

**South Carolina Department of Transportation
On Behalf of the Federal Highway Administration – South Carolina Division Office**

**PROCESSING FORM FOR PROGRAMMATIC CATEGORICAL EXCLUSIONS
NON MAJOR FEDERAL ACTIONS**

County	Route	PIN	File Number
Cherokee	I-85	39094_BR11	11.039034.11

Programmatic Type: CE B

Project Name: Proposed Bridge Replacements on I-85 over Norfolk Southern in Cherokee County, South Carolina.

Proposed Action: The South Carolina Department of Transportation (SCDOT) proposes to replace the dual bridges (northbound and southbound) located on Interstate 85 over the Norfolk Southern (NS) railroad tracks in Cherokee County, South Carolina (**Figure 1**). The proposed project would include replacement of both bridges in the same location with one modern structure while maintaining the existing roadway alignment and approaches. Each bridge currently accommodates two lanes of one-way traffic and the roadway is classified as Rural Principal Arterial Interstate. The existing bridges are each approximately 37.5 feet in width and 255 feet in length, consisting of three 57-foot spans and two approach spans of cast-in-place concrete on steel girders, supported on timber pile bents. The existing height of each bridge over the NS railroad tracks is approximately 24 feet, 8 inches. It is anticipated that the replacement bridge will be designed and constructed as part of a pending SCDOT Design-Build contract and funding is included in the State Transportation Improvement Plan (STIP District 4). With the NS requirement of 23 feet in height, the new bridge would provide adequate clearance for the railroad and the minimum span between bents would be approximately 150 feet to allow for future railroad widening. The new bridge would also be designed to accommodate the planned widening of I-85 to three lanes in each direction in the future. The proposed replacement bridge would be approximately 255 feet in length and 106 feet in width to accommodate three, 12-foot lanes in each direction with 12-foot shoulders on each bridge (**Figure 2a** and **Figure 2b**). It is anticipated that additional right-of-way would not be needed and displacements would not result (**Figure 3**). Staged construction would be used to allow use of the existing bridges during construction; therefore, an off-site detour would not be necessary.

Purpose and Need: The purpose of the project is to replace the structurally deficient southbound bridge and accommodate future widening of I-85 by replacing the northbound bridge concurrently. Existing (2009) average daily traffic (ADT) on I-85 is approximately 20,900 vehicles per day (vpd). By 2029, the ADT on I-85 is expected to increase to 36,575 vpd. The existing bridges were built in 1958 (northbound) and 1954 (southbound) and have a sufficiency rating of 76.0 (northbound) and 48.6 (southbound), out of 100. This sufficiency rating classifies the southbound bridge as structurally deficient and makes it eligible for replacement through the Federal Highway Bridge Replacement and Rehabilitation Program. Though the northbound bridge is neither

functionally obsolete nor structurally deficient, it would be replaced in conjunction with the southbound bridge to simplify construction, accommodate future widening of I-85, and minimize future disruption to highway traffic and freight rail traffic that would occur if the northbound bridge were replaced at a later date.

Findings: The project has been assessed for possible effects on the human and natural environment with a determination that no significant environmental impact would occur. The class of action and impact determination documented by this statement would qualify this project as a categorical exclusion under 23 CFR 771, Section 115(b).

In consultation with the State Historic Preservation Office (SHPO), as appropriate, the project would not affect historic properties or archeological sites under 36 CFR 800. Concurrence from the SHPO and the Tribal Historic Preservation Offices (THPOs) for the Catawba Indian Nations and the Eastern Band of Cherokee Indians is included in **Appendix A**.

Three streams and two wetlands were identified within the project study area (**Figures 4 – 7**). It is anticipated that minor impacts to one stream and both wetlands could occur as a result of the proposed project. Stream impacts are anticipated to be 100 linear feet, or less, and wetland impacts are anticipated to be less than 0.2 acre. It is anticipated that the proposed project would be processed as a General Permit (GP) and that any required compensatory mitigation requirements for permanent project impacts would be attained through purchase of mitigation credits from an approved mitigation bank.

No waters within the project study area or any waters within the project watersheds are listed on the South Carolina Department of Health and Environmental Control (SCDHEC) 2010 303(d) list of impaired waters.

The project is not expected to jeopardize the continued existence of any listed endangered or threatened species or destroy or adversely modify critical habitat. Therefore, no further investigation under Section 7 of the Endangered Species Act is necessary (see **Appendix B** for Biological Assessment).

Additionally, the proposed project will have no effect on floodplains, land use, hazardous materials, air quality or noise.

Environmental Commitments:

- Impacts to jurisdictional waters will be permitted and appropriately mitigated, if required, under a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers. Based on preliminary engineering, it is anticipated that the proposed project will impact 100 linear feet or less of stream and less than 0.2 acre of wetlands; and therefore, the project will be permitted under SCDOT's General Permit (GP). Any required compensatory mitigation requirements for permanent project impacts will be attained through purchase of mitigation credits from an approved mitigation bank.

- The acquisition and disturbance of hazardous waste will be avoided, if possible. If avoidance is not a viable alternative, hazardous materials will be tested and removed and/or treated in accordance with the United States Environmental Protection Agency and the South Carolina Department of Health and Environmental Control requirements. If the creosote treated wood from the pilings, guard rail supports, or cross ties are disturbed or removed during construction, the wood and surrounding soils should be evaluated for proper disposal.
- The proposed bridge replacement will be coordinated with Norfolk Southern railroad services.

Categorical Exclusion Type B (Conditional Programmatic)

Projects of the type listed below would not automatically fall under the same programmatic clearance as the CE Type A. The regulations in 23 CFR 771.117(d) list additional types of projects which can meet the CE criteria only after FHWA approval. Several of these projects have been approved to be processed programmatically by FHWA-SC if certain conditions are met. These types are listed below.

Check appropriate project type:

- ☐ 1. Safety projects including but not limited to: placement of traffic barrier; energy attenuators; grading of slopes or gore areas to eliminate the need for guardrail, improve the clear zone, improve curves, or improve sight distance/ removal of fixed objects such as boulders or trees; lighting; glare screens; delineators; and safety modification of drainage structures.
- ☐ 2. Pavement resurfacing, restoration, rehabilitation, and reconstruction projects including related shoulder and ditch work.
- ☐ 3. Traffic operation type projects including but not limited to: freeway surveillance and control systems; intersection channelization; turn lanes, acceleration or deceleration lanes; construction, modification or elimination of curbs, raised median dividers or sidewalks; and widening less than a single lane width.
- ☒ 4. Bridge and culvert rehabilitation work and bridge replacement at the same location.

To be processed as a Categorical Exclusion Type B (CEB) the following conditions must be met in addition to the General Criteria (as outlined in the PA between FHWA-SC and SCDOT). Place a check in the appropriate box.

	Yes	No
1. The acquisition of more than minor amounts of temporary or permanent strips of right-of-way and the acquisition will not require any residential or business displacements.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Use of Section 4(f) properties.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. An adverse effect determination under Section 106 of the Nation Historic Preservation Act.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Individual Coast Guard Permits.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Individual Corps of Engineer Permits, or and impact greater than three (3) acres of wetlands.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
a. Wetland Impacts (acres): <input type="text"/>		
6. Impacts to planned growth or land use, or significant impacts on travel patterns.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Work encroaching in a regulatory floodway, adversely affecting the base floodplain, or potentially adversely affecting a National Wild and Scenic River.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Changes in access control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Any known or potential major hazardous waste sites within the right-of-way.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If the answer is yes to any of the above criteria, a documented Categorical Exclusion (CE-C) must be prepared and forwarded to FHWA for approval.

The above described project has been reviewed based on the information contained in the engineer's Project Planning Report (PPR) and it has been determined that the project meets the criteria set forth in the Programmatic Categorical Exclusion Agreement signed by FHWA and SCDOT. It is understood that any additions/deletions to the project may void environmentally processing the project as presently classified; consequently, any engineering changes must be brought to the attention of the SCDOT Environmental Section immediately. The project's CE Classification should be shown in the remarks section on the Letter of Request for Authorization Form (PS Form 39) for right-of-way and/or construction for concurrence by FHWA. A copy of this form is included in the project file and one (1) copy has been provided to FHWA.

Prepared by: Jennifer Schwaller, Senior Environmental Planner April 25, 2012
STV Incorporated Date

PPMS: Yes ☐ No ☐

Supplemental Information

Acquisitions /Displacements

The proposed project would be constructed with existing right-of-way. As a result, acquisitions would not be necessary and displacements would not result.

Section 4(f)

The proposed project would not impact publically owned parks, recreational areas, or wildlife refuges. Therefore, a Section 4(f) evaluation/approval is not required for this project.

Section 106 - Cultural Resources (Archaeological/Historic)

In accordance with 36 CFR 800.4, an archaeological review and background research was conducted for the proposed project. All new construction would occur within the existing right-of-way and the bridges were previously determined to be not eligible for the National Register of Historic Places (NRHP). The project site was visited in September 2010 and March 2012 and it was determined that there are no eligible archaeological sites or historic architectural resources within the Area of Potential Effects (APE).

Based on the project setting and the absence of any eligible or listed properties within the APE, an intensive cultural resources survey was deemed not necessary, and no further work is recommended (letter dated November 4, 2010; and April 6, 2012). The State Historic Preservation Office (SHPO) concurred with these findings on February 23, 2011 and the SCDOT prepared a Cultural Resources Project Screening Form indicating concurrence with the findings on April 18, 2012 (see **Appendix A**).

Wetlands and Streams

The project corridor was field reviewed on August 12, 2010 and March 28, 2012 for the presence of jurisdictional waters of the U.S., including wetlands and streams. Potential jurisdictional waters of the U.S. identified in the project study area (PSA) include the following (**Figures 4-7**):

- Unnamed Tributary to Bee Branch (Seasonal RPW Stream A)
- Unnamed Tributary to Bee Branch (Seasonal RPW Stream B)
- Unnamed Tributary to Bee Branch (Seasonal RPW Stream C)
- Palustrine Emergent Herbaceous/Scrub-Shrub/Forested Wetland (Wetland A)
- Palustrine Emergent Herbaceous/Scrub-Shrub Wetland (Wetland B)

Stream A is located within the western portion of the PSA. The stream appears to be a seasonal relatively permanent water (RPW) and begins at a culvert located on the north side of I-85. A stormwater detention basin is located opposite of the stream channel on the south side of I-85 and drains to the channel via a pipe located under the roadway. Within the PSA, the stream channel exhibited weak flow, weak sinuosity, alluvial

deposits, continuous bed and banks, and bank heights of 1 to 2 feet. Substrate within the channel bottom consisted of sand, silt, and gravel.

Stream B is located within the west central portion of the PSA. The stream appears to be a seasonal RPW and flows in a general northwest direction through the PSA for approximately 166 linear feet. The stream appears to originate outside (south) of the PSA and flows into a pipe on the south side of I-85. At the pipe outfall on the north side of I-85, the stream continues in a northwest direction through the PSA for approximately 80 feet before diffusing into a wetland feature (Wetland B). RPW Stream B is approximately three to five feet in width and exhibited weak flow, weak to moderate sinuosity, continuous bed and banks, and bank heights of 0.5 to 1.5 feet. Substrate within the channel bottom consisted of sand and silt.

Stream C is located within the eastern portion of the PSA. The stream appears to be a seasonal RPW and flows in a general south direction through the PSA for approximately 25 linear feet. The stream appears to originate outside (north) of the PSA and flows into a pipe on the north side of I-85. At the pipe outfall on the south side of I-85, the stream continues in a south direction outside of the PSA. RPW Stream C is approximately two to three feet in width. Within the PSA, the stream channel exhibited weak flow, weak sinuosity, continuous bed and banks, and bank heights of 0.5 to one foot. Substrate within the channel bottom consisted of sand and silt.

Wetland A is a palustrine emergent herbaceous/scrub-shrub/forested wetland located in the western portion of the PSA within maintained and/or disturbed R/W. Within the PSA, Wetland A is approximately 0.186 acre in size. The eastern portion of the wetland located south of I-85 is forested and contained standing water. To the west of the forested portion of the wetland, the wetland becomes a ditch that runs along the south side of I-85 for approximately 225 feet to a pipe that crosses under I-85. Water flow was observed within the ditched portion of the wetland. At the pipe outfall on the north side of I-85, Wetland A continues as an emergent herbaceous/scrub-shrub wetland to the PSA boundary.

Wetland B is a palustrine emergent herbaceous/scrub-shrub wetland located in the western portion of the PSA within maintained and/or disturbed R/W. Within the PSA, Wetland B is approximately 0.014 acre in size and abuts/accepts drainage from RPW Stream B.

A jurisdictional determination for the replacement of the southbound bridge was issued by the USACE on July 27, 2011 (SAC 2011-0020-DJS). Subsequently, it was determined that the northbound bridge would also be replaced, and therefore a Jurisdictional Determination Request Addendum was submitted to the USACE in April 2012 (**Appendix C**). The revised Jurisdictional Determination from the USACE is pending.

It is anticipated that impacts to Stream B, Wetland A, and Wetland B could occur as a result of the proposed project. Adequate survey data is not available at the time of this report to quantify impact totals; however, impacts to Stream B are anticipated to be 100

linear feet or less; and impacts to Wetland A and Wetland B would be limited to the outer margins and would be less than the 0.2 acre that they collectively encompass.

Permitting

A Section 404 permit, pursuant to the Clean Water Act, would be required for project-related impacts to jurisdictional waters of the U.S. Depending on the type and amount of impacts to jurisdictional waters of the U.S., Section 404 permitting requirements can range from activities that are considered exempt or preauthorized to those requiring pre-construction notification (PCN) for a Section 404 permit from the USACE. Pursuant to Section 404, regulated discharges include, but are not necessarily limited to, the placement of fill material, riprap, pipes, culverts, etc., into jurisdictional waters of the U.S., including wetlands.

For South Carolina Department of Transportation (SCDOT) projects, USACE General Permit (GP) 2010-01346, effective date August 1, 2011, would be applicable if permanent and/or temporary impacts do not exceed 3.0 acres of freshwater wetlands, 0.50 acre of tidal wetlands, and/or 300 linear feet of jurisdictional waters of the U.S. It is anticipated that the SCDOT GP would be applicable for this project as impacts are expected to be below the stated thresholds.

Quantitative water quality sampling within the PSA was not conducted. The proposed project is not expected to have long term impacts to water quality within the PSA of the Buffalo Creek or Kings Creek watersheds. Short-term water quality impacts would be controlled through best management practices (BMPs). No waters within the PSA or any waters within the project watersheds are listed on the South Carolina Department of Health and Environmental Control (SCHEC) 2010 303(d) list of impaired waters.

Compensatory Mitigation

Compensatory mitigation is normally required to offset unavoidable impacts to waters of the U.S. The Council on Environmental Quality (CEQ) has defined mitigation in 40 CFR 1508.20 to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts. Three general types of mitigation include avoidance, minimization, and compensatory mitigation. Compensatory mitigation activities may include restoration and/or enhancement of existing degraded wetlands or waters, creation of wetlands/waters of equal or greater value than those to be impacted, and preservation of existing naturally functioning wetlands and upland buffers. Mitigation activities should be undertaken only after all avoidance and minimization actions have been exhausted and should be conducted, when practicable, within wetlands of the same type and watershed as the wetlands being impacted (i.e., in-kind, on-site compensatory mitigation). The USACE typically requires compensatory mitigation for any wetland impacts greater than 0.10 acre and/or stream impacts greater than 100 linear feet.

It is anticipated that compensatory mitigation for permanent project-related impacts would be attained through purchase of mitigation credits from a USACE-approved

mitigation bank. Specific mitigation requirements will be established during the Section 404 permitting process.

Land Use

The proposed project is located along I-85 in Cherokee County, South Carolina. Land use in the project area is comprised of forested and agricultural lands, most of which is undeveloped. Sparse residential and commercial development can also be found throughout the area. The only community establishment within a half-mile of the proposed project is a cemetery, located south of the proposed project location. The bridge replacement is not expected to modify existing land use or change the timing or density of development in the area. In addition, the proposed project is not in conflict with any plan, existing land use, or zoning regulation.

Floodplains

The PSA does not contain any regulated floodways (FEMA, Panel Number 45021C0100D). As a result, the proposed project would not result in impacts to floodplains.

Hazardous Materials

The acquisition of additional right-of-way is not required for this project. The area directly adjacent to the bridge predominately consists of undisturbed land with low potential for hazardous materials. As a result, impacts to hazardous materials are not expected.

A Phase 1 Environmental Site Assessment (ESA) for the proposed project was completed in November 2010 and additional records review was completed in March 2012. In general accordance with ASTM E 1527-05, *Standard Practice for Environmental Site Assessments*, the purpose of the Phase 1 ESA is to identify recognized environmental conditions (RECs) and historical recognized environmental conditions (HRECs). The Phase 1 ESA included a search of standard environmental databases in and a site reconnaissance. The Phase 1 ESA revealed no evidence of RECs on the subject property or within the specified search radii.

One on-site finding of an environmental nature was identified during the Phase I ESA. Plans of the existing bridge shows "creo treated pilings" were placed under the end bent of the bridge. The guard rails along the road have wood posts that appear to be creosote treated. The rail line that crosses under the bridge has wooden cross ties that appear to be creosote treated. Considering that creosote seeping out of the pilings, guard rail supports and cross ties is relatively immobile, it is not expected that creosote would significantly impact the underlying soils. Thus, the Phase 1 concludes that the use of the creosote treated wood products is not considered a REC. However, if these items are to be disturbed or removed during construction, the wood and surrounding soils should be evaluated for proper disposal. In addition, one off-site finding of potential environmental concern was also identified. The *J Grady Randolph Inc.* site is approximately 1,000 feet south of the subject site and at a lower elevation. This facility appears on the RCRA-Nongen and the UST databases due to the presence of four abandoned petroleum

tanks. Based on its distance from the subject site and its location at a lower elevation, *J. Grady Randolph* is not considered a REC.

It is SCDOT's practice to avoid the acquisition of underground storage tanks (USTs) and other hazardous waste materials, if at all possible. If soils that appear to be contaminated with petroleum products were encountered during construction, the South Carolina Department of Health and Environmental Controls (DHEC) would be informed. If avoidance were not a viable alternative, tanks and other hazardous materials would be tested and removed and/or treated in accordance with the United States Environmental Protection Agency (EPA) and South Carolina DHEC requirements. Costs necessary for clean up would be taken into consideration during the right-of-way appraisal and acquisition process.

Threatened and Endangered Species

Pursuant to Section 7 of the Endangered Species Act, the list of protected species known to occur in Cherokee County was reviewed, and evaluations were performed regarding the likelihood of the presence of each species within the project area. A search of the United States Fish and Wildlife Service (USFWS) database provided existing information concerning the potential occurrence of threatened or endangered species within Cherokee County. This database identifies one federally threatened species known to occur or to have formerly occurred in Cherokee County. This species is listed in **Table 1**.

Table 1
Cherokee County Endangered/Threatened Species

Federally Protected Species		Protection Status	
Common Name	Scientific Name	Federal	State
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	T	-

Source: U.S. Fish & Wildlife Service; South Carolina Department of Natural Resources; August 2010
T = Threatened, C = Candidate

No individuals of the dwarf-flowered heartleaf were observed within the PSA during the field reviews conducted in August 2010 and March 2012. Additionally, no potential habitat for dwarf-flowered heartleaf was identified within the PSA; therefore, it is determined that the project will have a biological conclusion of 'no effect' on this species (see the Biological Assessment in **Appendix B**).

Air Quality

Cherokee County is an attainment area for National Ambient Air Quality Standards (NAAQS). As a result, Cherokee County meets or exceeds the standards established by the Environmental Protection Agency (EPA) for criteria pollutants and air quality.

The purpose of this project is to improve safety by replacing a structurally deficient bridge. This project has been determined to generate minimal air quality impacts for Clean Air Act Amendments (CAAA) criteria pollutants and has not been linked with any special Mobile Source Air Toxins (MSAT) concerns. As such, this project will not result in

changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOBILE6.2 model forecasts a combined reduction of 72 percent in the total annual emission rate for the priority MSAT from 1999 to 2050 while vehicle-miles of travel are projected to increase by 145 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

Noise

The proposed project does not represent improvements on an entirely new location as the proposed bridge would be built in the same location as the existing bridges. Staged construction would be used to allow use of the existing bridges during construction. Also, this project does not include the addition of through traffic lanes*, a significant change in vertical alignment or any other conditions that would qualify it as a Type I project. Therefore, the requirements for conducting noise studies under 23 CFR 772 do not apply.

(*Note: The bridge would be wide enough to accommodate a future planned widening of I-85.)

References

Brockington and Associates, Inc. November 4, 2010. *No Need for Archaeological or Historic Architectural Survey for the Proposed I-85 SBL Southern Railroad Bridge Replacement Project, Cherokee County, South Carolina*. Prepared for the South Carolina Department of Transportation.

Brockington and Associates, Inc. April 6, 2012. *No Need for Archaeological or Historic Architectural Survey for the Proposed I-85 SBL Southern Railroad Bridge Replacement Project, Cherokee County, South Carolina*. Prepared for the South Carolina Department of Transportation.

Federal Emergency Management Agency. September 2011. FIRM Flood Insurance Rate Map, Cherokee County, South Carolina, Panel Number 45021C0100D. Available at <http://map1.msc.fema.gov>. Accessed March 2012

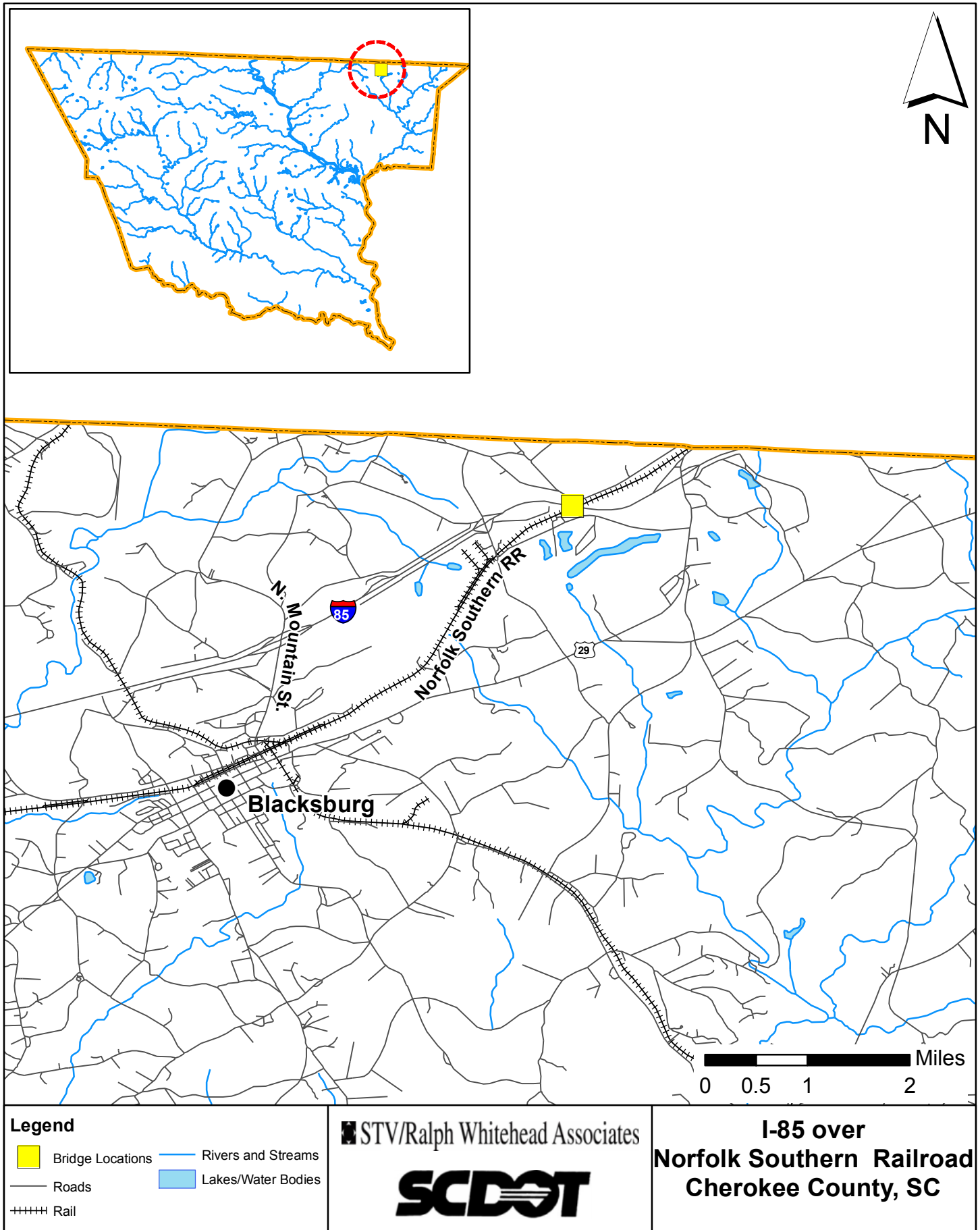
Federal Highway Administration. 2009. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. Available at: <http://www.fhwa.dot.gov/environment/airtoxic/100109guidmem.htm> Accessed April 2011.

S&ME, Inc. November 2010. *Phase 1 Environmental Site Assessment: I-85 Southbound Bridge Replacement Cherokee County, South Carolina*. Prepared for the South Carolina Department of Transportation.

STV/RWA. April 2012. *Natural Resources Technical Memorandum – I-85 Bridge Replacement over Norfolk Southern Railroad*. Prepared for the South Carolina Department of Transportation.

**Bridge Replacement on I-85 Over Norfolk Southern
Cherokee County, South Carolina
Categorical Exclusion – Type B**

Figure 1: Site Location



INTERSTATE I-85 OVER NSRR
CHEROKEE COUNTY
PRELIMINARY BRIDGE LAYOUT

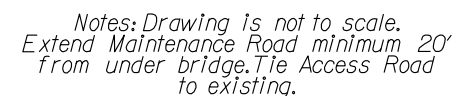
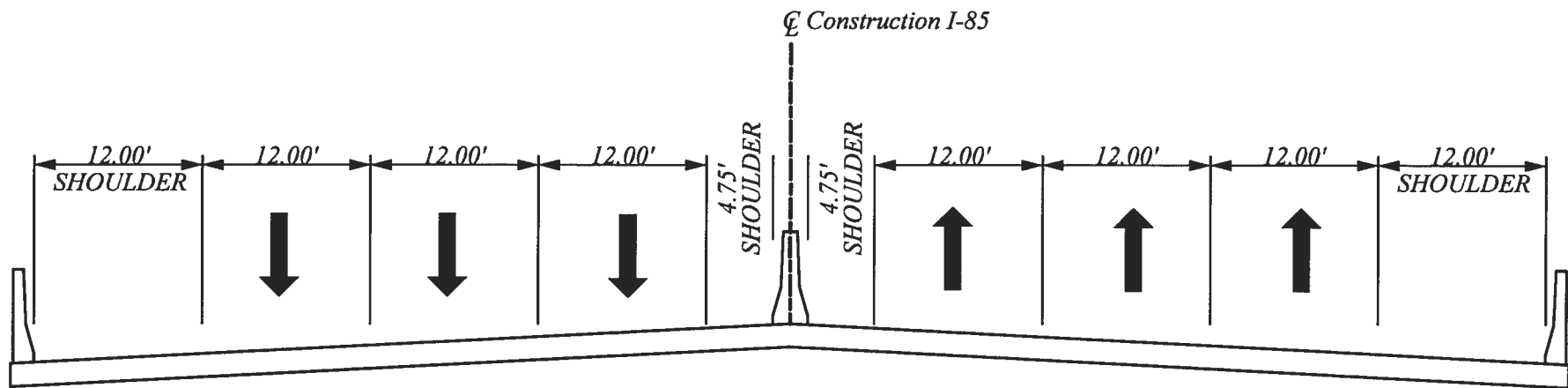


Figure 2b: Typical Section

SCALE 1"=12.5' H 1"=5' V



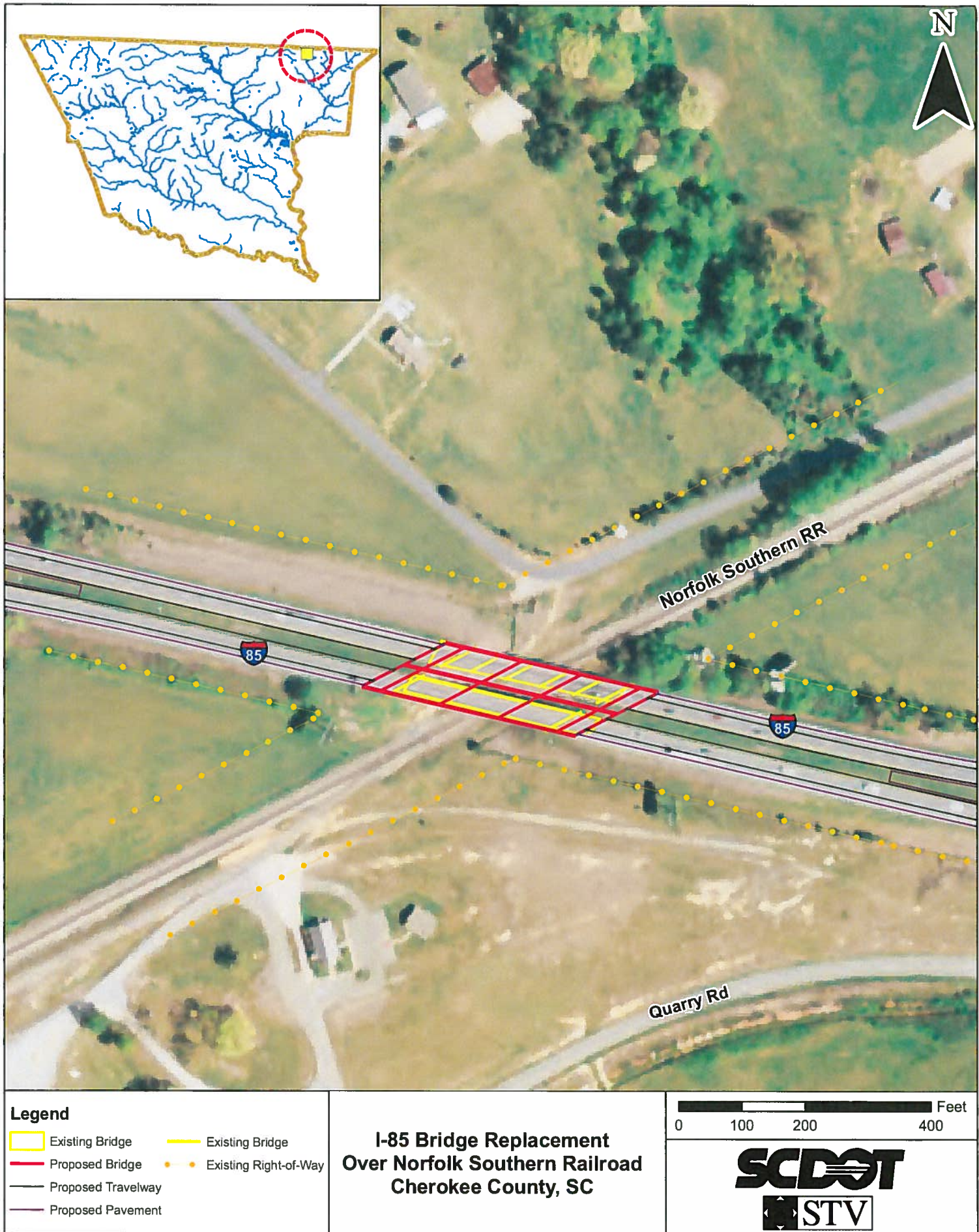
TYPICAL SECTION -
COMPLETED STRUCTURE

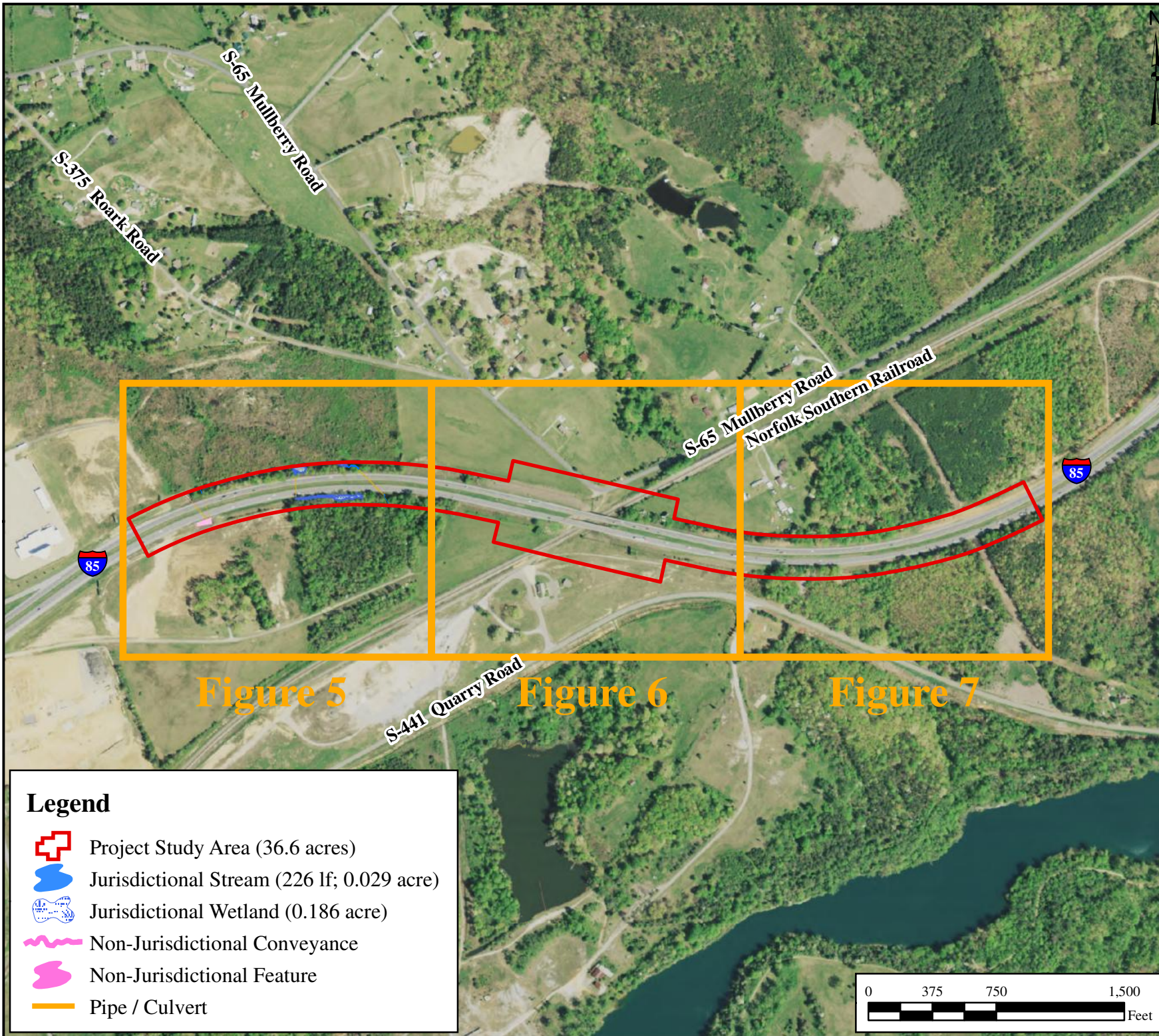
*Plan provided by SCDOT

I-85 over
Norfolk Southern Railroad
Cherokee County, SC



Figure 3: Potential Right-of-Way Impacts





Client:



Project:

**I-85 BRIDGE
REPLACEMENTS
OVER NORFOLK
SOUTHERN RAILROAD**

CHEROKEE COUNTY, SC

SCDOT PIN: 39094_BR11

Title:

**APPROXIMATE WATERS
OF THE U.S. AND
WETLANDS LOCATION
MAP**

Ref. National Agriculture Imagery
Program (NAIP) Aerial Photography
[Cherokee County, SC (2009)]

Notes:

1. Jurisdictional waters of the U.S. were delineated by STV during the field review conducted on March 28, 2012. Jurisdictional boundaries have been marked in the field with blue and white striped tape and mapped using a Trimble GeoXT hand-held GPS unit capable of submeter accuracy. This map is intended for planning purposes only.

2. Jurisdictional boundaries of the waters of the U.S. have not been verified by the U.S. Army Corps of Engineers and are subject to change following verification.

Drawn By:

MTD

Checked By:

WSB

Approved By:

-

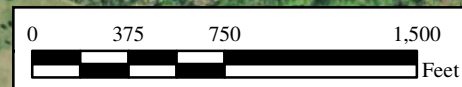
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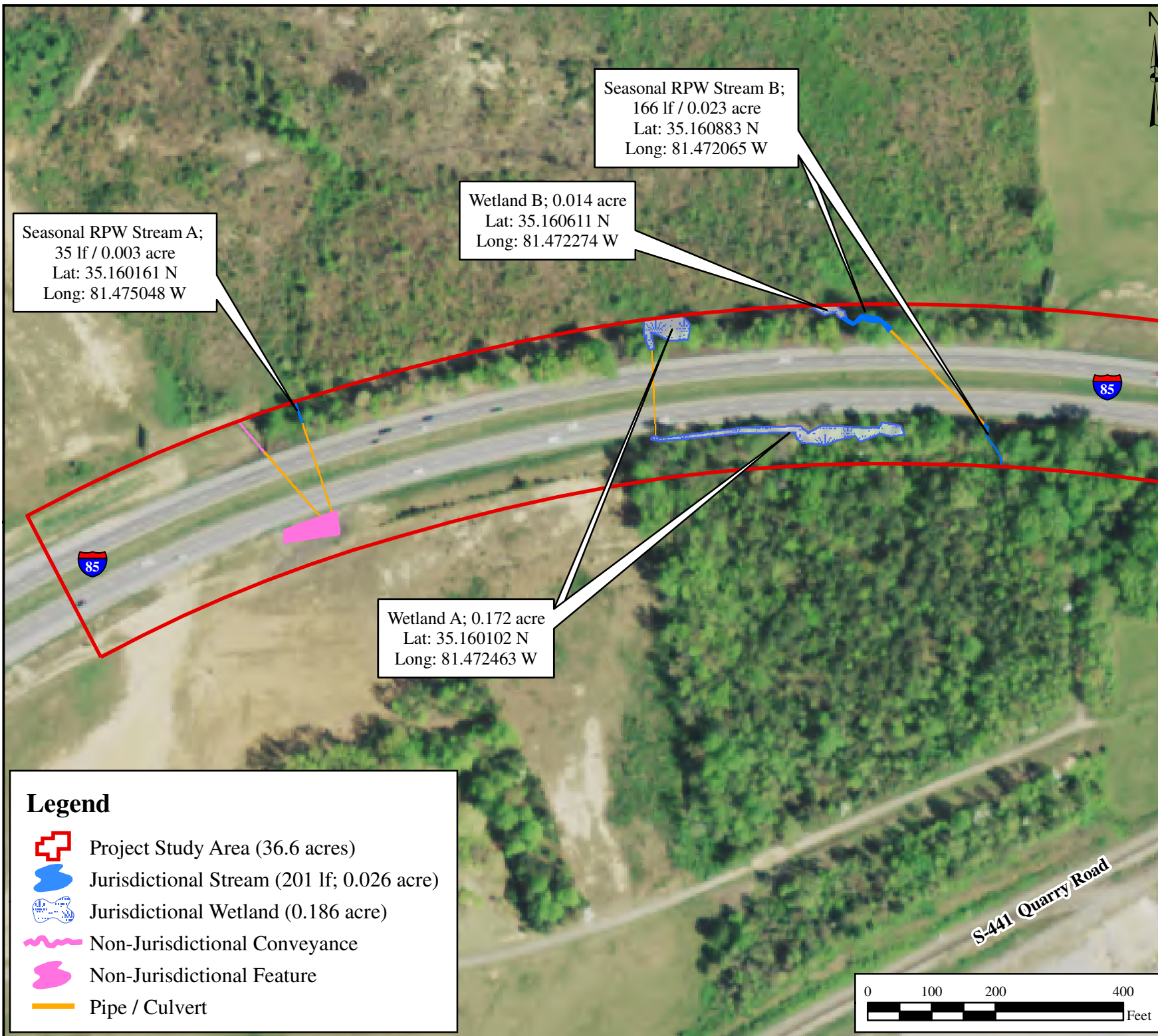
03/30/2012

STV/RWA Project No.

2514104

FIGURE 4





Client:



Project:

**I-85 BRIDGE
REPLACEMENTS
OVER NORFOLK
SOUTHERN RAILROAD**

CHEROKEE COUNTY, SC

SCDOT PIN: 39094_BR11

Title:

**APPROXIMATE WATERS
OF THE U.S. AND
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Drawn By:	Checked By:
MTD	WSB
Approved By:	Date:
-	03/30/2012

STV/RWA Project No.
2514104

FIGURE 5



Client:

SOUTH CAROLINA DEPARTMENT
OF TRANSPORTATION

Project:

**I-85 BRIDGE
REPLACEMENTS
OVER NORFOLK
SOUTHERN RAILROAD**

CHEROKEE COUNTY, SC

SCDOT PIN: 39094_BR11

Title:

**APPROXIMATE WATERS
OF THE U.S. AND
WETLANDS LOCATION
MAP**

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[Cherokee County, SC (2009)]

Notes:

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2. Jurisdictional boundaries of the waters of the U.S. have not been verified by the U.S. Army Corps of Engineers and are subject to change following verification.

Drawn By: <div style="text-align: center;">MTD</div>	Checked By: <div style="text-align: center;">WSB</div>
Approved By: <div style="text-align: center;">-</div>	Date: <div style="text-align: center;">03/30/2012</div>

STV/RWA Project No.

2514104

FIGURE 6

Legend

- Project Study Area (36.6 acres)
- Jurisdictional Stream (0 lf; 0.000 acre)
- Jurisdictional Wetland (0.000 acre)
- Non-Jurisdictional Conveyance
- Non-Jurisdictional Feature
- Pipe / Culvert





Client:



Project:

**I-85 BRIDGE
REPLACEMENTS
OVER NORFOLK
SOUTHERN RAILROAD**

CHEROKEE COUNTY, SC

SCDOT PIN: 39094_BR11

Title:

**APPROXIMATE WATERS
OF THE U.S. AND
WETLANDS LOCATION
MAP**

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Drawn By:

MTD

Checked By:

WSB

Approved By:

-

Date:

03/30/2012

STV/RWA Project No.

2514104

FIGURE 4

Legend



Project Study Area (36.6 acres)



Jurisdictional Stream (25 lf; 0.003 acre)



Jurisdictional Wetland (0.000 acre)



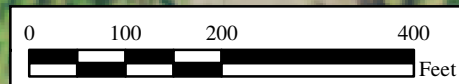
Non-Jurisdictional Conveyance



Non-Jurisdictional Feature



Pipe / Culvert



Appendix A

Agency Correspondence

April 6, 2012

Chad Long
South Carolina Department of Highways and Public Transportation
955 Park Street
Room 519
Columbia, SC 29201

RE: No Need for Archaeological or Historic Architectural Survey for the Proposed I-85 SBL-Southern Railroad Bridge Replacement Project, Cherokee County, South Carolina.

Dear Mr. Long:

Archaeologists with Brockington and Associates, Inc., have completed an archaeological review and background research for the above referenced project in Cherokee County, South Carolina. The South Carolina Department of Transportation (SCDOT) proposes to replace the Interstate 85 (I-85) north- and southbound bridges over the SBL-Southern Railroad. Figure 1 shows the location of the I-85 SBL-Southern Railroad Bridge Replacement Project on the 1971 Cherokee County Highway Map. Figure 2 shows the I-85 SBL-Southern Railroad Bridge Replacement Project on the USGS 1993 *Blacksburg North, SC* quadrangle. Figure 3 presents typical views of the project.

All new construction will occur within the present right-of-way (ROW). The bridges were previously determined to be not eligible for the National Register of Historic Places (NRHP) (Lichtenstein Consulting Engineers 2004). There are no eligible archaeological sites or historic architectural resources within the project survey universe. Investigators with Brockington and Associates, Inc., initially visited the project on September 2, 2010. A recent design change resulted in a longer project area adjacent to both the north- and southbound bridges. Investigators with Brockington and Associates, Inc., returned to visit the project on March 30, 2012. Based on the project area's setting and the absence of any eligible or listed properties within the project survey universe, Brockington and Associates, Inc., believes intensive cultural resources survey is not necessary. No further work is recommended.

In accordance with the Memorandum of Agreement approved by the Federal Highway Administration, March 16, 1993, Brockington and Associates, Inc., is providing this information to the SCDOT, the agency official designee, as defined under 36 CFR 800.2, to ensure compliance with Section 106 of the National Historic Preservation Act.

Sincerely,



Joshua N. Fletcher
Senior Archaeologist

REFERENCE CITED

Lichtenstein Consulting Engineers

2004 *South Carolina Historic Bridge Survey Statewide*. Prepared for the South Carolina Department of Transportation, Columbia.

LIST OF FIGURES

- Figure 1. Location of the I-85 SBL-Southern Railroad Bridge Replacement Project on the 1971 Cherokee County Highway Map.
- Figure 2. Location of the I-85 SBL-Southern Railroad Bridge Replacement Project on the USGS 1993 *Blacksburg North, SC* quadrangle.
- Figure 3. Typical views of the I-85 SBL-Southern Railroad Bridge Replacement Project: facing west (top); and facing east (bottom).

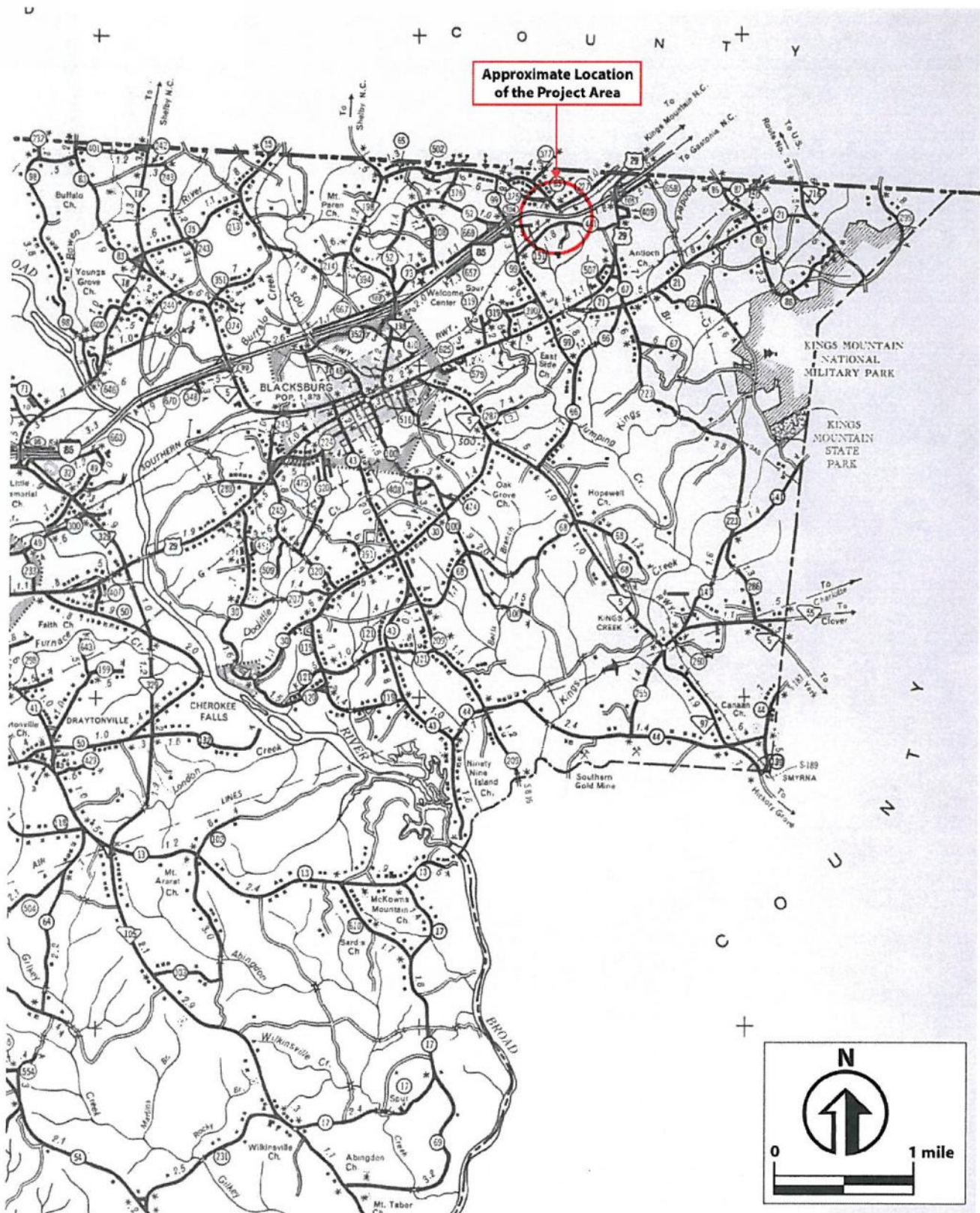


Figure 1. Location of the I-85 SBL-Southern Railroad Bridge Replacement Project on the 1971 Cherokee County Highway Map.

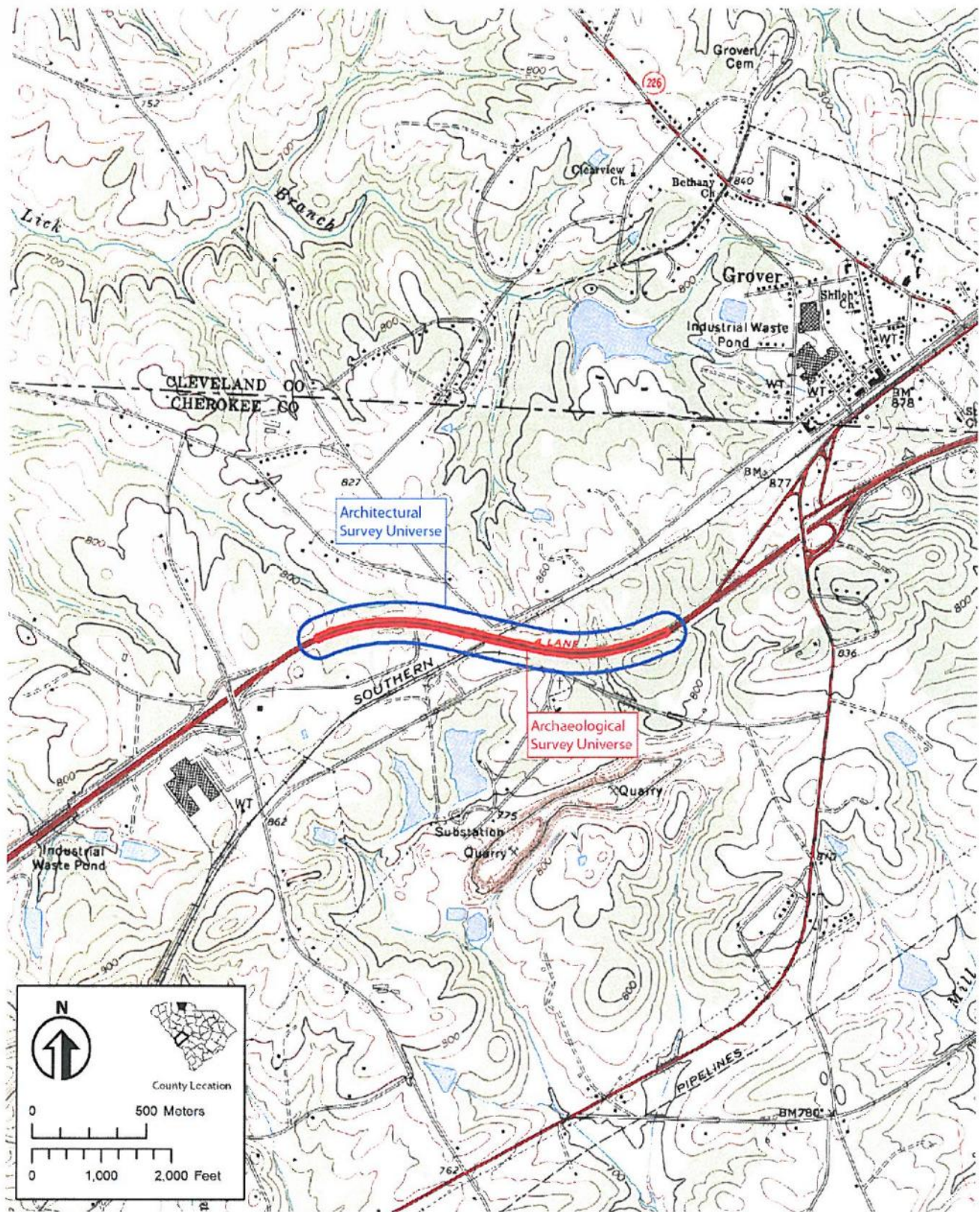


Figure 2. Location of the I-85 SBL-Southern Railroad Bridge Replacement Project on the USGS 1993 Blacksburg North, SC quadrangle.



Figure 3. Typical views of the I-85 SBL-Southern Railroad Bridge Replacement Project: facing west (top); and facing east (bottom).



South Carolina
Department of Transportation

February 7, 2011

11-DKO
NHPA

Ms. Elizabeth Johnson
Deputy State Historic Preservation Officer
South Carolina Department of Archives and History
8301 Parklane Road
Columbia, SC 29223-4905

RECEIVED

FEB 14 2011

SC Department of
Archives & History

RE: Ten Design Build Bridge Replacement Projects

Dear Ms. Johnson:

The Department plans to hire a design build contractor to replace ten structurally deficient bridges in various counties throughout the state. Brockington and Associates conducted background research and/or field surveys for each of the proposed bridge replacement projects. Copies of the survey reports and letters recommending no need for survey are provided for your review and comment.

Based on the results of background research and field surveys, it is the Department's determination that **no historic properties will be affected** by the following undertakings:

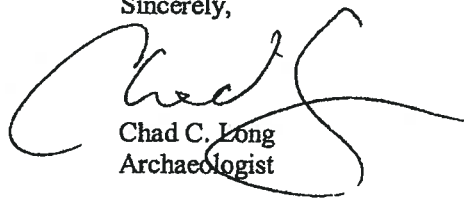
- 1) Proposed S-26-24 Pawleys Swamp Bridge Replacement Project, Horry County
File No. 26.040460.1 PCN: 40460_BR01
- 2) Cultural Resources Survey of the S-13-22 Thompson Creek Bridge Replacement Project, Chesterfield County, File No. 13.040460.3 PCN: 40460_BR03
- 3) Cultural Resources Survey of the SC 41 Marsh Creek Bridge Replacement Project, Marion County, File No. 34.040460.2 PCN: 40460_BR02
- 4) Cultural Resources Survey of the SC 9 Catawba River Bridge Replacement Project, Chester and Lancaster Counties, File No. 1229.039094 PCN: 39094_BR04
- 5) Proposed SC 72 Cane Creek Bridge Replacement Project, Union County,
File No. 44.039441.2 PCN: 39441_BR02
- 6) Cultural Resources Survey of the S-12-77 Fishing Creek Bridge Replacement Project, Chester County, File No. 12.039094.1 PCN: 39094_BR01
- 7) Cultural Resources Survey of the S-12-141 Rocky Creek Bridge Replacement Project, Chester County, File No. 12.039094.2 PCN: 39094_BR02
- 8) No Need for Archaeological or Historic Architectural Survey for the Proposed SC 200 Wateree Creek Bridge Replacement Project, Fairfield County
File No. 20.39094.3 PCN: 39094_BR03
- 9) Cultural Resources Survey of the SC 200 Cane Creek Bridge Replacement Project, Lancaster County, File No. 29.039094.5 PCN: 39094_BR05



10) No Need for Archaeological or Historic Architectural Survey for the Proposed I-85 SBL
Southern Railroad Bridge Replacement Project, Cherokee County
File No. 11.039094.11 PCN: 39094_BR11

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. 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

Enclosures

I (~~do not~~) concur in the above determination.

Signed: 

Date: 2/23/11

cc: Shane Belcher, FHWA
Russell Townsend, EBCI
Lisa LaRue-Stopp, United Keetowah
Dr. Wenonah Haire, CIN-THPO
Keith Derting, SCIAA

File: Env/CCL

Cultural Resources
Project Screening Form

SCDOT

State File # 11.039034.11

PIN 39034_BR11

Route I-85

County Cherokee

Project Name/Description

"I-85 SBL-Southern Railroad Bridge Replacement Project." Replacement of the I-85 bridges over the SBL-Southern Railroad in Cherokee County on both the north- and southbound lanes of I-85. All project work within existing right-of-way.

Project Type

☐ **Type 1** (Resurfacing, installation of fencing, signs, pavement markings, traffic signals, passenger shelters, railroad warning devices, construction of bicycle/pedestrian lanes, installation of rumble strips, landscaping)

☐ **Type 2** (Off-system bridge replacement, intersection improvements that involve construction of turn lanes and/or realignment of roads no greater than 300' in length)

☒ **Type 3** (Projects that do not fall into Type 1 and Type 2 categories: e.g. road widening)

IDENTIFICATION OF HISTORIC PROPERTIES

* Has ArchSite been reviewed? ☒ Yes ☐ No

* Has the project been reviewed in the field? ☒ Yes ☐ No

* Does the project require intensive survey? ☐ Yes ☒ No Date Surveyed 9/2/10 & 3/30/12

DESCRIBE SURVEY METHODS AND RESULTS

Project area was visited twice by SCDOT's cultural resource consultant (Brockington & Associates). All new construction will take place within existing right-of-way and the proposed project area was determined not to have potential for the presence of cultural resources. Additionally, the South Carolina Historic Bridge Survey (Lichtenstein Consulting Engineers, 2004) was utilized to determine that the bridges to be replaced were not historically significant. No further cultural resources investigations are recommended.

EFFECT DETERMINATION: ☒ No Historic Properties Affected If checked and the project falls into a Type 1 or 2 category, no further consultation with SHPO is necessary

☐ No Adverse Effect **If checked, consultation with SHPO is required**

☐ Adverse Effect **If checked, consultation with SHPO is required**

This screening form was developed to satisfy documentation requirements for Type I and Type II project under a Programmatic Agreement between the Federal Highway Administration, South Carolina State Historic Preservation Office, and the South Carolina Department of Transportation. For Type I and Type II projects that have no effect upon historic properties, the completion of the screening form with supporting documentation (e.g. ArchSite Map) provides evidence of FHWA and SCDOT's compliance with Section 106 of the National Historic Preservation Act.

Preparer: David P. Kelly

Date: 4/18/2012



Eastern Band of Cherokee Indians
Tribal Historic Preservation Office
P.O. Box 455
Cherokee, NC 28719
Ph: 828-554-6852 Fax 828-488-2462

DATE: April 6, 2011

TO: FHWA, SC Division
Robert L. Lee
Division Administrator
1835 Assembly St.
Suite 1270
Columbia, SC 29201



PROJECTS: Comments concerning:

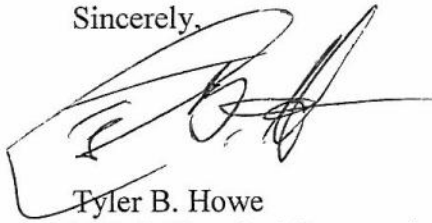
- 1.) (File # 40.039333A; Pin: 39333). Phase I Cultural Resources Survey of the Hardscrabble Road Widening Project, Richland County, SC.
- 2.) (File # 29.039094.5; PCN: .39094_BR05). Cultural Resources Survey of the SC 200 Cane Creek Bridge Replacement Project, Lancaster County, SC.
- 3.) (File # 20.39094.3 PCN: 39094_BR03). No Need for Archaeological or Historic Architectural Survey for Proposed SC 200 Wateree Creek Bridge Replacement Project, Fairfield County, SC.
- 4.) (File # 12.039094.2 PCN: 39094_BR02). Cultural Resources Survey of the S-12-141 Rocky Creek Bridge Replacement Project, Chester County, SC.
- 5.) (File # 12.039094.1 PCN: 39094_BR01). Cultural Resources Survey of the S-12-77 Fishing Creek Bridge Replacement Project, Chester County, SC.
- 6.) (File # 44.039441.2 PCN: 39441_BR02). No Need for Archaeological or Historic Architectural Survey for the Proposed SC 72 Cane Creek Bridge Replacement Project, Union County, SC.
- 7.) (File # 1229.039094 PCN: 39094_BR04). Cultural Resources Survey of the SC 9 Catawba River Bridge Replacement Project, Chester and Lancaster Counties, SC.
- 8.) Cultural Resources Survey of the Celriver/Red River Road Improvements Project, York County, SC. City of Rock Hill Project.

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians (EBCI THPO) would like to thank you for the opportunity to comment on this proposed section 106 activities under §36 C.F.R. 800.

The EBCI THPO concurs with the archeologist's recommendations that no sites eligible for inclusion on the National Register of Historic Places were encountered during the recent phase I archaeological field surveys. As such, the EBCI THPO believes that the proposed projects may proceed as planned. In the event that project plans change, or cultural resources or human remains are discovered, all work should cease, and this office should be contacted to continue government to government consultation as defined under Section 106 of the National Historic Preservation Act of 1966, as amended.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 554-6852.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tyler B. Howe', with a large, stylized initial 'T' and 'H'.

Tyler B. Howe
Tribal Historical Preservation Specialist
Eastern Band of Cherokee Indians

C: Wayne D. Roberts

Appendix B

Biological Assessment

**Biological Assessment
Federally Threatened and Endangered Species
I-85 Bridge Replacements over Norfolk Southern Railroad
Cherokee County, South Carolina
SCDOT PIN 39094; File No. 11.039094.11**

The South Carolina Department of Transportation (SCDOT) is proposing to replace the dual I-85 Bridges over the Norfolk Southern Railroad located approximately four miles northeast of the town of Blacksburg in the northeastern portion of Cherokee County, South Carolina. The proposed project would involve the replacement of the existing I-85 Southbound and Northbound Bridges over the Norfolk Southern Railroad with new bridges and associated roadway approach improvements. The existing bridges were built in 1954 and have a sufficiency rating of 48.6 out of 100, classifying the structures as structurally deficient. The existing bridges are 37.4 feet in width and 255 feet in length, consisting of three 57-foot spans and two approach spans of cast-in-place concrete on steel girders, supported on timber pile bents. It is anticipated that the replacement bridges will be designed and constructed as part of a pending SCDOT Design-Build contract. Consequently, bridge dimensions and other design details are unknown at the time of this writing.

Initially, the project involved the replacement of only the I-85 Southbound Bridge. STV/Ralph Whitehead Associates (STV/RWA) provided an environmental review, including the documentation of federally protected species, within a project study area approximately 1,000 feet long and 500 feet wide. Since the initial review, the project has been revised to include the replacement of both the Southbound and Northbound Bridges of I-85 over the Norfolk Southern Railroad. Upon notification of the project modifications, STV/RWA provided an additional environmental review of a revised project study area measuring approximately 5,250 feet long and 250 to 500 feet wide centered on the existing bridges and roadway approaches.

Because of the federal nexus of the project, consultation with the U.S. Fish and Wildlife Service (USFWS) is required under Section 7 of the Endangered Species Act (ESA), as amended (16 USC 1531-1534) for proposed projects that "may affect" federally protected (endangered or threatened) species. This Biological Assessment (BA) analyzes potential impacts to federally endangered or threatened species for the proposed project, and is intended to initiate informal consultation as needed.

The following list (Table 1) of federally protected species for Cherokee County was obtained from the U.S. Fish and Wildlife Service (USFWS) protected species database (updated May 2011). The South Carolina Department of Natural Resources (SCDNR)-South Carolina Heritage Trust (SCHT) Geographic Database of Rare and Endangered Species, updated January 17, 2006, was also reviewed to obtain information on documented populations or occurrences of federally protected species within or in close proximity to the project study area.

**TABLE 1. CHEROKEE COUNTY FEDERALLY PROTECTED
(ENDANGERED OR THREATENED) SPECIES**

Protected Species		Protection Status	
Common Name	Scientific Name	Federal	State
Plant			
Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	T	-

T = Threatened

Methods

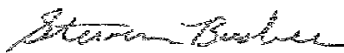
On behalf of SCDOT, STV/RWA performed literature and field reviews to determine the likelihood of the presence of individuals or potential habitat for the above-listed protected species within the project study area and potential project-related impacts. STV/RWA conducted pedestrian transects of the project study area on August 12th, 2010 and March 28th, 2012.

Results

According to the SCDNR-SCHT database, no occurrences of protected species have been documented within a one-mile radius of the project study area.

Based on the STV/RWA field review, natural communities located in the project study area include mixed hardwood upland forest, mixed hardwood/pine upland forest, and successional pine forest.

No dwarf-flowered heartleaf plants were observed within the project study area during the field reviews. Additionally, no potential habitat for dwarf-flowered heartleaf was identified within the project study area due to the lack of north-facing slopes and boggy areas adjacent to streams within deciduous forest; therefore, it is determined that the project will have a biological conclusion of 'no effect' on dwarf-flowered heartleaf.



SCDOT Authorized Agent's Signature

04 / 10 / 2012

Date

Appendix C

Jurisdictional Determination Request



ATTACHMENT A

Jurisdictional Determination Request Form

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: I-85 Bridge Replacements over Norfolk Southern Railroad;
SCDOT File No. 11.039094.11, SCDOT PIN 39094

Date: April 13, 2012

County: Cherokee

Total Acreage of Tract: 25.2 acres (linear project)

Property Owner : South Carolina Department of Transportation
Attn: Randall D. Williamson, P.E.

Address: P.O. Box 191

Address: Columbia, SC 29202-0191

Phone: (803) 737-1395

Email: WilliamsRD@dot.state.sc.us

Agent: STV/Ralph Whitehead Associates

Attn: Matt DeWitt

Address: 1000 W. Morehead St, Suite 200

Address: Charlotte, NC 28208

Phone: (704) 372-1885

Email: matthew.dewitt@stvinc.com

Information Required to Accompany Request - Check the items submitted - forward as much information as is available. At a minimum, 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.
- ☐ Topographic Survey
- ☐ Conceptual Site Plan for the Overall Development
- ☐ Description 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:

- ☒ 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.
- ☐ 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 must 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. Do not sign this form unless you are the owner, or have the specific authority of the property owner.

PRINTED NAME of person signing this form, below: Matt DeWitt

Signature of Property Owner or Authorized Agent:



HQ and South Branch
69-A Hagood Avenue
Charleston, SC 29403
843-329-8044

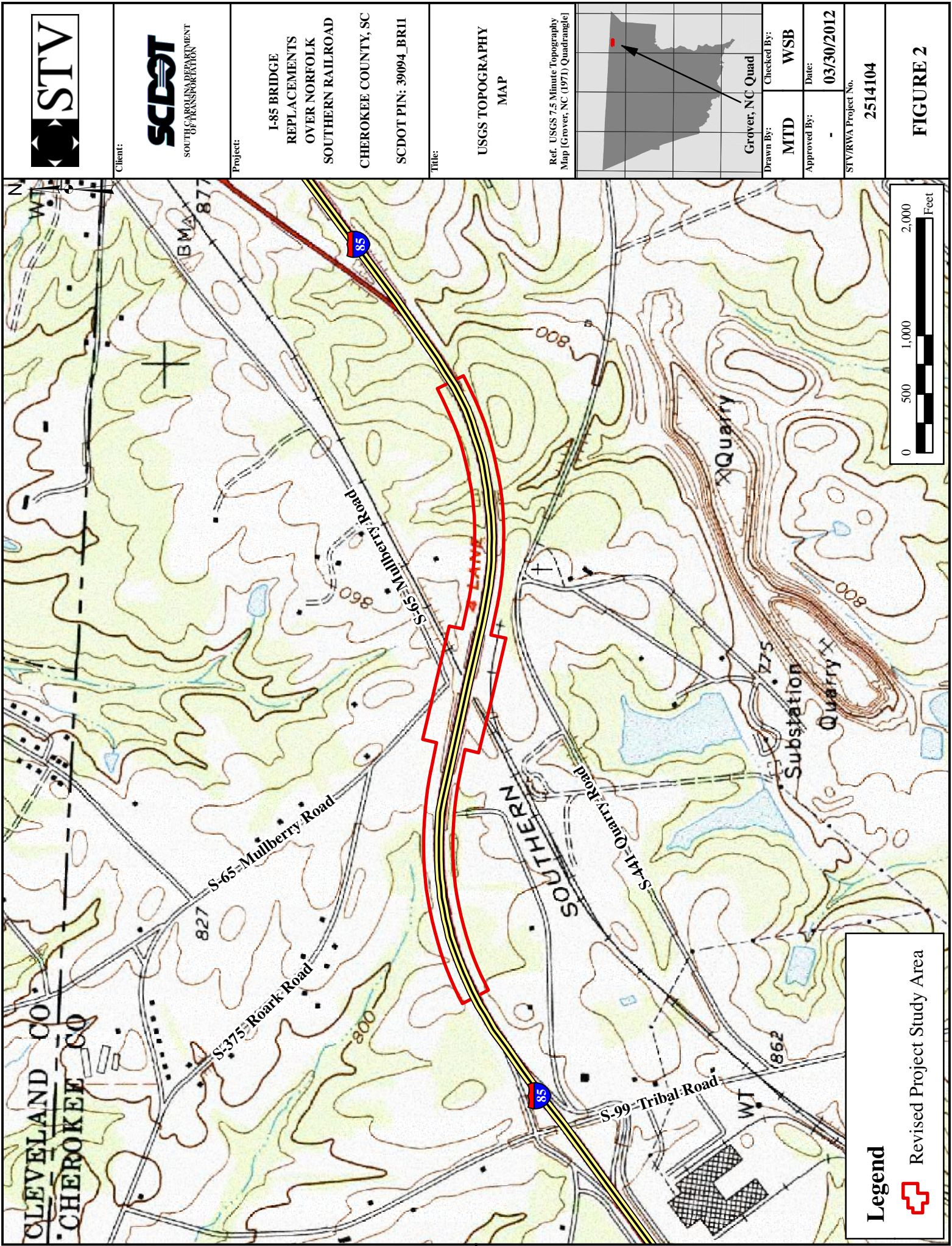
Northeast Branch
1949 Industrial Park Rd, Room 140
Conway, SC 29526
843-365-4239


Northwest Branch
1835 Assembly St., Room 865-B1
Columbia, SC 29201
803-253-3444




ATTACHMENT B

Figures





Client:

SOUTH CAROLINA DEPARTMENT
OF TRANSPORTATION

Project:
I-85 BRIDGE
REPLACEMENTS
OVER NORFOLK
SOUTHERN RAILROAD
CHEROKEE COUNTY, SC
SCDOT PIN: 39094_BR11

Title:
NRCs SOIL SERIES
MAP

Ref. NRCs Soil Series Data
Cherokee County, SC (2002)

Mapped Soil Units Within the PSA
GfF - Gullied land, 10-35% slopes
NaB - Nason very fine sandy loam, 2-6% slopes
NaD2 - Nason very fine sandy loam,
10-15% slopes, eroded
TaC3 - Tatum silty clay loam, 6-10% slopes
severely eroded
TmB - Tatum very fine sandy loam,
2-6% slopes
TmB2 - Tatum very fine sandy loam,
2-6% slopes, eroded
TmC2 - Tatum very fine sandy loam,
6-10% slopes, eroded
TmD2 - Tatum very fine sandy loam,
10-15% slopes, eroded
TmE - Tatum very fine sandy loam,
10-25% slopes

Drawn By:
MTD

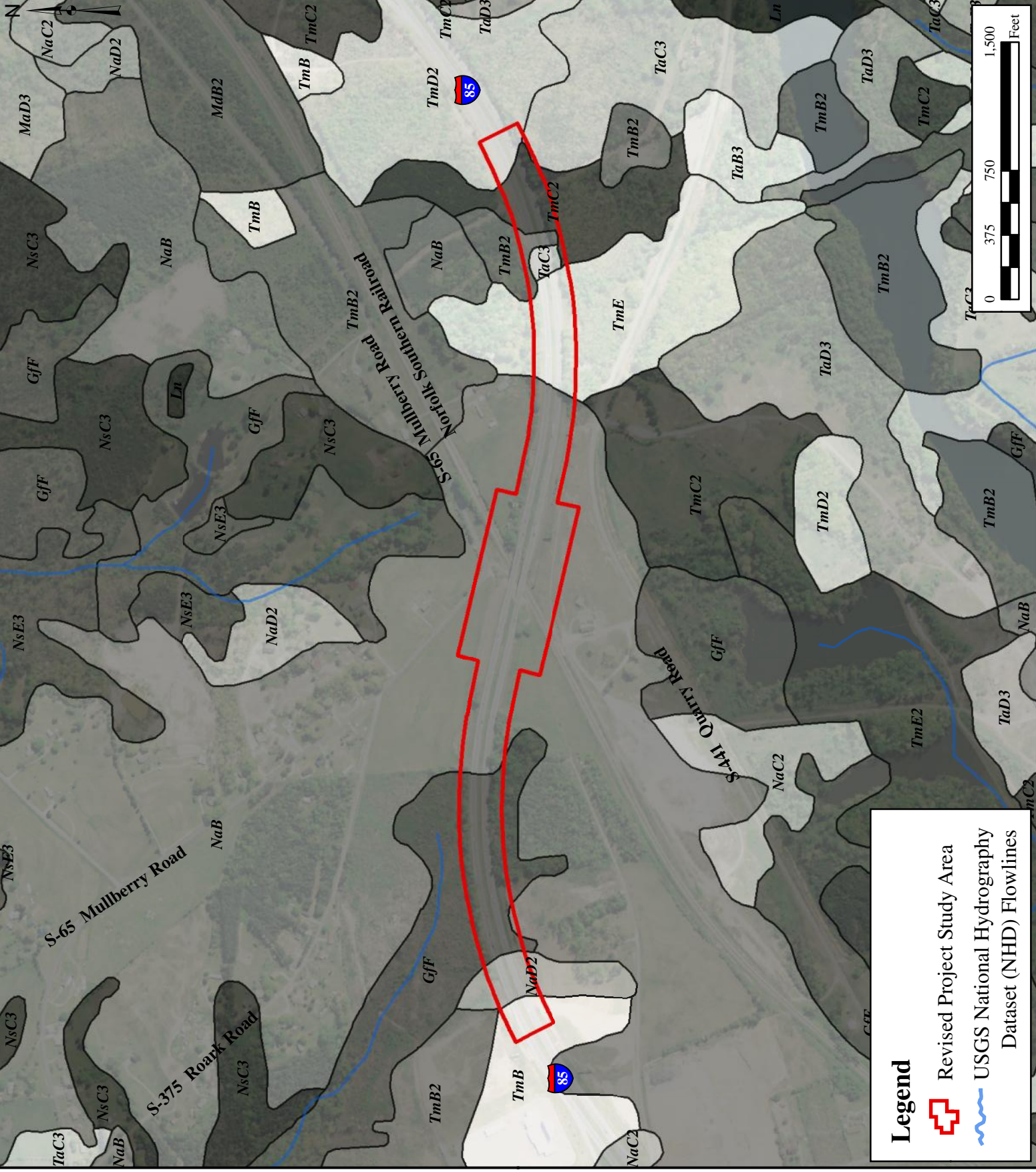
Checked By:
WSB

Approved By:
-

Date:
03/30/2012

STV/RWA Project No.
2514104

FIGURE 3





ATTACHMENT C

Representative Photographs



Photograph 1. View of RPW Stream A looking upstream (south) at the I-85 culvert crossing.



Photograph 2. View of RPW Stream B looking upstream (south) at the I-85 culvert crossing.



Photograph 3. View of RPW Stream C looking upstream (north) from the I-85 culvert crossing.



Photograph 4. View of the northern portion of Wetland A located north of I-85 in the western portion of the PSA.



Photograph 5. View of the southern portion of Wetland A located south of I-85 in the western portion of the PSA.



Photograph 6. View of Wetland B located north of I-85 in the west central portion of the PSA.



ATTACHMENT D

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: I-85 Bridge Replacements over NS Railroad City/County: Cherokee Sampling Date: 03-28-12
 Applicant/Owner: SCDOT State: SC Sampling Point: DP 3-Upland
 Investigator(s): Steven Busbee, PWS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): gentle to moderate slope Slope (%): 0 to 5
 Subregion (LRR or MLRA): LRR P Lat: 35.1604° Long: 81.4736° Datum: NAD 83
 Soil Map Unit Name: Gullied land, 10 to 35% slopes (GfF) NWI classification: none

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? No (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: DP 2 is representative of a non-jurisdictional upland area. DP 2 is located within a mixed hardwood forested roadside corridor along the north side of I-85 adjacent to/west of Wetland A.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Rocks (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <u>N/A</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <u>>12"</u> Saturation Present? (Includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): <u>>12"</u> <div style="text-align: right;">Wetland Hydrology Present? <u>Yes</u> <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/></div>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No wetland hydrology indicators are present.	

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

 Sampling Point: DP 3-Upland

Tree Stratum (Plot size: 50' x 20')	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Liquidambar styraciflua</u>	30	yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>89</u> (A/B)																
2. <u>Quercus alba</u>	20	yes	FACU																	
3. <u>Quercus rubra</u>	15	no	FACU																	
4. <u>Quercus nigra</u>	15	no	FAC																	
5. <u>Prunus serotina</u>	15	no	FACU																	
6. _____																				
7. _____																				
8. _____																				
<u>95</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____ (A)</td> <td>_____ (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____ (A)	_____ (B)	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x 1 = _____																			
FACW species _____	x 2 = _____																			
FAC species _____	x 3 = _____																			
FACU species _____	x 4 = _____																			
UPL species _____	x 5 = _____																			
Column Totals: _____ (A)	_____ (B)																			
Prevalence Index = B/A = _____																				
Sapling/Shrub Stratum (Plot size: 50' x 20')																				
1. <u>Elaeagnus umbellata</u>	25	yes	FAC																	
2. <u>Liquidambar styraciflua</u>	15	yes	FAC																	
3. <u>Prunus serotina</u>	10	no	FACU																	
4. <u>Quercus nigra</u>	10	no	FAC																	
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
<u>60</u> = Total Cover																				
Herb Stratum (Plot size: 50' x 20')																				
1. <u>Parthenocissus quinquefolia</u>	20	yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic																
2. <u>Elaeagnus umbellata</u>	15	yes	FAC																	
3. <u>Smilax rotundifolia</u>	5	no	FAC																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
<u>40</u> = Total Cover																				
Woody Vine Stratum (Plot size: 50' x 20')																				
1. <u>Vitis rotundifolia</u>	10	yes	FAC	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.																
2. <u>Smilax rotundifolia</u>	10	yes	FAC																	
3. <u>Parthenocissus quinquefolia</u>	10	yes	FAC																	
4. _____																				
5. _____																				
<u>30</u> = Total Cover																				
Remarks: (if observed, list morphological adaptations below). Greater than 50% of the dominant vegetation is hydrophytic (FAC, FACW, or OBL); therefore, passing the dominance test indicator.																				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				

SOIL

Sampling Point: DP 3-Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 4/2	100					sandy loam	containing coarse, gravelly sand
1-4	10YR 4/2	50					sandy loam	coarse sand mixed in
	10YR 5/4	50					sandy loam	coarse sand mixed in
4-10	10YR 6/6	100					sandy clay loam	
10-16+	10YR 5/8	100					loamy clay	rocky pieces throughout

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, O, P, T, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)		
<input type="checkbox"/> Stripped Matrix (S6)			

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:
 No hydric soil indicators are present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: I-85 Bridge Replacements over NS Railroad City/County: Cherokee Sampling Date: 03-28-12
Applicant/Owner: SCDOT State: SC Sampling Point: DP1-Wetland A
Investigator(s): Steven Busbee, PWS Section, Township, Range: _____
Landform (hillslope, terrace, etc.): interstream divide/floodplain Local relief (concave, convex, none): gently sloping to concave Slope (%): 0-1
Subregion (LRR or MLRA): LRR P Lat: 34.160102° Long: 81.472463° Datum: NAD 83
Soil Map Unit Name: Gullied land, 10 to 35% slopes (GfF) NWI classification: none

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? No (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: DP 1 was taken in the northern portion of Wetland A, north of I-85, and is also representative of Wetland B. The northern portion of Wetland A and Wetland B are herbaceous/scrub-shrub wetlands located within a maintained/disturbed utility line R/W. Wetland B abuts a relatively permanent water (RPW Stream B). Wetlands A and B exhibited positive evidence of all three wetland parameters including hydrology, hydrophytic vegetation, and hydric soils.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Rocks (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input checked="" type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): <u>0-5"</u>	
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): <u>0"</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (Inches): <u>0"</u>	
(Includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Several indicators of wetland hydrology are evident within Wetlands A and B.		

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

 Sampling Point: DP1-Wetland A

Tree Stratum (Plot size: 25' x 25')	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: *Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) *Total Number of Dominant Species Across All Strata: <u>8</u> (B) *Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) *Does not include unidentified species with no indicator status.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
			_____ = Total Cover	Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: _____ Multiply by: _____ </div> OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: 25' x 25')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <i>Liquidambar styraciflua</i>	10	yes	FAC	
2. <i>Acer rubrum</i>	10	yes	FACW	
3. <i>Alnus serrulata</i>	10	yes	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			30 = Total Cover	
Herb Stratum (Plot size: 25' x 25')	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
1. <i>Panicum sp.</i>	15	yes	-	
2. <i>Carex sp.</i>	15	yes	-	
3. <i>Juncus effusus</i>	15	yes	FACW	
4. <i>Dicanthelium sp.</i>	10	yes	-	
5. <i>Liquidambar styraciflua</i>	10	yes	FAC	
6. <i>Solidago sp.</i>	10	yes	-	
7. <i>Rubus sp.</i>	10	yes	-	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
			85 = Total Cover	
Woody Vine Stratum (Plot size: 30' x 20')	Absolute % Cover	Dominant Species?	Indicator Status	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <i>Lonicera japonica</i>	20	yes	FAC	
2. <i>Toxicodendron radicans</i>	10	yes	FAC	
3. <i>Smilax rotundifolia</i>	10	yes	FAC	
4. <i>Smilax laurifolia</i>	5	no	FACW	
5. _____	_____	_____	_____	
			45 = Total Cover	
Remarks: (if observed, list morphological adaptations below). Greater than 50% of the vegetation within Wetlands A and B is hydrophytic; therefore, passing the dominance test.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

SOIL

Sampling Point: DP1-Wetland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 5/2	100	2.5YR 4/6	3	C	M	clay loam	many distinct redox concentrations
10-16+	10YR 6/2	100	10YR 4/6	3	C	M	clay loam	many distinct redox concentrations

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, O, P, T) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if observed):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:
 The Depleted Matrix hydric soil indicator is evident throughout Wetlands A and B.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: I-85 Bridge Replacements over NS Railroad City/County: Cherokee Sampling Date: 03-28-12
 Applicant/Owner: SCDOT State: SC Sampling Point: DP2-Wetland A
 Investigator(s): Steven Busbee, PWS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): interstream divide/headwaters Local relief (concave, convex, none): gently sloping to concave Slope (%): 0-1
 Subregion (LRR or MLRA): LRR P Lat: 34.160102° Long: 81.472463° Datum: NAD 83
 Soil Map Unit Name: Gullied land, 10 to 35% slopes (GfF) NWI classification: none

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐, significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐, naturally problematic? No (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: DP 1 was taken in the southern portion of Wetland A, south of I-85. The southern portion of Wetland A is a forested, depressional type wetland that drains to a roadside ditch located alongside I-85. The ditched portion of Wetland A drains to a culvert located on the south side of I-85. Wetland A continues as an herbaceous/scrub-shrub wetland on the north side of the I-85 culvert. The southern portion of Wetland A exhibited positive evidence of all three wetland parameters including hydrology, hydrophytic vegetation, and hydric soils.	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13) </div> <div style="width: 50%;"> <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Rocks (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>0-5"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>0"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): <u>0"</u> (Includes capillary fringe)		
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Several indicators of wetland hydrology are evident within the southern portion of Wetland.		

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

 Sampling Point: DP2-Wetland A

Tree Stratum (Plot size: 25' x 25')	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Platanus occidentalis</u>	25	yes	FACW	Dominance Test worksheet: *Number of Dominant Species That Are OBL, FACW, or FAC: <u>12</u> (A) *Total Number of Dominant Species Across All Strata: <u>12</u> (B) *Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) *Does not include unidentified species with no indicator status.
2. <u>Acer rubrum</u>	15	yes	FAC	
3. <u>Salix nigra</u>	15	yes	OBL	
4. <u>Liquidambar styraciflua</u>	10	no	FAC	
5. <u>Ulmus americana</u>	5	no	FACW	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
70 = Total Cover				Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> Total % Cover of: _____ Multiply by: _____ </div> OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
70 = Total Cover				
60 = Total Cover				
Remarks: (if observed, list morphological adaptations below). Greater than 50% of the vegetation within the southern portion of Wetland A is hydrophytic; therefore, passing the dominance test.				

SOIL

Sampling Point: DP2-Wetland A

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16+	10YR 5/1	100	10YR 4/6	3	C	M	loam	many faint redox concentrations

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10) (**LRR N**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
☐ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
☐ Thin Dark Surface (S9) (**MLRA 147, 148**)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Iron-Manganese Masses (F12) (**LRR N, O, P, T, MLRA 136**)
☐ Umbric Surface (F13) (**MLRA 136, 122**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149A**)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (**MLRA 147**)
☐ Coast Prairie Redox (A16) (**MLRA 147, 148**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐**Remarks:**

The Depleted Matrix hydric soil indicator is evident throughout the southern portion of Wetland A.



ATTACHMENT E

Original Request for Jurisdictional Determination Package

**Request for Jurisdictional Determination
I-85 Southbound Bridge Replacement over Norfolk Southern Railroad
Cherokee County, South Carolina
SCDOT PIN 39094
SCDOT File No. 11.039094.11
December 2010**

Attachment A – Jurisdictional Determination Request Form

JURISDICTIONAL DETERMINATION REQUEST

For Identifying Waters of the U.S., Including Wetlands and Tributaries

I-85 Southbound Bridge Replacement over Norfolk Southern Railroad;

Project Name: SCDOT File No. 11.039094.11, SCDOT PIN 39094

Date: December 29, 2010

County: Cherokee

Total Acreage of Tract: ~ 11.4 acres (linear project)

Property Owner : South Carolina Department of Transportation

Attn: Randall D. Williamson, P.E.

Address: P.O. Box 191

Address: Columbia, SC 29202-0191

Phone: (803) 737-1385

Email: WilliamsRD@dot.state.sc.us

Agent: STV/Ralph Whitehead Associates

Attn: Michael Iagnocco, PWS

Address: 1000 W. Morehead St, Suite 200

Address: Charlotte, NC 28208

Phone: (704) 372-1885

Email: michael.iagnocco@stvinc.com

Information Required to Accompany Request - Check the items submitted - forward as much information as is available. At a minimum, 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.
- ☐ Topographic Survey
- ☐ Conceptual Site Plan for the Overall Development
- ☐ Description 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:

- ☐ 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.
- ☒ 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 must 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. Do not sign this form unless you are the owner, or have the specific authority of the property owner.

PRINTED NAME of person signing this form, below: Michael Iagnocco

Signature of Property Owner or Authorized Agent:

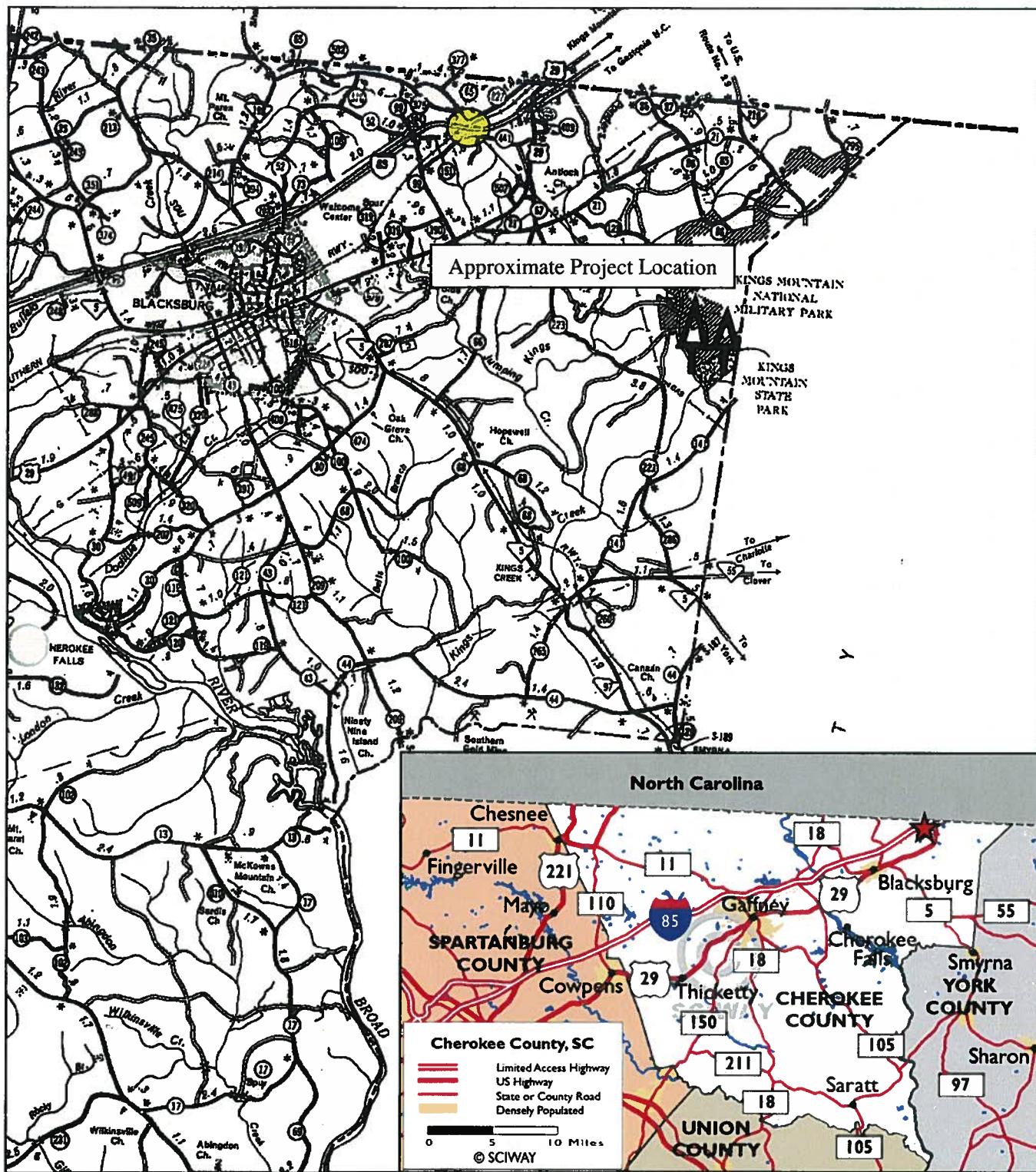
HQ and South Branch
69-A Hagood Avenue
Charleston, SC 29403
843-329-8044

Northeast Branch
1949 Industrial Park Rd, Room 140
Conway, SC 29526
843-365-4239

Northwest Branch
1835 Assembly St., Room 865-B1
Columbia, SC 29201
803-253-3444

**Request for Jurisdictional Determination
I-85 Southbound Bridge Replacement over Norfolk Southern Railroad
Cherokee County, South Carolina
SCDOT PIN 39094
SCDOT File No. 11.039094.11
December 2010**

Attachment B – Figures



Not to Scale

Ref.: SCDOT General Highway Map Cherokee County SC (1971)

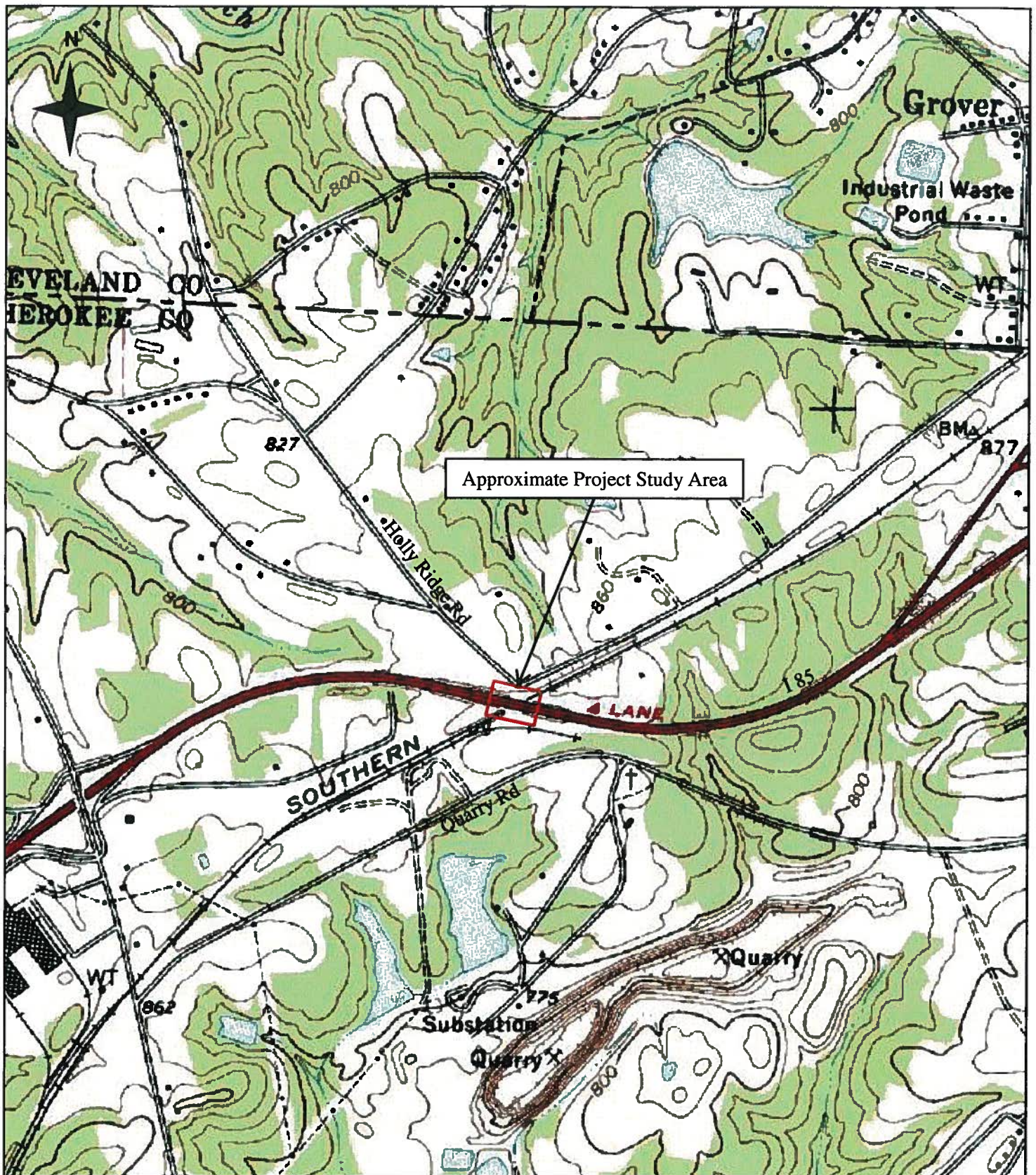
**I-85 Southbound
Bridge Replacement
Over Norfolk Southern Railroad
Cherokee County, SC**

STV/Ralph Whitehead Associates

SCDOT

Site Location

FIGURE 1



Ref. MSR Maps, Kings Creek, SC and Grover, NC Quadrangles 1969

Approximate Scale: 1:24,000

<p>I-85 Southbound Bridge Replacement Over Norfolk Southern Railroad Cherokee County, SC</p>	<p>STV/Ralph Whitehead Associates</p> <p>SCDOT</p>	<p>USGS Site Location Map</p> <p>FIGURE 2</p>
--	---	---



Ref: USDA Soil Survey of Cherokee County, South Carolina, Sheet 4 (1962).

Approximate Scale 1:20,000

Mapped Soil Units in Project Study Area

NaB – Nason very fine sandy loam, 2 to 6 percent slopes

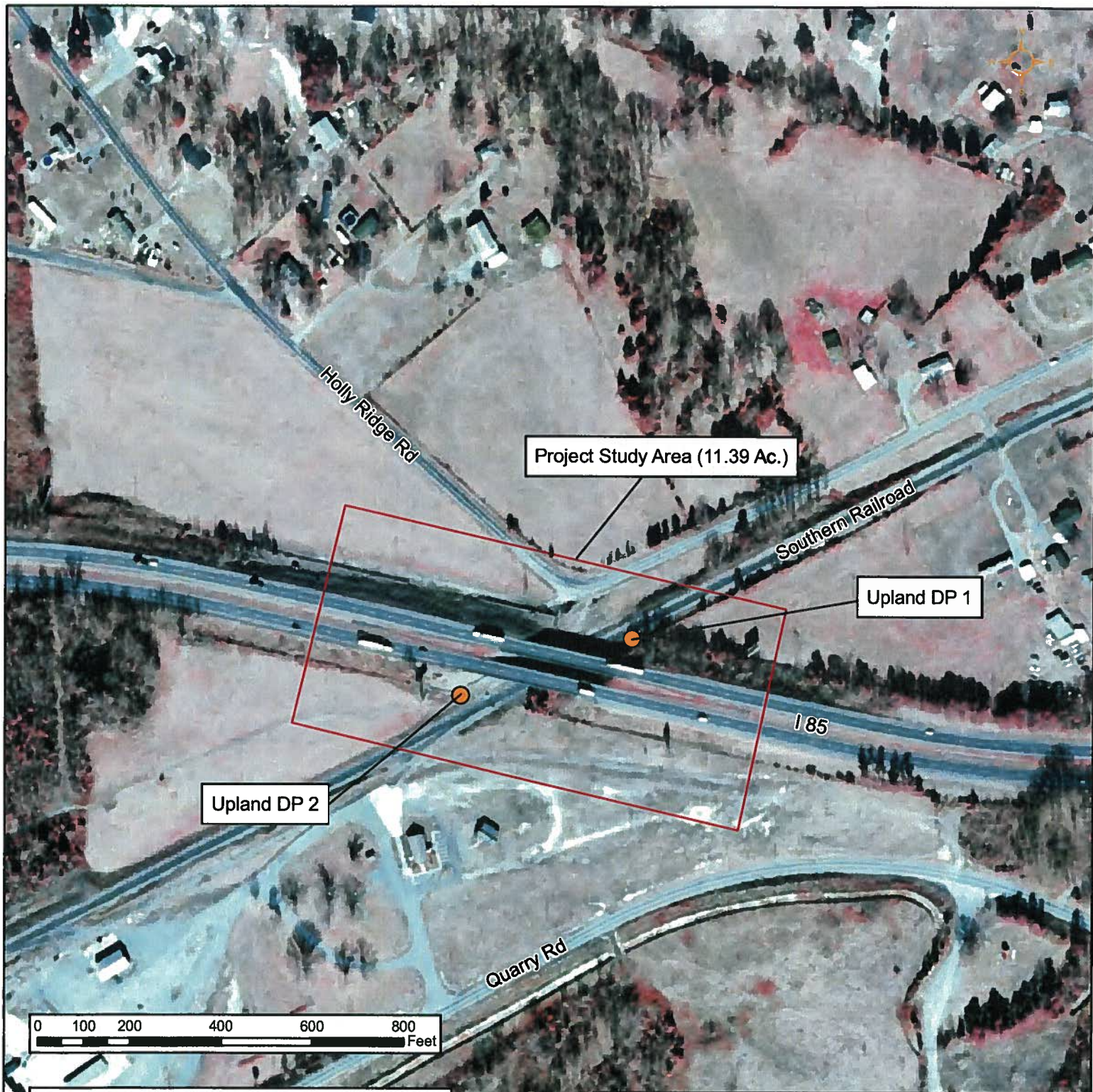
**I-85 Southbound
Bridge Replacement
Over Norfolk Southern Railroad
Cherokee County, SC**

STV/Ralph Whitehead Associates



Soils Map

FIGURE 3



Legend



Project Study Area



Wetland Determination Data Point

Note:

1. No potential jurisdictional waters of the U.S. were found by STV/Ralph Whitehead Associates during the field review conducted on August 12, 2010. Upland GPS data points were surveyed using a Trimble GEOXH hand-held GPS unit capable of submeter accuracy. This map is intended for planning purposes only.

Ref. SCDNR GIS Data Clearinghouse, 2006 Aerial Photography

I-85 Southbound Bridge Replacement Over Norfolk Southern Railroad

Cherokee County, SC

STV/ Ralph Whitehead Associates
Consulting Engineers



Approximate Waters of the U.S.
Boundary Map

FIGURE 4

BJP
DELINEATED BY

AWN
PREPARED BY

BJP
CHECKED BY

MAI
APPROVED BY

8/13/10
DATE

2514104/1200
JOB/PHASE NO.

1"=300'
SCALE

N:\PROJ\2514104\reports\
10 Bridges Field Maps\
I85 over SBL-Southern RR\
Waters.mxd
GIS FILE PATH

SHEET

OF

1

1

**Request for Jurisdictional Determination
I-85 Southbound Bridge Replacement over Norfolk Southern Railroad
Cherokee County, South Carolina
SCDOT PIN 39094
SCDOT File No. 11.039094.11
December 2010**

Attachment C – Representative Photographs

Request for Jurisdictional Determination
I-85 Southbound Bridge Replacement over Norfolk Southern Railroad
Cherokee County, South Carolina
SCDOT PIN 39094
SCDOT File No. 11.039094.11
December 2010



Photograph 1. View of bridge looking south.



Photograph 2. View of bridge looking northeast.

Request for Jurisdictional Determination
I-85 Southbound Bridge Replacement over Norfolk Southern Railroad
Cherokee County, South Carolina
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Photograph 3. View of bridge looking northwest.

Request for Jurisdictional Determination
I-85 Southbound Bridge Replacement over Norfolk Southern Railroad
Cherokee County, South Carolina
SCDOT PIN 39094
SCDOT File No. 11.039094.11
December 2010

Attachment D – Routine Wetland Determination Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: <u>I-85 Southbound Bridge Replacement over Norfolk Southern Railroad</u>	Date: <u>08/12/10</u>
Applicant/Owner: <u>SCDOT</u>	County: <u>Cherokee</u>
Investigator(s): <u>Brandon Phillips, C.H.M.M</u>	State: <u>SC</u>
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No	Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No	Transect ID: _____
Is the area a potential Problem Area? (If needed, explain on reverse.) <input type="radio"/> Yes <input checked="" type="radio"/> No	Plot ID: <u>DP1</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Liquidambar styraciflua</i>	tree	FAC+	9		
2 <i>Acer negundo</i>	tree	FACW	10		
3 <i>Ligustrum sinense</i>	shrub	FAC	11		
4 <i>Pueraria montana</i>	vine	NL	12		
5 <i>Lonicera japonica</i>	vine	FAC-	13		
6			14		
7			15		
8			16		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) **3/5 = 60%**

60% of the dominant plant species are FAC or wetter.

HYDROLOGY

<p>Recorded Data (Describe in remarks):</p> <p><input type="checkbox"/> Stream, Lake or Tide Gauge</p> <p><input type="checkbox"/> Aerial Photographs</p> <p><input type="checkbox"/> Other</p> <p><input checked="" type="checkbox"/> No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p><input type="checkbox"/> Inundated</p> <p><input type="checkbox"/> Saturated in Upper 12 Inches</p> <p><input type="checkbox"/> Water Marks</p> <p><input type="checkbox"/> Drift Lines</p> <p><input type="checkbox"/> Sediment Deposits (on leaves)</p> <p><input type="checkbox"/> Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p><input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches</p> <p><input type="checkbox"/> Water-Stained Leaves</p> <p><input type="checkbox"/> Local Soil Survey Data</p> <p><input type="checkbox"/> FAC-Neutral Test</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>N/A</u> (in.)</p> <p>Depth to Free Water in Pit: <u>>18"</u> (in.)</p> <p>Depth to Saturated Soil: <u>>18"</u> (in.)</p>	
<p>Remarks:</p> <p><u>Wetland hydrology indicators are not present.</u></p>	

DP 1 Continued

WETLAND DETERMINATION

Approved by HQUSACE 2/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: I-85 Southbound Bridge Replacement over Norfolk Southern Railroad	Date: 08/12/10
Applicant/Owner: SCDOT	County: Cherokee
Investigator(s): Brandon Phillips, C.H.M.M	State: SC
Do Normal Circumstances exist on the site? <input checked="" type="radio"/> Yes <input type="radio"/> No	Community ID: <u>Upland</u>
Is the site significantly disturbed (Atypical Situation)? <input type="radio"/> Yes <input checked="" type="radio"/> No	Transect ID: _____
Is the area a potential Problem Area? <input type="radio"/> Yes <input checked="" type="radio"/> No (If needed, explain on reverse.)	Plot ID: DP2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Pueraria montana</i>	vine	NL	9 <i>Lonicera japonica</i>	vine	FAC-
2 <i>Lonicera japonica</i>	vine	FAC-	10 _____		
3 <i>Lespedeza cuneata</i>	herb	NI	11 _____		
4 <i>Ambrosia artemisiifolia</i>	herb	FACU	12 _____		
5 <i>Sorghum halepense</i>	herb	FACU	13 _____		
6 _____			14 _____		
7 _____			15 _____		
8 _____			16 _____		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) **0/5 = 0%**

None of the dominant plant species are FAC or wetter.

HYDROLOGY

<p>Recorded Data (Describe in remarks):</p> <p>_____ Stream, Lake or Tide Gauge</p> <p>_____ Aerial Photographs</p> <p>_____ Other</p> <p>X No Recorded Data Available</p>	<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators:</p> <p>_____ Inundated</p> <p>_____ Saturated in Upper 12 Inches</p> <p>_____ Water Marks</p> <p>_____ Drift Lines</p> <p>_____ Sediment Deposits (on leaves)</p> <p>_____ Drainage Patterns in Wetlands</p> <p>Secondary Indicators (2 or more required):</p> <p>_____ Oxidized Root Channels in Upper 12 Inches</p> <p>_____ Water-Stained Leaves</p> <p>_____ Local Soil Survey Data</p> <p>_____ FAC-Neutral Test</p> <p>_____ Other (Explain in Remarks)</p>
<p>Field Observations:</p> <p>Depth of Surface Water: <u>N/A</u> (in.)</p> <p>Depth to Free Water in Pit: <u>>18"</u> (in.)</p> <p>Depth to Saturated Soil: <u>>18"</u> (in.)</p>	
<p>Remarks:</p> <p><u>Wetland hydrology indicators are not present.</u></p>	

DP 2 Continued

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	<input checked="" type="radio"/> No (Circle)	
Wetland Hydrology Present?	Yes	<input checked="" type="radio"/> No (Circle)	
Hydric Soils Present?	Yes	<input checked="" type="radio"/> No (Circle)	
Is this Sampling Point Within a Wetland?			Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks:			
<p><u>Data point is not representative of a jurisdictional wetland area. DP 2 located near southwest bridge corner.</u></p>			



ATTACHMENT F

Previously Issued USACE JD Letter



REPLY TO
ATTENTION OF

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



July 27, 2011

Regulatory Division

Mr. Randy Williamson, P.E.
South Carolina Department of Transportation
P.O. Box 191, 955 Park Street
Columbia, South Carolina 29201

Dear Mr. Williamson:

This is in response to a letter from your consultant, STV/Ralph Whitehead Associates, requesting a wetland determination, on behalf of the South Carolina Department of Transportation, for an 11.39 acre tract, I-85 Southbound Bridge Replacement over Norfolk Southern Railroad (SCDOT PIN 39094), located adjacent to I-85, northeast of Blacksburg, Cherokee County, South Carolina. The project area is depicted on the enclosed sketch prepared by STV/Ralph Whitehead Associates entitled "I-85 Southbound Bridge Replacement Over Norfolk Southern Railroad, Cherokee County" and dated August 13, 2010.

Based on a review of topographic maps, aerial photography, and soil survey information, it has been determined that the referenced property does not contain any wetland areas or other waters of the United States and, as such, Department of the Army authorization will not be required for mechanized land clearing, excavation, or the placement of dredged or fill material on this site.

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. For the purposes of 33 CFR 331.2, this is considered to be an approved jurisdictional determination.

In future correspondence concerning this matter, please refer to SAC 2011-0020-DJS. If you have any questions concerning this matter, please contact Stephen A. Brumagin at 803-253-3445.

Sincerely,

Travis G. Hughes
Chief, Special Projects Branch

Enclosures:
Approved Jurisdictional Determination Form
Notification of Appeal Options

Copy Furnished:

STV/Ralph Whitehead Associates
Attn: Mr. Michael Iagnocco
1000 W. Morehead Street, Suite 200
Charlotte, North Carolina 28208