre				Very Shallow Dark Surface (1F12) (LRR 1, U)
T CH MC	Helow Dark Surface	(A11)		nric (F11) (N		51)	
Thick Da	ark Surface (A12)	(,,,,,)	Iron-Mangan	ese Masses	s (F12) (LRR O. P.	T) ³ Indicators of hydrophytic vegetation and
Coast P	rairie Redox (A16) (M	LRA 150A)	Umbric Surfa	ce (F13) (L	RR P, T	, U)	wetland hydrology must be present,
Sandy M	lucky Mineral (S1) (L	RR O, S)	Delta Ochric	(F17) (MLR	A 151)		unless disturbed or problematic.
Sandy G	Bleyed Matrix (S4)		Reduced Ver	tic (F18) (M	ILRA 15	0A, 150B)	
Sandy R	edox (S5)		Piedmont Flo	odplain Soi	ls (F19)	(MLRA 14	9A)
Stripped	Matrix (S6)		Anomalous E	Bright Loam	y Soils (F	F20) (MLR	A 149A, 153C, 153D)
Dark Su	rface (S7) (LRR P, S,	I, U)					
Restrictive	Layer (if observed):						
Type:			_				
Depth (ind	ches):						Hydric Soil Present? Yes X No
Remarks:							

Appendix E Approved Jurisdictional Determination Form

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

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

SECTION I: BACKGROUND INFORMATION

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

В. **DISTRICT OFFICE, FILE NAME, AND NUMBER: Charleston**

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Wetlands 52, 53 and 54; Open Water 20; Stream 3 (Back River)

State:GA County/parish/borough: Chatham City: Savannah Center coordinates of site (lat/long in degree decimal format): Lat. 32.112005° N, Long. -81.077597° W.

Universal Transverse Mercator: 17N

Name of nearest waterbody: The Little Back River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: The Little Back River Name of watershed or Hydrologic Unit Code (HUC): 03060109

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

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

- Office (Desk) Determination. Date: 8/11/09 \boxtimes
- Field Determination. Date(s): 7/6/09-7/10/09

SECTION II: SUMMARY OF FINDINGS A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are "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]

- \square 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: TNW 1 (Stream 3) is used as a shipping route.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

- a. Indicate presence of waters of U.S. in review area (check all that apply): ¹
 - TNWs, including territorial seas \boxtimes
 - Wetlands adjacent to TNWs
 - Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
 - Non-RPWs that flow directly or indirectly into TNWs
 - Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
 - Impoundments of jurisdictional waters
 - Isolated (interstate or intrastate) waters, including isolated wetlands
- b. Identify (estimate) size of waters of the U.S. in the review area: Non-wetland waters: 354 linear feet: 3,220-3,300 width (ft) and/or 20.63 acres. Wetlands: 3.50 acres.
- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual Elevation of established OHWM (if known):
- Non-regulated waters/wetlands (check if applicable):³ 2. Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

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

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW

Identify TNW: The Little Back River (Stream 3).

Summarize rationale supporting determination: The Little Back River serves as a shipping route.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": Wetlands 52 and 53 abut to the Little Back River and are tidally influenced by the Little Back River. Wetland 54 is connected to Wetland 53 and therefore connected to the Little Back River.

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

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

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

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

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

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

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

(ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>
 ☐ Tributary flows directly into TNW.
 ☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are
Project waters arePick List
Pick List
river miles from RPW.Project waters are
Project waters arePick List
Pick List
aerial (straight) miles from TNW.Project waters are
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

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

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

Tributary stream order, if known:

.

	(b)	General Tributary Characteristics (check all that apply): Tributary is: Natural Artificial (man-made). Explain: . Manipulated (man-altered). Explain: .
		Tributary properties with respect to top of bank (estimate): Average width: feet Average depth: feet Average side slopes: Pick List.
		Primary tributary substrate composition (check all that apply):
		Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: . Presence of run/riffle/pool complexes. Explain: . Tributary geometry: Pick List Tributary gradient (approximate average slope): %
	(c)	<u>Flow:</u> Tributary provides for: Pick List Estimate average number of flow events in review area/year: Pick List Describe flow regime: Other information on duration and volume:
		Surface flow is: Pick List. Characteristics:
		Subsurface flow: Pick List. Explain findings: .
		Tributary has (check all that apply): Image: Figure 1 Bed and banks Image: Figure 1 OHWM ⁶ (check all indicators that apply): Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Clear, natural line impressed on the bank Image: Figure 1 Image: Vegetation matted down, bent, or absent Image: Sediment sorting Image: Sediment deposition Image: Sediment sorting Image: Sediment deposition Image: Sediment community Image: Other (list): Image: Sediment community Image: Other (list): Image: Sediment c
		If factors other than the OHWM were 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):
(iii)	Che Cha	emical Characteristics: racterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain:

Identify specific pollutants, if known:

.

⁶A 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. ⁷Ibid.

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

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:

Aquatic/wildlife diversity. Explain findings:

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

(i) **Physical Characteristics:**

- (a) General Wetland Characteristics: Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) General Flow Relationship with Non-TNW: Flow is: **Pick List**. Explain:

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

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

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

(d) Proximity (Relationship) to TNW

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

(ii) Chemical Characteristics:

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

Identify specific pollutants, if known:

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

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

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

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

For each wetland, specify the following:

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

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

- 1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
- 2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- 3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

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

Provide estimates for jurisdictional waters in the review area (check all that apply):

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
 - Identify type(s) of waters:
- 3. Non-RPWs⁸ that flow directly or indirectly into TNWs.
 - Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

acres.

- Tributary waters: linear feet width (ft).
- Other non-wetland waters:
 - Identify type(s) of waters:

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

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

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

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

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

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

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

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain:
- Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸See Footnote # 3.

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos*.

Provide estimates for jurisdictional waters in the review area (check all that apply):

.

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters:

Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

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

Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> 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 w	vaters (i.e., rive	rs, streams):	linear feet	width (ft).
Lakes/ponds:	acres.			
Other non-wet	land waters:	acres. List t	ype of aquatic re	source: .
Wetlands:	acres.			

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).

Lakes/ponds: acres.

Other non-wetland waters: acres. List type of aquatic resource:

Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

.

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 Office concurs with data sheets/delineation report.
 Office does not concur with data sheets/delineation report.
 Data sheets prepared by the Corps:
 Corps navigable waters' study:
 U.S. Geological Survey Hydrologic Atlas:
 USGS NHD data.
 USGS 8 and 12 digit HUC maps.
 - U.S. Geological Survey map(s). Cite scale & quad name:
 - USDA Natural Resources Conservation Service Soil Survey. Citation:
 - National wetlands inventory map(s). Cite name:
 - State/Local wetland inventory map(s):
 - FEMA/FIRM maps:
 - 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
 - Photographs: \square Aerial (Name & Date):ortho_1-1_1n_s_sc053_2006_1.sid.
 - or Other (Name & Date):
 - Previous determination(s). File no. and date of response letter:
 - Applicable/supporting case law:
 - Applicable/supporting scientific literature:
 - Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Appendix F Previous Jurisdictional Determination U.S. Route 17 Widening - SAC 2009-00631-DJM

Entire SC postion



DEPARTMENT OF THE ARMY CHARLESTON DISTRICT, CORPS OF ENGINEERS 69A HAGOOD AVENUE CHARLESTON, SOUTH CAROLINA 29403-5107

October 13, 2010

Regulatory Division

Mr. Randall D. Williamson, P.E. Environmental Engineer South Carolina Department of Transportation Post Office Box 191 Columbia, South Carolina 29202-0191

Dear Mr. Williamson:

This is in response to your agent's letter dated October 09, 2009, requesting a wetland determination, on behalf of the South Carolina Department of Transportation (SCDOT, PIN 25999) for a 7.5 linear-mile long project area consisting of approximately 397 acres, located along U.S. Route 17 from Hutchinson Island, Georgia to SC Route 170 in Jasper County, South Carolina. The project area is depicted on the enclosed wetland delineation plat that was submitted by letter dated August 25, 2010, and prepared by Jordan, Jones and Goulding, Incorporated. The wetland delineation plat consists of 16 sheets, entitled "Proposed Improvements to US 17 from Hutchinson Island, Georgia to SC 170, Jasper County, South Carolina". The plat consists of a location map dated August 25, 2009, and Figures 4-18 dated August 25, 2010. The wetland delineation portion of the plat was revised and a copy provided to our office on August 30, 2010.

Based on several on-site inspections and a review of aerial photography, topographic maps, National Wetland Inventory maps, soil survey information, and information provided by your agent, it has been concluded that the boundaries shown on the referenced, revised sketch are a reasonable approximation of the location and boundaries of the wetlands found on this site. The property in question contains approximately 107.07 acres of tidal marsh and open water tidal "critical area", and 68.874 acres of federally defined jurisdictional freshwater wetlands and other waters of the United States, for a total of 175.944 acres of wetlands or other waters of the United States, which are subject to the jurisdiction of this office. The location and configuration of these areas, as well as their status relative to jurisdiction, are reflected on the plat referenced above.

It should be clearly noted that the decision of the U.S. Supreme Court to exclude certain waters and wetlands from federal jurisdiction under the Clean Water Act has no effect on any state or local government restrictions or requirements concerning aquatic resources, including wetlands. You are strongly cautioned to ascertain whether such restrictions or requirements exist for any area in question before undertaking any activity which might destroy or otherwise impact these wetland resources.

Please note that the actual boundary of wetlands is approximate and, therefore, is subject to change and not appealable; however, the determination of jurisdiction over these wetlands is final and this approved jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use. If a

permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified sketch should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted.

In future correspondence concerning this matter, please refer to SAC 2009-00631-DJM. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management (OCRM). A copy of this letter is being forwarded to them for their information.

If you have any questions concerning this matter, please contact Michael R. Patrick at 843-329-8044, or toll free at 1-866-329-8187.

Sincerely,

11-0061

Travis G. Hughes Chief, Special Projects Branch

Enclosures: Basis for Jurisdiction Notification of Appeal Options

Copy Furnished:

2

Mr. H. Stephen Snyder S.C. Department of Health and Environmental Control Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405

Jacobs

Jordon, Jones and Goulding, Inc. Attn: Mr. Adam H. Karagosian 309 East Morehead Street, Suite 110 Charlotte, North Carolina 28202



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

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

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): Sept 17, 2010

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Charleston (SAC), US 17 Roadway Improvements from Hutchinson Island, Georgia to SC 170, SAC 2009-00631-DJM

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Form 1 of 1

State: South Carolina County/parish/borough: Jasper County City: NA

Center coordinates of site (lat/long in degree decimal format): Lat. 32.17806° N, Long -81.07725° W.

Universal Transverse Mercator:

Name of nearest waterbody. Savannah River/Back River Complex.

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Savannah River/Back River Complex Name of watershed or Hydrologic Unit Code (HUC): 03060109

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 Π different JD form.

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

- Office (Desk) Determination. Date: March 04, 2010
- Field Determination. Date(s): March 16 2010 and May 19 2010

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area [Required]

- Waters subject to the ebb and flow of the tide.
- Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Explain: Savannah River, Back River, and Little Back River prove access to international ports, as well as their historic significance in rice and international and national commerce.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

- a. Indicate presence of waters of U.S. in review area (check all that apply): 1
 - TNWs, including territorial seas \boxtimes
 - \boxtimes Wetlands adjacent to TNWs
 - Relatively permanent waters2 (RPWs) that flow directly or indirectly into TNWs
 - Non-RPWs that flow directly or indirectly into TNWs
 - Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
 - Impoundments of jurisdictional waters
 - Isolated (interstate or intrastate) waters, including isolated wetlands
- b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: Open Water Canal 1, 2, 4, 5, 7, 8, 9, 10, 10A, 10B, 11, 12, 13, 17, 18, and 19, and Streams 1, 2, and 3 linear fect: 10,661 with varying widths (ft) and/or 28.714 acres.

Wetlands: Wetlands 1-11, 13-32, 34-45, 45A, 48-50, 52, and 53 and POWs 6 and 15 for a total of 147.23 acres, which includes TNW wetlands as well as those areas above the plane of OHWL and MHWL This calculation is based on the consultant's acreage computations.

Note: an aggregate of wetlands and canals were delineated by the SCDOT consultant, due to the linear nature of the roadway project and are located within the Savannah River/Back River Complex that was created for the purpose of historic rice cultivation. A number of the canals were constructed within the TNW portion of the Complex (specifically Canals 17-19) Streams 3-4 and Weilands 32, 36, 38, 39, 43, 45, 45A, 50, 52, and 53 are situated in the TNW portion of the Complex. The remaining canal/stream/wetland designations are located within the adjacent wetland the TNW portion of the Complex, to

Boyes checked below shall be supported by completing the appropriate sections in Section III below

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (eg. typically 3 months).

include Open Water Canals 1, 2, 4, 5, 7-10, 10A, 10B, and 11-13, Stream 1, and Wetlands 1-11, 13-22, 24-27, 29-31, 34, 35, 37, 40-42, 44, 48, and 49 and POWs 6 and 15

- c. Limits (boundaries) of jurisdiction based on. 1987 Delineation Manual and the establishment of MHW and OHWM. Elevation of established OHWM (if known):
- 2. Non-regulated waters/wetlands (check if applicable):3
 - Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional Explain. Stormwater features, which are not considered waters of the United States.

SECTION III: CWA ANALYSIS

A. TNWS AND WETLANDS ADJACENT TO TNWS

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

1. TNW

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Identify TNW Savannah River/Back River Complex.

Summarize rationale supporting determination: Navigable in fact and observed tidal influence of within wetlands and manmade channels that were placed within said TNW wetlands that were converted to historic rice field, which are no longer active The majority of the wetland area subject to this delineation are contained within the Savannah National Wildlife Refuge.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": Review of USGS quads, local soil survey, infrared aerial photography support the adjacency call. These areas directly abut and are located outside the plane on influence of MHW and OHWL of the Savannah River/Back River/Little Back River, which are navigable in fact.

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

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

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

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

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

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

(i) General Area Conditions: Waterched size: Rick Lie

Watershed size:	Pick	List
Drainage area	Pick	List
Average annual rai	nfall:	inches
Average annual sno	owfall:	inches

Supporting documentation is presented in Section III F.

^{*} Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West

ii) Phy	sical Characteristics:						
(a)	Relationship with TNW.						
	Tributary flows directly into TNW.						
	Tributary flows through Pick List tributaries before entering TNW						
	Project waters are Pick List river miles from TNW						
	Project waters are Pick List river miles from RPW.						
	Project waters are Pick List aerial (straight) miles from TNW.						
	Project waters are Pick List aerial (straight) miles from RPW.						
	Project waters cross or serve as state boundaries. Explain:						
	Identify flow route to TNW ⁵ :						
	Tributary stream order, if known:						
(b)	General Tributary Characteristics (check all that apply);						
	Tributary is: 🔲 Natural						
	Artificial (man-made). Explain:						
	Manipulated (man-altered) Explain:						
	Tributary properties with respect to top of bank (estimate):						
	Average width: feet						
	Average depth: feet						
	Average side slopes: Pick List,						
	Primary tributary substrate composition (check all that apply):						
	Silts Sands Concrete						
	Cobbles Gravel Muck						
	□ Bedrock □ Vegetation. 1ypc/% cover. □ Other. Explain:						
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:						
	Presence of run/riffle/pool complexes. Explain:						
	Tributary geometry: Pick List						
	Tributary gradient (approximate average slope): %						
(c)	Flow:						
	Tributary provides for: Pick List						
	Estimate average number of flow events in review area/year: Pick List						
	Describe flow regime:						
	Other information on duration and volume:						
	Surface flow is: Pick List. Characteristics:						
	Subsurface flow: Pick List. Explain findings:						
	Dye (or other) test performed:						
	Tributary has (check all that apply):						
	Bed and banks						
	OHWM ⁶ (check all indicators that apply):						
	clear, natural line impressed on the bank in the presence of litter and debris						
	changes in the character of soil destruction of terrestrial vegetation						
	shelving the presence of wrack line						
	U vegetation matted down, bent, or absent U sediment sorting						
	L leaf litter disturbed or washed away L scour						
	used interview of the second o						
	water staming aber (list):						
	Discontinuous OLIWM ⁷ Evaluity						
	I DISCOBUNUOUS UH WIM. EXDIZINI						

^{*} Flow route can be described by identifying, e.g., inbutary a, which flows through the review area, to flow into fributary b, which then flows into TNW ^{*}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 ^{*}Ibid

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply): Mean High Water Mark indicated by:

vegetation lines/changes in vegetation types

High Tide Line indicated by.

- survey to available datum; oil or scum line along shore objects physical markings;
- fine shell or debris deposits (foreshore)

physical markings/characteristics

I tidal gauges

- other (list):

(iii) Chemical Characteristics:

Characterize tributary (c.g., water color is clear, discolored, oily film, water quality, general watershed characteristics, etc.) Explain:

Identify specific pollutants, if known:

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

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings: Fish/spawn areas. Explain findings:

 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:
- 2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

Physical Characteristics: (i)

- (a) General Wetland Characteristics: Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) General Flow Relationship with Non-TNW: Flow is: Pick List. Explain:

Surface flow is: Pick List Characteristics:

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

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

(d) Proximity (Relationship) to TNW

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

(ii) Chemical Characteristics:

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

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:

Habitat for:

- Federally Listed species. Explain findings:
- Fish/spawn areas. Explain findings:
- Other environmentally-sensitive species Explain findings:

Aquatic/wildlife diversity Explain findings:

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

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

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

Size (in acres)

For each wetland, specify the following:

Directly abuts?	(Y/N)
-----------------	-------

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

- Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D.
- Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of
 presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to
 Section III.D:

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

- TNWs and Adjacent Wetlands. Check all that apply and provide size estimates in review area:
 TNWs: approximately 7,158 linear feet with varying width (ft) / 27.84 acres of TNW open water area and approximately 79.23 acres of vegetated wetlands below the plane of MHWL and OHWL.
 Wetlands adjacent to TNWs: 68.0 acres above the plane of MHWL and OHWL.
- 2. RPWs that flow directly or indirectly into TNWs.
 - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: The tributaries/canals were excavated from the Savannah River/Back River Complex for the purpose of maintaining extensive historic rice cultivation. The open water canals were observed and verified during several, site visits and are commonly seen during commutes through the general area. Flow is observed year around.

Tributaries of TNW where tributaries have continuous flow "seasonally" (c.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply).

- Tributary waters. 3503 linear feet varies width (ft) / 0.874 acre
- Other non-wetland waters: acres.
 - Identify type(s) of waters
- Non-RPWs^a that flow directly or indirectly into TNWs. 3.
 - Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
 - Identify type(s) of waters:
- Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. 4.

Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

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

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

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

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

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

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

- 7. Impoundments of jurisdictional waters.9
 - As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
 - Demonstrate that impoundment was created from "waters of the U.S.," or
 - Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 - Demonstrate that water is isolated with a nexus to commerce (see E below).
- E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):10
 - which are or could be used by interstate or foreign travelets for recreational or other purposes.
 - from which fish or shellfish are or could be taken and sold in interstate or foreign commerce
 - which are or could be used for industrial purposes by industries in interstate commerce .
 - Interstate isolated waters. Explain:
 - Other factors. Explain

See Footnote # 3.

To complete the analysis refer to the key in Section III D.6 of the Instructional Guidebook.

¹º 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 CII'A Act Jurisdiction Following Rapanos.

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply).

Tributary waters. linear feet width (ft).

- Other non-wetland waters: acres.
- Identify type(s) of waters:
- Wetlands: acres

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i e., rivers, streams): linear feet, width (ft)
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
- Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
- USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000, Limehouse and Savannah Quads
- USDA Natural Resources Conservation Service Soil Survey. Citation: Jasper County Soil Survey.

.

- National wetlands inventory map(s). Cite name:
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is. (National Geodectic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date):aerial photograph submitted by agent and MapInfo 2006 aerials.
 - or Other (Name & Date): Site photographs presented by SCDOT consultant.
- Previous determination(s). File no. and date of response letter.
- Applicable/supporting case law:
- Applicable/supporting scientific literature:
- Other information (please specify)

B. ADDITIONAL COMMENTS TO SUPPORT JD: The waters of the United States presented in this report are part and parcel to the Savannah River/Back River Complex which is contiguous to the Atlantic Ocean, much of which is navigable in fact. Historically, the overall area, including wetlands of the TNWs, as well as those adjacent wetlands were utilized rice cultivation and highly manipulated. Much of the broad area falls into the Savannah National Wildlife Refuge or its adjacent wetlands.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

R	LEQUEST FOR APPEAL	
Applicant: South Carolina Department of Transportation (PIN 25999)	File Number: SAC 20099-00631-DJM	Date:
Attached is:		See Section below
INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
PROFFERED PERMIT (Standard)	Permit or Letter of permission)	В
PERMIT DENIAL		C
X APPROVED JURISDICTIONAL	_ DETERMINATION	D
PRELIMINARY JURISDICTION	AL DETERMINATION	E
 SECTION I - The following identifies you decision. Additional information may be for Corps regulations at 33 CFR Part 331. A: INITIAL PROFFERED PERMIT: You ACCEPT: If you received a Standard Permit, you authorization. If you received a Letter of Permit authorization. If you received a Letter of Permit authorization. 	r rights and options regarding an administration ound at http://usace.army.mil/inet/functions/o u may accept or object to the permit. you may sign the permit document and return it to the ussion (LOP), you may accept the LOP and your work	ve appeal of the above cw/cecwo/reg or district engineer for final k is authorized. Your
 to appeal the permit, including its terms and co OBJECT: If you object to the permit (Standard the permit be modified accordingly. You must Your objections must be received by the district to appeal the permit in the future. Upon receip modify the permit to address all of your concer the permit having determined that the permit sh district engineer will send you a proffered permit 	nditions, and approved jurisdictional determinations a d or LOP) because of certain terms and conditions the complete Section II of this form and return the form to t engineer within 60 days of the date of this notice, or t of your letter, the district engineer will evaluate your ns, (b) modify the permit to address some of your obj nould be issued as previously written. After evaluatin hit for your reconsideration, as indicated in Section B	issociated with the permit. rein, you may request that to the district engineer. you will forfeit your nght r objections and may: (a) ections, or (c) not modify g your objections, the below.
B: PROFFERED PERMIT: You may acce	pt or appeal the permit	
 ACCEPT: If you received a Standard Permit, y authorization. If you received a Letter of Perm signature on the Standard Permit or acceptance to appeal the permit, including its terms and co 	you may sign the permit document and return it to the ission (LOP), you may accept the LOP and your work of the LOP means that you accept the permit in its en nditions, and approved jurisdictional determinations a	district engineer for final c is authorized. Your utirety, and waive all rights associated with the permit.
 APPEAL: If you choose to decline the proffere may appeal the declined permit under the Corp form and sending the form to the division engine date of this notice. 	ed permit (Standard or LOP) because of certain terms s of Engineers Administrative Appeal Process by corr neer. This form must be received by the division engi	and conditions therein, you pleting Section II of this neer within 60 days of the
C: PERMIT DENIAL: You may appeal the by completing Section II of this form and sending the engineer within 60 days of the date of this notice.	denial of a permit under the Corps of Engineers Admi ne form to the division engineer. This form must be re	nistrative Appeal Process eceived by the division
D: APPROVED JURISDICTIONAL DI	ETERMINATION: You may accept or app	eal the approved JD or
provide new information.		
 ACCEPT: You do not need to notify the Corps date of this notice, means that you accept the a 	to accept an approved JD. Failure to notify the Corp pproved JD in its entirety, and waive all rights to appe	s within 60 days of the eal the approved JD.
 APPEAL: If you disagree with the approved JI Appeal Process by completing Section II of this 60 Forsyth St, SW, Atlanta, GA 30308-8801. To of this notice. 	D, you may appeal the approved JD under the Corps o s form and sending the form to the Division Engineer, This form must be received by the Division Engineer of	of Engineers Administrative South Atlantic Division, within 60 days of the date
E. PRELIMINARY IURISDICTIONAL	FTERMINATION. You do not need to rest	and to the Come

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

SECTION 11 - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

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

		6
ADDITIONAL INFORMATION: The appeal is limited to a revier record of the appeal conference or meeting, and any supplemental clarify the administrative record. Neither the appellant nor the Co you may provide additional information to clarify the location of	ew of the administrative record, the l information that the review office orps may add new information or a information that is already in the a	e Corps memorandum for the er has determined is needed to analyses to the record. However, dministrative record.
POINT OF CONTACT FOR QUESTIONS OR INFOI	RMATION:	
If you have questions regarding this decision and/or the appeal process you may contact the Corps biologist who signed the letter to which this notification is attached. The name and telephone number of this person is given at the end of the letter.	If you only have questions rega also contact the Coordinator for Division Office in Atlanta, Geo Mike Bell 60 Forsyth St, SW Atlanta, G	rding the appeal process you may Appeals in our South Atlantic rgia at (404) 562-5136. GA 30308-8801
RIGHT OF ENTRY: Your signature below grants the right of ent consultants, to conduct investigations of the project site during the notice of any site investigation, and will have the opportunity to p	try to Corps of Engineers personne e course of the appeal process. Yo articipate in all site investigations.	el, and any government ou will be provided a 15 day
	Date:	Telephone number:
Signature of appellant or agent.		





DEPARTMENT OF THE ARMY CHARLESTON DISTRICT, CORPS OF ENGINEERS 69A HAGOOD AVENUE CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO ATTENTION OF

November 14, 2011

Regulatory Division

Mr. Sean Connolly SC Department of Transportation Post Office Box 191 Columbia South Carolina 29202

Dear Mr. Connolly:

Find 33036

This is in response to a request received November 9, 2011, for a wetland determination, prepared by Mr. Collin Lane with Edwards-Pitman Environmental, Inc., for a 51.7 acre tract located along US 17 crossing the Back River, beginning in Chatham County, Georgia and ending in Jasper County, South Carolina. The project area is depicted on the maps you submitted, relabeled and entitled "SAC 2011-01156-DJJ US 17 Bridge Over Back River" and re-dated November 14, 2011.

This plat depicts the surveyed "Critical Area" boundaries as established by your office and approved by the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management (OCRM) on October 12, 2011 and the Georgia Department of Natural Resources, Coastal Resources Division on November 1, 2011. You have requested that this office verify the accuracy of this mapping as a true representation of wetlands or other waters of the United States within the regulatory authority of this office. The property contains 40.01 acres of salt marsh and/or open water tidal "critical area" subject to the jurisdiction of this office.

Based on a review of aerial photography and soil survey information, it has been determined that the surveyed jurisdictional area (i.e., "critical area") boundaries shown on the referenced maps are an accurate representation of jurisdictional areas within our regulatory authority. This office should be contacted prior to performing any work in these areas. You should be aware that the areas identified as jurisdictional may be subject to restrictions or requirements of other state or local government entities.

If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified maps, should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this wetland determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted. This **approved** jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use.

In future correspondence concerning this matter, please refer to SAC 2011-01156-DJJ. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management (OCRM) and/or the Georgia Department of Natural Resources, Coastal Resources Division.

If you have any questions concerning this matter, please contact Elizabeth Williams at 843-329-8044 or toll free at 1-866-329-8187.

Sincerely,

Travis G. Hughes Chief, Special Projects Branch

Enclosures: Basis for Jurisdiction Notification of Appeal Options

Copy Furnished:

S.C. Department of Health and Environmental Control Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405

Mr. Collin T. Lane Edwards-Pitman Environmental, Inc. 1250 Winchester Parkway, Suite 200 Smyrna, GA 30080

Mr. Stanley J Knight, via e-mail





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

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

SECTION I: BACKGROUND INFORMATION

- A. **REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 11-14-11**
- DISTRICT OFFICE, FILE NAME, AND NUMBER: SAC 2011-1156-DJJ, US 17 Bridge over Back River Β.

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:SC County/parish/borough: Jasper/ Chatham City: Center coordinates of site (lat/long in degree decimal format): Lat. 32.102005° N, Long. 81.088747° W. Universal Transverse Mercator:

Name of nearest waterbody: Back River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Back River Name of watershed or Hydrologic Unit Code (HUC): 03060109

- Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
- 12 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.

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

- Office (Desk) Determination. Date: 11-14-11.
- Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are "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]

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

- 1. Waters of the U.S.
 - a. Indicate presence of waters of U.S. in review area (check all that apply): ¹
 - TNWs, including territorial seas \boxtimes
 - Wetlands adjacent to TNWs
 - Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
 - Non-RPWs that flow directly or indirectly into TNWs
 - Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
 - Impoundments of jurisdictional waters
 - Isolated (interstate or intrastate) waters, including isolated wetlands
 - b. Identify (estimate) size of waters of the U.S. in the review area:
 - Non-wetland waters: linear feet: width (ft) and/or 24.3 acres. Wetlands: 15.7 acres.
 - c. Limits (boundaries) of jurisdiction based on: Established by mean (average) high waters. Elevation of established OHWM (if known):
- 2. Non-regulated waters/wetlands (check if applicable):³ [Including potentially jurisdictional features that upon assessment are NOT waters or wetlands]

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

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

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWS AND WETLANDS ADJACENT TO TNWS

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

1. TNW

Identify TNW: Back River.

Summarize rationale supporting determination: the waters and wetlands are subject to ebb and flow of the tide.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

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

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

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

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

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

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

(i) General Area Conditions:

Watershed size:	Pick l	List
Drainage area:	Pick l	list
Average annual rain	nfall:	inches
Average annual sno	wfall:	inches

(ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>
 ☐ Tributary flows directly into TNW.
 ☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW. Project waters are **Pick List** river miles from RPW. Project waters are **Pick List** aerial (straight) miles from TNW. Project waters are **Pick List** aerial (straight) miles from RPW. Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵: Tributary stream order, if known:

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

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

(b)	General Tributary Characteristics (check all that apply):					
2.1	Tributary is: Natural					
	Artificial (man-made). Explain:					
	Manipulated (man-altered). Explain:					
	and a second when the second se					
	Tributary properties with respect to top of bank (estimate):					
	Average width: feet					
	Average depth: reet					
	Average side slopes: Pick List.					
	Primary tributary substrate composition (check all that apply):					
	Silts Sands Concrete					
	Cobbles Gravel Muck					
	Bedrock 🗌 Vegetation. Type/% cover:					
	Other. Explain:					
	Tributary condition/stability [e.g. bighly grading sloughing backs] Explain					
	Presence of run/riffle/nool complexes. Explain:					
	Tributary geometry: Pick List					
	Tributary gradient (approximate average slope): %					
	susami Bunnus (Abbunnun alanBannaba), is					
(c)	Flow:					
	Tributary provides for: Pick List					
	Estimate average number of flow events in review area/year: Pick List					
	Describe flow regime: .					
	Other information on duration and volume:					
	Surface flow is: Pick List. Characteristics:					
	Subsurface flow: Pick List Explain findings:					
	Dye (or other) test performed:					
	Tributary has (check all that apply):					
	\Box Bed and banks					
	OHWM [®] (check all indicators that apply):					
	clear, natural line impressed on the bank in the presence of litter and debris					
	changes in the character of soil destruction of terrestrial vegetation					
	use presence of what have a second se					
	leaf litter disturbed or washed away					
	sediment denosition					
	water staining					
	☐ ustapt enange in plant commanity					
	Discontinuous OHWM. ⁷ Explain:					
	If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):					
	High Tide Line indicated by:					
	in or soum line along shore objects is survey to available datum;					
	hydrogen in vacatoriation hydrogen in vacatorian hydrogen hydrogen in vacatorian hydrogen in vacatorian hydrogen in vacatorian hydrogen in vacatorian hydrogen					
	by the sequence of the sequenc					
	L tidal gauges					
	□ other (list):					
Che	emical Characteristics:					
Cha	racterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, o					
	Explain: .					
Iden	itify specific pollutants, if known:					

⁶A 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. ⁷Ibid.

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

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

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

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(i) Physical Characteristics:

- (a) General Wetland Characteristics: Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain:
 - Project wetlands cross or serve as state boundaries. Explain:
- (b) General Flow Relationship with Non-TNW: Flow is: Pick List. Explain: .

Surface flow is: Pick List Characteristics:

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

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

(d) Proximity (Relationship) to TNW

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

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

Identify specific pollutants, if known:

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

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

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

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

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

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

- 1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
- 2. Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- 3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

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

Provide estimates for jurisdictional waters in the review area (check all that apply):

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
 - Identify type(s) of waters:
- Non-RPWs8 that flow directly or indirectly into TNWs. 3.
 - Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft). acres.
- Other non-wetland waters:

Identify type(s) of waters:

Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. 4.

Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

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

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

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

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

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

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

7. Impoundments of jurisdictional waters.9

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

ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, E. DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain:
- Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸See Footnote # 3.

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

	Provide estimates for jurisdictional waters in the review area (check all that apply):
	Tributary waters: linear feet width (ft). Other non-wetland waters: acres.
	Identify type(s) of waters:
F.	NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY)
	If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
	Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
	Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Bule" (MBR)
	Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
	Other: (explain, if not covered above):
	Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> 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-welland waters: acres. List type of aquatic resource: Wetlands: acres.
	Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply): Non-wetland waters (i.e., rivers, streams): linear feet, width (ft). Lakes/ponds: acres. Other non-wetland waters: acres. Wetlands: acres.
SEC	CTION IV: DATA SOURCES.
A. 3	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:
	Office concurs with data sheets/delineation report
	Office does not concur with data sheets/delineation report.
	Data sheets prepared by the Corps:
	Corps navigable waters' study:
	U.S. Geological Survey Hydrologic Atlas:
	USGS and 12 digit HUC maps
	U.S. Geological Survey map(s). Cite scale & quad name:Savannah GA Topo Map.
	USDA Natural Resources Conservation Service Soil Survey. Citation:
	National wetlands inventory map(s). Cite name:
	State/Local wetland inventory map(s):
	FEIVLA/FINIVI IIIaps:
	in too-year roodplain Elevation is. (National Geodectic vertical Datum of 1929)

- Photographs: Aerial (Name & Date):SCDNR aerial infrared 2006. or Other (Name & Date):
- Previous determination(s). File no. and date of response letter: SAC 2009-00631 (10-13-10), SAS 200701163 (9-5-08).
- Previous determination(s). File no. and dat
 Applicable/supporting case law;
 Applicable/supporting scientific literature:
 Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: Jurisdictional waters on site are subject to ebb and flow of the tide and thus are considered TNWs/ Navigable waters of the US.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Annli	Pile Number	Deter		
Attac	hed is:	Date:		
Attaci	NITIAL PROFEEDED DEDMIT (Standard Dormit or Latter of normission)	See Section below		
-	DROEFEDED DEDMIT (Standard Permit or Letter of permission)	A		
-	PROFFERED FERMIT (Standard Fernin of Letter of permission)	B		
v	ADDOVED HIDISDICTIONAL DETERMINATION			
Λ	DELIMINADY HIDISDICTIONAL DETERMINATION	D E		
	FRELIMINART JURISDICTIONAL DETERMINATION	L E		
 SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331. A: INITIAL PROFFERED PERMIT: You may accept or object to the permit. 				
 AC aut sig to 	• ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.			
• OE the Yc to mc the dis	• OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.			
B: PR	ROFFERED PERMIT: You may accept or appeal the permit			
• AC aut sig to :	ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.			
 AP ma for dat 	APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.			
C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.				
D: Al	PPROVED JURISDICTIONAL DETERMINATION: You may accept or appea	l the approved JD or		
provide new information.				
• AC dat	CCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps were of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal	vithin 60 days of the the approved JD.		
 AP Ap 60 of t 	APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer, South Atlantic Division, 60 Forsyth St, SW, Atlanta, GA 30308-8801. This form must be received by the Division Engineer within 60 days of the date of this notice.			
E: PR	ELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respon	nd to the Corps		

regarding the preliminary JD. The Preliminary JD **is not appealable**. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

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

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

ADDITIONAL INFORMATION: The appeal is limited to a revie record of the appeal conference or meeting, and any supplemental clarify the administrative record. Neither the appellant nor the Co you may provide additional information to clarify the location of	ew of the administrative record, the l information that the review offic orps may add new information or information that is already in the a	te Corps memorandum for the er has determined is needed to analyses to the record. However, administrative record.		
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:				
If you have questions regarding this decision and/or the appeal process you may contact the Corps biologist who signed the letter to which this notification is attached. The name and telephone number of this person is given at the end of the letter.	If you only have questions regarding the appeal process you may also contact the Coordinator for Appeals in our South Atlantic Division Office in Atlanta, Georgia at (404) 562-5136. 60 Forsyth St, SW Atlanta, GA 30308-8801			
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.				
Signature of appellant or agent.	Date:	Telephone number:		
Appendix G Back River Bridge Replacement Permit and Jurisdictional Determination SAC 2011-1156-DIJ

CHARLESTON DISTRICT, CORPS OF ENGINEERS 69A Hagood Avenue Charleston, South Carolina 29403-5107

<u>JOINT</u> <u>PUBLIC NOTICE</u> CHARLESTON AND SAVANNAH DISTRICTS- US ARMY CORPS OF ENGINEERS, and S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL-OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT, and IA DEPARTMENT OF MATURAL RESOURCES, ENVIRONMENTAL PROTECTION DW

GEORGIA DEPARTMENT OF NATURAL RESOURCES- ENVIRONMENTAL PROTECTION DIVISION

REGULATORY DIVISION Refer to: P/N #2011-1156-DIJ

January 6, 2012

Pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), Sections 401 and 404 of the Clean Water Act (33 U.S.C. 1344), the South Carolina Coastal Zone Management Act (48-39-10 <u>et.seq.</u>), the State of Georgia Coastal Management Program, and the Coastal Marshlands Protection Act (Georgia Laws), an application has been submitted by

Georgia Department of Transportation 600 W. Peachtree Street, NW Atlanta, Georgia 30308 and South Carolina Department of Transportation Post Office Box 191, 955 Park Street Columbia, South Carolina 20202-0191

for a permit to replace a bridge and place fill material in wetlands adjacent to and within

The Back River

located approximately one-mile north of Savannah, Georgia, beginning at the end of the existing Talmadge Bridge in Chatham County along the SR 404 Spur/ US 17, continuing over the Back River and ending along US 17 in Jasper County, South Carolina (from: Latitude 32.097732, Longitude -81.091956, to: Latitude: 32.108141, Longitude: -81.082747).). The Back River is a Section 10 navigable waterway and is a Federal Project maintained by the Savannah District, US Army Corps of Engineers.

In order to give all interested parties an opportunity to express their views

NOTICE

is hereby given that written statements regarding the proposed work will be received by the above mentioned offices until

30 DAYS FROM THE DATE OF THIS NOTICE

from those interested in the activity and whose interests may be affected by the proposed work.

BACKGROUND

This Joint Public Notice announces a request for authorizations from the US Army Corps of Engineers, the SC Department of Health and Environmental Control and the State of Georgia. The applicant's proposed work may also require local governmental approval.

The authority of the Secretary of the Army and Chief of Engineers with respect to permitting bridges was transferred to the Secretary of Transportation under the Department of Transportation Act of October 15, 1966, therefore the US Coast Guard (USCG) has the authority and responsibility for permitting bridge. Based on this, the USACE permitting authority for this project would be limited to the placement of the bridge piles in navigable waters and the placement of fill material in jurisdictional wetlands and waters of the US for the bridge approaches.

STATE OF SOUTH CAROLINA

<u>Water Quality Certification and South Carolina Coastal Zone Management Program:</u> The District Engineer has concluded that the discharges associated with this project, both direct and indirect, should be reviewed by the South Carolina Department of Health and Environmental Control in accordance with provisions of Section 401 of the Clean Water Act. As such, this notice constitutes a request, on behalf of the applicant, for certification that this project will comply with applicable effluent limitations and water quality standards. The work shown on this application must also be certified as consistent with applicable provisions the Coastal Zone Management Program (15 CFR 930). The District Engineer will not process this application to a conclusion until such certifications are received. The applicant is hereby advised that supplemental information may be required by the State to facilitate the review.

SCDHEC will receive written statements regarding the proposed work. Comments concerning these actions should be submitted to: South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resources Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405.

STATE OF GEORGIA

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

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

Marshland Protection: This notice also serves as notification of a request to alter coastal marshlands (under

the provision of the Coastal Marshlands Protection Act, Georgia Laws, 1970, p. 939 and as amended), if required. Comments concerning this action should be submitted to the Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, 1 Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

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

DESCRIPTION OF PROPOSED WORK

The proposed work consists of replacing the existing bridge over the Back River on a new alignment. The new alignment will shift the SR 404 Spur/ US 17 interchange with Wayne Shackleford Boulevard on Hutchinson Island to the west of its current location and create a new bridge over the Back River to the west of the existing bridge. The proposed project stays to the west of the existing alignment until merging back with the existing road alignment in Jasper County, South Carolina. The proposed typical section of the bridge would consist of two twelve foot travel lanes, one in each direction, plus eight-foot shoulders on either side for the majority of the project corridor. A southbound deceleration lane would be included to provide a safe exit onto Hutchinson Island, and a northbound deceleration lane would be provided to allow a safe exit onto an unnamed access road in South Carolina on the east side of US 17. The existing bridge will be demolished once the new structure is open to traffic. The purpose of the proposed work is to replace a structurally deficient bridge.

The proposed project would require permanent fill in 1.65 acres of tidal wetlands and the temporary clearing of 0.28 acre of tidal wetlands. The impacts will allow for the construction of the bridge approaches that would tie into the existing roadway network, re-aligning the existing roadway, construction of the ends of the bridge, as well as allowing access to a temporary work bridge that would allow for construction from the South Carolina side of the bridge where water depths are not sufficient to allow for construction from barges. The proposed bridge will utilize scuppers for bridge drainage. The replacement bridge is elevated 3 feet above the existing bridge and is designed with a 0.3 percent grade. The applicant states that due to the length of the bridge and minimal slope, it is not feasible to drain the stormwater back to land.

The applicant states that they have minimized impacts to wetlands as much as practicable. Geotechnical analysis of the structural capacity of the underlying marsh soils revealed that the load capacity was not sufficient to support the roadway with 2:1 slopes without a high probability of roadway failure. As a result, the recommendation from the geotechnical analysis was to utilize 4:1 slopes in order to provide greater structural load capacity. In addition, the proposed design utilizes 70-foot spacing between bents, which is longer than the current spacing. This minimizes the number of bents located in the Back River.

The applicant has calculated the required mitigation credits needed to compensate for the proposed impacts utilizing the April 2004 version of the USACE Savannah District's Standard Operating Procedure for Compensatory Mitigation and the USACE Charleston District's Required Wetland Mitigation Credit Table and Worksheet, as appropriate. No on-site location existed for wetland restoration to be included as a component of the compensatory mitigation for project related impacts to waters of the US. The applicant proposes to compensate for the impacts by purchasing 4.1 tidal marsh mitigation credits for the Georgia impacts form Salt Creek Saltmarsh Mitigation Bank in Chatham County, Georgia. Currently this mitigation bank is not approved; however the applicant proposes to purchase the credits when they become available. Impacts in South Carolina

will be mitigated by debiting 18.2 tidal marsh mitigation credits from SCDOT's Huspa Creek Mitigation Bank in Beaufort County, South Carolina.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Implementation of the proposed project would impact 1.95 acres of estuarine substrates and emergent wetlands utilized by various life stages of species comprising the red drum, shrimp, and snapper-grouper management complexes. Our initial determination is that the proposed action would not have a substantial individual or cumulative adverse impact on EFH or fisheries managed by the South Atlantic Fishery Management Council and the National Marine Fisheries Service (NMFS). Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the NMFS.

Pursuant to Section 7(c) of the Endangered Species Act of 1973 (as amended), the applicant has provided a protected species survey for the property associated with the activity described above. Based upon this report, the District Engineer has determined that the project is not likely to adversely affect the manatee, wood stork, and the shortnose sturgeon and there will be no effect on other Federally endangered, threatened, or proposed species nor will the project result in the destruction or adverse modification of designated or proposed critical habitat. This public notice serves as a request for written concurrence from the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service on this determination.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), this public notice also constitutes a request to Indian Tribes to notify the District Engineer of any historic properties of religious and cultural significance to them that may be affected by the proposed undertaking.

The applicant did coordinate with the South Carolina and Georgia State Historic Preservation Offices early in the planning process. One NRHP eligible site was identified and a Memorandum of Agreement (MOA) was signed between the Federal Highway Administration and Georgia Department of Transportation in 2007. It is the Corps' understanding that since that time, all stipulations of the MOA have been fulfilled. In accordance with the NHPA, the District Engineer has also consulted the latest published version of the National Register of Historic Places for the presence or absence of registered properties, or properties listed as being eligible for inclusion therein, and this worksite does not contain any other registered properties or properties listed as being eligible for inclusion in the Register. To insure that other cultural resources that the District Engineer is not aware of are not overlooked, this public notice also serves as a request to the South Carolina and Georgia State Historic Preservation Offices to provide any information it may have with regard to historic and cultural resources.

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

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the activity on the public interest and will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency (EPA), under authority of Section 404(b) of the Clean Water Act and, as appropriate, the criteria established under authority of Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the project must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the project will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production and, in general, the needs and welfare of the people. A permit will

be granted unless the District Engineer determines that it would be contrary to the public interest. In cases of conflicting property rights, the Corps of Engineers cannot undertake to adjudicate rival claims.

The Charleston District, Army Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this project. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity. Comments should be submitted to:

Charleston District, US Army Corps of Engineers, 69A Hagood Avenue Charleston, South Carolina 29403-5107

If there are any questions concerning this public notice, please contact Elizabeth Williams at 843-329-8044 or toll free at 1-866-329-8187.

































Appendix H Site Photographs

U.S. Route 17 Widening Chatham County, GA Site Photographs



Photograph 1 – Wetland 51/52 on east side of U.S. Route 17

U.S. Route 17 Widening Chatham County, GA Site Photographs



Photograph 2 – Back River on west side of U.S. Route 17

Page 2 of 3

U.S. Route 17 Widening Chatham County, GA Site Photographs



Photograph 3 – Wetland 54 on west side of U.S. Route 17

Page 3 of 3



United States Department of the Interior

Fish and Wildlife Service 105 West Park Drive, Suite D Athens, Georgia 30606 Phone: (706) 613-9493 Fax: (706) 613-6059

West Georgia Sub-Office Post Office Box 52560 Fort Benning, Georgia 31995-2560 Phone: (706) 544-6428 Fax: (706) 544-6419 Coastal Sub-Office 4980 Wildlife Drive Townsend, Georgia 31331 Phone: (912) 832-8739 Fax: (912) 832-8744

August15, 2014

Mr. Edward W. Frierson South Carolina Department of Transportation Post Office Box 191 Columbia, South Carolina 29202-0191

RE: USFWS Log Number 2014-0987

Dear Mr. Frierson:

Thank you for your correspondence initiating informal consultation for South Carolina Department of Transportation (SCDOT) U.S. Highway 17 project in Chatham County, Georgia and Jasper County, South Carolina. The proposed project would widen US 17 and construction of a new bridge over the Back River. The proposed project is located in the Lower Savannah River Watershed, Hydrologic Unit Code (HUC) 03070109. These comments are provided in accordance with the provisions of the Endangered Species Act (ESA) of 1973, as amended; (16 U.S.C. 1531 *et seq.*) to further the conservation of fish and wildlife resources and their habitats.

The proposed project would construct a new bridge parallel to an existing U. S. 17 bridge and widen the approaches from two to four lanes. The field surveys of the project corridor identified suitable habitat for species listed under the ESA. The proposed project would impact estuarine tidal river habitats within the Back River. These habitats are utilized by the West Indian manatee (*Trichechus manatus*)

Based on the information provided in SCDOT's June 2014 ecology assessment, including the associated Special Provisions for the protection of the manatee, we concur with your determination of "not likely to adversely affect" for the West Indian manatee. The requirements of section 7 of the ESA have been satisfied and no further consultation is required. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in this assessment; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

We appreciate the opportunity to comment on your project. If you have any additional questions, please write or call our Coastal Georgia Sub Office staff biologist, Christopher Coppola, at 912-832-8739 extension 6.

Sincerely,

Strant Colucle

Strant T. Colwell Coastal Georgia Supervisor

cc: GDOT, Atlanta, Georgia, Hiral Patel

Gordon Murphy

From: Sent: To: Subject: Attachments: Long, Chad C. <LongCC@scdot.org> Monday, July 14, 2014 10:14 AM Gordon Murphy FW: US 17_Back River Bridge US 17_Back River_USCG Response Letter.pdf

-----Original Message-----From: <u>Randall.D.Overton@uscg.mil</u> [<u>mailto:Randall.D.Overton@uscg.mil</u>] Sent: Monday, July 07, 2014 9:58 AM To: Belcher, Jeffery - FHWA Cc: Long, Chad C. Subject: RE: US 17_Back River Bridge

Shane,

As we discussed on the phone, the attached July 20, 2009 letter from Ms. Evelyn Smart of this office remains valid for the US 17 Back River Bridge project. The Back River is a navigable water of the United States and falls under the jurisdiction of the Coast Guard for bridge permitting purposes however the proposed bridge widening project will not require a formal Coast Guard Bridge permit. The Back River at the proposed project location has been determined to qualify as an Advance Approved waterway for Coast Guard Bridge permitting purposes. All stipulations outlined in the attached letter remain valid.

Thank you and please let me know if you have questions or concerns about this determination.

Randall Overton Federal Permit Agent USCG 909 SE 1st Ave Suite 432 Miami, Fl 33131 (305) 205-0795 Cell (305) 415-6736 Office

-----Original Message-----From: prvs=2539bc900=Jeffrey.Belcher@dot.gov [mailto:prvs=2539bc900=Jeffrey.Belcher@dot.gov] On Behalf Of Jeffrey.Belcher@dot.gov Sent: Wednesday, July 02, 2014 9:15 AM To: Overton, Randall D CIV Cc: LongCC@scdot.org Subject: US 17_Back River Bridge Importance: High

Randall,

Attached is the 2009 response letter received from the USCG stating that a permit is not needed for the project. Based on our conversation this morning we are following-up with your office regarding the validity of the permit determination since the letter stated that the decision would need to be reassessed if the new bridge was not constructed within two years. The letter also states that an updated Bridge Project Questionnaire be submitted with the reassessment. Please let us know if a new questionnaire is needed at this time.

Much thanks for your assistance,

J. Shane Belcher

Environmental Coordinator

Federal Highway Administration

1835 Assembly Street, Suite 1270

Columbia, SC 29201

Phone: 803-253-3187

Fax: 803-253-3989



United States Department of the Interior

FISH AND WILDLIFE SERVICE 176 Croghan Spur Road, Suite 200 Charleston, South Carolina 29407

July 1, 2014





JUL - 2 2014

Mr. Edward Frierson NEPA Coordinator S.C. Department of Transportation P.O. Box 191 Columbia, SC 29202-0191

Environmental Management SCDOT

Re: Biological Survey, US-17 Widening, Chatham County, Georgia and Jasper County, South Carolina FWS Log No. 2014-I-0318

Dear Mr. Frierson:

The U.S. Fish and Wildlife Service (Service) has received the biological survey for the South Carolina Department of Transportation's (SCDOT) proposed widening of US Hwy 17 in Jasper County, South Carolina, and the construction of a new bridge over the Back River in Chatham County, Georgia. This survey was conducted due to a change in the original project's scope of work. The new project has been reduced from 7.5 miles to 4.2 miles in length and will begin at the US Hwy 17/SC Route 315 intersection proceeding south to the South Carolina state line shared with Georgia. In addition, a new bridge will be constructed over the Back River adjacent to the bridge currently under construction. In accordance with the National Environmental Policy Act of 1969 (NEPA) and the Endangered Species Act of 1973 (ESA), SCDOT performed a survey to determine the presence of federally protected species in the project's corridor.

A Biological Assessment (BA) was developed by SCDOT for the original 7.5 mile project in 2009. The Service reviewed the BA and concurred with SCDOT's findings on December 1, 2009. Upon review of the current, shorter project, the Service again concurs that the road widening is not likely to adversely affect the species addressed in the BA. However, the new project includes the construction of a bridge over the Back River which represents a potential threat to the West Indian manatee not considered in the Service's 2009 correspondence.

The SCDOT has evaluated the proposed bridge construction and recognizes its potential to impact the manatee. Therefore, in order to reduce potential harm SCDOT will require that equipment usage and materials for the bridge may not impede 50 percent of the river

channel to allow safe passage for the manatee during bridge construction. In addition, all contractors involved in the construction will be required to comply with the Service's Standard Manatee Conditions for In-water Work. With these precautions SCDOT has determined that the proposed activity is not likely to adversely affect the manatee.

Upon review of the information provided, the Service concurs with the SCDOT determination that US Hwy 17 bridge construction over the Back River may affect, but is not likely to adversely affect the West Indian manatee. Please note that obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action. The Service recommends SCDOT contact the National Oceanographic and Atmospheric Administration regarding consultation requirements and determinations regarding the Atlantic and shortnose sturgeon.

For informational purposes only, the Service has included a list of species that have been petitioned for listing under the Endangered Species Act as well as Candidate Species. These species are collectively referred to as "At-Risk Species" (ARS). We have included a list of the ARS that may occur in Jasper County, South Carolina. Although there are no Federal protections afforded to ARS, please consider including them in your survey efforts. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at:

http://www.fws.gov/southeast/candidateconservation.

If you have any questions regarding the Service's determination, please do not hesitate to contact Mr. Mark Caldwell at (843) 727-4707 ext. 215, and reference FWS Log No. 2014-I-0318.

Sincerely,

. homan D. McCoy

Thomas D. McCoy Acting Field Supervisor

TDM/MAC

- Contact National Marine Fisheries Service (NMFS) for more information on this species
- ** The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species
- ARS At-Risk Species Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.
- BGEPA Federally protected under the Bald and Golden Eagle Protection Act
- C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species
- CH Critical Habitat
- E Federally Endangered
- P or P CH Proposed for listing or critical habitat in the Federal Register
- S/A Federally protected due to similarity of appearance to a listed species
- T Federally Threatened

COUNTY	CATEGORY	COMMON NAME	SCIENTIFIC NAME	STATUS
Jasper	Amphibian	Frosted flatwoods salamander	Ambystoma cingulatum	T, CH
	Bird	Baid eagle	Haliaeetus leucocephalus	BGEPA
	Bird	Black rail	Laterallus jamaicensis	ARS
	Bird	Black-capped petrel	Pterodroma hasitata	ARS
	Bird	MacGillivray's seaside sparrow	Ammodromus maritimus macgillivraii	ARS
	Bird	Piping plover	Charadrius melodus	T, CH
	Bird	Red-cockaded woodpecker	Picoides borealis	E
	Bird	Red knot	Calidris canutus rufo	Р
	Bird	Wood stork	Mycteria americana	T
	Crustacean None Found			
	Fish	American eel	Anguillo rostroto	ARS
	Fish	Atlantic Sturgeon*	Acipenser oxyrinchus*	E
	Fish	Blueback herring	Alosa aestivalis	ARS
	Fish	Robust redhorse	Moxostoma robustum	ARS
	Fish	Shortnose sturgeon*	Acipenser brevirostrum*	E
	Insect	Rare skipper	Problema bulenta	ARS
	Mammal	Finback whale*	Balaenoptera physalus*	E
	Mammal	Humpback whale*	Megaptera novaengliae*	E
	Mammal	Right whale*	Balaena glacialis*	E
	Mammal	West Indian manatee	Trichechus manatus	E
	Mollusk	Altamaha arcmussel	Alasmidonta orcula	ARS
	Mollusk	Brother spike	Elliptio fraterna	ARS
	Plant	American chaffseed	Schwalbea americana	E
	Plant	Bog spicebush	Lindera subcoríacea	ARS
	Plant	Canby's dropwort	Oxypolis canbyi	E
	Plant	Carolina-birds-in-a-nest	Macbridea caroliniana	ARS
	Plant	Ciliate-leaf tickseed	Coreopsis integrifolia	ARS
	Plant	Ocmulgee skullcap	Scutellaria ocmulgee	ARS
	Plant	Pondberry	Lindera melissifolia	E
	Reptile	Eastern diamondback rattlesnake	Crotalus adamanteus	ARS
	Reptile	Florida pine snake	Pituophis melanoleucus mugitus	ARS
	Reptile	Gopher tortoise	Gopherus polyphemus	С
	Reptile	Green sea turtle**	Chelonia mydas**	T
	Reptile	Kemp's ridley sea turtle**	Lepidochelys kempii**	E
	Reptile	Leatherback sea turtle**	Dermochelys coriacea **	E
	Reptile	Loggerhead sea turtle**	Coretto coretto**	P-CH, 1
	Reptile	Southern hognose snake	Heterdon simus	ARS
	Reptile	Spotted turtle	Clemmys guttato	ARS

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit http://www.dnr.sc.gov/species/index.html.

Interagency Meeting Minutes June 17, 2014

US 17 Widening from SC 315 to GA State Line Meeting Minutes

June 17, 2014

1:00 PM

Present:

South Carolina Department of Transportation (SCDOT) – Chad Long (Organizer, ENV project manager), Nicole Riddle, Will McGoldrick, Russell Chandler Baker – Gordon Murphy (ENV Project manager), Renée Flinchum-Bowles Federal Highways Administration (FHWA) – Shane Belcher US Army Corps of Engineers (USACE) – Elizabeth Williams US Fish and Wildlife Services (USFWS) – Mark Caldwell SC Department of Health and Environmental Control- Ocean and Coastal Resource Management (SCDHEC-OCRM) – Paul Wojoski National Oceanic and Atmospheric Administration-National Marine Fisheries (NOAA-NMFS) – Jaclyn Daly SC Department of Natural Resources (SCDNR) – Susan Davis SCDHEC Water Quality division – Don Padgett (via conference call)

Introduction

SCDOT opened the meeting, introductions were made, and a brief overview of where the project left off to date and then the current project overview was handed over to Baker.

Overview of the Project Discussed

SCDOT began the discussion by explaining a brief history of the project development and a project timeline. Baker was brought in to help in the environmental documentation and permitting phases of the project; they will also be conducting the bridge design for the bridge that crosses Back River. There have been many major changes since the conception of the project. The greatest of these changes were the logical termini. Originally, the termini were SC 170 to GA state line, however, traffic studies conducted in 2012, provided data to show most traffic was turning off to SC 315. The ADT from GA to SC 315 was 13,000; less than half continued to SC 170. Based on traffic data the termini were then changed to the current proposal from SC 315 to the Georgia SR 404 Spur. SCDOT conducted most of the design for the SC portion of the widening. There have been some delays in getting information from GDOT and this has slowed the project. GDOT has provided survey data and design for the GA portion of the widening project.

Three alternatives were discussed. (refer to the fact sheet)

Baker mentioned alternatives 1 and 2 are ideal because it allows for an area for stormwater treatment. The use of a concrete median would require a closed system for stormwater as to not impact the wetlands on both sides of the project. This would add considerable cost to the project and require more maintenance in the future. The grassed median provides for an area for storage and treatment of stormwater. A cable barrier would also need a wider median.

Baker explained the GDOT bridge is 2-lane and SCDOT will be required to build a replacement bridge with an additional 2 lanes in order to tie into the widening project. It was noted that the project will be covered in one EA but will be let in separate phases under one permit. The reasoning behind the two lane bridge is SCDOT changed the termini too late into the GDOT design process and GDOT was not willing to change the design. The SC bridge will be very close to the current alignment of the existing bridge. It will likely be built between the existing bridge and the new GDOT bridge.

Baker explained the wetlands delineation was conducted in 2008/2009, and approved by the USACE. However, no Critical Area plat was made for OCRM. A new delineation was conducted and all lines were collected by survey. The survey should be complete by the end of June 2014. It will include Freshwater Wetlands and Critical Area. The GA data has been approved by their version of OCRM. The impacts table included in the project fact sheet only represents 3.8 miles of the total 4.5 miles of the widening. Those figures will be updated as the design continues towards completion. The impacts listed are for fill and temporary clearing.

Baker explained the largest impacts to the project will be wetlands. There are a few businesses on the West side of the travelway that may be affected. There are no major historical or cultural impacts. The Biological Assessment did not originally include Back River. It has been updated and the Atlantic Sturgeon, Shortnose Sturgeon, and Manatee have all been added to the list of species of concern.

Two alignments to the bridge across Back River to GA were viewed and discussed. There are two alignments to consider, East and West. Neither has been selected as a preferred at this time. Both can tie into what SCDOT has designed for the widening project. The alignment to the West was determined to have less navigational impacts.

Agency questions, concerns, and suggestions/ SCDOT response

SCDNR

Question: What is the design speed for the corridor and the types of traffic?

Response: There is approximately 10% truck traffic according to the traffic count. The posted speed limit is 55 but the design speed is likely higher.

Comment: Mentioned the US 17 Widening through the ACE basin as a model to consider. 21' medians were mentioned and asked why that is not feasible for this project.
Response: The project is only 4.5 miles long and the 21' median would create driver expectancy issues and would require a total redesign to meet the 21' width. SCDOT will explore the ACE Basin design in greater detail.

Question: Why would there be clearing within the marsh?

Response: Clearing would take place in the upland island areas that contain FW wetlands that consist of shrubs and upland trees that will impede construction activities.

Comment: SCDNR as well as USFWS stated that they would not be in support of using Clydesdale as suitable mitigation for this project

USFWS

Comment: Added that SCDOT/ Baker should look into the Combahee River Crossing project and design similarly.

Question: Is the 10' inside shoulder part of the median and is the project alignment is to the East?

Response: Yes to both

Question: Are there are any wetland savings by aligning to the West?

Response: Will look further into.

Question: Asked about building the new bridge on the old pilings of the bridge to be removed and suggested old bridge be used for public recreation?

Response: Those pilings will be removed and the goal of setting up a public fishing access would not be feasible. The new bridge could not be built on the existing bridge alignment because it would be difficult to build around the existing pilings that will be left in the ground once they are cut off.

Question: Asked about the impact totals and if the table listed represented the entire project?

Response: No, these impacts only represent the current design. When the design is complete a new impact assessment will take place and agencies will be updated accordingly.

Comment: Stated that they would handle all BA correspondence but suggested SCDOT/Baker send the BA to the USFWS, Georgia office and their comments would also be addressed in the BA.

Question: Asked what was being considered for mitigation. Concerns were voiced over using the potential banks of Murray Hill and Clydesdale. USFW, stated they will not consider that acceptable and suggested HUSPA Creek Mitigation Bank?

Response: If Clydesdale is approved by the USACE that it will be the top choice for mitigation.

Comment: Suggested PRM possibilities within the Savannah River Wildlife Refuge. Possible restoration activities or land acquisitions.

NOAA-NMFS

Comment: The impacts to marsh from the GDOT project should not be included in the acreage impacts from the SCDOT project. However, they should be discussed in cumulative impact section.

Comment: The State of Georgia has in-water work windows for stripped bass spawning and SCDOT should look into when that is for more in-water work window context.

Question: Asked if Huspa Creek mitigation bank is available to use would it be required for SCDOT to use those credits?

Response: There would not be enough credits and SCDOT does not want to use all of those credits available for this project.

USACE response: Explained while a banking instrument is preferred, it is not required. Any bank approved by the USCAE is preferred, but if PRM is available, closer to the project area, and creates a more beneficial mitigation role for the watershed PRM is acceptable. In order to not drain all banks, PRM is a viable option. However, SCDOT must propose PRM in order to use it as an option and it will need to be justified as to why it's a viable option.

Comment: Stated the surround wetlands are not high quality. They have been impacted and manipulated already and do not look to be high quality.

Question: How many culverts are along the corridor and did we plan to replace any?

Response: There are two locations but are not planning to be replaced or extended. It was briefly discussed that increasing culverts or cross pipes to increase tidal flow could result in some onsite mitigation credits. However, this was quickly dismissed since both sides of the roadway are being regularly inundated with water therefore, this would not make any improvement to hydrologic flow.

Question: Requested an estimated timeline

Response: The Draft Environmental Assessment is projected to be complete by July 2014, a public hearing in September 2014, FONSI, then the permitting process. A permitting discussion needs to take place, especially the mitigation component.

Question: Asked about EFH documentation. Requested that the document not discuss tidal salt marsh in general but really get into details about the areas that will be impacted. Their qualitative and quantitative aspects should be discussed. Be specific and be sure to include an oyster survey.

Comment: Noted that there are some questionable FW v Tidal areas on the map provided. Wetlands 42-48 showed FW in what looks to be an extremely tidal area. Those areas will be double checked for correctness. Freshwater tidal wetlands and estuarine wetlands are both EFH. True freshwater wetlands (no influence of the tide or salinity) are not EFH.

A lengthy discussion of FW tidal v Brackish waters and which one ranks higher or lower, or how they should be viewed for mitigation purposes was held.

Question: Asked about the difference in slopes on Alternatives 1 and 2. Why is 1 6:1 and 2 4:1?

Response: It was explained that 6:1 slopes are used as SCDOT standard and this was an avoidance and minimization action taken into account by SCDOT design.

Comment: It was also discussed that GDOT had found that instability of the soils in this area created a hazard and they used 6:1 slopes to avoid any major maintenance issues in the future as well as safety.

Response: Will look into.

Comment: Requested that for impacts analysis that FW and CA impacts be separated and the types of impacts to each be separated.

USACE

Question: Asked if the bridge and the widening will be one permit document.

Response: Yes but the project will be constructed in phases. An extended life permit will be requested due to the different timelines of the bridge and the widening project. Currently there is a funding issue for the widening that must be resolved. GA needs to add it to their long range plan before FHWA has assurance funding will be available. Due to additional costs of ground improvements (10-15 million dollars) and estimated mitigation costs (10-15 million dollars) there is a funding shortfall in SC as well.

Question: Asked if the surcharged soil will be placed within the footprint of the project.

Response: Yes

FHWA

Question: About whether a Coast Guard permit would be needed.

Response: No Coast Guard permit is required. Coordination has taken place already for an exemption request but will re-initiate to verify.

Question: Asked about the timing of the EFH document

NOAA-NMFS response: The EFH document would be submitted during the NEPA process and approval of the EFH document would occur prior to the permit. It will require the design to be final so NOAA-NMFS can properly review the document.

Comment: Requested that navigational concerns be given its own section within the EA document.

SCDHEC-OCRM

Question: Asked if there are any utilities to be moved or any other impacts associated with utilities.

Response: Will look into further

Comment: Concern over drainage to the marsh

Response: Earthen grassed swales will be used to store and treat stormwater before entering the marsh. There were no objections to this idea from any agency. Baker added that there are no impaired waterbodies for this project in SC or GA.

Meeting Conclusion:

SCDOT closed the meeting by explaining meeting minutes would be written up and disseminated to all in attendance for their records. The meeting minutes will be included in the NEPA document in order to verify agency coordination.

The meeting concluded at 2:20 PM.



Don Padaett SCDHEC

Meeting Sign-In Sheet Proposed Widening of US 17 Jasper County June 17, 2014

Name	Agency	Email Address
(had Long	SCDOT	· long ccascolot.org
Nicole Riddle	SEDIT	R. deliciplesider.org
Russell Chandler	SCDOT	Chandler TR C scolut.org
Gordon Murphy	Baker	quurphy@mbakerintl.com
Renée Flinchum-Baules	Baker	ryflinchume mbaker intl.com
SHANE BELCHER	FHWA	jeffrey.belcher@dot.gov
ELIZABERT WILLIAMS	USALE	elizabeth.g.william Quace.army.mi
Will MGoldrick	DOF	magoldriwr esclotiory
Mark Caldwell	WSFWS	mark-collwell @fws.gov
Paul Wojodzi	SC PHEC OCRM	Nojoskpa@ thec.sc.gov
Jaclyn Daly	NOAA	jaclyn. dalye hoba gov
Susan Davis	SLONR	DavisseDNR, SL. JOU

Letter of Interest and Responses April 15, 2014



South Carolina Department of Transportation

April 15, 2014

<u>Electronic Correspondence:</u> You are receiving this document in electronic format in an effort to save resources and expedite delivery.

Re: Letter of Intent for the Proposed US 17 Widening Project in Jasper County, South Carolina and Chatham County, Georgia. PIN: 39168 File No.: 27.039168

Dear Sir/Madam:

The South Carolina Department of Transportation (SCDOT) proposes to improve U.S. 17 (Speedway Boulevard) from the Georgia SR 404 Spur on Hutchinson Island in Chatham County, Georgia, approximately four miles north to S.C. 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. 17 between Hutchinson Island and S.C. 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (refer to Figure 1). With regards to the existing bridge, the Georgia Department of Transportation (GDOT) has applied for and received a permit to construct a new bridge. As part of this permitted action, GDOT will remove the existing bridge once the new bridge is completed.

The purpose of this letter is to update you on this project as well as solicit any additional information that you may have related to the potential social, economic, and environmental impacts of the proposed project on the area. The SCDOT, in consultation with the Federal Highway Administration (FHWA), are preparing an Environmental Assessment (EA) to evaluate the benefits and impacts from the proposed project, in accordance with the *National Environmental Policy Act* (NEPA) and implementing regulations.

As shown on Figure 1, land adjacent to the study corridor is mostly undeveloped and consists of wetland areas. The Savannah College Equestrian Center is located on the east side of U.S. 17, just south of the intersection of South Okatie Highway.

Preliminary field work has been completed for wetlands and waters of the U.S., and palustrine forested, palustrine scrub-shrub, palustrine emergent wetlands, as well as estuarine emergent wetlands are present throughout the study corridor. The project will be designed to minimize wetland impacts to the maximum extent practicable. Coordination will occur with the USACE, South Carolina Department of Health and Environmental Control – Ocean and Coastal Resource Management, and Georgia Department of Natural Resources – Environmental Protection Division as the project continues.

In accordance with Section 7 of the *Endangered Species Act*, a database search and field survey was previously completed in 2010 for federally protected species. This information will be supplemented with any new data available since this survey. Due to the presence of essential fish habitat, an assessment will be completed and coordination will occur with the National Marine Fisheries Service.

Previous cultural resource surveys were completed for this project. Based on the results of the field survey the study corridor in South Carolina, the South Carolina State Historic Preservation Office (SHPO) determined that no historic properties would be affected by the proposed undertaking. With regards to the cultural resources survey in Georgia, a submerged late 19th century sailing vessel was found in the Back River near the river bank of Hutchinson Island. Georgia SHPO determined that if the U.S. 17



Bridge was replaced over the Back River, that it would have an adverse affect to this historic resource. A Memorandum of Agreement was signed with the Georgia SHPO to mitigate the adverse effect through data excavation and documentation. An Archaeological Mitigation Report was prepared documenting this resource, and will be included as an Appendix to the EA. If any surveys are needed outside the previously studied corridor, then additional coordination will occur with the Georgia and South Carolina SHPOs.

A noise analysis will also be conducted for the study area to predict future noise levels in accordance with the SCDOT and GDOT Noise Policies. Through conformance with Best Management Practices and standard SCDOT procedures during construction, no adverse impacts to the area's air quality or water quality are anticipated.

As an integral part of the environmental process, the SCDOT is soliciting input from agencies and individuals concerning the potential social, economic, and environmental impacts of the proposed project on the area. To ensure that issues of the proposed project are fully evaluated, the SCDOT requests your written response concerning any beneficial or adverse impacts of the project relating to the interest of your agency. The SCDOT looks forward to receiving your comments on the project within 30 days of the receipt of this letter. Comments should be addressed to the following:

Mr. Chad Long Archaeologist/NEPA Environmental Coordinator SCDOT P.O. Box 191 Columbia, SC 29201

Your expeditious handling of this notice will be appreciated. Should you have any questions, please contact me at (803) 737-1396.

Sincerely,

Chad Long

Archaeologist/NEPA Environmental Coordinator South Carolina Department of Transportation





OFFICE OF THE JASPER COUNTY ADMINISTRATOR

358 Third Avenue – Courthouse Square – Post Office Box 1149 Ridgeland, South Carolina 29936 – 843-717-3690 – Fax 726-7800 – TDD 726-7519

Andrew P. Fulghum County Administrator

April 24, 2014

afulghum@jaspercountysc.gov

VIA ELECTRONIC MAIL TO longcc@scdot.org

Chad Long, Archeologist/NEPA Environmental Coordinator South Carolina Department of Transportation Post Office box 191 Columbia, South Carolina 29201

RE: Letter of Intent for the Proposed US 17 Widening Project in Jasper County, South Carolina and Chatham County, Georgia PIN: 39168 File No.: 27.039168

Dear Mr. Long:

I have received your letter of April 15, 2004. Know that Jasper County favors the construction of this project that has been planned, designed, fully funded, and slated for construction in 2015. Jasper County offers the following response to your solicitation for input as to the potential social, economic and environmental impacts of the project:

Social

The potential social impacts are positive. The project will improve the safety of a heavily traveled and dangerous road that has lacked routine maintenance and provides direct access to the cultural amenities located within Jasper County such as the Savannah College of Art and Design's Equestrian Center and the federal Savannah Wildlife Refuge.

Economic

The potential economic impact is positive. This particular section of Rt. 17 serves as a major commuting thoroughfare for residents who travel between the two states and commute back and forth to work from Lowcountry South Carolina locations to Georgia. It is also a critical piece of infrastructure to serve the future Jasper Ocean Terminal as identified jointly by SCDOT and the South Carolina Ports Authority in the 2008 Jasper Port Infrastructure Summary.

Environmental

The potential environmental impacts are negligible as a majority of the work abuts a federal dredge spoil area.

I would also like to add the fact that I am astounded that your advisory of April 15, 2014 made no mention of what appears to be a new political ploy by SCDOT to delay the construction by blaming new, federal seismic regulations. I am further disappointed that I had to learn that information from a telephone conversation with you and not by official notice of the SCDOT.

page two of two

VIA ELECTRONIC MAIL TO longcc@scdot.org Chad Long, Archeologist/NEPA Environmental Coordinator South Carolina Department of Transportation April 24, 2014

We have all watched as SCDOT has wasted state resources by not joining with GADOT to enhance the construction of the Back River Bridge. Now, it appears as though SCDOT is attempting to place more political hurdles in front of another important project in Jasper County.

By this letter, Jasper County officially requests a meeting with recently appointed SCDOT Secretary Janet Oakley to discuss the actual status of the project, unequal application of the new federal seismic regulations, and environmental injustice.

Thank you very much for your time. We look forward to SCDOT's response.

Very truly yours,

Andrew P. Fulghum, ICMA-CM County Administrator

APF/hj cc: Janet Oakley via electronic mail to: janetoak@aol.com

1.0

South Carolina Department of Natural Resources

PO Box 12559 Charleston, SC 29422 843.953.9003 Office 843.953.9399 Fax Daviss@dnr.sc.gov

April 23, 2014

Mr. Chad Long **Environmental Project Manager** SCDOT P.O. Box 191 Columbia, SC 29202-0191

Alvin A. Taylor Director Robert D. Perry Director, Office of **Environmental Programs**

RECEIVED

APR 2 8 2014

SCDOT

Environmental Management Re: Proposed U.S. Highway 17 Widening Project in Jasper County

Dear Mr. Long:

Personnel from the South Carolina Department of Natural Resources have reviewed the proposal to widen U.S. Highway 17 in Jasper County and offer the following comments.

Based on the limited information provided about the proposed project, we are unable to provide any specific comments on potential impacts to natural resources at this time. We would, however, like to express some general comments regarding highway widening projects. As you are well aware, coastal South Carolina contains extensive acreage of both salt and freshwater wetlands. Wetland areas provide valuable habitat for fish and wildlife and are essential in maintaining water quality in adjoining water bodies. Careful consideration should be given to avoiding wetland impacts whenever possible and minimizing unavoidable impacts to the maximum extent possible.

Means for avoiding and minimizing wetland impacts should be incorporated early on in the planning and design stages and should include such things as bridging and culverting wetland crossings, reduced median and shoulder widths, and the use of top down construction methods. Mitigation for unavoidable wetland impacts should be addressed in the planning and environmental review stages of the project and should focus on the in-kind replacement of lost wetland functions. An environmental review process should also consider potential impacts to threatened and endangered species. Information concerning known populations of federal and/or state endangered or threatened species and other sensitive species can be obtained by contacting S.C. Department of Natural Resources staff within the Wildlife Diversity Section, Columbia, S.C. 29202, (803) 734-3917.

We ask that you consider the above outlined issues in the preparation of an Environmental Assessment for this project. Please contact us for further comment when additional information becomes available

Sincerely, 5.0. 5.00

Susan F. Davis Coastal Environmental Coordinator



RECEIVED

Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

April 21, 2014

Environmental Management SCDOT

APR 2 8 2014

Mr. Chad Long Archaeologist/NEPA Environmental Coordinator SC Department of Transportation Post Office Box 191 Columbia, SC 29201

Re: Letter of Intent for the Proposed US 17 Widening Project in Jasper County, South Carolina and Chatham County, Georgia. PIN: 39168 File No.: 27.039168

Dear Mr. Long:

On April 16, 2014, we received a Letter of Intent, dated April 15, 2014, concerning the proposed US 17 widening project in Jasper County, South Carolina. *Based on the information provided, I am responding on behalf of the South Carolina Department of Health and Environmental Control, Bureau of Air Quality (Bureau).*

The Bureau is tasked with implementing the Federal Clean Air Act (1990, as amended) in the State of South Carolina. The Bureau is required to ensure compliance with the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. Currently two criteria pollutants are of particular concern in South Carolina:

- Ozone The 2008 8-hour ozone standards (primary and secondary) are currently set at 0.075 parts per million (ppm). The area represented in this proposal is meeting the 2008 ozone standards. The Environmental Protection Agency (EPA) is currently reviewing the 2008 ozone standard and the proposal of a new standard is anticipated.
- <u>Particulate Matter 2.5</u> (Particulates 2.5 microns in size and smaller) The 2012 standard for maximum daily concentration is set at 35 micrograms per cubic meter. The 2012 standard for the maximum annual concentration is set at 12 micrograms per cubic meter. The area represented in this proposal is meeting the 2012 particulate matter 2.5 standards.

Presently only the eastern portion of York County has been designated nonattainment for the 2008 8-hour ozone NAAQS. For more information on which areas have been designated nonattainment, please visit <u>http://www.epa.gov/oar/oaqps/greenbk</u>. If a project is located in a nonattainment area, it may be subject to prescriptive requirements such as Transportation Conformity or air quality modeling.

An asbestos survey and project license may be required prior to any demolition activities such as deconstruction of a building or removal of structures in the right-of-way of a road project. If you have any questions regarding asbestos regulatory applicability you may contact Robin Mack (with the Bureau's Asbestos Section) at (803) 898-4270 or mackrs@dhec.sc.gov.

All necessary environmental permits for the subject project must be obtained in accordance with applicable state and federal regulations. If you have not already done so, please contact the Bureau of Water at (803) 898-4300 and the Bureau of Land and Waste Management at (803) 898-2000 for input regarding those program areas' assessments of this proposed project.

Emissions from construction equipment are regulated by federal standards. The Bureau would like to offer the following suggestions on how this project can help us stay in compliance with the NAAQS. More importantly, these strategies are beneficial to the health of citizens of South Carolina.

- Utilize alternatively fueled equipment.
- Utilize emission controls applicable to your equipment.
- Reduce idling time on equipment.
- Fugitive dust emissions should be minimized through good operating practices.
- Seek to accommodate all travel modes including bicycle and pedestrian travel when possible.

The Bureau can provide model clean construction contract language. A vendor may need to retrofit, repower or replace older and more polluting diesel construction equipment in order to satisfy clean construction requirements. These types of projects can be financed with Congestion Mitigation and Air Quality (CMAQ) funds, and are in fact a high priority for CMAQ funding. Please contact our office if assistance is needed.

Thank you for the opportunity to comment on this project. Should you have any further questions or comments concerning this matter, please do not hesitate to contact me at (803) 898-4122 or at robertln@dhec.sc.gov.

Sincerely,

L. Nelson Roberts J.

L. Nelson Roberts, Jr., Manager Air Quality Standards and Assessment Section SCDHEC Bureau of Air Quality

ec: Shane Johnson, Lowcountry EQC Beaufort Office, johnsosl@dhec.sc.gov

South Carolina Department of Natural Resources

PO Box 12559 Charleston, SC 29422 843.953.9003 Office 843.953.9399 Fax Daviss@dnr.sc.gov

April 23, 2014

Mr. Chad Long **Environmental Project Manager** SCDOT P.O. Box 191 Columbia, SC 29202-0191

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Alvin A. Taylor Director Robert D. Perry Director, Office of **Environmental Programs**

RECEIVED

AFR 2 8 2014

Re: Proposed U.S. Highway 17 Widening Project in Jasper County

Dear Mr. Long:

Personnel from the South Carolina Department of Natural Resources have reviewed the proposal to widen U.S. Highway 17 in Jasper County and offer the following comments.

Based on the limited information provided about the proposed project, we are unable to provide any specific comments on potential impacts to natural resources at this time. We would, however, like to express some general comments regarding highway widening projects. As you are well aware, coastal South Carolina contains extensive acreage of both salt and freshwater wetlands. Wetland areas provide valuable habitat for fish and wildlife and are essential in maintaining water quality in adjoining water bodies. Careful consideration should be given to avoiding wetland impacts whenever possible and minimizing unavoidable impacts to the maximum extent possible.

Means for avoiding and minimizing wetland impacts should be incorporated early on in the planning and design stages and should include such things as bridging and culverting wetland crossings, reduced median and shoulder widths, and the use of top down construction methods. Mitigation for unavoidable wetland impacts should be addressed in the planning and environmental review stages of the project and should focus on the in-kind replacement of lost wetland functions. An environmental review process should also consider potential impacts to threatened and endangered species. Information concerning known populations of federal and/or state endangered or threatened species and other sensitive species can be obtained by contacting S.C. Department of Natural Resources staff within the Wildlife Diversity Section, Columbia, S.C. 29202, (803) 734-3917.

We ask that you consider the above outlined issues in the preparation of an Environmental Assessment for this project. Please contact us for further comment when additional information becomes available.





Environmental Management SCDOT

Sincerely,

Susan F. Davis Coastal Environmental Coordinator



Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

April 23, 2014

RECEIVED

S. C. Department of Transportation
Attn: Mr. Chad Long
Environmental Management Office, Room 509
955 Park Street
P. O. Box 191
Columbia, SC 29202-0191

APR 2 8 2014

Environmental Management SCDOT

Re: Proposed US 17Widening in Jasper County SC and Chatham County, GA PIN 39168

Dear Mr. Long:

The South Carolina Department of Health and Environmental Control (SCDHEC) is providing comments regarding potential environmental impacts of the above referenced project, as requested in your Letter of Intent dated April 15, 2014. As you are aware, SCDHEC's Bureau of Water administers applicable regulations pertaining to water quality standards and classifications, including wetland protection, in accordance with the South Carolina Pollution Control Act, the Federal Clean Water Act, the State Stormwater Management and Sediment Reduction Act, Construction in Navigable Waters Permitting, and associated regulations for all of these statutes. SCDHEC's Office of Ocean and Coastal Resource Management (OCRM) administers regulations in accordance with provisions of the Coastal Zone Management Act.

The following comments are provided as input concerning environmental impacts in preparation of an Environmental Assessment (EA) in accordance with regulations of the Federal Highway Administration and National Environmental Policy Act.

The proposed work involves widening US 17 (Speedway Boulevard) from the Georgia SR 404 Spur on Hutchinson Island in Chatham County, GA, approximately 4 miles north to SC 315 (South Okatie Highway) in Jasper County, SC. The work would including the widening of US 17 from 2 to 4 travel lanes, with a 36-foot-wide depressed median. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on US 17 between Hutchinson Island and SC 315.

Page 2 Mr. Chad Long April 23, 2014

SCDHEC recommends efforts be made to minimize impacts to open water, associated wetlands, water quality and navigation when planning and constructing this project. Such efforts could include increasing the bridge length and vertical clearance to improve navigability. In addition, access to the project site should be attained from highland, from the portion of the bridge already completed ("end on end construction") or from temporary work trestles, floating barges or mats instead of barge canals or causeways.

Also, any additional stream or wetland impacts could be minimized by enlarging or adding to existing culverts to accommodate bank-full rain events, improve hydrologic flows and aquatic life passage. In addition, reducing road widths by utilizing 2:1 slopes and/or reducing median widths or shifting alignments in sensitive areas may minimize aquatic impacts.

The Back River is designated SB waters in the vicinity of the project, indicating that there is no shellfish harvesting use. In addition, there are no impaired monitoring sites or TMDLs in the vicinity of the project. Potential water quality impacts of stormwater associated with the project will be avoided if the applicant uses best management practices to minimize sediment migration during construction, as well as other post construction stormwater management practices. Also, the bridge should designed to minimize the amount of stormwater to be discharged directly from scuppers, if practicable.

SCDHEC will review any additional information provided including a thorough description (and quantification) of open water and wetland resources that will potentially be impacted by the proposed project. The above information will be useful in making a decision regarding the water quality review and Critical Area Permit (Permit) administered by SCDHEC. If required, the Permit may be conditioned to address specific modifications and measures that would be required to further reduce wetland and water quality impacts after a review of detailed project drawings. Also, a final mitigation plan addressing unavoidable wetland/stream impacts must be reviewed and approved by SCDHEC during the certification process.

In addition to the aforementioned Permit, the proposed work must be in compliance with State Sediment and Erosion Control and NPDES MS4 stormwater permitting requirements administered by the Bureau of Water.

Finally, please ensure that all other necessary environmental permits for this project are obtained in accordance with applicable State and Federal regulations. If you have not done so already, please contact the Bureau of Air Quality and the Bureau of Land and Waste Management for input regarding those program areas' assessments of this proposed project.

Page 2 Mr. Chad Long April 23, 2014

Please call me at 898-4179 if you have any questions.

Sincerely yours,

Mark Giffin, Project Manager Water Quality Certification and Wetlands Section

cc: Heather Preston Chuck Hightower Jill Stewart Blair Williams (OCRM) Myra Reece (BAQ) Daphne Neel (BLWM) Low Country Region EQC Region



RECEIVED

Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

APR 2 8 2014

April 21, 2014

Environmental Management SCDOT

Mr. Chad Long Archaeologist/NEPA Environmental Coordinator SC Department of Transportation Post Office Box 191 Columbia, SC 29201

Re: Letter of Intent for the Proposed US 17 Widening Project in Jasper County, South Carolina and Chatham County, Georgia. PIN: 39168 File No.: 27.039168

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- Ozone The 2008 8-hour ozone standards (primary and secondary) are currently set at 0.075 parts per million (ppm). The area represented in this proposal is meeting the 2008 ozone standards. The Environmental Protection Agency (EPA) is currently reviewing the 2008 ozone standard and the proposal of a new standard is anticipated.
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- Fugitive dust emissions should be minimized through good operating practices.
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The Bureau can provide model clean construction contract language. A vendor may need to retrofit, repower or replace older and more polluting diesel construction equipment in order to satisfy clean construction requirements. These types of projects can be financed with Congestion Mitigation and Air Quality (CMAQ) funds, and are in fact a high priority for CMAQ funding. Please contact our office if assistance is needed.

Thank you for the opportunity to comment on this project. Should you have any further questions or comments concerning this matter, please do not hesitate to contact me at (803) 898-4122 or at robertln@dhec.sc.gov.

Sincerely,

L. Nelson Roberts . A.

L. Nelson Roberts, Jr., Manager Air Quality Standards and Assessment Section SCDHEC Bureau of Air Quality

ec: Shane Johnson, Lowcountry EQC Beaufort Office, johnsosl@dhec.sc.gov

Section 106 Coordination

Gordon Murphy

Long, Chad C. <longcc@scdot.org></longcc@scdot.org>
Tuesday, March 11, 2014 12:46 PM
Belcher, Jeffery - FHWA; Gordon Murphy
FW: PI 522920 Chatham HP 050120-010 US 17 Widening & Bridge Construction over
Back River

FYI

From: Bedell, Jennifer [mailto:Jennifer.Bedell@dnr.state.ga.us]
Sent: Tuesday, March 11, 2014 12:15 PM
To: Long, Chad C.
Cc: Anderson-Cordova, Karen
Subject: RE: PI 522920 Chatham HP 050120-010 US 17 Widening & Bridge Construction over Back River

Hi Chad-

Sorry for the confusion. We normally have a worksheet and send a formal letter for concurrence for Georgia (or GDOT) projects. We did discuss whether a circle or scratch-out was most appropriate for your letter. It looks like Karen underlined the word "concur".

To verify: GASHPO concurs with the SCDOT determination that no historic properties will be affected.

Please let me know if you require anything else. Jenn

Jennifer Bedell Review Archaeologist Historic Preservation Division Georgia Department of Natural Resources 254 Washington St. SW., Ground Floor Atlanta, GA 30334 404.657.1042

From: Long, Chad C. [mailto:LongCC@scdot.org]
Sent: Monday, March 10, 2014 4:23 PM
To: Bedell, Jennifer
Subject: FW: PI 522920 Chatham HP 050120-010 US 17 Widening & Bridge Construction over Back River

Hi Jennifer,

I just received this letter from HPD. If the SHPO concurs, the "do not" portion in the parentheses is usually scratched out. I just wanted to double check and make sure we had concurrence.

Can you verify?

Thanks,

Chad

From: HPD-106reply [mailto:HPD-106reply@dnr.state.ga.us]
Sent: Monday, March 10, 2014 4:13 PM
To: 'Jim Pomfret'
Cc: Long, Chad C.
Subject: PI 522920 Chatham HP 050120-010 US 17 Widening & Bridge Construction over Back River

From: Historic Preservation Division

Attached is our letter on the subject undertaking (in Adobe Acrobat PDF format)

Do not respond to this e-mail.

If you have any questions concerning our letter, please contact: Jennifer Bedell at Jennifer.Bedell@dnr.state.ga.us

A free copy of Adobe Acrobat Reader can be downloaded from: www.adobe.com

PI



South Carolina Department of Transportation

February 24, 2014

2014 FET 26 P1 2: 12

Dr. David Crass Georgia Department of Natural Resources Historic Preservation Division 254 Washington Street, SW Ground Level Atlanta, GA 30334

> RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Dr. Crass:

The South Carolina Department of Transportation (SCDOT) proposes to improve U.S. 17 (Speedway Boulevard) from the Georgia SR 404 Spur on Hutchinson Island in Chatham County, Georgia, approximately four miles north to S.C. 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. 17 between Hutchinson Island and S.C. 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see attached map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new bridge construction and widening of the approach roads at the U.S. 17/SR 404 interchange on Hutchinson Island. All proposed construction activities will take place within existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia.

Per 36 CFR Part 800, the Department is providing your office with the results of our identification efforts. Based on the results of background and archival research, the Department has determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the Department's findings. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely, Chad C. Long Archaeologist

Date: 03/10/14

CCL:ccl Enclosure

I (do not) concur in the above determination. Signed:

ec: Shane Belcher, FHWA-SC Division Jim Pomfret, GDOT

Phone: (803) 737-2314 TTY: (803) 737-3870 AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER

Gordon Murphy

From:	Long, Chad C. <longcc@scdot.org></longcc@scdot.org>
Sent:	Wednesday, June 04, 2014 9:18 PM
То:	Gordon Murphy
Subject:	Fwd: u.s. Rout 17 Widening and Bridge Construction, Jasper County, SC and Chatham
	County, GA Project ID: 39168
Attachments:	image003.jpg
To: Subject: Attachments:	Gordon Murphy Fwd: u.s. Rout 17 Widening and Bridge Construction, Jasper County, SC and Chatham County, GA Project ID: 39168 image003.jpg

Begin forwarded message:

From: <<u>Jeffrey.Belcher@dot.gov</u>> Date: June 4, 2014 at 12:16:52 PM EDT To: <<u>LongCC@scdot.org</u>> Subject: FW: u.s. Rout 17 Widening and Bridge Construction, Jasper County, SC and Chatham County, GA Project ID: 39168

For your file.

J. Shane Belcher Environmental Coordinator FHWA South Carolina 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Jeffrey.belcher@dot.gov

From: Kim Jumper [mailto:kim.jumper@shawnee-tribe.com]
Sent: Tuesday, June 03, 2014 12:51 PM
To: Belcher, Jeffrey (FHWA)
Subject: u.s. Rout 17 Widening and Bridge Construction, Jasper County, SC and Chatham County, GA
Project ID: 39168

This letter is in response to the above referenced project.

The Shawnee Tribe's Tribal Historic Preservation Department concurs that no known historic properties will be negatively impacted by this project. We have no issues or concerns at this time, but in the event that archaeological materials are encountered during construction, use, or maintenance of this location, please re-notify us at that time as we would like to resume consultation under such a circumstance.

Thank you for giving us the opportunity to comment on this project.

×

Sincerely, Kim Jumper, THPO Shawnee Tribe

Belcher, Jeffrey (FHWA)
"ioseph.blanchard@astribe.com"
Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Wednesday, March 05, 2014 2:24:00 PM
Absentee-Shawnee_US_17_Back_River_Tribal Coorespondence with Attachments.pdf US_17_Cultural Report_GA Portion.pdf US_17_Cultural Report_SC Portion.pdf

Mr. Blanchard,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



South Carolina

1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Mr. Joseph Blanchard Tribal Historic Preservation Officer Abesentee-Shawnee Tribe of Oklahoma 2025 Gordon Cooper Drive Shawnee, OK 74801

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Mr. Blanchard:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

(for) Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed:

Date:

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA

From:	Belcher, Jeffrey (FHWA)
To:	"Wenonah Haire"
Cc:	Caitlin Haire
Subject:	Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 3:01:00 PM
Attachments:	Catawba Indian Nation US 17 Back River Tribal Coorespondence with Attachments.pdf US 17 Cultural Report GA Portion.pdf US 17 Cultural Report SC Portion.pdf

Wenonah and Caitlin,

Thought I would send this directly rather than via SCDOT since some of the project extends into Georgia. The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call. If you need a hard copy let me know and I'll get one out.

J. Shane Belcher

Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989 Catawba Indian Nation Tribal Historic Preservation Office 1536 Tom Steven Road Rock Hill, South Carolina 29730

Office 803-328-2427 Fax 803-328-5791 Division Office O.2 EidmuloD

APR 4 2014

nobedenimbA yewigih lengbot



March 31, 2014

Attention: Robert L. Lee USDOT FHWA 1835 Assembly Street, Suite 1270 Columbia, SC 29201

 Re. THPO # TCNS#
 Project Description

 2014-133-1
 US Route 17 Widening and Bridge Construction over the Back River in Jasper Co. & Chatham Co.

Dear Mr. Lee,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or email caitlinh@ccppcrafts.com.

Sincerely,

Caitlie Nothwow for

Wenonah G. Haire Tribal Historic Preservation Officer



South Carolina

1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Ms. Wenonah Haire Tribal Historic Preservation Officer The Catawba Indian Nation 1536 Tom Steven Road Rock Hill, SC 29731

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Ms. Haire:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that no historic properties will be affected by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

F. Shane Belchy

(for) Robert L. Lee Division Administrator

Enclosures

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I (do not) concur in the above determination.

Date: 3 26 14 Signed: Wenorch & Hain D

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA

From:	LaDonna Brown
То:	Belcher, Jeffrey (FHWA)
Subject:	Read: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 2:49:59 PM

Your message

To:

Subject: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga Sent: Wednesday, March 05, 2014 2:49:58 PM (UTC-05:00) Eastern Time (US & Canada) was read on Wednesday, March 05, 2014 2:49:49 PM (UTC-05:00) Eastern Time (US & Canada).

From:	Belcher, Jeffrey (FHWA)
To:	"ladonna.brown@chickasaw.net"
Subject:	Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 2:34:00 PM
Attachments:	Chickasaw Nation US 17 Back River Tribal Coorespondence with Attachments.pdf US 17 Cultural Report GA Portion.pdf US 17 Cultural Report SC Portion.pdf

Ms. Brown

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989


1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Ms. LaDonna Brown Historic Preservation Officer The Chickasaw Nation 2020 Arlington, Suite 4 Ada, OK 74820

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Ms. Brown:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

. Shane Belchy

(for Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed:

Date:

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA

Belcher, Jeffrey (FHWA)
"Robin Dushane"
Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Wednesday, March 05, 2014 2:37:00 PM
Eastern Shawnee US 17 Back River Tribal Coorespondence with Attachments.pdf US 17 Cultural Report GA Portion.pdf US 17 Cultural Report SC Portion.pdf

Ms. Dushane

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Ms. Robin DuShane Cultural Preservation Director Eastern Shawnee Tribe of Oklahoma 127 W. Oneida Street Seneca, MO 64865

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Ms. DuShane:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

Shane

(for) Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed:_____

Date:

5

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA

From:	Emman Spain
To:	Belcher, Jeffrey (FHWA)
Subject:	RE: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Thursday, April 03, 2014 12:23:42 PM

Mr. Belcher,

The Muscogee (Creek) Nation has received notice of FHWA's project to widen U. S. Highway 17 and to construct a bridge over Back River in Jasper County, S.C. and Chatham County, Ga. After review of the information sent and the project area, we concur with FHWA's determination of "No Historic Properties affected". Thank you.

Emman Spain, THPO Muscogee (Creek) Nation

From: Jeffrey.Belcher@dot.gov [mailto:Jeffrey.Belcher@dot.gov]
Sent: Wednesday, March 05, 2014 1:42 PM
To: Emman Spain; Emman Spain
Subject: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga

Mr. Spain,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher

Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989

From:	Belcher, Jeffrey (FHWA)
To:	"ESpain@MCN-NSN.gov"; "espain@muscogeenation-nsn.gov"
Subject:	Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 2:40:00 PM
Attachments:	Muscogee Creek Nation US 17 Back River Tribal Coorespondence with Attachments.pdf US 17 Cultural Report GA Portion.pdf US 17 Cultural Report SC.Portion.pdf

Mr. Spain,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Mr. Emman Spain Tribal Historic Preservation Officer Muscogee (Creek) Nation 1008 East Eufaula Okmulgee, OK 74447

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Mr. Spain:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

: Shane

(for) Robert L. Lee **Division Administrator**

Enclosures

I (do not) concur in the above determination.

Signed: Date:

Mr. Chad Long, Chief Archaeologist, SCDOT ec: Ms. Jennifer Giersch, FHWA-GA

From:	Belcher, Jeffrey (FHWA)
To:	"rthrower@pci-nsn.gov"
Subject:	Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 2:43:00 PM
Attachments:	Poarch Band of Creeks US 17 Back River Tribal Coorespondence with Attachments.pdf
	US 17 Cultural Report GA Portion.pdf
	US 17 Cultural Report SC Portion.pdf

Mr. Thrower,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Mr. Robert Thrower Tribal Historic Preservation Officer Poarch Band of Creek Indians 5811 Jack Springs Road Atmore, AL 36502

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Mr. Thrower:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

. Shane I

(for) Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed:_____ Date:

Date:

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA

From:	Paul Backhouse
To:	Belcher, Jeffrey (FHWA)
Subject:	Read: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 3:41:38 PM

Your message

To:

Subject: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga Sent: Wednesday, March 05, 2014 3:41:37 PM (UTC-05:00) Eastern Time (US & Canada) was read on Wednesday, March 05, 2014 3:41:31 PM (UTC-05:00) Eastern Time (US & Canada).

From:	Geoffrey Wasson
To:	Belcher, Jeffrey (FHWA)
Subject:	Read: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham
	CO., Ga
Date:	Thursday, March 06, 2014 8:08:12 AM

Your message

To:

Subject: Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga Sent: Thursday, March 06, 2014 8:08:11 AM (UTC-05:00) Eastern Time (US & Canada) was read on Thursday, March 06, 2014 8:07:38 AM (UTC-05:00) Eastern Time (US & Canada).

From:	Belcher, Jeffrey (FHWA)
To:	"paulbackhouse@semtribe.com"
Cc:	"bradleymueller@semtribe.com"; "geoffreywasson@semtribe.com"; "alisonwing@semtribe.com"
Subject:	Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 2:49:00 PM
Attachments:	Seminole Tribe of FL_US 17 Back River_Tribal Coorespondence with Attachments.pdf US 17 Cultural Report_GA Portion.pdf US 17 Cultural Report_SC Portion.pdf

Mr. Backhouse,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Dr. Paul N. Backhouse Tribal Historic Preservation Officer Seminole Tribe of Florida 30290 Josie Billie Highway, PMB 1004 Clewiston, FL 33440

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Dr. Backhouse:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

The purpose of this letter is to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The proposed undertaking will involve new road and bridge construction plus the widening of the approach roads at the U.S. Route 17/Georgia State Route 404 interchange on Hutchinson Island. All proposed construction activities will take place within the existing right-of-way. Enclosed is a brief letter report that describes background research and identification efforts within the project's Area of Potential Effects within the state of Georgia. A survey report for the South Carolina portion of the project is also enclosed.

Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

. Share I

(for) Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed:_____ Date:____

Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA ec:

Belcher, Jeffrey (FHWA)
"ben.barnes@omail.com"
Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Wednesday, March 05, 2014 2:53:00 PM
Shawnee Tribe US 17 Back River Tribal Coorespondence with Attachments.pdf US 17 Cultural Report GA Portion.pdf US 17 Cultural Report SC Portion.pdf

Second Chief Barnes,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Second Chief Ben Barnes The Shawnee Tribe 29 S. Highway 69A Miami, OK 74355

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Second Chief Barnes:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

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Per 36 CFR Par 800, we are providing your office with the results of our identification efforts. Based on the results of background and archival research, we have determined that **no historic properties will be affected** by the proposed undertaking.

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

Shan

(for) Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed:__

Date:

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA

From:	Belcher, Jeffrey (FHWA)
To:	"chascoleman75@yahoo.com"
Subject:	Federal Highway Administration: US 17 Widening & Bridge Construction in Jasper Co., SC and Chatham Co., Ga
Date:	Wednesday, March 05, 2014 2:56:00 PM
Attachments:	Thlopthlocco Tribal Town US 17 Back River Tribal Coorespondence with Attachments.pdf US 17 Cultural Report GA Portion.pdf US 17 Cultural Report SC Portion.pdf

Mr. Coleman,

The attached information regarding the subject project is being sent to initiate consultation with your office under Section 106 regulations of the National Historic Preservation Act. The attachments provide information about the proposed project along with cultural resource studies for the Georgia and South Carolina portions of the project. If you have any questions regarding any of the attachments or the project in general, please do not hesitate to call.

Much thanks,

J. Shane Belcher Environmental Coordinator Federal Highway Administration 1835 Assembly Street, Suite 1270 Columbia, SC 29201 Phone: 803-253-3187 Fax: 803-253-3989



1835 Assembly Street, Suite 1270 Columbia, South Carolina 29201 803-765-5411 803-253-3989

March 5, 2014

In Reply Refer To: HDA-SC

Mr. Charles Coleman Tribal Historic Preservation Officer Thlopthlocco Tribal Town P.O. Box 188 Okemah, OK 74859

RE: U.S. Route 17 Widening and Bridge Construction over the Back River in Jasper County, South Carolina and Chatham County, Georgia. <u>Project ID</u>: 39168

Dear Mr. Coleman:

The Federal Highway Administration (FHWA) and the South Carolina Department of Transportation (SCDOT) propose to improve U.S. Route 17 (Speedway Boulevard) from the Georgia State Route 404 Spur on Hutchinson Island in Chatham County, Georgia to approximately four mile north of S.C. Route 315 (South Okatie Highway) in Jasper County, South Carolina. The improvements include the widening of U.S. Route 17 from two to four travel lanes, with a 36-foot wide depressed median. The purpose of the project is to increase the capacity of the roadway in order to meet traffic and safety demands on U.S. Route 17 between Hutchinson Island and S.C. Route 315. The proposed widening would require that a new bridge structure be constructed over the Back River in order to accommodate the additional travel lanes (see enclosed map).

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It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the findings. Please respond within thirty (30) days if you have any objections or if you have need of additional information. Please address any questions you may have

regarding the proposed project to Mr. J. Shane Belcher at 803-253-3187 or jeffrey.belcher@dot.gov.

Sincerely,

F. Shane I

(for) Robert L. Lee Division Administrator

Enclosures

I (do not) concur in the above determination.

Signed: Date:____

Date:

ec: Mr. Chad Long, Chief Archaeologist, SCDOT Ms. Jennifer Giersch, FHWA-GA **Early Agency Coordination**



United States Department of the Interior

FISH AND WILDLIFE SERVICE 176 Croghan Spur Road, Suite 200 Charleston, South Carolina 29407



December 19, 2012

Lt. Colonel Edward P. Chamberlayne District Engineer U.S. Army Corps of Engineers 69A Hagood Avenue Charleston, SC 29403-5107

Attn: Christopher Mims

Re: P/N SAC-2011-00179-DIM, South Carolina Department of Transportation Charleston County, SC FWS Log No. 2013-CPA-0036

Dear Colonel Chamberlayne:

The U.S. Fish and Wildlife Service (Service) has reviewed the above-referenced public notice dated November 20, 2012. The applicant has requested a Department of the Army permit pursuant to section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), sections 401 and 404 of the Clean Water Act (33 U.S.C. 1344), and the South Carolina Coastal Zone Management Act (48-39-10 et seq.) to place fill material in tidal waters and freshwater wetlands in Sand, Russell, and Store Creeks in Charleston County, South Carolina. This report is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531-1543) (ESA). This report is also to serve as official comments to the South Carolina Department of Health and Environmental Control.

The proposed activity consists of the replacement of three existing structurally deficient bridges with wider, two-lane bridges along SC 174, which provides access to Edisto Island. The South Carolina Department of Transportation (SCDOT) proposes to replace the bridges over Russell and Store Creeks on new alignment adjacent to the existing bridges. The Sand Creek bridge will be replaced on the existing alignment. The typical roadway approach section for the proposed project would consist of two 12-foot travel lanes, 2-foot paved shoulders, and 8 to 10-foot grass shoulders. The new typical bridge section for the three bridges would consist of two 12-foot travel lanes and two 10-foot paved shoulders, which would accommodate future bike lanes.

The proposed project would require impacts to 4.242 acres of federally jurisdictional waters. As mitigation for impacts to tidal waters of the United States, the applicant has proposed to debit 51.02 credits from the Huspa Creek Mitigation Bank. For impacts to freshwater wetlands, the applicant proposes to debit 1.35 acres from the SCDOT Black River Mitigation Bank. The Service participated in early coordination meetings for this project with other State and

Federal agencies. The meetings provided an opportunity to consider measures to minimize impacts to fish and wildlife resources which during the design phase of the proposed project. The majority of our concerns were addressed in the project design. However, the Service has some remaining concerns with the current proposal, as outlined below to further reduce project associated impacts.

- Reduce the size of the proposed bike lanes or remove them from project design, because there are currently no designated bike lanes along SC 174;
- Avoid the placement of fill in Outstanding Resource Waters and/or adjacent wetlands for the purposes of stormwater management. Accordingly, the Service urges the applicant to seek less damaging methods for treating stormwater;
- Reduce the overall duration of impacts and avoid affecting the progress of restoration in temporary impact areas, the Service recommends that any work associated with the _ vd?/mikded(necessary relocation of utility lines be conducted concurrently with the project;
- Reduce potential construction-related impacts to the manatee to discountable and insignificant levels, the Service recommends implementing the Standard Manatee Construction Conditions.

Manatee Guidelines

The permittee will comply with the following manatee protection construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel must monitor water-related activities for the presence of manatee(s) during May 15 - October 15.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973.
- c. Any siltation barriers used during the project shall be made of material in which manatees cannot become entangled and must be properly secured, and regularly monitored to avoid manatee entrapment.
- d. All vessels associated with the project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

- e. If manatee(s) are seen within 100 yards of the active construction area all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet to a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- Any collision with and/or injury to a manatee shall be reported immediately to Mr. Jim-Valade of the U.S. Fish and Wildlife Service. North Florida Field Office, at (904) 731-3116.

The Service appreciates the opportunity to review and provide comments on the submitted permit. If you should need further assistance please contact Mr. Mark Leao at (843) 727-4707 ext. 228, and reference FWS Log No. 2013-CPA-0036.

Sincerely,

In Jay B. Herrington

JBHJMCL

.

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

SPEED / NO WAKE

When a manatee is within 50 feet of work all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee: Wildlife Alert:

1-888-404-FWCC(3922)

cell * FWC or #FWC





DEPARTMENT OF THE ARMY CHARLESTON DISTRICT, CORPS OF ENGINEERS 69A HAGOOD AVENUE CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO ATTENTION OF

November 14, 2011

Regulatory Division

Mr. Sean Connolly SC Department of Transportation Post Office Box 191 Columbia South Carolina 29202

Dear Mr. Connolly:

Pin 33036

This is in response to a request received November 9, 2011, for a wetland determination, prepared by Mr. Collin Lane with Edwards-Pitman Environmental, Inc., for a 51.7 acre tract located along US 17 crossing the Back River, beginning in Chatham County, Georgia and ending in Jasper County, South Carolina. The project area is depicted on the maps you submitted, relabeled and entitled "SAC 2011-01156-DJJ US 17 Bridge Over Back River" and re-dated November 14, 2011.

This plat depicts the surveyed "Critical Area" boundaries as established by your office and approved by the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management (OCRM) on October 12, 2011 and the Georgia Department of Natural Resources, Coastal Resources Division on November 1, 2011. You have requested that this office verify the accuracy of this mapping as a true representation of wetlands or other waters of the United States within the regulatory authority of this office. The property contains 40.01 acres of salt marsh and/or open water tidal "critical area" subject to the jurisdiction of this office.

Based on a review of aerial photography and soil survey information, it has been determined that the surveyed jurisdictional area (i.e., "critical area") boundaries shown on the referenced maps are an accurate representation of jurisdictional areas within our regulatory authority. This office should be contacted prior to performing any work in these areas. You should be aware that the areas identified as jurisdictional may be subject to restrictions or requirements of other state or local government entities.

If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified maps, should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this wetland determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted. This **approved** jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use.

In future correspondence concerning this matter, please refer to SAC 2011-01156-DJJ. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management (OCRM) and/or the Georgia Department of Natural Resources, Coastal Resources Division.

If you have any questions concerning this matter, please contact Elizabeth Williams at 843-329-8044 or toll free at 1-866-329-8187.

Sincerely,

15-

Travis G. Hughes Chief, Special Projects Branch

Enclosures: Basis for Jurisdiction Notification of Appeal Options

Copy Furnished:

S.C. Department of Health and Environmental Control Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405

Mr. Collin T. Lane Edwards-Pitman Environmental, Inc. 1250 Winchester Parkway, Suite 200 Smyrna, GA 30080

Mr. Stanley J Knight, via e-mail





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

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

SECTION I: BACKGROUND INFORMATION

- A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 11-14-11
- B. DISTRICT OFFICE, FILE NAME, AND NUMBER:SAC 2011-1156-DJJ, US 17 Bridge over Back River

PROJECT LOCATION AND BACKGROUND INFORMATION: C

County/parish/borough: Jasper/ Chatham City: State:SC Center coordinates of site (lat/long in degree decimal format): Lat. 32.102005° N, Long. 81.088747° W. Universal Transverse Mercator:

Name of nearest waterbody: Back River

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Back River

Name of watershed or Hydrologic Unit Code (HUC): 03060109

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

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

- Office (Desk) Determination. Date: 11-14-11
- Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

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

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

- 1. Waters of the U.S.
 - a. Indicate presence of waters of U.S. in review area (check all that apply): 1
 - TNWs, including territorial seas
 - Wetlands adjacent to TNWs
 - Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
 - Non-RPWs that flow directly or indirectly into TNWs
 - Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 - Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
 - Impoundments of jurisdictional waters
 - Isolated (interstate or intrastate) waters, including isolated wetlands
 - b. Identify (estimate) size of waters of the U.S. in the review area: Non-wetland waters: linear feet: width (ft) and/or 24.3 acres. Wetlands: 15.7 acres.
 - c. Limits (boundaries) of jurisdiction based on: Established by mean (average) high waters. Elevation of established OHWM (if known):
- 2. Non-regulated waters/wetlands (check if applicable):3 [Including potentially jurisdictional features that upon assessment are NOT waters or wetlands]
 - Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:

(e.g., typically 3 months).

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

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally"

Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW

Identify TNW: Back River.

Summarize rationale supporting determination: the waters and wetlands are subject to ebb and flow of the tide.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

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

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

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

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

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

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

- (i) General Area Conditions: Watershed size: Pick List Drainage area: Pick List Average annual rainfall: inches Average annual snowfall: inches
- (ii) Physical Characteristics:
 - (a) <u>Relationship with TNW:</u>
 ☐ Tributary flows directly into TNW.
 ☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW. Project waters are **Pick List** river miles from RPW. Project waters are **Pick List** aerial (straight) miles from TNW. Project waters are **Pick List** aerial (straight) miles from RPW. Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵: Tributary stream order, if known:

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

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

(6)	General Tributary Characteristics (check all that apply): Tributary is:
	Tributary properties with respect to top of bank (estimate): Average width: feet Average depth: feet Average side slopes: Pick List.
	Primary tributary substrate composition (check all that apply): Silts Sands Concrete Cobbles Gravel Muck Bedrock Vegetation. Type/% cover: Other. Explain:
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Presence of run/riffle/pool complexes. Explain: Tributary geometry: Pick List Tributary gradient (approximate average slope): %
(c)	Flow: Tributary provides for: Pick List Estimate average number of flow events in review area/year: Pick List Describe flow regime: Other information on duration and volume: Surface flow is: Pick List. Characteristics:
	Subsurface flow: Pick List . Explain findings:
	Tributary has (check all that apply): Bed and banks OHWM ⁶ (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 other (list): Discontinuous OHWM. ⁷ Explain:
	If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply) If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply) If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply) If high Tide Line indicated by: Image: Check all that apply) If oil or scum line along shore objects Image: Survey to available datum; If fine shell or debris deposits (foreshore) Image: Check all that apply) If physical markings/characteristics Image: Check all that apply) If tidal gauges Image: Check all that apply) If tidal gauges Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply) Image: Check all that apply)

Identify specific pollutants, if known:

⁶A 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. ⁷Ibid.
(iv) Biological Characteristics. Channel supports (check all that apply):

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

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

(i) Physical Characteristics:

- (a) General Wetland Characteristics: Properties:
 - Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) General Flow Relationship with Non-TNW: Flow is: Pick List. Explain:

Surface flow is: Pick List Characteristics:

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

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

(d) Proximity (Relationship) to TNW

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

(ii) Chemical Characteristics:

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

1

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 Fish/spawn areas. Explain findings:

 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

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

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

Approximately () acres in total are being considered in the cumulative analysis. For each wetland, specify the following:

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

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

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

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

- 1. Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
- Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
- 3. Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

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

2. RPWs that flow directly or indirectly into TNWs.

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

Provide estimates for jurisdictional waters in the review area (check all that apply):

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
 - Identify type(s) of waters:
- Non-RPWs8 that flow directly or indirectly into TNWs. 3.
 - Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft). acres.
- Other non-wetland waters:
 - Identify type(s) of waters:

Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. 4.

Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands. 100

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

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

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

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

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs. 6.

Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

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

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

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):10

- 61 which are or could be used by interstate or foreign travelers for recreational or other purposes.
- from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- лű, which are or could be used for industrial purposes by industries in interstate commerce.
- Interstate isolated waters. Explain:
- Other factors. Explain:

Identify water body and summarize rationale supporting determination:

⁸See Footnote # 3.

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

	Provide estimates for jurisdictional waters in the review area (check all that apply): Tributary waters: linear feet width (ft). Other non-wetland waters: acres. Identify type(s) of waters: .
	Wetlands: acres.
F.	 NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY): If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements. Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce. Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR). Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: Other: (explain, if not covered above): .
	Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> 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):
	Charles (construction) Construction (construction) Other non-wetland waters: acres. List type of aquatic resource: Wetlands: acres.
	 Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply): Non-wetland waters (i.e., rivers, streams): Lakes/ponds: acres. Other non-wetland waters: acres. Wetlands: acres.
SEC	CTION IV: DATA SOURCES.
A. 5	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: Data sheets prepared/submitted by or on behalf of the applicant/consultant. Office concurs 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:Savannah GA Topo Map. USDA Natural Resources Conservation Service Soil Survey. Citation: National wetlands inventory map(s). Cite name: State/Local wetland inventory map(s): FEMA/FIRM maps:
	 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929) Photographs: Aerial (Name & Date):SCDNR aerial infrared 2006. or Other (Name & Date):
	 Previous determination(s). File no. and date of response letter:SAC 2009-00631 (10-13-10), SAS 200701163 (9-5-08). Applicable/supporting case law: Applicable/supporting scientific literature: Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD: Jurisdictional waters on site are subject to ebb and flow of the tide and thus are considered TNWs/ Navigable waters of the US.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applic	cant: File Number:	Date:
Attach	ned is:	See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	В
	PERMIT DENIAL	С
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E
A: IN A: IN A: IN A: IN AC aut sign to a OB the You to a module the dist	ION 1 - The following identifies your rights and options regarding an administration. Additional information may be found at http://usace.army.mil/inet/functions regulations at 33 CFR Part 331. ITIAL PROFFERED PERMIT: You may accept or object to the permit. CCEPT: If you received a Standard Permit, you may sign the permit document and return it to the horization. If you received a Letter of Permission (LOP), you may accept the LOP and your wo nature on the Standard Permit or acceptance of the LOP means that you accept the permit in its of appeal the permit, including its terms and conditions, and approved jurisdictional determinations EJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions the permit be modified accordingly. You must complete Section II of this form and return the form ur objections must be received by the district engineer within 60 days of the date of this notice, of appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate yo dify the permit to address all of your concerns, (b) modify the permit to address some of your of permit having determined that the permit should be issued as previously written. After evaluation trict engineer will send you a proffered permit for your reconsideration, as indicated in Section F	tive appeal of the abov /cw/cecwo/reg or e district engineer for final rk is authorized. Your entirety, and waive all rights associated with the permit. erein, you may request that to the district engineer. or you will forfeit your right ur objections and may: (a) ojections, or (c) not modify ng your objections, the B below.
: PR	OFFERED PERMIT: You may accept or appeal the permit	
AC auth sigr to a	CEPT: If you received a Standard Permit, you may sign the permit document and return it to th horization. If you received a Letter of Permission (LOP), you may accept the LOP and your wo nature on the Standard Permit or acceptance of the LOP means that you accept the permit in its e appeal the permit, including its terms and conditions, and approved jurisdictional determinations	e district engineer for final rk is authorized. Your entirety, and waive all rights associated with the permit.
API may forr date	PEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain term y appeal the declined permit under the Corps of Engineers Administrative Appeal Process by co m and sending the form to the division engineer. This form must be received by the division eng e of this notice.	s and conditions therein, yo mpleting Section II of this gineer within 60 days of the
: PE / comp igineer	RMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Adn pleting Section II of this form and sending the form to the division engineer. This form must be r within 60 days of the date of this notice.	ninistrative Appeal Process received by the division
: AP	PROVED JURISDICTIONAL DETERMINATION: You may accept or ap e new information.	peal the approved JD o
AC) date	CEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Cor e of this notice, means that you accept the approved JD in its entirety, and waive all rights to app	ps within 60 days of the beal the approved JD.
API App 60 H of th	PEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps beal Process by completing Section II of this form and sending the form to the Division Enginee Forsyth St, SW, Atlanta, GA 30308-8801. This form must be received by the Division Engineer his notice.	of Engineers Administrativ r, South Atlantic Division, within 60 days of the date
PRI	ELIMINARY JURISDICTIONAL DETERMINATION: You do not need to read to read the preliminary JD. The Preliminary JD is not appealable. If you wish, you	spond to the Corps

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

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

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

ADDITIONAL INFORMATION: The appeal is limited to a revie record of the appeal conference or meeting, and any supplemental clarify the administrative record. Neither the appellant nor the Co you may provide additional information to clarify the location of i	w of the administrative record, the information that the review office rps may add new information or a information that is already in the a	e Corps memorandum for the er has determined is needed to analyses to the record. However, administrative record.		
POINT OF CONTACT FOR QUESTIONS OR INFOR	RMATION:			
If you have questions regarding this decision and/or the appeal process you may contact the Corps biologist who signed the letter to which this notification is attached. The name and telephone number of this person is given at the end of the letter. (60 Forsyth St, SW Atlanta, GA 30308-8801				
RIGHT OF ENTRY: Your signature below grants the right of ent consultants, to conduct investigations of the project site during the notice of any site investigation, and will have the opportunity to pro-	ry to Corps of Engineers personne course of the appeal process. Yo articipate in all site investigations	el, and any government ou will be provided a 15 day		
	Date:	Telephone number:		
Signature of appellant or agent.				



UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office 263 13th Avenue South St. Petersburg, FL 33701-5505 727.824.5312, FAX 824.5309 http://sero.nmfs.noaa.gov

APR 8 2011

F/SER31:JC

Mr. Edward Frierson NEPA Coordinator/Biologist South Carolina Department of Transportation P.O. Box 191 Columbia, SC 29202-0191

Dear Mr. Frierson:

This letter responds to your December 8, 2010, letter regarding a proposed project by the South Carolina Department of Transportation (SCDOT) to widen the bridge over the Back River and widen the roadway from Hutchinson Island to SC 170. This project is a joint endeavor between SCDOT and the Georgia Department of Transportation (GDOT). GDOT previously received concurrence from NMFS on January 12, 2009, for the construction activities proposed to occur within Georgia, and now SCDOT seeks concurrence from NMFS for construction proposed for the South Carolina portion of road widening. NMFS requested additional information from SCDOT by phone on February 23, 2011, and a response was given the same day. You determined that the proposed activities may affect but are not likely to adversely affect shortnose sturgeon and requested concurrence from the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA). This consultation is being conducted with the South Carolina Department of Transportation (SCDOT) as the non-federal representative designated by the Federal Highway Administration, South Carolina Division (letter dated March 17, 2004), pursuant to 50 CFR 402.08. NMFS' determinations regarding the effects of the proposed action are based on the description of the action in this informal consultation. You are reminded that any changes to the proposed action may negate the findings of the present consultation and may require reinitiation of consultation with NMFS.

The project is located at 32.104878°N and 81.085967°W (North American Datum of 1983) on the Back River that runs between Georgia and South Carolina. GDOT proposes to construct a new bridge over the Back River and its adjacent wetlands and remove the existing bridge which is both structurally deficient and functionally obsolete. SCDOT's portion of the proposed work involves only the widening of the portion of roadway (US 17) from Hutchinson Island, Georgia (Chatham County), to SC 170 (Jasper County), and includes adding two travel lanes leading to the bridge itself that would tie into the existing four-lane typical section of SR 404 Spur/US 17 centerline. The project area for the SCDOT portion of the project includes approximately 7.5 miles of roadway beginning at the US Hwy 17/SC 170 interface south to the South Carolina state line shared with Georgia. The existing US Hwy 17 consists of two, 12-ft-wide travel lanes with 5-ft-wide earthen shoulders on either side. Wetlands vegetation within portions of the project area include: smooth cordgrass (*Spartina alterniflora*), big cordgrass (*Spartina cynosuriodes*), and black needlerush (*Juncus roemerianus*). The impacts from the South Carolina portion of the



proposed actions will result from widening the soft shoulder portion of the causeway to accommodate the overall width necessary to construct an additional two lanes. The widening of US 17 will impact a total of approximately 79 acres of estuarine wetlands, according to a biological survey conducted by Jordon, Jones, and Goulding, Inc. during May and July of 2009. The widening of land to support the additional two lanes on US 17 will average approximately 86 sq ft of fill for each linear foot of distance, but will not be an equal square footage along the entire distance of approximately 7.5 miles. SCDOT Standard Specifications will be followed. Remnant materials will be removed in such a fashion as to minimize siltation. No cofferdams will be constructed and no dredging is anticipated. Total time for in-water construction is expected to be about 24 months.

The SCDOT will use standard Best Management Practices as prescribed in the Georgia Department of Transportation, State of Georgia, Standard Specifications Construction of Transportation Systems 2001 Edition available at

http://tomcat2.dot.state.ga.us/ContractsAdministration/uploads/DOT%202001.pdf. Generally, these provisions provide conditions intended, at a minimum, to protect shortnose sturgeon and their habitat during construction activities in proximity to the species. A special provision for the protection of threatened and/or endangered species is being implemented by SCDOT for this project: No in-water work in the Back River will occur between December 1 and April 30 of any year. The in-water moratorium prohibits Georgia (GDOT) portions of the work including pile installation and removal, and activities associated with bridge construction or destruction (including lowering equipment and materials into the river, and blasting), but also precludes any in-water work associated with the SCDOT widening of US 17. Additionally, two rows of Type "C" silt fence will be required for all areas in which road widening occurs where there are wetlands and other waterways.

The only federally-listed species under NMFS jurisdiction that occurs in the area of this project is the endangered shortnose sturgeon (*Acipenser brevirostrum*). There is no NMFS-designated critical habitat in the project area. Shortnose sturgeon are known to inhabit the Back River and the adjacent Savannah River. The fish migrate seasonally between freshwater and mesohaline areas within the river based on water temperature and salinity cues. Foraging in mesohaline portions of the estuary, including the project area, typically occurs in the winter.¹ Hence, the road construction occurring May through November, will occur during a period when the fish are likely to be upstream of the project area. The project area is not currently known to support habitat for shortnose sturgeon spawning or foraging.

We have analyzed the proposed action and believe the only potential effects to shortnose sturgeon are to their foraging habitats: temporarily during construction and long-term from inwater structures. NMFS has determined this effect will be insignificant because: (1) Implementation of the in-water moratorium prohibiting construction/demolition coincides with the period when shortnose are most likely to be present in the project area; (2) implementation of best management practices will reduce or eliminate in-water effects to benthic prey. Based on the above, NMFS believes the project is not likely to adversely affect shortnose sturgeon.

This concludes your consultation responsibilities under the ESA for species under NMFS'

¹ Hall, J.W., T.J.J. Smith, and S.D. Lamprect. 1991. Movements and habitats of shortnose sturgeon, *Acipenser brevirostrum*, in the Savannah River. Copeia: 695-702.

purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identification action.

We have enclosed additional information on other statutory requirements that may apply to this action, and on NMFS' Public Consultation Tracking System to allow you to track the status of ESA consultations. If you have any questions, please contact Joseph Cavanaugh by e-mail at Joseph.cavanaugh@noaa.gov. Thank you for your continued cooperation in the conservation of listed species.

Sincerel

Roy E. Crabtree, Ph.D. Regional Administrator

Enclosure

File: 1514-22.L.2 Ref: I/SER/2010/06374

PCTS Access and Additional Considerations for ESA Section 7 Consultations (Revised 7-15-2009)

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system at https://pcts.nmfs.noaa.gov/ that allows federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants and their consultants to ascertain the status of NMFS' Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations, conducted pursuant to ESA section 7, and Magnuson-Stevens Fishery Conservation and Management Act's (MSA) sections 305(b)2 and 305(b)(4), respectively. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The COE "Permit Site" (no password needed) allows COE permit applicants and consultants to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted, or is in the process of conducting, an ESA or EFH consultation with the COE.

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. For example: SAJ-2005-123; SAJ-2005-1234; SAJ-2005-12345.

For inquiries regarding applications processed by COE districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. For example: AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to PCTS.Usersupport@noaa.gov.

<u>EFH Recommendations</u>: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.



December 8, 2010

Mr. Robert Hoffman NOAA Fisheries Southeast Regional Office 263 13th Avenue South St. Petersburg, Florida 33701

> RE: Biological Assessment and Avoidance of Construction Impacts to the Endangered Shortnose Sturgeon – Road Widening and Bridge Widening on US 17 in Jasper County, South Carolina, File No. 27.480, PIN 25999

Dear Mr. Hoffman:

This letter is intended to request informal consultation regarding potential impacts to the shortnose sturgeon (*Acipenser brevirostrum*) for the above referenced project. The project would involve widening the bridge over the Back River. Improvements also include widening of the roadway from Hutchinson Island (Chatham County, Georgia) to SC 170 in Jasper County, South Carolina. This project is a joint endeavor of the SC Department of Transportation (SCDOT) and the Georgia Department of Transportation (GDOT). GDOT has already received concurrence from your office in January, 2009 for their section of the project which includes replacing the bridge (see attached correspondence). SCDOT will only be widening the roadway leading up to the bridge and adding two lanes to the bridge.

Both Departments have agreed to implement a seasonal moratorium for all in water work between December 1 and April 30 and work will not impede more than 50 percent of the channel during the months of January through April. No special measures will be employed by SCDOT outside of this moratorium except for normal Best Management Practices.

As a result of implementing these measures, the project may affect, but is not likely to adversely affect, the endangered shortnose sturgeon. Please review the enclosed Biological Assessment at your earliest convenience and provide the Department with your comments on this finding.

Thank you for your assistance in this matter. If you have any questions regarding these measures, you may contact me at (803) 737-1861.

Sincerely,

Edward W. Theson

Edward W. Frierson NEPA Coordinator/Biologist

EWF:ewf

Enclosures

cc: Mr. Chad Long, RPG-1 NEPA Coordinator (letter only)

File: Env/EWF





United States Department of the Interior

FISH AND WILDLIFE SERVICE 176 Croghan Spur Road, Suite 200 Charleston, South Carolina 29407



December 6, 2010

Mr. Edward Frierson Environmental Project Manager S.C. Department of Transportation P.O. Box 191 Columbia, SC 29202-0191

Re: Biological Assessment, Proposed US 17 Widening Chatham County, GA and Jasper County, SC FWS Log No. 42410-2011-I-0073

Dear Mr. Frierson:

The U.S. Fish and Wildlife Service (Service) has received your October 19, 2010, Biological Assessment (BA) regarding the proposed widening of US 17. The project corridor is approximately 395 acres in size and consists of a 400' wide corridor centered on the existing US 17 roadway for a distance of 7.5 miles, extending to the south from SC 170 in Jasper County, SC, to Hutchinson Island in Chatham County, GA. The project corridor is primarily comprised of palustrine emergent, scrub-shrub, and forested wetlands, open water canals, and emergent estuarine wetlands, as well as planted pine stands, periodically maintained roadsides, mixed hardwood-pine forests, agricultural land, and commercial, institutional, and residential development. The southern-most portion of the project corridor is situated in Chatham County, GA, and includes the Back River and adjacent emergent estuarine wetlands.

The BA concludes that the proposed project may affect, but is not likely to adversely affect the red-cockaded woodpecker, wood stork, bald eagle, eastern indigo snake, and pondberry. The Service concurs with SCDOT's determination of not likely to adversely affect for the aforementioned species. Suitable habitat for the West Indian manatee is present in the project corridor and observations of the manatee have been documented near the southern-most portion of the project corridor. Due to the historical presence of the manatee in the area and the presence of suitable habitat, the SCDOT has determined the project may affect, but is not likely to adversely affect this species. Provided the SCDOT implements the Service's Manatee Construction Guidelines during bridge construction activities to reduce potential impacts, the Service concurs that the project is not likely to adversely affect the West Indian manatee.

Please note that obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

If you have questions regarding the Service's position on this matter or need further assistance please contact Mr. Mark Leao at (843) 727-4707 ext. 228.

Sincerely,

lelie Jay B. Herrington

Field Supervisor

JBH/MCL



South Carolina Department of Transportation

October 20, 2010

Ms. Elizabeth Johnson Deputy State Historic Preservation Officer South Carolina Department of Archives and History 8301 Parklane Road Columbia, SC 29223-4905

RE: Section 106 Consultation Proposed Widening of US 17, Jasper County, South Carolina File No. 27.480 PIN: 25999

OCT 2 6 2010 SC Department of Archives & History

Dear Ms. Johnson:

The South Carolina Department of Transportation (SCDOT) plans to widen US 17 from two to four lanes from the existing four lane section of SR 404 SPUR/US 17 located on Hutchinson Island in Chatham County, Georgia to SC Route 170 in Jasper County, South Carolina (see attached maps). New South Associates conducted a terrestrial archaeological survey of the project corridor in October 2008. The survey resulted in the identification of three archaeological sites: 38JA1041, 38JA1042, and 38JA1043. All three sites were determined **not eligible** for listing in the National Register of Historic Places (March 30, 2009 letter to Elizabeth Johnson).

The scope of the widening project also includes the construction of a new two-lane bridge over the Back River. The existing bridge over the Back River is structurally deficient and will be replaced by the Georgia Department of Transportation (GDOT) in 2011. SCDOT's project would involve the construction of a new parallel structure within the alignment of the existing bridge over the Back River. The Back River was surveyed for submerged archaeological resources in 1992. Archaeological site 9CH800, the remains of a late 19th century sailing vessel, was identified at the southwestern end of the existing bridge. GDOT conducted data recovery investigations at 9CH800 in October 2008 (Watts 2008) to satisfy obligations under Section 106 of the National Historic Preservation Act. A copy of this report is available upon request.

Based on the results of the October 2008 field survey and the data recovery activities sponsored by GDOT, SCDOT has determined that no historic properties will be affected by the proposed undertaking.

In accordance with the Memorandum of Agreement approved by the Federal Highway Administration, March 16, 1993, the Department is providing this information as agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

Ms. Elizabeth Johnson October 20, 2010 US 17 Widening, Jasper County

It is requested that you review the enclosed material and, if appropriate, indicate your concurrence in the Department's findings, thus completing the Section 106 consultation process. Please respond within 30 days if you have any objections or if you have need of additional information.

Sincerely,

Chad C. Long Archaeologist

CCL:ccl

I (domat) concur in the above determination.

Signed:

cc: Shane Belcher, FHWA Keith Derting, SCIAA Jim Pomfret, GDOT Dr. Wenonah Haire, CIN-THPO

Date: 10/26/10

File: Env/CCL

Estin SC postion



DEPARTMENT OF THE ARMY CHARLESTON DISTRICT, CORPS OF ENGINEERS 69A HAGOOD AVENUE CHARLESTON, SOUTH CAROLINA 29403-5107

October 13, 2010

Regulatory Division

Mr. Randall D. Williamson, P.E. Environmental Engineer South Carolina Department of Transportation Post Office Box 191 Columbia, South Carolina 29202-0191

Dear Mr. Williamson:

This is in response to your agent's letter dated October 09, 2009, requesting a wetland determination, on behalf of the South Carolina Department of Transportation (SCDOT, PIN 25999) for a 7.5 linear-mile long project area consisting of approximately 397 acres, located along U.S. Route 17 from Hutchinson Island, Georgia to SC Route 170 in Jasper County, South Carolina. The project area is depicted on the enclosed wetland delineation plat that was submitted by letter dated August 25, 2010, and prepared by Jordan, Jones and Goulding, Incorporated. The wetland delineation plat consists of 16 sheets, entitled "Proposed Improvements to US 17 from Hutchinson Island, Georgia to SC 170, Jasper County, South Carolina". The plat consists of a location map dated August 25, 2009, and Figures 4-18 dated August 25, 2010. The wetland delineation portion of the plat was revised and a copy provided to our office on August 30, 2010.

Based on several on-site inspections and a review of aerial photography, topographic maps, National Wetland Inventory maps, soil survey information, and information provided by your agent, it has been concluded that the boundaries shown on the referenced, revised sketch are a reasonable approximation of the location and boundaries of the wetlands found on this site. The property in question contains approximately 107.07 acres of tidal marsh and open water tidal "critical area", and 68.874 acres of federally defined jurisdictional freshwater wetlands and other waters of the United States, for a total of 175.944 acres of wetlands or other waters of the United States, which are subject to the jurisdiction of this office. The location and configuration of these areas, as well as their status relative to jurisdiction, are reflected on the plat referenced above.

It should be clearly noted that the decision of the U.S. Supreme Court to exclude certain waters and wetlands from federal jurisdiction under the Clean Water Act has no effect on any state or local government restrictions or requirements concerning aquatic resources, including wetlands. You are strongly cautioned to ascertain whether such restrictions or requirements exist for any area in question before undertaking any activity which might destroy or otherwise impact these wetland resources.

Please note that the actual boundary of wetlands is approximate and, therefore, is subject to change and not appealable; however, the determination of jurisdiction over these wetlands is final and this approved jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The administrative appeal options, process and appeals request form is attached for your convenience and use. If a

permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified sketch should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted.

In future correspondence concerning this matter, please refer to SAC 2009-00631-DJM. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management (OCRM). A copy of this letter is being forwarded to them for their information.

If you have any questions concerning this matter, please contact Michael R. Patrick at 843-329-8044, or toll free at 1-866-329-8187.

Sincerely,

1----- 614

Travis G. Hughes Chief, Special Projects Branch

Enclosures: Basis for Jurisdiction Notification of Appeal Options

Copy Furnished:

Mr. H. Stephen Snyder S.C. Department of Health and Environmental Control Office of Ocean and Coastal Resource Management 1362 McMillan Avenue, Suite 400 Charleston, South Carolina 29405

Jacobs

Jordon, Jones and Goulding, Inc. Attn: Mr. Adam H. Karagosian 309 East Morehead Street, Suite 110 Charlotte, North Carolina 28202



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

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

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): Sept 17, 2010

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Charleston (SAC), US 17 Roadway Improvements from Hutchinson Island, Georgia to SC 170, SAC 2009-00631-DJM

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Form 1 of 1

State: South Carolina County/parish/borough: Jasper County City: NA

Center coordinates of site (lat/long in degree decimal format): Lat. 32.17806° N, Long. -81.07725° W.

Universal Transverse Mercator:

Name of nearest waterbody. Savannah River/Back River Complex

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Savannah River/Back River Complex Name of watershed or Hydrologic Unit Code (HUC): 03060109

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 Π different JD form.

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

- Office (Desk) Determination. Date: March 04, 2010
- Field Determination. Date(s): March 16 2010 and May 19 2010

SECTION II: SUMMARY OF FINDINGS A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area [Required]

- Waters subject to the ebb and flow of the tide.
- Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Ø Explain: Savannah River, Back River, and Linle Back River prove access to international ports, as well as their historic significance in rice and international and national commerce.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

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

1. Waters of the U.S.

- a. Indicate presence of waters of U.S. in review area (check all that apply): 1
 - TNWs, including territorial seas \boxtimes
 - Wetlands adjacent to TNWs
 - Relatively permanent waters2 (RPWs) that flow directly or indirectly into TNWs
 - Non-RPWs that flow directly or indirectly into TNWs
 - Wellands directly abuiting RPWs that flow directly or indirectly into TNWs
 - 80000 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 - Weilands adjacent to non-RPWs that flow directly or indirectly into TNWs
 - Impoundments of jurisdictional waters
 - Isolated (interstate or intrastate) waters, including isolated wetlands
- b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: Open Water Canal 1, 2, 4, 5, 7, 8, 9, 10, 10A, 10B, 11, 12, 13, 17, 18, and 19, and Streams 1, 2, and 3 linear fect: 10,661 with varying widths (ft) and/or 28.714 acres.

Wetlands: Wetlands 1-11, 13-32, 34-45, 45A, 48-50, 52, and 53 and POWs 6 and 15 for a total of 147.23 acres, which includes TNW wetlands as well as those areas above the plane of OHWL and MHWL This calculation is based on the consultant's acreage computations.

Note: an aggregate of wetlands and canals were delineated by the SCDOT consultant, due to the linear nature of the roadway project and are located within the Savannah River/Back River Complex that was created for the purpose of historic rice cultivation. A number of the canals were constructed within the TNW portion of the Complex (specifically Canals 17-19) Streams 3-4 and Wetlands 32, 36, 38, 39, 43, 45, 45A, 50, 52, and 53 are situated in the TNW portion of the Complex. The remaining canal/stream/wetland designations are located within the adjacent wetland the TNW portion of the Complex, to

Boves checked below shall be supported by completing the appropriate sections in Section III below

For purposes of this form, an RPW is defined as a tribulary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (eg typically 3 months)

include Open Water Canals 1, 2, 4, 5, 7-10, 10A, 10B, and 11-13, Stream 1, and Wetlands 1-11, 13-22, 24-27, 29-31, 34, 35, 37, 40-42, 44, 48, and 49 and POWs 6 and 15

- c. Limits (boundaries) of jurisdiction based on 1987 Delineation Manual and the establishment of MHW and OHWM. Elevation of established OHWM (if known):
- 2. Non-regulated waters/wetlands (check if applicable):3
 - Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional Explain. Stormwater features, which are not considered waters of the United States.

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 111.A.1 and Section 111.A.1 and Section 111.D.1.; otherwise, see Section 111.B below.

I. TNW

Identify TNW Szvannah River/Back River Complex

- Summarize rationale supporting determination: Navigable in fact and observed tidal influence of within wetlands and manmade channels that were placed within said TNW wetlands that were converted to historic rice field, which are no longer active The majority of the wetland area subject to this delineation are contained within the Savannah National Wildlife Refuge.
- 2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": Review of USGS quads, local soil survey, infrared aerial photography support the adjacency call. These areas directly abut and are located outside the plane on influence of MHW and OHWL of the Savannah River/Back River/Little Back River, which are navigable in fact.

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

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

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section 111.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section 111.D.2.

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

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

- 1. Characteristics of non-TNWs that flow directly or indirectly into TNW
 - (i) General Area Conditions: Watershed size: Pick List Drainage area: Pick List Average annual rainfall: inches Average annual snowfall: inches

^{&#}x27; Supporting documentation is presented in Section III F.

^{*} Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and crossonal features generally and in the arid West

i) Phy (a)	sical Characteristics: Relationship with TNW:							
1-1	Tribulary flows directly into TNW							
	Tributary flows through Pick List tributaries before entering TNW							
	Project waters are Pick List river miles from TNW.							
	Project waters are Pick List river miles from RPW							
	Project waters are Pick List aerial (straight) miles from TNW							
	Project waters are Pick List aerial (straight) miles from RPW.							
	Project waters cross or serve as state boundaries. Explain:							
	Identify flow route to TNWS:							
	Tributary stream order, if known:							
(b)	General Tributary Characteristics (check all that apply):							
	Manipulated (man-altered) Explain:							
	Tributary properties with respect to top of bank (estimate)-							
	Average width feet							
	Average depth: fect							
	Average side slopes: Pick List.							
	Primary tributary substrate composition (check al) that apply):							
	Silts Sands Concrete							
	Other. Explain:							
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:							
	Presence of run/rifle/pool complexes. Explain							
	Tributary geometry: Pick List							
	Tributary gradient (approximate average slope): %							
(c)	<u>Flow:</u>							
	Tributary provides for: Pick List							
	Estimate average number of how events in review area year. Fick Dist							
	Other information on duration and volume.							
	Surface flow is: Pick List. Characteristics:							
	Charles Brith 1:4 Fundain Gudinor:							
	Dye (or other) test performed:							
	Tributary has (check all that apply):							
	Bed and banks							
	OHWM ⁶ (check all indicators that apply):							
	clear, natural line impressed on the bank in 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							
	U leaf litter disturbed or washed away U scour							
	sediment deposition multiple observed or predicted flow events							
	U water staining							
	L) other (list):							
	Discontinuous OHWM. Explain:							

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² Flow route can be described by identifying, e.g., inhutary a, which flows through the review area, to flow into tributary b, which then flows into TNW ⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporantly 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 nuterop or through a culvert), the agencies will look for indicators of flow above and below the break ³Ibid

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

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

(iii) Chemical Characteristics: Characterize tributary (e.g., water color is clear, discolored, only film, water quality, general watershed characteristics, etc.) Explain:

Identify specific pollutants, if known:

- (iv) Biological Characteristics. Channel supports (check all that apply):
 - Riparian corridor. Characteristics (type, average width):
 - Wetland fringe Characteristics:
 - Habitat for:
 - Federally Listed species. Explain findings:

 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:
- 2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

- (a) General Wetland Characteristics:
 - Properties:

Wetland size. acres Wetland type. Explain: Wetland quality. Explain. Project wetlands cross or serve as state boundaries. Explain:

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

Surface flow is: Pick List Characteristics:

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

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

(d) Proximity (Relationship) to TNW

- Project wetlands are Pick List river miles from TNW. Project waters are Pick List aerial (straight) miles from TNW. Flow is from: Pick List. Estimate approximate location of wetland as within the Pick List floodplain.
- (ii) Chemical Characteristics:
 - Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality, general watershed characteristics; etc.). Explain

Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply): Riparian buffer. Characteristics (type, average width): Vegetation type/particul course. Type, average width):

- Vegetation type/percent cover. Explain:

Habitat for:

- Federally Listed species. Explain findings:
- Fish/spawn areas. Explain findings:
- Other environmentally-sensitive species Explain findings

Aquatic/wildlife diversity Explain findings:

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

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

For each welland, specify the following:

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

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

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

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

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollulants 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 irributary, 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:

- Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D.
- Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW Rows directly or indirectly into TNWs. Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D.
- Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW. Explain findings of
 presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to
 Section III.D:

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

- TNWs and Adjacent Weilands. Check all that apply and provide size estimates in review area:
 TNWs: approximately 7,158 linear feet with varying width (ft) / 27.84 acres of TNW open water area and approximately 79.23 acres of vegetated wetlands below the plane of MHWL and OHWL.
 Weilands adjacent to TNWs: 68.0 acres above the plane of MHWL and OHWL.
- 2. RPWs that flow directly or indirectly into TNWs.
 - Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: The tributaries/canals were excavated from the Savannah River/Back River Complex for the purpose of maintaining extensive historic rice cultivation. The open water canals were observed and verified during several, site visits and are commonly seen during commutes through the general area. Flow is observed year around.

Tribularies of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows scasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply).

Tributary waters 3503 linear feet varies width (ft) / 0.874 acre

 \square Other non-wetland waters: acres.

Identify type(s) of waters

Non-RPWs² that flow directly or indirectly into TNWs. 3.

Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- width (fi). linear feet
- Tributary waters: lin
 Other non-wetland waters: acres
 - Identify type(s) of waters:
- Wetlands directly abutting an RPW that flow directly or indirectly into TNWs. 4.
 - Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 - Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
 - Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D 2, above Provide rationale indicating that wetland is directly abutting an RPW.

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

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

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

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

Provide estimates for jurisdictional wetlands in the review area: acres

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

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and cold in interstate.

- which are or could be used for industrial purposes by industries in interstate commerce
- Interstate isolated waters Explain:
- Other factors. Explain

See Footnote # 3.

To complete the analysis refer to the key in Section III D.6 of the Instructional Guidebook

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category. Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply).

- Tributary waters. linear feet width (ft).
- Other non-weiland waters: acres.
 - Identify type(s) of waters:
- Wetlands: acres

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

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

Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for imigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource:
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-weiland waters (i e., rivers, streams) linear feet, width (ft)
- Lakes/ponds: acres.
 - Other non-wetland waters: acres List type of aquatic resource:
- Wetlands acres.

SECTION IV: DATA SOURCES.

- A. SUPPORTING DATA. Data reviewed for JD (check all that apply checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
 - Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
 - Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
 - Data sheets prepared by the Corps:
 - Corps navigable waters' study:
 - U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data
 - USGS 8 and 12 digit HUC maps.
 - U.S. Geological Survey map(s). Cite scale & quad name: 1.24,000, Limehouse and Savannah Quads
 - USDA Natural Resources Conservation Service Soil Survey. Citation: Jasper County Soil Survey.
 - National wetlands inventory map(s). Cite name:
 - State/Local wetland inventory map(s):
 - FEMA/FIRM maps:

Ø

- 100-year Floodplain Elevation is. (National Geodectic Vertical Datum of 1929)
 - Photographs: X Aerial (Name & Date):aerial photograph submitted by agent and MapInfo 2006 aerials.
 - or Other (Name & Date): Site photographs presented by SCDOT consultant.
- Previous determination(s). File no. and date of response letter.
- Applicable/supporting case law:
- Applicable/supporting scientific literature:
- Other information (please specify)

B. ADDITIONAL COMMENTS TO SUPPORT JD: The waters of the United States presented in this report are part and parcel to the Savannah River/Back River Complex which is contiguous to the Atlantic Ocean, much of which is navigable in fact. Historically, the overall area, including wetlands of the TNWs, as well as those adjacent wetlands were utilized rice cultivation and highly manipulated. Much of the broad area falls into the Savannah National Wildlife Refuge or its adjacent wetlands.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: South Carolina Department of		File Number: SAC 20099-00631-DJM	Date:
Transportation (PIN 25999)			
Attac	ched is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
1	PROFFERED PERMIT (Standard I	Permit or Letter of permission)	В
	PERMIT DENIAL		C
X	APPROVED JURISDICTIONAL	DETERMINATION	D
	PRELIMINARY JURISDICTIONA	AL DETERMINATION	E
SEC	TION I - The following identifies your	rights and options regarding an administration	ive appeal of the above

decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

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

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final
 authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your
 signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights
 to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your nght to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

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

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final
 authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your
 signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights
 to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you
 may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this
 form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the
 date of this notice.

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

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

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the
 date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the Division Engineer, South Atlantic Division, 60 Forsyth St, SW, Atlanta, GA 30308-8801. This form must be received by the Division Engineer within 60 days of the date of this notice.

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

	IONS TO AN INITIAL PROFFERED PERMIT
REASONS FOR APPEAL OR OBJECTIONS: (Descrit initial proffered permit in clear concise statements. You may atta or objections are addressed in the administrative record.)	be your reasons for appealing the decision or your objections to an ch additional information to this form to clarify where your reasor
ADDITIONAL INFORMATION: The appeal is limited to a revie ecord of the appeal conference or meeting, and any supplemental elarify the administrative record. Neither the appellant nor the Co you may provide additional information to clarify the location of i	w of the administrative record, the Corps memorandum for the information that the review officer has determined is needed to rps may add new information or analyses to the record. However information that is already in the administrative record.
POINT OF CONTACT FOR QUESTIONS OR INFOF	MATION:
f you have questions regarding this decision and/or the anneal	If you only have questions regarding the appeal process you ma also contact the Coordinator for Appeals in our South Atlantic Division Office in Atlanta. Georgia at (404) 562-5136
process you may contact the Corps biologist who signed the etter to which this notification is attached. The name and elephone number of this person is given at the end of the letter.	Mike Bell
process you may contact the Corps biologist who signed the etter to which this notification is attached. The name and elephone number of this person is given at the end of the letter.	Mike Bell 60 Forsyth St, SW Atlanta, GA 30308-8801
AIGHT OF ENTRY: Your signature below grants the right of entronsultants, to conduct investigations of the project site during the lotter of any site investigation, and will have the opportunity to parts	Mike Bell 60 Forsyth St, SW Atlanta, GA 30308-8801 ry to Corps of Engineers personnel, and any government course of the appeal process. You will be provided a 15 day articipate in all site investigations.

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					DATE		10/09/09
Jordan, Jone	s & Goulding				PROJE	CT NO:	03058003
9101 Southe	rn Pine Bouleva	rd • Suite	160		ATTEN	NTION: Travi	is Hughes
Charlotte, N	C 28273						
r: 704.527.4	106 • F: 704.52	7.4108 •	www.jjg.com				
ro: _	U.S. Army Corp	os of Eng	ineers		RE:	JD Reques	it Le star
-	Regulatory Div	ision	an Antonia and			US 17 WIC	iening inty SC
_	69-A Hagood A Charleston SC	29403	1 at Martin T	<u> </u>		PIN 25999	
PHONE::	843-329-8044	20400	<u></u>				
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ALC: NO

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE

Jordan, Jones & Goulding

9101 Southern Pine Boulevard, Suite 160 Charlotte, North Carolina 28273 T: 704.527.4106 • F: 704.527.4108 • www.jjg.com

CELEBRATING FIFTY YEARS

958-2008



October 8, 2009

Mr. Travis Hughes Regulatory Division United States Army Corps of Engineers – Charleston District 69-A Hagood Avenue Charleston, SC 29403

RE: Request for Jurisdictional Determination US 17 Widening from Hutchinson Island, GA to SC 170 Jasper County, South Carolina SCDOT PIN: 25999; File No. 27.480

Dear Mr. Hughes:

On behalf of the South Carolina Department of Transportation (SCDOT), Jordan, Jones & Goulding (JJG) was contracted to perform ecological field studies for the proposed US 17 Widening Project in Jasper County, South Carolina. The project consists of widening US 17 from two to four lanes with either a variable 36- to 48-foot depressed median or a 15-foot center turn lane for a distance of approximately 7.5 miles. The corridor reviewed was 400 feet wide (200 feet from the centerline of US 17 on both sides of the road), extending for Hutchinson Island in Chatham County, GA to SC 170 in Jasper County, SC. The total area reviewed was 397 acres. Field studies included identifying, locating, and flagging jurisdictional waters of the U.S. (following the accepted methodology of the United States Army Corps of Engineers). JJG is requesting, on behalf of SCDOT, an Approved Jurisdictional Determination from the USACE.

Field studies were conducted during the weeks of May 4 – May 8, 2009, May 18 – May 22, 2009, and July 6 – July 10, 2009. A total of 49 wetlands (Wetlands 1 - 53), two palustrine open waters (POW 6 and 15), 16 open water canals (Open Water Canals 1 - 19), three streams (Streams 1 - 3), and one non-jurisdictional, non-relatively permanent water (Non-RPW) were delineated within the project corridor during field studies. Of the 49 wetlands, seven are considered non-regulated, isolated wetlands (Wetlands 6, 12, 17, 28, 29, 44, and 51). Reference Table 1 below for a summary of the total acreage and length of jurisdictional and non-jurisdictional wetlands, streams, and canals delineated in the project corridor.

Туре	# of Features	Acres	Linear Feet
Palustrine Wetlands	33	64.06	NA
Estuarine Wetlands	9.	7 8.76	NA
Palustrine Open Waters	2	1.21	NA
Open Water Canals	16	5.06	9,833
Streams	3	20.74	782
Jurisdictional Totals	angar mananan ar an ar An isan ar <u>an</u>	169.83	10,615
Non-Regulated, Isolated Wetlands Non-Jurisdictional, Non-RPW	7	2.38 NA	NA NA
Non-Jurisdictional Totals	lana tang aka lang alam tang aka lang	2.38	ŇĂ

Table 1 US 17 Widening Project Delineation Summary



Mr. Travis Hughes October 8, 2009 Page 2



The features identified during field studies are located on the Limehouse, South Carolina and Savannah, Georgia USGS 7.5-minute topographic maps (Figure 1). Surrounding land use is mainly planted pines, the Savannah National Wildlife Refuge, undeveloped land, an educational facility, small commercial facilities, and private residences (Figure 2).

The jurisdictional features in the northern half of the site generally drain to the west and north through a vast wetland system, and through numerous unnamed canals and tributaries, all contained on the Savannah National Wildlife Refuge, to the Little Back River. The jurisdictional features in the central portion of the site generally drain to the west and south toward Lucknow Canal, Murray Hill Canal, and several unnamed canals, eventually into the Back River. The wetlands in the southern portion of the site generally drain to the Back River. The wetlands in the southern portion of the site generally drain to the Back River. The wetlands in the southern portion of the site generally drain to the Back River via Shubra Canal and other unnamed canals. The southern-most wetlands are estuarine tidal salt marshes that abut the Back River. In addition, three tidal salt marsh wetlands (Wetlands 32, 36 and 39) are situated on the west side of US 17, amongst a palustrine wetland system. This is the result of ditching that has alter the hydrologic regime, which appears to have caused mixing of freshwater and salt water beneath US 17 via culverts.

There are twelve soil mapping units located within the project corridor (Figure 3): Argent fine sandy loam (Ae), borrow pits (Bp), Cape Fear loam (Ca), Chisolm loamy fine sand (Cmb), Coosaw loamy fine sand (Cs), Fluvaquents and Udipsamments (FA), Hobonny soils (HB), Levy soils (LE), Okeetee fine sandy loam (Oe), Santee fine sandy loam (Sa), Tidal marsh, fresh (Tmh), and Williman loamy fine sand (Wn). The following soil mapping units within the project corridor are noted as hydric: Ae, Ca, FA, HB, LE, Oe, Sa, Tmh, and Wn.

A brief description of each feature within the proposed project corridor is located on the following pages in Table 2. For more detailed information on the jurisdictional features, please refer to the attached Jurisdictional Determination Forms, Wetland and Upland Data Sheets, Photographs of Jurisdictional Features, and Figures 4 through 18 (Jurisdictional Determination Maps showing location of the delineation features).

I.D	Cowardin Classification	Approximate Linear (ft) delineated	Acres (ac) delineated	Width at OHW (ft)	Width at TOC** (ft)	Lat/Long Coordinates
Open Water Canal 1	R1SB56	109	0.03	6-8	10-15	32.185110 -81.0 7 8363
Open Water Canal 2	R1\$B56	157	0.03	2-4	6-8	32.178797 -81.078594
Open Water Canal 4	R1SB6	182	0.02	2-4	6-10	32.166689 -81.066423
Open Water Canal 5	R1SB6	195	0.02	2-4	6-10	32.166656 -81.066429

Table 2 US 17 Widening Project Summary of Jurisdictional Features

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Table 2 US 17 Widening Project Summary of Jurisdictional Features

I.D	Cowardin Classification	Approximate Linear (ft) delineated	Acres (ac) delineated	Width at OHW (ft)	Width at TOC** (ft)	Lat/Long Coordinates
POW ⁺⁺ 6	POW	N/A	0.96	N/A	N/A	32.162750 -81.062511
Open Water Canal 7	R1SB45	123	0.03	6-26	8-30	32.161581 -81.061531
Open Water Canal 8	R15B45	118	0.19	70-75	74-79	32.161425 -81.061365
Open Water Canal 9	R15B45	126	0.07	20-28	22-30	32.161191 -81.061852
Open Water Canal 10	R1SB45	98	0.11	65-72	68-76	32.160900 -81.061672
Open Water Canal 10A	R1\$B5	41	0.004	3-4	3-4	32.160646 -81.061759
Open Water Canal 10B	R1SB45	370	0.05	2-3	2-3	32.160362 -81.061368
Open Water Canal 11	R1SB456	1,617	0.26	5-11	7-14	32.157524 -81.057820
[•] Open Water Canal 12	R1SB6	142	0.03	6-8	10-12	32.158380 -81.059085
Open Water Canal 13	R1SB56	44	0.01	4-6	6-8	32.151151 -81.053342
POW ⁺⁺ 15	POW	N/A	0.25	N/A	N/A	32.143871 -81.052019
Open Water Canal 17	R1SB456	150	0.41	110- 147	120- 165	32.136477 -81.052893
Open Water Canal 18	R1\$B456	6,184	3.29	15-28	25-36	32.105969 -81.084327
Open Water Canal 19	R1SB456	177	0.51	105- 194	117- 210	32.104783 -81.086624
Stream	R4SB56	181	0.02	1-2	3-6	32.178842 -81.081386

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Table 2 US 17 Widening Project Summary of Jurisdictional Features

İ.D	Cowardin Classification	Approximate Linear (ft) delineated	Acres (ac) delineated	Width at OHW (ft)	Width at TOC** (ft)	Lat/Long Coordinates
Stream 2	R1SB45	247	0.09	13-23	25-30	32.136350 -81.052524
Stream 3	R1SB45	354	20.63	2,920- 2,950	3,220- 3,300	32.101332 -81.089064
Non- RPW 1	N/A	346	0.04	N/A	2-5	32.184306 -81.078416
Wetland 1	PFO/PEM1E	N/A	2.74	N/A	N/A	32.185359 -81.077322
Wetland 2	PFO1B	N/A	0.92	N/A	N/A	32.185694 -81.078322
Wetland 3	PFO1B	N/A	0.48	N/A	N/A	32.178476 -81.077926
Wetland 4	PFO1A	N/A	0.07	N/A	N/A	32.17867 -81.08087
Wetland 5	PFO1E	N/A	2.16	N/A	N/A	32.178754 -81.082291
Wetland 6*	PEM/PSS1B	N/A	0.05	N/A	N/A	32.178957 -81.081086
Wetland 7	PEM1E	Ń/A	0.07	N/A	N/A	32.180287 -81.079505
Wetland 8	PEM1E	N/A	0.02	N/A	N/A	32.180355 -81.07991
Wetland 9	PFO/PEM1E	N/A	0.07	N/A	N/A	32.17956 -81.078857
Wetland 10	PFO1E	N/A	1.94	N/A	N/A	32.175888 -81.075992
Wetland 11	PFO1E	N/A	1.47	N/A	N/A	32.17483 -81.073998
Wetland 12*	PEM1B	N/A	0.03	N/A	N/A	32.1704 -81.069667
Wetland 13	PEM1E	N/A	0.10	N/A	N/A	32.169749 -81.069048
Wetland 14	PFO1B/PSS1E	N/A	0.36	N/A	N/A	32.16947 -81.068777
Wetland 15	PFO1B	N/A	0.44	N/A	N/A	32.170821 -81.071615
Wetland 16	PFO1B	N/A	0.44	N/A	N/A	32.169434 -81.069974

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Table 2 US 17 Widening Project Summary of Jurisdictional Features

I.D	Cowardin Classification	Approximate Linear (ft) delineated	Acrés (ac) delineated	Width at OHW (ft)	Width at TOC** (ft)	Lat/Long Coordinates
Wetland 17*	PEM1B	N/A	0.16	N/A	N/A .	32.168707 -81.068459
Wetland 18	PFO1E	N/A	1.08	N/A	N/A	32.167849 -81.067093
Wetland 19	PFO1E	N/A	5.29	N/A	N/A	32.165077 -81.06605
Wetland 20	PEM1B	N/A	0.06	N/Ą	N/A	32.166762 -81.066587
Wetland 21	PFO1B	N/A	0.37	N/A	N/A	32.165254 -81.064776
Wetland 22	PFO1E	N/A	0.43	N/A	N/A	32.15967 -81.05949
Wetland 24	PFO1E	N/A	3.09	N/A	N/A	32.155176 -81.055352
Wetland 25	PFO/PSS/PEM1B	N/A	1.69	· N/A	N/A	32.159546 -81.060795
Wetland 26	PFO1B	N/A	1.55	N/A	N/A	32.157404 -81.058578
Wetland 27	PFÓ1A	N/A	8.57	N/A	N/A	32.150937 -81.05494
Wetland 28*	PEM1E	N/A	0.14	N/A	N/A	32.153228 -81.054512
Wetland 29*	PEM1B	N/A	0.04	N/A	N/A	32.153033 -81.054297
Wetland 30	PFO/PEM1E	N/A	4.61	N/A	N/A	32.148756 -81.052849
Wetland 31	PEM1B	N/A	1.35 .	N/A	N/A	32.143833 -81.052026
Wetland 32	E2EM1N	N/A	0.14	N/A	N/A	32.14356 -81.053014
Wetland 34	PEM1B	N/A	3.71	N/A	N/A	32.144775 -81.052744
Wetland 35	PEM1B/H	N/A .	1.89	, N/A	N/A	32.142209 -81.051548
Wetland 36	E2EM1V	N/A	3.90	N/A	N/A	32.138845 -81.052749
Wetland 37	PFO/PSS1B/H	N/A	2.73	N/A	N/A	32.139622 -81.051716



Table 2 US 17 Widening Project Summary of Jurisdictional Features

I.D	Cowardin Classification	Approximate Linear (ft) delineated	Acrès (ac) delineated	Width at OHW (ft)	Width at TOC** (ft)	Lat/Long Coordinates
Wetland 38/43	E2EM1N	N/A	28.28	N/A	N/A	32.119289 -81.068835
Wetland 39	E2EM1N	N/A	3.00	N/A	N/A	32.134807 -81.053928
Wetland 40	PEM1H	N/A	1.80	N/A	N/A	32.132751 -81.055027
Wetland 41	PFO1B	N/A	8.21	N/A	N/A	32.127244 -81.06083
Wetland 42	PFO1B	N/A	0.38	N/A	N/A	32.1232 -81.065865
Wetland 44*	PEM1B	N/A	0.18	N/A	N/A	32.118048 -81.070361
Wetland 45	E2EM1N	N/A	17.90	N/A	N/A	32.111659 -81.077907
Wetland 45A	E2EM1N	N/A	1.19	N/A	N/A	32.105002 -81.085567
Wetland 48	PEM/PFO1B	N/A	4.14	N/A	N/A	32.120416 -81.069184
Wetland 49	PEM1B	N/A	1.83	N/A	N/Å	32.117066 -81.072797
Wetland 50	E2EM1N	N/A	20,85	N/A	N/A	32.11085 -81.080146
Wetland 51*	PEM1B/H	N/A	0.09	N/A	N/A	32.108475 -81.082675
Wetland 52	E2EM1N	N/A	2.37	N/A	N/A	32.105002 -81.085567
Wetland 53	E2EM1N	N/A	1.13	N/A	N/A	32.097739 -81.091444

* = Isolated Wetland ** = Top of Channel ** = Palustrine Open Water

1958-2008

Mr. Travis Hughes October 8, 2009 Page 7



1958-2008

CELEBRATING FIFTY YEARS

Please contact Adam Karagosian at 704-527-4106 if you have questions regarding this information.

Sincerely,

JORDAN, JONES & GOULDING, INC.

Kevin 🕅. Mullinax Project Environmental Scientist

PWS Adam H. Karagosian,

Project Manager

Enclosures: Jurisdictional Determination Request Form Approved Jurisdictional Determination Forms Wetland Determination Data Forms Figure 1 – Project Location Map Figure 2 – USGS Map Figure 3 – NRCS Soils Map Figures 4 through 18 – Jurisdictional Determination Maps Aerial Photo Sheet (36" x 42") Representative Photographs of Jurisdictional Features

cc: Chad Long, SCDOT

U.S. Army Corps of Engineers – Charleston District - Regulatory Division

JURISDICTIONAL DETERMINATION REQUEST

For Identifying Waters of the U.S., Including Wetlands and Tributaries

Project Name: US 17 Widening from Hutchinson Island, GA to SC 170 Date: 10-08-09

County: Jasper

Property Owner : SCDOT

Address: 955 Park Street, Room 507

Address: Columbia, SC 29201

Phone: Attn: Chad Long 803-737-1396

Email: longcc@dot.state.sc.us

Total Acreage of Tract: 397 acres

Agent: Jordan, Jones & Goulding, Inc.

Address: 9101 Southern Pine Blvd., Suite 160

Address: Charlotte, NC 28273

Phone: Attn: Adam Karagosian 704-527-4106

Email:__adam.karagosian@jjg.com

Information Required to Accompany Request - Check the items submitted - forward as much information as is available. At a <u>minimum</u>, the first two items must be forwarded:

Accurate Location Maps (from County Map, USGS Quad Sheet, etc.)

- Survey Plat or Tax Map of the Property in Question
- Soil Survey Sheet (from USDA-NRCS) or Aerial Photo (from County Assessor's Office or other source). Property boundaries should be shown on the soil survey / photo.
- C Topographic Survey
- Conceptual Site Plan for the Overall Development

IDescription of the proposed use of the property (residential, commercial, industrial, silvicultural, agricultural, etc.)

Status of the project (on-going site work for development, development in planning stages, no plans at this time, etc.)

Type of Determination Requested - Choose one:

O Preliminary – Preliminary determinations will identify whether wetlands or other waters are present on the site and will presume that they are jurisdictional. This type of determination is likely to be made more quickly and require less information be submitted.

O Approved – Approved determinations will identify whether wetlands or other waters are present on the site and will include a determination of their jurisdictional status. This type of determination is likely to take longer and require more detailed information be submitted.

IMPORTANT NOTE: Legible printed name and signature required. The person signing this form <u>must</u> be the present property owner or have the specific authority of the property owner to authorize Corps of Engineers employees or their agents to enter onto the property for on-site investigations if such is deemed necessary. <u>Do not sign</u> this form unless you are the owner, or have the specific authority of the property owner.

PRINTED NAME of person signing this form, below: Adam Karagosian

Signature of Property Owner or Authorized Agent:_

HQ and South Branch 69-A Hagood Avenue Charleston, SC 29403 843-329-8044

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Northeast Branch 1949 Industrial Park Rd, Room 140 Conway, SC 29526 843-365-4239 Northwest Branch 1853 Assembly St., Room 865-B Columbia, SC 29201 803-253-3444

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Copies of this form may be obtained at: http://www.sac.usace.army.mil/assets/pdf/regulatory/permits/request_jurisdictional_determination_form.pdf


United States Department of the Interior



FISH AND WILDLIFE SERVICE 176 Croghan Spur Road, Suite 200 Charleston, South Carolina 29407

December 1, 2009

Mr. Edward Frierson Environmental Project Manager S.C. Department of Transportation P.O. Box 191 Columbia, SC 29202-0191

Re: Biological Assessment, US-17 Widening, Chatham County, GA and Jasper County, SC, FWS Log No. 42410-2010-I-0075

Dear Mr. Frierson:

The U.S. Fish and Wildlife Service (Service) has received the Biological Assessment (BA) regarding the proposed improvement US Hwy 17 in Jasper County and the Back River bridge in Chatham County, GA. The described project entails widening Hwy 17 from two lanes to four lanes separated by a median. The project is 7.5 miles in length beginning at the US Hwy 17/SC 170 interface south to the South Carolina state line shared with Georgia. The project corridor is 400 feet in width covering approximately 395 acres of fresh and salt water wetlands.

This BA includes a review of each of the threatened and endangered (T&E) species that are known to occur, or may occur, within the project area. This review was performed in order to facilitate consultation with the Service as required by the Endangered Species Act of 1973 (Act), as amended. The BA concluded that no potential habitat was found in the project corridor for several species; piping plover, [frosted] flatwoods salamander, American chaffseed, Canby's dropwort and seaturtles. Therefore, SCDOT concluded the project would have no effect on these species. At this time, no further consultation is required. Potential habitat does exist for the West Indian manatee, red-cockaded woodpecker, shortnose sturgeon, wood stork, eastern indigo snake and the pondberry.

The Service recommends SCDOT contact the National Oceanographic and Atmospheric Administration regarding consultation requirements and determinations regarding the shortnose sturgeon. As the proposed bridge is located primarily in Georgia waters and pursuant to the Service's August 21, 2007, correspondence (copy enclosed) the Service's Ecological Services Coastal Sub Office located in Brunswick, GA serves as the lead office for species consultations.



We recommend SCDOT contact the Brunswick Sub Office to address potential impacts and section 7 requirements regarding the West Indian manatee. SCDOT determined that although potential habitat was found in the project area for the remaining species, no individuals were observed during survey efforts.

Upon review of the information provided, the Service concurs with the SCDOT determination that the US Hwy 17 widening project may affect, but is not likely to adversely affect the pondberry, red-cockaded woodpecker, American chaffseed or the woodstork. Please note that obligations under section 7 of the Act must be reconsidered if (1) new information reveals impacts of this identified action may affect any listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner which was not considered in this assessment; or (3) a new species is listed or critical habitat is designated that may be affected by the identified action.

If you have any questions regarding the Service's determination, please do not hesitate to contact Mark Caldwell at (843) 727-4707 ext. 215.

Sincerely,

gilli. Kodes

Timothy N. Hall Field Supervisor

TNH/MAC/km

Enclosure

cc: Mr. Ben Dickerson, USFWS, Brunswick, GA

U.S. Department of Homeland Security

United States Coast Guard



Commander Seventh Coast Guard District 909 S. E. First Avenue Miami, Fl 33131 Staff Symbol: (dpb) Phone: (305) 415-6989 Fax: (305) 415-6763 Email: evelyn.smart@uscg.mil

16211/GA-SC NAV Serial: 1786 July 20, 2009

Mr. Randall D. Williamson, P.E. Environmental Engineer South Carolina Department of Transportation P. O. Box 191 Columbia, South Carolina 29202-0191

Dear Mr. Williamson:

This refers to your letter dated May 14, 2009 requesting a written response for the proposed US 17 Bridge (locally known as the Eugene Talmadge Memorial Bridge) widening across the Back River located on Hutchinson Island in Chatham County, Georgia to SC 170 in Jasper County, South Carolina.

Our examination and jurisdictional findings indicates that there is sufficient factual support for concluding that the Back River is a navigable waterway of the United States. Although navigable waters of the United States and subject to Coast Guard jurisdiction, the waterway at this location is in the Advance Approval category. The Commandant has given his advance approval to the location and plans of bridges constructed across reaches of waterways navigable in law, but not actually navigated other than by rowboats, canoes, and small motorboats. In such cases, the clearances provided for high water stages are considered adequate to meet the reasonable needs of navigation (33 CFR 115.70).

Based on our determination the proposed bridge project across the Back River will not require a Coast Guard bridge permit. Although this project will not require a bridge permit other areas of Coast Guard jurisdiction apply. The following stipulations must be met:

a. The lowest portion of the superstructure of the bridge across the waterway should clear the 100-year flood height elevation. Coordinate with the Federal Emergency Management Administration.

b. Upon completion of design and finalization of the location, this office shall be contacted regarding approval of lights and other signals that may be required under 33 CFR 118. Approval of said lighting or waiver shall be obtained prior to construction.

c. Upon completion of construction, the bridge owner shall submit "as built" drawings (8 1/2 X 11") showing clearances through the bridge and sufficient data to permit this office to prepare a completion report. This report is used for Coast Guard and other mariner publications. Also submit an 8 $\frac{1}{2}$ X 11" photo of the completed bridge for our bridge file and database.

d. For the safety of navigation (rowboats, canoes and small motorboats) that may use the waterway, at no time shall the waterway be closed to navigation without 60 days notification and approval of the Seventh Coast Guard District Bridge Branch, Operations Section. The 60 day notification shall be given to Mr. Michael Lieberum at (305) 415-6744.

Coast Guard approval does not relieve the applicant of the responsibility to ensure compliance with any applicable **federal**, **state**, **and local laws and regulations** for the proposed project. When the bridge is no longer used for transportation purposes, it must be removed in its entirety and you <u>must</u> notify this office that the waterway has been cleared.

This exemption will not necessarily apply to future modifications of this bridge or the construction of other bridges along this waterway since waterway usage may change over time, increased activity along this waterway could remove it from the Advance Approval category. If construction of this bridge is not commenced within 2 years from the date of this letter, please submit an updated "Bridge Project Questionnaire" for reconsideration.

If you have any questions about this matter, please call Miss Evelyn Smart at (305) 415-6989.

Sincerely,

Evelyn Swart

EVELYN SMART Environmental Protection Specialist U. S. Coast Guard By direction