

APPENDIX C

Natural Resources Technical Memorandum

DRAFT NATURAL RESOURCES TECHNICAL MEMORANDUM

**PROPOSED INTERSTATE 85 (I-85) WIDENING & INTERCHANGE
IMPROVEMENTS PROJECT FROM MILE MARKER 96 TO MILE MARKER 106
CHEROKEE COUNTY, SOUTH CAROLINA**

SCDOT PIN XXXXX

Prepared For:

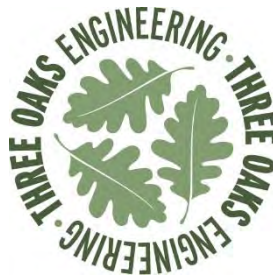
**ICA | HDR
And**



**SC Department of Transportation
Columbia, South Carolina**

December 2016

Prepared by



**Three Oaks Engineering
1000 Corporate Drive
Hillsborough, NC 27278
Tel (919) 732-1300**

TABLE OF CONTENTS

1.0	Introduction	1
1.1	<i>Project Description</i>	1
1.2	<i>Purpose</i>	1
1.3	<i>Methodology</i>	1
2.0	Physical Resources	2
2.1	<i>Land Use</i>	2
2.2	<i>Physiography and Topography</i>	3
2.3	<i>Geology and Soils</i>	4
2.3.1	Soil Descriptions	5
2.4	<i>Water Resources and Water Quality</i>	9
2.4.1	Water Resources	9
2.4.2	Water Quality	10
2.4.2.1	303(d) List of Impaired Waters and Total Maximum Daily Load	10
2.4.2.2	National Pollutant Discharge Elimination System	11
3.0	Biotic Resources	11
3.1	<i>Terrestrial Plant Communities</i>	11
3.1.1	Maintained/Disturbed	11
3.1.2	Cutover/Successional Forest	12
3.1.3	Mixed Pine Forest	12
3.1.4	Piedmont Alluvial Forest	12
3.1.5	Bottomland Hardwood Forest	13
3.1.6	Mesic Mixed Hardwood Forest	13
3.2	<i>Wetland Plant Communities</i>	13
3.3	<i>Aquatic Plant Communities</i>	13
3.4	<i>Wildlife</i>	13
3.4.1	Terrestrial Wildlife	13
3.4.2	Aquatic Wildlife	14
4.0	Waters of the United States	14
4.1	<i>Wetlands</i>	14
4.2	<i>Streams</i>	24
4.3	<i>Ponds/Open Water</i>	36
4.4	<i>Permitting</i>	37
5.0	Floodplains	38
6.0	Threatened and Endangered Species	39
6.1	<i>Dwarf-Flowered Heartleaf</i>	39
6.2	<i>Northern Long-Eared Bat</i>	40
6.3	<i>Georgia Aster</i>	41
7.0	Works Cited	42

Appendix A – Figures

Appendix B – Scientific Names of Species Listed in Report

Appendix C – Photographs

Appendix D – Qualifications of Investigators

Appendix E – Data Sheets

1.0 INTRODUCTION

1.1 Project Description

The South Carolina Department of Transportation (SCDOT) proposes to widen approximately ten miles of Interstate 85 (I-85) in Cherokee County, South Carolina. The project also proposes to improve interchanges within the project limits. The project originates approximately one mile north of the SC-18 (Exit 96) intersection near the Gaffney Ferry Road entrance slip ramp, and ends at the South Carolina/North Carolina State Line (Appendix A, Figure 1).

The proposed project would involve widening the existing four-lane interstate facility to six lanes, three lanes in each direction, improve four interchanges within the project limits, and improve existing bridges and ramps.

Three Oaks Engineering (Three Oaks) has been contracted to provide an environmental review of the proposed project study area (PSA), including documentation of existing natural resources within the PSA. Three Oaks reviewed the PSA along I-85, approximately ten miles in length and encompassing approximately 1,035 acres. The PSA begins approximately one mile north of the SC-18 (Exit 96) intersection and ends at the South Carolina/North Carolina State Line. The PSA is further defined as being approximately 75 feet outside of the existing right-of-way (ROW) corridor in width along the mainline/frontage road and includes the median area to provide full coverage between the northbound and southbound lanes. Specifically, the PSA encompasses the I-85 interchanges with S-83 (Blacksburg Highway), SC-5/198 (North Mountain Street), S-99 (Tribal Road), and US-29 (East Cherokee Street).

This Natural Resources Technical Memorandum (NRTM) summarizes the findings of the environmental review. This report provides an overall description of the project vicinity and specifically describes the natural resources within the PSA, including wetlands, water resources, plant communities, and protected species. Scientific names of species listed in this report are included in Appendix B. Photographs are included in Appendix C. Qualifications of Three Oaks personnel involved in the preparation of this report are located in Appendix D.

1.2 Purpose

The purpose of the proposed project is to increase capacity along I-85 and improve interchanges and overpasses to meet current SCDOT design and safety standards.

1.3 Methodology

Prior to conducting fieldwork, Three Oaks reviewed the following reference material:

- U.S. Geological Survey (USGS) 7.5 minute topographic quadrangles. Blacksburg South, South Carolina (1974); Blacksburg North, South Carolina (1979); and Grover, South Carolina (1979);
- Natural Resource Conservation Service (NRCS) Soil Survey Geographic (SSURGO) database. Cherokee County, South Carolina (2013)
- NRCS-USDA National List of Hydric Soils Database; National List, All States. (Last updated December 2015; reviewed February 2016).
- USFWS National Wetlands Inventory (NWI) Seamless Wetlands data for South Carolina (Last updated October 2015)

- USFWS South Carolina Field Office. Endangered, Candidate, and At-Risk Species. County Listings. Cherokee County (Last Updated: April 29, 2015; Reviewed: November 2016)
- S.C. Department of Natural Resources (SCDNR). Rare, Threatened, and Endangered Species and Communities Known to Occur in Cherokee County (Last Updated June 2014; Reviewed: November 2016)
- South Carolina Department of Health and Environmental Control (SCDHEC). Integrated Report for 2014. Part I: Section 303(d) List of Impaired Waters
- National Agriculture Imagery Program (NAIP) Aerial Photography. Cherokee County (2015)

Field reviews of the PSA were conducted on June 19, 2015, for Dwarf-flowered Heartleaf (*Hexastylis naniflora*) outside of the optimal survey window by Michael Wood and Haley Wood. Suitable habitat was noted throughout the PSA, with varying degrees of suitability (high – low). Additionally, while performing stream and wetland delineations within the PSA, all observations of any *Hexastylis* specimens were recorded and mapped so they could be visited during the flowering period. Prior to initiating field surveys, Three Oaks staff used ArcGIS to locate sandy loam soils (e.g., Pacolet, Madison, and Musella) on north-facing slopes. These, and other areas having the potential to support *H. naniflora* were specifically targeted during field surveys. *H. naniflora* surveys were conducted within the PSA on March 29 and April 5, 2016, by Timothy Savidge and Nathan Howell. The PSA was expanded around the four interchanges in July 2016, after the optimal survey window for *H. naniflora*. Nathan Howell and Hannah Slyce surveyed within the preferred alternate footprint for *Hexastylis* specimens; a complete survey of these areas within the expanded area will occur during the 2017 flowering period.

Field surveys of the PSA for the presence of wetlands and other “waters of the U.S.,” community types, and protected species habitat were conducted between December 1, 2015-January 12, 2016, and September 15-October 6, 2016, by Three Oaks personnel Chris Sheats, Michael Wood, John Roberts, Evan Morgan, Mary Frazer, Nathan Howell, Hannah Slythe, and Sarah Burton. The boundaries of waters of the U.S. (wetlands and streams) were delineated at that time. Wetlands were determined using the Routine On-Site Determination Method as defined in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and the Eastern Mountains and Piedmont Regional Supplement to the Manual (USACE 2012). Delineated waters were located using a handheld Trimble GeoXH Global Positioning System (GPS) unit capable of sub-meter accuracy.

2.0 PHYSICAL RESOURCES

2.1 Land Use

The proposed project is located in a generally rural area, between the cities of Gaffney, South Carolina and the North Carolina state line, and passes just north of Blacksburg, South Carolina. Land use within the project vicinity, an area defined as extending one mile on all sides of the proposed project area, is comprised primarily of undeveloped woodland, commercial development, agricultural lands, industrial development, residential development, a rock quarry, a portion of Blacksburg open water, and floodplains associated with the Broad River.

Land use directly within the project limits is primarily comprised of undeveloped woodland, roadway and utility rights-of-way (ROW), and commercial development near the four interchanges. Undeveloped woodlands within the project limits consist of mixed pine-hardwoods, oak-hickory, planted pine, bottomland hardwoods, and successional scrub-shrub.

2.2 Physiography and Topography

The PSA is located in the Piedmont (45) Level III Ecoregion of South Carolina. Griffith et al. (2002) defines this Ecoregion as follows:

The northeast-southwest trending Piedmont ecoregion comprises a transitional area between the mostly mountainous ecoregions of the Appalachians to the northwest and the relatively flat coastal plain to the southeast. It is a complex mosaic of Precambrian and Paleozoic metamorphic and igneous rocks with moderately dissected irregular plains and some hills. Once largely cultivated, much of this region is in planted pine or has reverted to successional pine and hardwood woodlands. The historic oak-hickory-pine forest was dominated by White Oak, Southern Red Oak, Post Oak, and Hickory, with Shortleaf Pine, Loblolly Pine, and to the north and west, Virginia Pine. The soils tend to be finer-textured than in coastal plain regions. (Griffith et al. 2002)

Griffith et al. (2002) subdivides Level III Ecoregions into Level IV Ecoregions. The eastern and western portions of the PSA are located in the Kings Mountain (45i) Level IV Ecoregion.

The Kings Mountain ecoregion is a hilly, somewhat rugged area with some northeast- to southwest-trending ridges and distinctive metasedimentary and metavolcanic rocks. Aluminum-rich quartz-sericite schist is common. The metamorphic grade is generally lower than adjacent geologic belts and the rocks contain an unusual variety of mineral deposits. Mining strongly influenced the early development of the region, including an iron industry in the late 1700's to late 1800's, and later production of marble, lime, gold, lead, silver, pyrite, lithium, mica, feldspar, silica, and clay. Soils are often a very fine sandy to silty texture, similar to [the Carolina Slate Belt] 45c. The region is covered with oak-hickory-pine forest, and Virginia pine is common. (Griffith et al. 2002)

The middle portion of the PSA is located within the Southern Outer Piedmont (45b) Level IV Ecoregion. (Griffith, et al. 2002).

The Southern Outer Piedmont ecoregion has lower elevations, less relief, and less precipitation than [the Southern Inner Piedmont] 45a. The landform class is mostly irregular plains rather than the plains with hills of [the Southern Inner Piedmont] 45a and [Northern Inner Piedmont] 45e. Pine (mostly loblolly and shortleaf) dominates on old field sites and pine plantations, while mixed oak forest is found in less heavily altered areas. Gneiss, schist, and granite are typical rock types, covered with deep saprolite and mostly red, clayey subsoils. Kanhapludults are common soils, such as the Cecil, Appling, and Madison series. Some areas within this region have more alkaline soils, such as the Iredell series, formed over diabase, diorite, or gabbro, and may be associated with areas once known as Blackjack Oak prairies. (Griffith et al. 2002)

Based on USGS topographic mapping (Appendix A - Figure 2), elevations in the study area range from approximately 548 feet above National Geodetic Vertical Datum (NGVD) to 960 feet above NGVD. The highest elevations within the PSA are located in the central portion of the PSA near Exit 102 near Whitaker Mountain. The lowest elevations of the PSA are located in the floodplain of the Broad River, in the western/southern-most extent of the PSA. The PSA drains in a generally southwesterly direction through tributaries to the Broad River.

2.3 Geology and Soils

The soils in this portion of Cherokee County are in general moderately well-drained, deep, friable soils over sericitic schist (USDA NRCS 2013). Thirty-eight soil map units (SMUs) are mapped within the PSA (USDA NRCS 2013). The SMUs mapped within the PSA are depicted in Appendix A - Figure 3. Farmland Classification and Hydric Rating for each SMU is located in Table 1.

Table 1. Soil map units within the PSA, Cherokee County, South Carolina

Symbol	Soil Unit Name	Farmland Classification^a	Hydric Rating^b
AfA	Altavista fine sandy loam, 0-2% slopes, eroded	Prime farmland	Non-hydric
AfB2	Altavista fine sandy loam, 2-6% slopes, eroded	Prime farmland	Non-hydric
ApC	Appling sandy loam, 6-10% slopes	Farmland of statewide importance	Non-hydric
ApD2	Appling sandy loam, 10-15% slopes	Not prime farmland	Non-hydric
ApE2	Appling sandy loam, 15-25% slopes	Not prime farmland	Non-hydric
Bc	Buncombe loamy sand	Not prime farmland	Non-hydric
Ch	Chewacla silt loam, 0-2% slopes, occasionally flooded	Prime farmland if protected from flooding or not frequently flooded during the growing season	Hydric ^c
Ga	Gullied land, firm materials	Not prime farmland	Non-hydric
GfF	Gullied land, friable materials, 10-35% slopes	Not prime farmland	Non-hydric
MdB2	Madison and Cecil sandy loams, 2-6% slopes, eroded	Prime farmland	Non-hydric
Mv	Mixed alluvial land	Not prime farmland	Non-hydric
Mw	Mixed wet alluvial land	Not prime farmland	Hydric
NaB	Nason very fine sandy loam, 2-6% slopes	Farmland of statewide importance	Non-hydric
NaC2	Nason very fine sandy loam, 6-10% slopes, eroded	Not prime farmland	Non-hydric
NaD2	Nason very fine sandy loam, 10-15% slopes, eroded	Not prime farmland	Non-hydric
NaE	Nason very fine sandy loam, 15-25% slopes	Not prime farmland	Non-hydric
NsC3	Nason silty clay loam, 2-10% slopes, severely eroded	Not prime farmland	Non-hydric
NsE3	Nason silty clay loam, 10-15% slopes, severely eroded	Not prime farmland	Non-hydric
Sa	State fine sandy loam	Prime farmland	Non-hydric
St	Stony land	Not prime farmland	Non-hydric
TaB3	Tatum silty clay loam, 2-6% slopes, severely eroded	Not prime farmland	Non-hydric
TaC3	Tatum silty clay loam, 6-10% slopes, severely eroded	Not prime farmland	Non-hydric
TaD3	Tatum silty clay loam, 10-15% slopes, severely eroded	Not prime farmland	Non-hydric

Table 1. Soil map units within the PSA, Cherokee County, South Carolina (continued)

Symbol	Soil Unit Name	Farmland Classification^a	Hydric Rating^b
TaF3	Tatum silty clay loam, 15-35% slopes, severely eroded	Not prime farmland	Non-hydric
TmB	Tatum very fine sandy loam, 2-6% slopes	Farmland of statewide importance	Non-hydric
TmB2	Tatum very fine sandy loam, 2-6% slopes, eroded	Farmland of statewide importance	Non-hydric
TmC	Tatum very fine sandy loam, 6-10% slopes	Not prime farmland	Non-hydric
TmC2	Tatum very fine sandy loam, 6-10% slopes, eroded	Not prime farmland	Non-hydric
TmD	Tatum very fine sandy loam, 10-15% slopes	Not prime farmland	Non-hydric
TmD2	Tatum very fine sandy loam, 10-15% slopes, eroded	Not prime farmland	Non-hydric
TmE	Tatum very fine sandy loam, 15-25% slopes	Not prime farmland	Non-hydric
TmE2	Tatum very fine sandy loam, 15-25% slopes, eroded	Not prime farmland	Non-hydric
TmF	Tatum very fine sandy loam, 25-35% slopes	Not prime farmland	Non-hydric
W	Water	Not prime farmland	~
WcB	Wickham sandy loam, 2-6% slopes	Prime farmland	Non-hydric
WcC2	Wickham sandy loam, 2-10% slopes, eroded	Farmland of statewide importance	Non-hydric
WcE3	Wickham sandy loam, 10-25% slopes, severely eroded	Not prime farmland	Non-hydric
WkD2	Wilkes sandy loam, 6-15% slopes, eroded	Not prime farmland	Non-hydric
WoB	Worsham sandy loam, 0-6% slopes	Not prime farmland	Non-hydric

a – Source – USDA-NRCS Web Soil Survey

b – National Hydric Soils List

c – Predominately non-hydric; contains hydric inclusions

2.3.1 Soil Descriptions

Altavista fine sandy loam, 0-2% slopes, eroded (AfA) is a deep, moderately well drained, and friable soil. Like other Altavista soils, AfA formed in general alluvium on level to gentle slopes near or adjacent to bottomlands. AfA soil is found in the central portion of the PSA, east of Buffalo Creek, and comprises 2.2% of the PSA.

Altavista fine sandy loam, 2-6% slopes, eroded (AfB2) is a deep well-drained, friable soil. It formed on the lower slopes of Piedmont stream terraces. AfB2 soil is found in the western half of the PSA and comprises 1.1% of the PSA.

Appling sandy loam, 6-10% slopes (ApC), like all Appling soils, is a deep, well-drained soil that formed on weathered granite, gneiss, or schist. In comparison to Appling sandy loam, 2-6% slopes (ApB), the surface layer of ApC is thinner and more variable and the subsurface is more friable. Water infiltrates this soil at medium to slow rates and runoff is rapid. ApC soil comprises 0.98% of the PSA and is found at the eastern most extent of the PSA at the North Carolina border.

Appling sandy loam, 10-15% slopes (ApD2), like all Appling soils, is a deep, well-drained soil that formed on weathered granite, gneiss, or schist. ApD2 is strongly sloping and eroded. In comparison to

Appling sandy loam, 2-6% slopes (ApB), the surface layer of ApD2 is thinner and the subsurface is also thinner and more friable. Water infiltrates this soil at medium to slow rates and runoff is medium to rapid with gullyng common. ApD2 soil comprises 0.03% of the PSA and is found at the eastern most extent of the PSA at the North Carolina border.

Appling sandy loam, 15-25% slopes (ApE2), like all Appling soils, is a deep, well-drained soil that formed on weathered granite, gneiss, or schist. ApE2 is steep, eroded, and in some places has a thin, very friable subsurface. Water infiltrates this soil at moderate to slow rates and runoff is rapid with gullyng common. ApE2 soil comprises 0.8% of the PSA and is found at the eastern most extent of the PSA at the North Carolina border.

Buncombe loamy sand (Bc) is a deep, excessively drained soil that formed on high bottomlands along large drainageways. Bc soils are rapidly permeable with slow surface runoff and low moisture-storage capability. Bc soil comprises 2.3% of the PSA and is found at the western end of the PSA along the western side of the Broad River.

Chewacla silt loam, 0-2% slopes, occasionally flooded (Ch) is a deep somewhat poorly to moderately well drained soil. Ch soil formed in recent alluvium on bottomlands along medium to large streams. Ch soil comprises 0.6% of the PSA and is found at the western end of the PSA.

Gullied land, firm materials (Ga) consists of very severely eroded areas where more than half the acreage is dissected by shallow to moderately deep gullies. Most of these areas were composed of Wilkes, Manteo, and Mecklenburg soil prior to being gullied, with a few consisting of Iredell, Orange, and Helena soil. Slopes range from 10-35%. Water infiltration is slow and runoff is large and rapid. Ga soil comprises 0.5% of the PSA and is found in the middle portion of the PSA.

Gullied land, friable materials, 10-35% slopes (GfF) consists of very severely eroded areas where more than half the acreage is dissected by shallow to moderately deep gullies. Prior to gullyng most GfF soils were made up of Cecil, Tatum, Appling, Nason, and Lockhart soils. Water infiltration is slow with moderate permeability and runoff is rapid and large. GfF soils comprise 5.7% of the PSA and are found throughout the PSA.

Madison and Cecil sandy loams, 2-6% slopes, eroded (MdB2) consist of two red soils that formed on broad ridgetops and adjacent gentle slopes from weathered quartz mica schist, quartz mica gneiss or granite. MdB2 soil is deep, well drained, and friable. MdB2 soil comprises 2.5% of the PSA and is at the eastern end of the PSA near the North Carolina border.

Mixed alluvial land (Mv) consists of soil materials that have been washed from upland and terraces and deposited along streams. Mv soil is deep, well drained to somewhat poorly drained and is likely to be flooded at times. Water infiltration is medium and permeability is moderately rapid. Mv soil comprises 7.9% of the PSA and is found throughout the PSA, but predominantly in the western half of the PSA.

Mixed wet alluvial land (Mw) is similar to Mv but experiences more frequent flooding and is composed of less uniform material. Mw consists of deep, poorly drained materials that have washed from uplands into bottomland areas along medium to large streams where surface drainage is blocked or stream channels are shallow. Water infiltration is medium and permeability is moderately rapid to rapid. Mw soil comprises 0.6% of the PSA and is found in the middle of the PSA east of Buffalo Creek.

Nason very fine sandy loam, 2-6% slopes (NaB) is a deep, well-drained, friable soil formed from weathered sericitic schist found on fairly broad upland ridges or adjacent gentle slopes. NaB has

moderate permeability and slow to very slow infiltration. NaB soil comprises 18% of the PSA and is found predominately in the eastern portion of the PSA.

Nason very fine sandy loam, 6-10% slopes, eroded (NaC2) is a deep, well-drained, friable soil formed from weathered sericitic schist found on fairly broad upland ridges or adjacent gentle slopes with stronger slopes and more runoff than NaB. Shallow gullies are fairly common. NaC2 has slow water infiltration. NaC2 soil comprises 3.2% of the PSA and is found throughout the PSA but predominately in the eastern portion.

Nason very fine sandy loam, 10-15% slopes, eroded (NaD2) is a deep, well-drained, friable soil formed from weathered sericitic schist. It is strongly sloping, has more runoff than NaB, and is much more likely to erode. NaD2 soil comprises 1.7% of the PSA and is found throughout the PSA but predominately in the eastern portion.

Nason very fine sandy loam, 15-25% slopes (NaE) is a deep, well-drained, friable soil formed from weathered sericitic schist. NaE is a steep soil found in small areas on short slopes along drainageways. NaE soil comprises 0.3% of the PSA and is found in the eastern portion of the PSA.

Nason silty clay loam, 2-10% slopes, severely eroded (NsC3) has stronger slopes, finer texture and much more runoff than NaB. It is slightly sticky and water infiltration is very slow. Shallow gullies are common in addition to many moderately deep gullies. NsC3 soil comprises 0.2% of the PSA and is found sporadically within the middle portion of the PSA.

Nason silty clay loam, 10-15% slopes, severely eroded (NsE3) is a very steep soil found on slopes along drainageways. Runoff is large and rapid. Many moderately deep gullies are present. NsE3 soil comprises 2.6% of the PSA and is found sporadically throughout the PSA.

State fine sandy loam (Sa) is a deep, very friable, well drained to moderately well drained soil found on second bottoms or low terraces. Sa is likely to be infrequently flooded. Sa comprises 1.2% of the PSA and is found along the eastern bank of the Broad River.

Stony land (St) is strongly sloping to steep and includes area covered with small rocks and boulders. It is found on short steep ridges or rounded hills, often referred to colloquially as mountains. These mountains include Thicketty, Whitaker, Draytonville, McGowans, and Saladback. St comprises 0.8% of the study area and is found in the middle portion of the PSA near Whitaker Mountain.

Tatum silty clay loam, 2-6% slopes, severely eroded (TaB3) has a finer textured soil surface, slower infiltration rate, and more rapid runoff than TmB2. Shallow gullies are common with a few moderately deep gullies. TaB3 comprises 3.1% of the PSA and is found in the central portion of the PSA.

Tatum silty clay loam, 6-10% slopes, severely eroded (TaC3) is a strongly sloping soil with a finer textured soil surface and more runoff than TmB2. Shallow gullies are common with a few moderately deep gullies. TaC3 comprises 4.2% of the PSA and is found throughout the PSA.

Tatum silty clay loam, 10-15% slopes, severely eroded (TaD3) is found on the medium to short slopes near or at the heads of drainageways. Shallow gullies are common with a few moderately deep gullies. TaD3 comprises 4.6% of the PSA and is found throughout the PSA.

Tatum silty clay loam, 15-35% slopes, severely eroded (TaF3) is found on the short slopes along large drainageways. Shallow gullies and moderately deep gullies are common. TaF3 comprises 7.3% of the PSA and is found predominately in the western half of the PSA.

Tatum very fine sandy loam, 2-6% slopes (TmB) is a deep, well drained friable soil that formed in the residuum of weathered sericitic schist found on gentle to steep upland slopes. Water infiltration is slow to moderately slow and permeability is moderate. TmB soil comprises 1.3% of the PSA and is found in the eastern portion.

Tatum very fine sandy loam, 2-6% slopes, eroded (TmB2) is a deep, well drained friable soil found on broad ridgetops. Water infiltration is medium to slow and runoff is rapid with a moderate hazard of further erosion. TmB2 soil comprises 4.8% of the PSA and is found throughout the PSA.

Tatum very fine sandy loam, 6-10% slopes (TmC) is a deep, well drained friable soil that formed in the residuum of weathered sericitic schist. TmC is strongly sloping and has more rapid runoff than TmB2. TmC soil comprises 0.7% of the study area and is found sporadically in the middle and eastern portions of the PSA.

Tatum very fine sandy loam, 6-10% slopes, eroded (TmC2) is strongly sloping and has more rapid runoff than TmB2. Shallow gullies are common in TmC2. TmC2 soil comprises 7.4% of the study area and is found throughout the eastern half of the PSA.

Tatum very fine sandy loam, 10-15% slopes (TmD) is mostly found on short slopes along medium to large drainageways. Slopes are much stronger and runoff more rapid than TmB2. TmD faces a severe erosion hazard. TmD soil comprises 0.1% of the PSA and is found in the middle portion.

Tatum very fine sandy loam, 10-15% slopes, eroded (TmD2) is a moderately steep slope soil. Runoff is greater than that seen on TmB2. A few moderately deep gullies are present. TmD2 soil comprises 4.2% of the PSA and is found sporadically throughout the PSA.

Tatum very fine sandy loam, 15-25% slopes (TmE) is found on steep slopes between drainageways. A few gullies are present. TmE soil comprises 1.5% of the PSA and is found sporadically throughout the PSA.

Tatum very fine sandy loam, 15-25% slopes, eroded (TmE2) is found on steep slopes between drainageways. In comparison to TmB2, runoff occurs at a higher volume and presents a greater erosion hazard. TmE2 contains a few moderately deep gullies. TmE2 soil comprises 1.9% of the PSA and is found in the central portion of the PSA.

Tatum very fine sandy loam, 25-35% slopes (TmF) is found on short slopes or breaks along drainageways. It includes a few moderately deep gullies. TmF soil comprises 1.3% of the PSA and is found with in the central portion of the PSA.

Wickham sandy loam, 2-6% slopes (WcB) is a deep, well drained, friable soil found on stream terraces in the upper Piedmont. WcB soil comprises 0.3% of the PSA and is found at the western end of the PSA.

Wickham sandy loam, 2-10% slopes, eroded (WcC2) is a deep, well drained, friable soil with more runoff than WcB. Shallow gullies are common with a few moderately deep gullies. WcC2 soil comprises 1.2% of the PSA and is found at the western end of the PSA.

Wickham sandy loam, 10-25% slopes, severely eroded (WcE3) is severely eroded and much of the original soil surface has been washed away. Shallow gullies are common with a few moderately deep gullies. WcE3 soil comprises 0.7% of the PSA and is found at the western end of the PSA.

Wilkes sandy loam, 6-15% slopes, eroded (WkD2) is a shallow soil with a thinner soil surface than WkB. Runoff occurs in large amounts and removes most of the sandy loam. Many shallow gullies are present. WkD2 soil comprises 0.3% of the PSA and is found at the western end of the PSA.

Worsham sandy loam, 0-6% slopes (WoB) is a deep, poorly drained soil found on nearly level upland slopes at the head of drainageways. WoB is slowly permeable and is sometimes flooded with water from adjoining slopes. WoB soil comprises 0.4% of the PSA and is found at the eastern end of the PSA.

The Farmland Protection Policy Act (FPPA) of 1981, requires proposed projects that will convert farmland to non-agricultural uses be evaluated. The FPPA is intended to minimize the impact projects have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Projects are subject to FPPA requirements if they irreversibly convert farmland to nonagricultural uses and are completed by a Federal agency or with assistance from a Federal agency. Based on the soil types found within the PSA, the project will need to be assessed following the provisions of the FPPA during the preparation of the Environmental Assessment (EA) document.

2.4 Water Resources and Water Quality

2.4.1 Water Resources

The PSA is located in the Broad River Basin. As defined by the South Carolina Department of Health and Environmental Control (2007), the Broad River Basin is composed of four eight-digit Hydrologic Units (HU):

1. Upper Broad River Basin – HU Code (HUC) 03050105
2. Lower Broad River Basin – HUC 03050106
3. Tyger River Basin – HUC 03050107
4. Enoree River Basin – HUC 03050108

Within South Carolina, the Broad River Basin is 2,427,533 acres and includes portions of Cherokee, Chester, Fairfield, Greenville, Laurens, Lexington, Newberry, Richland, Spartanburg, Union, and York Counties. According to the 2011 National Land Cover Database (NLCD), the Broad River Basin is 63% forested, 15% agriculture, 15% developed land, and 3% wetland (Homer et al. 2015). There are approximately 9,931 river miles (RM) of streams and 29,703 acres of open water (ponds and lakes). The PSA is located in the Upper Broad River Basin.

The Upper Broad River Basin within South Carolina is 617,199 acres and includes portions of Cherokee, Greenville, Spartanburg, Union, and York counties. According to the 2011 NLCD, the Upper Broad River Basin is 53% forested, 20% agriculture, 14% developed land, and 2% wetland (Homer et al. 2015). There are approximately 2,378 RM of streams and 6,299 acres of open water (ponds and lakes). It is composed of ten ten-digit HUs:

1. Sandy Run-Broad River – HUC 0305010505
2. Buffalo Creek – HUC 0305010508
3. Kings Creek – HUC 0305010509
4. Thicketty Creek – HUC 0305010510
5. Bullock Creek – HUC 0305010511

6. North Pacolet River – HUC 0305010512
7. South Pacolet River – HUC 0305010513
8. Lawsons Fork Creek – HUC 0305010514
9. Pacolet River – HUC 0305010515
10. Cherokee Creek – Broad River – HUC 0305010516

The majority of the PSA is located within the South Carolina portion of the Buffalo Creek 10-digit HU with portions also in the Kings Creek and Cherokee River-Broad River HUs. According to the 2011 NLCD, these three 10-digit HUs are 58% forested, 20% agriculture, 11% developed land, and 0.5% wetland (Homer et al. 2015). There are approximately 520 RM of streams and 951 acres of open water (ponds and lakes) within these three 10-digit HUs.

The PSA is drained primarily by two streams: Buffalo Creek and the Broad River; Buffalo Creek flows through the PSA approximately 2.5 RM before joining the Broad River. The Broad River flows approximately 90 miles south to its confluence with the Congaree River near Columbia, South Carolina. The Congaree River flows approximately 50 miles before entering the Santee River. The Santee River flows approximately 105 miles to the Atlantic Ocean.

2.4.2 Water Quality

2.4.2.1 303(d) List of Impaired Waters and Total Maximum Daily Load

Pursuant to Section 303(d) of the Federal Clean Water Act (CWA) and Federal Regulation 4.0 CFR 130.7, last revised in 1992, SCDHEC has compiled a priority list of waters that do not meet State water quality standards, as well as identifying the cause(s) for impairment and the designated use classification. This 303(d) list is used to prioritize waters for further investigations, additional monitoring, and water quality improvements, including Total Maximum Daily Loads (TMDLs). TMDL development is one way that 303(d) listing promotes management actions.

A TMDL is a calculation of the maximum amount of a specific pollutant that a waterbody can receive and still meet all water quality standards. It incorporates input from point and non-point sources and also a buffer for safety and variation. If a water is impaired, the TMDL report will mandate the level of pollutant reduction required for the water to no longer be listed as impaired.

SCDHEC has a network of more than 240 fixed, ambient, surface water monitoring stations throughout the state. These are supplemented with shellfish sanitation stations, aquatic macroinvertebrate stations, fish tissue station, beach monitoring stations, and phytoplankton stations, in addition to numerous random monitoring stations (SCDHEC 2007). Data from the above are used to make statistically valid inferences about larger watershed areas. There are two SCDHEC water quality monitoring sites in the vicinity of the PSA (B-042 on Broad River and B-057 on Buffalo Creek) and one benthic macroinvertebrate monitoring site on Bee Branch (B-740) (Appendix A - Figure 4).

According to the 2014 303(d) list, both the Broad River at station B-042 and Buffalo Creek at station B-057 are included within approved TMDLs. Both are listed as being impaired for recreational use (swimming) due to excessive fecal coliform bacteria. Both stations have been part of an approved TMDL since September 30, 2004 (SCDHEC 2014). Station B-750 on Bee Branch is not included on the 2014 303(d) list.

The 2004 TMDL document for the Upper Broad River Watershed, which includes stations B-042 and B-057 from above, examined current sources of the observed impairment to calculate a recommended TMDL. Potential sources of impairment within the Upper Broad River Watershed include both point and

non-point pollution. Point source pollution is derived from facilities that discharge at a specific location through pipes, outfalls, and/or conveyance channels; all point sources must have a National Pollutant Discharge Elimination System (NPDES) permit and are often municipal wastewater treatment plants or industrial waste treatment facilities. Nonpoint source pollution can have multiple routes of entry into surface waters and include such sources as wildlife, agricultural practices (both crops and animal grazing), septic system failure, and urban runoff. The calculated TMDL reductions for fecal coliform bacteria within the watershed range from 48-86% reductions. Specifically, at station B-042 and B-057 the reduction recommendations are 68% and 72%, respectively.

2.4.2.2 National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) was created by Section 402 of the CWA in 1972. In 1975, SCDHEC Bureau of Water was authorized to administer the NPDES Program within the state of South Carolina. The Bureau of Water is responsible for permitting, compliance, monitoring, and enforcement components of the programs.

A point source discharge is any discharge released to waters of the state by any discernable, confined, and discrete conveyance. The NPDES program regulates a variety of point source discharges including discharges from private, municipal, and industrial wastewater treatment plants; stormwater discharges from municipal storm sewer systems; stormwater discharges from industrial activities; and stormwater discharge from construction activities, for example. There are two types of NPDES permits: individual and general. All NPDES permits contain: limits of pollutants of concern; pollutant monitoring frequencies; reporting requirements; schedules of compliance, when appropriate; operating conditions; best management practices; and administrative requirements.

There is one permitted NPDES discharger within the PSA. Sharma Petroleum (Permit Number SC0042196) is a minor industrial permit that discharges into Buffalo Creek. It is located northeast of the intersection of I-85 and S-83 (Blacksburg Highway). It is permitted to discharge with a flow rate of 7,500 gallons per day.

3.0 BIOTIC RESOURCES

3.1 Terrestrial Plant Communities

Plant communities identified in the project study area were identified based on plant species composition, landscape position, and hydrologic regime. According to field investigations, six community types are present within the PSA: Maintained/Disturbed areas, Cutover/Successional Forests, Mixed Pine Forests, Piedmont Alluvial Forests, Bottomland Hardwood Forests, and Mesic-mixed Hardwood Forests. A brief description of each community type follows.

3.1.1 Maintained/Disturbed

Maintained/disturbed areas are scattered throughout the PSA in places where the vegetation is periodically maintained or mowed, such as agriculture fields and pastures, athletic fields, commercial and residential lawns, commercial properties, utility easements, and roadside shoulders. Vegetation observed in agriculture fields during the field investigations include, but are not limited to, winter cover crops such as Cereal Rye and Annual Rye-grass. Pastures are generally open but comprised of some scattered canopy species including Tulip Poplar, American Sycamore, Blackgum, Green Ash, and Loblolly Pine. Subcanopy and shrub species include Eastern Red Cedar, Wild Cherry, and Chinese Privet. Grasses and herbs include Tall Fescue, Annual Rye-grass, Annual Bluegrass, Perennial Rye-grass, White Clover,

Common Dandelion, Wild Garlic, Broomsedge, and Purple Henbit. Athletic fields, commercial properties, residential lawns, and roadside shoulders are comprised of grasses and herbs including Tall Fescue, Bermuda Grass, Bahia Grass, Purpletop, Common Dandelion, Purple Henbit, Broomsedge, and Perennial Ryegrass. Residential areas consist of canopy and subcanopy species such as Pignut Hickory, Mockernut Hickory, White Oak, Northern Red Oak, Southern Red Oak, Sweetgum, Tulip Poplar, Loblolly Pine, Shortleaf Pine, American Holly, and Virginia Pine. Invasive species present within these communities include Mimosa, Bradford Pear, Golden Bamboo, Chinese Privet, Glossy Privet, Chinese Silvergrass, Autumn-olive, Multiflora Rose, Gill-over-the-ground, Common Periwinkle, Bigleaf Periwinkle, Johnson Grass, English Ivy, Chinese Wisteria, Kudzu, Japanese Stiltgrass, and Japanese Honeysuckle. Utility easements consist of successional species where infrequent mowing occurs. There is no canopy within these areas, however young canopy and subcanopy sapling species observed include Sweetgum, Eastern Baccharis, Wild Cherry, White Oak, Tulip Poplar, American Sycamore, Blackgum, Eastern Red Cedar, and Loblolly Pine. The shrub layer includes Chinese Privet, Autumn-olive, and Blackberry thickets. The herb and vine layer includes Tall Fescue, Broomsedge, Purpletop, Common Dog-fennel, Tall Goldenrod, Switchgrass, Chinese Silvergrass, Poison Ivy, and Japanese Honeysuckle.

3.1.2 Cutover/Successional Forest

The cutover forest community type is scattered throughout, ranging from one to 15 years old. These cutover communities are predominantly immature mesic mixed hardwood forests with dominant tree species comprised of Sweetgum, Tulip Poplar, Red Maple, Red Elm, Green Ash, Blackgum, American Beech, White Oak, Northern Red Oak, Willow Oak, Mockernut Hickory, Pignut Hickory, Eastern Baccharis, Loblolly Pine, Shortleaf Pine, Virginia Pine, Eastern Red Cedar, Ironwood, Winged Elm, and American Holly. Herb and vine species include Broomsedge, Poison Ivy, Muscadine Grape, and Common Greenbriar. Invasive species present within this community type include Autumn-Olive, Chinese Privet, Japanese Honeysuckle, Japanese Stiltgrass, and Thorny-olive.

3.1.3 Mixed Pine Forest

The mixed pine forest community is scattered in patches throughout the uplands of the project study area. Dominant canopy species include Loblolly Pine, Shortleaf Pine, and Virginia Pine. Deciduous species that are present within the canopy layer include Sweetgum, Tulip Poplar, and Red Maple. The understory and shrub layer species include American Beech, Blackgum, Winged Elm, American Holly. Herb and vine species are sparse to absent and include Ebony Spleenwort and Christmas Fern. Invasive species present within this community type include Chinese Privet, Chinese Wisteria, Japanese Honeysuckle, Japanese Stiltgrass, and Multiflora Rose.

3.1.4 Piedmont Alluvial Forest

The piedmont alluvial forest community occurs along stream floodplains such as South Buffalo Creek. Dominant canopy species include American Sycamore, Green Ash, River Birch, Sweetgum, Water Oak, Tulip Poplar, Red Elm, Black Willow, Box Elder, Southern Hackberry, and Red Maple. Subcanopy and shrub species present include Ironwood, Tag Alder, Swamp Rose, Giant Cane, Small Cane, Silky Dogwood, Southern Arrowwood, and Chinese Privet. Herb and vines include Smallspike False Nettle, White Turtlehead, Common Chickweed, Common Rush, Sedges, Cinnamon Fern, Netted Chain Fern, Sensitive Fern, Poison Ivy, Muscadine Grape, Common Greenbriar, and Crossvine. Invasive species present within this community type include Chinese Privet, Japanese Honeysuckle, and Japanese Stiltgrass.

3.1.5 Bottomland Hardwood Forest

The piedmont alluvial forest community occurs along the Broad River. Dominant canopy species include American Sycamore, Green Ash, River Birch, Eastern Cottonwood, Sweetgum, Black Willow, Water Oak, Swamp Chestnut Oak, Tulip Poplar, Red Elm, and Red Maple. Subcanopy and shrub species include Ironwood, Tag Alder, Swamp Rose, Giant Cane, Silky Dogwood, and American Black Elderberry. Herb and vines include Smallspike False Nettle, Common Cattail, Bulrush, Marsh-fleabane, Smartweed, Common Rush, Threeway Sedge, Sedges, Cinnamon Fern, Netted Chain Fern, Common Greenbriar, and Crossvine. Invasive species present within this community type include Chinese Privet, Japanese Honeysuckle, and Japanese Stiltgrass.

3.1.6 Mesic Mixed Hardwood Forest

The mesic mixed hardwood forest community is the dominant natural community type observed throughout the project study area, occurring within undisturbed uplands and along small stream valleys. Dominant canopy species in this community include Sweetgum, Tulip Poplar, Red Maple, Green Ash, Blackgum, American Beech, White Oak, Southern Red Oak, Northern Red Oak, Willow Oak, Rock Chestnut Oak, Mockernut Hickory, Pignut Hickory, Black Walnut, Loblolly Pine, Shortleaf Pine, and Virginia Pine. Subcanopy and shrub species include Flowering Dogwood, Eastern Red Cedar, Sugar Maple, Black Haw, Winged Elm, Chinese Privet, American Hazelnut, Possumhaw, Blueberry, and American Holly. Herb and vine species include Christmas Fern, Common Running Cedar, Ebony Spleenwort, Crane-fly Orchid, Crossvine, Poison Ivy, Muscadine Grape, Common Greenbriar. Invasive species present within this community type include Autumn Olive, Chinese Wisteria, Japanese Honeysuckle, Japanese Stiltgrass, Kudzu, and Thorny Olive.

3.2 Wetland Plant Communities

Wetland communities located within the PSA include 36 freshwater forested/emergent (PFO1B and PEM2B) wetland areas (Table 2; Cowardin et al. 1979). More information on the aforementioned wetland areas, including approximate size, dominant vegetation, soils, indicators of hydrology and hydric soils, and jurisdictional status is included in Section 4.0 Delineated Waters of the U.S.

3.3 Aquatic Plant Communities

No aquatic plant communities, including submerged aquatic vegetation (SAV), were observed within the PSA during the field reviews.

3.4 Wildlife

3.4.1 Terrestrial Wildlife

Terrestrial communities are comprised of both natural and disturbed habitats that may support a diversity of wildlife species (those species actually observed are indicated with *). Mammal species that commonly exploit forested habitats and stream corridors found within the project study area include Eastern Gray Squirrel*, Grey Fox*, Eastern Cottontail*, Raccoon, Virginia Opossum, and White-tailed Deer*. Birds that commonly use forest and forest edge habitats include American Crow*, Blue Jay*, White Throated Sparrow, Carolina Chickadee*, Tufted Titmouse*, Red-shouldered Hawk*, Yellow-bellied Sapsucker*, Eastern Towhee*, Northern Cardinal*, Carolina Wren*, and Yellow-rumped Warbler. Birds that may use the open habitat or water bodies within the project study area include American Kestrel*, Red-tailed Hawk*, Belted Kingfisher*, Eastern Bluebird*, Field Sparrow*, Black

Vulture*, and Turkey Vulture*. Reptile and amphibian species that may use terrestrial communities include Black Rat Snake*, Black Racer, Northern Copperhead, Eastern Box Turtle*, Ground Skink, Eastern Fence Lizard, Five-lined Skink, Fowler's Toad*, American Toad*, Spotted Salamander, and Marbled Salamander.

3.4.2 Aquatic Wildlife

Aquatic communities in the project study area consist of both perennial and intermittent piedmont streams, riverine wetlands, and ponds. Perennial streams could support Bluehead Chub, Redbreast Sunfish, and Northern Dusky Salamander. Intermittent streams are relatively small in size and support aquatic communities of Spring Peeper*, Crayfish*, and various benthic macroinvertebrates. Pond habitats could support Largemouth Bass, Bluegill, Redbreast Sunfish, Channel Catfish, Yellowbelly Slider*, Snapping Turtle, American Bullfrog, Green Frog, and Northern Water Snake.

4.0 WATERS OF THE UNITED STATES

4.1 Wetlands

A total of 36 wetlands were identified within the PSA (Table 2; Appendix A - Figure 6).

Table 2. Wetlands within the PSA

Wetland ID	Type	Figure	Area (acres)
WA	PFO1B	6-27	0.0123
WB	PFO1B	6-26	0.0338
WC	PFO1B	6-26	0.0525
WD	PFO1B	6-26	0.0096
WE	PFO1B	6-25	0.1325
WF	PFO1B	6-26	0.2229
WG	PFO1B	6-25	0.1155
WH	PFO1B	6-25	0.3129
WDD	PFO1B	6-1	0.0691
WEE	PFO1B	6-1	0.0014
WFF	PFO1B	6-1, 6-2	0.3033
WGG	PFO1B	6-1	0.0051
WII	PFO1B	6-2	0.0429
WJJ	PFO1B	6-4	0.2387
WKK	PFO1B	6-4	0.0088
WLL	PFO1B	6-4	0.0171
WMM	PFO1B	6-7, 6-8	0.0455
WNN	PFO1B	6-5	0.0065
WOO	PFO1B	6-10	0.5382
WPP	PFO1B	6-9	0.3319
WQQ	PEM2B	6-9	0.2195
WRR	PEM2B	6-8	0.0361
WSS	PFO1B	6-13	0.1400
WTT	PFO1B	6-8	0.7907
WUU	PFO1B	6-9, 6-10	0.2340
WVV	PFO1B	6-10	1.7720
WWW	PFO1B	6-10	0.1436

Table 2. Wetlands within the PSA (continued)

Wetland ID	Type	Figure	Area (acres)
WXX	PFO1B	6-5	0.1205
WYY	PFO1B	6-13	0.0400
WZV	PFO1B	6-30	0.0530
WZW	PFO1B	6-13	0.0111
WZX	PFO1B	6-13	0.0541
WZY	PEM1B	6-13	0.8037
WZZ		6-4	0.0785
WAAA		6-18	0.0061
WBBB		6-14	0.0445
Total:			7.0479 acres

Wetland WA

Wetland WA is a palustrine, forested wetland located north of I-85, approximately 2,000 feet west of Exit 106/ East Cherokee Street. The wetland extends beyond the boundary of the PSA; 0.0123 acres are within the PSA. The tree stratum of Wetland WA is dominated by Tulip Poplar and Red Maple. The sapling/shrub stratum is sparse and contains saplings of Water Oak and Sweetgum, in addition to the invasive Chinese Privet. The herb stratum contains Christmas Fern and the invasive Japanese Stiltgrass. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WA include: high water table, saturation, water-stained leaves, and crayfish burrows. Hydric soil indicators, including a depleted matrix, were also observed in the wetland. Wetland WA is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WA is included in Appendix C, Photograph 1.

Wetland WB

Wetland WB is a palustrine, forested wetland located north of I-85, approximately 1,500 feet east of Mulberry Street. The wetland is completely within the boundary of the PSA (0.0338 acres). The tree stratum of Wetland WB is dominated by White Oak and Red Maple. The sapling/shrub stratum is sparse and contains the invasive Chinese Privet. The herb stratum contains Virginia Chain Fern, Netted Chain Fern, Christmas Fern, and Blackberry. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WB include: oxidized rhizospheres on living roots, moss trim lines, and crayfish burrows. Hydric soil indicators, including a depleted matrix, were also observed in the wetland. Wetland WB is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WB is included in Appendix C, Photograph 2.

Wetland WC

Wetland WC is a palustrine, forested wetland located south of I-85, approximately 1,500 feet east of Mulberry Street. The wetland is completely within the boundary of the PSA (0.0525 acres). The tree stratum of Wetland WC is dominated by Ironwood, American Sycamore, and Tulip Poplar. The sapling/shrub stratum contains Hazel Alder and the invasive Autumn-olive. The herb stratum contains Christmas Fern, Switchcane, and White Turtlehead. Greenbriar and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WC include: high water table, saturation, water-stained leaves, crayfish burrows, and positive FAC-Neutral test. Hydric soil indicators, including a depleted matrix, were also observed in the wetland. Wetland WC is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WC is included in Appendix C, Photograph 3.

Wetland WD

Wetland WD is a palustrine, forested wetland located south of I-85, approximately 1,500 feet east of Mulberry Street. The wetland is completely within the boundary of the PSA (0.0096 acres). The tree stratum of Wetland WD is dominated by Tulip Poplar, Green Ash, and very tall Black Willow. The sapling/shrub stratum contains American Sycamore and White Oak saplings along with the invasive Chinese Privet. The herb stratum contains Christmas Fern. Greenbriar and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WD include: surface water, high water table, water-stained leaves, oxidized rhizospheres on living roots, and crayfish burrows. Hydric soil indicators, including a depleted matrix, were also observed in the wetland. Wetland WD is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WD is included in Appendix C, Photograph 4.

Wetland WE

Wetland WE is a palustrine, forested wetland located south of I-85, approximately 565 feet north of Priester Road and west of Wetland WF. The wetland is completely within the boundary of the PSA (0.1325 acres). The tree stratum of Wetland WE is dominated by Red Maple, Tulip Poplar, and Sweetgum. The sapling/shrub stratum contains Possumhaw, Black Highbush Blueberry, and Red Maple saplings, along with the invasive Chinese Privet. The herb stratum is absent. Laurel Greenbriar and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WE include: surface water, high water table, water-stained leaves, moss trim lines, and crayfish burrows. Hydric soil indicators, including a depleted matrix, were also observed in the wetland. Wetland WE is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WE is included in Appendix C, Photograph 5.

Wetland WF

Wetland WF is a palustrine, forested wetland located south of I-85, approximately 375 feet northeast of Priester Road and east of Wetland WE. The wetland extends beyond the boundary of the PSA; 0.2229 acres are within the PSA. The tree stratum of Wetland WF is dominated by Red Maple and Sweetgum. The sapling/shrub stratum contains Possumhaw and Sweetgum saplings. The herb stratum is comprised of Switchcane, the invasive Broad-leaf Privet, and Common Rush. Greenbriar and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WF include: surface water, high water table, saturation, water-stained leaves, sparsely vegetated concave surface, and positive FAC-Neutral test. Hydric soil indicators, including redox depressions, were also observed in the wetland. Wetland WF is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WF is included in Appendix C, Photograph 6.

Wetland WG

Wetland WG is a palustrine, forested wetland located north of I-85, approximately 600 feet south of Roark Road and east of Wetland WH. The wetland is completely within the boundary of the PSA (0.1155 acres). The tree stratum of Wetland WG is dominated by Red Maple and Black Willow. The sapling/shrub stratum contains Hazel Alder and Sweetgum saplings. The herb stratum is comprised of Switchcane and Possumhaw sprouts. Common Greenbriar and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WG include: high water table, saturation, water-stained leaves, oxidized rhizospheres on living roots, and positive FAC-Neutral test. Hydric soil indicators, including redox dark surface, were also observed in the

wetland. Wetland WG is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WG is included in Appendix C, Photograph 7.

Wetland WH

Wetland WH is a palustrine, forested wetland located north of I-85, approximately 650 feet south of Roark Road and west of Wetland WG. The wetland is completely within the boundary of the PSA (0.3129 acres). The tree stratum of Wetland WH is dominated by Red Maple, Tulip Poplar, and Water Oak. The sapling/shrub stratum contains Red Maple saplings. The herb stratum is comprised of Switchcane. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WH include: water-stained leaves, drainage patterns, crayfish burrows, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WH is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WH is included in Appendix C, Photograph 8.

Wetland WDD

Wetland WDD is a palustrine, forested wetland located south of I-85, approximately 1,000 feet west of the Broad River. The wetland extends beyond the boundary of the PSA; 0.0691 acres are within the PSA. The tree stratum of Wetland WDD is absent. The sapling/shrub stratum contains Red Maple and Downy Poplar. The herb stratum is comprised of Common Rush and Giant Cane. The vine stratum is absent. Primary and secondary wetland hydrology indicators within Wetland WDD include: surface water, high water table, saturation, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WDD is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WDD is included in Appendix C, Photograph 9.

Wetland WEE

Wetland WEE is a palustrine, forested wetland located south of I-85, approximately 150 feet west of the Broad River. The wetland extends beyond the boundary of the PSA; 0.0014 acres are within the PSA. The tree stratum of Wetland WEE contains Black Willow and River Birch. The sapling/shrub stratum contains Sweetgum and Winged Elm. The herb stratum is comprised of Sedges and Threeway Sedge. The vine stratum is absent. Primary and secondary wetland hydrology indicators within Wetland WEE include: surface water, high water table, saturation, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WEE is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WEE is included in Appendix C, Photograph 10.

Wetland WFF

Wetland WFF is a palustrine, forested wetland located north of I-85, approximately 275 feet west of the Broad River. The wetland is completely within the boundary of the PSA (0.3033 acres). The tree stratum of Wetland WFF contains River Birch, American Sycamore, Water Oak, and Sweetgum. The sapling/shrub stratum contains American Sycamore. The herb and vine strata are absent. Primary and secondary wetland hydrology indicators within Wetland WFF include: surface water, high water table, saturation, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WFF is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WFF is included in Appendix C, Photograph 11.

Wetland WGG

Wetland WGG is a palustrine, forested wetland located north of I-85, approximately 50 feet east of Wetland WHH. The wetland is contained entirely within the boundary of the PSA (0.0051 acres). The tree stratum of Wetland WGG is comprised of Sweetgum and Red Maple. The sapling/shrub stratum contains Sweetgum and Downy Poplar. The herb stratum is comprised the invasive Japanese Honeysuckle. The vine stratum is absent. Primary and secondary wetland hydrology indicators within Wetland WGG include: surface water, high water table, saturation, water marks, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WGG is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WGG is included in Appendix C, Photograph 12.

Wetland WII

Wetland WII is a palustrine, forested wetland located south of I-85, approximately 750 feet east of the Broad River. The wetland extends beyond the boundary of the PSA; 0.0429 acres are within the PSA. The tree stratum of Wetland WII is comprised of Elm. The sapling/shrub stratum contains Green Ash. The herb stratum is comprised of Giant Cane and the invasive Chinese Privet. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WII include: surface water, high water table, saturation, water-stained leaves, sparsely vegetated concave surface, crayfish burrows, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WII is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WII is included in Appendix C, Photograph 13.

Wetland WJJ

Wetland WJJ is a palustrine, forested wetland located south of I-85, approximately 375 feet south of Milliken Road and west of Exit 100. The wetland is contained entirely within the boundary of the PSA (0.2387 acres). The tree stratum of Wetland WJJ is comprised of Box Elder. The sapling/shrub stratum contains Box Elder and Sweetgum. The herb stratum is absent. The vine stratum is comprised of the invasive Japanese Honeysuckle. Primary and secondary wetland hydrology indicators within Wetland WJJ include: surface water, high water table, saturation, water-stained leaves, sparsely vegetated concave surface, and microtopographic relief. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WJJ is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WJJ is included in Appendix C, Photograph 14.

Wetland WKK

Wetland WKK is a palustrine, forested wetland located south of I-85, approximately 90 feet west of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.0088 acres). The tree stratum of Wetland WKK is comprised of Box Elder. The sapling/shrub stratum contains Box Elder and the invasive Chinese Privet. The herb stratum contains the invasive Chinese Privet. The vine stratum is absent. Primary and secondary wetland hydrology indicators within Wetland WKK include: surface water, high water table, saturation, water marks, and sparsely vegetated concave surface. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WKK is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WKK is included in Appendix C, Photograph 15.

Wetland WLL

Wetland WLL is a palustrine, forested wetland located south of I-85, approximately 315 feet west of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.0171 acres). The tree stratum of Wetland WLL is comprised of Box Elder. The sapling/shrub stratum contains Box Elder and the invasive Chinese Privet. The herb and vine stratum are absent. Primary and secondary wetland hydrology indicators within Wetland WLL include: surface water, high water table, saturation, and sparsely vegetated concave surface. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WLL is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WLL is included in Appendix C, Photograph 16.

Wetland WMM

Wetland WMM is a palustrine, forested wetland located south of I-85, approximately 70 feet east of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.0455 acres). The tree stratum of Wetland WMM is absent. The sapling/shrub stratum contains Green Ash, *Baccharis sp.*, Downy Poplar, Box Elder, and the invasive Chinese Privet. The herb stratum contains Japanese Honeysuckle and Japanese Stiltgrass; both are considered invasive. Blackberry and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WMM include: water-stained leaves and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WMM is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WMM is included in Appendix C, Photograph 17.

Wetland WNN

Wetland WNN is a palustrine, forested wetland located north of I-85, approximately 625 feet west of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.0065 acres). The tree stratum of Wetland WNN includes Red Maple and Sweetgum. The sapling/shrub stratum contains Ironwood and Red Maple. The herb stratum contains the invasive Chinese Privet. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WNN include: surface water, high water table, saturation, and water-stained leaves. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WNN is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WNN is included in Appendix C, Photograph 18.

Wetland WOO

Wetland WOO is a palustrine, forested wetland located south of I-85, approximately 480 feet north of Bear Den Road. The wetland is contained entirely within the boundary of the PSA (0.5382 acres). The tree stratum of Wetland WOO includes Sweetgum and Slippery Elm. The sapling/shrub stratum contains Green Ash and Sweetgum. The herb stratum contains Blackberry, Sedges, Threeway Sedge, and Marsh-fleabane. The invasive Japanese Honeysuckle and Poison Ivy comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WOO include: surface water, high water table, saturation, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WOO is depicted on the NWI GIS layer as PFO1C (USFWS 2015). A representative photograph of Wetland WOO is included in Appendix C, Photograph 19.

Wetland WPP

Wetland WPP is a palustrine, forested wetland located south of I-85, approximately 675 feet north of Bear Den Road. The wetland extends beyond the boundary of the PSA; 0.3319 acres are within the PSA. The tree stratum of Wetland WPP includes American Sycamore, Red Maple, and Sweetgum. The sapling/shrub stratum contains Sweetgum, Willow Oak, and Slippery Elm. The herb stratum contains Threeway Sedge and the invasive Japanese Honeysuckle. The invasive Japanese Honeysuckle and Poison Ivy comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WPP include: surface water, high water table, saturation, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WPP is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WPP is included in Appendix C, Photograph 20.

Wetland WQQ

Wetland WQQ is a palustrine, emergent wetland located south of I-85, approximately 1,400 feet north of Bear Den Road. The wetland extends beyond the boundary of the PSA; 0.2195 acres are within the PSA. The tree stratum of Wetland WQQ is absent. The sapling/shrub stratum contains Sweetgum. The herb stratum contains Common Rush, Blackberry, Marsh-fleabane, and Fescue. The vine stratum is absent. Primary and secondary wetland hydrology indicators within Wetland WQQ include: surface water, high water table, saturation, water-stained leaves, micro-topographic relief, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WQQ is depicted on the NWI GIS layer as PFO1C (USFWS 2015). A representative photograph of Wetland WQQ is included in Appendix C, Photograph 21.

Wetland WRR

Wetland WRR is a palustrine, emergent wetland located south of I-85, approximately 2,500 feet east of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.0391 acres). The tree, shrub/sapling, and vine strata of Wetland WRR are absent. The herb stratum contains Common Rush. Primary and secondary wetland hydrology indicators within Wetland WRR include: surface water, high water table, saturation, water-stained leaves, sparsely vegetated concave surface, and positive FAC-Neutral test. Hydric soil indicators, including depleted dark surface, were also observed in the wetland. Wetland WRR is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WRR is included in Appendix C, Photograph 22.

Wetland WSS

Wetland WSS is a palustrine, forested wetland located south of I-85, between the Exit 102 off-ramp and Henson Road. The wetland is contained entirely within the boundary of the PSA (0.14 acres). The tree stratum of Wetland WSS contains Sweetgum and Chestnut Oak. The sapling/shrub stratum contains Sweetgum, Hazel Alder, and the invasive Chinese Privet. The herb stratum contains Common Rush, Common Cattail, and the invasive Japanese Honeysuckle. Common Greenbrier and the invasive Japanese Honeysuckle comprise the herb stratum. Primary and secondary wetland hydrology indicators within Wetland WSS include: surface water, high water table, water marks, drainage patterns, micro-topographic relief, positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WSS is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WSS is included in Appendix C, Photograph 23.

Wetland WTT

Wetland WTT is a palustrine, forested wetland located north of I-85, approximately 2,500 feet east of Blacksburg Highway/Exit 100. The wetland extends beyond the boundary of the PSA; 0.7907 acres are within the PSA. The tree stratum of Wetland WTT contains Green Ash and American Sycamore. The sapling/shrub stratum contains Sweetgum, Box Elder, and the invasive Chinese Privet. The herb stratum is absent. Common Greenbriar and Poison Ivy comprise the herb stratum. Primary and secondary wetland hydrology indicators within Wetland WTT include: surface water, high water table, saturation, water marks, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WTT is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WTT is included in Appendix C, Photograph 24.

Wetland WUU

Wetland WUU is a palustrine, forested wetland located north of I-85, approximately 3,500 feet east of Blacksburg Highway/Exit 100. The wetland extends beyond the boundary of the PSA; 0.234 acres are within the PSA. The tree and vine strata of Wetland WUU are absent. The sapling/shrub stratum contains Green Ash. The herb stratum contains Common Rush and Smartweed. Primary and secondary wetland hydrology indicators within Wetland WUU include: surface water, high water table, saturation, inundation visible on aerial imagery, water-stained leaves, micro-topographic relief, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WUU is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WUU is included in Appendix C, Photograph 25.

Wetland WVV

Wetland WVV is a palustrine, forested wetland located north of I-85, approximately 4,600 feet east of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (1.3226 acres). The tree and vine strata of Wetland WVV are absent. The sapling/shrub stratum contains Hazel Alder, Black Willow, and American Black Elderberry. The herb stratum contains Goldenrod and the invasive Japanese Honeysuckle. Primary and secondary wetland hydrology indicators within Wetland WVV include: surface water, high water table, saturation, water-stained leaves, oxidized rhizospheres on living roots, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WVV is depicted on the NWI GIS layer as PFO1A (USFWS 2015). A representative photograph of Wetland WVV is included in Appendix C, Photograph 26.

Wetland WWW

Wetland WWW is a palustrine, forested wetland located north of I-85, approximately 1,000 feet north of Henson Road. The wetland is contained entirely within the boundary of the PSA (0.1436 acres). The tree stratum of Wetland WWW contains Black Willow and Downy Poplar. The sapling/shrub stratum contains Green Ash and the invasive Chinese Privet. The herb stratum contains Smallspike False Nettle. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WWW include: surface water, high water table, saturation, water-stained leaves, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WWW is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WWW is included in Appendix C, Photograph 27.

Wetland WXX

Wetland WXX is a palustrine, forested wetland located north of I-85, approximately 350 feet east of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.1205 acres). The tree stratum of Wetland WXX contains Green Ash, Red Maple, and Southern Hackberry. The sapling/shrub stratum contains Ironwood and Red Maple. The herb stratum contains Smallspike False Nettle and the invasive Japanese Stiltgrass. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WXX include: high water table, saturation, oxidized rhizospheres on living roots, geomorphic position, micro-topographic relief, and positive FAC-neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WXX is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WXX is included in Appendix C, Photograph 28.

Wetland WYY

Wetland WYY is a palustrine, forested wetland located north of I-85, approximately 1,100 feet west of North Mountain Street/Exit 102. The wetland is contained entirely within the boundary of the PSA (0.04 acres). The tree stratum of Wetland WYY contains Black Willow and American Sycamore. The sapling/shrub stratum contains Sweetgum, American Sycamore, and the invasive Chinese Privet. The herb stratum contains Sedges and Sensitive Fern. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WYY include: surface water, high water table, saturation, oxidized rhizospheres on living roots, drainage patterns, geomorphic position, micro-topographic relief, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WYY is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WYY is included in Appendix C, Photograph 29.

Wetland WZV

Wetland WZV is a palustrine, forested wetland located south of I-85, approximately 1,160 feet east of US 29/Exit 106. The wetland is contained entirely within the boundary of the PSA (0.0055 acres). The tree stratum of Wetland WZV contains Black Willow and Eastern Cottonwood. The sapling/shrub stratum contains Southern Wax Myrtle and Black Willow saplings. The herb stratum contains Bulrush, Arrowleaf Tearthumb, Sedges, and Blackberry. Poison Ivy and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WZV include: high water table, saturation, water marks, water-stained leaves, drainage patterns, geomorphic position, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were developing within the wetland; the soils were recently deposited fill/run-off and if present conditions remain the depleted matrix will further develop. Wetland WZV is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WYY is included in Appendix C, Photograph 30.

Wetland WZW

Wetland WZW is a palustrine, forested wetland located north of I-85, approximately 890 feet east of Rocky Springs Road. The wetland is contained entirely within the boundary of the PSA (0.011 acres). The tree stratum of Wetland WZW contains Tulip Poplar. The sapling/shrub stratum contains Hazel Alder and American Black elderberry. The herb stratum contains Sweetgum seedlings, Virginia Chain Fern, and the invasive Japanese stiltgrass. Muscadine grape and Virginia Creeper comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WZW include: high water

table, saturation, water marks, water-stained leaves, hydrogen sulfide odor, drainage patterns, and geomorphic position. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WZW is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WZW is included in Appendix C, Photograph 31.

Wetland WZX

Wetland WZX is a palustrine, forested wetland located north of I-85, approximately 600 feet east of Rocky Springs Road. The wetland is contained entirely within the boundary of the PSA (0.0541 acres). The tree stratum of Wetland WZX contains Tulip Poplar, Red Maple, Sweetgum and Black Willow. The sapling/shrub stratum contains Red Maple and Sweetgum saplings. The herb stratum contains the invasive Japanese stiltgrass. Virginia Creeper and the invasive Japanese Honeysuckle comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WZX include: water marks, water-stained leaves, drainage patterns, and crayfish burrows. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WZX is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WZX is included in Appendix C, Photograph 32.

Wetland WZY

Wetland WZY is a palustrine, emergent wetland located north of I-85, approximately 1,135 feet west of North Mountain Street/Exit 102. The wetland is contained entirely within the boundary of the PSA (0.8028 acres). The tree stratum of Wetland WZY contains Black Willow. The sapling/shrub stratum and vine stratum are absent. The herb stratum contains Common Cattail, Narrowleaf Cattail, and bulrush. The invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WZY include: water marks, water-stained leaves, oxidized rhizospheres on living roots, surface soil cracks, drainage patterns, geomorphic position, and positive FAC-Neutral test. The soils in Wetland WZY is heavily disturbed. It is comprised of 8-12 inches of fill over parent material. This fill is developing redoximorphic features consistent with a hydric water regime and is therefore considered hydric. Wetland WZY is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WZY is included in Appendix C, Photograph 33.

Wetland WZZ

Wetland WZZ is a palustrine, forested wetland located south of I-85, approximately 780 feet west of Blacksburg Highway/Exit 100. The wetland is contained entirely within the boundary of the PSA (0.0785 acres). The tree stratum of Wetland WZZ contains Green Ash and Ironwood. The sapling/shrub stratum contains Sweetgum and American Holly. The herb stratum contains Arrowleaf tearthumb, Smallspike False Nettle, and the invasive Japanese Stiltgrass. Virginia Creeper and the invasive Japanese Honeysuckle comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WZZ include: saturation, water marks, water-stained leaves, sparsely vegetated concave surface, drainage patterns, crayfish burrows, and geomorphic position. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WZZ is not depicted on the NWI GIS layer (USFWS 2015). No photo.

Wetland WAAA

Wetland WAAA is a palustrine, forested wetland located north of I-85, approximately 1,900 feet east of SC Highway 5/Exit 102. The wetland is contained entirely within the boundary of the PSA (0.0075 acres). The tree stratum of Wetland WAAA contains Red Maple. The sapling/shrub stratum contains the

invasive Chinese Privet. The herb stratum contains wetland grasses. Trumpet Vine comprises the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WAAA include: surface water, high water table, saturation, water marks, water-stained leaves, hydrogen sulfide odor, sparsely vegetated concave surface, and geomorphic position. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WAAA is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WAAA is included in Appendix C, Photograph 34.

Wetland WBBB

Wetland WBBB is a palustrine, forested wetland located north of I-85, approximately 1,230 feet west of North Mountain Street/Exit 102; it appears to be an old BMP retention feature. The wetland continues beyond the boundary of the PSA (0.0445 acres). The tree stratum of Wetland WBBB contains Black Willow, Water Oak, Sweetgum, and Red Maple. The sapling/shrub stratum contains Black Willow, Red Maple, the invasive Chinese Privet and the invasive Autumn-olive. The herb stratum contains Common Rush and Orange Jewelweed. Poison Ivy and Common Greenbriar comprise the vine stratum. Primary and secondary wetland hydrology indicators within Wetland WBBB include: surface water, high water table, saturation, water marks, inundation visible on aerial imagery, water-stained leaves, drainage patterns, crayfish burrows, saturation visible on aerial imagery, and positive FAC-Neutral test. Hydric soil indicators, including depleted matrix, were also observed in the wetland. Wetland WBBB is not depicted on the NWI GIS layer (USFWS 2015). A representative photograph of Wetland WBBB is included in Appendix C, Photograph 35.

4.2 Streams

A total of 77 streams were identified within the PSA (Table 3; Appendix A – Figure 6). All are listed in the table below but only descriptions of jurisdictional streams (Seasonal and Perennial) follow.

Table 3. Streams identified with the PSA

Stream ID	Figure	Type	Delineated Area	
			Linear Feet	Acres
Broad River	6-1, 6-2	Tributary – Perennial	1568	10.9574
Buffalo Creek	6-4, 6-7, 6-8	Tributary – Perennial	2447	4.0642
Mill Creek/ SZL	6-30	Tributary – Intermittent	176	0.0196
	6-30	Tributary – Seasonal	196	0.0229
	6-30	Tributary – Perennial	72	0.0162
SA	6-30	Tributary – Intermittent	314	0.0563
SB/SG	6-30	Tributary – Perennial	454	0.0727
SC	6-30	Tributary – Intermittent	103	0.0066
SD	6-30	Tributary – Intermittent	28	0.0020
SE	6-30	Tributary – Intermittent	254	0.0319
SF	6-30	Tributary – Seasonal	93	0.0134
SH	6-30	Tributary – Seasonal	137	0.0236
SI	6-27, 6-28	Tributary – Intermittent	97	0.0265
SJ	6-27	Tributary – Intermittent	167	0.0234
SK	6-27	Tributary – Seasonal	117	0.0109
	6-27	Tributary – Perennial	166	0.0227

Table 3. Streams identified with the PSA (continued)

Stream ID	Figure	Type	Delineated Area	
			Linear Feet	Acres
SL	6-27	Tributary – Intermittent	132	0.0067
SM	6-26	Tributary – Perennial	278	0.0204
SN	6-28	Tributary – Intermittent	193	0.0174
	6-27	Tributary – Seasonal	1137	0.1286
	6-27	Tributary – Perennial	189	0.0141
SO	6-25	Tributary – Intermittent	319	0.0160
SP	6-25, 6-26	Tributary – Intermittent	592	0.0522
SQ	6-26	Tributary – Intermittent	168	0.0122
SR	6-25	Tributary – Intermittent	198	0.0297
SS	6-25	Tributary – Intermittent	60	0.0033
ST	6-23	Tributary – Perennial	672	0.0877
SU	6-23	Tributary – Intermittent	169	0.0095
SV	6-23	Tributary – Intermittent	976	0.0802
SW	6-22	Tributary – Seasonal	287	0.0249
	6-22	Tributary – Perennial	279	0.0103
SX/SRRR	6-21, 6-22	Tributary – Perennial	377	0.0560
SY	6-21, 6-22	Tributary – Intermittent	108	0.0060
SZ	6-19	Tributary – Intermittent	183	0.0124
SBB	6-2	Tributary – Perennial	583	0.0860
SCC	6-2	Tributary – Seasonal	113	0.0055
SDD	6-3	Tributary – Seasonal	179	0.0106
SEE	6-3	Tributary – Intermittent	154	0.0079
SFF	6-3	Tributary – Intermittent	107	0.0208
SGG	6-3	Tributary – Perennial	210	0.0163
SHH	6-3	Tributary – Perennial	188	0.0186
SII	6-3, 6-4	Tributary – Intermittent	292	0.0240
SJJ	6-3	Tributary – Intermittent	170	0.0144
SKK	6-4	Tributary – Seasonal	100	0.0047
SLL	6-5	Tributary – Seasonal	225	0.0317
SMM	6-4, 6-5	Tributary – Perennial	1962	0.6080
SNN	6-4	Tributary – Seasonal	187	0.0119
SOO	6-7	Tributary – Perennial	247	0.0344
SPP	6-7	Tributary – Seasonal	153	0.0106
SQQ	6-5	Tributary – Perennial	802	0.1491
SRR	6-5	Tributary – Intermittent	406	0.0476
	6-5	Tributary – Perennial	851	0.1027
SSS	6-9, 6-10	Tributary – Perennial	492	0.0903
STT	6-8	Tributary – Seasonal	684	0.0755
SUU	6-8	Tributary – Seasonal	115	0.0084
SVV	6-6	Tributary – Intermittent	123	0.0108

Table 3. Streams identified with the PSA (continued)

Stream ID	Figure	Type	Delineated Area	
			Linear Feet	Acres
SWW	6-5, 6-6, 6-8	Tributary – Perennial	1295	0.1681
SXX	6-6	Tributary – Intermittent	123	0.0142
SY Y	6-8	Tributary – Seasonal	181	0.0147
SZA	6-19	Tributary – Intermittent	142	0.0053
SZB	6-18	Tributary – Intermittent	301	0.0099
	6-18	Tributary – Perennial	35	0.0021
SZC	6-18	Tributary – Perennial	144	0.0411
SZD	6-4	Tributary – Seasonal	260	0.0234
SZN	6-14, 6-18	Tributary – Intermittent	389	0.0590
	6-14	Tributary – Perennial	277	0.2053
SZQ	6-13, 6-14	Tributary – Intermittent	115	0.0059
SZZ	6-8	Tributary – Seasonal	175	0.0180
SAAA	6-8	Tributary – Intermittent	129	0.0043
SBBB	6-8	Tributary – Intermittent	108	0.0051
SCCC	6-12, 6-13	Tributary – Seasonal	898	0.0708
	6-16	Tributary – Perennial	195	0.0158
SDDD	6-17	Tributary – Intermittent	412	0.0280
	6-13	Tributary – Seasonal	454	0.0397
SEEE	6-12, 6-13	Tributary – Intermittent	253	0.0187
SFFF	6-13, 6-14	Tributary – Intermittent	316	0.0235
SGGG	6-8	Tributary – Seasonal	243	0.0227
SHHH	6-10	Tributary – Seasonal	44	0.0007
SIHH	6-10, 6-11	Tributary – Perennial	518	0.1107
SJJJ	6-11	Tributary – Seasonal	72	0.0042
SKKK	6-13, 6-17	Tributary – Seasonal	805	0.0293
SLLL	6-13	Tributary – Perennial	1628	0.1752
SMMM	6-18	Tributary – Perennial	291	0.0170
SNNN	6-19	Tributary – Perennial	376	0.0314
SOOO	6-19	Tributary – Perennial	552	0.0368
SPPP	6-18	Tributary – Perennial	258	0.0111
SQQQ	6-21	Tributary – Perennial	302	0.0205
SSSS	6-21	Tributary – Seasonal	66	0.0021
Total:			32,406 lf	18.5823 ac

Broad River

The Broad River, a perennial stream, flows through the PSA near the westernmost extent of the project. The Broad River is a Traditionally Navigable Water (TNW). It originates north of the PSA and flows south. Approximately 1,568 linear feet (lf) of the Broad River are within the PSA. The Broad River is

approximately 250-320 feet wide with bank height of approximately 5-12 feet. During the site visit the Broad River flowed with a moderate velocity and clarity was turbid. Aquatic life was not observed. The Broad River is depicted on the USGS Topographic map as a perennial river. It is also shown on the USGS National Hydrologic Dataset (NHD) layer. Representative photographs are included in Appendix C, Photograph 36.

Buffalo Creek

Buffalo Creek, a perennial stream, flows through the PSA near the middle of the project. Buffalo Creek is a Traditionally Navigable Water (TNW). It originates north of the PSA and flows south across the PSA east of Blacksburg Highway/Exit 100. It then curves and flows west across Blacksburg Highway/Exit 100 before discharging into the Broad River. Approximately 2,290 lf of Buffalo Creek are within the PSA. Within the PSA, Buffalo Creek is approximately 60-120 feet wide with bank height of approximately 4-8 feet. During the site visit Buffalo Creek flowed with a moderate velocity and clarity was turbid. Aquatic life was not observed. Buffalo Creek is depicted on the USGS Topographic map as a perennial river. It is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 37.

Mill Creek/SZL

Mill Creek/SZL is located at the northern/eastern end of the PSA, south of I-85, approximately 1,280 feet south of South Carolina/North Carolina border. Mill Creek/SZL originates as an intermittent stream that flows 176 lf to Wetland WZV. It leaves Wetland WZV as a seasonal stream and flows 196 lf before becoming a perennial stream. The perennial portion of Mill Creek/SZL flows 72 lf before leaving the PSA. Within the PSA, the seasonal portion of Mill Creek/SZL ranges from 2-3 feet wide with bank height approximately 2 feet high. Water depth ranges from 6-12 inches. The substrate is composed of clay. No aquatic life was observed within the seasonal portion of Stream SK. During the site visit the water was slightly turbid with a slow velocity. The perennial portion of Mill Creek/SZL ranges from 6-10 feet wide with bank height approximately 2 feet high. Water depth ranges from 6-12 in. The substrate is composed of silt, sand, and gravel. During the site visit the water was slightly turbid with a slow velocity. Mill Creek/SZL is shown on both the USGS Topographic map and the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 38-40.

Stream SB/SG

Stream SB/SG, a perennial stream, is located at the northern/eastern end of the PSA approximately 150 feet south of South Carolina/North Carolina border. Stream SB/SG flows south across the PSA for 454 lf to its confluence with Mill Creek approximately 500 feet south of the PSA. Within the PSA, Stream SB/SG ranges from 6-8 feet wide with bank heights ranging from 1-6 feet. Water depth ranges from 2-24 inches (in). The substrate is composed of silt, sand, gravel, cobble, and bedrock. Crayfish and amphibians were observed within the stream. During the site visit the water flowed clear with a moderate velocity. Stream SB/SG is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 43-44.

Stream SF

Stream SF, a seasonal stream, is located at the northern/eastern end of the PSA and crosses the South Carolina/North Carolina border. Stream SF flows south across the PSA for 103 lf, then approximately 630 lf to a pond that discharges into Mill Creek. Within the PSA, Stream SF is approximately 3 feet wide with an approximate bank height of 3 feet. Water depth is approximately 3 in. The substrate is composed

of silt, sand, gravel, and cobble. No aquatic life was observed within the stream. During the site visit the water was slightly turbid with a moderate velocity. Stream SF is depicted on the USGS Topographic map as an intermittent stream. It is shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 48.

Stream SH

Stream SH, a seasonal stream, is located at the northern/eastern end of the PSA approximately 500 feet south of the South Carolina/North Carolina border. Stream SH flows southwest for 137 lf to its confluence with Stream SB/SG. Within the PSA, Stream SH ranges from 4-6 feet wide with bank height ranging from 3-4 feet. Water depth ranges from 2-12 inches (in). The substrate is composed of silt, sand, gravel, and cobble. Salamander larvae were observed within the stream. During the site visit the water was clear with a moderate velocity. Stream SH is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 49.

Stream SK

Stream SK flows south across the PSA. North of I-85, Stream SK flows 117 lf and is a seasonal stream. South of I-85, it flows 166 lf and is perennial. Stream SK is located approximately 2,000 feet southwest of Exit 106. Within the PSA, the seasonal portion of Stream SK ranges from 1-2 feet wide with bank height ranging from 1-2 feet. Water depth ranges from 2-4 in. The substrate is composed of clay, silt, sand, and gravel. No aquatic life was observed within the seasonal portion of Stream SK. During the site visit the water was clear with a moderate velocity. The perennial portion of Stream SK ranges from 4-8 feet wide with bank height ranging from 2-4 feet. Water depth ranges from 4-12 in. The substrate is composed of silt, sand, gravel, and cobble. Both fish and amphibians were observed within the perennial portion of Stream SK. During the site visit the water was clear with a moderate velocity throughout the entire channel. Stream SK is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 51-52.

Stream SM

Stream SM, located approximately 3,400 feet west of Exit 106, is a perennial stream that flows south across the PSA for 278 lf. Within the PSA, Stream SM ranges from 2-5 feet wide with bank height ranging from 1-3 feet. Water depth ranges from 2-15 in. The substrate is composed of silt, sand, gravel, and cobble. Macroinvertebrates, fish, crayfish, and amphibians were observed within the channel. During the site visit the water flowed clear with a moderate velocity. Stream SM is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 54.

Stream SN

Stream SN originates approximately 630 feet west of Exit 106. It is intermittent north of I-85 for 193 lf; south of I-85 Stream SN is seasonal and parallels I-85 for 1,137 lf; it turns into a perennial stream and exits the PSA after 189 lf; once outside of the PSA, Stream SN flows approximately 630 feet to its confluence with Stream SK. Within the PSA, the seasonal portion of Stream SN ranges from 1-3 feet wide with bank height ranging from 1-4 feet. Water depth ranges from 1-12 in. The substrate is composed of clay, silt, and sand. Aquatic life observed included macroinvertebrates and amphibians. The perennial portion of Stream SN ranges from 2-6 feet wide with bank height ranging from 2-4 feet. Water depth ranges from 2-18 in. The substrate is composed of silt, sand, gravel, and cobble. Macroinvertebrates, crayfish, and amphibians were observed within the perennial portion of Stream SN. During the site visit

the water was clear with a moderate velocity throughout the entire channel. Stream SN is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 55-57.

Stream ST

Stream ST, located approximately 550 feet west of Tribal Road/Exit 106, is a seasonal stream that flows northwest through the PSA north of I-85 for 549 lf. On exiting the PSA, Stream ST flows into/becomes Bee Branch in approximately 185 feet. Within the PSA, Stream ST ranges from 3-4 feet wide with bank height ranging from 0-1 feet. Water depth ranges from 0-12 in. The substrate is composed of clay, silt, sand, and gravel. No aquatic life was observed during the site visit. During the site visit the water flowed clear with a slow velocity. Stream ST is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 63.

Stream SW

Stream SW originates approximately 1,800 feet west of Tribal Road/Exit 104; it is located entirely north of I-85. Stream SW flows as a seasonal channel for 287 lf before becoming a perennial channel. The perennial portion of Stream SW flows for 279 lf before leaving the PSA, then travels approximately 500 feet to an Unnamed tributary (UT) to Bee Branch which then flows approximately 4,000 feet to its confluence with Bee Branch. Within the PSA, the seasonal portion of Stream SW ranges from 1-3 feet wide with bank height approximately 2 feet. Water depth ranges from 0-6 in. The substrate is composed of clay, silt, sand, and gravel. No aquatic life was observed during the site visit. The perennial portion of Stream SW ranges from 3-5 feet wide with bank height ranging from 1-3 feet. Water depth ranges from 8-24 in. The substrate is composed of clay, silt, sand, and gravel. Larval salamanders and crayfish were observed within the perennial portion of the stream. During the site visit the water was clear with a moderate velocity throughout the entire channel. Stream SW is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 66-67.

Stream SX/SRRR

Stream SX/SRRR, a perennial stream, is located approximately 3,200 feet west of Tribal Road/Exit 104. Stream SX/SRRR flows north across the PSA for 376 lf; it continues to its confluence with Bee Branch approximately 7,400 lf north of the PSA. Within the PSA, Stream SX/SRRR ranges from 3-8 feet wide with bank height ranging from 1-5 feet. Water depth ranges from 8-24 in. The substrate is composed of silt, sand, gravel, cobble, and bedrock. During the site visit fish were observed and the water flowed clear with a moderate velocity. Stream SX is depicted on the USGS Topographic map as a perennial stream; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 68-69.

Stream SBB

Stream SBB, a perennial stream located east of the Broad River, flows south across the PSA for 583 lf; it exits the PSA and flows approximately 1,100 feet to its confluence with Buffalo Creek. Stream SBB is approximately 6 feet wide with banks ranging from 3-4 feet high. Water depth ranges from 2-8 in. The substrate is composed of silt, sand, and gravel. During the site visit fish, snails, mayfly larvae, crayfish, and amphibians were observed and the water flowed clear with a moderate velocity. Stream SBB is depicted on the USGS Topographic map as an intermittent stream; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 72.

Stream SCC

Stream SCC, a seasonal stream located east of the Broad River, flows south across the PSA for 113 lf; it exits the PSA and flows approximately 1,000 feet to its confluence with Buffalo Creek. Stream SCC is approximately 2 feet wide with banks ranging from 0.5-1 feet high. Water depth is approximately 4 in. The substrate is composed of clay, silt, sand, and gravel. During the site visit macrobenthos and amphibians were observed and the water flowed clear with a slow velocity. Stream SCC is not depicted on the USGS Topographic map; it is also not shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 73.

Stream SDD

Stream SDD, a seasonal stream located east of the Broad River, flows southeast on the south side of I-85 for 113 lf; it exits the PSA and flows approximately 1,400 feet to Buffalo Creek. Stream SDD is approximately 3 feet wide with a bank height of approximately 5 feet. Water depth ranges from 1-3 in. The substrate is composed of clay, silt, and sand. During the site visit no aquatic life was observed and the water flowed clear with a slow velocity. Stream SDD is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 74.

Stream SGG

Stream SGG, a perennial stream located east of the Broad River, flows southeast across the PSA for 210 lf; it exits the PSA and flows approximately 1,000 feet to Buffalo Creek. Stream SGG is approximately 3 feet wide with bank height ranging from 2-4 feet. Water depth ranges from 2-6 in. The substrate is composed of clay, silt, sand, and gravel. During the site visit macrobenthos, crayfish, and fish were observed and the water flowed clear with a slow velocity. Stream SGG is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 77.

Stream SHH

Stream SHH, a perennial stream located east of the Broad River and approximately 3,100 feet west of Blacksburg Highway/Exit 100, flows southeast across the PSA for 188 lf; it exits the PSA and flows approximately 250 feet to Buffalo Creek. Stream SHH ranges from 3-6 feet wide with bank height ranging from 4-6 feet. Water depth ranges from 1-6 in. The substrate is composed of sand, gravel, and cobble. During the site visit macrobenthos and crayfish were observed and the water flowed clear with a moderate velocity. Stream SHH is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 78.

Stream SKK

Stream SKK, a seasonal stream located approximately 2,300 feet west of Blacksburg Highway/Exit 100, flows south on the south side of I-85 for 72 lf; it exits the PSA and flows 60 lf to its confluence with Buffalo Creek. Stream SKK is approximately 1.5 feet wide with a bank height of approximately 3 feet. Water depth is approximately 2 in. The substrate is composed of sand and gravel. During the site visit no aquatic life was observed and the water flowed clear with a moderate velocity. Stream SKK is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 81.

Stream SLL

Stream SLL, a seasonal stream located approximately 790 feet west of Blacksburg Highway/Exit 100, flows south on the south side of I-85 for 225 lf to its confluence with Stream SMM. Stream SLL ranges from 2-4 feet wide with bank height ranging from 3-4 feet. Water depth ranges from 0-6 in. The substrate is composed of sand, gravel, and cobble. During the site visit fish and crayfish were observed and the water flowed clear with a slow velocity. Stream SLL is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 82.

Stream SMM

Stream SMM, a perennial stream located approximately 650 feet west of Blacksburg Highway/Exit 100, flows south across the PSA for 1,572 lf to its confluence with Buffalo Creek. Stream SMM is approximately 4 feet wide with a bank height of approximately 4 feet. Water depth is approximately 5 in. The substrate is composed of sand, gravel, and cobble. During the site visit caddisfly larvae, fish, and crayfish were observed and the water flowed clear with a moderate velocity. Stream SMM is depicted on the USGS Topographic map as an intermittent stream; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 83.

Stream SNN

Stream SNN, a seasonal stream located approximately 1,000 feet west of Blacksburg Highway/Exit 100, enters the PSA at its southern edge and flows north 31 lf to its confluence with Buffalo Creek. Stream SNN ranges from 1.5-3 feet wide with bank height ranging from 0.5-2 feet. Water depth ranges from 1-8 in. The substrate is composed of sand, gravel, and cobble. During the site visit macrobenthos were observed and the water flowed clear with a slow velocity. Stream SNN is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 84.

Stream SOO

Stream SOO, a perennial stream located approximately 1,000 feet east of Blacksburg Highway/Exit 100, enters the PSA at its southern edge and flows north 102 lf to its confluence with Buffalo Creek. Stream SOO ranges from 4-6 feet wide with bank height ranging from 1-3 feet. Water depth ranges from 12-20 in. The substrate is composed of sand, gravel, and cobble. During the site visit macrobenthos, fish, and crayfish were observed and the water was slightly turbid with a moderate velocity. Stream SOO is depicted on the USGS Topographic map as an intermittent; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 85.

Stream SPP

Stream SPP, a seasonal stream located approximately 140 feet east of Blacksburg Highway/Exit 100, enters the PSA at its southern edge and flows north 7 lf to its confluence with Stream SOO. Stream SPP ranges from 2-4 feet wide with bank height ranging from 1-2 feet. Water depth ranges from 4-8 in. The substrate is composed of sand, gravel, and cobble. During the site visit macrobenthos and fish were observed and the water was clear with a slow velocity. Stream SPP is not depicted on the USGS Topographic map or on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 86.

Stream SQQ

Stream SQQ, a perennial stream located approximately 1,250 feet west of Blacksburg Highway/Exit 100, enters the PSA at its northern edge and flows south 802 lf to its confluence with Stream SMM. Stream SQQ ranges from 2-4 feet wide with bank height ranging from 2-5 feet. Water depth ranges from 0-15 in. The substrate is composed of sand, gravel, and cobble. During the site visit macrobenthos and fish were observed and the water was clear with a slow velocity. Stream SQQ is depicted on the USGS Topographic map as an intermittent stream and is shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 87.

Stream SRR

Stream SRR, a perennial stream located approximately 800 feet west of Blacksburg Highway/Exit 100, enters the PSA at its northern edge and flows south 309 lf to its confluence with Stream SMM. Stream SRR is approximately 4 feet wide with bank height ranging from 1-2.5 feet. Water depth ranges from 2-5 in. The substrate is composed of sand and gravel. During the site visit caddisfly larvae and crayfish were observed and the water was clear with a moderate velocity. Stream SRR is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 88.

Stream SSS

Stream SSS, a perennial stream located approximately 2,000 feet east of Buffalo Creek, flows north across the PSA for 492 lf to its confluence with Buffalo Creek. Stream SSS is approximately 6 feet wide with bank height ranging from 3-4 feet. Water depth ranges from 6-10 in. The substrate is composed of sand and gravel. During the site visit macrobenthos, fish, and crayfish were observed and the water was clear with slow velocity. Stream SSS is depicted on the USGS Topographic map as a perennial stream and is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 89.

Stream STT

Stream STT, a seasonal stream located east of Buffalo Creek, flows west 684 lf to its confluence with Buffalo Creek. Stream STT ranges from 1-3 feet wide with bank height of approximately 3 feet. Water depth is approximately 6 in. The substrate is composed of silt and sand. During the site visit amphibians were observed and the water was slightly turbid with a slow velocity. Stream STT is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 90.

Stream SUU

Stream SUU, a seasonal stream located approximately 324 feet east of Buffalo Creek, flows north 115 lf to its confluence with Stream STT. Stream SUU ranges from 1-3 feet wide with bank height ranging from 1-2 feet. Water depth ranges from 2-8 in. The substrate is composed of silt, sand, and gravel. During the site visit no aquatic life was observed and the water was turbid with a slow velocity. Stream SUU is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 91.

Stream SWW

Stream SWW, a perennial stream located approximately 315 feet east of Blacksburg Highway/Exit 100, flows south across the PSA for 1,260 lf to its confluence outside the PSA with Buffalo Creek. Stream SWW ranges from 3-5 feet wide with bank height ranging from 1-6 feet. Water depth ranges from 3-9 in. The substrate is composed of sand, gravel, and cobble. South of I-85, Stream SWW is impounded due to beavers. Stream width increases to 12-15 feet wide with water depths ranging from 6-24 in. Stream SWW is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 93.

Stream SYY

Stream SYY, a seasonal stream located approximately 1,100 feet east of Blacksburg Highway/Exit 100, flows west 181 lf to its confluence with Stream SZZ. Stream SYY ranges from 2-4 feet wide with bank height ranging from 2-10 feet. Water depth ranges from 6-10 in. Stream SYY is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 95.

Stream SZB

Stream SZB, a perennial stream located approximately 1,900 feet east of North Mountain Street/ Exit 102, flows west 35 lf to its confluence with Stream SMMM. Stream SZB ranges from 2-4 feet wide with bank height ranging from 3-4 feet. Water depth ranges from 2-6 in. During the site visit Stream SZB flowed with a slow velocity and clarity was clear. Aquatic life was not observed. Stream SZB is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 97.

Stream SZC

Stream SZC, a perennial stream located approximately 1,900 feet east of North Mountain Street/ Exit 102, flows north 144 lf to exit the PSA. Stream SZC ranges from 6-30 feet wide with bank height ranging from 3-15 feet. Water depth ranges from 3-10 in. During the site visit Stream SZC flowed with a slow velocity and clarity was clear. Aquatic life was not observed. Stream SZC is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 98.

Stream SZD

Stream SZD, a seasonal stream located south of I-85, approximately 780 feet west of Blacksburg Highway/Exit 100, flows north 260 lf towards the floodplain of Buffalo Creek where it loses its stream characteristics without joining Buffalo Creek. Stream SZD originates from Wetland WZZ. Stream SZD ranges from 2-4 feet wide with bank height of approximately 2 feet. During the site visit water was absent from the channel. Aquatic life was not observed. Stream SZD is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 99.

Stream SZN

Stream SZN, perennial stream located north of I-85, located approximately 980 feet east of North Mountain Street/ Exit 102. Stream SZN originates as an intermittent stream and becomes perennial at a

large headcut; it then flows 277 LF before discharging into Wetland WBBB. Stream SZN ranges from 8-50 feet wide with bank height ranging from 3-30 feet. Water depth ranges from 2-8 in. During the site visit Stream SZC flowed with a slow velocity and clarity was clear. Aquatic life was not observed. Stream SZN is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 100-101.

Stream SZZ

Stream SZZ, a seasonal stream located approximately 1,100 feet east of Blacksburg Highway/Exit 100, flows south 175 lf across the PSA to its confluence with Buffalo Creek. Stream SZZ ranges from 2-3 feet wide with bank height ranging from 1-5 feet. Water depth ranges from 1-24 in. The substrate is composed of sand and gravel. Stream SZZ is depicted on the USGS Topographic map as a perennial stream; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 103.

Stream SCCC

Stream SCCC, a seasonal stream located approximately 2,000 feet west of North Mountain Street/Exit 102, flows north 802 lf across the PSA to its confluence outside the PSA with a UT to Buffalo Creek (Stream SLLL). Stream SCCC ranges from 1.5-4 feet wide with bank height ranging from 0.5-7 feet. Water depth ranges from 2-8 in. The substrate is composed of sand and cobble. Stream SCCC is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 106-107.

Stream SDDD

Stream SDDD, a seasonal stream located south of I-85, flows approximately 675 feet west of North Mountain Street/Exit 102. It originates as an intermittent channel just west of North Mountain Street and flows west 412 lf to Henson Road. On the west side of Henson Road, Stream SDDD is a seasonal channel. It flows 454 lf, and through Wetland WSS, to I-85. Stream SDDD has a braided channel in places and ranges from 1-4 feet wide with bank height ranging from 1-3 feet. Water depth ranges from 1-15 in. Stream SDDD is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 108-109.

Stream SGGG

Stream SGGG, a seasonal stream located approximately 2,100 feet east of Blacksburg Highway/Exit 100, flows west 243 lf from Wetland WTT to its confluence with Buffalo Creek. Stream SGGG ranges from 2-5 feet wide with bank height ranging from 1-4 feet. Water depth ranges from 3-12 in. Salamander larvae were observed in the stream during the site visit. Stream SGGG is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 112.

Stream SHHH

Stream SHHH, a seasonal stream located north of I-85 and approximately 1,000 feet north of Henson Road, begins at a pipe failure and flows north 44 lf to its confluence with Wetland WWW. Stream SHHH is approximately 2 feet wide with bank height ranging from 1-2 feet. Water depth ranges from 4-8 in. The substrate is composed of sand. Stream SHHH is not depicted on the USGS Topographic map or

shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 113.

Stream SIII

Stream SIII, a perennial stream located north of I-85 and approximately 1,000 feet north of Henson Road, flows west across the PSA 355 lf to its confluence outside of the PSA with a UT to Buffalo Creek. Stream SIII ranges from 6-15 feet wide with bank height ranging from 6-10 feet. Water depth ranges from 6-20 in. The substrate is composed of sand. Stream SIII is relatively straight. Stream SIII is shown on the USGS Topographic map as a perennial stream; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 114.

Stream SJJJ

Stream SJJJ, a seasonal stream located north of I-85 and approximately 1,000 feet north of Henson Road, flows north 72 lf to its confluence with Stream SIII. Stream SJJJ is fed by groundwater and is sinuous with stable bed and banks. Stream SJJJ is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 115.

Stream SKKK

Stream SKKK, a seasonal stream located approximately 700 feet west of North Mountain Street/Exit 102, flows west 738 lf. Stream SKKK is a braided channel that ranges from 2-5 feet wide with bank height of approximately 0.5 feet. Water depth ranges from 1-5 in. The substrate is composed of silt, sand, and gravel. Salamander larvae were observed in the stream during the site visit. Stream SKKK is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 116.

Stream SLLL

Stream SLLL, a perennial stream located approximately 1,200 feet west of North Mountain Street/Exit 102, flows west 927 lf. Stream SLLL ranges from 2-6 feet wide with bank height ranging from 2-8 feet. Water depth ranges from 2-12 in. The substrate is composed of silt, sand, gravel, and cobble. The channel is lined with concrete from flags 8-11 as a stability aide. Stream SLLL is depicted as an intermittent stream on the USGS Topographic map; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 117.

Stream SMMM

Stream SMMM, a perennial stream that flows to and from a pond, located approximately 2,100 feet east of North Mountain Street/Exit 102, flows north across the PSA 290 lf to its confluence with a pond outside of the PSA. Stream SMMM ranges from 3-6 feet wide with bank height ranging from 1-5 feet. Water depth ranges from 8-24 in. The substrate is composed of sand and gravel. Stream SMMM is depicted as an intermittent stream on the USGS Topographic map; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 118.

Stream SNNN

Stream SNNN, a perennial stream, located approximately 3,200 feet east of North Mountain Street/Exit 102, flows north 376 lf across the PSA to its confluence with Stream SOOO just outside the PSA. Stream SNNN ranges from 3-6 feet wide with bank height ranging from 2-4 feet. Water depth ranges from 2-8 in. The substrate is composed of sand, gravel, and cobble. Fish were observed in the stream during the site visit. Stream SNNN is depicted as an intermittent stream on the USGS Topographic map; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 119.

Stream SOOO

Stream SOOO, a perennial stream located approximately 3,200 feet east of North Mountain Street/Exit 102, flows north 552 lf across the PSA to its confluence with Stream SNNN just outside the PSA. Stream SOOO ranges from 2-5 feet wide with bank height ranging from 2-4 feet. Water depth ranges from 6-10 in. Aquatic snails and fish were observed in the stream during the site visit. Stream SOOO is depicted as an intermittent stream on the USGS Topographic map; it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 120.

Stream SPPP

Stream SPPP, a perennial stream that flows from Pond 2, located approximately 2,100 feet east of North Mountain Street/Exit 102, flows east 258 lf to its confluence with Stream SMMM. The substrate is composed of silt, sand, and gravel. Stream SPPP is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 121.

Stream SQQQ

Stream SQQQ, a perennial stream flowing from a pond outside the PSA, is located south of I-85 approximately 3,200 feet west of Tribal Road/Exit 104, and flows north 302 lf to its confluence with Stream SRRR. Stream SQQQ ranges from 3-4 feet wide with bank height ranging from 3-6 feet. Water depth ranges from 3-6 in. The substrate is composed of silt, sand, and gravel. During the site visit the invasive Asian Clam was observed and the water was turbid with a slow velocity. Stream SQQQ is depicted on the USGS Topographic map as a perennial stream, it is also shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photographs 122.

Stream SSSS

Stream SSSS, a seasonal stream located approximately 3,200 feet west of Tribal Road/Exit 104, flows west 66 lf to its confluence with Stream SX/SRRR. Stream SSSS ranges from 1-3 feet wide with bank height ranging from 4-6 feet. Water depth ranges from 0-3 in. Stream SSSS is not depicted on the USGS Topographic map or shown on the USGS NHD layer. Representative photographs are included in Appendix C, Photograph 123.

4.3 Ponds/Open Water

A total of three ponds were identified within the PSA (Table 4).

Table 4. Ponds found within the Project Study Area.

Pond ID	Figure	Area (acres)
P1	6-4, 6-5	0.032
P2	6-17, 6-18	0.216
P3	6-30	0.053
P4	6-18	0.405
Total:		0.706 acres

4.4 Permitting

A Clean Water Act Section 404 permit is required for impacts to waters of the U.S., including wetlands. Section 404 is administered by the U.S. Army Corps of Engineers (USACE). Depending on the type and extent of waters of the U.S., including wetlands, to be impacted, Section 404 permitting requirements can range from activities that are considered exempt or preauthorized to those requiring pre-construction notification (PCN) for a Nationwide Permit (NWP) or Individual Permit (IP) from the USACE. For South Carolina Department of Transportation (SCDOT) projects, USACE General Permit (GP) 2010-01346 may be applicable if impacts do not exceed 3.0 acres of freshwater wetlands, 0.5 acre of tidal wetlands, and/or 300 linear feet of stream.

In addition to the Section 404 permit, SCDHEC must grant, deny, or waive a Water Quality Certification (WQC), in accordance with Section 401 of the Clean Water Act. Waters considered by SCDHEC to be sensitive may also require additional consideration during the 401 WQC process. These include, but are not limited to, Outstanding Resource Waters (ORW), Shellfish Harvesting Waters (SFH), trout waters, areas draining to waters included on the 303(d) list of impaired waters, and areas draining to waters with an approved TMDL. As discussed in Section 2.4, the PSA drains to water listed as a water with an EPA approved TMDL. Depending on the type of impairments, extent of the project, and other factors, SCDHEC may require additional water quality protection and stormwater treatment measures during and after construction.

The SCDOT GP has been approved by SCDHEC, therefore separate approval for Section 401 WQC is not required. If impacts exceed the GP threshold limits, an IP from the USACE would be required which involves a more rigorous, time-consuming review process. It is not uncommon for the regulatory processing of an IP application to take close to a year. Specific permitting requirements and strategies for the project will be determined once impacts to wetlands, and other waters of the U.S., are quantified following establishment of proposed project construction limits. Pursuant to Section 404, regulated discharges would include, but are not necessarily limited to, the placement of fill material, riprap, pipes, culverts, etc., into waters of the U.S. The permit application must include a delineation of affected waters of the U.S., including wetlands, as well as a description of impact avoidance and minimization strategies, and an alternatives analysis. It is anticipated that an IP will be required for this project.

4.5 Compensatory Mitigation

Compensatory mitigation is normally required to offset unavoidable losses of waters of the U.S. The Council on Environmental Quality (CEQ) has defined mitigation in 40 CFR Part 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 consists usually of the restoration of existing degraded wetlands or waters, or the creation of wetlands/waters of equal or greater value than those to be impacted. This type of mitigation is only undertaken after avoidance and minimization actions are exhausted and should be undertaken, when practicable, in areas near the impact site (i.e., on-site compensatory mitigation). The

USACE typically requires compensatory mitigation for any wetland impacts for which a Section 404 permit application is submitted.

It is anticipated that compensatory mitigation for permanent project impacts will be attained through purchase of mitigation credits from a USACE/SCDOT approved mitigation bank. Specific mitigation requirements will be established during the Section 404 permitting process.

5.0 FLOODPLAINS

Executive Order (EO) 11988 of May 24, 1977 (Floodplain Management) requires federal agencies to avoid to the greatest extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains. In addition, it requires the avoidance of direct and indirect support of floodplain development whenever there is a practicable alternative. In January 2015, EO 13690 was signed into law amending EO 11988 establishing a Federal Flood Risk Management Standard (Standard), a flexible framework to increase resilience against flooding and help preserve the natural values of floodplains. This Standard will ensure that agencies expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk and ensure that projects funded with taxpayer dollars last as long as intended.

The Federal Environmental Management Agency (FEMA) regulates floodplains subject to inundation by the “100-year flood” (a flood that has a 1% chance of occurring in a given year). FEMA produces the Flood Insurance Rate Map (FIRM), which depicts flood hazard areas and divides them into zones that reflects the potential severity or type of flooding in that area. The extent of the 500-year flood (0.2% annual chance of flooding) and the 100-year flood (1% annual chance of flooding) are depicted on the FIRM. Base Flood Elevation (BFE) is the depth of anticipated flood water based on computer modelling. Zone A floodplains are areas that will be inundated during a 100-year flood, for which no BFEs have been determined. Zone AE floodplains areas that will be inundated during a 100-year flood, for which BFEs have been determined.

The PSA crosses or encroaches on multiple FEMA-regulated floodplains (Table 4; Appendix A – Figure 7).

Table 5. FEMA regulated floodplains within the PSA

River	FEMA Zone	FIRM ID	Existing Crossing	Figure
Broad River	A	45021C	Bridge	7-1
Buffalo Creek	A	45021C	~	7-1, 7-2
Buffalo Creek	AE	45021C	Bridge	7-1

The PSA will continue to cross and encroach on Zone A of the Broad River floodplain at the eastern most extent of the PSA. The impact to the Buffalo Creek Zone AE floodplain will increase, particularly south of the PSA between the I-85 crossing of the Broad River and the intersection of I-85 and SC-5.

To comply with EO 11988 and its amendment EO 13690, a hydraulic analysis must be conducted to determine if the project will cause changes within the 100-year floodplain (Zone A/Zone AE). SCDOT considers “No Impact” projects to be those that cause no change to the 100-year flood profile or floodway profile rounded to the nearest 0.1 foot or no change to the floodway width rounded to the nearest 1.0 foot. Any changes greater than those listed above will require the development of a Conditional Letter of Map Revision (CLOMR) and eventually a Letter of Map Revision (LOMR) documenting the changes. SCDOT policy limits any increase to 1.0 foot or less above the unrestricted or natural 100-year flood profile without a request for a design exception.

During this preliminary design stage, no hydraulic studies have been conducted. These studies will be performed for each encroachment of a FEMA regulated floodplain during the final design process.

6.0 THREATENED AND ENDANGERED SPECIES

The Federal Endangered Species Act (ESA) of 1973, as amended, provides for the conservation of ecosystems upon which endangered and threatened species depend through federal actions and the establishment of state programs including permit administration, recovery plan development, and listed species monitoring. The ESA is administered jointly by the US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA). The ESA:

- authorizes the determination and listing of species as endangered and threatened
- prohibits unauthorized taking, possession, sale, and transport of endangered species
- provides authority to acquire land for the conservation of listed species, using land and water conservation funds
- authorizes establishment of cooperative agreements and grants-in-aid to States that establish and maintain active and adequate programs for endangered and threatened wildlife and plants
- authorizes the assessment of civil and criminal penalties for violating the Act or regulations
- authorizes the payment of rewards to anyone furnishing information leading to arrest and conviction for any violation of the Act or any regulation issued thereunder

The ESA provides federal protection to species that have been classified as Endangered (E), Threatened (T), or Threatened due to similarity of Appearance (T [S/A]). Species that are classified as Endangered are in danger of extinction throughout all or a significant portion of its range. Threatened species are those that are likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Species listed as threatened due to similarity of appearance with another listed species are not biologically endangered or threatened and are listed for its protection. Species can also be designated as Proposed (P), Candidate (C), and Federal Species of Concern (FSC). Proposed species are any that are proposed to be listed under Section 4 of the ESA in the Federal Register. Candidate species are those that have been studied and USFWS has concluded that they should be proposed for listing. Federal species of Concern is an informal term that refers to species that might be in need of concentrated conservation actions which range from increased monitoring to listing; FSC confers no legal protection.

Table 6. Endangered and threatened Species listed for Cherokee County, SC

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Dwarf-Flowered Heartleaf	<i>Hexastylis naniflora</i>	T	Yes	No Effect*
Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	T	Yes	No Effect
Georgia Aster	<i>Symphyotrichum georgianum</i>	C	Yes	Not Required

T = Threatened C = Candidate species *Pending spring 2017 surveys

If any additional species are listed as federally protected or endangered prior to construction of the project, SCDOT will consult with USFWS.

6.1 Dwarf-Flowered Heartleaf

USFWS Recommended Survey Window: March-May

Species Description: Dwarf-flowered Heartleaf, listed April 14, 1989, is a low growing, evergreen, perennial plant with dark green, leathery, heart shaped leaves that are 4-5 inches long supported by long thin stems connected to an underground stem. Flowers are jug-shaped, found near the base of leaf stems, and range from beige to dark brown to purple; they are inconspicuous and often buried beneath leaf litter (USFWS 2011). Superficially, Dwarf-flowered Heartleaf is known to closely resemble *H. minor* and *H. heterophylla*. A combination of floral and vegetative morphology and habitat characteristics must be used to accurately identify Dwarf-flowered Heartleaf. Dwarf-flowered Heartleaf almost exclusively occurs over acidic, sandy loam soils on north-facing slopes.

Habitat Description: Dwarf-flowered heartleaf is endemic to the western Piedmont and foothills of North and South Carolina. This herbaceous evergreen is found in moist to rather dry forests along bluffs; boggy areas next to streams and creek heads; and adjacent hillsides, slopes, and ravines. Requiring acidic, sandy loam soils, the species is found in soil series such as Pacolet, Madison, and Musella, among others. Occurrences are generally found on a north facing slope. Undisturbed natural communities such as Piedmont/Coastal Plain Heath Bluff, Dry-Mesic Oak Hickory Forest, and Mesic Mixed Hardwood Forest hold the most viable occurrences. However, less viable remnant occurrences are found in disturbed habitats, including logged, grazed, mown, and residential/commercial developed lands; areas converted to pasture, orchards, and tree plantations; roadside rights-of-way; and on upland slopes surrounding manmade ponds or lakes (USFWS 2011).

Survey Methodology: Field reviews of the PSA were conducted on June 19, 2015, for Dwarf-flowered Heartleaf (*Hexastylis naniflora*) outside of the optimal survey window by Michael Wood and Haley Wood. Suitable habitat was noted throughout the PSA, with varying degrees of suitability (high – low). Additionally, while performing stream and wetland delineations within the PSA, all observations of any *Hexastylis* specimens were recorded and mapped so they could be visited during the flowering period. Prior to initiating field surveys, Three Oaks staff used ArcGIS to locate sandy loam soils (e.g., Pacolet, Madison, and Musella) on north-facing slopes. These, and other areas having the potential to support *H. naniflora* were specifically targeted during field surveys. *H. naniflora* surveys were conducted within the PSA on March 29 and April 5, 2016, by Timothy Savidge and Nathan Howell. The PSA was expanded around the four interchanges in July 2016, after the optimal survey window for *H. naniflora*. Nathan Howell and Hannah Slyce surveyed within the preferred alternate footprints for *Hexastylis* specimens; a complete survey of these expanded areas will occur during the 2017 flowering period.

Biological Conclusion: No Effect

Dwarf-flowered Heartleaf was not found during 2016 field surveys in the PSA. *H. minor* was found on nearly all north-facing slopes that contained mature to semi-mature hardwood canopies and moderate slope angles in the PSA. Based on the survey results, Dwarf-flowered Heartleaf is not present within the PSA, as such, project construction will have no effect on this species.

6.2 Northern Long-Eared Bat

USFWS Recommended Survey Window: June 1 – August 15

Species Description: The Northern long-eared bat (NLEB) is a medium-sized bat about 3 to 3.7 inches in length with a wingspan of 9 to 10 inches. It is distinguished by its long ears, especially as compared to other bats in the *Myotis* genus. NLEB emerges at dusk to feed in the understory of forested hillsides and

ridges. NLEB hunts moths, flies, leafhoppers, caddisflies, and beetles using echolocation, but have been known to glean motionless insects from vegetation and water surfaces (USFWS ECOS 2015)

Habitat Description: NLEB roosts singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees during summer months. It does not appear to show a species preference for tree roosts instead choosing trees opportunistically based on bark retention, cavities, and crevices. Non-reproductive females and males may also roost in cooler places like caves and mines during the summer. NLEB has also been found, rarely, roosting in structures like barns and sheds, under eaves of buildings, behind window shutters, in bridges, and in bat houses. Foraging occurs on forested hillsides and ridges, and occasionally over forest clearings, over water, and along tree-lined corridors. Mature forests may be an important habitat type for foraging. During the winter, NLEB roosts in caves and mines that are typically large, with constant temperatures, high humidity, and no air currents (USFWS ECOS 2015).

Biological Conclusion: No Effect

On January 14, 2016, the US Fish and Wildlife Service (USFWS) published in the Federal Register the Final 4(d) rule, which “focuses prohibitions on protecting [northern long-eared] bats when and where they are most vulnerable: maternity roost trees during June and July pup-rearing and at hibernation sites” (USFWS 2016). On May 3, 2016, SCDOT consulted with USFWS to revise its prior commitment to eliminate the restriction on clearing of trees greater than 3 inches in diameter between November 15 and March 31. USFWS concurred on May 4, 2016. Therefore, there are no restrictions on the clearing of trees associated with the Northern long-eared bat.

6.3 Georgia Aster

USFWS Recommended Survey Window: early October to mid-November

Species Description: Georgia aster is a rhizomatous perennial herb, reaching heights of 17-32 inches. It commonly forms colonies and is capable of extensive clonal growth/clumping. Its dark purple ray flowers (up to 0.8 inches long) surround white disc florets. Individual heads, from ray tip to ray tip, can reach 2 inches in diameter. It has thick, lanceolate to oblanceolate, scabrous, clasping leaves. Georgia aster can be distinguished from other similar asters by its involucre, which can be nearly 0.5 inches high (NatureServe 2015).

Habitat Description: Georgia aster is found in dry open woods, roadsides, and other openings. Soils vary from sand to heavy clay, with pH ranging from 4.4 to 6.8. It is a good competitor during early succession but declines as it is shaded by woody species. Georgia aster is most likely a relict species of the post oak savannah/prairie communities that covered much of the southeast prior to the extirpation of large native grazing animals and widespread fire suppression. As of 2013, 146 populations are known to occur in the Southwest, 28 of which are considered extirpated or historical.

Georgia aster was found within the PSA (Appendix A, Figure 8). One stem was found along Stream SLLL north of I-85 near Shaman Road, outside of the existing mainline corridor. Candidate species do not currently do not receive and statutory protection under the Endangered Species Act and therefore do not receive a Biological Conclusion.

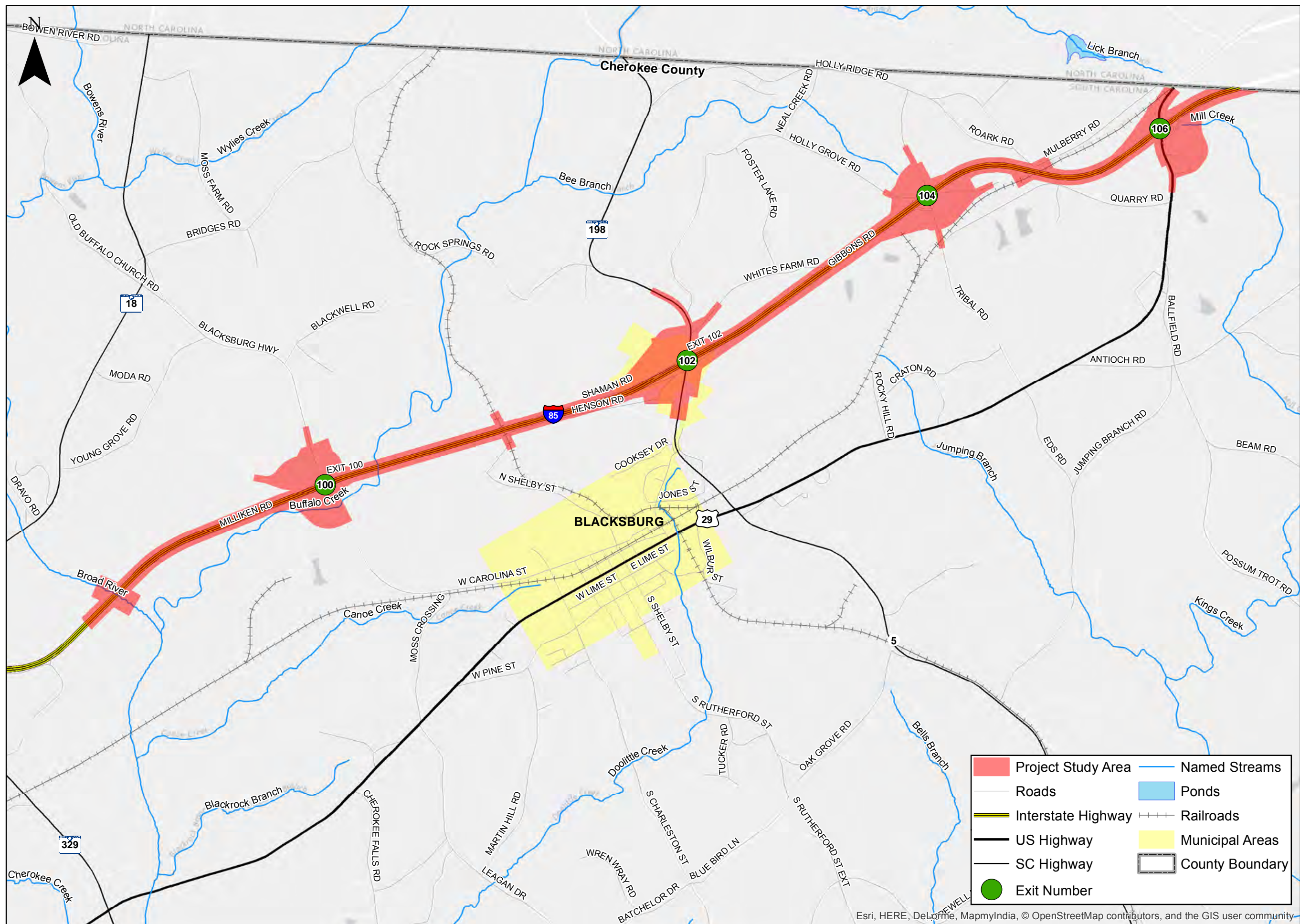
7.0 WORKS CITED

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. U.S. Fish and Wildlife Service, Washington, DC. 103 pp.
- Exec. Order No. 11988, 3 C.F.R. 117 (1977).
- Exec. Order No. 13690, 3 C.F.R. 6425 -6428 (2015)
- Griffith, G.E., J.M. Omernik, J.A. Comstock, M.P. Schafale, W.H. McNab, D.R. Lenat, T.F. MacPherson, J.B. Glover, and V.B. Shelburne. 2002. Ecoregions of North Carolina and South Carolina, (color poster with map, descriptive text, summary tables, and photographs): Reston, Virginia, U.S. Geological Survey (map scale 1: 1,500,000)
- Homer, C.G., J.A. Dewitz, L. Yang, S. Jin, P. Danielson, G. Xian, J. Coulston, N.D. Herold, J.D. Wickham, and K. Megown. 2015. Completion of the 2011 National Land Cover Database for the conterminous United States-Representing a decade of land cover change information. Photogrammetric Engineering and Remote Sensing, v. 81, no. 5, p. 345-354
- National Agriculture Imagery Program (NAIP) Aerial Photography. 2015. Cherokee County. Accessed November 2, 2015. <https://gdg.sc.egov.usda.gov/>
- NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available <http://explorer.natureserve.org>. (Accessed: November 11, 2015).
- S.C. Department of Health and Environmental Control (SCDHEC). 2001. National Pollutant Discharge Elimination System Permits (NPDES). GIS layer. Accessed November 9, 2015. <https://www.scdhec.gov/HomeAndEnvironment/maps/GIS/GISDataClearinghouse/default.aspx>
- S.C. Department of Health and Environmental Control (SCDHEC). 2004. Total Maximum Daily Load Development for the Upper Broad River Watershed (Hydrologic Unit Code: 03050105) Stations: B-026, B-028, B-042, B-044, B-048, B-056, B-057, B-059, B-062, B-088, B-095, B-100, B-103, B-119, B-126, B-128, B-133, B159, B-191, B-211, B-221, B-259, B-277, B-278, B-301, B-302, B323, B-325, B-326, B-330, B-331, B-334, BL-001, BL-005, BP-001 Fecal Coliform Bacteria.
- S.C. Department of Health and Environmental Control (SCDHEC). 2007. Watershed Water Quality Assessment: Broad River Basin. Technical Report No. 006-07. Bureau of Water, Columbia, SC.
- S.C. Department of Health and Environmental Control (SCDHEC). 2014. State of South Carolina Integrated Report for 2014 Part I: Section 303(d) List of Impaired Waters.
- S.C. Department of Natural Resources (SCDNR). Rare, Threatened, and Endangered Species and Communities Known to Occur in Cherokee County. Last Updated June 2014; Accessed: September 2015. <http://www.dnr.sc.gov/species/pdf/Cherokee2014.pdf>

- U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. 100 pp. and appendices.
- U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). U.S. Army Engineers Research and Development Center, Vicksburg, MS. 182 pp.
- U.S. Department of Agriculture - Soil Conservation Service (USDA-SCS). 1962. Soil Survey of Cherokee County, South Carolina.
- U.S. Department of Agriculture -Natural Resources Conservation Service (USDA-NRCS). 2013. Soil Survey Geographic (SSURGO) database. Accessed November 2, 2015. <https://gdg.sc.egov.usda.gov/>
- U.S. Department of Agriculture -Natural Resources Conservation Service (USDA-NRCS). 2015. National Hydric Soils List. Accessed February 19, 2016. <http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>
- U.S. Fish and Wildlife Service (USFWS). 2011. Dwarf-flowered Heartleaf (*Hexastylis naniflora*). Accessed November 10, 2015. http://www.fws.gov/raleigh/species/es_dwarf-flowered_heartleaf.html
- US Fish and Wildlife Service (USFWS). 2013. U.S. Fish and Wildlife Service Species Assessment and Listing Priority Assignment Form: Georgia Aster. Accessed November 11, 2015. http://ecos.fws.gov/docs/candidate/assessments/2013/r4/Q2Z5_P01.pdf
- U.S. Fish and Wildlife Service (USFWS). 2015. South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Cherokee County. April 29, 2015. http://www.fws.gov/charleston/pdf/Endangered/species_by_county/charokee_county.pdf
- U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online Systems (ECOS). 2015. Northern Long-eared Bat (*Myotis septentrionalis*). Accessed November 10, 2015. http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0JE
- U.S. Fish and Wildlife Service (USFWS). 2015. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>
- U.S. Fish and Wildlife Service (USFWS). February 2016. Northern long-eared bat Final 4(d) Rule – Questions and Answers. <http://www.fws.gov/midwest/endangered/mammals/nleb/FAQsFinal4dRuleNLEB.html>
- U.S. Geological Survey (USGS) 7.5 minute topographic quadrangles. Blacksburg South, South Carolina (1974); Blacksburg North, South Carolina (1979); and Grover, South Carolina (1979).

Appendix A

Figures



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
Site Location
Map**

Cherokee County,
South Carolina

Date: November 2016

Scale: 0 0.25 0.5 Miles

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
1



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
USGS
Topographic
Map**

Cherokee County,
South Carolina

Date: November 2016

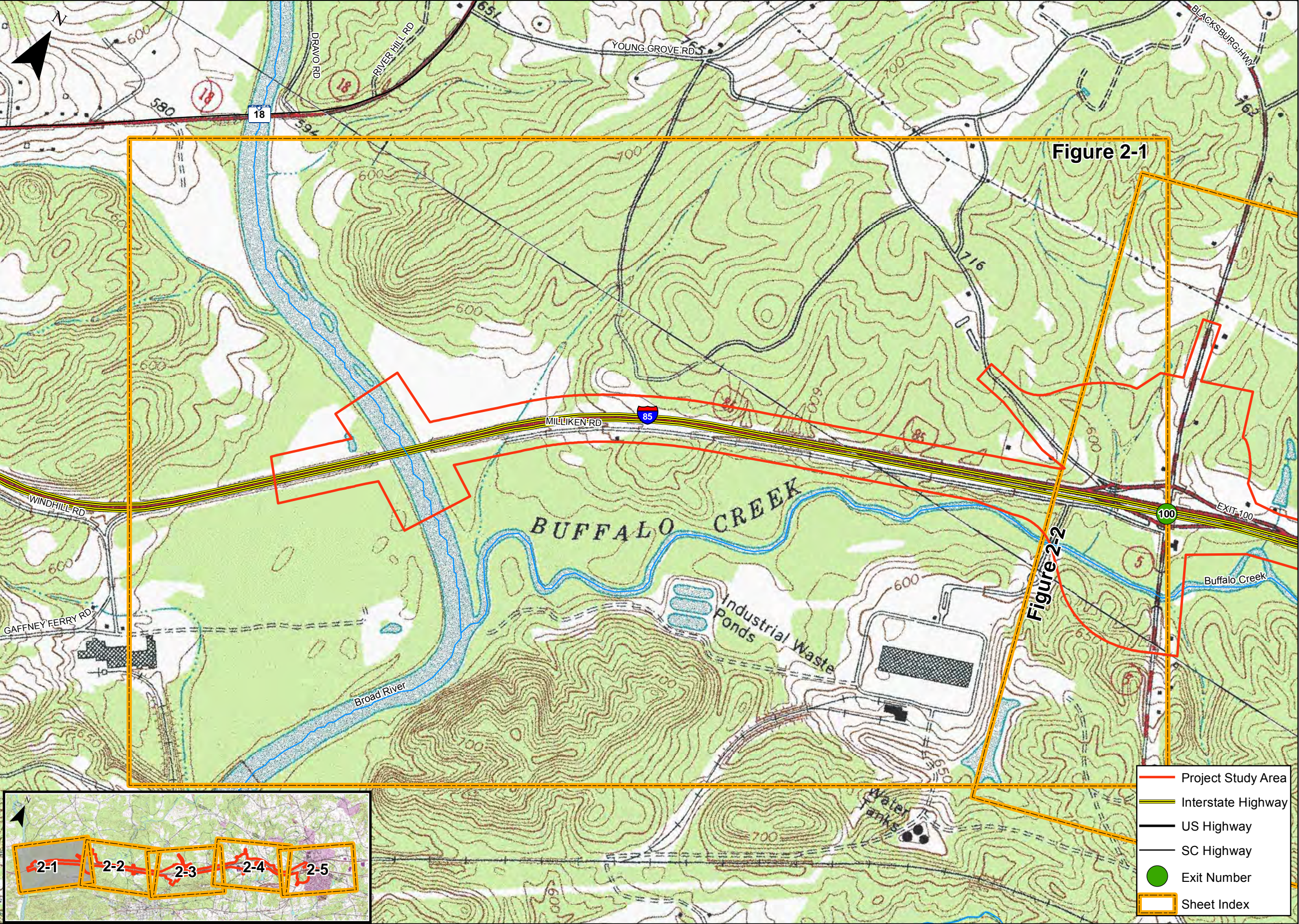
Scale: 0 500 1,000 Feet

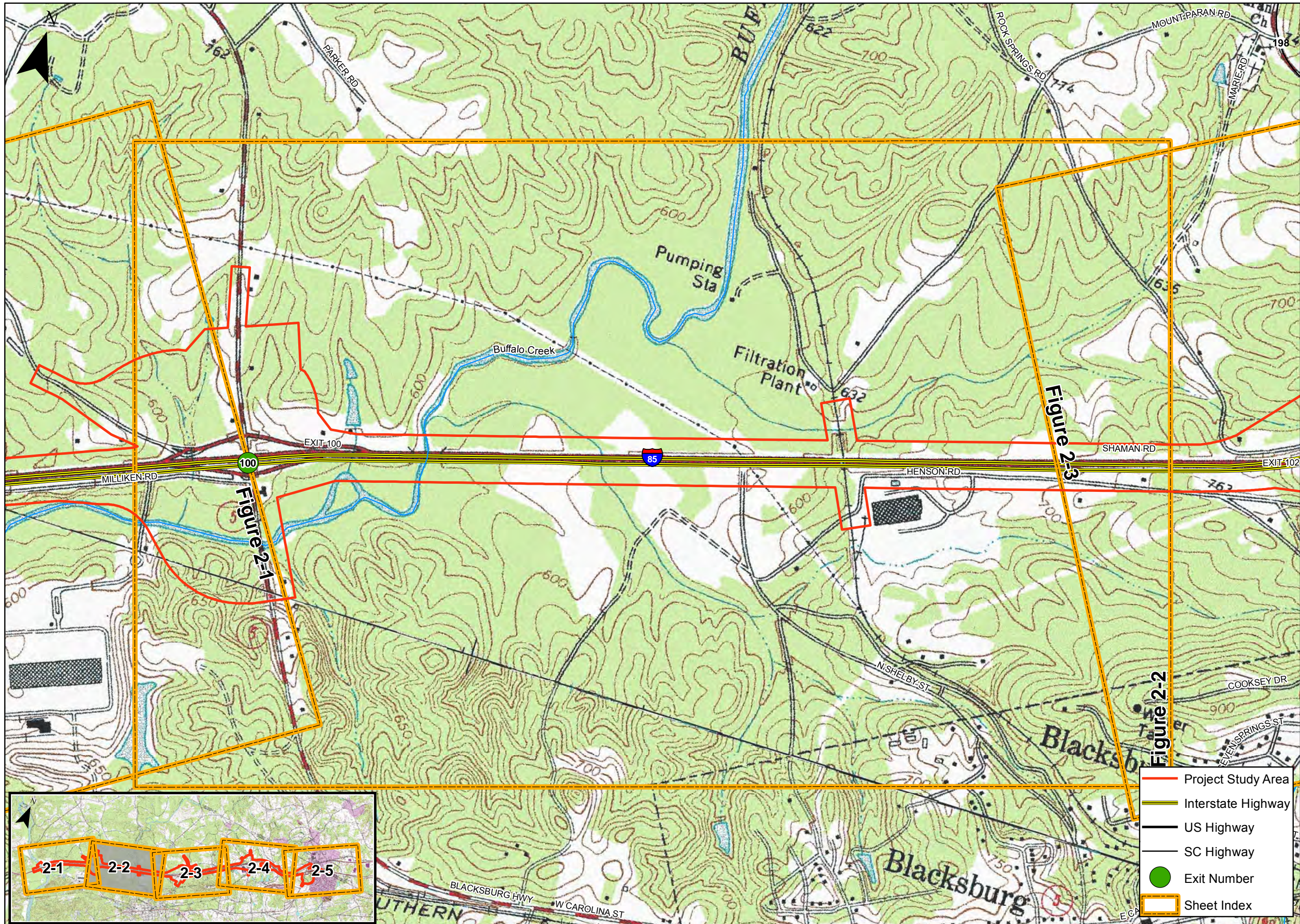
Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure

2-1





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
USGS
Topographic
Map**

Cherokee County,
South Carolina

Date:	November 2016	
Scale:	0 500 1,000 Feet	
Job No.:	6214	
Drawn By:	KMS	Checked By: CS

Figure
2-2



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
USGS
Topographic
Map**

Cherokee County,
South Carolina

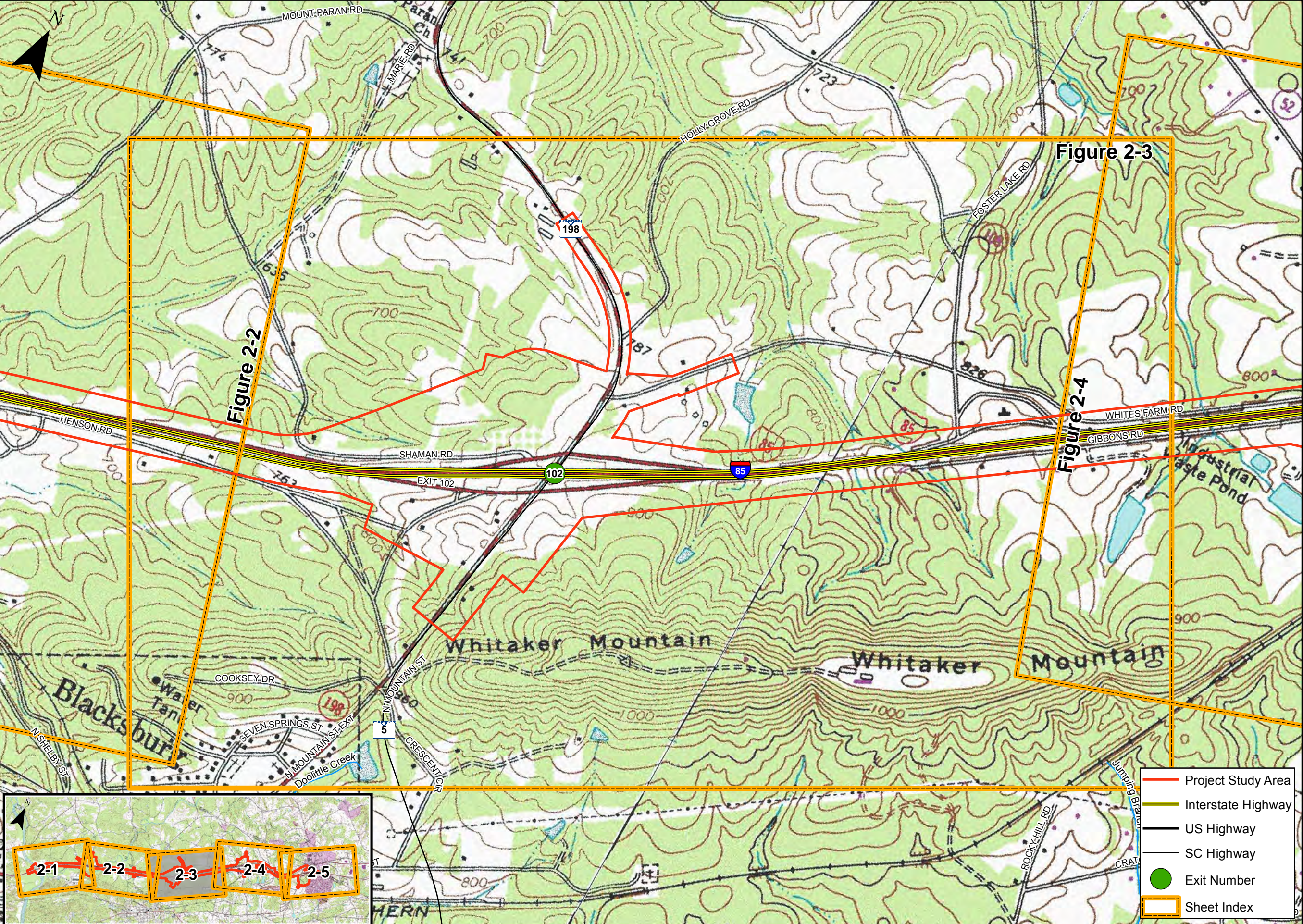
Date:
November 2016

Scale:
0 500 1,000 Feet

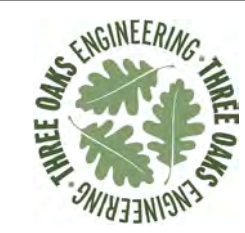
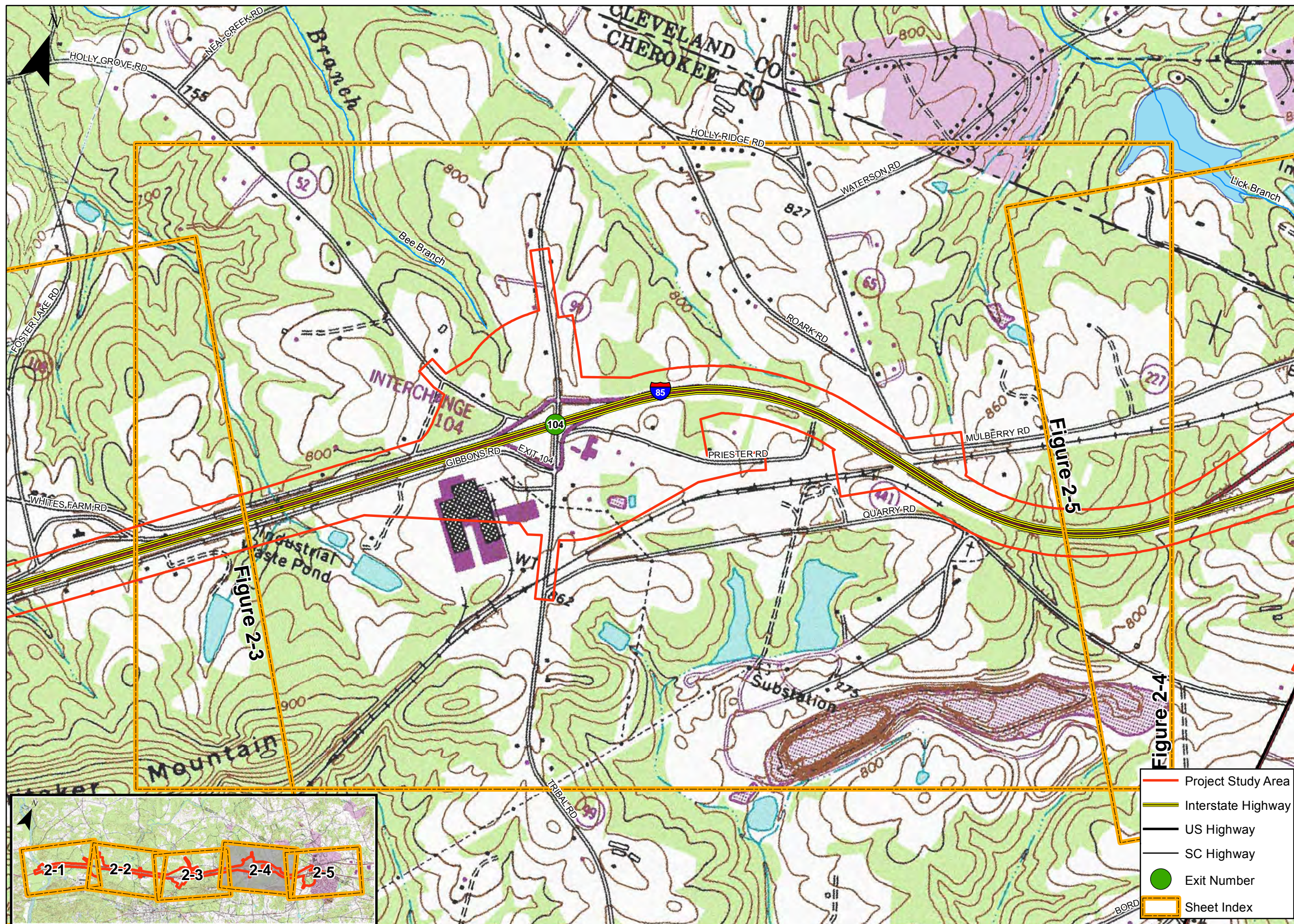
Job No.:
6214

Drawn By: KMS
Checked By: CS

**Figure
2-3**



- Project Study Area
- Interstate Highway
- US Highway
- SC Highway
- Exit Number
- Sheet Index



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
USGS
Topographic
Map**

Cherokee County,
South Carolina

Date:	November 2016	
Scale:	0 500 1,000 Feet	
Job No.:	6214	
Drawn By:	KMS	Checked By: CS

Figure
2-4



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
USGS
Topographic
Map

Cherokee County,
South Carolina

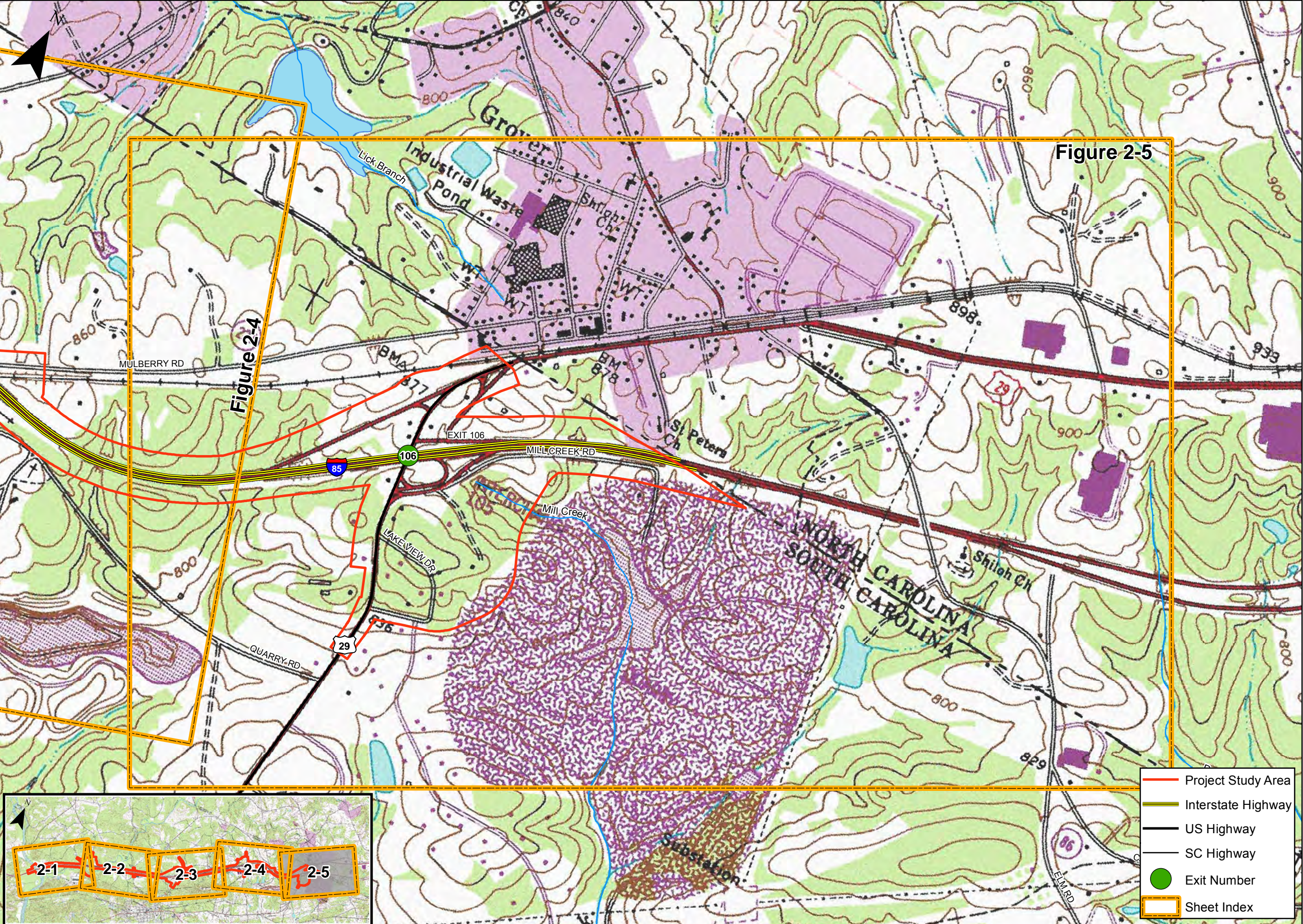
Date:
November 2016

Scale:
0 500 1,000 Feet

Job No.:
6214

Drawn By: KMS
Checked By: CS

Figure
2-5





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
USDA-NRCS
Mapped Soils**

Cherokee County,
South Carolina

Date: November 2016

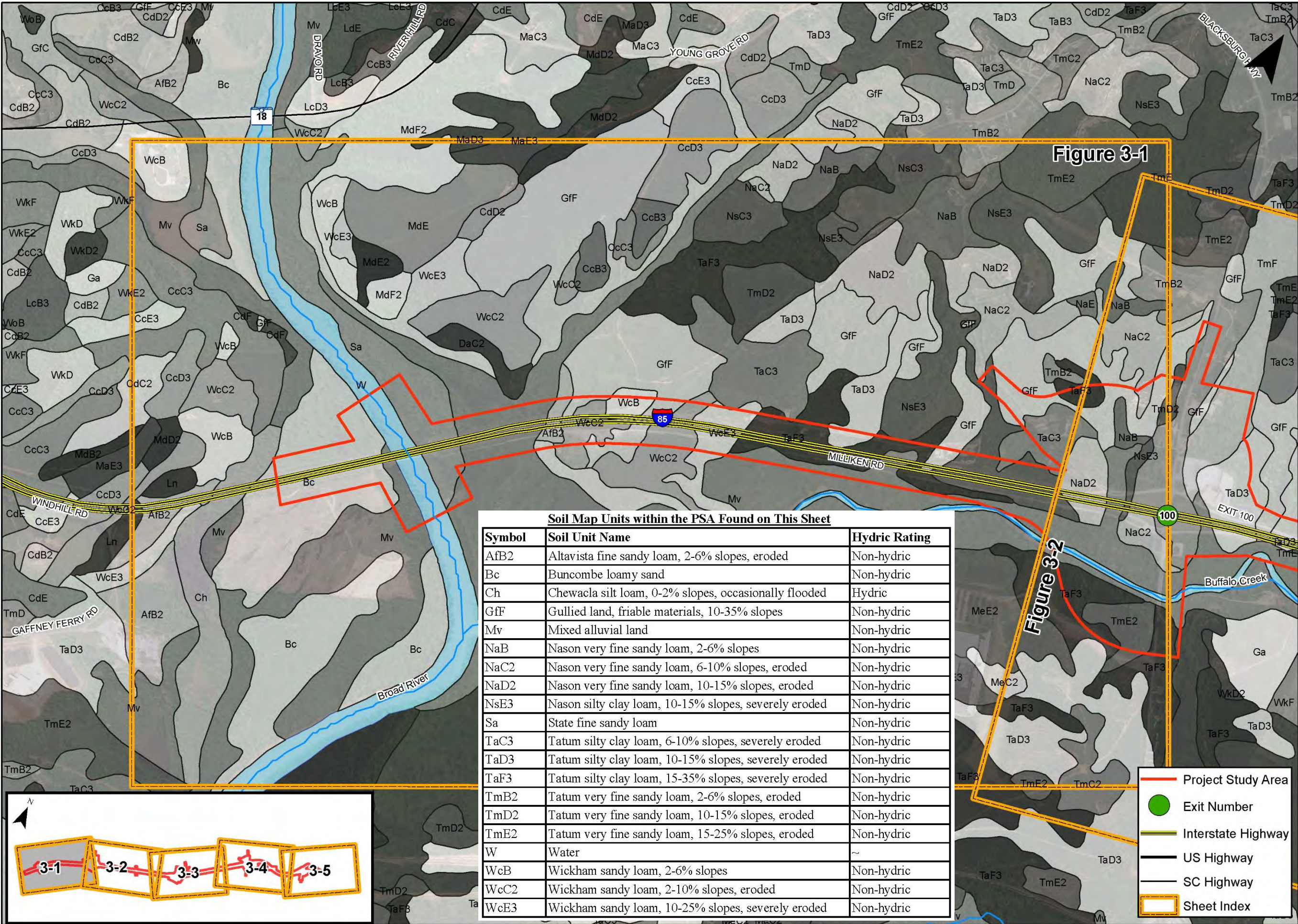
Scale: 0 500 1,000 Feet

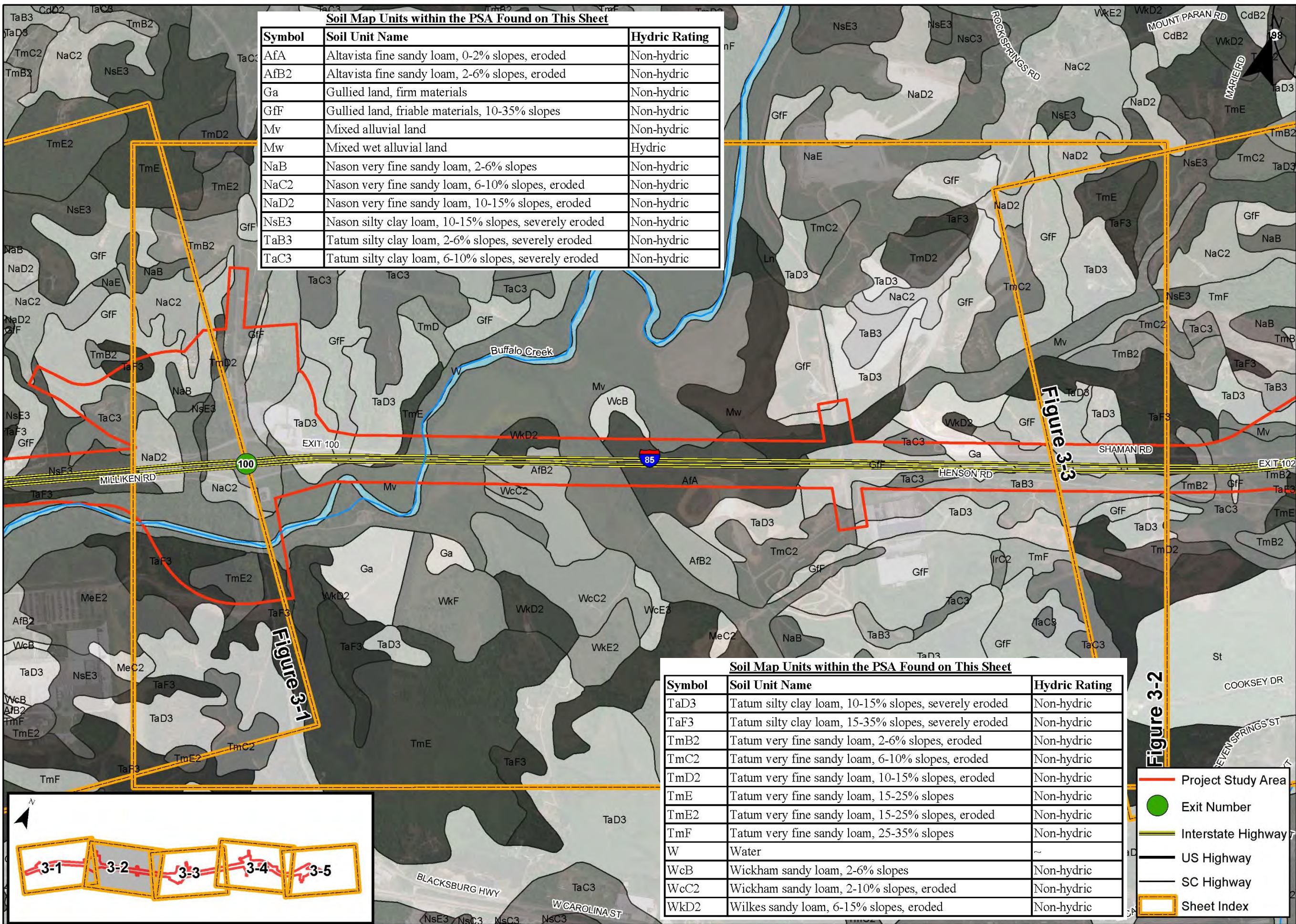
Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure

3-1





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

USDA-NRCS
Mapped Soils

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 500 1,000 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
3-2



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
USDA-NRCS
Mapped Soils

Cherokee County,
South Carolina

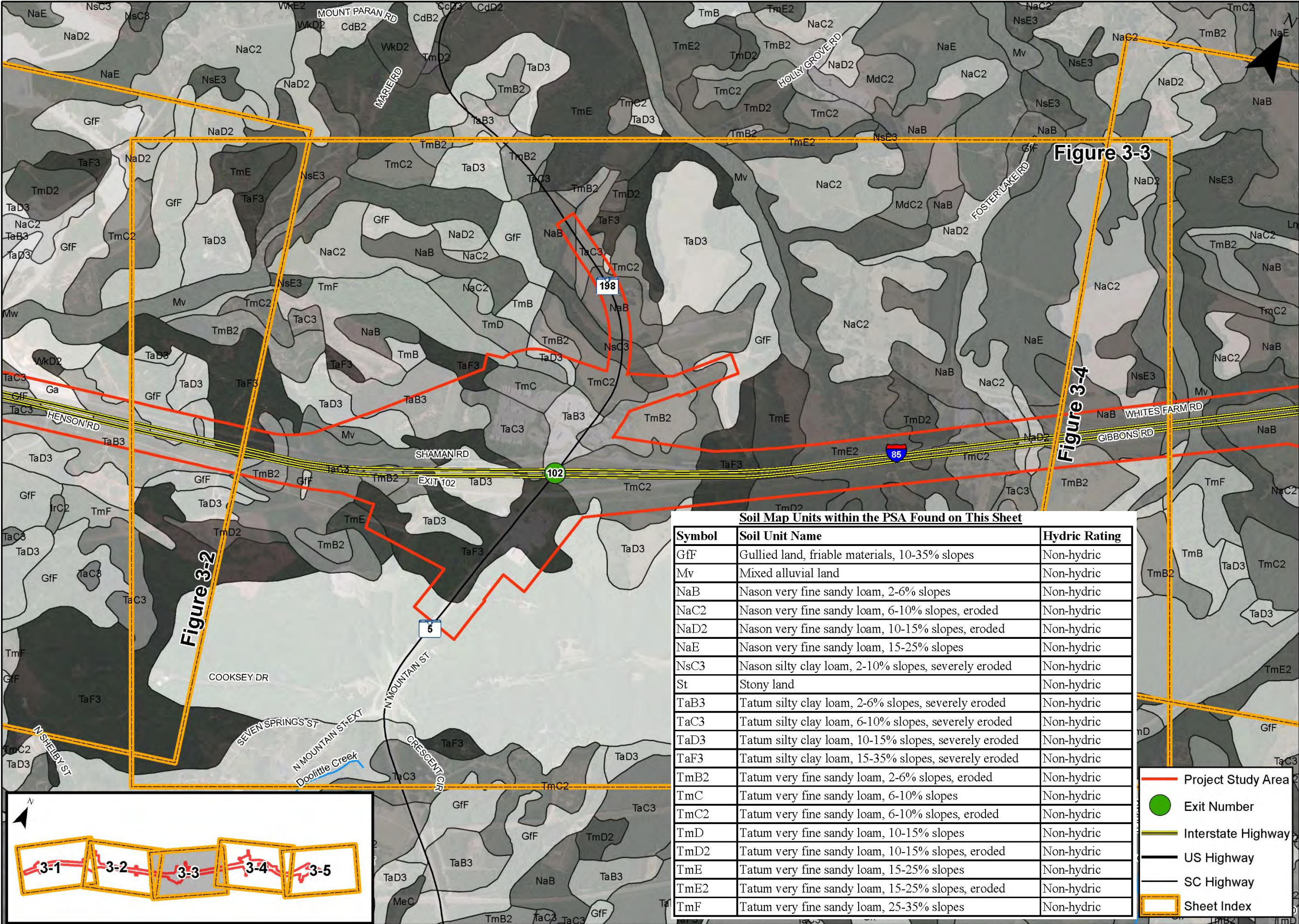
Date: November 2016

Scale: 0 500 1,000 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
3-3





Prepared For:

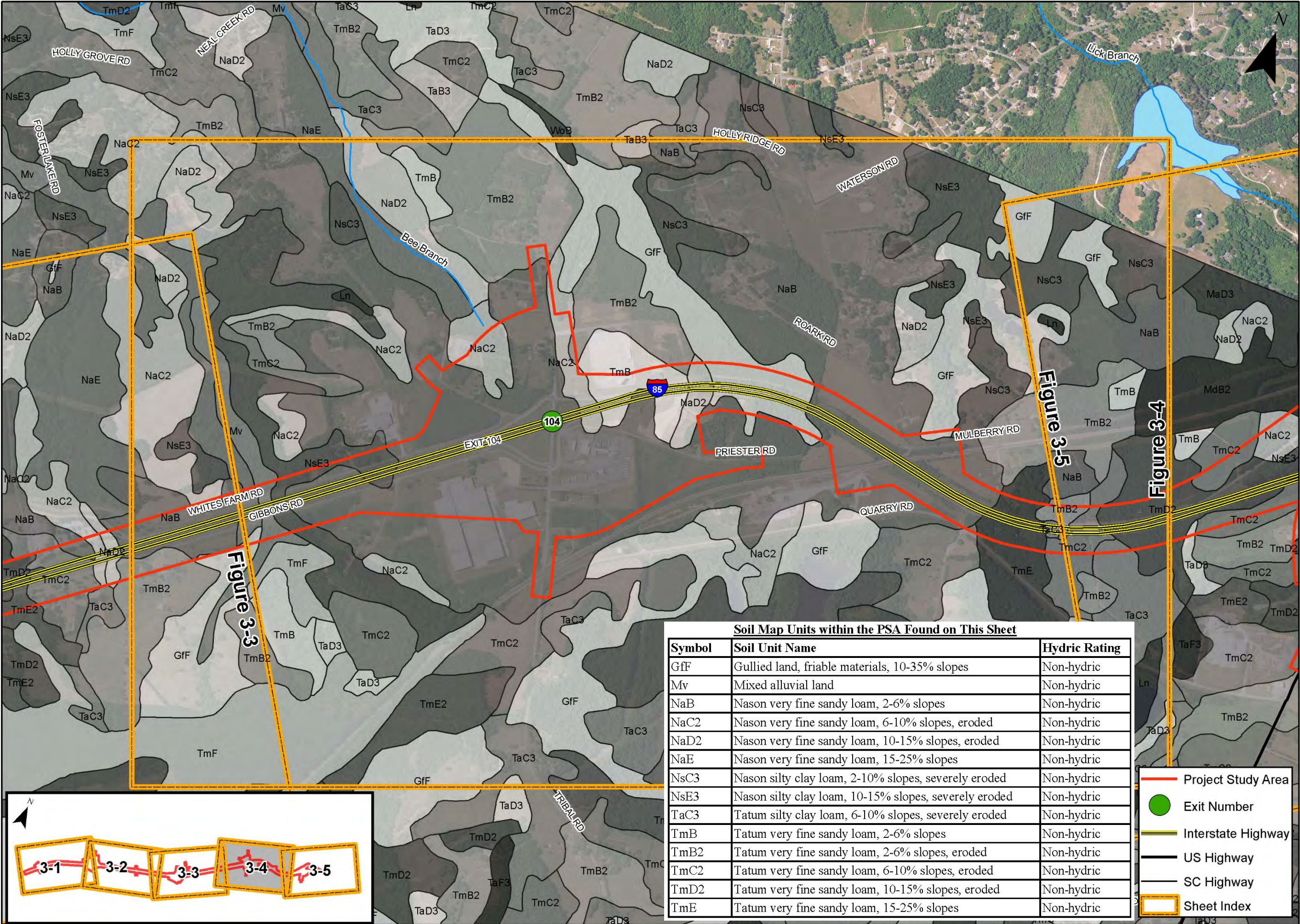


**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
USDA-NRCS
Mapped Soils

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 500 1,000 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
3-4





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
USDA-NRCS
Mapped Soils

Cherokee County,
South Carolina

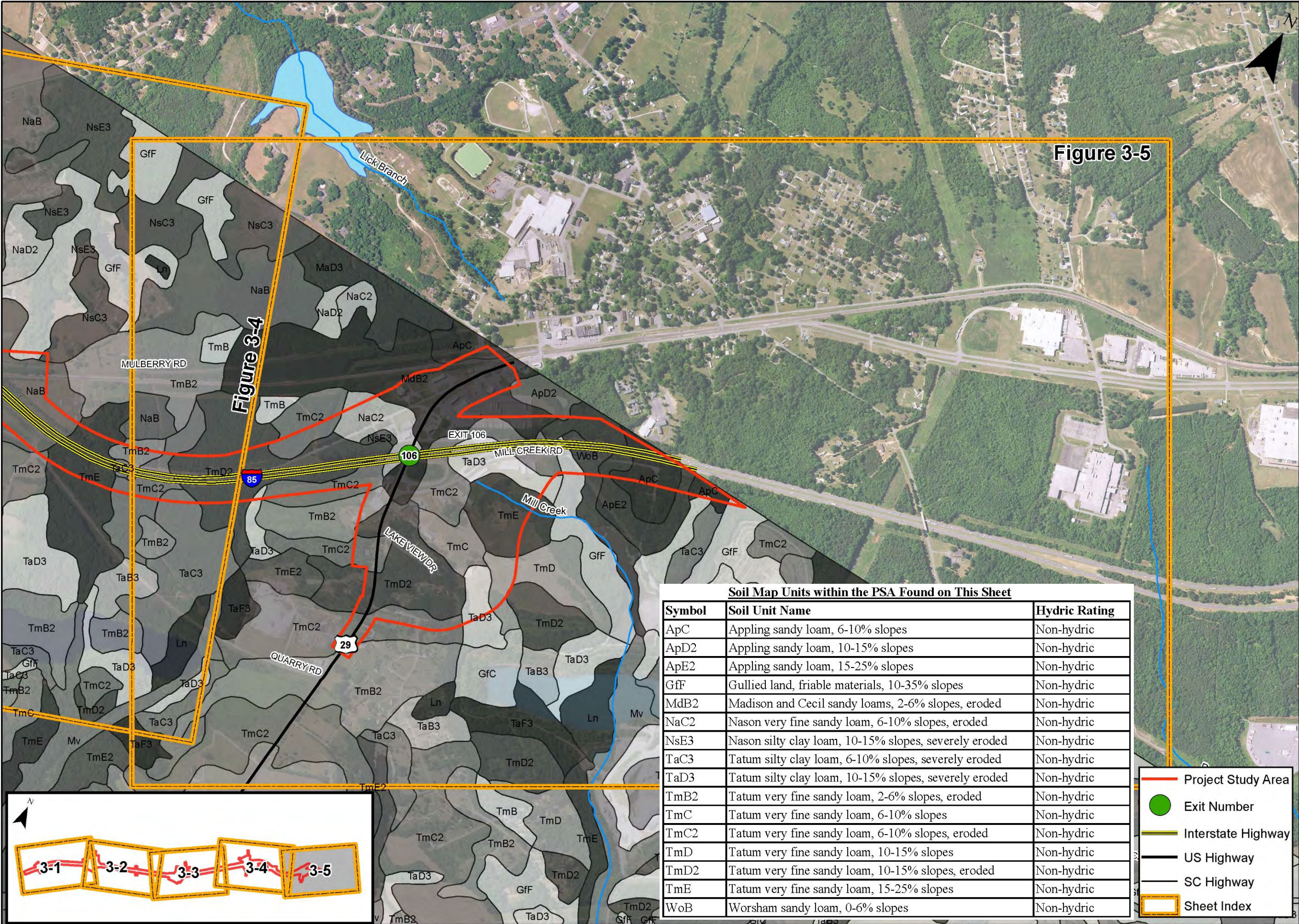
Date: November 2016

Scale: 0 500 1,000 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
3-5





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
Water Quality
Monitoring
Station Map**

Cherokee County,
South Carolina

Date: November 2016

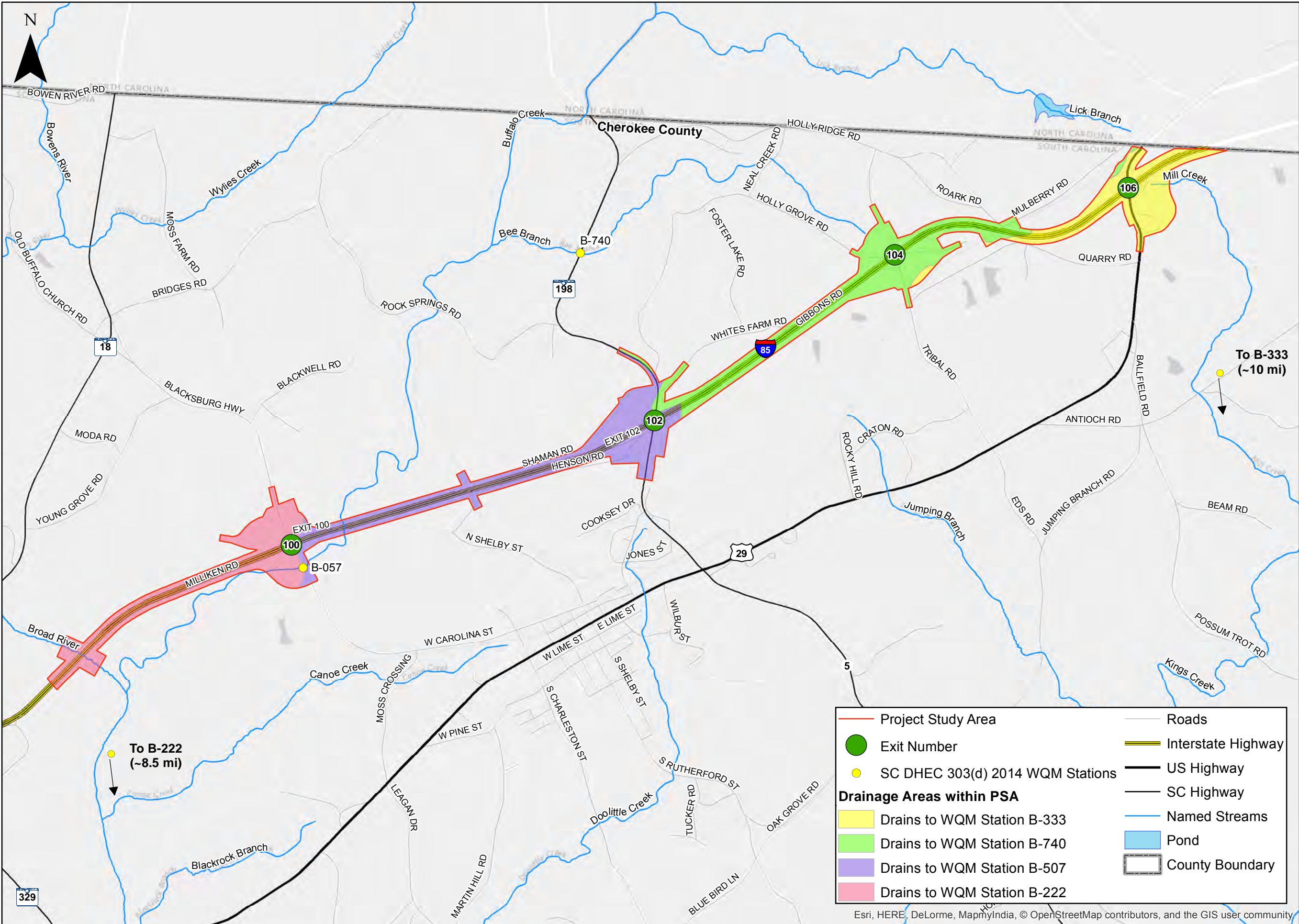
Scale: 0 0.25 0.5 Miles

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure

4





Prepared For:

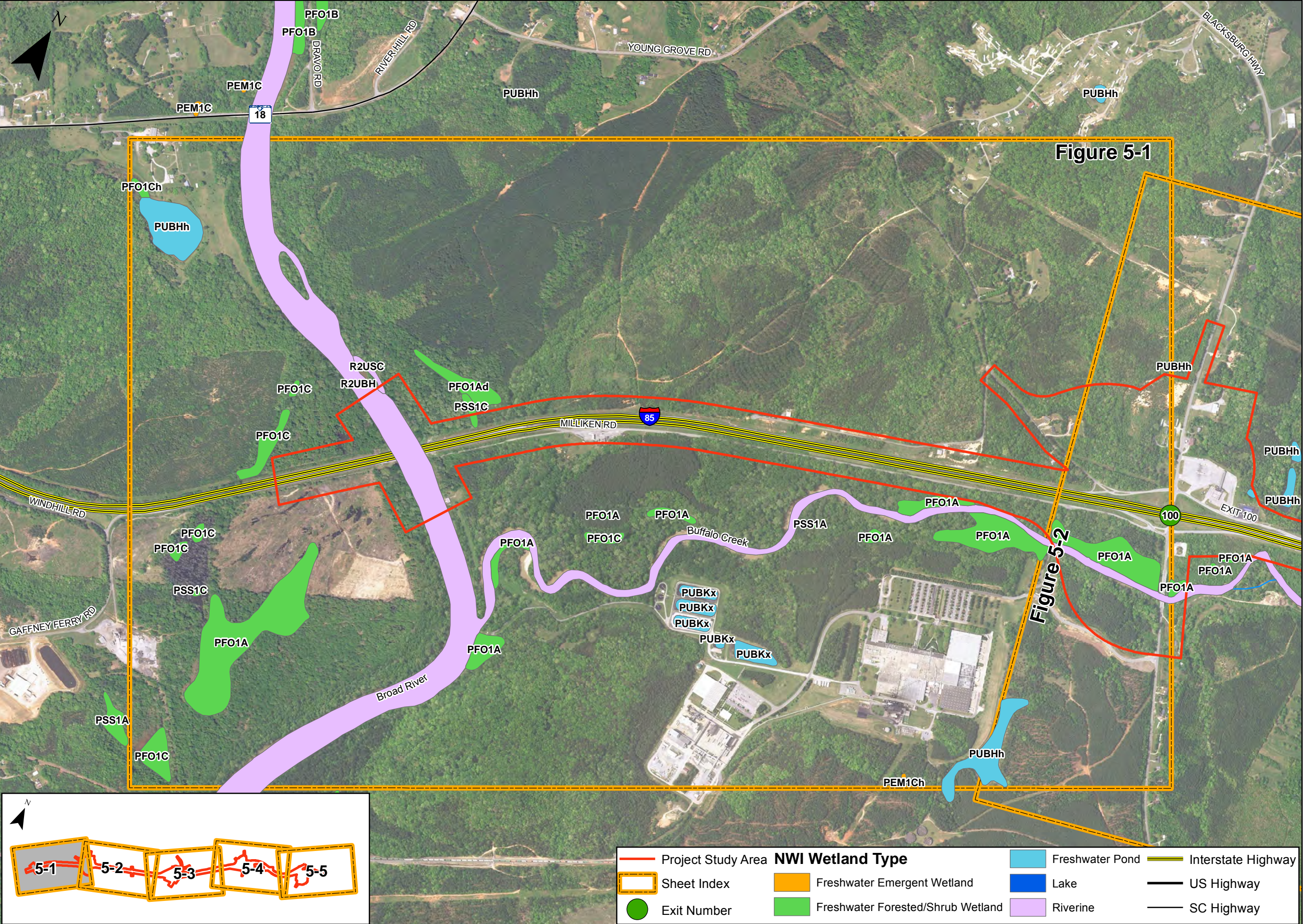


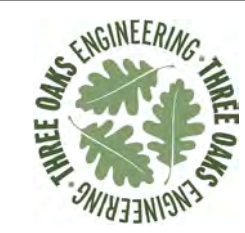
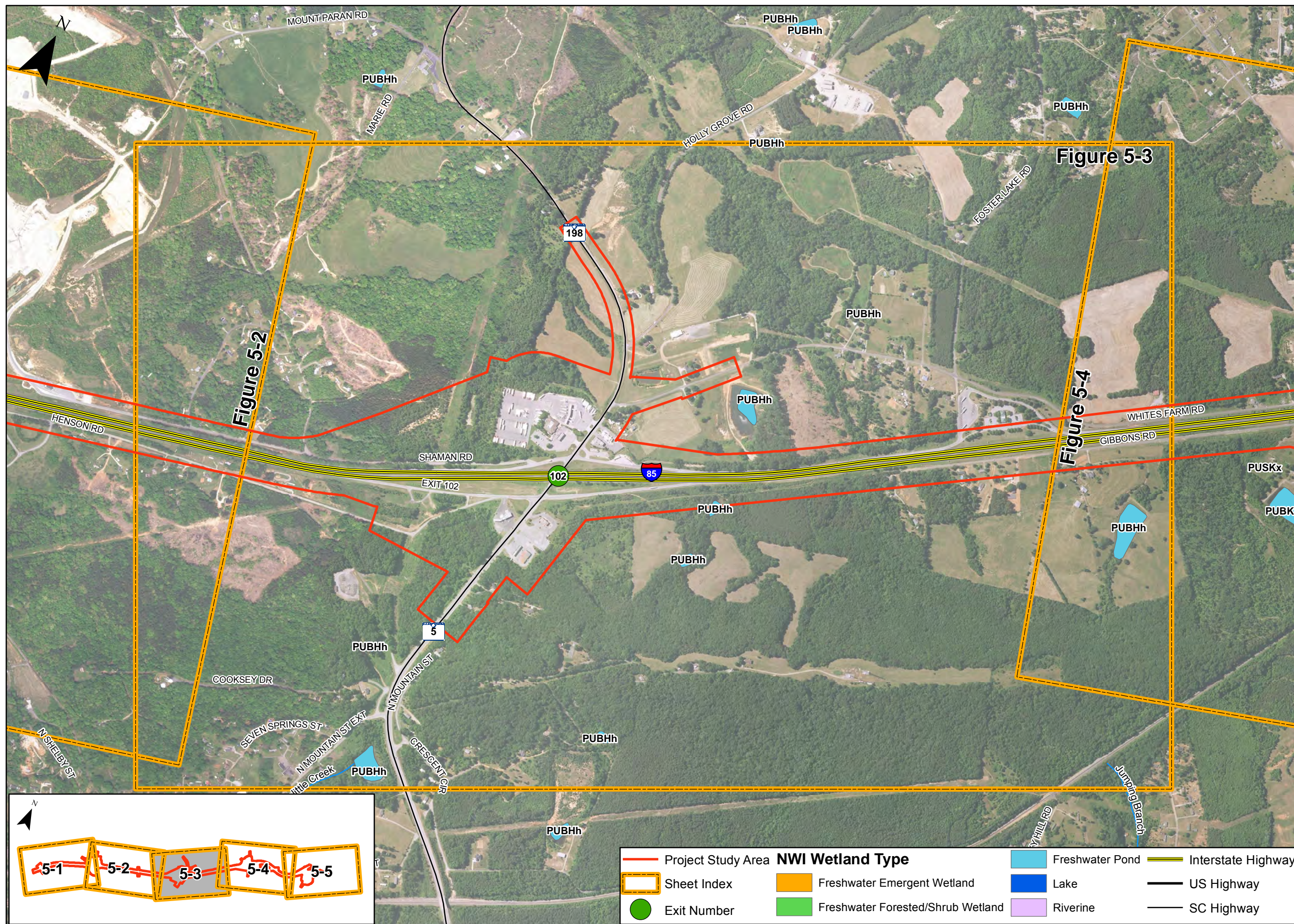
Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
National Wetland
Inventory (NWI)
Map

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 500 1,000 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
5-1





Prepared For:

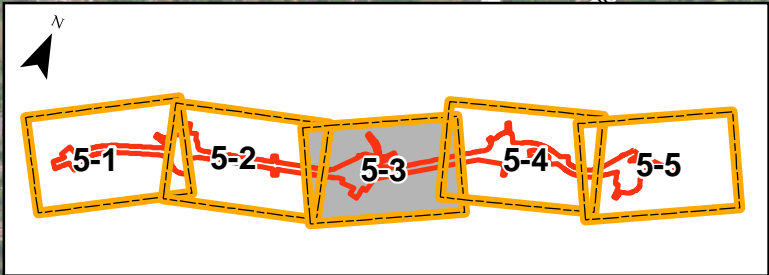


**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
National Wetland
Inventory (NWI)
Map**

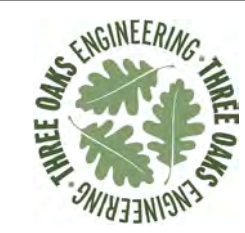
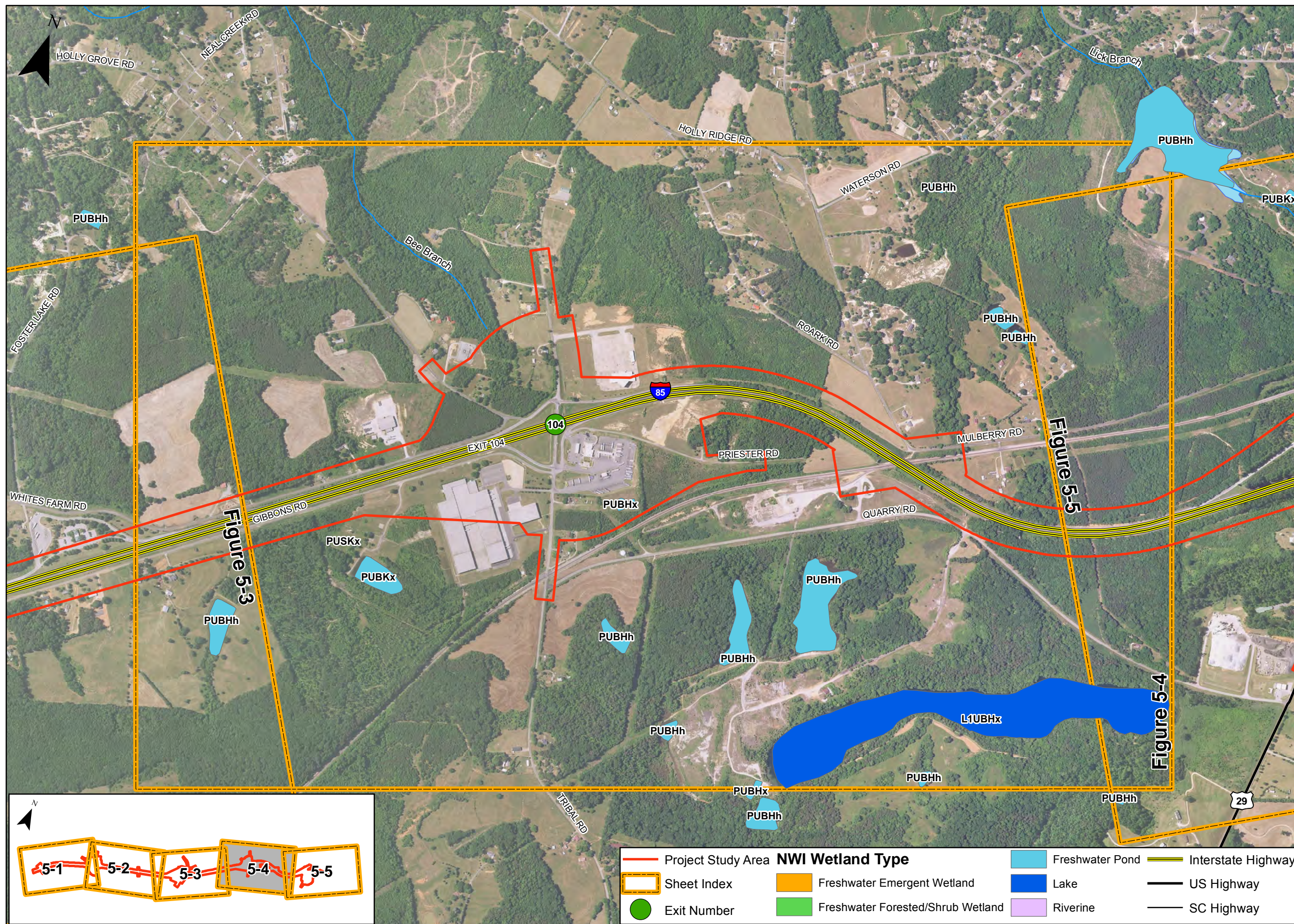
Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 500 1,000 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
5-3



- | | | | |
|----------------------|-------------------------------------|-------------------|----------------------|
| — Project Study Area | NWI Wetland Type | — Freshwater Pond | — Interstate Highway |
| — Sheet Index | — Freshwater Emergent Wetland | — Lake | — US Highway |
| — Exit Number | — Freshwater Forested/Shrub Wetland | — Riverine | — SC Highway |



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
National Wetland
Inventory (NWI)
Map**

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 500 1,000 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
5-4

- | | | | |
|----------------------|-------------------------------------|-------------------|----------------------|
| — Project Study Area | NWI Wetland Type | — Freshwater Pond | — Interstate Highway |
| — Sheet Index | — Freshwater Emergent Wetland | — Lake | — US Highway |
| — Exit Number | — Freshwater Forested/Shrub Wetland | — Riverine | — SC Highway |



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
National Wetland
Inventory (NWI)
Map

Cherokee County,
South Carolina

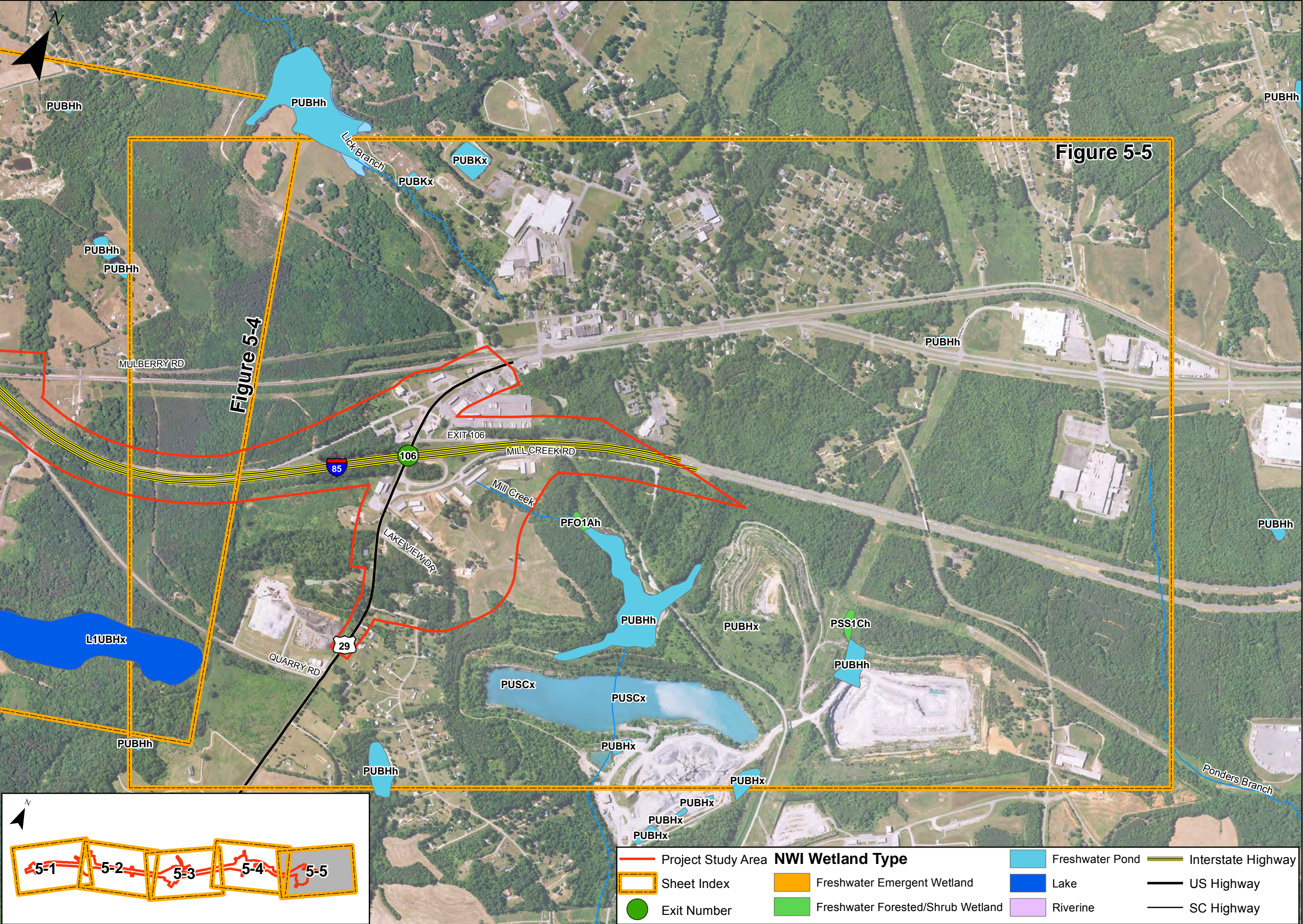
Date: November 2016

Scale: 0 500 1,000 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
5-5





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date: November 2016

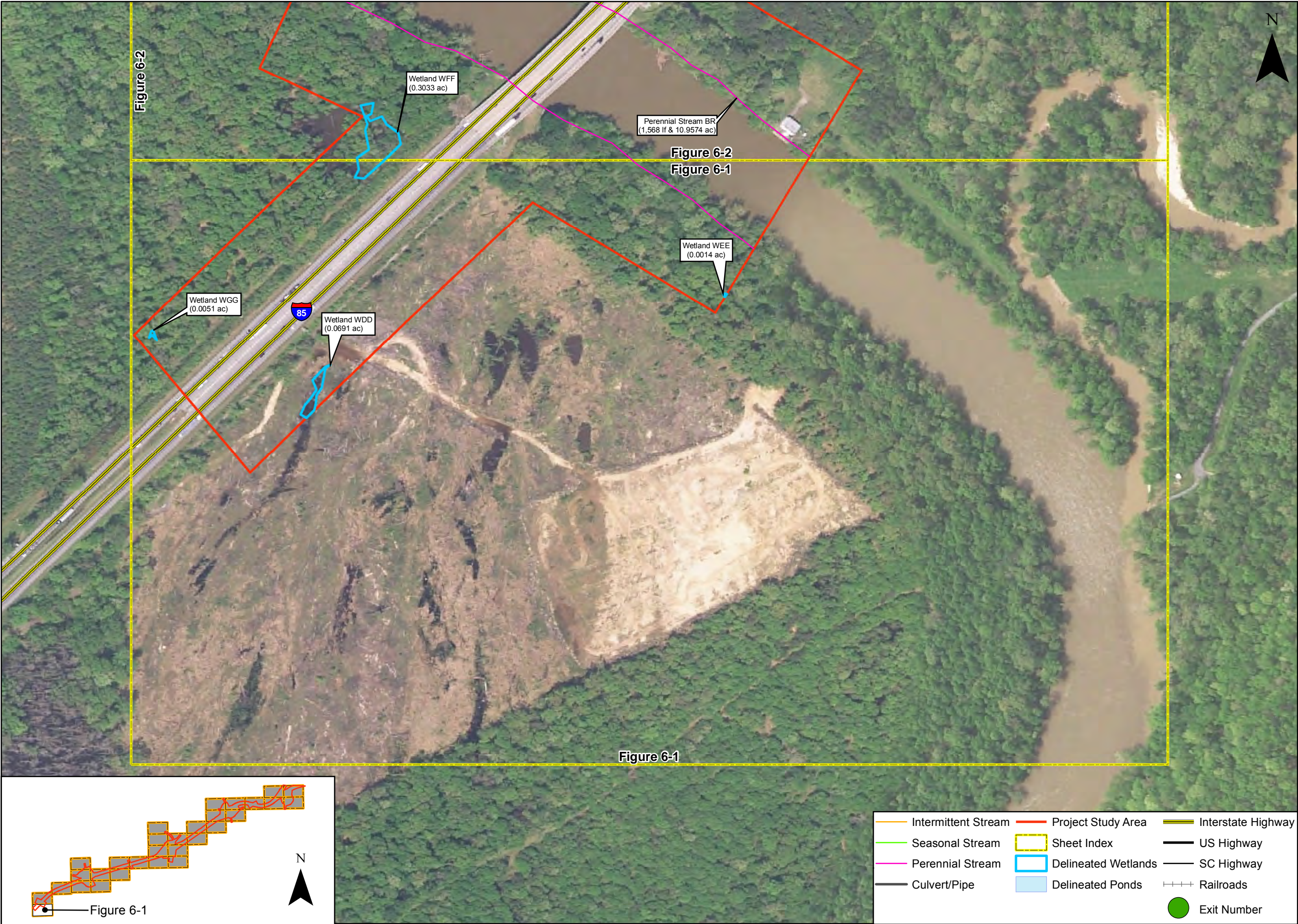
Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure

6-1





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

Delineated
Features

Cherokee County,
South Carolina

Date: November 2016

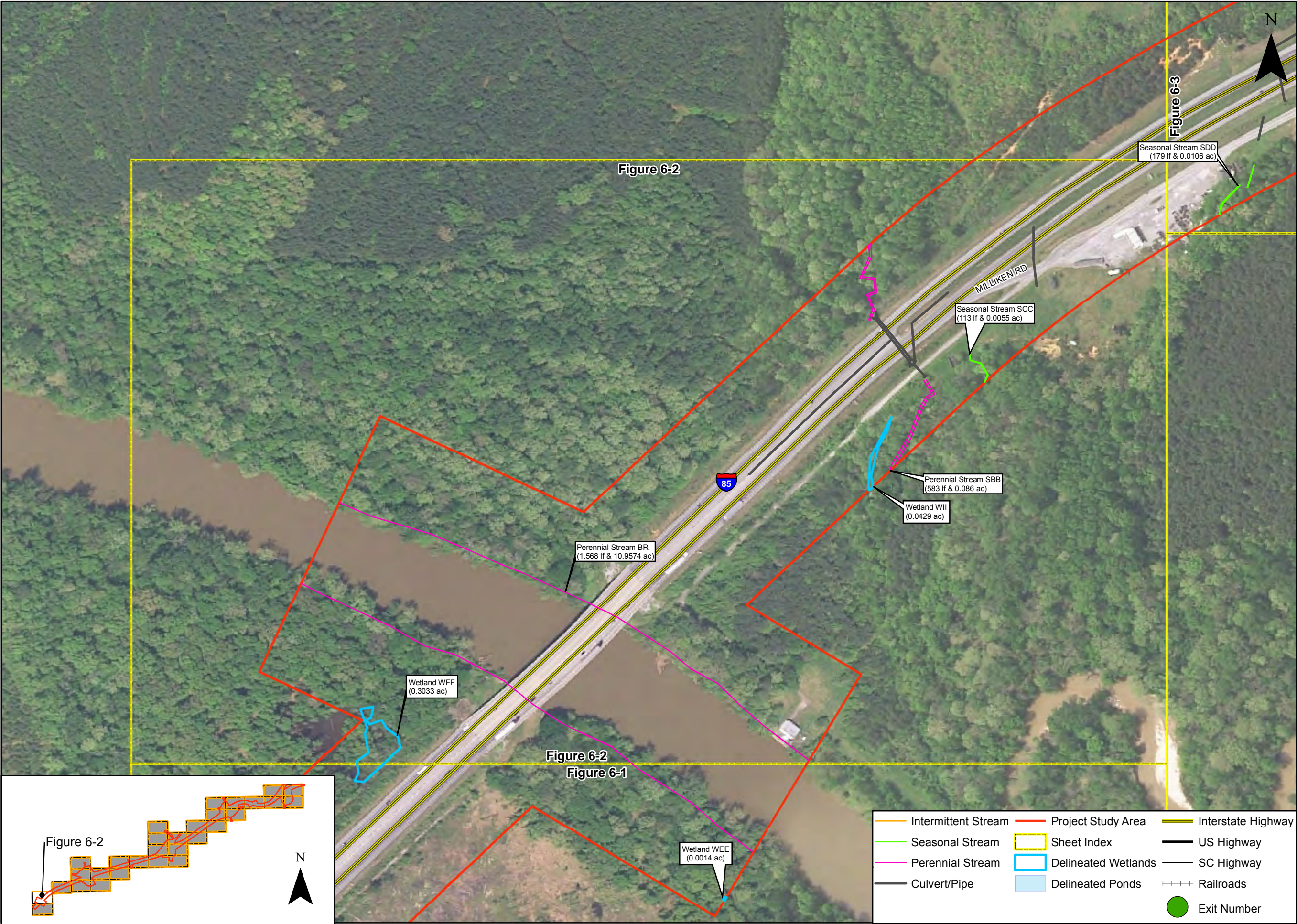
Scale: 0 100 200 Feet

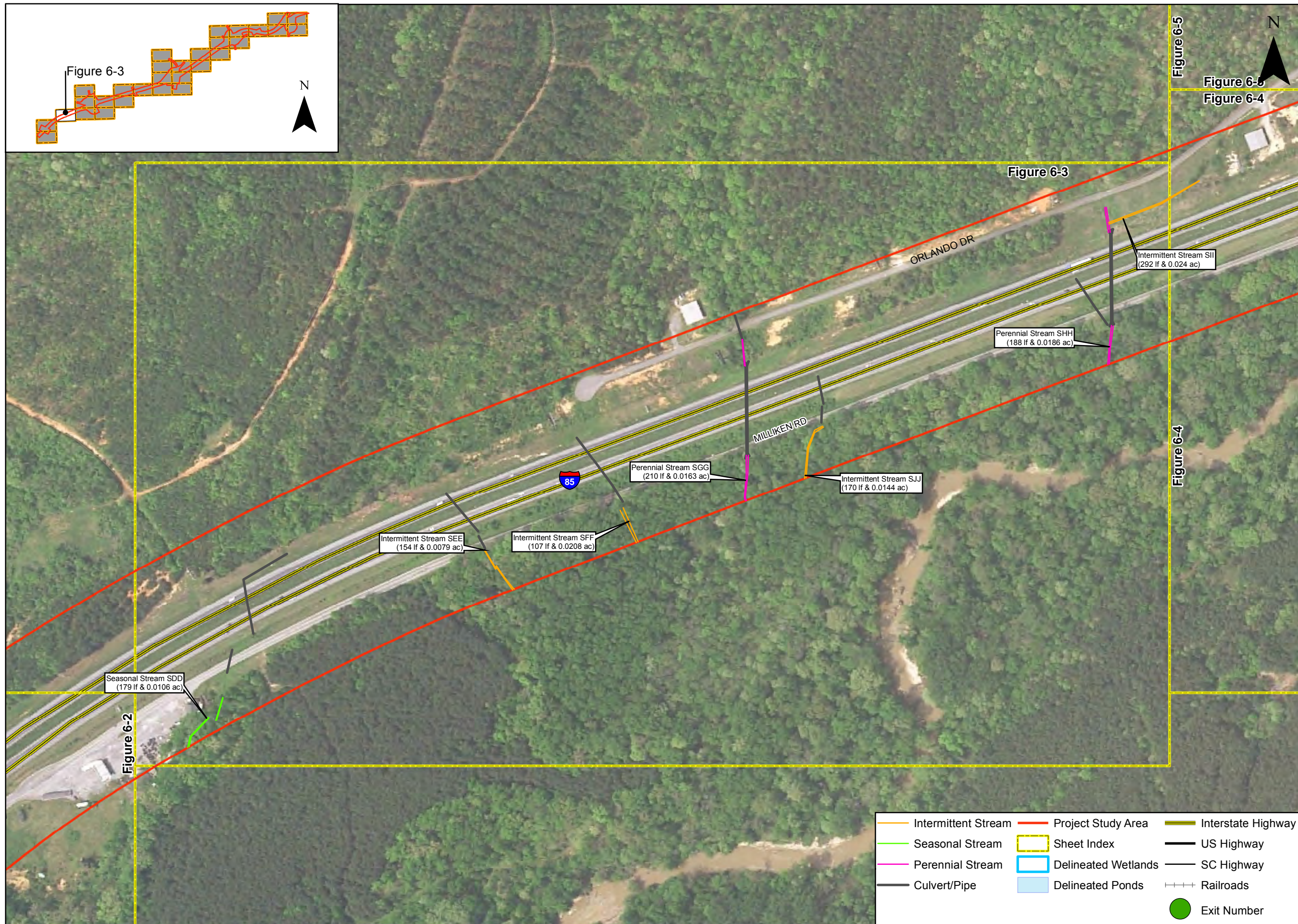
Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure

6-2





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

**Delineated
Features**

Cherokee County,
South Carolina

Date: November 2016

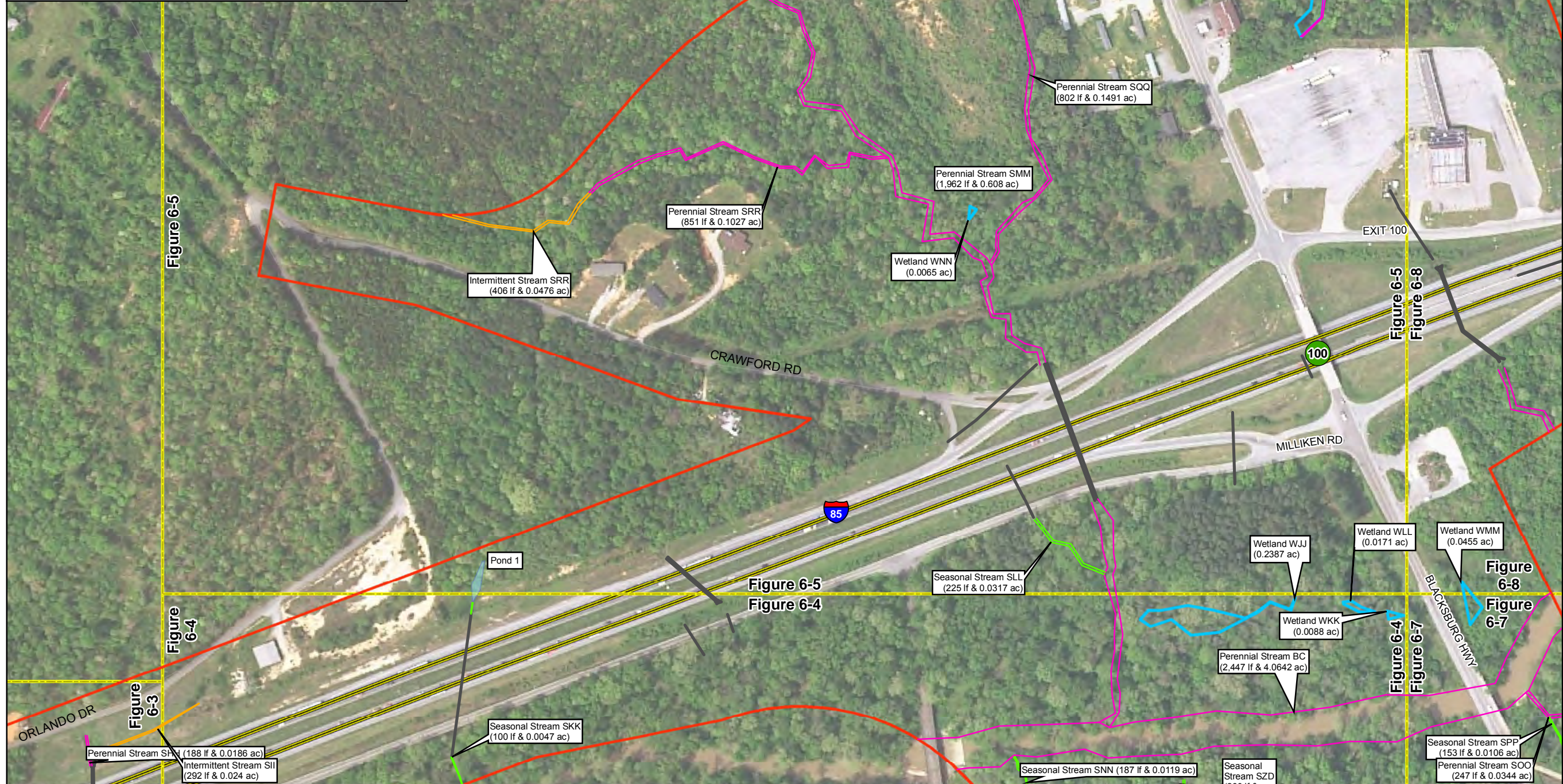
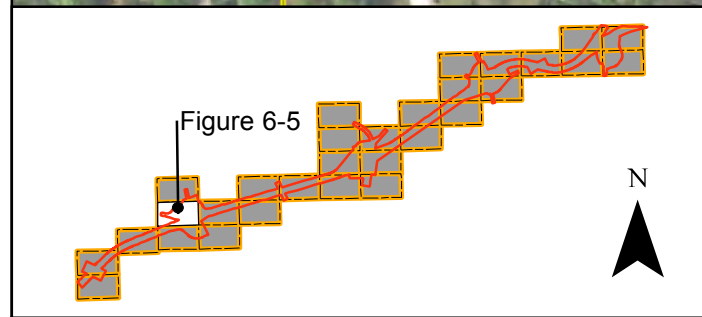
Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-3

- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:



Proposed I-85 Widening and Interchange Improvements Project (Mile Marker 96 to 106) Delineated Features

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 100 200 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
6-5

- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:

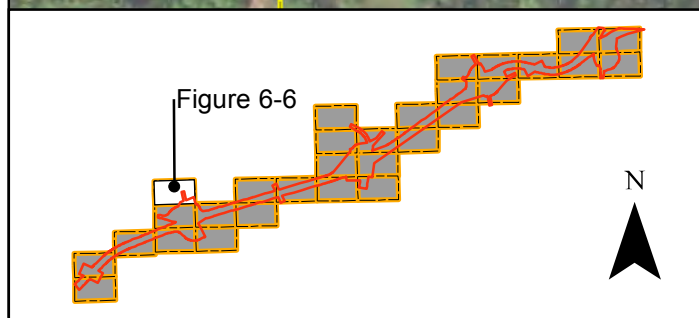
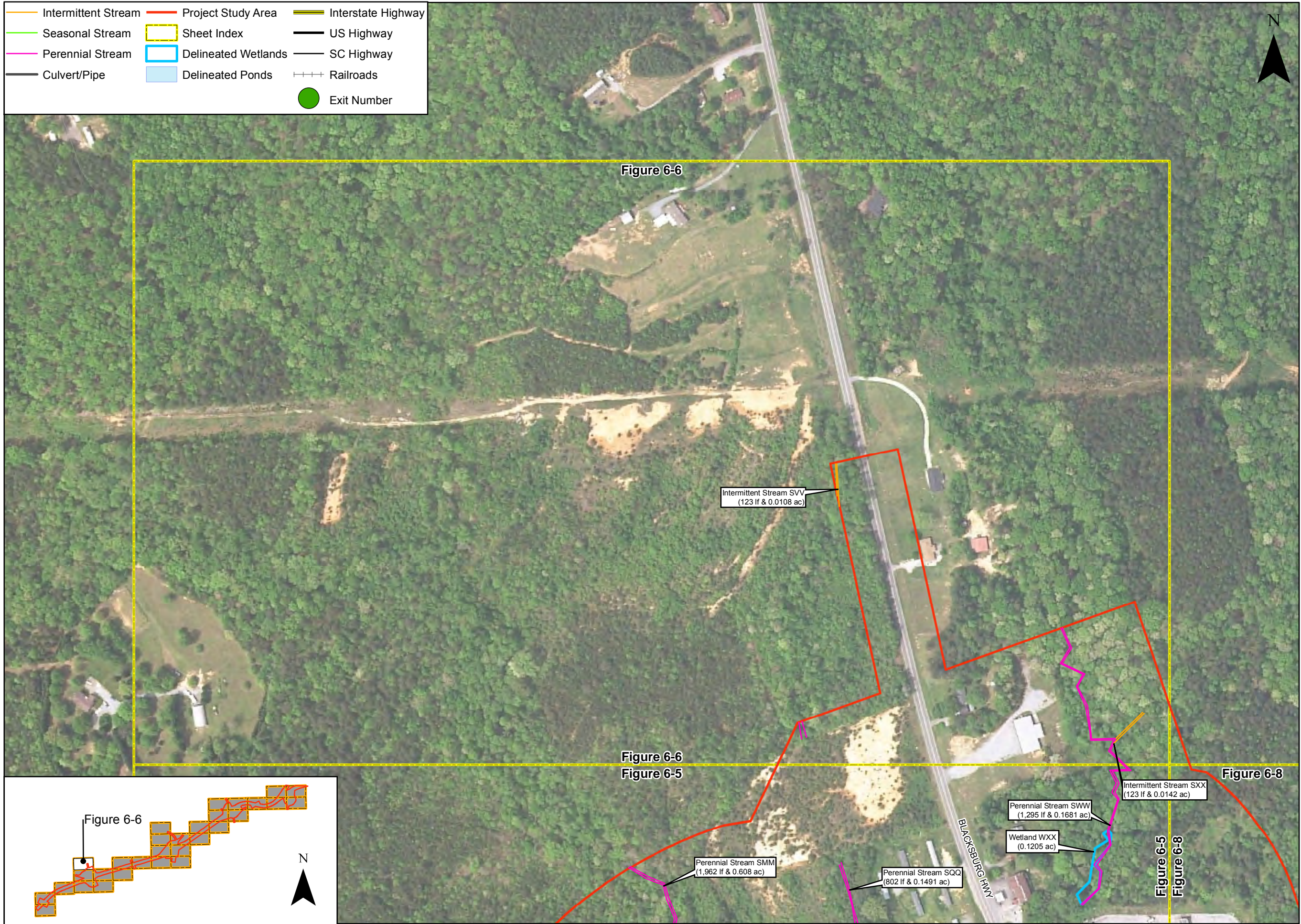


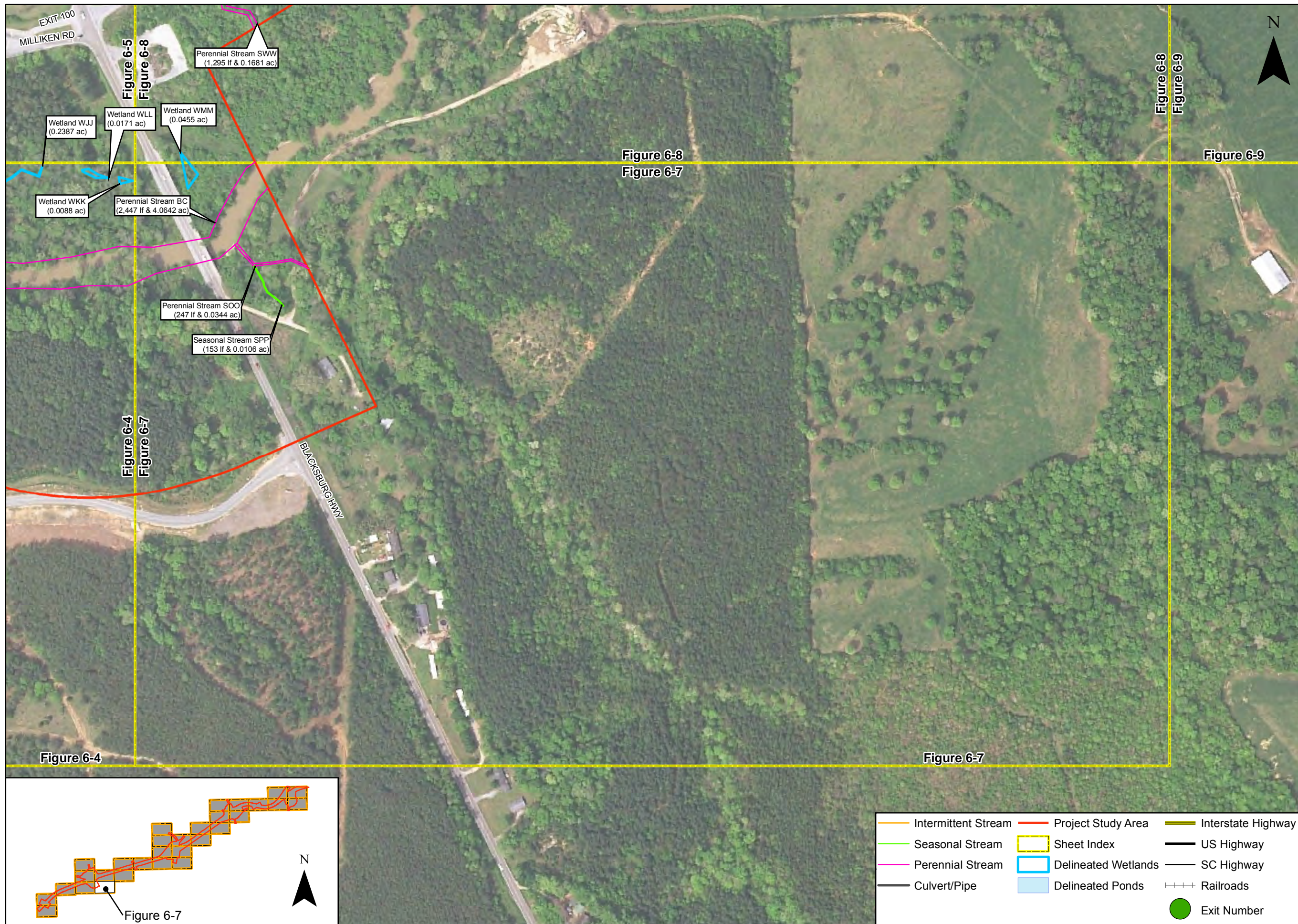
**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date:	November 2016	
Scale:	0 100 200 Feet	
Job No.:	6214	
Drawn By:	KMS	Checked By: CS

Figure
6-6





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

Delineated
Features

Cherokee County,
South Carolina

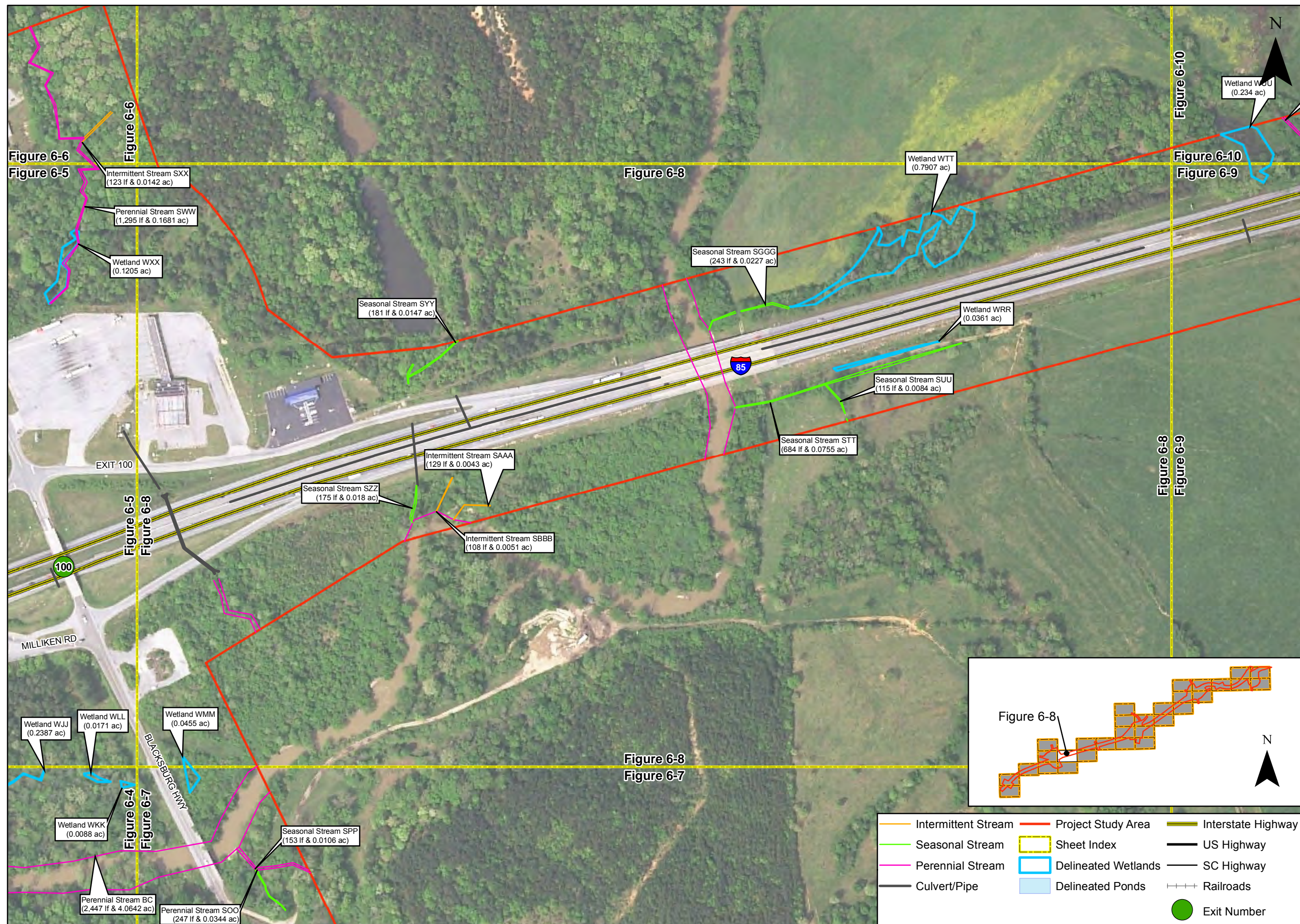
Date: November 2016

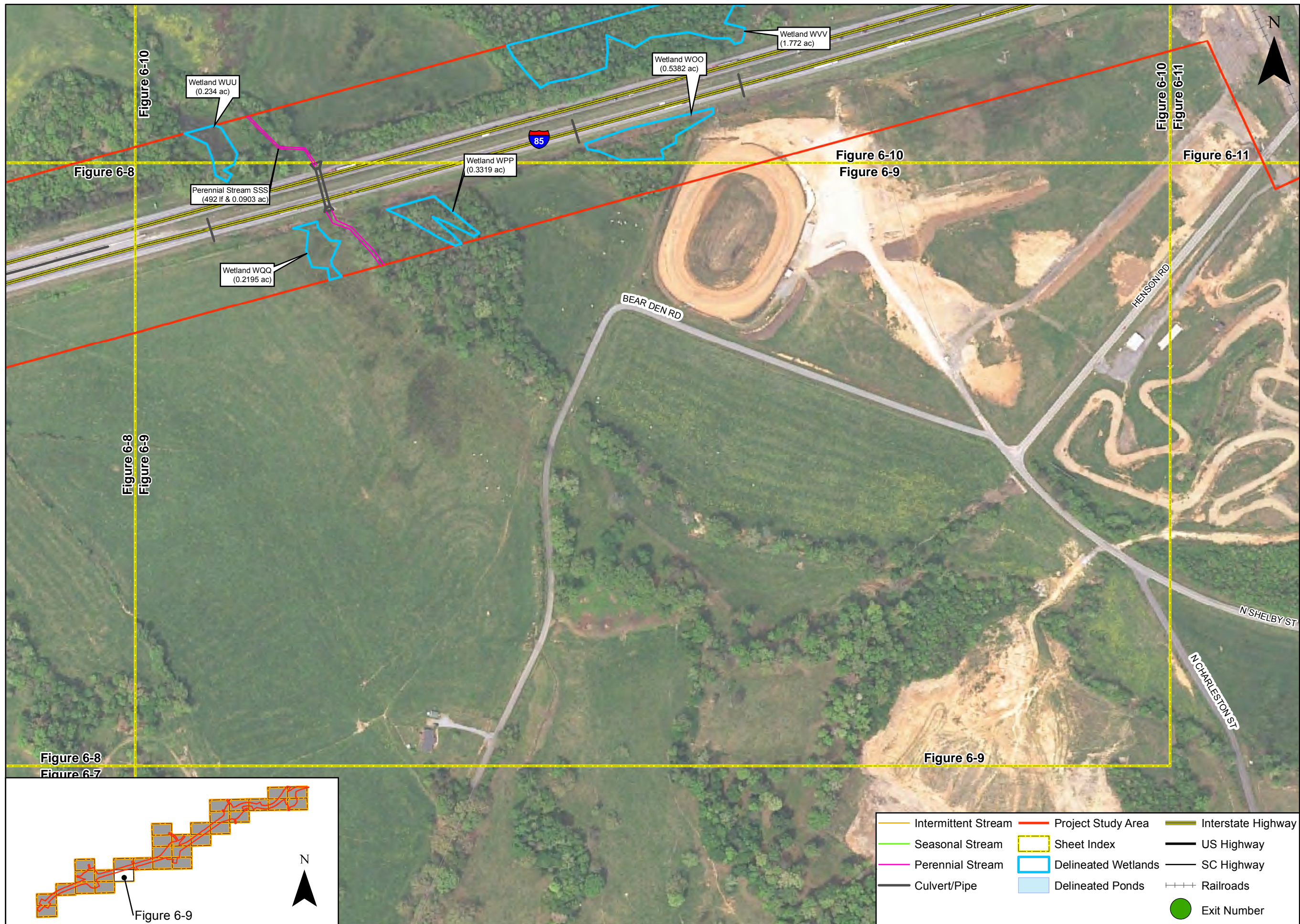
Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-7





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

Delineated
Features

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 100 200 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
6-9



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

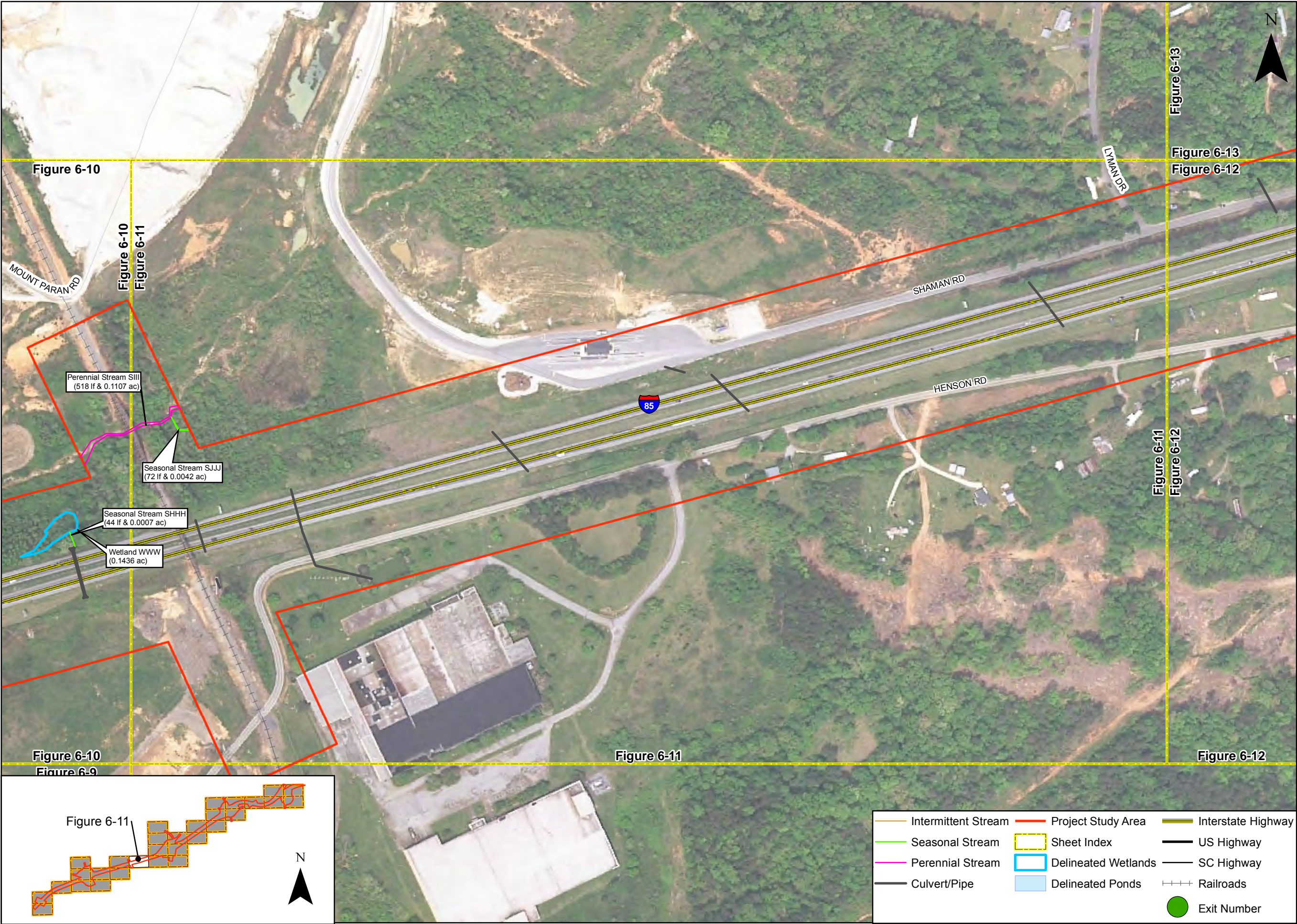
Date: November 2016

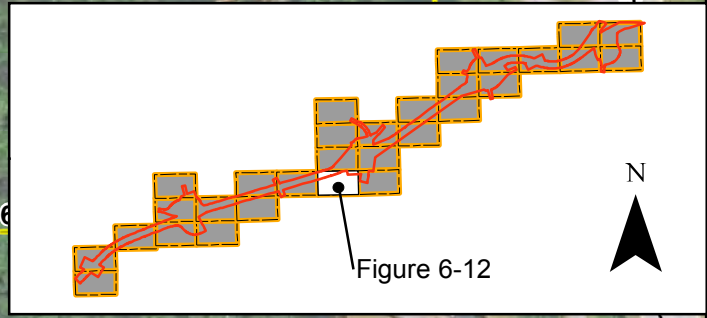
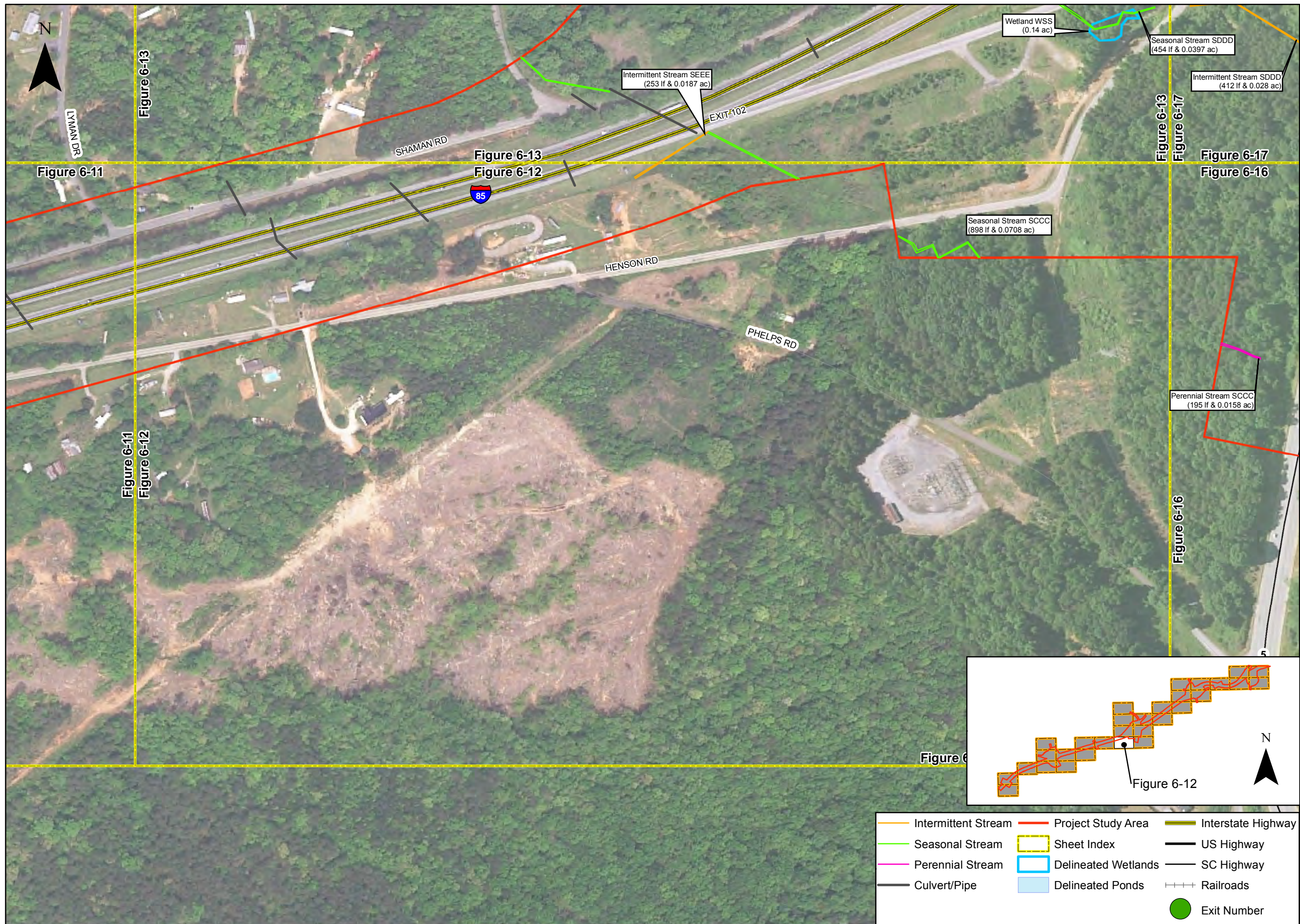
Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-11





- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
Delineated
Features**

Cherokee County,
South Carolina

Date: November 2016

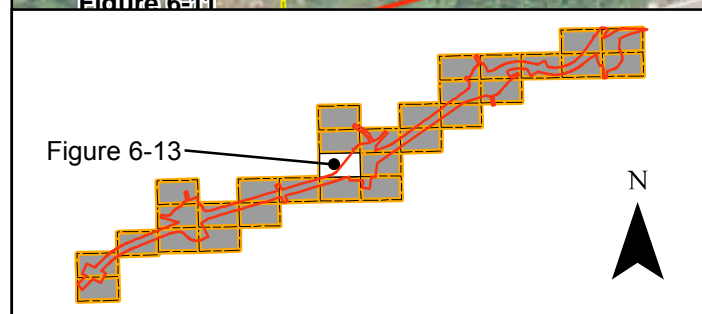
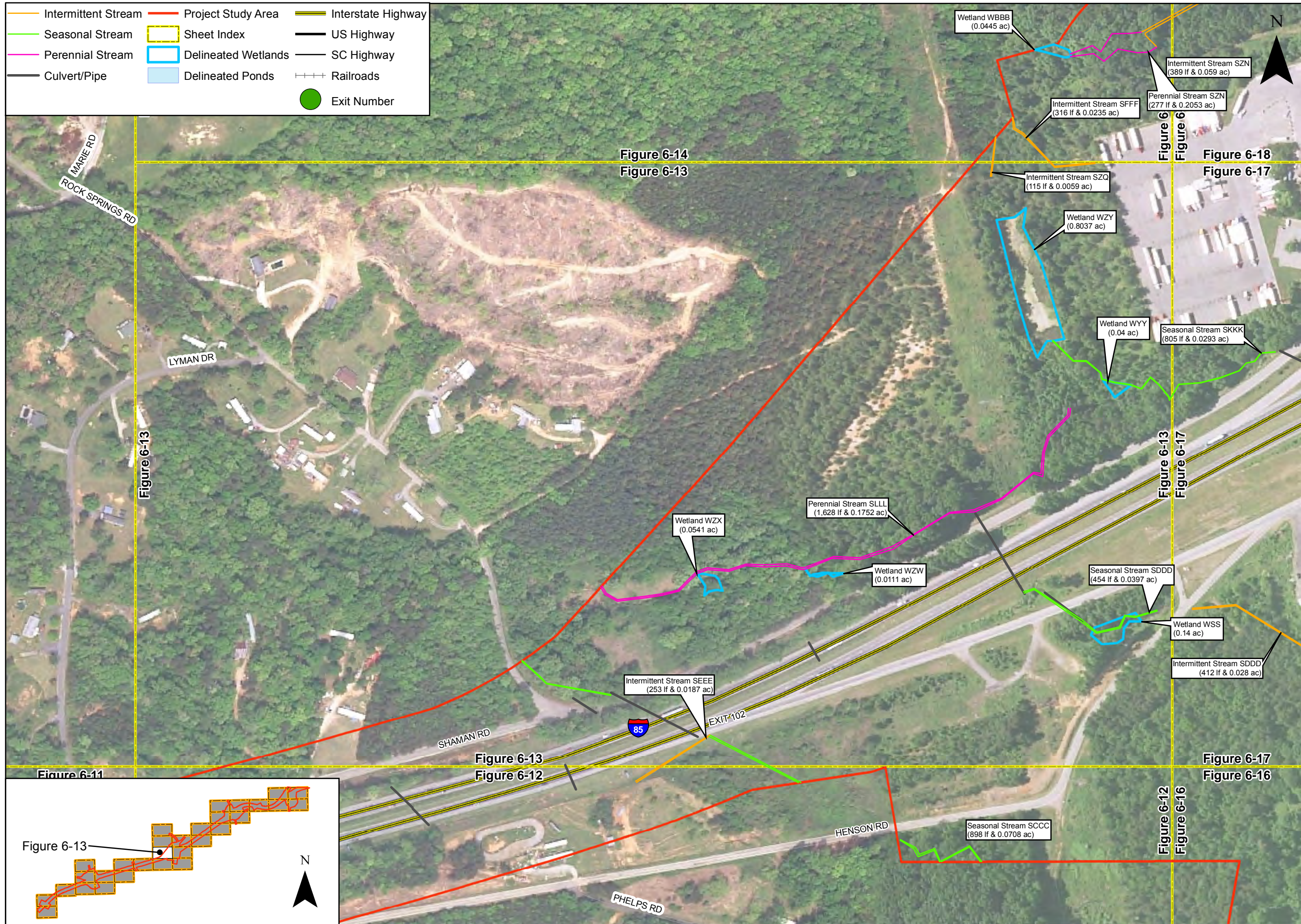
Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS Checked By: CS

Figure
6-12

- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:



Proposed I-85 Widening and Interchange Improvements Project (Mile Marker 96 to 106) **Delineated Features**

Cherokee County,
South Carolina

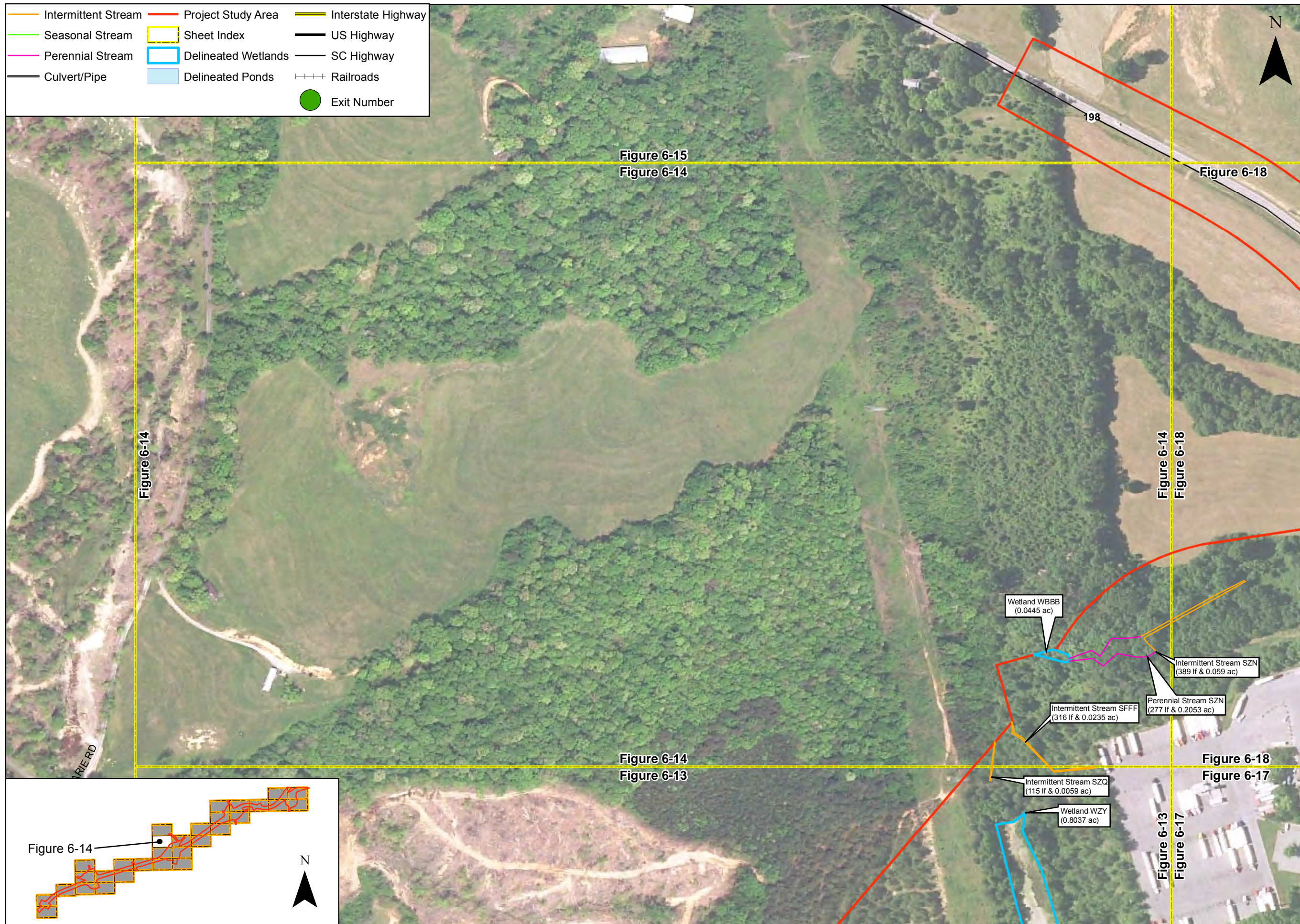
Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS Checked By: CS

Figure
6-13



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
Delineated
Features**

Cherokee County,
South Carolina

Date: November 2016

Scale: 0 100 200 Feet

Job No.:	6214
----------	------

Drawn By: KMS	Checked By: CS
------------------	-------------------

Figure
6-14

- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

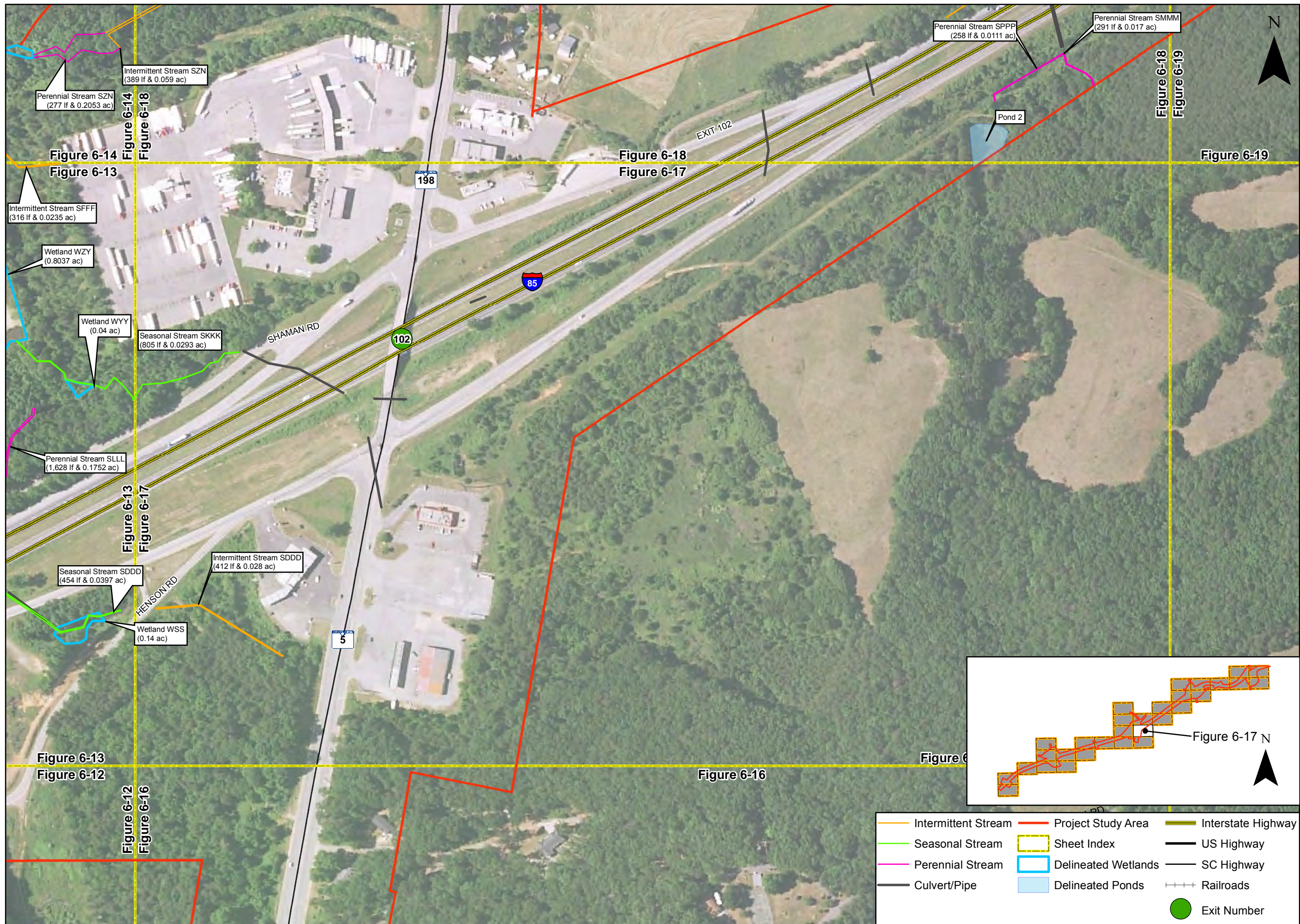
Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-15



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

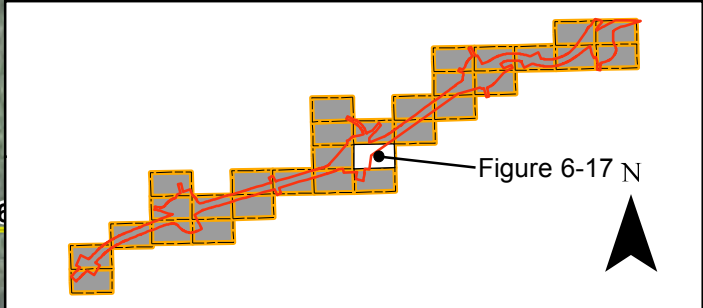
Date: November 2016

Scale: 0 100 200 Feet

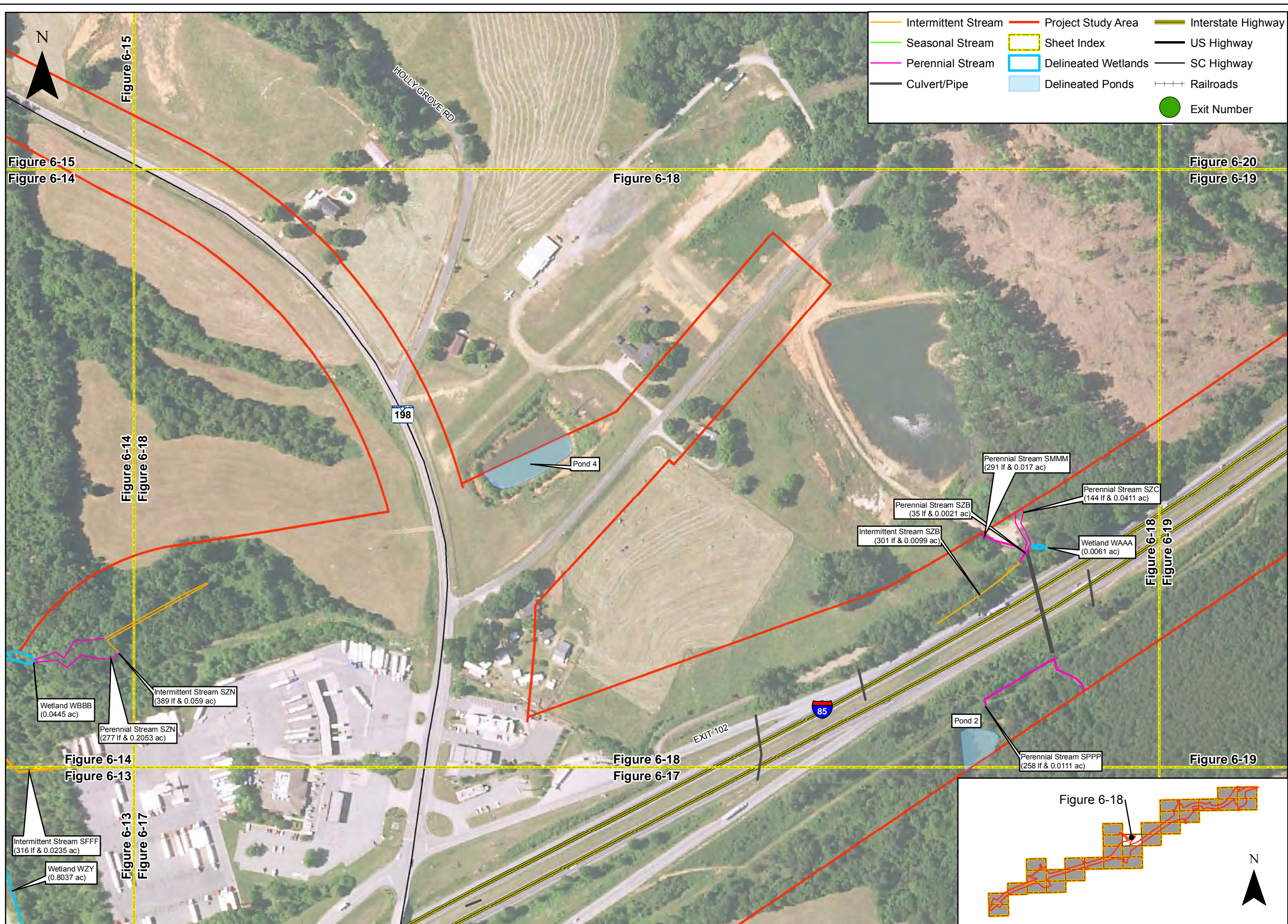
Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-17



- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)
Delineated
Features**

Cherokee County,
South Carolina

Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-18



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

Delineated
Features

Cherokee County,
South Carolina

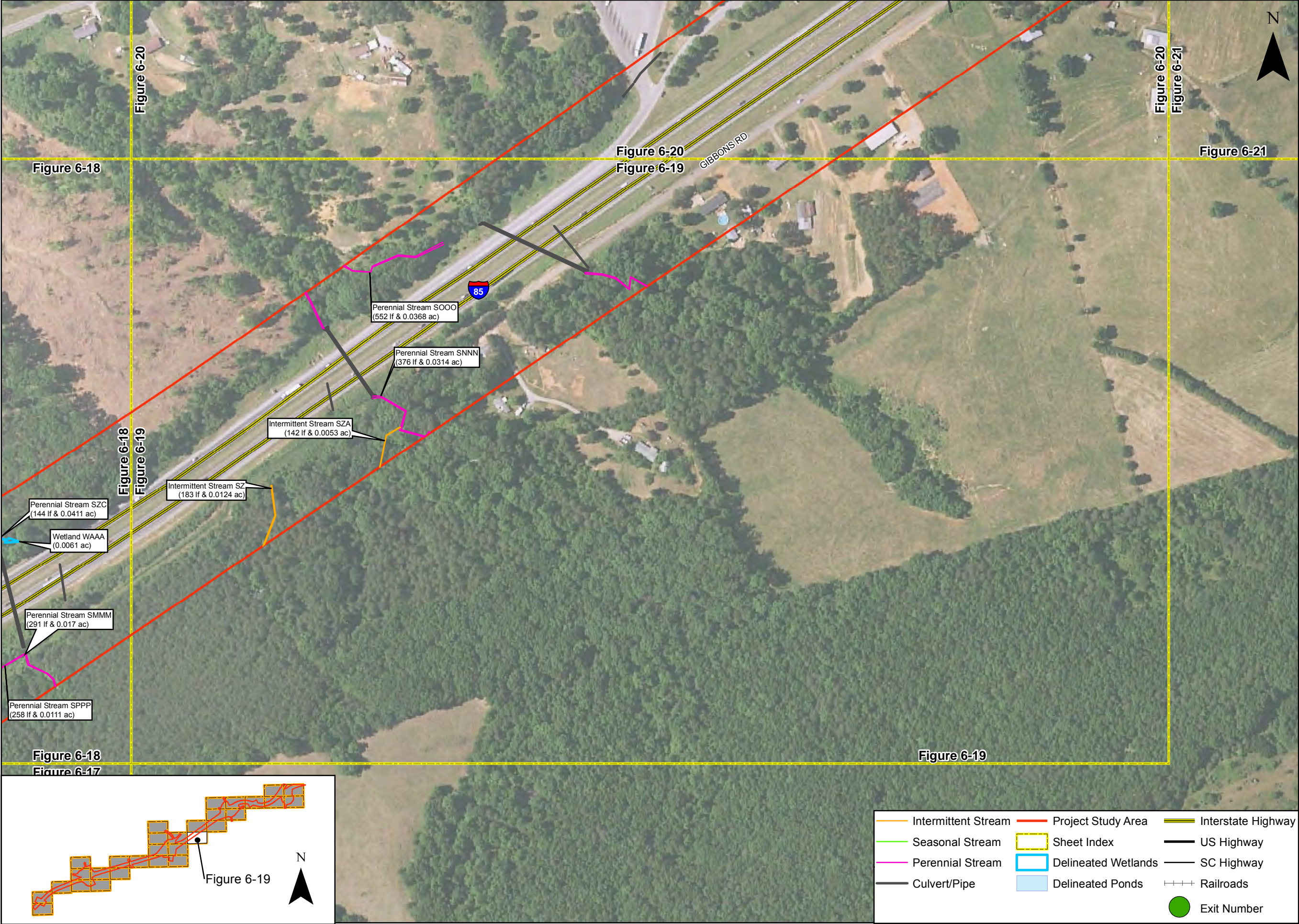
Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-19





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

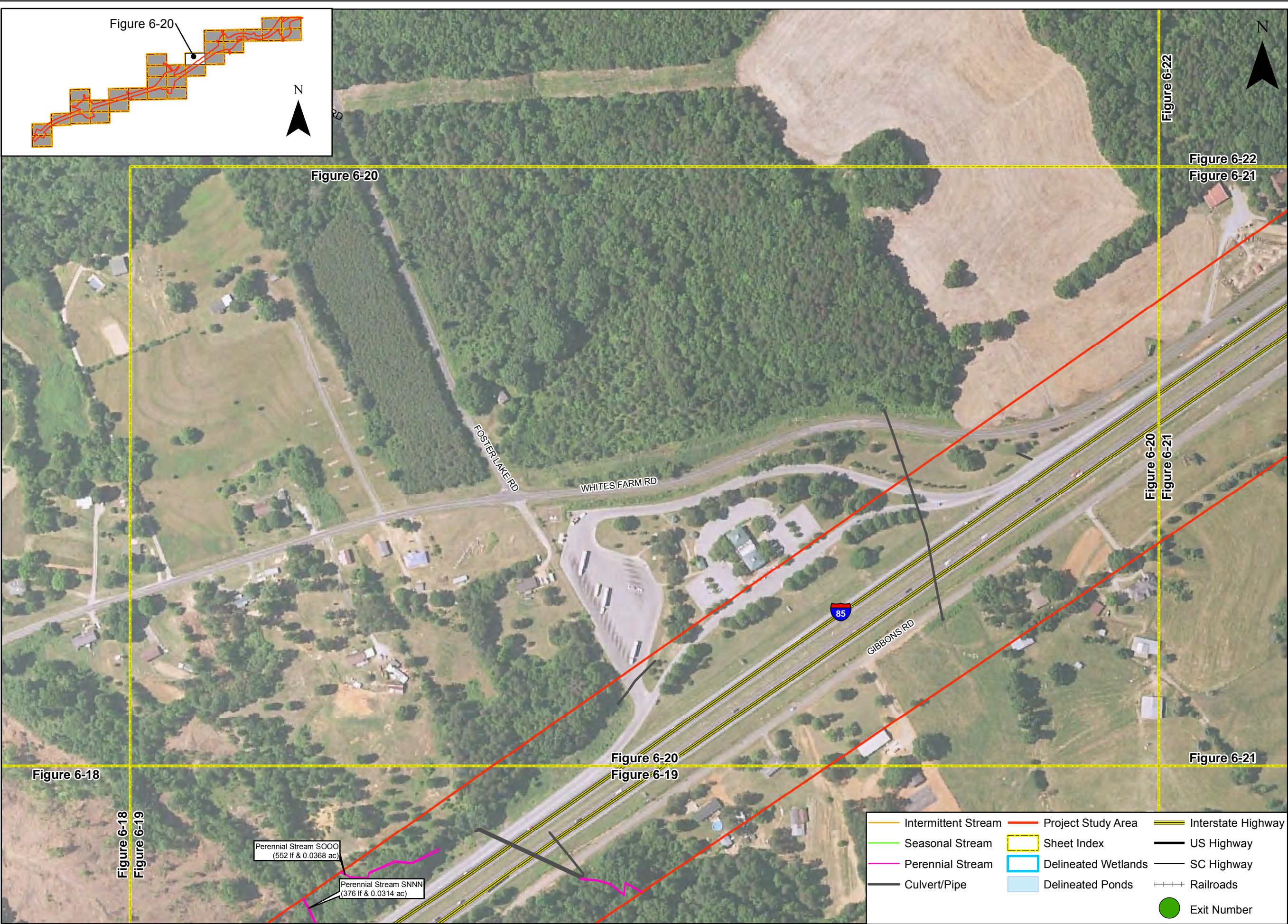
Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-20





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

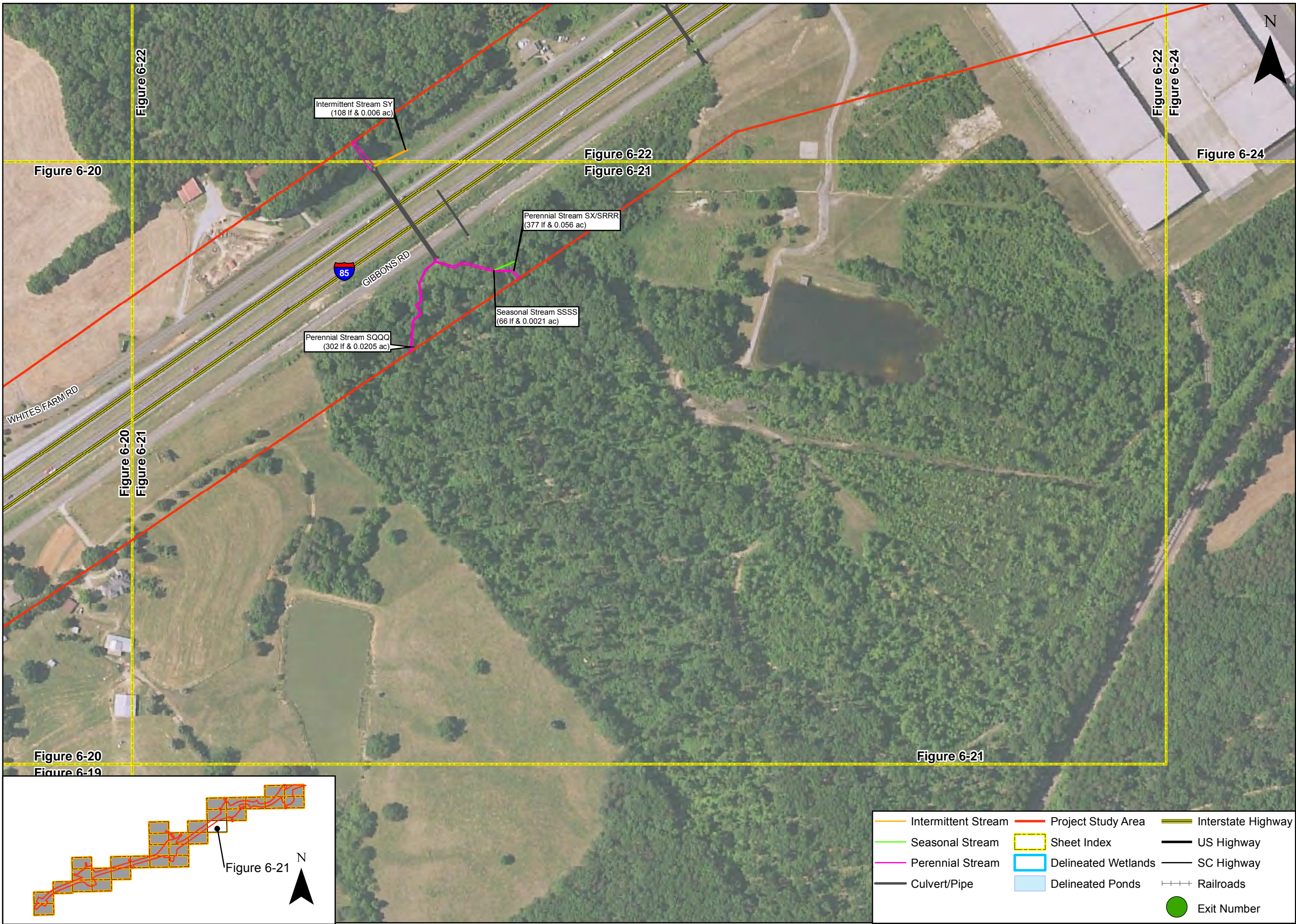
Date: November 2016

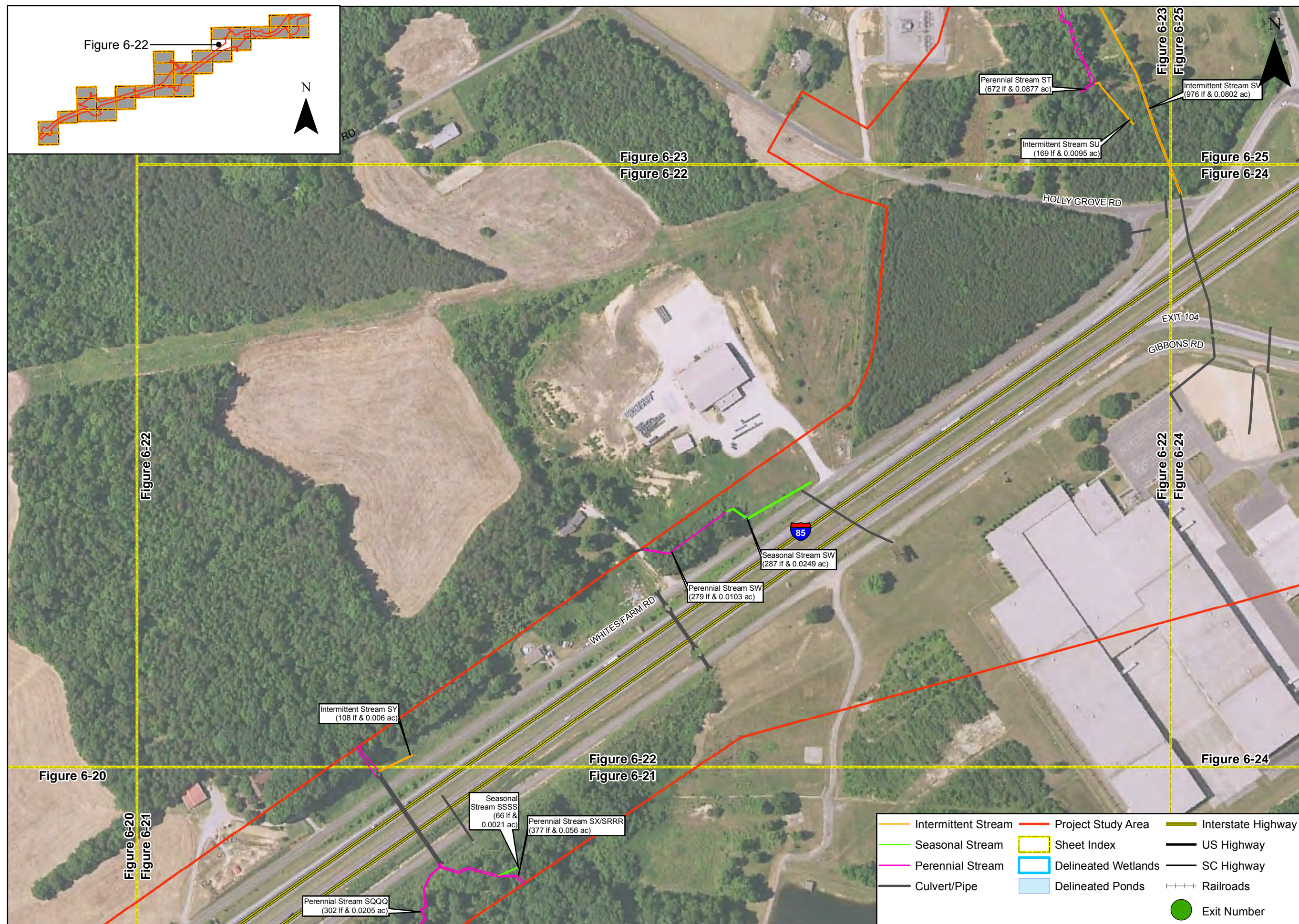
Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-21





Prepared For:



Proposed I-85 Widening and Interchange Improvements Project (Mile Marker 96 to 106) Delineated Features

Cherokee County,
South Carolina

Date: November 2016

Scale: 0 100 200 Feet

Job No.:	6214
----------	------

Drawn By: KMS	Checked By: CS
------------------	-------------------

Figure
6-22

- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Project Study Area
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- Interstate Highway
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:

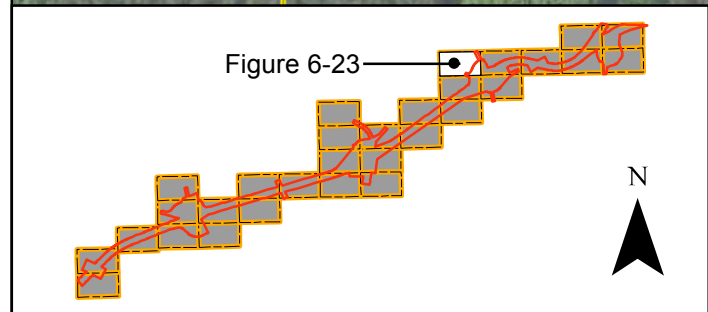
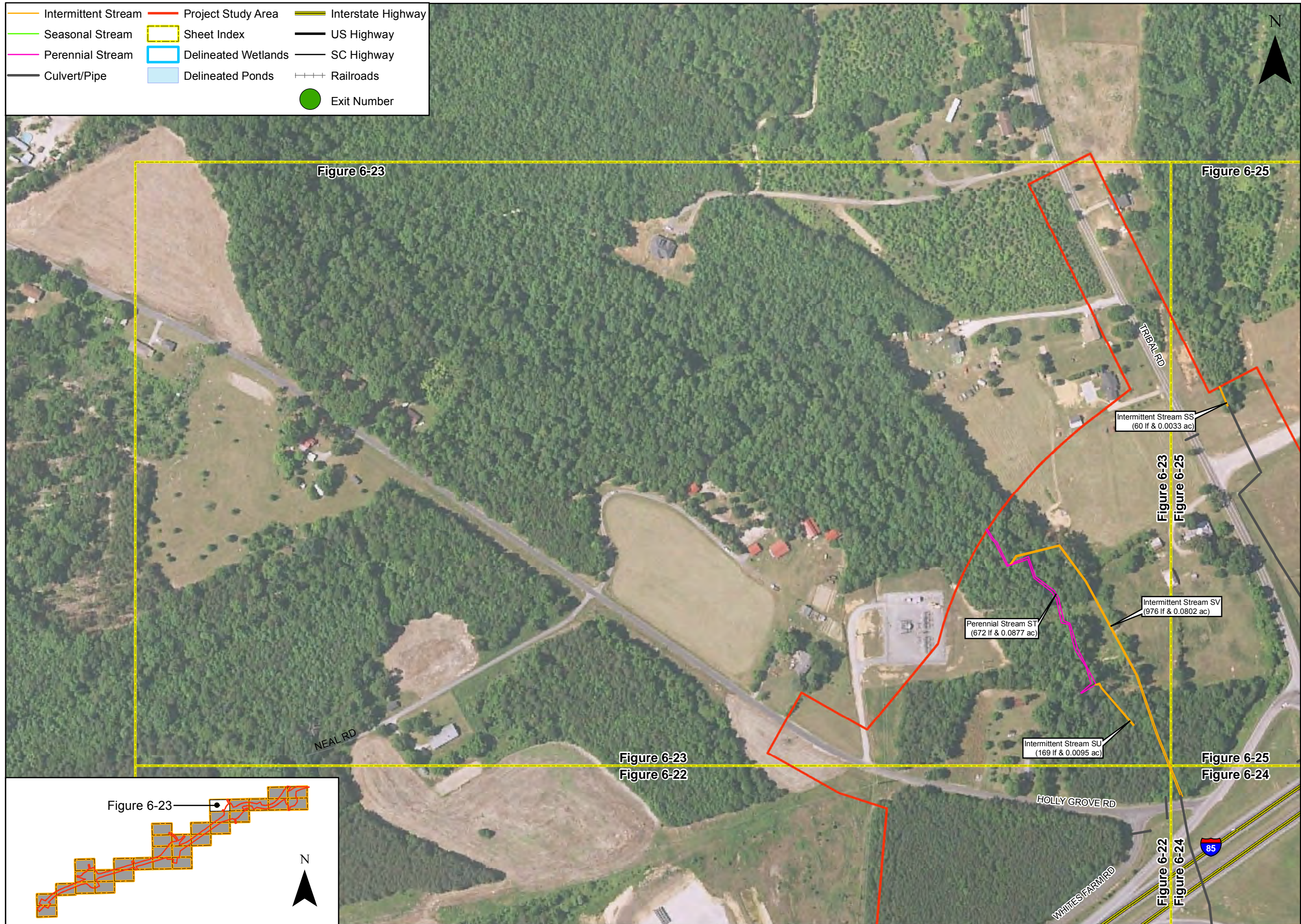


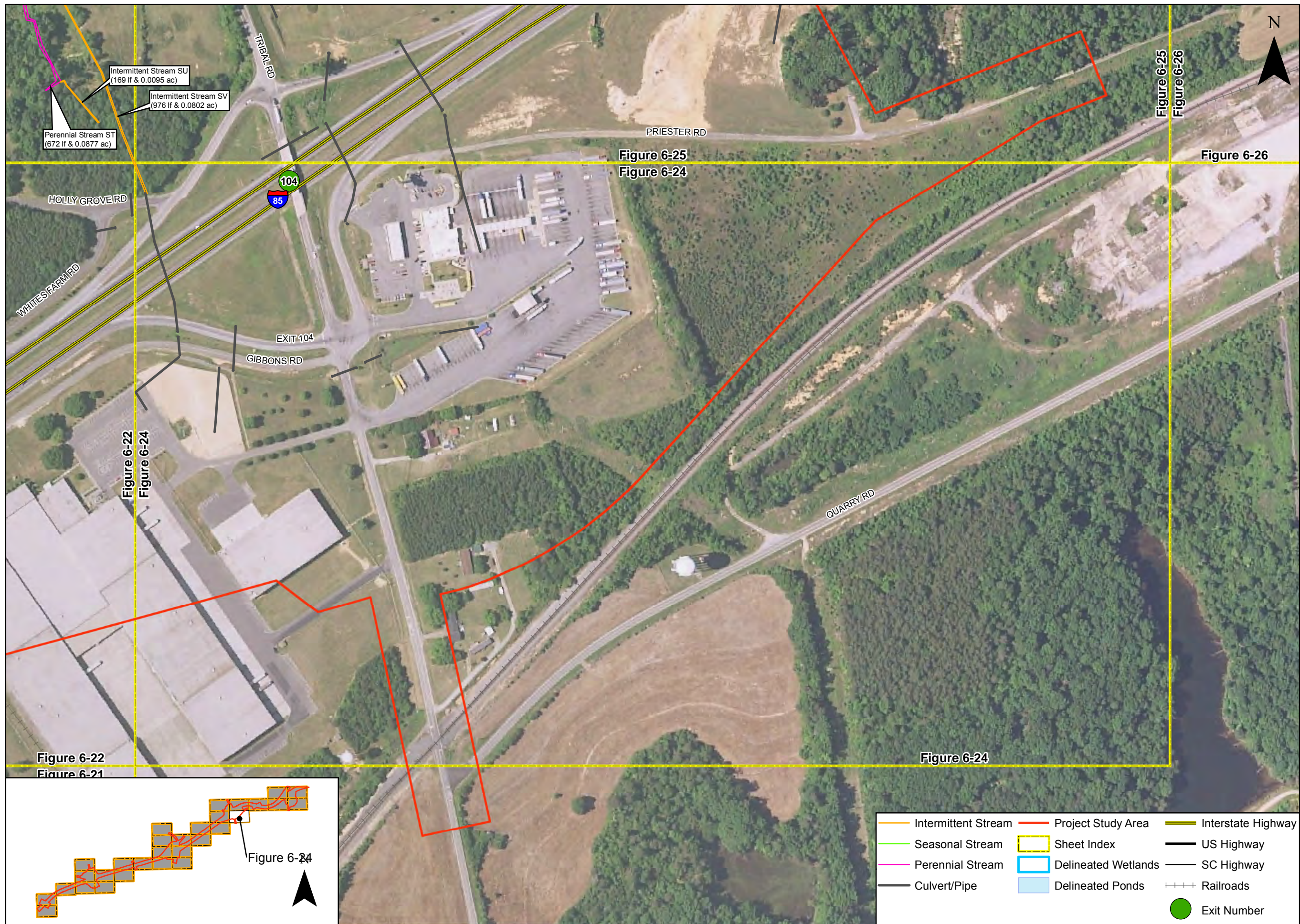
**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 100 200 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
6-23





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-24



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

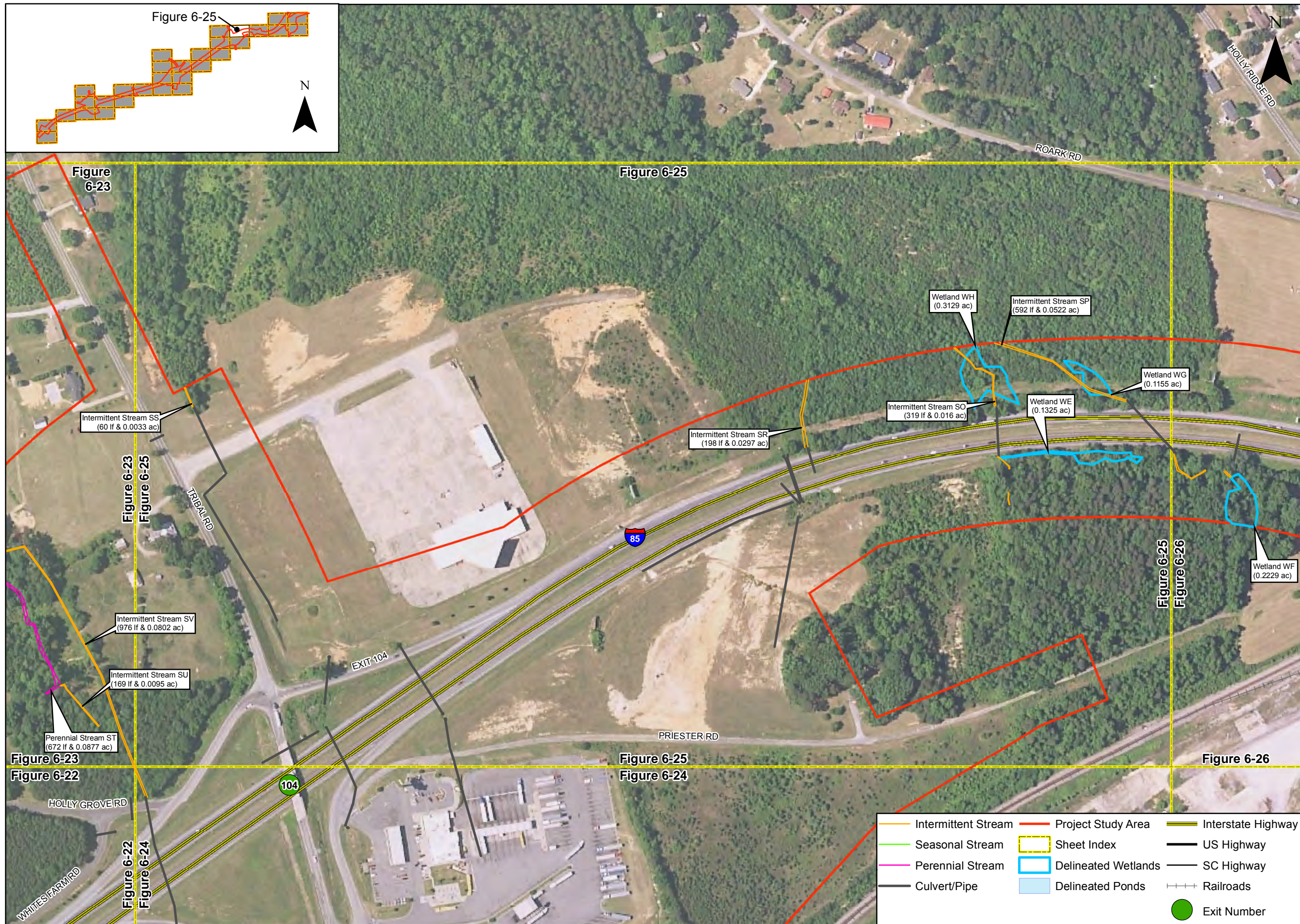
Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-25





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

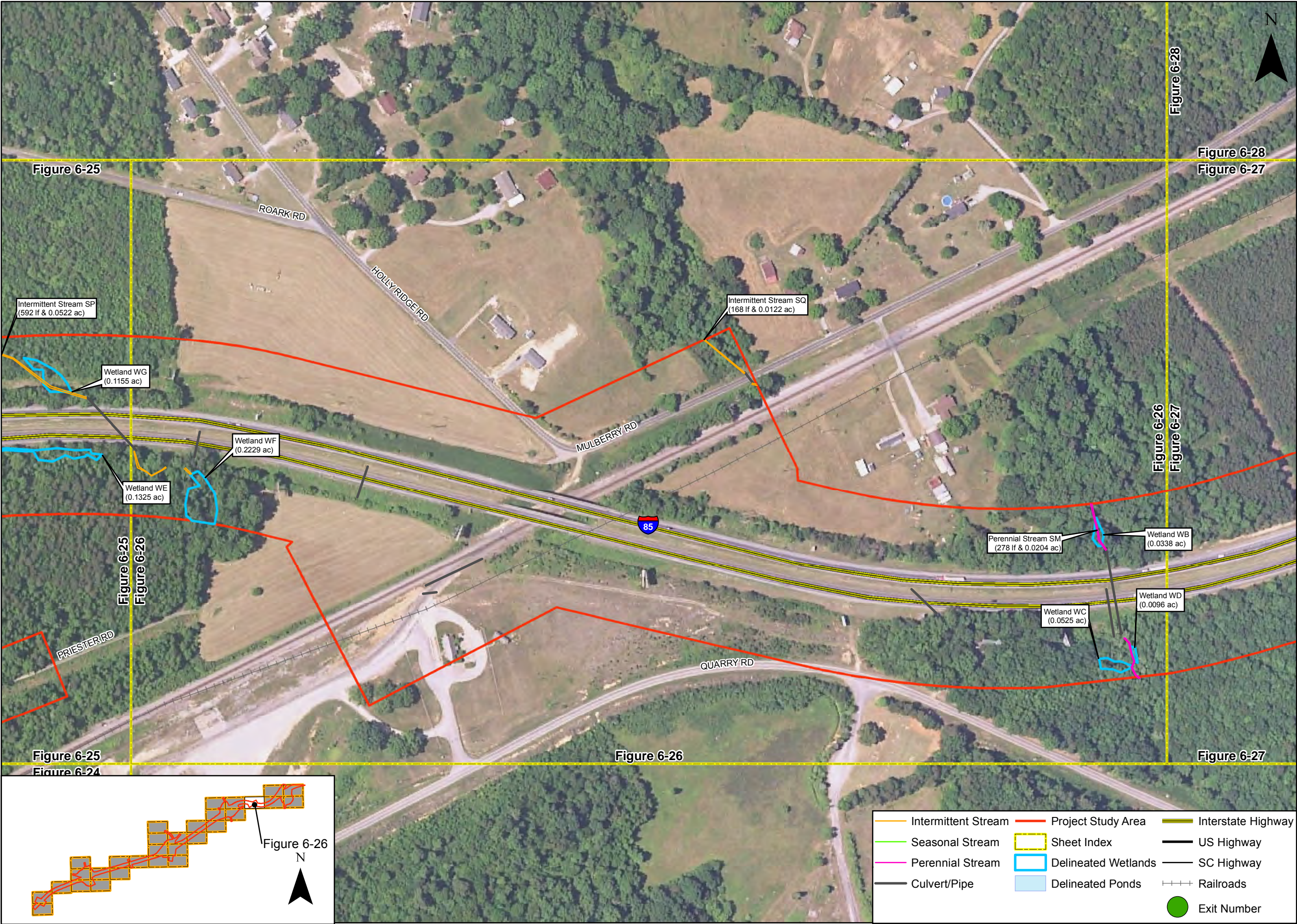
Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-26





Prepared For:

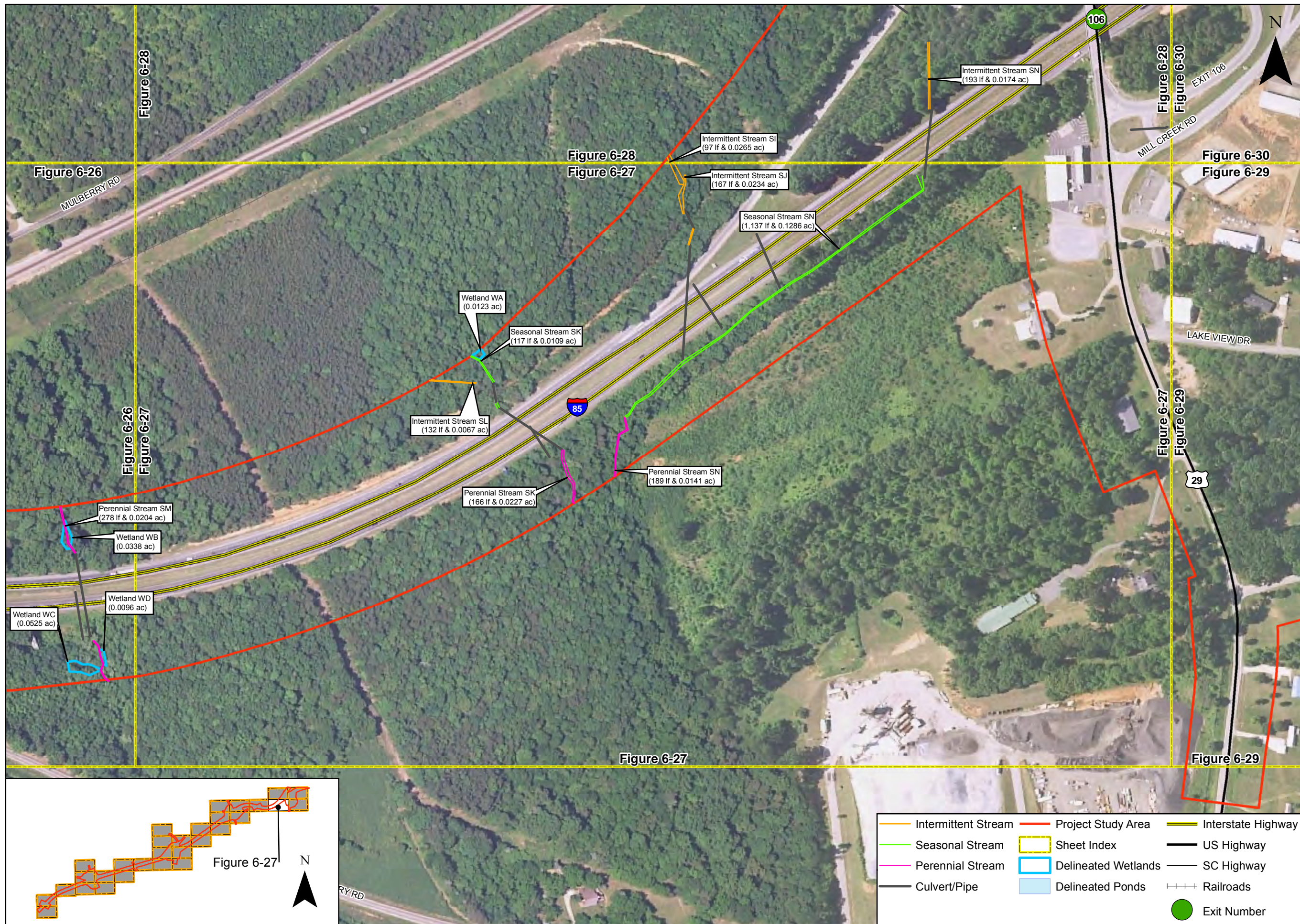


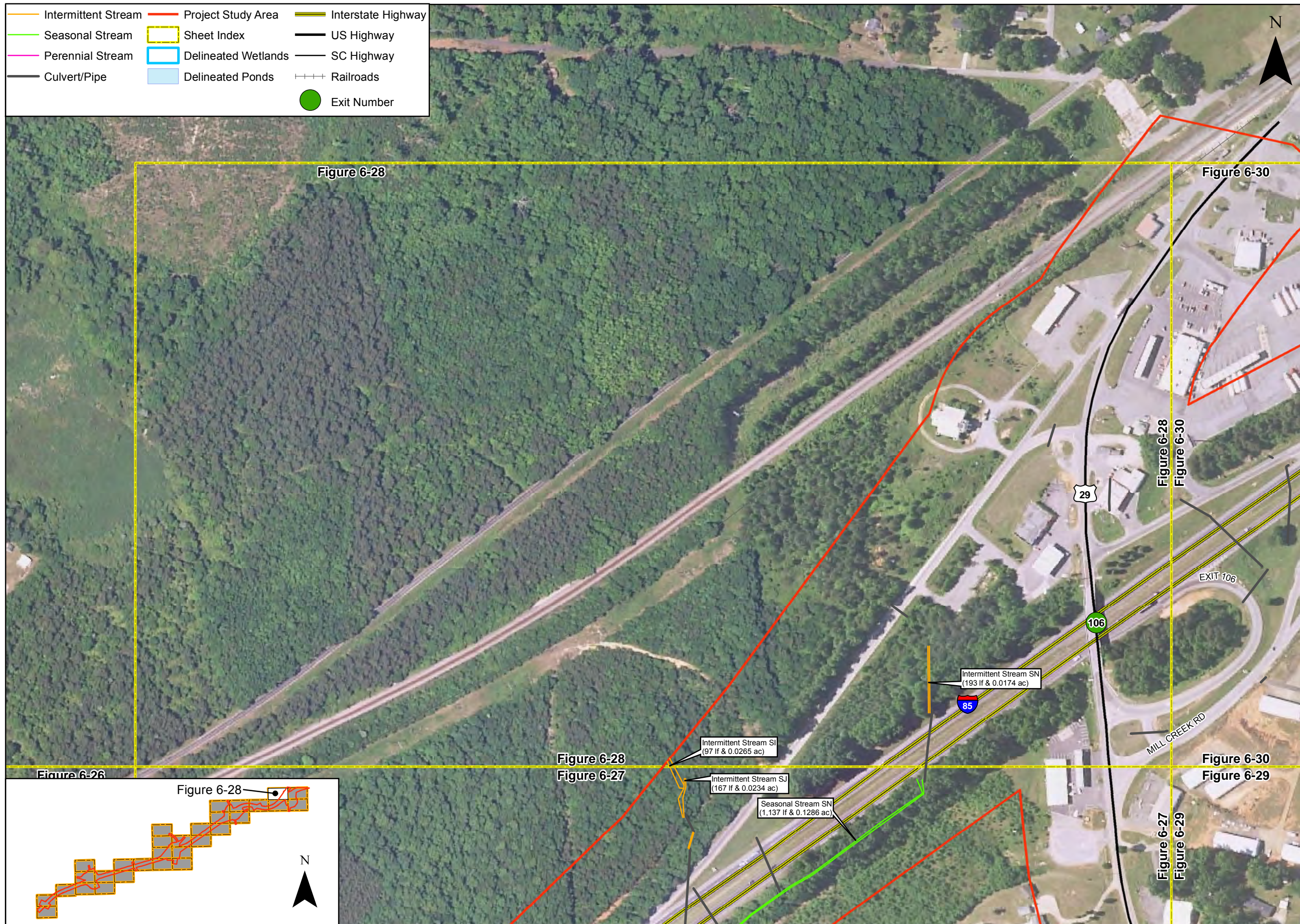
**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date:	November 2016		
Scale:	0	100	200 Feet
Job No.:	6214		
Drawn By:	KMS	Checked By:	CS

Figure
6-27





Prepared For:



Proposed I-85 Widening and Interchange Improvements Project (Mile Marker 96 to 106) Delineated Features

Cherokee County,
South Carolina

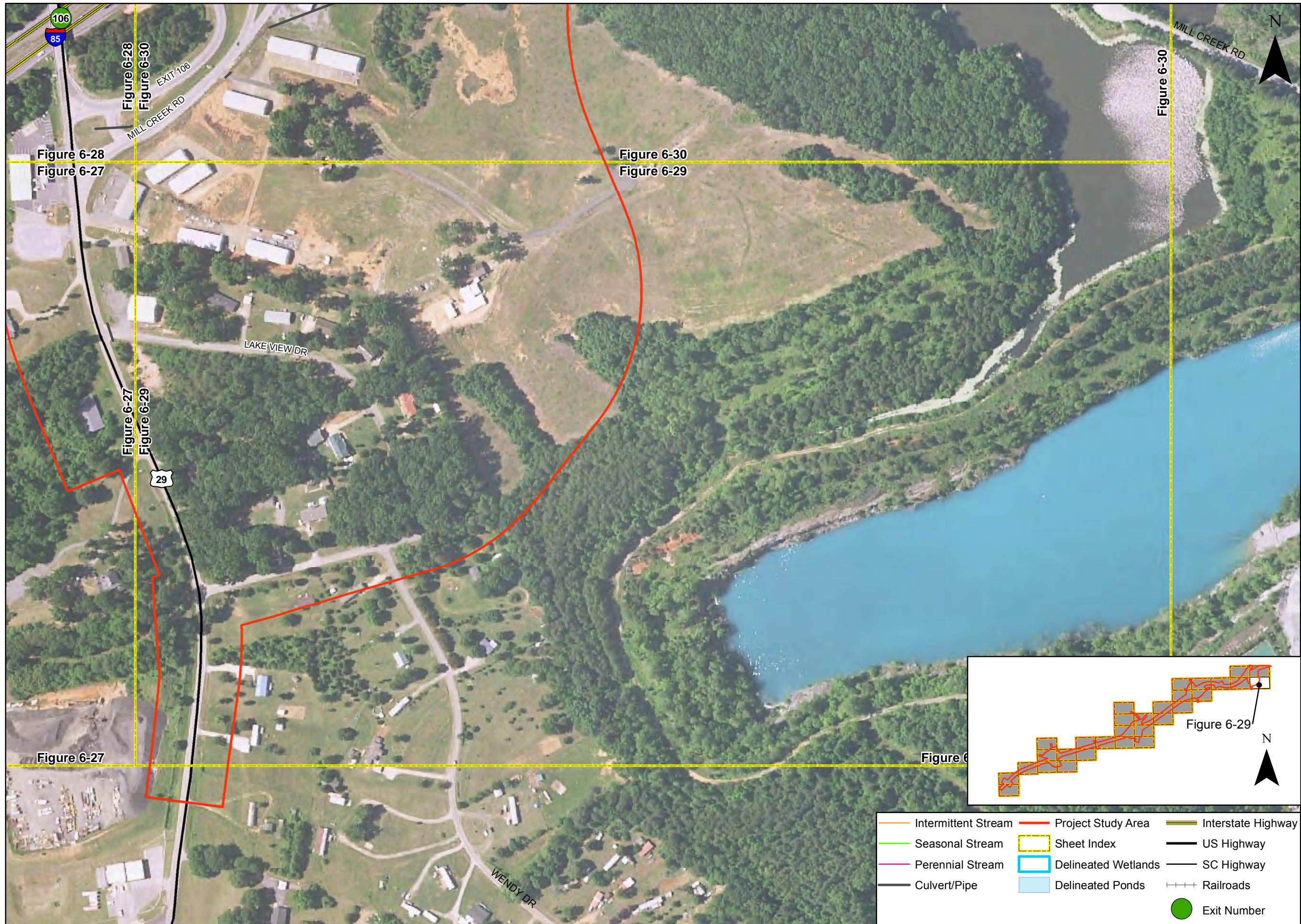
Date: November 2016

Scale: 0 100 200 Feet

Job No.:	6214
----------	------

Drawn By: KMS	Checked By: CS
------------------	-------------------

Figure
6-28



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date: November 2016

Scale: 0 100 200 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
6-29



Prepared For:

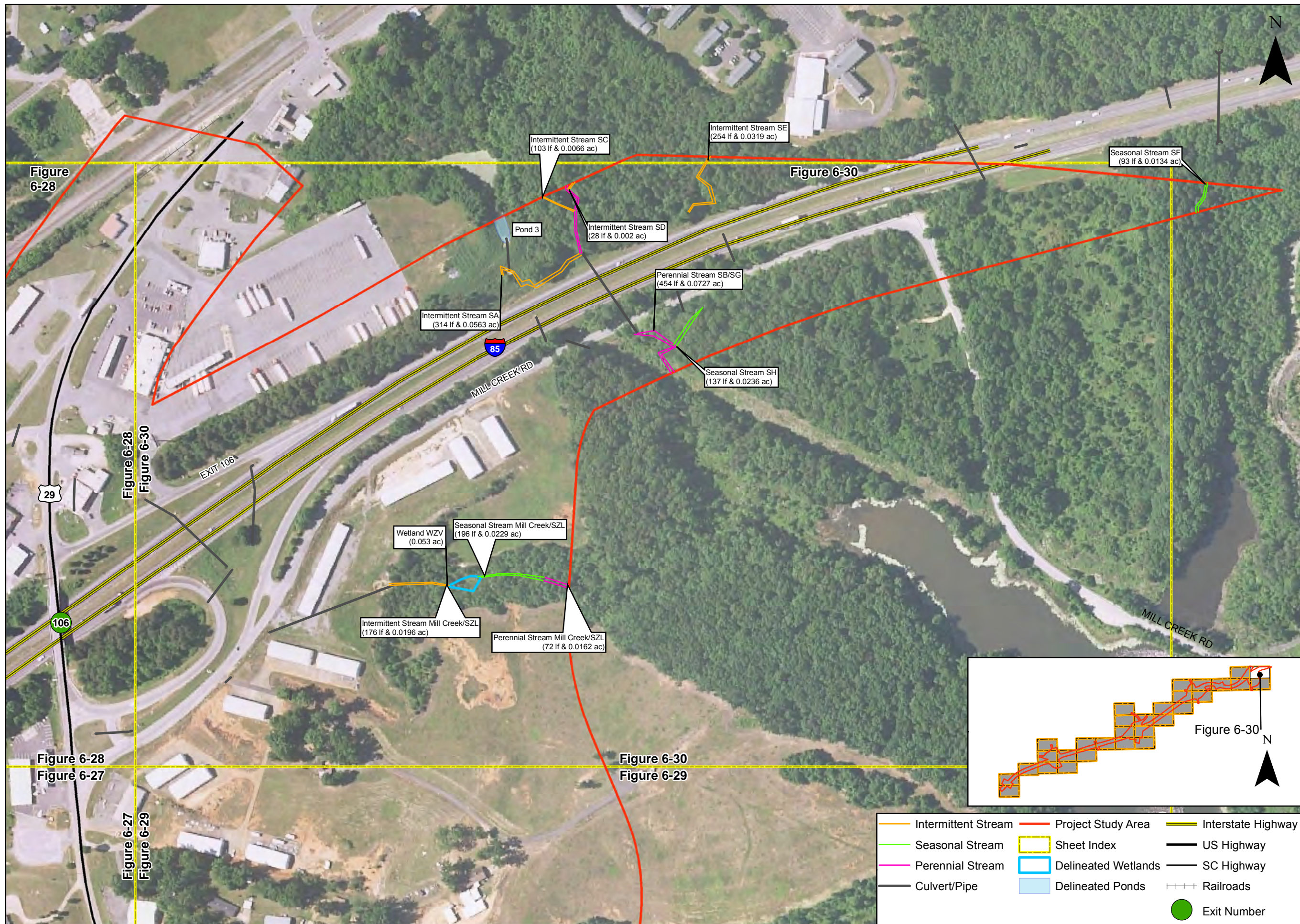


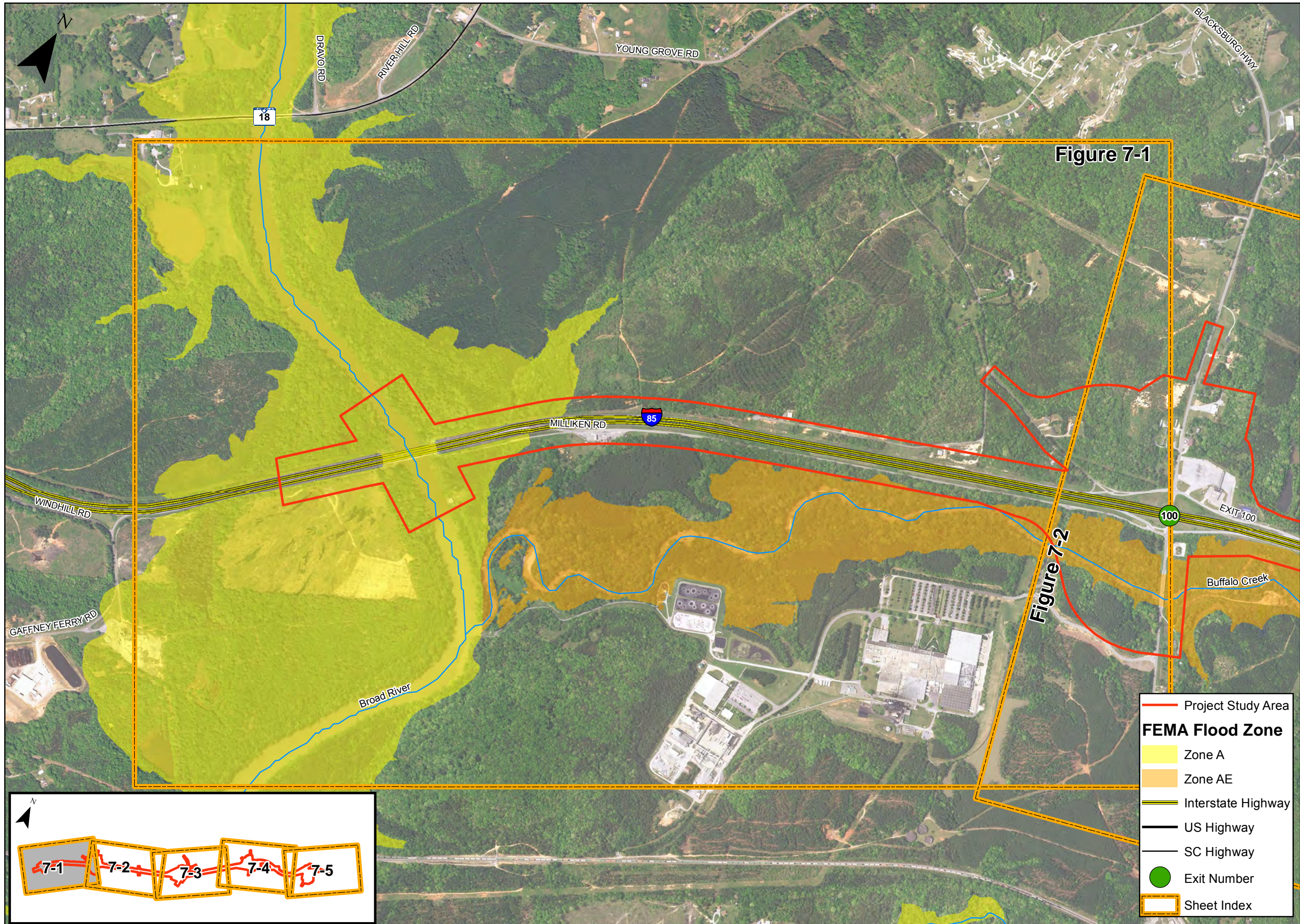
**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Delineated
Features

Cherokee County,
South Carolina

Date:	November 2016
Scale:	0 100 200 Feet
Job No.:	6214
Drawn By:	Checked By:
KMS	CS

Figure
6-30





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

**FEMA 100-Year
Floodplain Map**

**Cherokee County,
South Carolina**

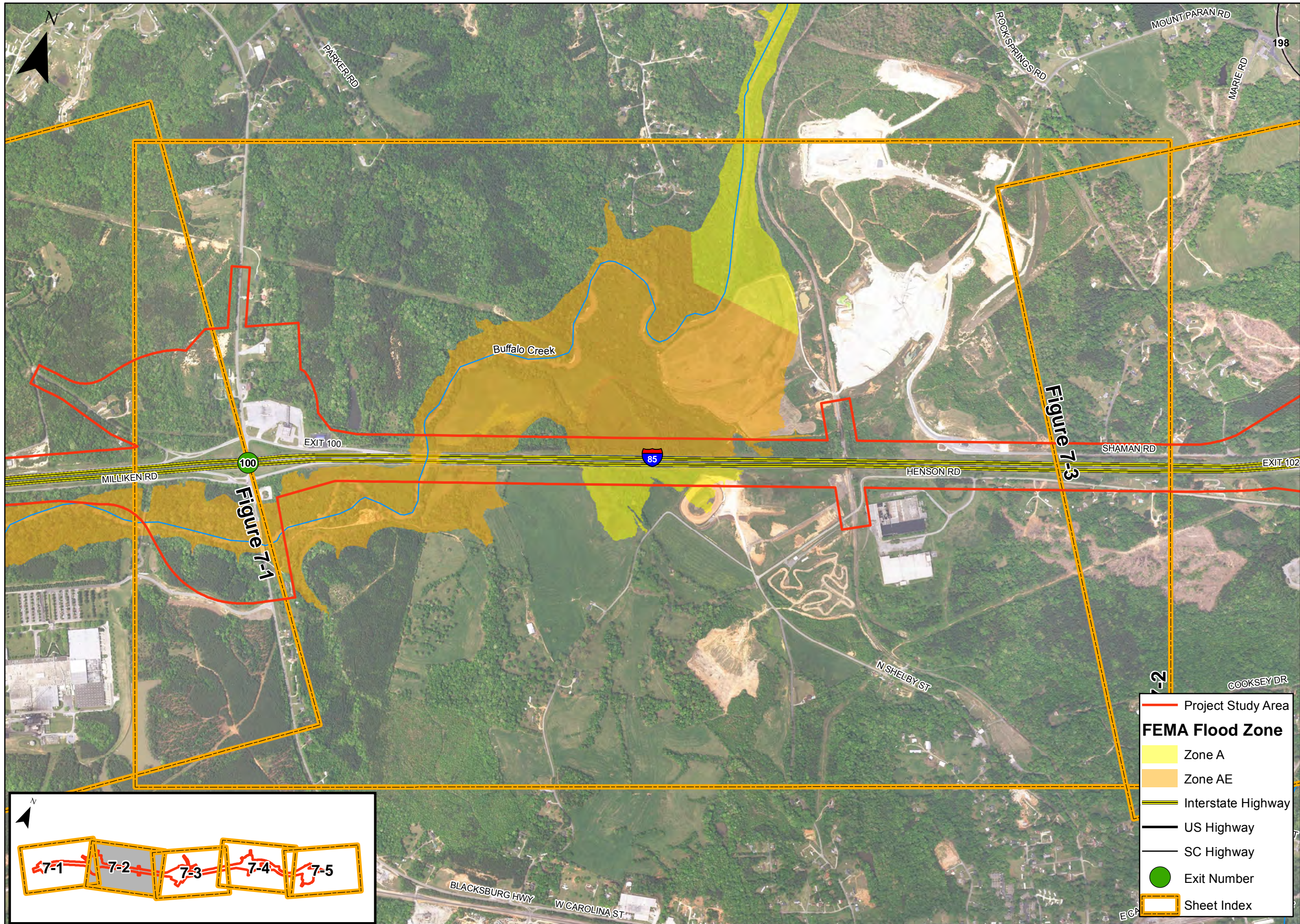
Date: November 2016

Scale: 0 500 1,000 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

**Figure
7-1**



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

**FEMA 100-Year
Floodplain Map**

**Cherokee County,
South Carolina**

Date: November 2016

Scale: 0 500 1,000 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
7-2



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

FEMA 100-Year
Floodplain Map

Cherokee County,
South Carolina

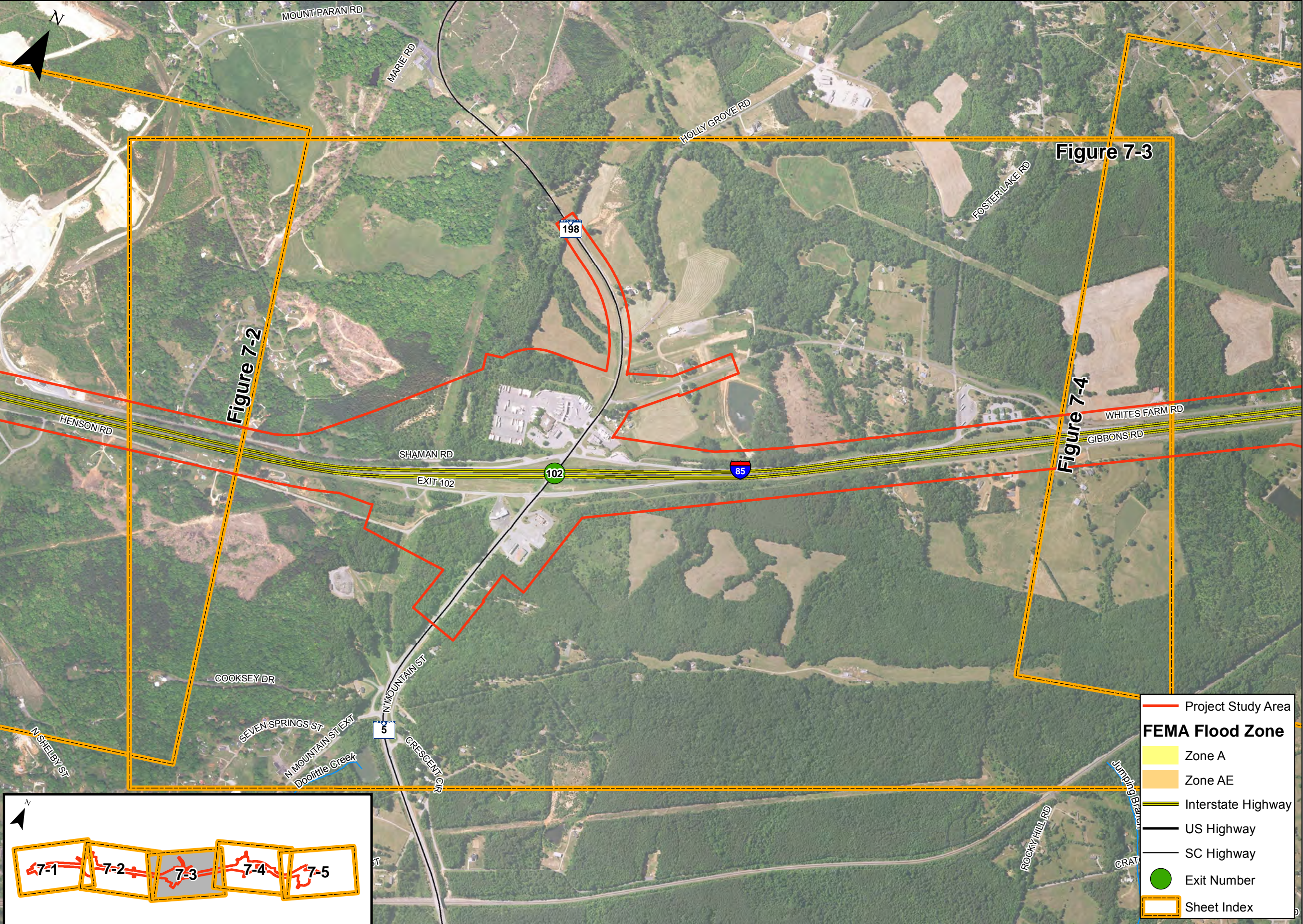
Date:
November 2016

Scale:
0 500 1,000 Feet

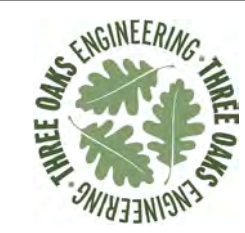
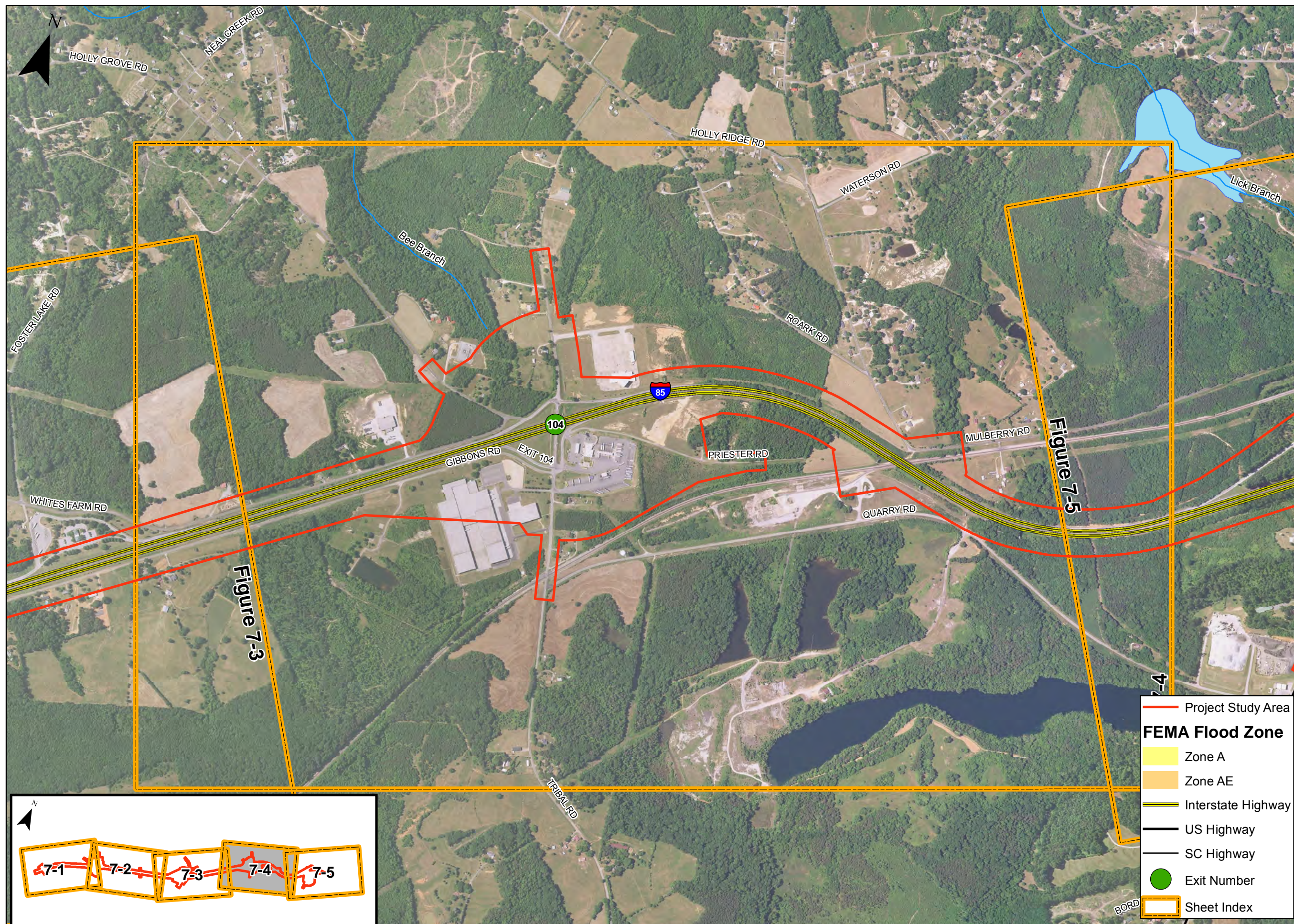
Job No.:
6214

Drawn By: KMS
Checked By: CS

Figure
7-3



- Project Study Area
- FEMA Flood Zone
 - Zone A
 - Zone AE
- Interstate Highway
- US Highway
- SC Highway
- Exit Number
- Sheet Index



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

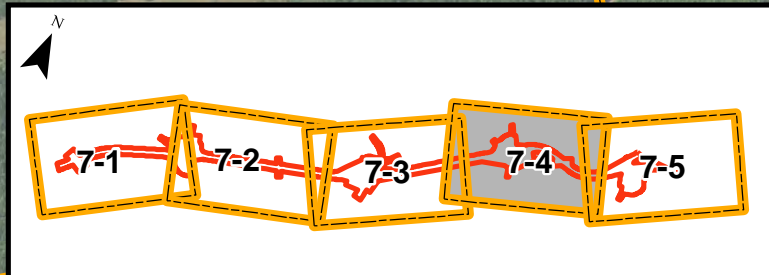
**FEMA 100-Year
Floodplain Map**

**Cherokee County,
South Carolina**

Date:	November 2016	
Scale:	0 500 1,000 Feet	
Job No.:	6214	
Drawn By:	KMS	Checked By: CS

Figure
7-4

- Project Study Area
- FEMA Flood Zone**
- Zone A
- Zone AE
- Interstate Highway
- US Highway
- SC Highway
- Exit Number
- Sheet Index





Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**

FEMA 100-Year
Floodplain Map

Cherokee County,
South Carolina

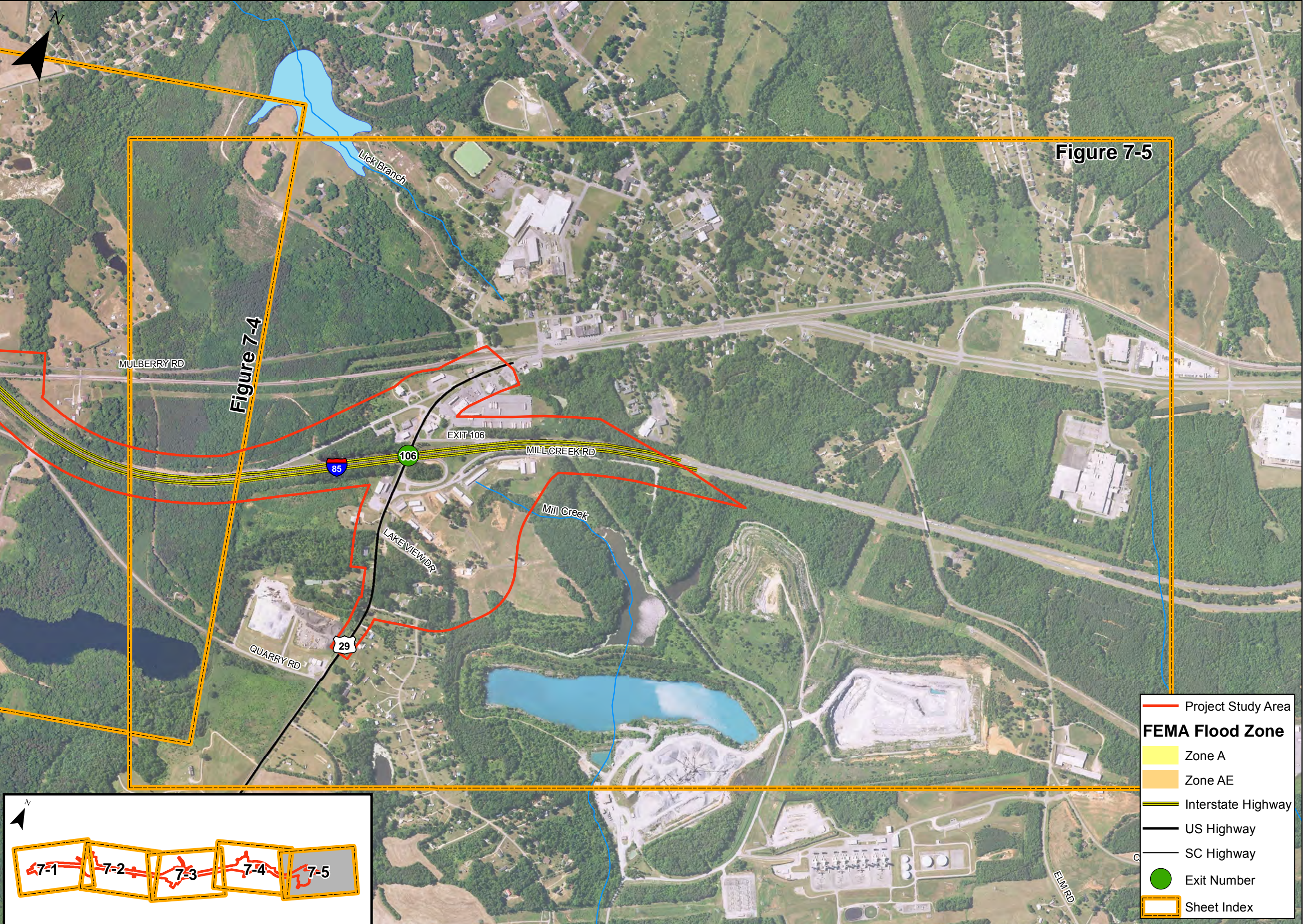
Date:
November 2016

Scale:
0 500 1,000 Feet

Job No.:
6214

Drawn By: KMS
Checked By: CS

Figure
7-5



- Georgia Aster Location
- Project Study Area
- Interstate Highway
- Intermittent Stream
- Seasonal Stream
- Perennial Stream
- Culvert/Pipe
- Sheet Index
- Delineated Wetlands
- Delineated Ponds
- US Highway
- SC Highway
- Railroads
- Exit Number



Prepared For:



**Proposed I-85
Widening and
Interchange
Improvements
Project
(Mile Marker
96 to 106)**
Location of
Georgia Aster

Cherokee County,
South Carolina

Date: December 2016

Scale: 0 40 80 Feet

Job No.: 6214

Drawn By: KMS
Checked By: CS

Figure
8

Appendix B

Scientific Names of Species Listed in Report

Plant Species

Common Name

American Beech
American Black Elderberry
American Hazelnut
American Holly
American Sycamore
Annual Bluegrass
Annual Rye-Grass
Arrowleaf Tearthumb
Autumn-Olive
~
Bahia Grass
Bermuda Grass
Bigleaf Periwinkle
Black Haw
Black Highbush Blueberry
Black Walnut
Black Willow
Blackberry
Blackgum
Blueberry
Box Elder
Bradford Pear
Broad-Leaf Privet
Broomsedge
Bulrush
Cereal Rye
Chestnut Oak
Chinese Privet
Chinese Silvergrass
Chinese Wisteria
Christmas Fern
Cinnamon Fern
Common Cattail
Common Chickweed
Common Dandelion
Common Dog-Fennel
Common Greenbriar
Common Periwinkle
Common Running Cedar
Common Rush
Crane-fly Orchid
Crossvine
Dog Fennel

Scientific Name

Fagus grandifolia
Sambucus canadensis
Corylus americana
Ilex opaca
Platanus occidentalis
Poa annua
Lolium perenne var. *aristatum*
Polygonum sagittatum
Elaeagnus umbellata
Baccharis sp.
Paspalum notatum
Cynodon dactylon
Vinca major
Viburnum prunifolium
Vaccinium fuscatum
Juglans nigra
Salix nigra
Rubus sp.
Nyssa sylvatica
Vaccinium sp.
Acer negundo
Pyrus calleryana
Ligustrum lucidum
Andropogon virginicus
Scirpus cyperinus
Secale cereale
Quercus prinus
Ligustrum sinense
Miscanthus sinensis
Wisteria sinensis
Polystichum acrostichoides
Osmundastrum cinnamomeum
Typha latifolia
Stellaria media
Taraxacum officinale
Eupatorium capillifolium
Smilax rotundifolia
Vinca minor
Diphasiastrum digitatum
Juncus effusus
Tipularia discolor
Bignonea capreolata
Eupatorium capillifolium

Common Name

Downy Poplar
Dwarf-Flowered Heartleaf
Eastern Baccharis
Eastern Cottonwood
Eastern Red Cedar
Ebony Spleenwort
Elm
English Ivy
Fescue
Flowering Dogwood
Giant Cane
Gill-Over-The-Ground
Glossy Privet
Golden Bamboo
Goldenrod
Green Ash
Greenbriar
Hazel Alder
Hickory
Ironwood
Japanese Honeysuckle
Japanese Stiltgrass
Johnson Grass
Kudzu
Laurel Greenbrier
Loblolly Pine
Marsh-Fleabane
Mimosa
Mockernut Hickory
Multiflora Rose
Muscadine Grape
Muscadine Grape
Narrowleaf Cattail
Netted Chain Fern
Northern Red Oak
Orange Jewelweed
Perennial Rye-Grass
Pignut Hickory
Poison Ivy
Possumhaw
Post Oak
Purple Henbit
Purpletop
Red Elm
Red Maple

Scientific Name

Populus heterophylla
Hexastylis naniflora
Baccharis halimifolia
Populus deltoides var. *deltoides*
Juniperus virginiana
Asplenium platyneurons
Ulmus sp.
Hedera helix var. *helix*
Festuca sp.
Cornus florida
Arundinaria gigantea
Glechoma hederacea
Ligustrum lucidum
Phyllostachys aurea
Solidago sp.
Fraxinus pennsylvanica
Smilax sp.
Alnus serrulata
Carya spp.
Carpinus caroliniana
Lonicera japonica
Microstegium vimineum
Sorghum halapense
Pueraria montana var. *lobata*
Smilax laurifolia
Pinus taeda
Pluchea sp.
Albizia julibrissin
Carya tomentosa
Rosa multiflora
Muscadinia rotundifolia var. *rotundifolia*
Vitis rotundifolia
Typha angustifolia
Woodwardia aereolata
Quercus rubra
Impatiens capensis
Lolium perenne var. *perenne*
Carya glabra
Toxicodendron radicans var. *radicans*
Viburnum nudum
Quercus stellata
Lamium aplexicaule var. *aplexicaule*
Tridens flavus
Ulmus rubra
Acer rubrum

<u>Common Name</u>	<u>Scientific Name</u>
River Birch	<i>Betula nigra</i>
Rock Chestnut Oak	<i>Quercus montana</i>
Sedges	<i>Carex sp.</i>
Sensitive Fern	<i>Onoclea sensibilis</i>
Shortleaf Pine	<i>Pinus echinata</i>
Silky Dogwood	<i>Cornus amomum</i>
Slippery Elm	<i>Ulmus rubra</i>
Small Cane	<i>Arundinaria tecta</i>
Smallspike False Nettle	<i>Boehmeria cylindrica</i>
Smartweed	<i>Persicaria sp.</i>
Southern Arrowwood	<i>Viburnum dentatum</i>
Southern Hackberry	<i>Celtis laevigata</i>
Southern Red Oak	<i>Quercus falcata</i>
Southern Wax Myrtle	<i>Myrica cerifera</i>
Sugar Maple	<i>Acer floridanum</i>
Swamp Chestnut Oak	<i>Quercus michauxii</i>
Swamp Rose	<i>Rosa palustris</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Switchcane	<i>Arundinaria tecta</i>
Switchgrass	<i>Panicum virgatum</i>
Tag Alder	<i>Alnus serrulata</i>
Tall Fescue	<i>Festuca arundinaceum</i>
Tall Goldenrod	<i>Solidago altissima</i>
Thorny-Olive	<i>Elaeagnus pungens</i>
Threeway Sedge	<i>Dulichium arundinaceum</i>
Trumpet Vine	<i>Campsis radicans</i>
Tulip Poplar	<i>Liriodendron tulipifera</i>
~	<i>Viburnum sp.</i>
Virginia Creeper	<i>Parthenocissus quinquefolia</i>
Virginia Pine	<i>Pinus virginiana</i>
Virginina Chain Fern	<i>Woodwardia virginica</i>
Water Oak	<i>Quercus nigra</i>
White Clover	<i>Trifolium carolinianum</i>
White Oak	<i>Quercus alba</i>
White Turtlehead	<i>Chelone glabra</i>
Wild Cherry	<i>Prunus serotina</i>
Wild Garlic	<i>Allium vineale</i>
Willow Oak	<i>Quercus phellos</i>
Winged Elm	<i>Ulmus alata</i>

Animal Species

Common Name

Asian Clam
American Bullfrog
American Crow
American Kestrel
American Toad
Belted Kingfisher
Black Racer
Black Rat Snake
Black Vulture
Blue Jay
Bluegill
Bluehead Chub
Carolina Chickadee
Carolina Wren
Channel Catfish
Crayfish
Eastern Bluebird
Eastern Box Turtle
Eastern Cottontail
Eastern Fence Lizard
Eastern Gray Squirrel
Eastern Towhee
Field Sparrow
Five-Lined Skink
Fowler's Toad
Green Frog
Grey Fox
Ground Skink
Largemouth Bass
Marbled Salamander
Northern Cardinal
Northern Copperhead
Northern Dusky Salamander
Northern Water Snake
Raccoon
Redbreast Sunfish
Red-Shouldered Hawk
Red-Tailed Hawk
Snapping Turtle
Spotted Salamander
Spring Peeper
Tufted Titmouse

Scientific Name

Corbicula fluminea
Rana catesbeiana
Corvus brachyrhynchos
Falco sparverius
Bufo americanus
Ceryle alcyon
Elaphe obsoleta
Elaphe obsoleta
Coragyps atratus
Cyanocitta cristata
Lepomis macrochirus
Nocomis leptcephalus
Poecile carolinensis
Thryothorus ludovicianus
Ictalurus punctatus
Cambarus sp.
Sialia sialis
Terrapene carolina
Sylvilagus floridanus
Sceloporus undulatus
Sciurus carolinensis
Pipilo erythrophthalmus
Spizella passerina
Eumeces anthracinus
Bufo woodhousei
Rana clamitans
Urocyon cinereoargenteus
Scincella lateralis
Micropterus salmoides
Ambystoma opacum
Cardinalis cardinalis
Agkistrodon contortrix
Desmognathus fuscus
Nerodia sipedon
Procyon lotor
Lepomis auritus
Buteo lineatus
Buteo jamaicensis
Chelydra serpentina
Ambystoma maculatum
Hyla crucifer
Baeolophus bicolor

Common Name

Turkey Vulture

Virginia Opossum

White Throated Sparrow

White-Tailed Deer

Yellow-Bellied Sapsucker

Yellowbelly Slider

Yellow-Rumped Warbler

Scientific Name*Cathartes aura**Didelphis virginiana**Zonotrichia albicollis**Odocoileus virginianus**Sphyrapicus varius**Chrysemys scripta**Dendroica coronata*

Appendix C

Photographs

Wetland Photos (1-35)


Photo 1 	Title: Wetland WA
	Date: 12/02/2015
	Taken By: Nathan Howell
	Description: Wetland WA is a small floodplain/toe-of-slope wetland located east of Stream SK. Photo taken at flag WA-3 facing northwest.


Photo 2 	Title: Wetland WB
	Date: 12/02/2015
	Taken By: Nathan Howell
	Description: Wetland WB is a small floodplain/toe-of-slope wetland located on both sides of Stream SM. Photo taken at flag WB-3 facing northwest.

Photo 3



Title:
Wetland WC

Date:
12/03/2015

Taken By:
Nathan Howell

Description:
Wetland WC is a seepage slope wetland located west of Stream SM. Photo taken at point WC-10 facing west.

Photo 4



Title:
Wetland WD

Date:
12/03/2015

Taken By:
Nathan Howell

Description:
Wetland WD is a small floodplain/toe-of-slope wetland located east of Stream SM. Photo taken at point WD-3 facing south.

Photo 5



Title:
Wetland WE

Date:
12/03/2015

Taken By:
Nathan Howell

Description:
Wetland WE is a wetland occurring in an old roadside cut on the south side of I-85 between a Love's Travel Stop and an open field north of Priester Rd. A jurisdictional ditch connects Wetland WE to Stream SO. Photo taken at point WE-1 facing southeast.

Photo 6



Title:
Wetland WF

Date:
12/03/2015

Taken By:
Nathan Howell

Description:
Wetland WF is an upland depression wetland located on the south side of I-85 between a Loves Travel Stop and an open field north of Priester Rd. Photo taken at point WF-1 facing southeast.

Photo 7



Title:
Wetland WG

Date:
12/09/2015

Taken By:
Evan Morgan

Description:
Wetland WG is a palustrine forested wetland located on both sides of Stream SP. Photo is taken from point WG-8 looking east towards a powerline right-of-way crossing of the wetland.

Photo 8



Title:
Wetland WH

Date:
12/09/2015

Taken By:
Nathan Howell

Description:
Wetland WH occurs along both sides of Stream SO. Photo is taken at flag WH-2 facing west where the wetland crosses a powerline right-of-way.

Photo 9



Title:
Wetland WDD

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Wetland WDD is a small depressional wetland occurring in a cutover area in the floodplain of the Broad River. Photo is facing northeast at flag WDD-3b.

Photo 10



Title:
Wetland WEE

Date:
12/01/2015

Taken By:
Mary Frazer

Description:
Wetland WEE is a small, isolated wetland found in a floodplain forest. Photo taken facing east at flag WEE-1.

Photo 11



Title:
Wetland WFF

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Wetland WFF receives water from a roadside ditch and a culvert under I-85. It drains into the floodplain of the Broad River, but the drainage would only connect directly to the river under extreme flood conditions. Soil is disturbed; it is probably an old borrow pit. Photo taken facing northeast at flag WFF-6a.

Photo 12



Title:
Wetland WGG

Date:
12/01/2015

Taken By:
Evan Morgan

Description:
Wetland WGG is a palustrine forested wetland located north of I-85 and contained entirely within the PSA. Photo is taken from flag WGG-2A facing northwest.

Photo 13



Title:
Wetland WII

Date:
12/01/2015

Taken By:
Mary Frazer

Description:
Wetland WII is an old ditch leading toward Stream SBB; however, the end of the ditch is dammed up with sediment. Photo taken facing north at flag WII-2.

Photo 14



Title:
Wetland WJJ

Date:
12/03/15

Taken By:
Evan Morgan

Description:
Wetland WJJ is a palustrine, forested wetland located south of I-85 in the floodplain of Buffalo Creek. Photo taken at flag WJJ-1 facing west.

Photo 15



Title:

Wetland WKK

Date:

12/02/2015

Taken By:

Mary Frazer

Description:

Wetland WKK is a small ponded depression with scant vegetation; it is in the floodplain of Buffalo Creek. Photo facing southeast at flag WKK-1.

Photo 16



Title:

Wetland WLL

Date:

12/01/2015

Taken By:

Mary Frazer

Description:

Wetland WLL is a small wetland located in the floodplain of Buffalo Creek. It appears to have been a dug channel due to the adjacent berm. There are no hydric soils to connect it to Wetland WKK. Photo taken facing south at flag WLL-4.

Photo 17



Title:
Wetland WMM

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Wetland WMM is in the floodplain of Buffalo Creek. It is a marginal wetland. Photo taken facing southeast at flag WMM-3.

Photo 18



Title:
Wetland WNN

Date:
12/03/15

Taken By:
Sarah Burton

Description:
Wetland WNN is a small, palustrine, forested wetland located north of I-85 in the uplands between Streams SMM and SQQ. Photo taken at flag WNN-1 facing west.

Photo 19



Title:
Wetland WOO

Date:
12/09/2015

Taken By:
Sarah Burton

Description:
Wetland WOO is a palustrine, forested wetland located south of I-85. The photo was taken at flag WOO-2 facing north.

Photo 20



Title:
Wetland WPP

Date:
12/09/2015

Taken By:
Sarah Burton

Description:
Wetland WPP is located between pastures in a small depression east of Stream SSS. The photo is taken at flag WPP-7 facing south.

Photo 21



Title:
Wetland WQQ

Date:
12/09/2015

Taken By:
Sarah Burton

Description:
Wetland WQQ is in an active pasture and drains to Stream SSS. This photo was taken at flag WQQ-8 and is facing southeast.

Photo 22



Title:
Wetland WRR

Date:
12/09/2015

Taken By:
Sarah Burton

Description:
Wetland WRR is a linear wetland running alongside an access road to a pasture parallel to Stream STT. The photo is taken at flag WRR-1 and is facing east.

Photo 23



Title:
Wetland WSS

Date:
12/10/2015

Taken By:
Sarah Burton

Description:
Wetland WSS is in a large depression found on both sides of Stream DDD. This photo was taken at flag WSS-4 facing north.

Photo 24



Title:
Wetland WTT

Date:
12/15/2015

Taken By:
Sarah Burton

Description:
Wetland WTT is a large forested wetland with areas of standing water. The photo is taken at flag WTT-5 facing southwest.

Photo 25



Title:
Wetland WUU

Date:
12/15/2015

Taken By:
Sarah Burton

Description:
Wetland WUU is in an open area between woodlots. It is located north of I-85 and west of Stream SSS. This photo was taken at flag WUU-12 facing southwest.

Photo 26



Title:
Wetland WVV

Date:
12/15/2015

Taken By:
Sarah Burton

Description:
Wetland WVV is a large wetland that contains some standing water. It is located in a depression next to a utility easement north of I-85. This photo is taken at flag WVV-2 facing north.

Photo 27



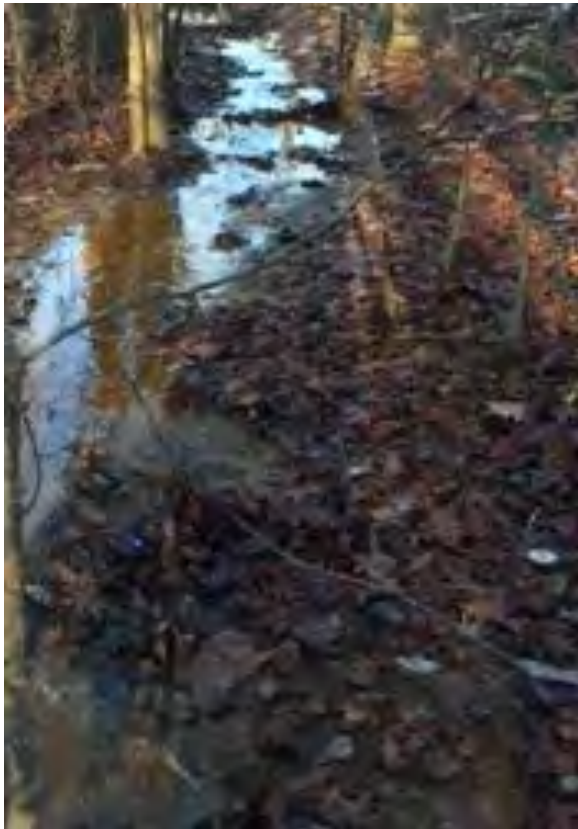
Title:
Wetland WWW

Date:
12/15/2015

Taken By:
Sarah Burton

Description:
Wetland WWW is in a disturbed area with pockets of standing water north of I-85. Stream SHHH is the source of water for this wetland. The photo is taken at flag WWW-1 facing east.

Photo 28



Title:
Wetland WXX

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
Wetland WXX is part of a braided system with Stream SWW located east of Blacksburg Highway. The photo is taken facing southwest at flag WXX-1.

Photo 29



Title:
Wetland WYY

Date:
12/16/15

Taken By:
Chris Sheats

Description:
Wetland WYY is a palustrine, forested wetland located north of I-85. It directly abuts Stream SKKK. Photo was taken at flag WYY-3 facing southeast.

Photo 30



Title:
Wetland WZV

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Wetland WZV is an instream/headwater wetland draining into Mill Creek /SZL located south of Mill Creek Road. The photo is taken at flag WZV-1 facing east.

Photo 31



Title:
Wetland WZW

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Wetland WZW is a toe-of-slope/seep wetland draining into Stream SLLL located north of Rocky Springs Road. The photo is taken facing west at flag WZW-6.

Photo 32



Title:
Wetland WZX

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Wetland WZX is a marginal forested wetland draining into Stream SLLL located north of Rocky Spring Road. The photo is taken at flag WZX-4 facing northwest.

Photo 33



Title:
Wetland WZY

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Wetland WZY is an old farm pond that has been drained; it flows into Stream SKKK located north of Rocky Springs Road. The photo is taken facing northwest at flag WZY-1.

Photo 34



Title:
Wetland WAAA

Date:
10/05/2016

Taken By:
Nathan Howell

Description:
Wetland WAAA is a small, toe-of-slope seepage wetland that drains into Stream SZC located north of I-85. Photo taken at flag WAAA-2 facing southwest.

Photo 35



Title:
Wetland WBBB

Date:
10/05/2016

Taken By:
Nathan Howell

Description:
Wetland WBBB is primarily fed by stream SZN and is contained by an old riprap dam. This system is located behind the Denny's/Flying J off I-85/SC 5. Photo is taken at flag WBBB-1 facing west.

Stream Photos (36-123)

Photo 36



Title:

Broad River

Date:

12/01/15

Taken By:

Evan Morgan

Description:

Broad River is a large, perennial stream that bisects the PSA at the southwest end. Photo taken facing upstream/northwest at flag BR-17.

Photo 37



Title:

Buffalo Creek

Date:

12/09/2015

Taken By:

Sarah Burton

Description:

Buffalo Creek is a perennial stream that passes through the study area in multiple locations near the I-85/Blacksburg Highway interchange. This photo is taken facing downstream near the bridge of I-85 at flag BC-19A.

Photo 38



Title:

Intermittent Stream Mill Creek/ SZL

Date:

9/16/2016

Taken By:

Michael Wood and Hannah Slyce

Description:

Mill Creek originates in the PSA south/east of I-85. This intermittent portion of Mill Creek flows east into Wetland WZV. Photo is taken facing downstream/east at flag SZL-1.

Photo 39



Title:

Seasonal Stream Mill Creek/ SZL

Date:

9/16/2016

Taken By:

Michael Wood and Hannah Slyce

Description:

The seasonal section of Mill Creek flows east from Wetland WZV. This photo is taken facing downstream/east at flag SZM-2.

Photo 40



Title:

Perennial Stream Mill Creek/ SZL

Date:

9/16/2016

Taken By:

Michael Wood and Hannah Slyce

Description:

The perennial portion of Mill Creek originates at a large, 8-foot-high head cut. Photo taken facing downstream/east at flag SZM-4.

Photo 41



Title:

Intermittent Stream SA

Date:

12/01/2015

Taken By:

Nathan Howell

Description:

View of Stream SA origin (headcut) taken at flag SA-9 facing upstream/northwest. Stream is fed by a stormwater pond overflow/drainage pipe.

Photo 42



Title:
Intermittent Stream SA

Date:
12/01/2015

Taken By:
Nathan Howell

Description:
View of Stream SA facing upstream from flag SA-3a located just upstream from the confluence of Streams SA & SB. Streams SA & SB merge and immediately flow into a culvert that runs south under Interstate 85. Photo taken facing west.

Photo 43



Title:
Perennial Stream SB/SG

Date:
12/01/2015

Taken By:
Nathan Howell

Description:
Upstream view of Stream SB taken at flag SB-6. Stream SB is on the north side of I-85. Photo taken facing north.

Photo 44



Title:
Perennial Stream SB/SG

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Upstream view of Steam SG taken from flag SG-1b. This section of Stream SG is located on the south side of I-85. Photo is taken facing north.

Photo 45



Title:
Intermittent Stream SC

Date:
12/01/2015

Taken By:
Nathan Howell

Description:
Upstream view of Stream SC from the confluence of Streams SB & SC at flag SC-1. Stream SC originates from a groundwater seep upstream. Photo taken facing northwest.

Photo 46



Title:
Intermittent Stream SD

Date:
12/01/2015

Taken By:
Nathan Howell

Description:
Downstream view of Stream SD. Stream SD merges with Stream SB north of the confluence of Streams SB & SC. Photo taken facing west at flag SD-2.

Photo 47



Title:
Intermittent Stream SE

Date:
12/01/2015

Taken By:
Nathan Howell

Description:
Upstream view of Stream SE taken from flag SE-4a. Stream SE flows as intermittent surface water to an I-85 roadside ditch. Photo taken facing north.

Photo 48



Title:
Seasonal Stream SF

Date:
12/01/2015

Taken By:
Nathan Howell

Description:
Downstream view of Stream SF taken at flag SF-5a. Stream SF is located at the northeast corner of the PSA. Photo taken facing south.

Photo 49



Title:
Seasonal Stream SH

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Upstream view of Stream SH taken from the confluence of Streams SG & SH at flag SH-1a. Photo taken facing northeast.

Photo 50



Title:
Intermittent Streams SI (left) & SJ
(right)

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Upstream view of Streams SI & SJ
taken at their confluence at flag SI-2b.
Point is located north of the onramp
from Exit 106 (East Cherokee Street).
Photo taken facing north.

Photo 51



Title:
Seasonal Stream SK

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Upstream view of Stream SK taken at flag SK-1a
facing north. Stream SK flows south through the
PSA and into a culvert, which then goes underneath
I-85.

Photo 52



Title:
Perennial Stream SK

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Upstream view of Stream SK from flag SK-8b. Stream SK becomes perennial upon exiting a 3ft culvert on the south side of I-85. Photo taken facing north.

Photo 53



Title:
Intermittent Stream SL

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Downstream view of Stream SL from flag SL-2a. This feature contained leaf litter throughout 100% of the channel/gully and ended without merging with any other permanent or semi-permanent water bodies. Photo taken facing east. Stream is located north of I-85 west of Stream SK.

Photo 54



Title:
Perennial Stream SM

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Downstream view of Stream SM taken at flag SM-1a. Stream SM flows south through Wetland WB and into a culvert, which emerges on the south side of I-85. Photo taken facing south.

Photo 55



Title:
Seasonal Stream SN

Date:
12/02/2015

Taken By:
Nathan Howell

Description:
Downstream view of Stream SN from taken from flag SN-2. Stream SN originates on the north side of I-85 in a small wooded area between the exit 106 off-ramp and I-85. Stream SN enters a culvert on the north side of the interstate and re-emerges on the south side, where it runs parallel with I-85 for several hundred feet. Photo taken facing southwest.

Photo 56



Title:

Seasonal Stream SN

Date:

12/02/2015

Taken By:

Nathan Howell

Description:

Seasonal portion of Stream SN. Photo taken facing upstream/northeast at flag SN-7b.

Photo 57



Title:

Perennial Stream SN

Date:

12/02/2015

Taken By:

Nathan Howell

Description:

Upstream view of the perennial portion of Stream SN taken at flag SN-12a. Stream SN becomes perennial at this flag. Photo taken facing north.

Photo 58



Title:
Intermittent Stream SO

Date:
12/09/2015

Taken By:
Nathan Howell

Description:
Stream SO originates in a hardwood forest north of Priestester Rd and between a Love's Travel Stop to the west and an open field to the east. Stream SO flows north to a roadside ditch that flows to a culvert and re-emerges north I-85. Photo taken at flag SO-9 facing upstream/south.

Photo 59



Title:
Intermittent Stream SP

Date:
12/03/2015

Taken By:
Nathan Howell

Description:
Downstream view of Stream SP from flag SP-5b. Stream SP originates as drainage from Wetland WF, flows north to a roadside culvert, and re-emerges on the north side of I-85 to flow through Wetland WG. Photo taken facing north.

Photo 60



Title:
Intermittent Stream SQ

Date:
12/09/2015

Taken By:
Evan Morgan

Description:
Upstream photo of Stream SQ from flag SQ-2 facing southeast. SQ flows under Mulberry Road from this point and then northwest out of the PSA.

Photo 61



Title:
Intermittent Stream SR

Date:
12/09/2015

Taken By:
Nathan Howell

Description:
Stream SR originates from a roadside stormwater retention area on the south side of I-85. A culvert directs water from the retention area to the north of I-85 (Stream SR origin) during high rainfall events. Photo taken facing downstream/north at flag SR-2a.

Photo 62



Title:
Intermittent Stream SS

Date:
12/09/2015

Taken By:
Evan Morgan

Description:
Photo of Stream SS at origin facing downstream/north at flag SS-1. Stream SS is located to the east of Tribal Road.

Photo 63



Title:
Perennial Stream ST

Date:
12/09/2015

Taken By:
Nathan Howell

Description:
Stream ST originates as groundwater and flows north, parallel to a large pasture. Photo is taken at stream origin facing downstream/northeast at flag ST-1b. Stream ST is located north of Holly Grove Road.

Photo 64



Title:
Intermittent Stream SU

Date:
12/09/2015

Taken By:
Nathan Howell

Description:
Stream SU originates as surface water runoff from an upland slope adjacent to Stream ST. Photo is taken facing upstream/south at flag SU-3. Downstream from this point, SU flows into ST.

Photo 65



Title:
Intermittent Stream SV

Date:
12/09/2015

Taken By:
Nathan Howell

Description:
Stream SV originates from a roadside culvert on the north side of I-85/Holly Grove Road. Stream SV runs through a large pasture and into Stream ST. Significant amounts of trash and large scrap metal are in the channel near its confluence with Stream ST. Photo is taken facing upstream/south at flag SV-3.



<p>Photo 66</p> 	<p>Title: Seasonal Stream SW</p>
	<p>Date: 12/09/2015</p>
	<p>Taken By: Nathan Howell</p>
	<p>Description: Seasonal portion of Stream SW originates from a roadside culvert on the north side of I-85/White Farm Road. Stormwater runoff from I-85, a large commercial business, and the Love's Travel Stop at exit 104 feed Stream SW. Photo taken at flag SW-1 facing downstream/southwest.</p>
<p>Photo 67</p> 	<p>Title: Perennial Stream SW</p>
	<p>Date: 12/09/2015</p>
	<p>Taken By: Nathan Howell</p>
	<p>Description: Perennial portion of Stream SW originates from a roadside ditch between a private business and White Farm Road, west of exit 104 on I-85. Photo is taken at flag SW-7b facing upstream/north.</p>

Photo 68



Title:

Perennial Stream SX/SRRR

Date:

12/09/2015

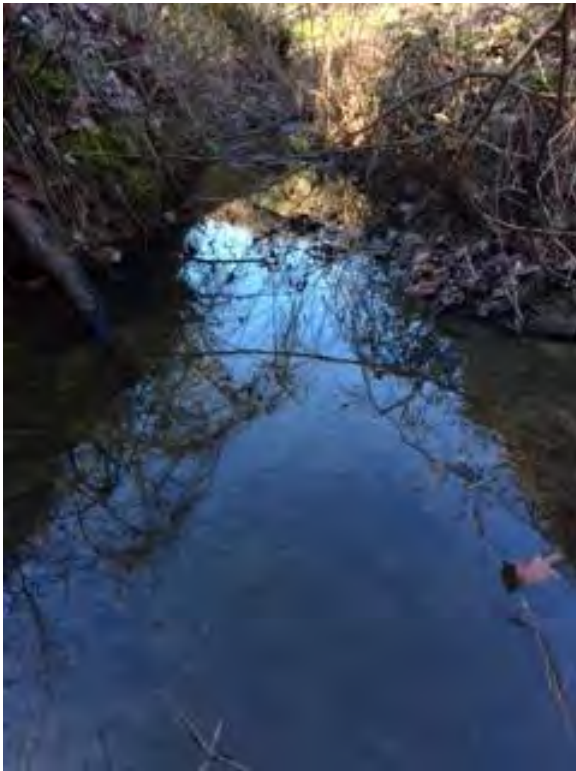
Taken By:

Nathan Howell

Description:

Perennial Stream SX/SRRR originates from a farm pond on the south side of I-85 and flows underneath I-85 via a large, 5-6 ft culvert. Photo is taken facing upstream/south at flag SX-3b.

Photo 69



Title:

Perennial Stream SX/SRRR

Date:

12/16/2015

Taken By:

Sarah Burton

Description:

Stream SX/SRRR originates on the southside of I-85 and collects water from stream SQQQ near a culvert that flows under I-85. This photo was taken at flag SRRR-3 facing downstream/northwest.

Photo 70



Title:

Intermittent Stream SY

Date:

12/09/2015

Taken By:

Nathan Howell

Description:

Stream SY originates from surface water runoff from a steep roadside slope. Photo was taken at flag SY-1, facing downstream/west, where it merges with Stream SX north of White Farm Rd.

Photo 71



Title:

Intermittent Stream SZ

Date:

10/05/2016

Taken By:

Nathan Howell

Description:

Intermittent Stream SZ originates at a small headcut near the summit of a hill and does not flow into any jurisdictional waters. Photo was taken at flag SZ-3 facing upstream/south. Stream SZ is located south of I-85 between SZA to the east and SMMM to the west.

Photo 72



Title:
Perennial Stream SBB

Date:
12/02/2015

Taken By:
Mary Frazer

Description: Stream SBB begins on the northwest side of I-85 and flows under I-85 eventually flowing into Buffalo Creek. The photo is pointing upstream/north at flag SBB-15a.

Photo 73



Title:
Seasonal Stream SCC

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Stream SCC is fed by surface runoff from Frontage Road. It becomes a diffuse braided channel just outside the project study area as it reaches a bottomland forest and the land levels out. The photo points upstream/north at flag SCC-2a.

Photo 74



Title:
Seasonal Stream SDD

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Stream SDD is incised and drains a gulley which collects surface water from Frontage Road south of I-85. Trash and refuse were present. Photo points upstream/north at flag SDD-3a.

Photo 75



Title:
Intermittent Stream SEE

Date:
12/02/15

Taken By:
Evan Morgan

Description:
Stream SEE collects surface water from Frontage Road and is located south of I-85. Photo taken at Flag SEE-3a facing north/upstream.

Photo 76



Title:

Intermittent Stream SFF

Date:

12/02/15

Taken By:

Evan Morgan

Description:

Stream SFF collects surface water from Frontage Road and is located south of I-85. Photo taken at flag SFF-2b facing upstream/north.

Photo 77



Title:

Perennial Stream SGG

Date:

12/02/2015

Taken By:

Mary Frazer

Description:

Stream SGG begins between I-85 and Orlando Drive. It flows south under I-85 and continues into a bottomland area outside the project study area. The photo was taken pointing upstream/north at flag SGG-5b.

Photo 78



Title:
Perennial Stream SHH

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
This stream begins between I-85 and Orlando Drive. It flows south under I-85 and a frontage road and continues outside the project study area. The photo was taken pointing upstream/north at flag SHH-3b.

Photo 79



Title:
Intermittent Stream SII

Date:
12/02/15

Taken By:
Evan Morgan

Description:
Stream SII drains the area around Orlando Drive and I-85, flowing west. Photo taken at flag SII-2a facing downstream/west.

Photo 80



Title:
Intermittent Stream SJJ

Date:
12/02/2015

Taken By:
Evan Morgan

Description:
Stream SJJ forms from roadway runoff with a small culvert as its origin. Stream SJJ is located south of I-85 and Frontage Road. Photo taken facing upstream/north at flag SJJ-1A.

Photo 81



Title:
Seasonal Stream SKK

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Stream SKK originates from Pond 1 and flows south under I-85 and Frontage Road and drains to Buffalo Creek. The photo points upstream/northwest at flag SKK-3b.

Photo 82



Title:
Seasonal Stream SLL

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
The small Stream SLL drains Frontage Road and flows southeast to stream SMM. The photo points upstream/northwest at flag SLL-2b.

Photo 83



Title:
Perennial Stream SMM

Date:
12/02/2015

Taken By:
Mary Frazer

Description:
Stream SMM originates northwest of the I-85/Blacksburg Highway interchange and flows under the interstate and Frontage Road through a 6x6-foot box culvert. It drains to Buffalo Creek. Stream SLL drains into this stream at this photo point. The photo was taken facing upstream/north at flag SMM-8a.

Photo 84



Title:
Seasonal Stream SNN

Date:
12/03/2015

Taken By:
Mary Frazer

Description:
Stream SNN drains to Buffalo Creek near the boundary of the PSA and east of Milliken Road. The photo faces downstream/north at flag SNN-3b.

Photo 85



Title:
Perennial Stream SOO

Date:
12/03/15

Taken By:
Sarah Burton

Description:
Stream SOO is east of Blacksburg Highway and is joined by Stream SPP at this photo point before flowing into Buffalo Creek. Photo taken at flag SOO-2a facing downstream/north.

Photo 86



Title:
Seasonal Stream SPP

Date:
12/03/15

Taken By:
Sarah Burton

Description:
Stream SPP is located east of Blacksburg Highway and flows north to Stream SOO, which continues to join Buffalo Creek. Photo taken at flag SPP-2a facing downstream/north.

Photo 87



Title:
Perennial Stream SQQ

Date:
12/03/15

Taken By:
Evan Morgan

Description:
Stream SQQ flows parallel to Blacksburg Highway south through the PSA to its confluence with Stream SMM. Photo taken at flag SQQ-4b facing upstream/north.

Photo 88



Title:
Perennial Stream SRR

Date:
12/03/15

Taken By:
Evan Morgan

Description:
Stream SRR is located north of Crawford Road and flows east/southeast towards its confluence with Stream SMM. Photo taken at flag SRR-3b facing upstream/west.

Photo 89



Title:
Perennial Stream SSS

Date:
12/09/15

Taken By:
Sarah Burton

Description:
Stream SSS is located between WQQ to the west and Wetland WPP to the east. It flows north through the PSA joining Buffalo Creek outside of the PSA. Photo taken at flag SSS-7a facing downstream/north.

Photo 90



Title:
Seasonal Stream STT

Date:
12/09/2015

Taken By:
Sarah Burton

Description:
Stream STT is adjacent to Wetland WRR and flows from a pasture area to Buffalo Creek. It was created by the development of a roadway through the pasture. This photo was taken at flag STT-1a facing upstream/east.

Photo 91



Title:
Seasonal Stream SUU

Date:
12/09/2015

Taken By:
Sarah Burton

Description:
Stream SUU is located in an active pasture. It flows south to Stream STT, which flows to Buffalo Creek. This photo was taken at flag SUU-1 and is facing upstream/south.

Photo 92



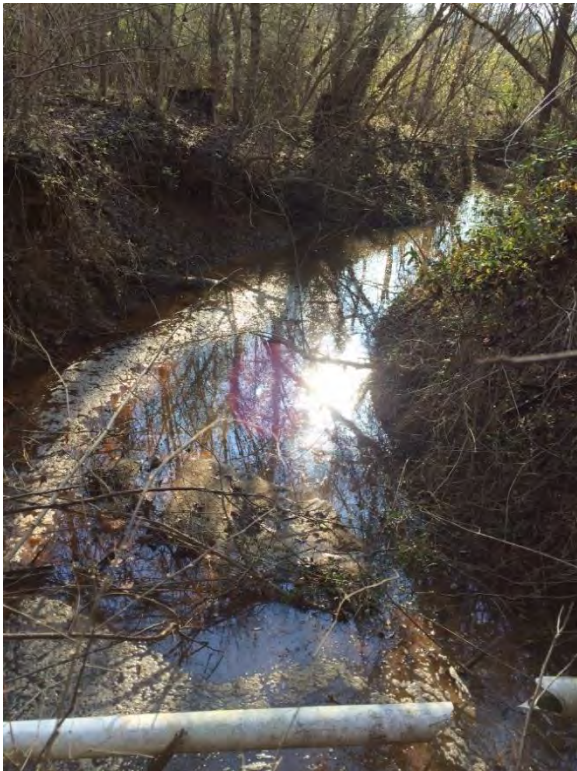
Title:
Intermittent Stream SVV

Date:
12/10/15

Taken By:
Nathan Howell

Description:
Photo taken at flag SVV-1 facing downstream/south.

Photo 93



Title:
Perennial Stream SWW

Date:
12/10/2015

Taken By:
Sarah Burton

Description:
Stream SWW flows to Buffalo Creek after crossing under I-85 via a long culvert. It collects runoff from several parking lots. This photo was taken at flag SWW-22B south of I-85 facing downstream/south.

Photo 94



Title:
Intermittent Stream SXX

Date:
12/10/15

Taken By:
Sarah Burton

Description:
Photo taken at flag SXX-2 facing
downstream/southwest.

Photo 95



Title:
Seasonal Stream SY Y

Date:
12/10/2015

Taken By:
Sarah Burton

Description:
This photo was taken at SY Y-4A facing
upstream/northeast. Stream SY Y is located north of I-
85. It begins with a large head-cut and flows southwest
to Stream SZZ.

Photo 96



Title:
Intermittent Stream SZA

Date:
10/05/2016

Taken By: Nathan Howell

Description:
Stream SZA originates at a small headcut and flows directly into Stream SNNN. This photo was taken at flag SZA-2 facing downstream/northeast.

Photo 97



Title:
Intermittent Stream SZB

Date:
10/05/2016

Taken By:
Nathan Howell

Description:
Stream SZB originates at a small headcut adjacent to I-85 and upslope of Stream SMMM. It flows parallel to I-85 and empties directly into Stream SMMM. This photo was taken at flag SZB-2 facing upstream/west.

Photo 98

Title:
Perennial Stream SZC

Date:
10/05/2016

Taken By: Nathan Howell

Description:
Stream SZC originates from the same culvert as Stream SMMM on the north side of I-85. Both flow into a small ponded area downstream of the culvert and then diverge into two separate streams. This ponded area is the result of the omission of a culvert while constructing a dirt road over Stream SZC. Downstream/north of the dirt road, Stream SZC receives seepage from the above mentioned ponded area and flows toward a farm pond. This photo was taken at flag SZC-2 facing upstream/south.

Photo 99

Title:
Seasonal Stream SZD

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Stream SZD is located between Milliken Road to the west and Blacksburg Highway to the east. It flows out of Wetland WZZ to the floodplain of Buffalo Creek. Once in the floodplain it loses its stream characteristics and ceases to be a stream before reaching Buffalo Creek. Photo taken at flag SZZ-4 facing downstream/north.

Photo 100



Title:
Intermittent Stream SZN

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Stream SZN originates in a forested area north of I-85 behind the Flying J/Denny's rest stop. It flows west. This photo was taken at flag SZN-2 facing downstream/southwest.

Photo 101



Title:
Perennial Stream SZN

Date:
10/05/2016

Taken By:
Nathan Howell

Description:
This perennial portion of Stream SZN begins abruptly at a large headcut (point SZN-3). This photo was taken at flag SZN-4 facing upstream/east.

Photo 102



Title:
Intermittent Stream SZQ

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Stream SZQ is an intermittent stream near Stream SFFF. Photo was taken at SZQ-1 facing downstream/north.

Photo 103



Title:
Seasonal Stream SZZ

Date:
12/10/15

Taken By:
Sarah Burton

Description:
Stream SZZ flows south through the PSA and under I-85 to its confluence with Buffalo Creek. Photo taken at flag SZZ-2b facing downstream/south.

Photo 104



Title:
Intermittent Stream SAAA

Date:
12/10/2015

Taken By:
Evan Morgan

Description:
Photo is taken facing upstream/east from flag SAAA-2. Stream SAAA forms from channelized surface runoff and directly flows into adjacent Buffalo Creek.

Photo 105



Title:
Intermittent Stream SB BB

Date:
12/10/2015

Taken By:
Evan Morgan

Description:
This is an intermittent stream that forms from roadway runoff. Stream SB BB is located south of I-85 and service road. Photo taken facing downstream/south at flag SB BB-1. Stream SB BB runs directly in to Buffalo Creek.

Photo 106



Title:
Seasonal Stream SCCC

Date:
12/10/2015

Taken By:
Sarah Burton

Description:
At some point after the perennial portion of Stream SCCC leaves the PSA it is downgraded to a seasonal stream. The seasonal portion of Stream SCCC flows south out of the study area near a utility easement. This photo was taken at flag SCCC-3B facing downstream/west.

Photo 107



Title:
Perennial Stream SCCC

Date:
9/16/2016

Taken By:
Michael Wood and Hannah Slyce

Description:
Stream SCCC originates as a perennial stream at a spring east of SC Highway 5. Photo was taken at flag SZY-4 facing upstream/east. It flows out of the PSA and is downgraded to a seasonal stream before reentering the PSA south of Henson Road.

Photo 108



Title:
Intermittent Stream SDDD

Date:
12/10/2015

Taken By:
Evan Morgan

Description:
Photo is taken from flag SDDD-1 facing downstream/northwest.

Photo 109



Title:
Seasonal Stream SDDD

Date:
12/10/2015

Taken By:
Sarah Burton

Description:
Stream SDDD begins as intermittent stream but changes to seasonal at flag SDDD-4. It flows to I-85 and becomes a braided channel surrounded by Wetland WSS. This photo was taken at flag SDDD-6A facing downstream/southwest.

Photo 110



Title:
Intermittent Stream SEEE

Date:
12/10/2015

Taken By:
Evan Morgan

Description:
Photo is taken from flag SEEE-1 facing downstream/northeast towards SCCC culvert under I-85. This is an intermittent stream that forms from runoff from the roadway and a small horse field to the right of the fence in the photo.

Photo 111



Title:
Intermittent Stream SFFF

Date:
12/10/15

Taken By:
Sarah Burton

Description:
Photo taken at the stream origin at flag SFFF-3 facing downstream/west.



<p>Photo 112</p> 	<p>Title: Seasonal Stream SGGG</p> <p>Date: 12/15/2015</p> <p>Taken By: Sarah Burton</p> <p>Description: Stream SGGG forms from Wetland WTT and flows west to Buffalo Creek. The photo was taken at flag SGGG-6A facing downstream/west.</p>
<p>Photo 113</p> 	<p>Title: Seasonal Stream SHHH</p> <p>Date: 12/15/2015</p> <p>Taken By: Sarah Burton</p> <p>Description: This photo was taken at flag SHHH-2 facing downstream/north. The water source of stream SHHH comes from a pipe failure. During a site visit, water was observed flowing out of the pipe, creating the stream. This stream is the source for wetland WWW. Stream SHHH is only about 40 feet in length.</p>

Photo 114



Title:
Perennial Stream SIII

Date:
12/15/2015

Taken By:
Sarah Burton

Description:
Stream SIII flows west under a railroad bridge, eventually depositing into Buffalo Creek and can be seen on USGS topography maps. This photo was taken at flag SIII-4 facing upstream/east.

Photo 115



Title:
Seasonal Stream SJJJ

Date:
12/15/2015

Taken By:
Sarah Burton

Description:
This stream flows to stream SIII, upstream of the railroad bridge, which then deposits into Buffalo Creek. A head-cut with groundwater flowing out was observed. This photo was taken at flag SJJJ-2 facing upstream/east.

Photo 116



Title:
Seasonal Stream SKKK

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
Stream SKKK I located north of Rocky Springs Road. This stream flows west/northwest. Wetland WYY is directly connected to the stream and downstream of this photo point SKKK flows into Wetland WZY. This photo was taken at flag SKKK-2A facing downstream/west.

Photo 117



Title:
Perennial Stream SLLL

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
This stream is fed by an outflow pipe of from Wetland WZY. From flag SLLL-8 to flag SLLL-11 concrete was laid creating a more stable channel. At flag SLLL-11 is a massive head-cut. This photo was taken at flag SLLL-3 facing downstream/south. Wetlands WZX and WZW are also adjacent to SLLL downstream of this photo point.

Photo 118



Title:
Perennial Stream SMMM

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
Stream SMMM flows north under I-85 to a pond outside of the study area. This photo was taken at flag SMMM-1a facing upstream/south.

Photo 119



Title:
Perennial Stream SNNN

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
Stream SNNN flows north under I-85 and connects with stream SOOO north of the study area. The picture is taken at flag SNNN-1 facing upstream/north.

Photo 120



Title:
Perennial Stream SOOO

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
Stream SOOO joins with SNN outside of the study area. A portion of Stream SOOO is in full sunlight. This photo was taken at flag SOOO-1 facing downstream/north.

Photo 121



Title:
Perennial Stream SPPP

Date:
12/16/15

Taken By:
Sarah Burton

Description:
Stream SPPP flows from the outflow of Pond 2 to its confluence with Stream SMMM. Photo taken at flag SPPP-2 facing downstream/northeast.

Photo 122



Title:
Perennial Stream SQQQ

Date:
12/16/2015

Taken By:
Sarah Burton

Description:
Stream SQQQ is shown on USGS topography maps. Its source is a pond located outside of the PSA. Stream SQQQ flows to Stream SRRR. This photo was taken at flag SQQQ-2 facing upstream/south.

Photo 123



Title:
Seasonal Stream SSSS

Date:
12/16/2015

Taken By: Chris Sheats

Description:
View of Stream SSSS from its origin (headcut) at flag SSSS-2 facing downstream/southwest. This is a short seasonal stream before converging with Stream SX/SRRR.

Appendix D

Qualifications of Investigators

Investigator:	Michael G. Wood, LSS #1219
Education:	M.S. Soil Science, University of Rhode Island, 1996 B.S. Recreation Management, University of Vermont, 1986
Experience:	Principal/Soil Scientist, Three Oaks Engineering, 2015 - present President/Soil Scientist, The Catena Group, 1997 – 2015 Environmental Specialist, NCDOT, 1996 - 2001 Soil Scientist, North Carolina Division of Coastal Management, 1995 - 1996
Responsibilities:	T/E species assessment
Investigator:	Chris Sheats, PWS
Education:	B.S. Botany, North Carolina State University, 2002
Experience:	Environmental Scientist, Three Oaks Engineering, 2015 - present Environmental Scientist, The Catena Group 2005 - 2015 Staff Scientist, Arcadis G&M, 2003 - 2005
Responsibilities:	Wetland and stream delineations, stream assessment, and community determinations
Investigator:	Kate Montieth Sevic
Education:	M.S. Environmental Sciences, University of Rhode Island, 2004 B.A. Biology, Reed College, 2000
Experience:	Environmental Scientist, Three Oaks Engineering, 2015 - present Environmental Specialist and Graphics Coordinator, The Catena Group, 2004-2015
Responsibilities:	Document preparation and GIS
Investigator:	John Roberts, LSS #1292
Education:	M.S. Soil Science, North Carolina State University, 2005 B.S. Natural Resources, North Carolina State University, 2001
Experience:	Environmental Scientist, Three Oaks Engineering, 2015 - present Licensed Soil Scientist, The Catena Group 2010 - 2015 Licensed Soil Scientist, Hal Owen & Associates, 2005 - 2010
Responsibilities:	Wetland and stream delineations
Investigator:	Mary Frazer
Education:	M.E.M. (Master of Environmental Management), Resource Ecology, Duke University, 1991 B.S. Zoology, University of Wisconsin, 1988
Experience:	Environmental Specialist, Three Oaks Engineering, July 2015-present Environmental Program Consultant, NCDOT, 2000-2015 Environmental Specialist, Wisconsin Coastal Management Program, 1996-2000 Water Regulation Specialist, Wisconsin Department of Natural Resources, 1994-1996 Biologist, Soil and Environmental Consultants, 1992-1994
Responsibilities:	Wetland and stream delineations, natural community assessment, T/E species assessment
Investigator:	Evan Morgan
Education:	B.S. Environmental Science, Virginia Tech, 2014\
Experience:	Environmental Scientist, Three Oaks Engineering, 2015 - present Environmental Scientist, The Catena Group March 2015 – April 2015 Environmental Specialist I, Virginia Department of Environmental Quality, June 2014 - December 2014
Responsibilities:	Wetland and stream delineations

Investigator:	Nathan Howell
Education:	B.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2013 M.S. Plant and Microbial Biology, North Carolina State University, 2015
Experience:	Environmental Scientist, Three Oaks Engineering, October 2015 - present
Responsibilities:	Wetland and stream delineations and T/E species assessment
Investigator:	Hannah Slyce
Education:	B.S. Environmental Science, University of South Carolina, 2016
Experience:	Environmental Scientist, Three Oaks Engineering, May 2016- present
Responsibilities:	Wetland and stream delineations, T/E species assessment
Investigator:	Sarah Burton
Education:	B.S. Biology: Natural Resources, Central Michigan University, 2013
Experience:	Environmental Scientist, Three Oaks Engineering, 2015 - present Environmental Scientist, The Catena Group, March 2015 - April 2015 Field Technician, Duke University, May 2014- Nov 2014 Biological Intern, University of Florida, Oct 2013-April 2014
Responsibilities:	Wetland and stream delineations

Appendix E

Data Sheets

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / E-85 City/County: Cherokee Sampling Date: 12/02/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WA-2 (wet)
 Investigator(s): N. Howell / S. Roberts Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): Floodplain / TOS Local relief (concave, convex, none): flat - slightly concave Slope (%): 0
 Subregion (LRR or MLRA): LRRP Lat: 35.16177 Long: -81.458139 Datum: NAD-83
 Soil Map Unit Name: ImD2-Tatum very fine sandy loam 10-15% eroded NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" 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 checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (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)		<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 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 type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>9</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u>	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: <u>Unusually wet few months</u>		

6214/I-85

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

Sampling Point: WA-Z (wet)

Tree Stratum (Plot size: <u>40x5/5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Acer rubrum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>25</u> <u>50</u> = Total Cover 20% of total cover: <u>10</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>5/5m</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Quercus nigra</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. <u>Corylus americana</u>	<u>3</u>	<u>No</u>	<u>FACU</u>	
3. <u>Liquidambar styraciflua</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	
4. <u>Ligustrum sinense</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
50% of total cover: <u>8</u> <u>16</u> = Total Cover 20% of total cover: <u>3.2</u>				
Herb Stratum (Plot size: <u>5/5m</u>)				
1. <u>Microstegium vimineum</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Polystichum acrostichoides</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% of total cover: <u>7.5</u> <u>15</u> = Total Cover 20% of total cover: <u>3</u>				
Woody Vine Stratum (Plot size: <u>5/5m</u>)				
1. <u>Lonicera japonica</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: <u>10</u> <u>20</u> = Total Cover 20% of total cover: <u>4</u>				
Remarks: (Include photo numbers here or on a separate sheet.) <u>Plot size reflects small wetland size.</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12-7-15
Applicant/Owner: SCDOT State: SC Sampling Point: WA3 UP
Investigator(s): N. Howell & S. Roberts Section, Township, Range: Grover, NC
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Linear Slope (%): 12
Subregion (LRR or MLRA): LRR-P Lat: 35.161177 Long: -81.458139 Datum: NAD83
Soil Map Unit Name: Tm 02 - Tatum very fine sandy loam, 10-15% eroded NWI classification: —
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks:					
Wetland point taken on foot slope, upland. Photo taken of wetland					

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<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): <input type="text"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6214/I-85

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

Sampling Point: WA-3 UP

Tree Stratum (Plot size: <u>10 m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2. <u>Quercus nigra</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
3. <u>Quercus montana</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71%</u> (A/B)
4. <u>Quercus alba</u>	<u>15</u>	<u>N</u>	<u>FACU</u>	
5. _____				
6. _____				
7. _____				
50% of total cover: <u>85</u> = Total Cover 20% of total cover: <u>17</u>				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: <u>10 m²</u>)				Total % Cover of: _____ Multiply by: _____
1. <u>Juniperus virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	OBL species _____ x 1 = _____
2. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species _____ x 2 = _____
3. <u>Carya tomentosa</u>	<u>10</u>	<u>Y</u>	<u>-</u>	FAC species _____ x 3 = _____
4. _____				FACU species _____ x 4 = _____
5. _____				UPL species _____ x 5 = _____
6. _____				Column Totals: _____ (A) _____ (B)
7. _____				Prevalence Index = B/A = _____
8. _____				Hydrophytic Vegetation Indicators:
9. _____				<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover: <u>20</u> = Total Cover 20% of total cover: <u>4</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5 m²</u>)				Definitions of Four Vegetation Strata:
1. <u>Polytrichum acrostichoides</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
2. <u>Diphasiastrium dilatatum</u>	<u>15</u>	<u>Y</u>	<u>-</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
3. <u>Lonicera japonica</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
4. <u>Ligustrum sinense</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	Woody vine – All woody vines greater than 3.28 ft in height.
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
50% of total cover: <u>37</u> = Total Cover 20% of total cover: <u>7.4</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: <u>5 m²</u>)				
1. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Smilax sp.</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
50% of total cover: <u>10</u> = Total Cover 20% of total cover: <u>2</u>				

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

Wetland vegetation is present but area is not a wetland

Sampling Point: W/A -3 ^{UP}

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: (6214)-I-85 Cherokee City/County: Cherokee Sampling Date: 12/02/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WB-3(wet)
 Investigator(s): N. Howen & S. Roberts Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): Flat / Flood Plain Local relief (concave, convex, none): flat Slope (%): 1-2
 Subregion (LRR or MLRA): LRRP Lat: 35.159644 Long: -81.962089 Datum: NAD83
 Soil Map Unit Name: TmE-Tatum very fine sandy loam NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ☒ No _____

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

Remarks:

Floodplain wetland (small) 10 yds on both sides of creek
 ↓
 Toe of slope

6214/I-85

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

Sampling Point: WB-3 WET

Tree Stratum (Plot size: <u>10m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Acer rubrum</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
2.	<u>Quercus alba</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
7.				
50% of total cover: <u>45</u>		<u>90</u> = Total Cover	20% of total cover: <u>18</u>	
Sapling/Shrub Stratum (Plot size: <u>10m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ligustrum sinense</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
50% of total cover: <u>2.5</u>		<u>5</u> = Total Cover	20% of total cover: <u>1</u>	
Herb Stratum (Plot size: <u>10m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Rubus sp.</u>	<u>10</u>	<u>Y</u>	<u>—</u>
2.	<u>Woodwardia aereolata</u>	<u>203</u>	<u>N</u>	<u>FACW</u>
3.	<u>Polystichum acrosticoideg</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4.	<u>Woodwardia virginica</u>	<u>320</u>	<u>Y</u>	<u>OBL</u>
5.				
6.				
7.				
8.				
9.				
10.				
11.				
50% of total cover: <u>19</u>		<u>38</u> = Total Cover	20% of total cover: <u>7.6</u>	
Woody Vine Stratum (Plot size: <u>10m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
50% of total cover: <u>5</u>		<u>10</u> = Total Cover	20% of total cover: <u>2</u>	

Dominance Test worksheet:	
Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>60</u> (A/B)

Prevalence Index worksheet:	
Total % Cover of:	Multiply by:
OBL species <u>20</u>	x 1 = <u>20</u>
FACW species <u>3</u>	x 2 = <u>6</u>
FAC species <u>60</u>	x 3 = <u>90</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species	x 5 =
Column Totals: <u>133</u> (A)	<u>316</u> (B)
Prevalence Index = B/A = <u>2.38</u>	

Hydrophytic Vegetation Indicators:	
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	

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

Definitions of Four Vegetation Strata:	
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
Woody vine – All woody vines greater than 3.28 ft in height.	

Hydrophytic Vegetation Present?	
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

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

Sampling Point: WB-3 ^{WET}

Sampling Point: WB-3

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <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 checked="" 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"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, 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 148) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | |
- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

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

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12/02/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WB-3 (4P)
 Investigator(s): N. Howell + J. Roberts Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): hillside Local relief (concave, convex, none): convex Slope (%): 1-2
 Subregion (LRR or MLRA): LRR-P Lat: 35.159644 Long: -81.462089 Datum: NAD-83
 Soil Map Unit Name: TWIE-Tatum very fine sandy loam NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

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

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

Remarks:

6214/I-85

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

Sampling Point: WB-340

Tree Stratum (Plot size: 10/10 m)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<i>Acer rubrum</i>	50	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
2.	<i>Quercus alba</i>	30	Y	FACW	Total Number of Dominant Species Across All Strata:	4 (B)
3.					Percent of Dominant Species That Are OBL, FACW, or FAC:	25% (A/B)
4.						
5.						
6.						
7.						
		80 = Total Cover				
50% of total cover: 40		20% of total cover: 16				
Sapling/Shrub Stratum (Plot size: 5/5 m)		Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1.	<i>Prunus serotina</i>	5	Y	FACW	Total % Cover of:	Multiply by:
2.	<i>Nyssa sylvatica</i>	3	Y	FAC	OBL species	x 1 =
3.	<i>Quercus phellos</i>	3	Y	FAC	FACW species	x 2 =
4.					FAC species	x 3 =
5.					FACU species	x 4 =
6.					UPL species	x 5 =
7.					Column Totals:	(A) (B)
8.					Prevalence Index = B/A =	
9.						
		11 = Total Cover				
50% of total cover: 5.5		20% of total cover: 2.2				
Herb Stratum (Plot size: 5/5 m)		Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1.	<i>Rubus</i> sp.	25	Y	-	1 - Rapid Test for Hydrophytic Vegetation	
2.					2 - Dominance Test is >50%	
3.					3 - Prevalence Index is ≤3.0 ¹	
4.					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.					Problematic Hydrophytic Vegetation ¹ (Explain)	
6.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7.					Definitions of Four Vegetation Strata:	
8.					Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9.					Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
10.					Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11.					Woody vine – All woody vines greater than 3.28 ft in height.	
		25 = Total Cover				
50% of total cover: 12.5		20% of total cover: 5				
Woody Vine Stratum (Plot size: 5/5 m)		Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?	
1.					Yes	No <input checked="" type="checkbox"/>
2.						
3.						
4.						
5.						
50% of total cover:		20% of total cover:				

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


WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12/03/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WC-2 (Wet)
 Investigator(s): N. Howell + S. Roberts Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): hillside seep Local relief (concave, convex, none): slightly convex Slope (%): 10
 Subregion (LRR or MLRA): LRR-P Lat: 35.158606 Long: -81.461904 Datum: NAD 83
 Soil Map Unit Name: TmE - tatum very fine sandy loam NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" 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 checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (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):		<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 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 type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>—</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>5</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: <u>Wetland originates from hillside seep</u> 		

6214/I-85

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

Sampling Point: WC-2 (Wd)

Tree Stratum (Plot size: <u>10 X 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carex caroliniana</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2. <u>Platanus occidentalis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3. <u>Liriodendron tulipifera</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 20 = Total Cover
20% of total cover: 8

Sapling/Shrub Stratum (Plot size: <u>10 X 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Alnus serrulata</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
2. <u>Elaeagnus umbellata</u>	<u>5</u>	<u>Y</u>	<u>—</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 2.5 = Total Cover
20% of total cover: 3

Herb Stratum (Plot size: <u>10 X 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Arundinaria tecta</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>
2. <u>Polystichum acrostichoides</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
3. <u>Chelone glabra</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

50% of total cover: 20 = Total Cover
20% of total cover: 5

Woody Vine Stratum (Plot size: <u>10 X 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

50% of total cover: 5 = Total Cover
20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)Total Number of Dominant Species Across All Strata: 8 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

Sampling Point: WLC-2 (wet)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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, MLRA 136)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)
- ___ Red Parent Material (F21) (MLRA 127, 147)

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)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I 85 / 6214 City/County: Cherokee Sampling Date: 12-3-15
 Applicant/Owner: SCDOR State: SC Sampling Point: WC-2 (dry)
 Investigator(s): J. Roberts, N. Howell Section, Township, Range: Greaver, NC
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 10
 Subregion (LRR or MLRA): LRR-P Lat: 35.1581006 Long: -81.461904 Datum: NAD 83
 Soil Map Unit Name: TmE- tatum very fine sandy loam NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <u>Upland point sampled along foot slope, above wetland</u>		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

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

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

Remarks:

6214/I-85

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

Sampling Point: WC-2 (dry)

Tree Stratum (Plot size: <u>10m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>65</u>	<u>Y</u>	<u>FACU</u>
2. <u>Quercus alba</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
4. <u>Quercus macrocarpa</u>	<u>5</u>	<u>N</u>	<u>UPL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
50% of total cover: <u>42.5</u> = Total Cover 20% of total cover: <u>19</u>			
Sapling/Shrub Stratum (Plot size: <u>10m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>
2. <u>Carya tomentosa</u>	<u>10</u>	<u>Y</u>	<u>—</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
50% of total cover: <u>20</u> = Total Cover 20% of total cover: <u>8</u>			
Herb Stratum (Plot size: <u>5m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Allium vineale</u>	<u>2</u>	<u>Y</u>	<u>FACU</u>
2. <u>Polystichum acrostichoides</u>	<u>2</u>	<u>Y</u>	<u>FACU</u>
3. <u>Lonicera japonica</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
50% of total cover: <u>3</u> = Total Cover 20% of total cover: <u>1.2</u>			
Woody Vine Stratum (Plot size: <u>5m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% of total cover: <u>5</u> = Total Cover 20% of total cover: <u>1</u>			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42% (A/B)

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No ☒

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

Sampling Point: WC-2 (dry)

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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, MLRA 136)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)
- ___ Red Parent Material (F21) (MLRA 127, 147)

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)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

12/03/2015

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 11/02/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WP-2 (wet)
 Investigator(s): N. Howell & S. Roberts Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): Stream floodplain / TOS Local relief (concave, convex, none): Flat Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.158099 Long: -81.461708 Datum: NAD 83
 Soil Map Unit Name: TME - tatum very fine sandy loam NWI classification: 1
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	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:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): 2
 Water Table Present? Yes ☒ No ☐ Depth (inches): 3
 Saturation Present? Yes ☒ No ☐ Depth (inches): 5
 (includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

Salamanders Present

6214/I-85

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

Sampling Point: WD-2 (wet)

Tree Stratum (Plot size: 5x5 m)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Salix nigra</i> (50-60 ft tall!)	10	N	OBL	Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2. <i>Liriodendron tulipifera</i>	60	Y	FACW	Total Number of Dominant Species Across All Strata: 6 (B)
3. <i>Fraxinus pennsylvanica</i>	10	N	FACW	Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
4.				
5.				
6.				
7.				
50% of total cover: 40 80 = Total Cover				Prevalence Index worksheet:
20% of total cover: 16				Total % Cover of: Multiply by:
				OBL species 10 x 1 = 10
				FACW species 15 x 2 = 30
				FAC species 10 x 3 = 30
				FACU species 105 x 4 = 420
				UPL species x 5 =
				Column Totals: 140 (A) 490 (B)
				Prevalence Index = B/A = 3.5
Sapling/Shrub Stratum (Plot size: 5x5 m)				Hydrophytic Vegetation Indicators:
1. <i>Platanus occidentalis</i>	5	Y	FACW	1 - Rapid Test for Hydrophytic Vegetation
2. <i>Quercus alba</i>	5	Y	FACU	2 - Dominance Test is >50%
3. <i>Ligustrum sinense</i>	10	Y	FACU	3 - Prevalence Index is ≤3.0 ¹
4.				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5.				Problematic Hydrophytic Vegetation ¹ (Explain)
6.				
7.				
8.				
9.				
50% of total cover: 10 20 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
20% of total cover: 4				Definitions of Four Vegetation Strata:
Herb Stratum (Plot size: 5x5 m)				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
1. <i>Polygonum acrostichoides</i>	15	Y	FACU	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
2.				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
3.				Woody vine – All woody vines greater than 3.28 ft in height.
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
50% of total cover: 7.5 15 = Total Cover				Hydrophytic Vegetation Present? Yes No X
20% of total cover: 3				
Woody Vine Stratum (Plot size: 5x5 in)				
1. <i>Lonicera japonica</i>	10	Y	EAC	
2. <i>Smilax</i> sp.				
3.				
4.				
5.				
50% of total cover: 5 10 = Total Cover				
20% of total cover: 11				
Remarks: (Include photo numbers here or on a separate sheet.)				
Despite absence of hydrophytic vegetation, the area is considered a wetland				

6214/I-85

SOIL

Sampling Point: WD-2/wet

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		
0-5	10YR 4/2	75	7.5YR 4/6	20	C	M	L	oxidized rhizospheres
			10YR 5/3	5	C	M	L	
5-8	10YR 5/3	60	10YR 5/2	15	D	M	CL	
			10YR 5/4	25	C	M	CL	
8-18	10YR 6/2	50	7.5YR 5/8	20	C	PL	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

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)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: ± 85 / 6214 City/County: Cherokee Sampling Date: 12/03/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WD-2(dry)
 Investigator(s): O. Roberts, N. Howell Three Oaks Eng. Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): rise slope Slope (%): 10
 Subregion (LRR or MLRA): LRR-P Lat: 35.158699 Long: -81.461708 Datum: NAD 83
 Soil Map Unit Name: TmE-tatum very fine sandy loam NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks: <u>Wetland occurs at toe of slope. Upland point taken just up slope</u>		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<input 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)

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

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

Remarks:

6214 / I-85

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

Sampling Point: WD-2 (654)

Tree Stratum (Plot size: <u>10 m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>90</u>	<u>Y</u>	<u>FACU</u>
2. <u>Pinus taeda</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
3. <u>Quercus alba</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 50 100 = Total Cover
20% of total cover: 20

Sapling/Shrub Stratum (Plot size: <u>10 m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus alba</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2. <u>Carpinus caroliniana</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 22.5 45 = Total Cover
20% of total cover: 9

Herb Stratum (Plot size: <u>5 m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Polygonum acetoschordis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
2. <u>Lonicera japonica</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

50% of total cover: 30 60 = Total Cover
20% of total cover: 12

Woody Vine Stratum (Plot size: <u>5 m²</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>2</u>	<u>N</u>	<u>FAC</u>
2. <u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

50% of total cover: 6 12 = Total Cover
20% of total cover: 2.4

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)Total Number of Dominant Species Across All Strata: 6 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes _____ No ☒

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12/02/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WE-8 (wet)
 Investigator(s): N. Nowell & S. Roberts Section, Township, Range: Grovet, NC
 Landform (hillslope, terrace, etc.): Roadside cut Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.140078 Long: -81.472137 Datum: NAD 83
 Soil Map Unit Name: GfF-Gullied land, friable materials, 10-35% NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" 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 type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>—</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>7-8</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</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:			

6214/I-85

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

Sampling Point: WE-4 (Wet)

Tree Stratum (Plot size: <u>5x10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3. <u>Liriodendron tulipifera</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
50% of total cover: <u>30</u> 20% of total cover: <u>12</u> <u>60</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>5x10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Viburnum nudum</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>
2. <u>Ligustrum sinense</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3. <u>Vaccinium fuscatum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
4. <u>Acer rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
50% of total cover: <u>30</u> 20% of total cover: <u>12</u> <u>60</u> = Total Cover			
Herb Stratum (Plot size: <u>5x10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
50% of total cover: _____ 20% of total cover: _____ _____ = Total Cover			
Woody Vine Stratum (Plot size: <u>5x10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2. <u>Smilax laurifolia</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% of total cover: <u>5</u> 20% of total cover: <u>2</u> <u>10</u> = Total Cover			

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

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
 Total Number of Dominant Species Across All Strata: 7 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index worksheet:

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

 Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:
☒ Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No _____

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12-3-15
 Applicant/Owner: SCDOT State: SC Sampling Point: WE-8 UP
 Investigator(s): J. Roberts, N. Howell Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Linear Slope (%): 4
 Subregion (LRR or MLRA): LRR-7 Lat: 35.160078 Long: -81.472137 Datum: NAD 83
 Soil Map Unit Name: GfE - Gullied land, friable materials, 10-35% NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/I-85

Upland

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

Sampling Point: WE-9

Tree Stratum (Plot size: <u>10m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Pinus echinata</u>	<u>15</u>	<u>Y</u>	<u>—</u>
2.	<u>Platanus occidentalis</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>
3.	<u>Quercus alba</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>
4.	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
5.	<u>Liriodendron tulipifera</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
6.				
7.				
		<u>95</u> = Total Cover		
50% of total cover: <u>47.5</u>		20% of total cover: <u>19</u>		
Sapling/Shrub Stratum (Plot size: <u>10m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Quercus alba</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
2.	<u>Pinus echinata</u>	<u>10</u>	<u>Y</u>	<u>—</u>
3.	<u>Liriodendron tulipifera</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
		<u>25</u> = Total Cover		
50% of total cover: <u>12.5</u>		20% of total cover: <u>5</u>		
Herb Stratum (Plot size: <u>5m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		<u>10</u> = Total Cover		
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>		
Woody Vine Stratum (Plot size: <u>5m²</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Smilax latifolia</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>
2.	<u>Lonicera japonica</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>
3.				
4.				
5.				
		<u>20</u> = Total Cover		
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 62.5 (A/B)

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ✓ No

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

Sampling Point: WE-8 (dr)

[illegible]


WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12/03/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WF-11 (wet)
 Investigator(s): N. Howell & S. Roberts Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): depression / basin Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.159729 Long: -81.470785 Datum: NAD-83
 Soil Map Unit Name: GfF-Gullied land, friable materials / NAB-NASON ^{very fine sandy loam} NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</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: <p>Wetland is basin like. Old road bed restricts outflow of water from the one culvert.</p> 		

6214/I-85

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

Sampling Point: WF-11 (wet)

Tree Stratum (Plot size: 10x10 m)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer rubrum</i>	50	Y	FAC
2.	<i>Liquidambar styraciflua</i>	50	Y	FAC
3.				
4.				
5.				
6.				
7.				
50% of total cover: 50		100	= Total Cover	
20% of total cover: 20				
Sapling/Shrub Stratum (Plot size: 10x10 m)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Viburnum nudum</i>	15	Y	OBL
2.	<i>L. styraciflua</i>	5	Y	FAC
3.				
4.				
5.				
6.				
7.				
8.				
9.				
50% of total cover: 10		20	= Total Cover	
20% of total cover: 4				
Herb Stratum (Plot size: 10x10 m)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Arundinaria tecta</i>	15	Y	FACU
2.	<i>Ligustrum lucidum</i>	5	N	
3.	<i>Juncus effusus</i>	5	Y	FACU
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
50% of total cover: 11.5		23	= Total Cover	
20% of total cover: 4.6				
Woody Vine Stratum (Plot size: 10x10 m)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Lonicea japonica</i>	5	Y	FAC
2.	<i>Smilax</i> sp.	5	Y	
3.				
4.				
5.				
50% of total cover: 5		10	= Total Cover	
20% of total cover: 2				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Sampling Point: WF-11 (wet)

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85/6214 City/County: Cherokee Sampling Date: 12-3-15
 Applicant/Owner: SCDOT State: SC Sampling Point: NF-11 (dry)
 Investigator(s): J. Roberts; N. Howell Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): bottom of old road bank Local relief (concave, convex, none): convex Slope (%): 2-5
 Subregion (LRR or MLRA): LRR-7 Lat: 35.159713 Long: -81.470782 Datum: NAD 83
 Soil Map Unit Name: GfF-cultivated lands, friable materials/ NaB-Nason very fine sandy loam NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<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 type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Microtopographic Relief (D4)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

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

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

Remarks:

unusually high rainfall during past few months and days.

6214 / I-85

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

Sampling Point: ^{WF} -11 (Arv)

Tree Stratum (Plot size: 10 x 5 m)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Liquidambar styraciflua</i>	75	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2. <i>Acer rubrum</i>	20	Y	FAC	Total Number of Dominant Species Across All Strata: 5 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: 80.70 (A/B)
4.				
5.				
6.				
7.				
50% of total cover: 47.5 95 = Total Cover 20% of total cover: 19				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species x 1 = FACW species x 2 = FAC species x 3 = FACU species x 4 = UPL species x 5 = Column Totals: (A) (B) Prevalence Index = B/A =
Sapling/Shrub Stratum (Plot size: 10 x 5 m) 1. <i>Ligustrum sinense</i> 10 Y FACU 2. 3. 4. 5. 6. 7. 8. 9.				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: 5 10 = Total Cover 20% of total cover: 2				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: 10 x 5 m) 1. <i>Rubus</i> sp. 45 Y 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
50% of total cover: 2.5 5 = Total Cover 20% of total cover: 1				
Woody Vine Stratum (Plot size: 10 x 5 m) 1. <i>Smilax rotundifolia</i> 5 Y FAC 2. <i>Lonicera japonica</i> 15 Y FAC 3. 4. 5.				
50% of total cover: 10 20 = Total Cover 20% of total cover: 4				
Remarks: (Include photo numbers here or on a separate sheet.) Abundance of generalist FAC species.				

Vf

Sampling Point: WF-11

[illegible]²Location: PL=Pore Lining, M=Matrix.

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 type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Redox Dark Surface (F6)
<input checked="" type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | <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"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks) |
|--|---|---|
- ³Indicators of hydrophytic vegetation wetland hydrology must be present, unless disturbed or problematic.

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

Hydric Soil Present? Yes ☒ No ☐

Remarks: Upland soils very similar to wetland soils. Both meet FB indicator. Wetland boundary delineated on hydrologic indicators (surface water & water depth in auger borings) and vegetation.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Charlotte Sampling Date: 12/09/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WG-6 (ext)
 Investigator(s): N. Howell + E. Morgan Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): - Local relief (concave, convex, none): concave Slope (%): -
 Subregion (LRR or MLRA): LRR- P Lat: 35.160687 Long: -81.472278 Datum: NAD 83
 Soil Map Unit Name: GFE - Gullied lands, friable materials NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>-</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>11</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>9</u>		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:		

6214 / I-85

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

Sampling Point: WG-6 (Wet)

Tree Stratum (Plot size: <u>5x5 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>35</u>	<u>y</u>	<u>FAC</u>
2. <u>Salix nigra</u>	<u>5</u>	<u>n</u>	<u>OBL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 20 40 = Total Cover
20% of total cover: 8

Sapling/Shrub Stratum (Plot size: <u>5x5 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Alnus serrulata</u>	<u>30</u>	<u>y</u>	<u>OBL</u>
2. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 20 40 = Total Cover
20% of total cover: 4

Herb Stratum (Plot size: <u>3x5 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Arundinaria tecta</u>	<u>5</u>	<u>y</u>	<u>FACW</u>
2. <u>Viburnum nudum</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

50% of total cover: 5 10 = Total Cover
20% of total cover: 2

Woody Vine Stratum (Plot size: <u>3x5 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

50% of total cover: 7.5 15 = Total Cover
20% of total cover: 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation _____

2 - Dominance Test is >50% ☒

3 - Prevalence Index is ≤3.0¹ _____

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) _____

Problematic Hydrophytic Vegetation¹ (Explain) _____

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12/09/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WG-6 (dry)
 Investigator(s): N. Howell + E. Morgan Section, Township, Range: Grover, NC
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 10%
 Subregion (LRR or MLRA): P Lat: 35.160687 Long: -81.472278 Datum: NAD83
 Soil Map Unit Name: Gullied lands, friable materials NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6211/I-85

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

Sampling Point: WG-6 (dry)

Tree Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	<u>50</u>	<u>y</u>	<u>FAC</u>	
2. <u>Liquidambar styraciflua</u>	<u>50</u>	<u>y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. <u>Quercus sp.</u>	<u>-</u>	<u>-</u>	<u>-</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>50</u> 100 = Total Cover 20% of total cover: <u>20</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: <u>5x5m</u>)				
1. <u>Acer rubrum</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	
2. <u>Vaccinium sp.</u>	<u>-</u>	<u>-</u>	<u>-</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>5</u> 10 = Total Cover 20% of total cover: <u>2</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Herb Stratum (Plot size: <u>5x5m</u>)				
1. <u>Arundinaria tecta</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	
2. <u>Asplenium platyneuron</u>	<u>3</u>	<u>n</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Remarks: (Include photo numbers here or on a separate sheet.) <u>Abundance of FAC, generalist species.</u>
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
50% of total cover: <u>7.5</u> 15 = Total Cover 20% of total cover: <u>3</u>				
Woody Vine Stratum (Plot size: <u>5x5m</u>)				
1. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: <u>5</u> 10 = Total Cover 20% of total cover: <u>2</u>				

Sampling Point: WG-6 up

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / I-85 City/County: Cherokee Sampling Date: 12/09/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: WH-10 (wet)
 Investigator(s): N. Howell + F. Morgan Section, Township, Range: Grovet, NC
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.160675 Long: -81.473307 Datum: NAD83
 Soil Map Unit Name: GfE-Gulched lands, friable materials NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No — (If no, explain in Remarks.)
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No —
 Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

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

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

Sampling Point: W14-10 (Wed)

Tree Stratum (Plot size: <u>10 x 10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Acer rubrum</u>	<u>60</u>	<u>y</u>	<u>FAC</u>		
2. <u>Liriodendron tulipifera</u>	<u>25</u>	<u>y</u>	<u>FACW</u>		
3. <u>Quercus nigra</u>	<u>10</u>	<u>n</u>	<u>FAC</u>		
4.					
5.					
6.					
7.					
50% of total cover: <u>47.5</u> 20% of total cover: <u>19</u>		95 = Total Cover			Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10 x 10m</u>)					
1. <u>Acer rubrum</u>	<u>30</u>	<u>y</u>	<u>FAC</u>		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>		30 = Total Cover			Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>10 x 10m</u>)					
1. <u>Arundinaria tecta</u>	<u>10</u>	<u>y</u>	<u>FACW</u>		
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>		10 = Total Cover			Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>10 x 10m</u>)					
1. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>		
2.					
3.					
4.					
5.					
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>		10 = Total Cover			Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / t - 85 City/County: Cherokee Sampling Date: 12/09/2015
 Applicant/Owner: SCDOT State: SC Sampling Point: W/H-10 (dry)
 Investigator(s): N. Howell + E. Morgan Section, Township, Range: Grovet, NC
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR or MLRA): P Lat: 35.160675 Long: -81.473307 Datum: NAD83
 Soil Map Unit Name: GfE - Gullied lands, friable materials NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/J-85

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

Sampling Point: W4-15 (dry)

Tree Stratum (Plot size: <u>10 X 10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				

50% of total cover: _____ = Total Cover
20% of total cover: _____

Sapling/Shrub Stratum (Plot size: <u>10 X 10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Quercus nigra</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2.	<u>Ilex opaca</u>	<u>5</u>	<u>n</u>	<u>FACW</u>
3.	<u>Pinus taeda</u>	<u>3</u>	<u>n</u>	<u>FAC</u>
4.	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
5.				
6.				
7.				
8.				
9.				

50% of total cover: 19 = Total Cover
20% of total cover: 7.6

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

50% of total cover: _____ = Total Cover
20% of total cover: _____

Woody Vine Stratum (Plot size: <u>10 X 10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonocera japonica</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				

50% of total cover: 5 = Total Cover
20% of total cover: 1

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is $\leq 3.0^1$
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/1/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WDD-2 Wet
 Investigator(s): M. Frater, E. Morgan, S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.115034 Long: -81.578729 Datum: NAD83
 Soil Map Unit Name: Bc-Buncombe loamy sand NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation Yes, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation NO, Soil NO, or Hydrology NO 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: <u>Vegetation recently cleared</u>		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6-12</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:		

6214 / I-85

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

Sampling Point: WDD-2 wet

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				
1. <u>Salix nigra</u>	<u>5</u>	<u>4</u>	<u>OBL</u>	
2. <u>Populus heterophylla</u>	<u>10</u>	<u>4</u>	<u>OBL</u>	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: <u>5x5m</u>)				
1. <u>Juncus effusus</u>	<u>20</u>	<u>4</u>	<u>FACW</u>	
2. <u>Anandiania gigantea</u>	<u>10</u>	<u>4</u>	<u>FACW</u>	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				Woody Vine Stratum (Plot size: _____)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Remarks: (Include photo numbers here or on a separate sheet.)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 195 City/County: Cherokee Sampling Date: 12/1/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WDD-2 VP
 Investigator(s): M. Frazer, E. Morgan, S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): Convex Slope (%): 3%
 Subregion (LRR or MLRA): LRR-P Lat: 35.115094 Long: -81.578042 Datum: NAD83
 Soil Map Unit Name: Burcon-be loamy sand NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation Yes, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation NO, Soil NO, or Hydrology NO 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Vegetation recently cleared</u>	

HYDROLOGY

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

6214 / I-85

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

Sampling Point: WDD-2 up

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus taeda</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			

_____ = Total Cover
50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstigeum vimineum</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2. <u>Eupatorium capillifolium</u>	<u>50</u>	<u>y</u>	<u>FACU</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

_____ = Total Cover
50% of total cover: 35 20% of total cover: 14

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

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

Sampling Point: WDD-2 UP

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 City/County: Cherokee Sampling Date: 12/1/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WEE 1
 Investigator(s): M. Frazer Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): 2 Lat: 35.115917 Long: -81.541779 Datum: NAD83
 Soil Map Unit Name: mixed alluvial land NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 2 No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes 2 No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>Small, isolated pocket in floodplain forest.</u> <u>photo @ WEE 1 pointing E</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>5</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>Surface</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>Surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: WEE-7 wet

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
1.	<u>Acer negundo</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
2.	<u>Botula nigra</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
3.					
4.					
5.					
6.					
7.					
50% of total cover: <u>15</u> 30 = Total Cover		20% of total cover: <u>6</u>			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)					
1.	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	
2.	<u>Ulmus alata</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
50% of total cover: <u>10</u> 20 = Total Cover		20% of total cover: <u>4</u>			Hydrophytic Vegetation Indicators: — 1 - Rapid Test for Hydrophytic Vegetation — 2 - Dominance Test is >50% — 3 - Prevalence Index is ≤3.0 ¹ — 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) — Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5x5m</u>)					
1.	<u>Carex lasiocarpa</u>	<u>10</u>	<u>+</u>	<u>-</u>	
2.	<u>Dulichium arundinaceum</u>	<u>5</u>	<u>Y</u>	<u>OBL</u>	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
50% of total cover: <u>7.5</u> 15 = Total Cover		20% of total cover: <u>3</u>			Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: _____)					
1.					
2.					
3.					
4.					
5.					
50% of total cover: _____ = Total Cover		20% of total cover: _____			Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/1/15
 Applicant/Owner: SCDOT State: SC Sampling Point: 10001 ^{up}
 Investigator(s): F. Morgan M. Frizers, S. Butts Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR or MLRA): LRR-P Lat: 35.115917 Long: -81.574779 Datum: NAD83
 Soil Map Unit Name: Mixed alluvial lands NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6214/I-85

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

Sampling Point: WEE-1 up

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Quercus nigra</u>	<u>40</u>	<u>y</u>	<u>FAC</u>
2.	<u>Betula nigra</u>	<u>20</u>	<u>y</u>	<u>FACW</u>
3.	<u>Liquidambar styraciflua</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
4.				
5.				
6.				
7.				
50% of total cover: <u>40</u>		20% of total cover: <u>160</u> = Total Cover		
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ilex opaca</u>	<u>10</u>	<u>y</u>	<u>FACU</u>
2.	<u>Ligustrum sinense</u>	<u>15</u>	<u>y</u>	<u>FACB</u>
3.	<u>Hamamelis sp.</u>	<u>70</u>	<u>y</u>	<u>FACN</u>
4.				
5.				
6.				
7.				
8.				
9.				
50% of total cover: <u>17.5</u>		20% of total cover: <u>7</u> = Total Cover		
Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Microstachys unguiculata</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2.	<u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
50% of total cover: <u>22.5</u>		20% of total cover: <u>9</u> = Total Cover		
Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Sarcocolla columbiana</u>	<u>15</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
50% of total cover: <u>7.5</u>		20% of total cover: <u>3</u> = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 78 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

photo pointing NW

Project/Site: I-95 City/County: Cherokee Sampling Date: 12/1/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WFF 6A *we*
 Investigator(s): M. Frazer + S. Burton + Morgan Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.117047 Long: -81.578188 Datum: NAD83
 Soil Map Unit Name: Buncombe loamy sand NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No — (If no, explain in Remarks.)
 Are Vegetation No, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No —
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <u>—</u>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <u>—</u>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <u>—</u>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <u>—</u>	
Remarks: <u>Receives water from culvert under I-95. A mix of hydric & non-hydric soils. Some "wet" looking areas had bright sandy soils. Drains into floodplain; no direct connection to river. Possibly an old borrow pit.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" 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 Roots (C3)	<input 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 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 type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <input checked="" type="checkbox"/> No <u>—</u> Depth (inches): <u>0-6"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <u>—</u>	
Water Table Present? Yes <input checked="" type="checkbox"/> No <u>—</u> Depth (inches): <u>surface</u>		
Saturation Present? Yes <input checked="" type="checkbox"/> No <u>—</u> Depth (inches): <u>surface</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/I-85

WFF-6A

wet

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

Sampling Point:

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Betula nigra</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>Platanus occidentalis</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. <u>Quercus nigra</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>30</u> 20% of total cover: <u>12</u> <u>60</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>) 1. <u>Platanus occidentalis</u> <u>10</u> <u>Y</u> <u>FACW</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 50% of total cover: <u>5</u> 20% of total cover: <u>2</u> <u>10</u> = Total Cover				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks: (Include photo numbers here or on a separate sheet.)				

6A

Sampling Point: WFR wet

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ☐ 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, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

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

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

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No

Contains a mosaic of hydric + non hydric soils.
It is best professional judgement that this is a wetland.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/1/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WFF 6A up
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 570
 Subregion (LRR or MLRA): LRR-P Lat: 35.117047 Long: -81.678188 Datum: NAD83
 Soil Map Unit Name: Buncombe loamy sand NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil Yes, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

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

6214/I-85

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

Sampling Point: WFFGA_{up}

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus nigra</u>	<u>30</u>	<u>y</u>	<u>FAC</u>
2. <u>Betula nigra</u>	<u>20</u>	<u>y</u>	<u>FACW</u>
3.			
4.			
5.			
6.			
7.			

50% of total cover: 25 50 = Total Cover
20% of total cover: 10

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Platanus occidentalis</u>	<u>5</u>	<u>y</u>	<u>FACW</u>
2. <u>Quercus nigra</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			

50% of total cover: 5 10 = Total Cover
20% of total cover: 2

Herb Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Mimulus vimineum</u>	<u>60</u>	<u>y</u>	<u>FAC</u>
2. <u>Symphoricarpos pilosum</u>	<u>10</u>	<u>n</u>	<u>FAC</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

50% of total cover: 35 70 = Total Cover
20% of total cover: 14

Woody Vine Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
2.			
3.			
4.			
5.			

50% of total cover: 2.5 5 = Total Cover
20% of total cover: 1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Sampling Point: WFF

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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, MLRA 136)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)
- ___ Red Parent Material (F21) (MLRA 127, 147)

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**)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/01/15
 Applicant/Owner: SCDOT State: SC Sampling Point: W66-2 wet
 Investigator(s): E. Morgan & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRA-P Lat: 35.115483 Long: -81.980303 Datum: NAD83
 Soil Map Unit Name: Buncombe loamy sand NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6-12</u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6214 / I-85

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

Sampling Point: W166-2 wet

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>40</u>	<u>y</u>	<u>FAC</u>
2.	<u>Acer rubrum</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
50% of total cover: <u>25</u> = Total Cover		20% of total cover: <u>10</u>		
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>y</u>	<u>FAC</u>
2.	<u>Populus heterophylla</u>	<u>20</u>	<u>y</u>	<u>OBL</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
50% of total cover: <u>25</u> = Total Cover		20% of total cover: <u>10</u>		
Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>15</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
50% of total cover: <u>7.5</u> = Total Cover		20% of total cover: <u>3</u>		
Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
50% of total cover: _____ = Total Cover		20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation _____

☒ 2 - Dominance Test is >50% _____

3 - Prevalence Index is ≤3.0¹ _____

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) _____

Problematic Hydrophytic Vegetation¹ (Explain) _____

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/01/15
 Applicant/Owner: SCDOT State: SC Sampling Point: W66-2 VP
 Investigator(s): E. Morgan & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): none Slope (%): 2%
 Subregion (LRR or MLRA): LRR-P Lat: 35.115483 Long: -81.580303 Datum: NAD83
 Soil Map Unit Name: BC-Buncombe loamy sand NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation NO, Soil NO, or Hydrology NO naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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 <u> </u> No <u>✓</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u> Saturation Present? (includes capillary fringe) Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u>		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/I-85

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

Sampling Point: W66-2 up

Tree Stratum (Plot size: <u>10x10 m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Quercus phellos</u>	<u>30</u>	<u>y</u>	<u>FAC</u>
2.	<u>Quercus nigra</u>	<u>40</u>	<u>y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				

70 = Total Cover
50% of total cover: 35 20% of total cover: 14

Sapling/Shrub Stratum (Plot size: <u>10x10 m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>30</u>	<u>y</u>	<u>FAC</u>
2.	<u>Quercus nigra</u>	<u>15</u>	<u>y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				

45 = Total Cover
50% of total cover: 22.5 20% of total cover: 9

Herb Stratum (Plot size: <u>5x5 m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2.	<u>Hexaconia</u>	<u>5</u>	<u>y</u>	<u>FACU</u>
3.	<u>Ligustrum sinense</u>	<u>5</u>	<u>y</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

20 = Total Cover
50% of total cover: 10 20% of total cover: 4

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

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No _____

Sampling Point: WGG-2 UP

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 City/County: Cherokee Sampling Date: 12/2/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WIT 2 wet
 Investigator(s): M. Frater, E. Morgan Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.119451 Long: -81.573427 Datum: NAD83
 Soil Map Unit Name: Mv - mixed alluvial land NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? (Yes) No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No X
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>✓</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>✓</u> No <u> </u>
Hydric Soil Present? Yes <u>✓</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>✓</u> No <u> </u>	
Remarks: <u>Ditch w/ dammed up end leading to creek SBB. Receives water from another ditch.</u> <u>Photo array NNE.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u>✓</u> No <u> </u> Depth (inches): <u>10</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present? Yes <u>✓</u> No <u> </u> Depth (inches): <u>Surface</u>		
Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u> (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Rain this AM.</u>		

6214 / I-85

2

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

Sampling Point: WII wet

Tree Stratum (Plot size: <u>10x10 m</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
1.	<u>Ulmus spp.</u>	<u>25</u>			
2.					
3.					
4.					
5.					
6.					
7.					
50% of total cover: <u>25</u> = Total Cover		20% of total cover: _____			Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>10x10 m</u>)					
1.	<u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>y</u>	<u>FACW</u>	
2.					
3.					
4.					
5.					
50% of total cover: <u>5</u> = Total Cover		20% of total cover: <u>1</u>			
Herb Stratum (Plot size: <u>5x5 m</u>)					Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1.	<u>Arundinaria gigantea</u>	<u>5</u>	<u>y</u>	<u>FACW</u>	
2.	<u>Ligustrum sinense</u>	<u>2</u>	<u>y</u>	<u>FACU</u>	
3.					
4.					
5.					
6.					
50% of total cover: <u>7</u> = Total Cover		20% of total cover: <u>1.4</u>			
Woody Vine Stratum (Plot size: <u>5x5 m</u>)					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1.	<u>Lonicera japonica</u>	<u>5</u>	<u>y</u>	<u>FAC</u>	
2.					
3.					
4.					
5.					
6.					
50% of total cover: <u>5</u> = Total Cover		20% of total cover: <u>1</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 City/County: Cherokee Sampling Date: 12/2/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WIF up
 Investigator(s): E. Morgan & M. Frazer Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): Convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR-P Lat: 35.19451 Long: -81.573427 Datum: NAD83
 Soil Map Unit Name: MV - mixed alluvial land NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: WFI up ⁻²

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liquidambar styraciflua</u>	<u>30</u>	<u>y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2. <u>Prunella laevis</u>	<u>15</u>	<u>y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>22.5</u> 20% of total cover: <u>9</u> <u>45</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				
1. <u>Acer negundo</u>	<u>20</u>	<u>y</u>	<u>FAC</u>	
2. <u>Quercus incana (?)</u>	<u>10</u>	<u>y</u>	<u>-</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
50% of total cover: <u>15</u> 20% of total cover: <u>6</u> <u>30</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: <u>5x5m</u>)				
1. <u>Anemone ranunculifolia</u>	<u>20</u>	<u>y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% of total cover: <u>10</u> 20% of total cover: <u>4</u> <u>20</u> = Total Cover				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>5x5m</u>)				
1. <u>Cornus japonica</u>	<u>20</u>	<u>y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: <u>10</u> 20% of total cover: <u>4</u> <u>20</u> = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks: (Include photo numbers here or on a separate sheet.)				

Sampling Point: WFF-2

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 Wilderidge MM 9/16/10 City/County: Cherokee Sampling Date: 12/02/15
 Applicant/Owner: SUBOT State: SC Sampling Point: WJ-1 W
 Investigator(s): S. Burton + M. Emmons + E. Mercer Section, Township, Range: Blacksbury
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0-2%
 Subregion (LRR or MLRA): LRR-P Lat: 35.126913 Long: -81.552469 Datum: NAD83
 Soil Map Unit Name: MV-mixed alluvial land NWI classification: PFO1A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input 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 checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u>✓</u> No Depth (inches): <u>4-8</u> Water Table Present? Yes <u>✓</u> No Depth (inches): <u>0</u> Saturation Present? Yes <u>✓</u> No Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Surface water not present throughout wetland</u>		

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

Sampling Point: WJ-1 W

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Asar rugosus</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
6.				
7.				

50% of total cover: 10 = Total Cover
20% of total cover: 4

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Asar rugosus</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2.	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 35 = Total Cover
20% of total cover: 7

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

50% of total cover: _____ = Total Cover
20% of total cover: _____

Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>25</u>	<u>y</u>	<u>FACU</u>
2.				
3.				
4.				
5.				

50% of total cover: 12.5 = Total Cover
20% of total cover: 5

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is $\leq 3.0^1$
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes ☒ No ☐

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 Widening MM96-106 City/County: Cherokee Sampling Date: 12/08/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WJ-10
 Investigator(s): S. Burton + M. Frazer + Emorgan Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2
 Subregion (LRR or MLRA): LRR-P Lat: 35.126913 Long: -81.552469 Datum: NAD 83
 Soil Map Unit Name: MV- mixed alluvial land NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

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

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes _____ No <u>✓</u> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <u>X</u>	
Water Table Present?	Yes _____ No <u>✓</u> Depth (inches): _____		
Saturation Present? (includes capillary fringe)	Yes _____ No <u>✓</u> Depth (inches): _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: WJ-1 up

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1.	<u>Platanus occidentalis</u>	<u>30</u>	<u>y</u>	<u>FACW</u>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2.	<u>Quercus sp.</u>	<u>25</u>	<u>y</u>	<u>NI</u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)		
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60%</u> (A/B)		
4.					Prevalence Index worksheet:		
5.						Total % Cover of: _____ Multiply by: _____	
6.						OBL species _____ x 1 = _____	
7.						FACW species _____ x 2 = _____	
8.						FAC species _____ x 3 = _____	
9.					FACU species _____ x 4 = _____		
10.					UPL species _____ x 5 = _____		
11.					Column Totals: _____ (A) _____ (B)		
50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u> <u>55</u> = Total Cover					Prevalence Index = B/A = _____		
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)					Hydrophytic Vegetation Indicators:		
1.	<u>Acer rubra</u>	<u>15</u>	<u>y</u>	<u>FAC</u>		1 - Rapid Test for Hydrophytic Vegetation	
2.	<u>Ligustrum sinense</u>	<u>25</u>	<u>y</u>	<u>FACU</u>		<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3.						3 - Prevalence Index is ≤3.0 ¹	
4.						4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.					Problematic Hydrophytic Vegetation ¹ (Explain)		
6.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
7.						Definitions of Four Vegetation Strata:	
8.							Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
9.							Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10.							Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11.					Woody vine – All woody vines greater than 3.28 ft in height.		
50% of total cover: <u>40</u> 20% of total cover: <u>9</u> <u>40</u> = Total Cover					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____		
Herb Stratum (Plot size: <u>5x5m</u>)							
1.	<u>Lonicera japonica</u>	<u>5</u>	<u>n</u>	<u>FACU</u>			
2.	<u>Ligustrum sinense</u>	<u>10</u>	<u>y</u>	<u>FACU</u>			
3.	<u>Microstegium minimum</u>	<u>30</u>	<u>y</u>	<u>FAC</u>			
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
50% of total cover: <u>22.5</u> 20% of total cover: <u>9</u> <u>45</u> = Total Cover							
Woody Vine Stratum (Plot size: _____)							
1.							
2.							
3.							
4.							
5.							
50% of total cover: _____ 20% of total cover: _____ _____ = Total Cover							
Remarks: (Include photo numbers here or on a separate sheet.) <u>Upland plot adjacent to wetland, species overlap, generalists</u>							

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening MM96-106 City/County: Cherokee Sampling Date: 12/3/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WKIC1 - wet
 Investigator(s): M. Frazer Section, Township, Range: Blacksburg, SC
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): -1%
 Subregion (LRR or MLRA): LRR-P Lat: 35.126973 Long: -81.550876 Datum: NAD83
 Soil Map Unit Name: DU - mixed alluvial land NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" 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: <u>Small depression in floodplain ponded. Little veg. Recent rain forest.</u> <u>Vegetation doesn't meet criteria, however believe it is due to location in Buffalo Creek floodplain</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>14"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
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)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

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

Sampling Point: WICK 1 her

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Acer negundo</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
6.				
7.				

50% of total cover: 35 70 = Total Cover
20% of total cover: 14

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ligustrum sinense</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>
2.	<u>Acer negundo</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 20 40 = Total Cover
20% of total cover: 8

Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ligustrum sinense</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 5 10 = Total Cover
20% of total cover: 2

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

50% of total cover: = Total Cover
20% of total cover:

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u> </u>	x 1 = <u> </u>
FACW species <u> </u>	x 2 = <u> </u>
FAC species <u>75</u>	x 3 = <u>225</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u> </u>	x 5 = <u> </u>
Column Totals: <u>120</u> (A)	<u>405</u> (B)

Prevalence Index = B/A = 3.37

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No ✓

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

Vegetation doesn't meet wetland criteria, however due to density of Ligustrum, believe that the vegetation is not the best indicator for this wetland.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening MM96-106 City/County: Cherokee Sampling Date: 12/3/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WKE 1-up
 Investigator(s): M. Frazer Section, Township, Range: Blacksburg, SC
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.126973 Long: -81.550876 Datum: NAD83
 Soil Map Unit Name: MV mixed alluvial land NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

HYDROLOGY

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

I-85 widening mm 9/6-10/6

Sampling Point: wkk 1

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

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<u>Acer negundo</u>	<u>90</u>	<u>y</u>	<u>FAC</u>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2.					Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)	
4.					Prevalence Index worksheet:	
5.						Total % Cover of: _____ Multiply by: _____
6.						OBL species _____ x 1 = _____
7.						FACW species _____ x 2 = _____
50% of total cover: <u>45</u> 20% of total cover: <u>18</u>						FAC species _____ x 3 = _____
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)						FACU species _____ x 4 = _____
1.	<u>Acer negundo</u>	<u>20</u>	<u>y</u>	<u>FAC</u>	UPL species _____ x 5 = _____	
2.					Column Totals: _____ (A) _____ (B)	
3.					Prevalence Index = B/A = _____	
4.					Hydrophytic Vegetation Indicators:	
5.						1 - Rapid Test for Hydrophytic Vegetation
6.						<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
7.						3 - Prevalence Index is ≤3.0 ¹
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>						4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
Herb Stratum (Plot size: <u>5x5m</u>)						Problematic Hydrophytic Vegetation ¹ (Explain)
1.	<u>Glechoma hederacea</u>	<u>50</u>	<u>y</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2.	<u>Stellaria media</u>	<u>20</u>	<u>y</u>	<u>UPL</u>		
3.						
4.						
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>						Definitions of Four Vegetation Strata:
Woody Vine Stratum (Plot size: <u>5x5m</u>)						Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
1.	<u>Lonicera japonica</u>	<u>20</u>	<u>y</u>	<u>FAC</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
2.					Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
3.					Woody vine – All woody vines greater than 3.28 ft in height.	
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>						Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)						

I-85 widening MM 96-106
Sampling Point: WCL/CL

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

²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

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

Hydric Soil Present? Yes _____ No X

Depth (inches): _____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 widening mm96-106 City/County: Cherokee Sampling Date: 12/03/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WLL-2 wet
 Investigator(s): Ill. Frazer Section, Township, Range: Blacksburg, SC
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): -
 Subregion (LRR or MLRA): LRR-P Lat: 35.12702 Long: -71.55173 Datum: NAD 83
 Soil Map Unit Name: MV- mixed alluvial land NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation -, Soil -, or Hydrology - significantly disturbed? 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 <u>-</u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>-</u>
Hydric Soil Present? Yes <u>X</u> No <u>-</u>	
Wetland Hydrology Present? Yes <u>X</u> No <u>-</u>	
Remarks: <u>Location in Buffalo Crk floodplain, hydrology, & soils lead us to believe it is a wetland despite lacking hydrophytic vegetation criteria.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input 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 <u>X</u> No <u>-</u> Depth (inches): <u>14"</u> Water Table Present? Yes <u>X</u> No <u>-</u> Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No <u>-</u> Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u>-</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

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

Sampling Point: WLL-2 wet

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer negundo</u>	<u>70</u>	<u>y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>35</u> = Total Cover <u>70</u> 20% of total cover: <u>14</u>				
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				
1. <u>Ligustrum sinense</u>	<u>35</u>	<u>y</u>	<u>FACU</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>75</u> x 3 = <u>225</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species _____ x 5 = _____ Column Totals: <u>110</u> (A) <u>365</u> (B) Prevalence Index = B/A = <u>3.32</u>
2. <u>Acer negundo</u>	<u>5</u>	<u>n</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>20</u> = Total Cover <u>40</u> 20% of total cover: <u>9</u>				
Herb Stratum (Plot size: <u>5x5m</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% of total cover: _____ = Total Cover _____ 20% of total cover: _____				
Woody Vine Stratum (Plot size: <u>5x5m</u>)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: _____ = Total Cover _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.) <u>Vegetation doesn't meet criteria, due to the high density of the invasive Ligustrum sinense.</u>				

Sampling Point: WLL-2 wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/03/15
 Applicant/Owner: SUDOT State: SC Sampling Point: WLL-2 up
 Investigator(s): M. Frazer Section, Township, Range: Blackburg, SC
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): - Slope (%): -
 Subregion (LRR or MLRA): LRR-P Lat: 35.12702 Long: -81.55173 Datum: NAD83
 Soil Map Unit Name: MV- mixed alluvial land NWI classification: -

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

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

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

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer negundo</u>	<u>90</u>	<u>y</u>	<u>FAC</u>
2.			
3.			
4.			
5.			
6.			
7.			

50% of total cover: 45 20% of total cover: 18 = Total Cover 90

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer negundo</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

50% of total cover: 10 20% of total cover: 4 = Total Cover 20

Herb Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Glechoma hederacea</u>	<u>50</u>	<u>y</u>	<u>FACW</u>
2. <u>Stellaria media</u>	<u>20</u>	<u>y</u>	<u>UPL</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

50% of total cover: 35 20% of total cover: 14 = Total Cover 70

Woody Vine Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2.			
3.			
4.			
5.			

50% of total cover: 10 20% of total cover: 4 = Total Cover 20

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)Total Number of Dominant Species Across All Strata: 5 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- 3 - Prevalence Index is ≤3.0¹
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No

Sampling Point: WLL-2 UP

Sampling Point: WLL-2 UP

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/03/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WMM-8 WE
 Investigator(s): M. Frazer, E. Morgan, S. Burton Section, Township, Range: Blacksburg, SC
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): —
 Subregion (LRR or MLRA): P Lat: 35.127057 Long: -81.550249 Datum: NAD83
 Soil Map Unit Name: Mv- mixed alluvial land NWI classification: PFO1 A
 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 <u>X</u> No <u>—</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>—</u>
Hydric Soil Present?	Yes <u>X</u> No <u>—</u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u>—</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u>—</u> No <u>X</u> Depth (inches): <u>—</u> Water Table Present? Yes <u>—</u> No <u>X</u> Depth (inches): <u>—</u> Saturation Present? Yes <u>—</u> No <u>X</u> Depth (inches): <u>—</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u>—</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Questionable, previously flagged but questionable hydrology.</u>		

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

Sampling Point: WMM 2- wet

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
50% of total cover: _____ 20% of total cover: _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: <u>10 x 10m</u>)	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Fraxinus pennsylvanica</u>	<u>40</u>	<u>y</u>	<u>FACW</u>	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. <u>Baccharis sp.</u>	<u>10</u>	<u>n</u>	<u>-</u>	
3. <u>Populus deltoides</u>	<u>10</u>	<u>n</u>	<u>FAC</u>	
4. <u>Chinese privet</u>	<u>5</u>	<u>n</u>	<u>FACU</u>	
5. <u>Berberis aquifolium</u>	<u>10</u>	<u>n</u>	<u>FAC</u>	
6. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
50% of total cover: <u>37.5</u> 20% of total cover: <u>15</u>	_____	_____	_____	
Herb Stratum (Plot size: <u>5 x 5m</u>)	_____	_____	_____	
1. <u>Microstegium vimineum</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	
2. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>	_____	_____	_____	
Woody Vine Stratum (Plot size: <u>5 x 5m</u>)	_____	_____	_____	
1. <u>Rubus sp.</u>	<u>5</u>	<u>-</u>	<u>-</u>	
2. <u>Lonicera japonica</u>	<u>20</u>	<u>y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover	_____	_____	_____	
50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u>	_____	_____	_____	
Remarks: (Include photo numbers here or on a separate sheet.)				

I-85 Widening MM96-106
Sampling Point: WMM-2 wet

Sampling Point: WMM-2wet

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ☐ 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, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

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

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

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/03/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WMM2-0P
 Investigator(s): M. Frazer, E. Morgan & S. Burton Section, Township, Range: Blacksburg, SC
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): -
 Subregion (LRR or MLRA): LRR-P Lat: 35.127057 Long: -81.550249 Datum: NAD83
 Soil Map Unit Name: MV-mixed alluvial land NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes 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 <u>X</u>	No <u>_____</u>	Is the Sampled Area within a Wetland?	Yes <u>_____</u>	No <u>X</u>
Hydric Soil Present?	Yes <u>_____</u>	No <u>X</u>			
Wetland Hydrology Present?	Yes <u>_____</u>	No <u>X</u>			
Remarks:					

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 <u>_____</u> No <u>X</u> Depth (inches): <u>_____</u> Water Table Present? Yes <u>_____</u> No <u>X</u> Depth (inches): <u>_____</u> Saturation Present? Yes <u>_____</u> No <u>X</u> Depth (inches): <u>_____</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>_____</u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: WMM2-up

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Platanus occidentalis</u>	<u>15</u>	<u>y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>8</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet:
5. _____	_____	_____	_____	Total % Cover of: _____ Multiply by:
6. _____	_____	_____	_____	OBL species _____ x 1 = _____
7. _____	_____	_____	_____	FACW species _____ x 2 = _____
50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>				FAC species _____ x 3 = _____
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				FACU species _____ x 4 = _____
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>y</u>	<u>FACU</u>	UPL species _____ x 5 = _____
2. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	Column Totals: _____ (A) _____ (B)
3. <u>Populus deltoides</u>	<u>25</u>	<u>y</u>	<u>FAC</u>	Prevalence Index = B/A = _____
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:
5. _____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation
6. _____	_____	_____	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
7. _____	_____	_____	_____	3 - Prevalence Index is ≤3.0 ¹
8. _____	_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
9. _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5x5m</u>)				Definitions of Four Vegetation Strata:
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>y</u>	<u>FACU</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
2. <u>Microrhizon viminalis</u>	<u>20</u>	<u>y</u>	<u>FAC</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
3. _____	_____	_____	_____	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
4. _____	_____	_____	_____	Woody vine – All woody vines greater than 3.28 ft in height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% of total cover: <u>30</u> 20% of total cover: <u>6</u>				
Woody Vine Stratum (Plot size: <u>5x5m</u>)				
1. <u>Smilax rotundifolia</u>	<u>5</u>	<u>y</u>	<u>FAC</u>	
2. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: <u>15</u> 20% of total cover: <u>3</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

ISS Widening MM96-106
Sampling Point: WMM-21P

Sampling Point: WMM-21P

US Army Corps of Engineers Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: T-85 City/County: Cherokee Sampling Date: 12/3/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WNN1 wet
 Investigator(s): M. Frazer Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): Flat Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.129574 Long: -81.554357 Datum: NAD83
 Soil Map Unit Name: mv - mixed alluvial land NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>Flat area between streams that collects water in a few shallow puddles.</u> <u>photo pointing S @ WNN1. Recent rain.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" 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 Roots (C3)	<input 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 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 type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u>	Wetland Hydrology Present? Yes <u>X</u> No _____	
Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>2" - surface</u>		
Saturation Present? (includes capillary fringe) Yes <u>X</u> No _____ Depth (inches): <u>surface</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: WNN wet

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>80</u>	<u>y</u>	<u>FAC</u>
2.	<u>Acer rubrum</u>	<u>15</u>	<u>n</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				

50% of total cover: 47.5 20% of total cover: 19 95 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Carpinus caroliniana</u>	<u>50</u>	<u>y</u>	<u>FAC</u>
2.	<u>Acer rubrum</u>	<u>10</u>	<u>n</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 30 20% of total cover: 12 60 = Total Cover

Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ligustrum sinense</u>	<u>2</u>	<u>y</u>	<u>FACU</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 1 20% of total cover: .40 2 = Total Cover

Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				

50% of total cover: 5 20% of total cover: 2 10 = Total Cover

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 City/County: Cherokee Sampling Date: 12/3/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WNN 2
 Investigator(s): M. Frazer Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.129574 Long: -81.554357 Datum: NAD83
 Soil Map Unit Name: Mixed alluvial land NWI classification: 7

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

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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 No <u>X</u> Depth (inches): Water Table Present? Yes <u>X</u> No Depth (inches): <u>2"</u> Saturation Present? Yes <u>X</u> No Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Upland Plot located just outside of wetland. Hydrology is present due to recent rain events. Soils are not hydric.		

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

Sampling Point: WNN-2p

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>55</u>	<u>y</u>	<u>FAC</u>
2.	<u>Betula nigra</u>	<u>25</u>	<u>y</u>	<u>FACW</u>
3.				
4.				
5.				
6.				
7.				

50% of total cover: 40 20% of total cover: 16 = Total Cover 90

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Acer rubrum</u>	<u>20</u>	<u>y</u>	<u>FAC</u>
2.	<u>Carpinus caroliniana</u>	<u>40</u>	<u>y</u>	<u>FAC</u>
3.	<u>Fagus grandifolia</u>	<u>5</u>	<u>n</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 32.5 20% of total cover: 13 = Total Cover 105

Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Allium schoenoprasum</u>	<u>5</u>	<u>y</u>	<u>FACU</u>
2.	<u>Ilex opaca</u>	<u>5</u>	<u>y</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 5 20% of total cover: 2 = Total Cover 10

Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				

50% of total cover: 2.5 20% of total cover: 1 = Total Cover 5

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)Total Number of Dominant Species Across All Strata: 7 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 71 (A/B)

Prevalence Index worksheet:

Total % Cover of: Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No _____

Sampling Point: WNW-2_{up}

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: K85 City/County: Cherokee Sampling Date: 12/09/15
 Applicant/Owner: M. Frazer & S. Burton State: SC Sampling Point: W00-2 WET
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.132435 Long: -81.535939 Datum: NAD 83
 Soil Map Unit Name: AFA - altavista fine sandy loam NWI classification: PFC1C
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ND, Soil ND, or Hydrology ND significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ND, Soil ND, or Hydrology ND naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-10</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</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:		

6214/I-85

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

Sampling Point: W00-2 Wet

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>25</u>	<u>y</u>	<u>FAC</u>
2. <u>Viburnum vibre</u>	<u>5</u>	<u>n</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 15 30 = Total Cover
20% of total cover: 6

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>y</u>	<u>FAC</u>
2. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>y</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 15 30 = Total Cover
20% of total cover: 6

Herb Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus sp.</u>	<u>5</u>	<u>n</u>	<u>-</u>
2. <u>Carex sp.</u>	<u>30</u>	<u>y</u>	<u>-</u>
3. <u>Panicum abundinaceum</u>	<u>10</u>	<u>y</u>	<u>OBL</u>
4. <u>Pluchea sp</u>	<u>5</u>	<u>n</u>	<u>-</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

50% of total cover: 22.5 45 = Total Cover
20% of total cover: 9

Woody Vine Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2. <u>Toxicodendron radicans</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

50% of total cover: 7.5 15 = Total Cover
20% of total cover: 3

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)Total Number of Dominant Species Across All Strata: 6 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes X No _____

Sampling Point: W00-2 Wet

[illegible]

Photo WDD-2
North

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 / 185 City/County: Cherokee Sampling Date: 12/09/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WDD-2 -p
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): bottomland Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): LR-P Lat: 35.132435 Long: -81.535939 Datum: NAD83
 Soil Map Unit Name: AFA - Altavista fine sandy loam NWI classification: -

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

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/I-85

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

Sampling Point: W00-2 UP

Tree Stratum (Plot size: 10x10m)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Liquidambar styraciflua	10	y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2. Ulmus rubra	5	n	FAC	
3.				Total Number of Dominant Species Across All Strata: 6 (B)
4.				Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)
5.				
6.				Prevalence Index worksheet:
7.				
75 = Total Cover 50% of total cover: 37.5 20% of total cover: 15				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)
Sapling/Shrub Stratum (Plot size: 10x10m)				Prevalence Index = B/A = _____
1. Liquidambar styraciflua	10	y	FAC	Hydrophytic Vegetation Indicators:
2. Juniper virginiana	15	n	FACU	
3. Quercus phellos	5	n	FAC	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
4. Ligustrum sinense	5	n	FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				
6.				Definitions of Four Vegetation Strata:
7.				
8.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
9.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
10.				
11.				
30 = Total Cover 50% of total cover: 15 20% of total cover: 6				
Herb Stratum (Plot size: 5x5m)				
1. Lonicera japonica	10	y	FAC	
2. Ligustrum sinense	5	y	FACU	
3. Rubus sp.	5	y		
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
20 = Total Cover 50% of total cover: 10 20% of total cover: 4				
Woody Vine Stratum (Plot size: 5x5m)				
1. Toxicodendron radicans	5	y	FAC	
2.				
3.				
4.				
5.				
5 = Total Cover 50% of total cover: 2.5 20% of total cover: 1				
Remarks: (Include photo numbers here or on a separate sheet.)				

Photo at
WPP-7 North +
South

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/09/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WPP-10 West
 Investigator(s): M. Prazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%):
 Subregion (LRR or MLRA): LRR-P Lat: 35.13751 Long: -81.537981 Datum: NAD83
 Soil Map Unit Name: BFA-altavista fine sandy loam / Mv-mixed alluvial land NWI classification: PFO1A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒, Soil ☒, or Hydrology ☒ significantly disturbed? 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:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-2</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</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:		

6214 / I-85

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

Sampling Point: WPP-10 wet

Tree Stratum (Plot size: 10x10m)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Platanus occidentalis</i>	30	y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)
2. <i>Acer Rubrum</i>	15	y	FAC	Total Number of Dominant Species Across All Strata: 9 (B)
3. <i>Liquidambar styraciflua</i>	20	y	FAC	Percent of Dominant Species That Are OBL, FACW, or FAC: 89 (A/B)
4.				
5.				
6.				
7.				
65 = Total Cover				Prevalence Index worksheet:
50% of total cover: 32.5				Total % Cover of: Multiply by:
20% of total cover: 13				OBL species x 1 =
				FACW species x 2 =
				FAC species x 3 =
				FACU species x 4 =
				UPL species x 5 =
				Column Totals: (A) (B)
				Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
				Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
				Definitions of Four Vegetation Strata:
				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				Woody vine – All woody vines greater than 3.28 ft in height.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)				

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214/185 City/County: Cherokee Sampling Date: 12/09/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WPP-10 up
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): Convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR-P Lat: 35.131751 Long: -81.537981 Datum: NAD83
 Soil Map Unit Name: HFA-Atlanta fine sandy loam/mv-mixed alluvial NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? 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 type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

GZ14/I-85

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

Sampling Point: WPP-10 up

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liquidambar styraciflua</u>	<u>40</u>	<u>y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2. <u>Acer rubrum</u>	<u>10</u>	<u>y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>25</u> 50 = Total Cover 20% of total cover: <u>10</u>				
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				Prevalence Index worksheet:
1. <u>Ligustrum sinense</u>	<u>20</u>	<u>y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Juniper virginiana</u>	<u>5</u>	<u>y</u>	<u>FACU</u>	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
6. _____	_____	_____	_____	UPL species _____ x 5 = _____
7. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
8. _____	_____	_____	_____	Prevalence Index = B/A = _____
9. _____	_____	_____	_____	
50% of total cover: <u>12.5</u> 25 = Total Cover 20% of total cover: <u>5</u>				
Herb Stratum (Plot size: <u>5x5m</u>)				Hydrophytic Vegetation Indicators:
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>y</u>	<u>FACU</u>	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. <u>Panicum antidotale</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
3. <u>Microrhiza virginiana</u>	<u>30</u>	<u>y</u>	<u>FAC</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
6. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7. _____	_____	_____	_____	Definitions of Four Vegetation Strata:
8. _____	_____	_____	_____	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
9. _____	_____	_____	_____	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
10. _____	_____	_____	_____	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11. _____	_____	_____	_____	Woody vine – All woody vines greater than 3.28 ft in height.
50% of total cover: <u>22.5</u> 45 = Total Cover 20% of total cover: <u>9</u>				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

Sampling Point: WPPUP

[illegible]

Photo WAQ-8
NE & SW

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 / 6214 City/County: Cherokee Sampling Date: 12/09/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WAQ-14 wet
 Investigator(s): M. Prazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): field Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.131485 Long: -81.539074 Datum: NAD83
 Soil Map Unit Name: mv-mixed alluvial land NWI classification: PFOIC

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:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 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>1-8</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u>		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:			

Sampling Point: WQ0 - wet

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
		_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		_____ = Total Cover		
50% of total cover: <u>2.5</u>		20% of total cover: <u>1</u>		

Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Festuca sp.</u>	<u>5</u>	<u>-</u>	<u>-</u>
2.	<u>Rubus sp.</u>	<u>20</u>	<u>-</u>	<u>-</u>
3.	<u>Pluchea sp.</u>	<u>5</u>	<u>-</u>	<u>-</u>
4.	<u>Juncus effusus</u>	<u>80</u>	<u>y</u>	<u>FACW</u>
5.				
6.				
7.				
8.				
9.				
10.				
11.				
		_____ = Total Cover		
50% of total cover: <u>55</u>		20% of total cover: <u>22</u>		

Woody Vine Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		_____ = Total Cover		
50% of total cover: _____		20% of total cover: _____		

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

Sampling Point: W/ QQ-4 wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/09/13
 Applicant/Owner: SCDOT State: SC Sampling Point: WQQ-141P
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): field Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.131485 Long: -81.539074 Datum: NAD83
 Soil Map Unit Name: my-mixed alluvial land NWI classification: -

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

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>		
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6214 / I-85

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

Sampling Point: WQQ-2 up

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>y</u>	<u>FFCW</u>
2.				
3.				
4.				
5.				
6.				
7.				

50% of total cover: 7.5 20% of total cover: 3 15 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ligustrum sinense</u>	<u>20</u>	<u>y</u>	<u>FACU</u>
2.	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 15 20% of total cover: 6 30 = Total Cover

Herb Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Festuca sp.</u>	<u>70</u>	<u>-</u>	<u>-</u>
2.	<u>Eupatorium capillifolium</u>	<u>20</u>	<u>y</u>	<u>FACU</u>
3.	<u>Rubus sp.</u>	<u>10</u>	<u>-</u>	<u>-</u>
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 50 20% of total cover: 20 100 = Total Cover

Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Smilax sp.</u>	<u>20</u>	<u>-</u>	<u>-</u>
2.				
3.				
4.				
5.				

50% of total cover: 10 20% of total cover: 4 20 = Total Cover

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☐ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

WRR-1 = photo
(East)

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 City/County: Cherokee Sampling Date: 12/9/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WRR-1 wet
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.130518 Long: -81.543726 Datum: NAD83
 Soil Map Unit Name: MV-mixed alluvial land NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation Soil yes, or Hydrology yes significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation Soil no, or Hydrology no 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:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-12</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: <u>Ditched area (ponded) along farm road at I-85 interchange point.</u> <u>lots of cone activity in wet.</u>		

6214/I-85

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

Sampling Point: WRR-1 wet

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____				
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>5x5m</u>) 1. <u>Juncus effusus</u> <u>100</u> <u>YPS</u> <u>FACW</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				
_____ = Total Cover 50% of total cover: <u>5</u> <u>10</u> 20% of total cover: <u>2</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

Sampling Point: WLR-1 wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 1-85 City/County: Cherokee Sampling Date: 12/04/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WRR-1 UP
 Investigator(s): M. Frazer & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): field Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.130518 Long: -81.543726 Datum: NAD83
 Soil Map Unit Name: mv-mixed alluvial land NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No — (If no, explain in Remarks.)
 Are Vegetation — Soil Yes, or Hydrology — significantly disturbed? 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 <u>—</u> No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes <u>—</u> No <u>✓</u>
Hydric Soil Present?	Yes <u>—</u> No <u>✓</u>		
Wetland Hydrology Present?	Yes <u>—</u> No <u>✓</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
<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)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (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)	<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 <u>—</u> No <u>✓</u> Depth (inches): <u>—</u> Water Table Present? Yes <u>—</u> No <u>✓</u> Depth (inches): <u>—</u> Saturation Present? Yes <u>—</u> No <u>✓</u> Depth (inches): <u>—</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>—</u> No <u>✓</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6219/I-85

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

Sampling Point: WRR-1 up

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Sapling/Shrub Stratum (Plot size: <u>8x8m</u>)				
1. <u>Ligustrum sinense</u>	<u>40</u>	<u>y</u>	<u>FACW</u>	
2. <u>Baccharis sp.</u>	<u>20</u>	<u>L</u>	<u>-</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				
Herb Stratum (Plot size: <u>5x5m</u>)				
1. <u>Yucca sp.</u>	<u>10</u>	<u>-</u>	<u>-</u>	
2. <u>Verbena incompta</u>	<u>5</u>	<u>n</u>	<u>FACW</u>	
3. <u>Eupatorium capillifolium</u>	<u>20</u>	<u>y</u>	<u>FACU</u>	
4. <u>Andropogon montherianus</u>	<u>10</u>	<u>y</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>22.5</u> 20% of total cover: <u>9</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No ☒

Sampling Point: WRR. up

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 135 City/County: Cherokee Sampling Date: 12/10/15
 Applicant/Owner: SCDOT State: SC Sampling Point: NSS-4 wet
 Investigator(s): E. Morgan & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): RR-P Lat: 35.138645 Long: -81.511547 Datum: NAD83
 Soil Map Unit Name: TaF3-tatum silty clay loam, 15-35%, eroded NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation —, Soil —, or Hydrology — significantly disturbed? 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:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 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>1-8 in</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</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:		

6214 / I-85

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

Sampling Point: WSS-4 wet

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2. <u>Quercus prinus</u>	<u>5</u>	<u>y</u>	<u>UPL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 7.5 20% of total cover: 3 15 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>n</u>	<u>FACU</u>
2. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>y</u>	<u>FAC</u>
3. <u>Alopecurus pratensis</u>	<u>30</u>	<u>y</u>	<u>OBL</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 27.5 20% of total cover: 11 55 = Total Cover

Herb Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2. <u>Typha latifolia</u>	<u>10</u>	<u>y</u>	<u>OBL</u>
3. <u>Juncus effusus</u>	<u>20</u>	<u>y</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

50% of total cover: 20 20% of total cover: 8 40 = Total Cover

Woody Vine Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>10</u>	<u>y</u>	<u>FAC</u>
2. <u>Lonicera japonica</u>	<u>5</u>	<u>y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

50% of total cover: 7.5 20% of total cover: 3 15 = Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 89 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

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

Sampling Point: WSS-4 wet

²Location: PL=Pore Lining, M=Matrix.

Restrictive Layer (if observed):

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 195 City/County: Cherokee Sampling Date: 12/10/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WSS-4 up
 Investigator(s): E. Morgan + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5%
 Subregion (LRR or MLRA): LRR-P Lat: 35.138645 Long: -81.511547 Datum: NAD83
 Soil Map Unit Name: TaF3-tatum silty clay loam, 15-35%, eroded NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? 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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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></u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u></u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u></u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6214 / I-85

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

Sampling Point: WISS-4 up

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus rubra</u>	<u>10</u>	<u>N</u>	<u>FACU</u>
2. <u>Quercus prinus</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>
3. <u>Fagus grandifolia</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
4. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>N</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
50% of total cover: <u>70</u> = Total Cover 20% of total cover: <u>14</u>			
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2. <u>Fagus grandifolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
50% of total cover: <u>15</u> = Total Cover 20% of total cover: <u>3</u>			
Herb Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
50% of total cover: <u>5</u> = Total Cover 20% of total cover: <u>1</u>			
Woody Vine Stratum (Plot size: <u>5x5m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax sp.</u>	<u>5</u>	<u>-</u>	<u>-</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
50% of total cover: <u>5</u> = Total Cover 20% of total cover: <u>1</u>			

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No ✓

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

Sampling Point: WSS-4 LP

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SODOT State: SC Sampling Point: WTT-38 Wet
 Investigator(s): C. Sheats + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-D Lat: 35.131396 Long: -81.543422 Datum: NAD83
 Soil Map Unit Name: Mv-mixed alluvial sand Wkdg-willows sandy loam AFB2-alkaline fine sandy loam NWI classification: PFO1A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? 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:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1-10 inch</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</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: <u>Salmonanders abundant</u>			

6214/I-85

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

Sampling Point: WTT-38Wet

Tree Stratum (Plot size: <u>10x10 m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Fraxinus pennsylvanica</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>
2.	<u>Platanus occidentalis</u>	<u>35</u>	<u>yes</u>	<u>FACW</u>
3.				
4.				
5.				
6.				
7.				

50% of total cover: 32.5 20% of total cover: 13 65 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>10x10 m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liriodendron tulipifera</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>
2.	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>
3.	<u>Acer glabrum</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 22.5 20% of total cover: 9 45 = Total Cover

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

50% of total cover: _____ 20% of total cover: _____ _____ = Total Cover

Woody Vine Stratum (Plot size: <u>5x5m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Tamoxylon radicans</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>
2.	<u>Smilax latifolia</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>
3.				
4.				
5.				

50% of total cover: 22.5 20% of total cover: 9 45 = Total Cover

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes K No _____

Sampling Point: WIT-38ret

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/19/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WT-38Up
 Investigator(s): C. Sheats & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 5%
 Subregion (LRR or MLRA): LRR-P Lat: 35.131396 Long: -81.543422 Datum: NAD83
 Soil Map Unit Name: 1A1-mixed alluvial land Wkd2-wilkes sandy loam AFB2-a Hanover fine sandy loam NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation -, Soil -, or Hydrology - significantly disturbed? 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 type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: WTT - UP

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<u>Quercus phellos</u>	<u>25</u>	<u>yes</u>	<u>FAC</u>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2.					Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)	
4.					Prevalence Index worksheet:	
5.						Total % Cover of: _____ Multiply by: _____
6.						OBL species _____ x 1 = _____
7.						FACW species _____ x 2 = _____
8.					FAC species _____ x 3 = _____	
9.					FACU species _____ x 4 = _____	
10.					UPL species _____ x 5 = _____	
11.					Column Totals: _____ (A) _____ (B)	
50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u> <u>25</u> = Total Cover					Prevalence Index = B/A = _____	
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)					Hydrophytic Vegetation Indicators:	
1.	<u>Ligustrum sinense</u>	<u>85</u>	<u>yes</u>	<u>FACU</u>		1 - Rapid Test for Hydrophytic Vegetation
2.						<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
3.						3 - Prevalence Index is ≤3.0 ¹
4.					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.					Problematic Hydrophytic Vegetation ¹ (Explain)	
6.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7.						Definitions of Four Vegetation Strata:
8.					Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
9.					Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
10.					Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
11.					Woody vine – All woody vines greater than 3.28 ft in height.	
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u> <u>85</u> = Total Cover					Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Herb Stratum (Plot size: _____)						
1.					Remarks: (Include photo numbers here or on a separate sheet.)	
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
50% of total cover: _____ 20% of total cover: _____ _____ = Total Cover						
Woody Vine Stratum (Plot size: <u>5x5m</u>)						
1.	<u>Smilax sp</u>	<u>25</u>	<u>-</u>	<u>-</u>		
2.	<u>Smilax japonica</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>		
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u> <u>35</u> = Total Cover						

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WVU-12 Wet
 Investigator(s): C. Sheats & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.132261 Long: -81.540096 Datum: NAD 83
 Soil Map Unit Name: mv-mixed alluvial land NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation —, Soil —, or Hydrology — significantly disturbed? 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:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 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>0-10 in</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

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

Sampling Point: WUV-12 Wet

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: <u>5x5m</u>)				
1. <u>Juncus effusus</u>	<u>90</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Persicaria sp</u>	<u>25</u>	<u>yes</u>	<u>-</u>	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>57.5</u> 20% of total cover: <u>23</u>				Woody Vine Stratum (Plot size: _____)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				Remarks: (Include photo numbers here or on a separate sheet.)
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____				

Sampling Point: WUU-12 Wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WU-12 up
 Investigator(s): C. Sheats & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5%
 Subregion (LRR or MLRA): UK-P Lat: 35.132261 Long: -81.54096 Datum: NAD83
 Soil Map Unit Name: MV- mixed alluvial land NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: WUU-12 up

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer negundo</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

_____ = Total Cover
50% of total cover: 30 20% of total cover: 12

Herb Stratum (Plot size: <u>5x5ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus sp.</u>	<u>25</u>	<u>-</u>	<u>-</u>
2. <u>Carex</u>	<u>20</u>	<u>-</u>	<u>-</u>
3. <u>Festuca sp.</u>	<u>10</u>	<u>-</u>	<u>-</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

_____ = Total Cover
50% of total cover: 27.5 20% of total cover: 11

Woody Vine Stratum (Plot size: <u>5x5ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>
2.			
3.			
4.			
5.			

_____ = Total Cover
50% of total cover: 10 20% of total cover: 4

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

SOIL

Sampling Point: WVU-2 up

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 183 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WV-15wet
 Investigator(s): C. Shreets + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): 180-P Lat: 35.133229 Long: -81.53609 Datum: NAD83
 Soil Map Unit Name: MR-mixed alluvial sand / AFA-alluvial fine sandy loam NWI classification: PF01 A
 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:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Pondation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1-10 in</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4 in</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4 in</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:		

6214 / I-85

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

Sampling Point: WV-15-wet

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Sapling/Shrub Stratum (Plot size: <u>10x16m</u>)				
1. <u>Alnus serrulata</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>	OBL species _____ x 1 = _____
2. <u>Salix nigra</u>	<u>15</u>	<u>yes</u>	<u>OBL</u>	FACW species _____ x 2 = _____
3. <u>Sambucus canadensis</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
6. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
7. _____	_____	_____	_____	Prevalence Index = B/A = _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				
Herb Stratum (Plot size: <u>5x5m</u>)				
1. <u>Solidago sp.</u>	<u>20</u>	_____	_____	
2. <u>Lonicera japonica</u>	<u>50</u>	<u>yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

Sampling Point: WNN-10 wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WVY-42
 Investigator(s): C. Sheats + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 6%
 Subregion (LRR or MLRA): LRR-P Lat: 35.133229 Long: -81.53609 Datum: NAD83
 Soil Map Unit Name: Mv-mixed alluvial land / AFA-altivista fine sandy loam NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? 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:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/I-85

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

Sampling Point: WV-154

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 10x10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Sambucus canadensis</i>	15	yes	FAC
2. <i>Rubus</i> sp.	20	yes	-
3.			
4.			
5.			
6.			
7.			
8.			
9.			

_____ = Total Cover
50% of total cover: 17.5 20% of total cover: 7

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

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: 5x5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Lonicera japonica</i>	30	yes	FAC
2.			
3.			
4.			
5.			

_____ = Total Cover
50% of total cover: 15 20% of total cover: 6

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SCDOT State: SC Sampling Point: MMW-13 wet
 Investigator(s): C. Sheats & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): CONCAVE Slope (%): 0
 Subregion (LRR or MLRA): 122-D Lat: 35.134181 Long: -81.531633 Datum: NAD83
 Soil Map Unit Name: mv-mixed alluvial land HFA-altavista fine sandy loam GFF-gullied land, friable materials NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation —, Soil —, or Hydrology — significantly disturbed? 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:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-15</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</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:			

6214/I-85

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

Sampling Point: WWV-13 wet

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Populus heterophylla</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>
2.	<u>Salix nigra</u>	<u>60</u>	<u>yes</u>	<u>OBL</u>
3.				
4.				
5.				
6.				
7.				

50% of total cover: 40 20% of total cover: 16 = Total Cover 80

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Fraxinus pennsylvanica</u>	<u>25</u>	<u>yes</u>	<u>FACW</u>
2.	<u>Ligustrum sinense</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 22.5 20% of total cover: 9 = Total Cover 45

Herb Stratum (Plot size: <u>5x5ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Boehmeria caribaea</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 5 20% of total cover: 2 = Total Cover 10

Woody Vine Stratum (Plot size: <u>5x5ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>95</u>	<u>yes</u>	<u>FAC</u>
2.				
3.				
4.				
5.				

50% of total cover: 47.5 20% of total cover: 19 = Total Cover 95

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 60 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/15/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WW/1-13 up
 Investigator(s): C. Sheats + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): downslope road Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.134181 Long: -81.531633 Datum: NAD83
 Soil Map Unit Name: My mixed / AFA - alluvial / G.F. - gullied land NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation Yes, 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 _____	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: W/WW-134p

Tree Stratum (Plot size: <u>10x10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Salix nigra</u>	<u>40</u>	<u>yes</u>	<u>OBL</u>
2. <u>Acer negundo</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>
3.			
4.			
5.			
6.			
7.			

50% of total cover: 25 20% of total cover: 10 = Total Cover 50

Sapling/Shrub Stratum (Plot size: <u>10x10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>85</u>	<u>yes</u>	<u>FACU</u>
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

50% of total cover: 42.5 20% of total cover: 17 = Total Cover 85

Herb Stratum (Plot size: <u>5x5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

50% of total cover: _____ 20% of total cover: _____ = Total Cover _____

Woody Vine Stratum (Plot size: <u>5x5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>
2.			
3.			
4.			
5.			

50% of total cover: 10 20% of total cover: 4 = Total Cover 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)Total Number of Dominant Species Across All Strata: 4 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/16/15
 Applicant/Owner: SCDOT State: SC Sampling Point: WXX-Sa wet
 Investigator(s): C. Sheats + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): LRR-P Lat: 35.131058 Long: -81.551618 Datum: NAD83
 Soil Map Unit Name: TmF-tatum very fine sandy loam NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? 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:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 checked="" 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 type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10"</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u>		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:			

6214 / I-85

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

Sampling Point: WXY-5a wet

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Celtis Lavagata</u>	<u>15</u>	<u>yes</u>	<u>FACW</u>
2. <u>Fraxinus Pennsylvanica</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>
3. <u>Acer rubrum</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>
4.			
5.			
6.			
7.			

50% of total cover: 40 = Total Cover
20% of total cover: 8

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Carpinus caroliniana</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			

50% of total cover: 25 = Total Cover
20% of total cover: 5

Herb Stratum (Plot size: <u>5x5ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Micromeria viminalis</u>	<u>70</u>	<u>yes</u>	<u>FAC</u>
2. <u>Boehmeria cylindrica</u>	<u>15</u>	<u>no</u>	<u>FACW</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

50% of total cover: 85 = Total Cover
20% of total cover: 17

Woody Vine Stratum (Plot size: <u>5x5ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lonicera japonica</u>	<u>30</u>	<u>yes</u>	<u>FAC</u>
2.			
3.			
4.			
5.			

50% of total cover: 30 = Total Cover
20% of total cover: 6

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)Total Number of Dominant Species Across All Strata: 7 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

Sampling Point: WXX-5a wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/16/15
 Applicant/Owner: SCDOT State: SC Sampling Point: NXX-Sa up
 Investigator(s): C. Sheats + S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR or MLRA): LRR-P Lat: 35.131058 Long: -81.551618 Datum: NAD83
 Soil Map Unit Name: TmF - tatum fine sandy loam NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? 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 <u> </u> No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>✓</u>
Hydric Soil Present?	Yes <u> </u> No <u>✓</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>✓</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <u> </u> No <u>✓</u>	
Water Table Present?	Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u>		
Saturation Present? (includes capillary fringe)	Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: WYX - Se up

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus rubra</u>	<u>15</u>	<u>no</u>	<u>FACU</u>
2. <u>Quercus Alba</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>
3. <u>Carya tomentosa</u>	<u>15</u>	<u>no</u>	<u>FACU</u>
4. <u>Populus heterophylla</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 40 20% of total cover: 10 = Total Cover 80

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 10 20% of total cover: 4 = Total Cover 20

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

50% of total cover: _____ 20% of total cover: _____ = Total Cover _____

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

50% of total cover: _____ 20% of total cover: _____ = Total Cover _____

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 30 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes _____ No ☒

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/16/15
 Applicant/Owner: SCDOT State: SC Sampling Point: Wyg-1 **Wet**
 Investigator(s): C. Sheats & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.140573 Long: -81.511583 Datum: NAD83
 Soil Map Unit Name: TaF3-tatum silty clay loam NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? 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:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (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 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 checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input 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>1-4 in</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u>		
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

6214 / I-85

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

Sampling Point: Wyll - 1 Net

Tree Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Salix nigra</u>	<u>50</u>	<u>yes</u>	<u>OBL</u>
2.	<u>Platanus occidentalis</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>
3.				
4.				
5.				
6.				
7.				

50% of total cover: 40 20% of total cover: 16 80 = Total Cover

Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>
2.	<u>Platanus occidentalis</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>
3.	<u>Ligustrum sinense</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				

50% of total cover: 20 20% of total cover: 8 40 = Total Cover

Herb Stratum (Plot size: <u>5x5ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Onoclea sensibilis</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>
2.	<u>Carex sp.</u>			
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

50% of total cover: 25 20% of total cover: 10 50 = Total Cover

Woody Vine Stratum (Plot size: <u>5x5ft</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Lonicera japonica</u>	<u>15</u>	<u>yes</u>	<u>FAC</u>
2.				
3.				
4.				
5.				

50% of total cover: 7.5 20% of total cover: 3 15 = Total Cover

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 86 (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0¹

___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

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

Sampling Point: Wing-1 wet

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 185 City/County: Cherokee Sampling Date: 12/16/15
 Applicant/Owner: SCDOT State: SC Sampling Point: Wry-24
 Investigator(s): C. Sheats & S. Burton Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Convex Slope (%): 5%
 Subregion (LRR or MLRA): P Lat: 35.140573 Long: -81.511523 Datum: NAD83
 Soil Map Unit Name: TaF3- tatum silty clay loam NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? 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 <u> </u> No <u>✓</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>✓</u>
Hydric Soil Present? Yes <u> </u> No <u>✓</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>✓</u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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 <u> </u> No <u>✓</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>✓</u> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>✓</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / I-85

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

Sampling Point: Wyy-2 up

Tree Stratum (Plot size: <u>10x10m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liquidambar styraciflua</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>Liriodendron tulipifera</u>	<u>30</u>	<u>yes</u>	<u>FACU</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Pinus taeda</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>75</u> = Total Cover 20% of total cover: <u>15</u>				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: <u>10x10m</u>)				
1. <u>Liquidambar styraciflua</u>	<u>35</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Liriodendron tulipifera</u>	<u>15</u>	<u>yes</u>	<u>FACU</u>	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>50</u> = Total Cover 20% of total cover: <u>10</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: <u>5x5 ft</u>)				
1. <u>Allium vineale</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>10</u> = Total Cover 20% of total cover: <u>2</u>				Woody Vine Stratum (Plot size: <u>5x5 ft</u>)
Woody Vine Stratum (Plot size: <u>5x5 ft</u>)				
1. <u>Lonicera japonica</u>	<u>40</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	50% of total cover: <u>40</u> = Total Cover 20% of total cover: <u>8</u>
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>20</u> = Total Cover 20% of total cover: <u>4</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

Sampling Point: W44-2 UP

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 WIDENING City/County: Cherokee Sampling Date: 9/16/16
 Applicant/Owner: SCDOT State: SC Sampling Point: WEV-6 wet
 Investigator(s): M. WOOD / A. SWICE Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): HILLSLOPE Local relief (concave, convex, none): CONCAVE Slope (%): 3
 Subregion (LRR or MLRA): LRR-P Lat: 35.164339 Long: -81.448256 Datum: NAD-83
 Soil Map Unit Name: TmE - tatum very fine sandy loam 2S-3S% slope NWI classification: —
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? 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:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" 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 checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (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)	<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 type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>—</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8"</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: <u>drainage, pipe → ephemeral stream → wetland</u>			

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

Sampling Point: WEV -6 wet

Tree Stratum (Plot size: <u>30x60ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Salix nigra</u>	<u>40</u>	<u>YES</u>	<u>OBL</u>
2 <u>Populus deltoides</u>	<u>10</u>	<u>YES</u>	<u>FAC</u>
3 <u>Pinus taeda</u>	<u>5</u>	<u>NO</u>	<u>FAC</u>
4			
5			
6			
7			

50% of total cover: 27.5 55 = Total Cover
20% of total cover: 11

Sapling/Shrub Stratum (Plot size: <u>30x60ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Myrica cerifera</u>	<u>5</u>	<u>YES</u>	<u>FAC</u>
2 <u>Salix nigra</u>	<u>5</u>	<u>YES</u>	<u>OBL</u>
3			
4			
5			
6			
7			
8			
9			

50% of total cover: 5 10 = Total Cover
20% of total cover: 2

Herb Stratum (Plot size: <u>30x60ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Scirpus cyperinus</u>	<u>40</u>	<u>YES</u>	<u>FACW</u>
2 <u>Juncus spp.</u>	<u>5</u>	<u>NO</u>	<u>OBL</u>
3 <u>Carex spp.</u>	<u>30</u>	<u>YES</u>	<u>FAC</u>
4 <u>Polygonum spp.</u>	<u>10</u>	<u>NO</u>	<u>—</u>
5 <u>Polygonum sagittatum</u>	<u>10</u>	<u>NO</u>	<u>OBL</u>
6 <u>Rubus spp.</u>	<u>15</u>	<u>NO</u>	<u>—</u>
7			
8			
9			
10			
11			

50% of total cover: 55 110 = Total Cover
20% of total cover: 22

Woody Vine Stratum (Plot size: <u>30x60ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1 <u>Toxicodendron radicans</u>	<u>3</u>	<u>YES</u>	<u>FAC</u>
2 <u>Lonicera japonica</u>	<u>3</u>	<u>YES</u>	<u>FAC</u>
3			
4			
5			

50% of total cover: 3 10 = Total Cover
20% of total cover: 1.2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)
Total Number of Dominant Species Across All Strata: 7 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (VB)

Prevalence Index worksheet:

Total % Cover of: Multiply by:
OBL species 7 x 1 = 7
FACW species 0 x 2 = 0
FAC species 0 x 3 = 0
FACU species 0 x 4 = 0
UPL species 0 x 5 = 0
Column Totals: (A) 7 (B) 7

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

6214/I-85

SOIL

Sampling Point: WEV-6 wet

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		
0-5	7.5YR 5/6	60	7.5YR 5/4	40	C	M	L	
6-10	7.5YR 5/3	55	7.5YR 5/4	40	C	M	L	
			7.5YR 5/8	5	C	M	L	
10-12+	10YR 6/3	100					CSL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

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)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators 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 SOIL IS RECENTLY DEPOSITED FILL/RUN-OFF FROM THE SURROUNDING UPLANDS. THE SOIL IS DEVELOPING REDOXIMORPHIC FEATURES CONSISTENT WITH A HYDRIC WATER REGIME WHICH WOULD BECOME A DEPLETED MATRIX IF PRESENT CONDITIONS REMAIN. THEREFORE, IT'S CONSIDERED HYDRIC

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 1-85 WIDENING City/County: Cherokee Sampling Date: 9/16/16 flag 6
 Applicant/Owner: SCDOT State: SC Sampling Point: WZU-up
 Investigator(s): M. WOOD / H. Siler Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): HILLSLOPE Local relief (concave, convex, none): CONVEX Slope (%): 20
 Subregion (LRR or MLRA): LRR-P Lat: 35.164339 Long: -81.448256 Datum: NAD-83
 Soil Map Unit Name: TmE - tatum very fine sandy loam, 25-35% slope NWI classification: -
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
 Are Vegetation No, Soil YES, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation No, Soil No, or Hydrology No 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 <u> </u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: <u>HYDROPHYTIC VEGETATION WERE MOSTLY "FAC" PLANTS SO COULD BE FOUND IN UPLAND AREAS AS WELL.</u>	

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u> <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) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (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)	<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 <u> </u> No <u> </u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: WZV-6 UP

Light indicator

Tree Stratum (Plot size: <u>20x20ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus taeda</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Styraciflua</u>	<u>10</u>	<u>X</u>	<u>FAC</u>
3. <u>Gleditsia tridacanthos</u>	<u>5</u>	<u>X</u>	<u>FAC</u>
4.			
5.			
6.			
7.			

50% of total cover: 27.5 = Total Cover
20% of total cover: 11

Sapling/Shrub Stratum (Plot size: <u>20x20ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus taeda</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

50% of total cover: 10 = Total Cover
20% of total cover: 4

Herb Stratum (Plot size: <u>20x20ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus spp.</u>	<u>10</u>	<u>Yes</u>	<u>=</u>
2. <u>Evax prolifera</u>	<u>5</u>	<u>Yes</u>	<u>=</u>
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

50% of total cover: 7.5 = Total Cover
20% of total cover: 3

Woody Vine Stratum (Plot size: <u>20x20ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitex rotundifolia</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3.			
4.			
5.			

50% of total cover: 10 = Total Cover
20% of total cover: 4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)Total Number of Dominant Species Across All Strata: 4 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>110</u>	x 3 = <u>330</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>110</u> (A)	<u>330</u> (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No ☐

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

NOT PART OF WETLAND DESPITE VEGETATION INDICATING WETLAND

flag 6

WZV-up

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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, MLRA 136)
- ___ Umbria Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)
- ___ Red Parent Material (F21) (MLRA 127, 147)

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)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

STRONGLY CEMENTED: NOT REALLY SOIL

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: WZW-6 wet
 Investigator(s): M. Wood + H. Slyce Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 3
 Subregion (LRR or MLRA): P Lat: 35.139026 Long: -81.514335 Datum: NAD-83
 Soil Map Unit Name: TaC3 NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? No Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation No, Soil No, or Hydrology No 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:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>-</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>10</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>2</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: <u>WZW 1-2: drainage from stream</u>		

6214 / I-85

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

Sampling Point: WZW-6wet

Tree Stratum (Plot size: <u>20x20ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liocodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>15</u> 20% of total cover: <u>6</u> <u>30</u> = Total Cover				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: <u>20x20ft</u>)				Total % Cover of: _____ Multiply by: _____
1. <u>Alnus serrulata</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	OBL species _____ x 1 = _____
2. <u>Sambucus canadensis</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	FACW species _____ x 2 = _____
3. _____	_____	_____	_____	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
6. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
7. _____	_____	_____	_____	Prevalence Index = B/A = _____
8. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:
9. _____	_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation
50% of total cover: <u>10.5</u> 20% of total cover: <u>4.2</u> <u>21</u> = Total Cover				2 - Dominance Test is >50%
Herb Stratum (Plot size: <u>20x20ft</u>)				3 - Prevalence Index is ≤3.0 ¹
1. <u>Microstegium vimineum</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. <u>Ligularia styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Problematic Hydrophytic Vegetation ¹ (Explain)
3. <u>Woodwardia virginica</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
4. <u>Polygonum spp</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
50% of total cover: <u>10.5</u> 20% of total cover: <u>4.2</u> <u>21</u> = Total Cover				
Woody Vine Stratum (Plot size: <u>20x20ft</u>)				
1. <u>Vitis rotundifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Parthenocissus quinquefolia</u>	<u>3</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: <u>4</u> 20% of total cover: <u>1.6</u> <u>8</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Sampling Point: WZWBW

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: WZW-6 up
 Investigator(s): M. Wood & H. Slyce Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): convex Slope (%): 3
 Subregion (LRR or MLRA): LRR-P Lat: 35.139026 Long: -81.514335 Datum: NA083
 Soil Map Unit Name: TAC3 NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<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)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (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)	<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> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214 / F-85

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

Sampling Point: WZW-6 up

Tree Stratum (Plot size: 20x20 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <i>Liriodendron tuliofera</i>	30	Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. <i>Liquidambar styraciflua</i>	100	Y	FAC	
3. <i>Quercus alba</i>	20	N	FACU	
4. <i>Quercus rubra</i>	20	N	FACU	
5. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>65</u> 20% of total cover: <u>26</u> <u>130</u> = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: 20x20 ft)				
1. <i>Cornus alterniflora</i>	5	N	FAC	
2. <i>Q. alba</i>	15	Y	FACU	
3. <i>Ilex opaca</i>	5	N	FACU	<input type="checkbox"/> 1 - Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4. <i>Nyssa sylvatica</i>	4	N	FAC	
5. <i>Carya cordiformis</i>	2	N	FACU	
6. <i>Ulmus alata</i>	2	N	FACU	
7. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
50% of total cover: <u>16.5</u> 20% of total cover: <u>6.6</u> <u>33</u> = Total Cover				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
Herb Stratum (Plot size: 20x20 ft)				
1. <i>Polystichum acrostichoides</i>	10	Y	FACU	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Woody Vine Stratum (Plot size: 20x20 ft)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
50% of total cover: <u>5</u> 20% of total cover: <u>2</u> <u>10</u> = Total Cover				Remarks: (Include photo numbers here or on a separate sheet.)
Woody Vine Stratum (Plot size: 20x20 ft)				
1. <i>V. vitis rotundifolia</i>	15	Y	FAC	
2. <i>Lonicera japonica</i>	10	Y	FAC	
3. _____	_____	_____	_____	50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u> <u>25</u> = Total Cover
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	

Sampling Point: WZW-60f

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: WZY - S wet
 Investigator(s): Michael Wood + Hannah Syce Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): linear Local relief (concave, convex, none): none Slope (%): 4
 Subregion (LRR or MLRA): P Lat: 35.138938 Long: -81.515459 Datum: NAD83
 Soil Map Unit Name: Mv NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:	

HYDROLOGY

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

6214 / I-85

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

Sampling Point: WZx-5 wet

Tree Stratum (Plot size: <u>30x30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2. <u>Acer rubrum</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83%</u> (A/B)
4. <u>Salix nigra</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>42.5</u> 85 = Total Cover 20% of total cover: <u>17</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>30x30ft</u>) 1. <u>Acer rubrum</u> <u>30</u> <u>Y</u> <u>FAC</u> 2. <u>Liquidambar styraciflua</u> <u>15</u> <u>Y</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: <u>22.5</u> 45 = Total Cover 20% of total cover: <u>9</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: <u>30x30ft</u>) 1. <u>Microstegium vimineum</u> <u>20</u> <u>Y</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>10</u> 20 = Total Cover 20% of total cover: <u>4</u>				
Woody Vine Stratum (Plot size: <u>30x30ft</u>) 1. <u>Lonicera japonica</u> <u>5</u> <u>Y</u> <u>FAC</u> 2. <u>Parthenocissus quinquefolia</u> <u>1</u> <u>N</u> <u>FACU</u> 3. _____ 4. _____ 5. _____				
50% of total cover: <u>3</u> 6 = Total Cover 20% of total cover: <u>1.2</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

Sampling Point: W2X-Swet

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCOOT State: SC Sampling Point: W2X-4 up
 Investigator(s): Mr. Wood & H. Slyce Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): linear Local relief (concave, convex, none): convex Slope (%): 4
 Subregion (LRR or MLRA): LRR-P Lat: 35.138938 Long: -81.515459 Datum: NA083
 Soil Map Unit Name: MV NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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 _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

6214/I-85

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

Sampling Point: W2X-4up

Tree Stratum (Plot size: <u>20x30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
3. <u>Liriodendron tulipifera</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

50% of total cover: 35 70 = Total Cover
20% of total cover: 17

Sapling/Shrub Stratum (Plot size: <u>20x30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>L. styraciflua</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>
2. <u>Fagus grandifolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>
3. <u>A. rubrum</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50% of total cover: 17.5 35 = Total Cover
20% of total cover: 7

Herb Stratum (Plot size: <u>20x30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

50% of total cover: 7.5 15 = Total Cover
20% of total cover: 3

Woody Vine Stratum (Plot size: <u>20x30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis rotundifolia</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>
2. <u>Coccoloba japonica</u>	<u>2</u>	<u>Y</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

50% of total cover: 3.5 7 = Total Cover
20% of total cover: 1.4

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)Total Number of Dominant Species Across All Strata: 8 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- 3 - Prevalence Index is $\leq 3.0^1$
- 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes ☒ No _____

Sampling Point: WZx-7-P

Sampling Point: WZx-7-P

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: WZY-10 wet
 Investigator(s): M. Wood & H. Slyce Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): linear Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRB or MLRA): LRB P Lat: 35.141379 Long: -81.512992 Datum: NAD-83
 Soil Map Unit Name: TaC3 NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology Yes significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply)		<u>Secondary Indicators</u> (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input checked="" 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 checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (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)	<input checked="" type="checkbox"/> Surface Soil Cracks (B6) <input 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 type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		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: Wetland is old drainage pond that has been drained, pipe outlet located near wetland area with standing water inside rock barrier			

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

Sampling Point: WEY-10wet

Tree Stratum (Plot size: <u>15x15ft</u>)				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Salix nigra</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>2</u> (A)
2.				Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100%</u> (A/B)
4.					
5.					
6.					
7.					
50% of total cover: <u>10</u> <u>20</u> = Total Cover 20% of total cover: <u>4</u>				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____	
1.				OBL species _____	x 1 = _____
2.				FACW species _____	x 2 = _____
3.				FAC species _____	x 3 = _____
4.				FACU species _____	x 4 = _____
5.				UPL species _____	x 5 = _____
6.				Column Totals: _____	(A) _____ (B) _____
7.				Prevalence Index = B/A = _____	
8.				Hydrophytic Vegetation Indicators:	
9.				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
50% of total cover: _____ 20% of total cover: _____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>15x15ft</u>)				Definitions of Four Vegetation Strata:	
1. <u>Typha latifolia</u>	<u>85</u>	<u>Y</u>	<u>OBL</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2. <u>Typha angustifolia</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
3. <u>Scirpus cypripus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4. <u>Polygonum sp.</u>	<u>2</u>	<u>N</u>	<u>—</u>	Woody vine – All woody vines greater than 3.28 ft in height.	
5.					
6.					
7.					
8.					
9.					
10.					
11.					
50% of total cover: <u>48.5</u> <u>97</u> = Total Cover 20% of total cover: <u>19.4</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size: _____)					
1.					
2.					
3.					
4.					
5.					
50% of total cover: _____ 20% of total cover: _____ = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					

Sampling Point: WZ4-10 wet

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: WZY-9 up
 Investigator(s): M. Wood & H. Syre Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR or MLRA): P Lat: 35.141379 Long: -81.512442 Datum: NAD83
 Soil Map Unit Name: TAC3 NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>old drainage pond embankment</u>		

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

Sampling Point: WZY-9 up

Tree Stratum (Plot size: <u>30 x 30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)
2. <u>Pinus virginiana</u>	<u>30</u>	<u>Y</u>	<u>—</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Platanus occidentalis</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3</u> (A/B)
4. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____				
6. _____				
7. _____				
50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u> Total Cover: <u>65</u>				Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: <u>30 x 30 ft</u>)				Total % Cover of: _____ Multiply by: _____
1. <u>Diospyros virginica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	OBL species _____ x 1 = _____
2. <u>Betula nigra</u>	<u>3</u>	<u>N</u>	<u>FACW</u>	FACW species _____ x 2 = _____
3. <u>Ligustrum sinense</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	FAC species _____ x 3 = _____
4. <u>Ulmus alata</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	FACU species _____ x 4 = _____
5. _____				UPL species _____ x 5 = _____
6. _____				Column Totals: _____ (A) _____ (B)
7. _____				
8. _____				
9. _____				
50% of total cover: <u>36.5</u> 20% of total cover: <u>14.6</u> Total Cover: <u>73</u>				Prevalence Index = B/A = _____
Herb Stratum (Plot size: <u>30 x 30 ft</u>)				Hydrophytic Vegetation Indicators:
1. <u>Lespedeza angustifolia</u>	<u>1</u>	<u>Y</u>	<u>FAC</u>	1 - Rapid Test for Hydrophytic Vegetation _____
2. _____				2 - Dominance Test is >50% <input checked="" type="checkbox"/>
3. _____				3 - Prevalence Index is ≤3.0 ¹ <input checked="" type="checkbox"/>
4. _____				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____
5. _____				Problematic Hydrophytic Vegetation ¹ (Explain) _____
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
50% of total cover: <u>0.5</u> 20% of total cover: <u>0.2</u> Total Cover: <u>1</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: <u>30 x 30 ft</u>)				Definitions of Four Vegetation Strata:
1. <u>Smilax rotundifolia</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
2. <u>Lonicera japonica</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
3. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
4. <u>Campsis radicans</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	Woody vine – All woody vines greater than 3.28 ft in height.
5. _____				
50% of total cover: <u>12</u> 20% of total cover: <u>4.8</u> Total Cover: <u>12</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>6</u> 20% of total cover: <u>2.4</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

Sampling Point: WZY-900

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 Widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: W22-7 wet
 Investigator(s): M. Wood & H. Slyce Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave Slope (%): 4
 Subregion (LRR or MLRA): P Lat: 35.129922 Long: -81.552246 Datum: NAD83
 Soil Map Unit Name: TmE2 NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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:		

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input 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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>8</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: <u>possibly an old farm pond, seeps flow down into larger wetland area</u>		

6214 / I-85

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

Sampling Point: WZ77 wet

Tree Stratum (Plot size: <u>30x15ft</u>)				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Fraxinus pennsylvanica</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)	
2. <u>Carpinus caroliniana</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71.4%</u> (A/B)	
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>20</u> 20% of total cover: <u>8</u> <u>40</u> = Total Cover				Prevalence Index worksheet:	
Sapling/Shrub Stratum (Plot size: <u>30x15ft</u>)				Total % Cover of: _____ Multiply by: _____	
1. <u>Ilex opaca</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	OBL species _____	x 1 = _____
2. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species _____	x 2 = _____
3. _____				FAC species _____	x 3 = _____
4. _____				FACU species _____	x 4 = _____
5. _____				UPL species _____	x 5 = _____
6. _____				Column Totals: _____ (A)	_____ (B)
7. _____				Prevalence Index = B/A = _____	
8. _____				Hydrophytic Vegetation Indicators:	
9. _____				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
50% of total cover: <u>10</u> 20% of total cover: <u>4</u> <u>20</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: <u>30x15ft</u>)				Definitions of Four Vegetation Strata:	
1. <u>Microstegium vimineum</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2. <u>Polygonum sagittatum</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
3. <u>Boehmeria cylindrica</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4. _____				Woody vine – All woody vines greater than 3.28 ft in height.	
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
50% of total cover: <u>23.5</u> 20% of total cover: <u>9.4</u> <u>47</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Woody Vine Stratum (Plot size: <u>30x15ft</u>)					
1. <u>Parthenocissus quinquefolia</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>		
2. <u>Lonicera japonica</u>	<u>4</u>	<u>Y</u>	<u>FAC</u>		
3. _____					
4. _____					
5. _____					
50% of total cover: <u>7</u> 20% of total cover: <u>2.8</u> <u>14</u> = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					

6214 / I-85

SOIL

Sampling Point: W22-7 we

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-6	10YR 4/2	80	2.5YR 4/6	20	C	M	SL	
6-8	2.5YR 5/4	75	2.5YR 5/2	15	D	M	SL	
			7.5YR 5/6	10	C	M	SL	
8-12+	2.5YR 5/3	80	7.5YR 5/6	20	C	M	LoSL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: 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, MLRA 136)
☐ Umbric Surface (F13) (MLRA 136, 122)
☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Red Parent Material (F21) (MLRA 127, 147)

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)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: I-85 widening City/County: Cherokee Sampling Date: 9-16-16
 Applicant/Owner: SCDOT State: SC Sampling Point: W27-7 up
 Investigator(s): M. Wood & H. Slyce Section, Township, Range: Blackburg
 Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): convex Slope (%): 20
 Subregion (ERP or MLRA): P Lat: 35.127922 Long: -81.552246 Datum: NAD83
 Soil Map Unit Name: TmE2 NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____ No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes _____ No <input checked="" type="checkbox"/>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <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 _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: W277 up

Tree Stratum (Plot size: <u>30x30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus taeda</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>28.6%</u> (A/B)
2. <u>Carya cordiformis</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Ostrya virginiana</u>	<u>20</u>	<u>Y</u>	<u>FAM</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u> Sapling/Shrub Stratum (Plot size: <u>30x30ft</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
2. <u>Ilex opaca</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Cercis canadensis</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
4. <u>Liquidambar styraciflua</u>	<u>3</u>	<u>N</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>19</u> 20% of total cover: <u>7.6</u> Herb Stratum (Plot size: <u>30x30ft</u>)				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. <u>Polystichum acrostichoides</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Microstegium vimineum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Asplenium platyneuron</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	Woody Vine Stratum (Plot size: <u>30x30ft</u>)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>18.5</u> 20% of total cover: <u>7.4</u> Woody Vine Stratum (Plot size: <u>30x30ft</u>)				Remarks: (Include photo numbers here or on a separate sheet.)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	

Sampling Point: WZ2-7 up

[illegible]

[†]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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, MLRA 136)
- ___ Umbric Surface (F13) (MLRA 136, 122)
- ___ Piedmont Floodplain Soils (F19) (MLRA 148)
- ___ Red Parent Material (F21) (MLRA 127, 147)

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)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 I-85 widening City/County: Cherokee Sampling Date: 10/05/2016
 Applicant/Owner: SCDOT State: SC Sampling Point: WAAA-1 (wet)
 Investigator(s): Nathan Howell Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Top-of-slope Local relief (concave, convex, none): Convex Slope (%): 2
 Subregion (LRR or MLRA): LRR-P Lat: 35.144316 Long: -81.502339 Datum: NAD 83
 Soil Map Unit Name: Tatum silty clay loam, 15-35% slopes, severely eroded 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: <u>WAAA is a small seepage / TWS wetland that drains to SZC.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" 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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3"</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:		

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

Sampling Point: WAAA - 1 (wet)

Tree Stratum (Plot size: 5x10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Acer rubrum</i>	40	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
50% of total cover: 20 40 = Total Cover 20% of total cover: 8			
Sapling/Shrub Stratum (Plot size: 5x10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Ligustrum sinense</i>	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
50% of total cover: 2.5 5 = Total Cover 20% of total cover: 1			
Herb Stratum (Plot size: 5x10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. wetland grass taxon	3	-	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
50% of total cover: 2.5 5 = Total Cover 20% of total cover: 1			
Woody Vine Stratum (Plot size: 5x10 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Campsis radicans</i>	5	Yes	FAC
2.			
3.			
4.			
5.			
50% of total cover: 2.5 5 = Total Cover 20% of total cover: 1			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

☐ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

Plot size reflects small wetland size.

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214-I-85 City/County: Cherokee Sampling Date: 10/05/2016
 Applicant/Owner: SCDOT State: SC Sampling Point: WAAA-2(4PL)
 Investigator(s): Nathan Howell Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 40
 Subregion (LRR or MLRA): LRR-P Lat: 35.144504 Long: -81.502275 Datum: NAD-83
 Soil Map Unit Name: Tatum Very fine sandy loam 15-25% slopes 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 type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<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): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

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

Sampling Point: WAAA-2 UPL

Tree Stratum (Plot size: <u>10 x 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Quercus alba</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Pinus echinata</u>	<u>15</u>	<u>Yes</u>	<u>NI</u>
3. <u>Liriodendron tulipifera</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

55 = Total Cover
50% of total cover: 27.5 20% of total cover: 11

Sapling/Shrub Stratum (Plot size: <u>10 x 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Fagus grandifolia</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Kalmia latifolia</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

50 = Total Cover
50% of total cover: 25 20% of total cover: 10

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

_____ = Total Cover
50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: <u>10 x 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax latifolia</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

10 = Total Cover
50% of total cover: 5 20% of total cover: 2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)Total Number of Dominant Species Across All Strata: 5 (B)Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.**Woody vine** – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present?

Yes _____ No ☒

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 I-85 City/County: Cherokee Sampling Date: 10/05/2016
 Applicant/Owner: SCDOT State: SC Sampling Point: WBBB-10 (wet)
 Investigator(s): Nathan Howell Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Toe-of-slope Local relief (concave, convex, none): Convex Slope (%): 2
 Subregion (LRR or MLRA): LRR-P Lat: 35.143189 Long: -81.512155 Datum: NAD-83
 Soil Map Unit Name: Tatum very fine sandy loam, 25-35% slopes 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: <u>WBBB is an old BMP retention feature. Riprap dam is holding water in wetland. Stream S2N flows into WBBB.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input checked="" type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input 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 checked="" 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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-4</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>3</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: <u>Two very shallow channels flow through wetland.</u>		

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

Sampling Point: W3B5-10 (wet)

Tree Stratum (Plot size: <u>10 x 10 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix nigra</u>	<u>60</u>	<u>YES</u>	<u>OBL</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)
2. <u>Quercus nigra</u>	<u>15</u>	<u>NO</u>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
3. <u>Liquidambar styraciflua</u>	<u>15</u>	<u>NO</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. <u>Acer rubrum</u>	<u>15</u>	<u>NO</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Total Cover: <u>105</u> 50% of total cover: <u>52.5</u> 20% of total cover: <u>21</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10 x 10 m</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Salix nigra</u>	<u>15</u>	<u>YES</u>	<u>OBL</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. <u>Ligustrum sinense</u>	<u>5</u>	<u>NO</u>	<u>FACU</u>	
3. <u>Elaeagnus umbellata</u>	<u>5</u>	<u>-</u>	<u>NI</u>	
4. <u>Acer rubrum</u>	<u>10</u>	<u>YES</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
Total Cover: <u>35</u> 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>				
Herb Stratum (Plot size: <u>10 x 10 m</u>)				
1. <u>Imperata capensis</u>	<u>35</u>	<u>YES</u>	<u>FACW</u>	
2. <u>Juncus effusus</u>	<u>10</u>	<u>YES</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Total Cover: <u>45</u> 50% of total cover: <u>22.5</u> 20% of total cover: <u>9</u>				
Woody Vine Stratum (Plot size: <u>10 x 10 m</u>)				
1. <u>Toxicodendron radicans</u>	<u>5</u>	<u>YES</u>	<u>FAC</u>	
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>YES</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Total Cover: <u>10</u> 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 6214 I-85 City/County: Cherokee Sampling Date: 10/05/2016
 Applicant/Owner: SCDOT State: SC Sampling Point: WBBB-1 (UP)
 Investigator(s): Nathan Howell Section, Township, Range: Blacksburg
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 35
 Subregion (LRR or MLRA): LRR-P Lat: 35.143189 Long: -81.512155 Datum: NAD-83
 Soil Map Unit Name: Tatum very fine sandy loam 25-35 % slopes NWI classification: NOA

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 type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> 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 type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input 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 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 type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>		
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u> </u>		
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: WBBB-7 UPL

Tree Stratum (Plot size: <u>10 X 16 m</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Liriodendron tulipifera</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Prunus serotina</u>	<u>10</u>	<u>yes</u>	<u>FACU</u>	Total Number of Dominant Species Across All Strata: <u>6</u> (B)
3. <u>Liquidambar styraciflua</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>20</u> 40 = Total Cover 20% of total cover: <u>8</u>				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Sapling/Shrub Stratum (Plot size: <u>10 X 16 m</u>)				
1. <u>Liquidambar styraciflua</u>	<u>15</u>	_____	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>75</u> 15 = Total Cover 20% of total cover: <u>3</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Herb Stratum (Plot size: <u>10 X 16 m</u>)				
1. <u>Microstegium vimineum</u>	<u>10</u>	<u>yes</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>5</u> 10 = Total Cover 20% of total cover: <u>2</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: <u>10 X 16 m</u>)				
1. <u>Lonicera japonica</u>	<u>5</u>	<u>yes</u>	<u>FAC</u>	
2. <u>Smilax rotundifolia</u>	<u>5</u>	<u>yes</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50% of total cover: <u>5</u> 10 = Total Cover 20% of total cover: <u>2</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.) <u>Upland vegetation consists of several FAC, generalist, species.</u>				

SOIL

Sampling Point: WB33-7 UF

[illegible]