

NATURAL RESOURCES TECHNICAL REPORT

**Corridor K Project
Graham County, North Carolina**

STIP A-0009C



**THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION 14**

October 2019

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1.0 INTRODUCTION

As part of the Corridor K project, the North Carolina Department of Transportation (NCDOT) proposes improvements to US 129, NC 143 and NC 28 from Robbinsville to Stecoah in Graham County, which include both new location and improve existing options (STIP A-0009C) (Figures 1 and 2). The following Natural Resources Technical Report (NRTR) has been prepared to assist in the preparation of a document for the purposes of the National Environmental Policy Act (NEPA).

2.0 METHODOLOGY

All work was conducted in accordance with the NCDOT Environmental Coordination and Permitting's Preparing Natural Resources Technical Reports Procedure and the latest NRTR Template November 2017. Field work was conducted on June 2 through 30, and July 1 through 12, 2019. At the time of this report, no verification meetings have been held regarding jurisdictional features identified in the study area. The principal personnel contributing to the field work and document is provided in Appendix B.

3.0 TERRESTRIAL COMMUNITIES

Thirteen terrestrial communities were identified in the study area. Figure 4 shows the location and extent of the terrestrial communities. Terrestrial community data are presented in the context of total coverage of each type within the study area (Table 1).

Table 1. Coverage of terrestrial communities in the study area

Community	Dominant Species (scientific name)	Coverage (ac.)
Montane Oak-Hickory Forest	White Oak (<i>Quercus alba</i>) Chestnut Oak (<i>Quercus prinus</i>) Sourwood (<i>Oxydendrum arboreum</i>)	302.7
Dry-Mesic Oak-Hickory Forest	Shortleaf Pine (<i>Pinus echinata</i>) Virginia Pine (<i>Pinus virginiana</i>) White Oak (<i>Quercus alba</i>)	2.6
Rich Cove Forest	American Beech (<i>Fagus grandifolia</i>) Sweet Birch (<i>Betula lenta</i>) Tulip Poplar (<i>Liriodendron tulipifera</i>)	542.7
Acid Cove Forest	Red Maple (<i>Acer rubrum</i>) Sweet Birch (<i>Betula lenta</i>) Great Rhododendron (<i>Rhododendron maximum</i>)	165.6
White Pine Forest	Eastern White Pine (<i>Pinus strobus</i>) Tulip Poplar (<i>Liriodendron tulipifera</i>) Red Maple (<i>Acer rubrum</i>)	72.3
Canada Hemlock Forest	Eastern Hemlock (<i>Tsuga canadensis</i>) Tulip Poplar (<i>Liriodendron tulipifera</i>) White Oak (<i>Quercus alba</i>)	1.4
Montane Alluvial Forest	Sycamore (<i>Platanus occidentalis</i>) Black Willow (<i>Salix nigra</i>) Sweetgum (<i>Liquidambar styraciflua</i>)	34.1

Community	Dominant Species (scientific name)	Coverage (ac.)
Seep	American Hornbeam (<i>Carpinus caroliniana</i>) Red Maple (<i>Acer rubrum</i>) Sedge (<i>Carex</i> sp.)	0.3
Floodplain Pool	Black Elderberry (<i>Sambucus nigra</i>) Northern Spicebush (<i>Lindera benzoin</i>) Jewelweed (<i>Impatiens capensis</i>)	0.02
Headwater Forest	Red Maple (<i>Acer rubrum</i>) Black Elderberry (<i>Sambucus nigra</i>) Sedges (<i>Carex</i> sp.)	3.7
Non-Tidal Freshwater Marsh	Needle Spikerush (<i>Eleocharis acicularis</i>) Sedges (<i>Carex</i> sp.) Common Rush (<i>Juncus effusus</i>)	5.9
Agriculture	Fescue (<i>Festuca</i> sp.) Orchardgrass (<i>Dactylus glomerate</i>) Corn (<i>Zea mays</i>)	156.3
Maintained / Disturbed	Fescue (<i>Festuca</i> sp.) Crabgrass (<i>Digitaria</i> sp.) Sawtooth Blackberry (<i>Rubus argutus</i>)	507.2
Total		1794.8

4.0 PROTECTED SPECIES

4.1 Endangered Species Act Protected Species

As of June 27, 2018, the United States Fish and Wildlife (USFWS) lists ten federally protected species, under the Endangered Species Act (ESA) for Graham County, North Carolina (Table 2). At the request of the USFWS, small whorled pogonia was also evaluated. For each species, a discussion of the presence or absence of habitat is included below along with the Biological Conclusion rendered based on coordination with USFWS and survey results in the study area.

Table 2. ESA federally protected species listed for Graham County

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Glyptemys muhlenbergii</i>	Bog turtle	T(S/A)	N/A	Not required
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	E	No	No Effect
<i>Myotis grisescens</i>	Gray bat	E	No	No Effect
<i>Myotis sodalis</i>	Indiana bat	E	Yes	Unresolved
<i>Myotis septentrionalis</i>	Northern long-eared bat	T	Yes	Unresolved
<i>Erimonax monachus</i>	Spotfin chub	T	No	No Effect
<i>Alasmidonta raveneliana</i>	Appalachian elktoe	E	No	No Effect
<i>Bombus affinis</i> *	Rusty-patched bumble bee	E	N/A	Not Required
<i>Spiraea virginiana</i>	Virginia spiraea	T	Yes	No Effect
<i>Gymnoderma lineare</i>	Rock gnome lichen	E	No	No Effect

E - Endangered

T - Threatened

T (S/A) - Threatened due to similarity of appearance

* - Historic record

Bog Turtle

USFWS Optimal Survey Window: April 1 – October 1 (visual surveys); April 1-June 15 (optimal for breeding/nesting); May 1-June 30 (trapping surveys)

Biological Conclusion: Not Required

Species listed as threatened due to similarity of appearance do not require Section 7 consultation with the USFWS. Suitable habitat including open, groundwater supplied, graminoid dominated wetlands along riparian corridors or on seepage slopes, was observed along the floodplain of Sweetwater Creek within the project study area. Surveys completed by “Project Bog Turtle” in 1999 did not find occurrences of bog turtle within the project study area (FHWA 2008). Additionally, a review of the NCNHP database (June 2019), revealed no known occurrences of this species within 1.0 mile of the project study area.

Carolina Northern Flying Squirrel

USFWS Optimal Survey Window: May – October; coldest days in coldest winter months (nest box surveys)

Biological Conclusion: No effect

Suitable habitat for the Carolina northern flying squirrel including ecotone between coniferous and mature northern hardwood forest at elevations above 4,500 feet above mean sea level was not observed within the project study area. Additionally, a review of the NCNHP database (July 2019), revealed no known occurrences of this species within 1.0 mile of the project study area.

Gray Bat

USFWS Optimal Survey Window: May 15 – August 15 (summer); January 15 – February 15

Biological Conclusion: No Effect

Gray bats live in caves, often utilizing different caves for summer roosting and winter hibernating. A structure survey was completed on July 8-9, 2019 which included a site search and review of cave and mine databases (Appendix C). No caves or abandoned mines occur within or near the project corridor. No suitable habitat for gray bats was found within the project corridor. Additionally, a review of NCNHP database (June 2019 dataset) indicates no known occurrences within 1.0 mile of the study area.

Indiana Bat

USFWS Recommended Survey Window: May 15-August 15 (summer); January 15-February 15 (winter)

Biological Conclusion: Unresolved

No Indiana bats were captured in surveys conducted for the project study area in 2001 or 2008-2009 (NCDOT 2009). However, the eastern end of the project study area intersects a buffer for a known Indiana bat maternity roost. A mine/cave and bridge/structure survey was completed on July 8-9, 2019 and no Indiana bats were found (Appendix C). Additionally, a review of NCNHP database (June 2019 dataset) indicates no known occurrences within 1.0 mile of the study area. Because of the potential for forest loss from the project and proximity to a known maternity roost, formal consultation with USFWS is required for Indiana bat. A biological conclusion of May Affect, Not Likely to Adversely Affect is being proposed within the Biological Assessment for Indiana Bat.

Northern Long-Eared Bat

USFWS Optimal Survey Window: June 1 – August 15

Biological Conclusion: Unresolved

Nineteen (19) northern long-eared bats (NLEB) were captured in surveys conducted for the project study area in 2001 and 25 NLEB were captured in 2008-2009 (NCDOT 2009). No NLEB were found during a mine/cave and bridge/structure survey completed on July 8-9, 2019 (Appendix C). Because of a record indicative of a maternity roost, formal consultation for NLEB is being conducted in conjunction with formal consultation for Indiana bats. A biological conclusion of May Affect, Not Likely to Adversely Affect is being proposed within the Biological Assessment for NLEB.

Spotfin chub

USFWS Optimal Survey Window: September – November (tributaries); year-round (large river)

Biological Conclusion: No Effect

Suitable habitat for spotfin chub in the form of moderate to large streams with good current is not present in the study area. The only population known in Graham County is related to an effort by the USFWS and NC Wildlife Resource Commission to re-introduce spotfin chub to the Cheoah River downstream of Lake Santeetlah. A review of NCNHP database (June 2019 dataset) indicates no known occurrences of the spotfin chub within 1.0 mile of the study area.

Appalachian Elktoe

USFWS Optimal Survey Window: year round

Biological Conclusion: No Effect

Suitable habitat for Appalachian elktoe includes streams with coarse sandy and gravelly substrates often mixed with cobble and boulders as well as in cracks of bedrock and in relatively silt-free areas with moderate flow. Past surveys indicate that habitat is marginal at best within the study area (FHWA 2008). A review of NCNHP database (June 2019 dataset) indicates one historic occurrence of the Appalachian elktoe within 1.0 mile of the study area. Although historic records exist for Tulula Creek, the species is believed to have been extirpated from Tulula Creek (FHWA 2008). Surveys were completed in 2008 within Tulula Creek and no shells or live specimens were discovered (FHWA 2008). Additionally, an Aquatic Resource Analysis (AQUA) completed by the US Forest Service in 2000 stated that there was no habitat within the Nantahala National Forest areas of the project area (USFS 2000).

Rusty-patched bumble bee

USFWS Survey Window: April-September

Biological Conclusion: Not Required

Suitable habitat for the rusty-patched bumble bee includes a variety of habitats including prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. According to USFWS, the rusty patched bumble bee was historically collected or observed within Graham County and no known occurrences have occurred since the 1970's. Additionally, a review of NCNHP database (June 2019 dataset), indicates one historic occurrence of the rusty-patched bumble bee within 1.0 mile of the study area. It has been determined by USFWS that no Section 7 consultation or surveys are required outside of Swain County in North Carolina.

Virginia Spiraea

USFWS Optimal Survey Window: May-early July

Biological Conclusion: No Effect

Suitable habitat for Virginia spiraea including flood-scoured, high-gradient sections of rocky river banks of second and third order streams was identified within the project study area. A survey for Virginia spiraea was completed in June 2019 within the project study area and no individuals were found. Additionally, no occurrences were discovered during past surveys in 1999, 2003 and 2007 within the project study area (FHWA 2008). A review of NCNHP database (June 2019 dataset) indicates no known occurrences within 1.0 mile of the study area.

Rock Gnome Lichen

USFWS Optimal Survey Window: year round

Biological Conclusion: No Effect

Suitable habitat for rock gnome lichen including high elevation coniferous forests on rocky outcrops or cliff habitats is not present in the study area. A review of NCNHP database (June 2019 dataset) indicates no known occurrences of the rock gnome lichen within 1.0 mile of the study area.

Small whorled pogonia

USFWS Optimal Survey Window: mid-May - early-July

Biological Conclusion: No Effect

Suitable habitat for small whorled pogonia, including open, dry deciduous woods, was observed within the project study area. A survey for small whorled pogonia was completed in June 2019 within the project study area and no individuals were found. Additionally, a review of the NCNHP database (June 2019 dataset), revealed no known occurrences of this species within 1.0 mile of the project study area.

4.2 Bald and Golden Eagle Protection Act

The bald eagle is protected under the Bald and Golden Eagle Protection Act and enforced by the USFWS. Habitat for the bald eagle primarily consists of mature forests in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

A desktop-GIS assessment of the project study area, as well as the area within a 1.13-mile radius (1.0 mile plus 660 feet) of the project limits, was performed on May 30, 2019 using 2015 color aerial orthoimagery and the 2016 National Hydrography Database (NHD). Three bodies of water, including Santeetlah Lake, large enough or sufficiently open to be considered potential feeding sources were identified within the search radius. A survey of the project study area and the area within 660 feet of the project limits was conducted during the delineation field work. No nests or eagles were observed.

5.0 WATER RESOURCES

Water resources in the study area are part of the Little Tennessee basin [U.S. Geological Survey (USGS) Hydrologic Unit 06010202 and 06010204]. One hundred fifty-nine (159) streams were identified in the study area. The location of the identified streams is shown in Figure 3.

Table 3. Streams in the study area

Stream Name	Map ID	NCDWR Index Number	Best usage Classification	Bank Height (ft)	Bankfull Width (ft)	Depth (in)
Beech Creek	Beech Creek	2-190-3-3	WS-III	7	20	6
Carver Branch	Carver Branch	2-130-3-1	C	5	10	3
Cody Branch	Cody Branch	2-130-1	C	5	20	6
Dry Creek	Dry Creek	2-130-2	C	3	8	12
Edwards Branch	Edwards Branch	2-130-3	C	2	4	8
Harwood Branch	Harwood Branch	2-190-3-5	WS-III	3	5	6
Orr Branch	Orr Branch	2-190-3-2	WS-III	2	5	6
Pigpen Branch	Pigpen Branch	2-190-3-5-1	WS-III	3	6	2
Slay Bacon Branch	Slay Bacon Branch	2-190-3-7	WS-III	7	6	6
Stecoah Creek	Stecoah Creek	2-130	C; Tr	2.5	12	8
Sweetwater Creek	Sweetwater Creek	2-190-3-(0.5)	WS-III; Tr	9	25	12
Tulula Creek	Tulula Creek	2-190-2-(0.5)	WS-III; Tr	12	35	36
Tulula Creek	Tulula Creek	2-190-2-(14)	WS-III; Tr, CA	12	35	36
Wolf Creek	Wolf Creek	2-117	C	2	4	4
UT to Tulula Creek	SA	2-190-2-(0.5)	WS-III; Tr	4	6	0
UT to Tulula Creek	SB	2-190-2-(0.5)	WS-III; Tr	1	4	0
UT to Tulula Creek	SC	2-190-2-(0.5)	WS-III; Tr	2	4	6
UT to Tulula Creek	SD	2-190-2-(0.5)	WS-III; Tr	4	5	3
UT to Tulula Creek	SE	2-190-2-(0.5)	WS-III; Tr	1	4	5
UT to Sweetwater Creek	SF	2-190-3-(0.5)	WS-III; Tr	2	3	1
UT to Sweetwater Creek	SG	2-190-3-(0.5)	WS-III; Tr	2	2	3

Stream Name	Map ID	NCDWR Index Number	Best usage Classification	Bank Height (ft)	Bankfull Width (ft)	Depth (in)
UT to Sweetwater Creek	SH	2-190-3-(0.5)	WS-III; Tr	2	3	3
UT to Sweetwater Creek	SI	2-190-3-(0.5)	WS-III; Tr	2.5	5	6
UT to Sweetwater Creek	SJ	2-190-3-(0.5)	WS-III; Tr	4	2	2
UT to Sweetwater Creek	SK	2-190-3-(0.5)	WS-III; Tr	3	3	1
UT to Sweetwater Creek	SL	2-190-3-(0.5)	WS-III; Tr	4	4	1
UT to Sweetwater Creek	SM	2-190-3-(0.5)	WS-III; Tr	1.5	3	3
UT to Sweetwater Creek	SN	2-190-3-(0.5)	WS-III; Tr	2	4	4
UT to Sweetwater Creek	SO	2-190-3-(0.5)	WS-III; Tr	2	4	4
UT to Sweetwater Creek	SP	2-190-3-(0.5)	WS-III; Tr	0.5	1	3
UT to Pigpen Branch	SQ	2-190-3-5-1	WS-III	3	6	2
UT to Sweetwater Creek	SR	2-190-3-(0.5)	WS-III; Tr	1	2	1
UT to Sweetwater Creek	SS	2-190-3-(0.5)	WS-III; Tr	0.5	2	1
UT to Sweetwater Creek	ST	2-190-3-(0.5)	WS-III; Tr	2	4	6
UT to Sweetwater Creek	SU	2-190-3-(0.5)	WS-III; Tr	3	8	6
UT to Sweetwater Creek	SV	2-190-3-(0.5)	WS-III; Tr	3	4	4
UT to Sweetwater Creek	SW	2-190-3-(0.5)	WS-III; Tr	3	4	4
UT to Sweetwater Creek	SX	2-190-3-(0.5)	WS-III; Tr	2	6	6
UT to Sweetwater Creek	SY	2-190-3-(0.5)	WS-III; Tr	4	4	1.5
UT to Sweetwater Creek	SZ	2-190-3-(0.5)	WS-III; Tr	1	1.5	1
UT to Sweetwater Creek	SAA	2-190-3-(0.5)	WS-III; Tr	1	1.5	0.5
UT to Sweetwater Creek	SAB	2-190-3-(0.5)	WS-III; Tr	1	2	0.5
UT to Sweetwater Creek	SAC	2-190-3-(0.5)	WS-III; Tr	0.5	2	6
UT to Sweetwater Creek	SAD	2-190-3-(0.5)	WS-III; Tr	5	4	6
UT to Sweetwater Creek	SAE	2-190-3-(0.5)	WS-III; Tr	0.5	1	3
UT to Sweetwater Creek	SAF	2-190-3-(0.5)	WS-III; Tr	0.5	3	3
UT to Sweetwater Creek	SAG	2-190-3-(0.5)	WS-III; Tr	0.5	3	3
UT to Sweetwater Creek	SAH	2-190-3-(0.5)	WS-III; Tr	1	2	0.6
UT to Sweetwater Creek	SAI	2-190-3-(0.5)	WS-III; Tr	2	5	6
UT to Sweetwater Creek	SAJ	2-190-3-(0.5)	WS-III; Tr	1	4	4
UT to Sweetwater Creek	SAK	2-190-3-(0.5)	WS-III; Tr	1	4	4
UT to Sweetwater Creek	SAL	2-190-3-(0.5)	WS-III; Tr	0.5	3	3
UT to Sweetwater Creek	SAM	2-190-3-(0.5)	WS-III; Tr	2	5	6
UT to Sweetwater Creek	SAN	2-190-3-(0.5)	WS-III; Tr	1.5	3.5	4
UT to Sweetwater Creek	SAO	2-190-3-(0.5)	WS-III; Tr	1.5	3.5	4
UT to Sweetwater Creek	SAP	2-190-3-(0.5)	WS-III; Tr	2	3	6
UT to Sweetwater Creek	SAQ	2-190-3-(0.5)	WS-III; Tr	1.5	3.5	4

Stream Name	Map ID	NCDWR Index Number	Best usage Classification	Bank Height (ft)	Bankfull Width (ft)	Depth (in)
UT to Sweetwater Creek	SAR	2-190-3-(0.5)	WS-III; Tr	4	4.5	6
UT to Sweetwater Creek	SAS	2-190-3-(0.5)	WS-III; Tr	2.5	8	6
UT to Sweetwater Creek	SAT	2-190-3-(0.5)	WS-III; Tr	2	3	6
UT to Sweetwater Creek	SAU	2-190-3-(0.5)	WS-III; Tr	1	2.5	6
UT to Sweetwater Creek	SAV	2-190-3-(0.5)	WS-III; Tr	2	3	2
UT to Sweetwater Creek	SAW	2-190-3-(0.5)	WS-III; Tr	1	2	1
UT to Sweetwater Creek	SAX	2-190-3-(0.5)	WS-III; Tr	1	2	2
UT to Sweetwater Creek	SAY	2-190-3-(0.5)	WS-III; Tr	1	2	2
UT to Sweetwater Creek	SAZ	2-190-3-(0.5)	WS-III; Tr	1	2	3
UT to Sweetwater Creek	SBA	2-190-3-(0.5)	WS-III; Tr	1	1	1
UT to Stecoah Creek	SBB	2-130	C; Tr	0.5	1	1
UT to Carver Branch	SBC	2-130-3-1	C	1	3	3
UT to Carver Branch	SBD	2-130-3-1	C	1	3	2
UT to Johnson's Gap Branch	SBE	2-131-2	C	3	8	1
UT to Johnson's Gap Branch	SBF	2-131-2	C	4	4	1
UT to Carver Branch	SBG	2-130-3-1	C	0.5	1	0.5
UT to Carver Branch	SBH	2-130-3-1	C	0.25	3	1
UT to Carver Branch	SBI	2-130-3-1	C	2	8	1
UT to Carver Branch	SBJ	2-130-3-1	C	4	2	2
UT to Carver Branch	SBK	2-130-3-1	C	3	5	3
UT to Carver Branch	SBL	2-130-3-1	C	2	1	1
UT to Carver Branch	SBM	2-130-3-1	C	0.6	1	1
UT to Carver Branch	SBN	2-130-3-1	C	2	5	2
UT to Carver Branch	SBO	2-130-3-1	C	1	1	0.25
UT to Carver Branch	SBP	2-130-3-1	C	1	1.5	0.25
UT to Carver Branch	SBQ	2-130-3-1	C	2	4	1
UT to Carver Branch	SBR	2-130-3-1	C	1	5	1
UT to Carver Branch	SBS	2-130-3-1	C	1	4	1
UT to Carver Branch	SBT	2-130-3-1	C	1	4	1
UT to Carver Branch	SBU	2-130-3-1	C	3	4	3
UT to Edwards Branch	SBV	2-130-3	C	1	2	2
UT to Edwards Branch	SBW	2-130-4	C	1	2	0.5
UT to Edwards Branch	SBX	2-130-5	C	0.5	2	1
UT to Edwards Branch	SBY	2-130-6	C	2	4	2
UT to Edwards Branch	SBZ	2-130-7	C	1	3	1

Stream Name	Map ID	NCDWR Index Number	Best usage Classification	Bank Height (ft)	Bankfull Width (ft)	Depth (in)
UT to Edwards Branch	SCA	2-130-8	C	1	3	2
UT to Stecoah Creek	SCB	2-130	C; Tr	0.5	2	3
UT to Stecoah Creek	SCC	2-130	C; Tr	1	7	3
UT to Stecoah Creek	SCD	2-130	C; Tr	2	5	8
UT to Stecoah Creek	SCE	2-130	C; Tr	3	7	2
UT to Stecoah Creek	SCF	2-130	C; Tr	2.5	7	3
UT to Stecoah Creek	SCG	2-130	C; Tr	3	8	1
UT to Stecoah Creek	SCH	2-130	C; Tr	2	3	2
UT to Cody Branch	SCI	2-130-1	C	2	3	4
UT to Cody Branch	SCJ	2-130-1	C	2.5	4	3
UT to Cody Branch	SCK	2-130-1	C	0.5	3	2
UT to Cody Branch	SCL	2-130-1	C	2	3	4
UT to Cody Branch	SCM	2-130-1	C	2	4	4
UT to Cody Branch	SCN	2-130-1	C	0.25	2	1
UT to Cody Branch	SCO	2-130-1	C	0.25	2	1
UT to Stecoah Creek	SCP	2-130	C; Tr	5	5	3
UT to Stecoah Creek	SCQ	2-130	C; Tr	1	3	2
UT to Stecoah Creek	SCR	2-130	C; Tr	6	5	1
UT to Stecoah Creek	SCS	2-130	C; Tr	6	5	1
UT to Stecoah Creek	SCT	2-130	C; Tr	2	2	1
UT to Stecoah Creek	SCU	2-130	C; Tr	1	2	1
UT to Stecoah Creek	SCV	2-130	C; Tr	5	6	2
UT to Stecoah Creek	SCW	2-130	C; Tr	0.25	2	1
UT to Stecoah Creek	SCX	2-130	C; Tr	1	6	1
UT to Stecoah Creek	SCY	2-130	C; Tr	1	3	2
UT to Stecoah Creek	SCZ	2-130	C; Tr	2	4	2
UT to Stecoah Creek	SDA	2-130	C; Tr	8	8	2
UT to Stecoah Creek	SDB	2-130	C; Tr	0.5	0.75	0.5
UT to Stecoah Creek	SDC	2-130	C; Tr	2	8	0.5
UT to Stecoah Creek	SDD	2-130	C; Tr	0.25	3	1
UT to Stecoah Creek	SDE	2-130	C; Tr	1	2	1
UT to Stecoah Creek	SDF	2-130	C; Tr	2	5	3
UT to Stecoah Creek	SDG	2-130	C; Tr	1.5	7	4
UT to Stecoah Creek	SDH	2-130	C; Tr	1.5	7	4
UT to Stecoah Creek	SDI	2-130	C; Tr	1.5	7	4
UT to Stecoah Creek	SDJ	2-130	C; Tr	1	5	2

Stream Name	Map ID	NCDWR Index Number	Best usage Classification	Bank Height (ft)	Bankfull Width (ft)	Depth (in)
UT to Stecoah Creek	SDK	2-130	C; Tr	1	6	2
UT to Stecoah Creek	SDL	2-130	C; Tr	2	4	1
UT to Stecoah Creek	SDM	2-130	C; Tr	2	4	1
UT to Stecoah Creek	SDN	2-130	C; Tr	1	1.5	1
UT to Stecoah Creek	SDO	2-130	C; Tr	0.5	3	1
UT to Stecoah Creek	SDP	2-130	C; Tr	3	7	2.5
UT to Stecoah Creek	SDQ	2-130	C; Tr	3	4	1
UT to Stecoah Creek	SDR	2-130	C; Tr	2	3	2
UT to Stecoah Creek	SDS	2-130	C; Tr	2	4	2
UT to Stecoah Creek	SDT	2-130	C; Tr	5	3	5
UT to Stecoah Creek	SDU	2-130	C; Tr	3	3	2
UT to Stecoah Creek	SDV	2-130	C; Tr	0.5	2	3
UT to Wolf Creek	SDW	2-117	C	5	6	4
UT to Wolf Creek	SDX	2-117	C	0.5	4	3
UT to Wolf Creek	SDY	2-117	C	0.9	3	5
UT to Wolf Creek	SDZ	2-117	C	0.5	2	1
UT to Wolf Creek	SEA	2-117	C	0.5	5	3
UT to Wolf Creek	SEB	2-117	C	0.5	6	4
UT to Wolf Creek	SEC	2-117	C	0	1	0.25
UT to Sweetwater Creek	SED	2-190-3-(0.5)	WS-III; Tr	2	8	2
UT to Edwards Branch	SEE	2-130-9	C	3	5	2
UT to Edwards Branch	SEF	2-130-10	C	1	4	2
UT to Carver Branch	SEG	2-130-3-1	C	1	1	1
UT to Carver Branch	SEH	2-130-3-1	C	0.6	1	1
UT to Carver Branch	SEI	2-130-3-1	C	0.5	4	3
UT to Cody Branch	SEJ	2-130-1	C	2	4	3
UT to Cody Branch	SEK	2-130-1	C	1	2	1
UT to Cody Branch	SEL	2-130-1	C	0.1	4	1
UT to Cody Branch	SEM	2-130-1	C	0.25	3	2
UT to Stecoah Creek	SEO	2-130	C; Tr	5	10	3
UT to Sweetwater Creek	SEP	2-190-3-(0.5)	WS-III; Tr	1	2.5	6
UT to Sweetwater Creek	SEQ	2-190-3-(0.5)	WS-III; Tr	3	11	1

There are no designated Outstanding Resources Waters (ORW), designated High Quality Waters (HQW), or water supply watersheds (WS-I or WS-II) within or within 1.0 miles downstream of the study area. The North Carolina 2018 Final 303(d) list did not identify an impaired water within the study area.

Eleven surface waters were identified in the study area (Table 4). The location of each surface water is show in Figure 3.

Table 4. Surface waters in the study area

Surface Water	Figure 3 Sheet Number	Jurisdictional	Map ID of Connection	Area (ac) in Study Area
PA	5	Undetermined	WI	0.02
PB	7	Undetermined	SN	0.12
PC	8	Undetermined	SX	0.19
PD	8	Undetermined	N/A	0.06
PE	10	Undetermined	N/A	0.07
PF	12	Undetermined	SAK	0.06
PG	32	Undetermined	N/A	0.24
PH	31	Undetermined	SCD	0.59
PI	30	Undetermined	N/A	0.01
PJ	29	Undetermined	N/A	0.04
PK	28	Undetermined	N/A	0.04
Total				1.45

6.0 REGULATORY CONSIDERATIONS

6.1 Clean Water Act Waters of the U.S.

One hundred and fifty-nine (159) jurisdictional streams were identified in the study area (Table 5). The location of these streams is shown on Figure 3. North Carolina Stream Assessment Method (NCSAM) and NCDWR stream identification forms are included in a separate Preliminary Jurisdictional Determination (PJD) Package for select streams. All jurisdictional streams in the study area have been designated as cold water streams for the purposes of stream mitigation.

Table 5. Characteristics of jurisdictional streams in the study area

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer	Figure 3 Sheet Number(s)
Beech Creek	1,048	Perennial	Yes	Not Subject	9
Carver Branch	8,113	Perennial	Yes	Not Subject	22, 25-30
Cody Branch	2,489	Perennial	Yes	Not Subject	15, 16
Dry Creek	904	Perennial	Yes	Not Subject	18, 19
Edwards Branch	1,600	Perennial	Yes	Not Subject	29, 30
Harwood Branch	485	Perennial	Yes	Not Subject	7
Orr Branch	744	Perennial	Yes	Not Subject	11, 12
Pigpen Branch	581	Perennial	Yes	Not Subject	7
Slay Bacon Branch	253	Perennial	Yes	Not Subject	6
Stecoah Creek	10,683	Perennial	Yes	Not Subject	17, 30-32
Sweetwater Creek	28,626	Perennial	Yes	Not Subject	4, 6, 7-13
Tulula Creek	12,022	Perennial	Yes	Not Subject	1-3
Wolf Creek	2,371	Perennial	Yes	Not Subject	21, 34
SA*	273	Intermittent	Undetermined	Not Subject	1
SB	116	Intermittent	Undetermined	Not Subject	1
SC	275	Perennial	Yes	Not Subject	1
SD*	16	Intermittent	Undetermined	Not Subject	2
SE*	89	Intermittent	Undetermined	Not Subject	3
SF	39	Intermittent	Undetermined	Not Subject	4
SG	32	Intermittent	Undetermined	Not Subject	4
SH	61	Intermittent	Undetermined	Not Subject	4
SI	1,041	Perennial	Yes	Not Subject	4, 5
SJ	164	Intermittent	Undetermined	Not Subject	5
SK	2	Intermittent	Undetermined	Not Subject	5
SL	92	Intermittent	Undetermined	Not Subject	5
SM	192	Perennial	Yes	Not Subject	7
SN	87	Intermittent	Undetermined	Not Subject	7
SO	151	Intermittent	Undetermined	Not Subject	7
SP	224	Intermittent	Undetermined	Not Subject	7
SQ	200	Perennial	Yes	Not Subject	7
SR	303	Perennial	Yes	Not Subject	8

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer	Figure 3 Sheet Number(s)
SS	223	Intermittent	Undetermined	Not Subject	8
ST	338	Perennial	Yes	Not Subject	8
SU	359	Perennial	Yes	Not Subject	8
SV	329	Intermittent	Undetermined	Not Subject	8
SW	111	Intermittent	Undetermined	Not Subject	8
SX	231	Perennial	Yes	Not Subject	8
SY	218	Perennial	Yes	Not Subject	9
SZ	268	Perennial	Yes	Not Subject	9, 10
SAA	111	Perennial	Yes	Not Subject	10
SAB	331	Perennial	Yes	Not Subject	10
SAC*	97	Intermittent	Undetermined	Not Subject	10
SAD	290	Perennial	Yes	Not Subject	11
SAE	70	Perennial	Yes	Not Subject	11
SAF	766	Perennial	Yes	Not Subject	11
SAG	586	Perennial	Yes	Not Subject	11
SAH	319	Intermittent	Undetermined	Not Subject	12
SAI	511	Perennial	Yes	Not Subject	12
SAJ	234	Perennial	Yes	Not Subject	12
SAK	329	Perennial	Yes	Not Subject	12
SAL	110	Seep (Intermittent)	Undetermined	Not Subject	12
SAM	1,340	Perennial	Yes	Not Subject	12, 13
SAN	182	Seep (Intermittent)	Undetermined	Not Subject	12
SAO	66	Intermittent	Undetermined	Not Subject	12, 13
SAP	1,664	Perennial	Yes	Not Subject	12, 13
SAQ	44	Intermittent	Undetermined	Not Subject	12, 13
SAR	527	Perennial	Yes	Not Subject	13, 14
SAS	205	Perennial	Yes	Not Subject	13
SAT	1,592	Perennial	Yes	Not Subject	13
SAU	228	Intermittent	Undetermined	Not Subject	13
SAV	549	Perennial	Yes	Not Subject	13, 14
SAW	179	Intermittent	Undetermined	Not Subject	13
SAX	2,387	Perennial	Yes	Not Subject	13, 22, 23
SAY	1,098	Perennial	Yes	Not Subject	13
SAZ	73	Seep (Intermittent)	Undetermined	Not Subject	13
SBA	458	Seep (Intermittent)	Undetermined	Not Subject	13
SBB	259	Intermittent	Undetermined	Not Subject	24
SBC	1,877	Perennial	Yes	Not Subject	22, 25
SBD	990	Perennial	Yes	Not Subject	25
SBE	779	Perennial	Yes	Not Subject	26
SBF	95	Seep (Intermittent)	Undetermined	Not Subject	26
SBG	166	Intermittent	Undetermined	Not Subject	25
SBH	131	Seep (Intermittent)	Undetermined	Not Subject	25

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer	Figure 3 Sheet Number(s)
SBI	1,022	Perennial	Yes	Not Subject	27
SBJ	1,888	Perennial	Yes	Not Subject	27, 28
SBK	1,473	Perennial	Yes	Not Subject	27, 28
SBL	849	Perennial	Yes	Not Subject	27, 28
SBM	148	Intermittent	Undetermined	Not Subject	27
SBN	1,843	Perennial	Yes	Not Subject	28, 29
SBO	279	Intermittent	Undetermined	Not Subject	29
SBP	36	Intermittent	Undetermined	Not Subject	29
SBQ	19	Seep (Intermittent)	Undetermined	Not Subject	28
SBR	177	Seep (Intermittent)	Undetermined	Not Subject	28
SBS	249	Seep (Intermittent)	Undetermined	Not Subject	28
SBT	157	Intermittent	Undetermined	Not Subject	29
SBU	281	Intermittent	Undetermined	Not Subject	29
SBV	373	Perennial	Yes	Not Subject	30
SBW	417	Perennial	Yes	Not Subject	29
SBX	25	Intermittent	Undetermined	Not Subject	29
SBY	959	Perennial	Yes	Not Subject	29, 30
SBZ	562	Intermittent	Undetermined	Not Subject	30
SCA	124	Intermittent	Undetermined	Not Subject	30
SCB	254	Seep (Intermittent)	Undetermined	Not Subject	31
SCB	401	Perennial	Yes	Not Subject	31
SCC	1,578	Perennial	Yes	Not Subject	31, 32
SCD	1,059	Perennial	Yes	Not Subject	31, 32
SCE	264	Seep (Perennial)	Yes	Not Subject	31
SCF	1,570	Perennial	Yes	Not Subject	31, 32
SCG	264	Perennial	Yes	Not Subject	32
SCH	651	Perennial	Yes	Not Subject	20, 32
SCI	30	Intermittent	Undetermined	Not Subject	15
SCI	829	Perennial	Yes	Not Subject	15
SCJ	271	Intermittent	Undetermined	Not Subject	15
SCJ	345	Seep (Intermittent)	Undetermined	Not Subject	15
SCK	223	Seep (Intermittent)	Undetermined	Not Subject	15
SCL	607	Perennial	Yes	Not Subject	15
SCM	700	Perennial	Yes	Not Subject	16
SCN	104	Seep (Intermittent)	Undetermined	Not Subject	16
SCO	50	Seep (Intermittent)	Undetermined	Not Subject	16
SCP	284	Perennial	Yes	Not Subject	16
SCQ	43	Perennial	Yes	Not Subject	16
SCR	796	Perennial	Yes	Not Subject	16
SCS	259	Perennial	Yes	Not Subject	16
SCT	87	Intermittent	Undetermined	Not Subject	16
SCU	41	Seep (Intermittent)	Undetermined	Not Subject	16

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer	Figure 3 Sheet Number(s)
SCV	354	Perennial	Yes	Not Subject	16, 17
SCW	64	Seep (Intermittent)	Undetermined	Not Subject	16, 17
SCX	692	Perennial	Yes	Not Subject	17
SCY	1,643	Perennial	Yes	Not Subject	17
SCZ	51	Seep (Intermittent)	Undetermined	Not Subject	17
SDA	244	Perennial	Yes	Not Subject	17
SDB	476	Seep (Intermittent)	Undetermined	Not Subject	17
SDC	1,025	Perennial	Yes	Not Subject	17
SDD	46	Seep (Intermittent)	Undetermined	Not Subject	17
SDE	627	Intermittent	Undetermined	Not Subject	17
SDF	188	Perennial	Yes	Not Subject	17
SDG	73	Seep (Intermittent)	Undetermined	Not Subject	17
SDH	1,015	Perennial	Yes	Not Subject	17, 18
SDI	136	Perennial	Yes	Not Subject	17
SDJ	469	Perennial	Yes	Not Subject	17
SDK	64	Seep (Intermittent)	Undetermined	Not Subject	17
SDL	734	Perennial	Yes	Not Subject	17, 18
SDM	388	Perennial	Yes	Not Subject	17, 18
SDN	128	Perennial	Yes	Not Subject	18
SDO	468	Seep (Intermittent)	Undetermined	Not Subject	18
SDP	714	Perennial	Yes	Not Subject	20
SDQ	533	Perennial	Yes	Not Subject	19, 20
SDR	206	Perennial	Yes	Not Subject	21
SDS	260	Intermittent	Undetermined	Not Subject	20
SDT	1,917	Perennial	Yes	Not Subject	21, 32, 33
SDU	348	Perennial	Yes	Not Subject	21, 33
SDV	252	Seep (Intermittent)	Undetermined	Not Subject	33
SDW	181	Intermittent	Undetermined	Not Subject	21
SDW	406	Perennial	Yes	Not Subject	21
SDX	79	Perennial	Yes	Not Subject	21
SDY	177	Perennial	Yes	Not Subject	21
SDZ	144	Intermittent	Undetermined	Not Subject	21
SEA	179	Intermittent	Undetermined	Not Subject	33
SEB	142	Intermittent	Undetermined	Not Subject	34
SEC	11	Seep (Intermittent)	Undetermined	Not Subject	21
SED	256	Perennial	Yes	Not Subject	13
SEE	58	Intermittent	Undetermined	Not Subject	29
SEF	378	Seep (Intermittent)	Undetermined	Not Subject	29
SEG	19	Intermittent	Undetermined	Not Subject	27
SEH	19	Intermittent	Undetermined	Not Subject	27
SEI	303	Seep (Intermittent)	Undetermined	Not Subject	22, 26
SEJ	6	Seep (Intermittent)	Undetermined	Not Subject	15

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer	Figure 3 Sheet Number(s)
SEK	121	Seep (Intermittent)	Undetermined	Not Subject	15
SEL	31	Seep (Intermittent)	Undetermined	Not Subject	15
SEM	30	Seep (Intermittent)	Undetermined	Not Subject	15
SEO	619	Perennial	Yes	Not Subject	13
SEP	42	Perennial	Yes	Not Subject	13
SEQ	135	Perennial	Yes	Not Subject	11
Total	132,038				

*NCSAM forms are available in the PJD package

Seventy-six (76) jurisdictional wetlands were identified within the study area (Table 6). The location of these wetlands is shown on Figure 3. All wetlands in the study area are located within the Little Tennessee basin [USGS Hydrologic Unit 06010202 and 06010204]. USACE wetland determination forms and NCWAM forms for each site are included in a separate Preliminary Jurisdictional Determination Package.

Table 6. Characteristics of jurisdictional wetlands in the study area

Map ID	NCWAM Classification	NCWAM Rating	Figure 3 Sheet Number	Hydrologic Classification	Area (ac.) in Study Area
WA	Headwater Forest	Medium	1	Riparian	0.09
WB	Headwater Forest	High	1	Riparian	0.09
WC	Headwater Forest	Medium	1	Riparian	0.07
WD	Headwater Forest	High	4	Riparian	0.01
WE	Headwater Forest	Low	4	Riparian	0.03
WF	Headwater Forest	Low	4	Riparian	0.02
WG	Headwater Forest	Low	4	Riparian	0.00
WH	Headwater Forest	High	4	Riparian	0.01
WI	Non-Tidal Freshwater Marsh	High	5	Riparian	0.00
WJ	Non-Tidal Freshwater Marsh	High	6	Riparian	0.37
WK	Non-Tidal Freshwater Marsh	Medium	6	Riparian	0.07
WL	Non-Tidal Freshwater Marsh	High	6, 7	Riparian	0.23
WM	Headwater Forest	High	7	Riparian	0.06
WN	Headwater Forest	High	7	Riparian	0.38
WO	Headwater Forest	High	7	Riparian	0.18
WP	Headwater Forest	Low	7	Riparian	0.25
WQ	Non-Tidal Freshwater Marsh	Medium	7	Riparian	0.10
WR	Headwater Forest	High	7	Riparian	0.86

Map ID	NCWAM Classification	NCWAM Rating	Figure 3 Sheet Number	Hydrologic Classification	Area (ac.) in Study Area
WS	Non-Tidal Freshwater Marsh	High	8	Riparian	0.33
WT	Non-Tidal Freshwater Marsh	Medium	8	Riparian	0.01
WU	Non-Tidal Freshwater Marsh	Medium	8	Riparian	0.21
WV	Floodplain Pool	High	8	Riparian	0.02
WW	Non-Tidal Freshwater Marsh	High	8	Riparian	0.11
WX	Non-Tidal Freshwater Marsh	High	8	Riparian	0.07
WY	Non-Tidal Freshwater Marsh	Medium	8	Riparian	0.12
WZ	Non-Tidal Freshwater Marsh	Low	8	Riparian	0.03
WAA	Non-Tidal Freshwater Marsh	Medium	9	Riparian	0.22
WAB	Non-Tidal Freshwater Marsh	Medium	9	Riparian	0.02
WAC	Non-Tidal Freshwater Marsh	Medium	9	Riparian	0.42
WAD	Non-Tidal Freshwater Marsh	High	9	Riparian	0.46
WAE	Non-Tidal Freshwater Marsh	Medium	9	Riparian	0.52
WAF	Non-Tidal Freshwater Marsh	High	9	Riparian	0.38
WAG	Non-Tidal Freshwater Marsh	High	9, 10	Riparian	0.31
WAH	Non-Tidal Freshwater Marsh	Medium	10	Riparian	0.04
WAI	Non-Tidal Freshwater Marsh	Medium	10	Riparian	0.41
WAJ	Non-Tidal Freshwater Marsh	Medium	10	Riparian	0.11
WAK	Non-Tidal Freshwater Marsh	Medium	10	Riparian	0.22
WAL	Non-Tidal Freshwater Marsh	Medium	11	Riparian	0.20
WAM	Non-Tidal Freshwater Marsh	Medium	11	Riparian	0.23
WAN	Seep	High	11	Non-Riparian	0.04

Map ID	NCWAM Classification	NCWAM Rating	Figure 3 Sheet Number	Hydrologic Classification	Area (ac.) in Study Area
WAO	Non-Tidal Freshwater Marsh	High	11	Riparian	0.15
WAP	Non-Tidal Freshwater Marsh	High	11	Riparian	0.28
WAQ	Seep	High	12	Non-Riparian	0.18
WAR	Non-Tidal Freshwater Marsh	High	12	Riparian	0.03
WAS	Non-Tidal Freshwater Marsh	Medium	12	Riparian	0.01
WAT	Seep	High	12, 13	Non-Riparian	0.02
WAU	Headwater Forest	High	13	Riparian	0.06
WAV	Seep	High	13	Non-Riparian	0.01
WAW	Headwater Forest	High	13	Riparian	0.07
WAX	Headwater Forest	Low	13	Riparian	0.05
WAY	Non-Tidal Freshwater Marsh	Medium	13	Riparian	0.05
WAZ	Non-Tidal Freshwater Marsh	Medium	13	Riparian	0.02
WBA	Non-Tidal Freshwater Marsh	Medium	13	Riparian	0.02
WBB	Headwater Forest	Medium	24	Riparian	0.01
WBC	Headwater Forest	Low	15	Riparian	0.05
WBD	Headwater Forest	Low	15	Riparian	0.02
WBE	Headwater Forest	High	17	Riparian	0.01
WBF	Headwater Forest	High	17	Riparian	0.01
WBG	Headwater Forest	High	17	Riparian	0.04
WBH	Headwater Forest	High	17, 18	Riparian	0.03
WBI	Headwater Forest	Low	19, 20	Riparian	0.02
WBJ	Non-Tidal Freshwater Marsh	High	21	Riparian	0.02
WBK	Headwater Forest	High	21	Riparian	0.03
WBL	Headwater Forest	High	21	Riparian	0.08
WBM	Headwater Forest	Low	21	Riparian	0.32
WBN	Headwater Forest	High	21	Riparian	0.01
WBO	Headwater Forest	High	21	Riparian	0.22
WBP	Headwater Forest	High	21, 34	Riparian	0.15
WBQ	Headwater Forest	High	34	Riparian	0.01
WBR	Headwater Forest	Medium	31	Riparian	0.11
WBS	Headwater Forest	Low	29	Riparian	0.03
WBT	Headwater Forest	High	29	Riparian	0.06
WBU	Headwater Forest	High	28, 29	Riparian	0.21

Map ID	NCWAM Classification	NCWAM Rating	Figure 3 Sheet Number	Hydrologic Classification	Area (ac.) in Study Area
WBV	Non-Tidal Freshwater Marsh	Low	25	Riparian	0.09
WBW	Seep	High	25, 26	Non-Riparian	0.07
WBX	Headwater Forest	Low	25	Riparian	0.03
Total					9.88

6.2 Construction Moratoria

Stecoah Creek, Sweetwater Creek, and Tulula Creek were identified as trout waters and therefore, a trout moratorium may be applied to those streams and their tributaries.

6.3 N.C. River Basin Buffer Rules

The study area is not within a river basin with buffer rules.

6.4 Rivers and Harbors Act Section 10 Navigable Waters

Streams and surface waters identified the study area were not designated by the USACE as Navigable Waters under Section 10 of the Rivers and Harbors Act.

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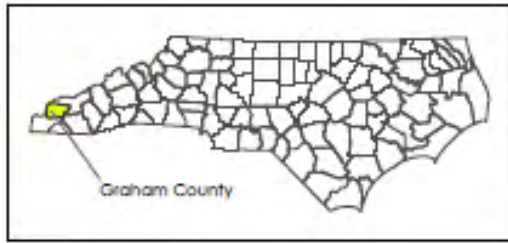
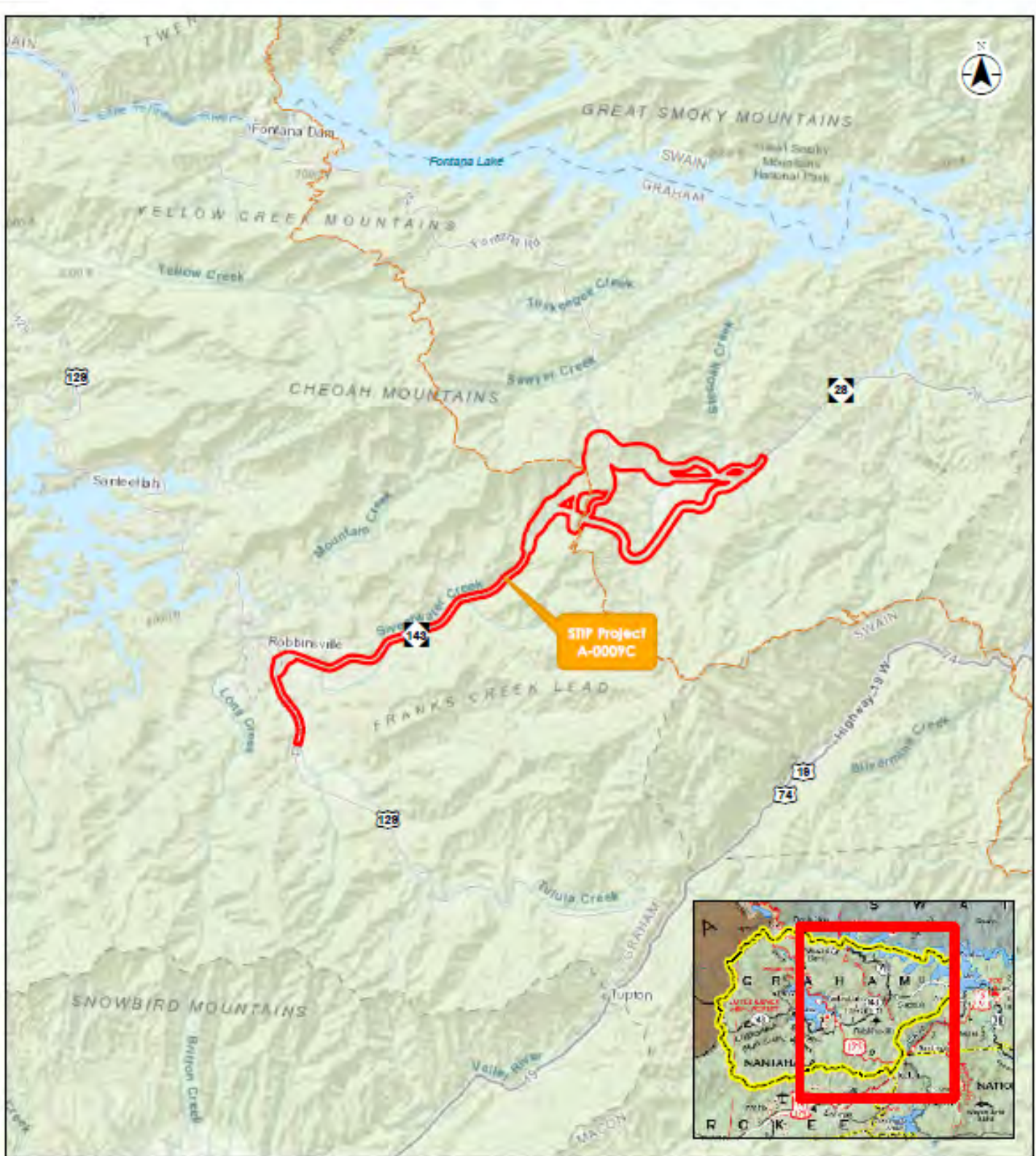
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Appendix A

Figures

\\fs1\apps\pdm\k\design\GIS\external\processes\addto_a_bec\141814_Region_1_V14874_03_11.mxd - Printed: 10/15/2019 8:42:42 AM



Legend
 Appalachian Trail
 Project Study Area

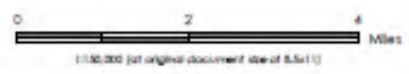
 **NC DEPARTMENT OF TRANSPORTATION**
DIVISION OF HIGHWAYS
DIVISION 14

Project Location: Graham County, NC
Prepared by: ALC on 2019-08-27
Technical Review by: JRM on 2019-08-28
Independent Review by: JA on 2019-08-28

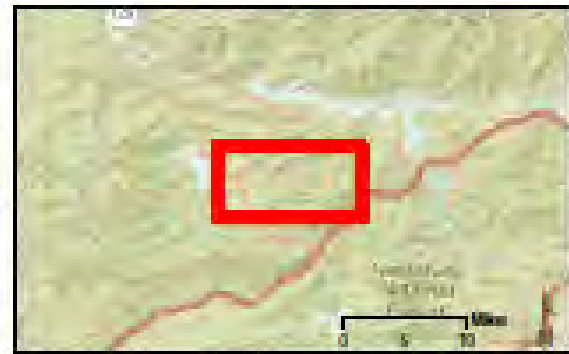
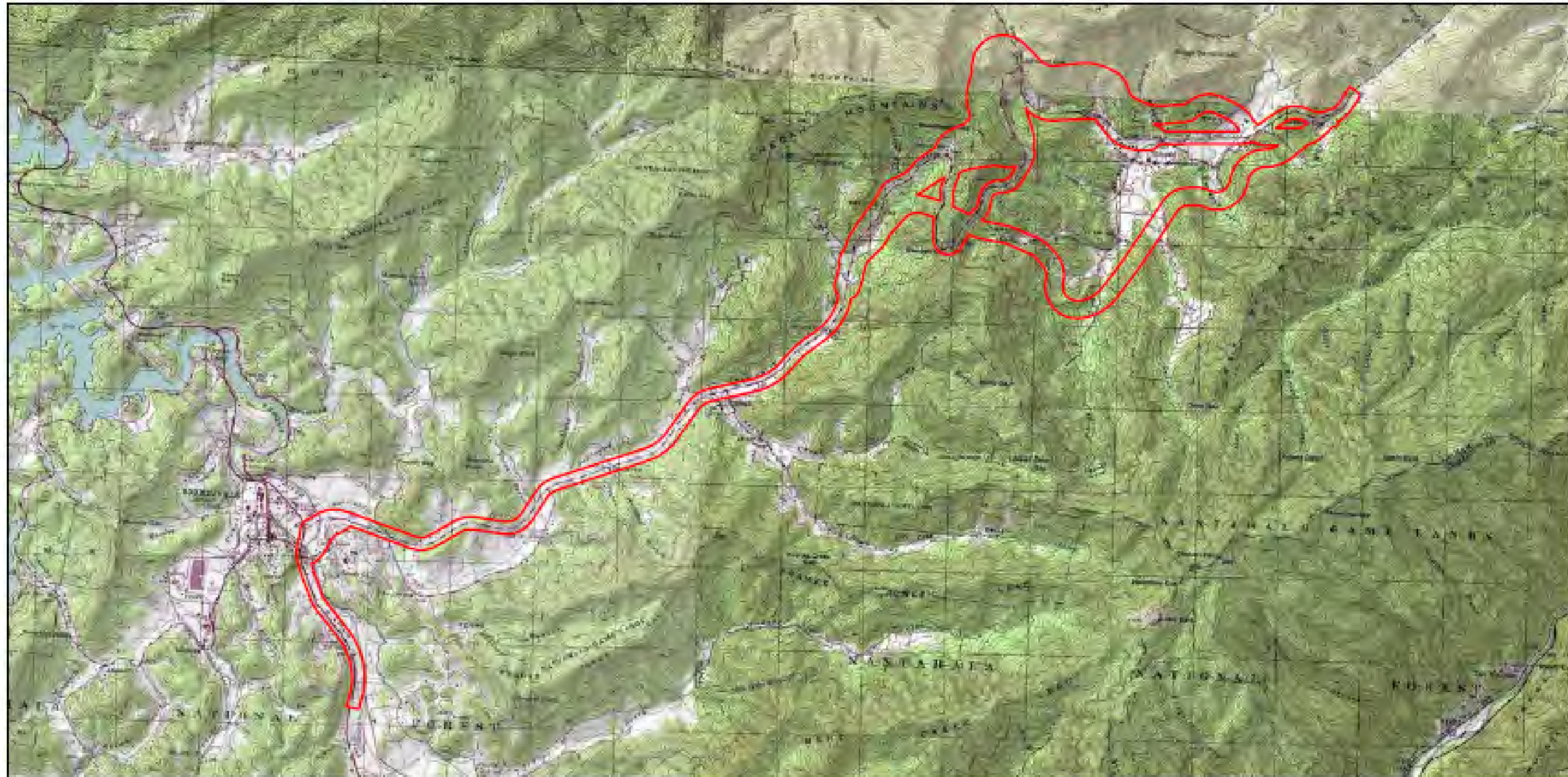
Client/Project: NCDOT - Division 14
Corridor K Project
STIP A-0009C


Figure No.: 1

Vicinity Map




Notes
1. Coordinate System: NAD 1983 StatePlane North Carolina NPS 2000 Feet
2. Base Feature: NCDOT, NC Overlap, 60K




NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 4,000 8,000 Feet
 1:62,500 (At original document size of 11x17)

Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 17N 6000 Feet
 2. Elevation: Hypsometric Classification, 1:25,000 from the 1:25,000 Topographic Series, NC

Legend
 Project Study Area



Project Location
 Baldhead/Thomas
 Currituck County, NC

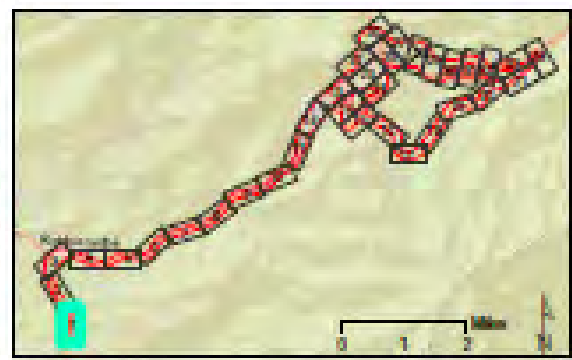
177007126
 Prepared by JTA on 2018 08 08
 Issued/Revised by MWR on 2018 08 17
 Independent Review by GWR on 2018 08 15


Client/Project
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Sheet No.
 2

Title
 Project Study Area Map











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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes:
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1175 6000 Feet
 2. Jurisdictional Determination completed by Service on June 27, 2015, and July 1, 2015.
 3. Date: August 11, 2015.

- Legend**
-  Potential Jurisdictional Intermittent Stream
 -  Potential Jurisdictional Perennial Stream
 -  Potential Jurisdictional Seep
 -  Select Pipes/Bridges/Culverts
 -  Potential Jurisdictional Pond
 -  Potential Jurisdictional Wetland
 -  Project Study Area
 -  Wetland Data Point
 -  Upland Data Point
 -  Sink Points



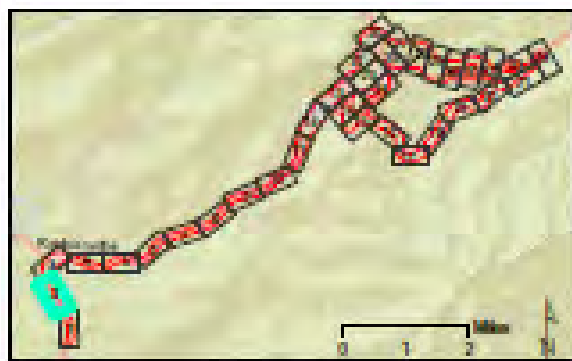
Project Location:
 Johnston/Sumner
 Guilford County, NC
 Proposed by: JFA/SLC on 2/19/15
 Technical Review by: MBR on 2/19/15
 Independent Review by: GWR on 2/19/15

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.:
 3-1

Title:
 Potential Jurisdictional Features Map

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DIVISION 14



Notes:
 1. Coordinate System: NAD 1983 North Carolina State Plane (NAD83) Feet
 2. Symbolized Data was completed by Sartin on June 2, 2015, 10/25, and July 1, 11, 2015.
 3. Date: 10/25/2015

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points

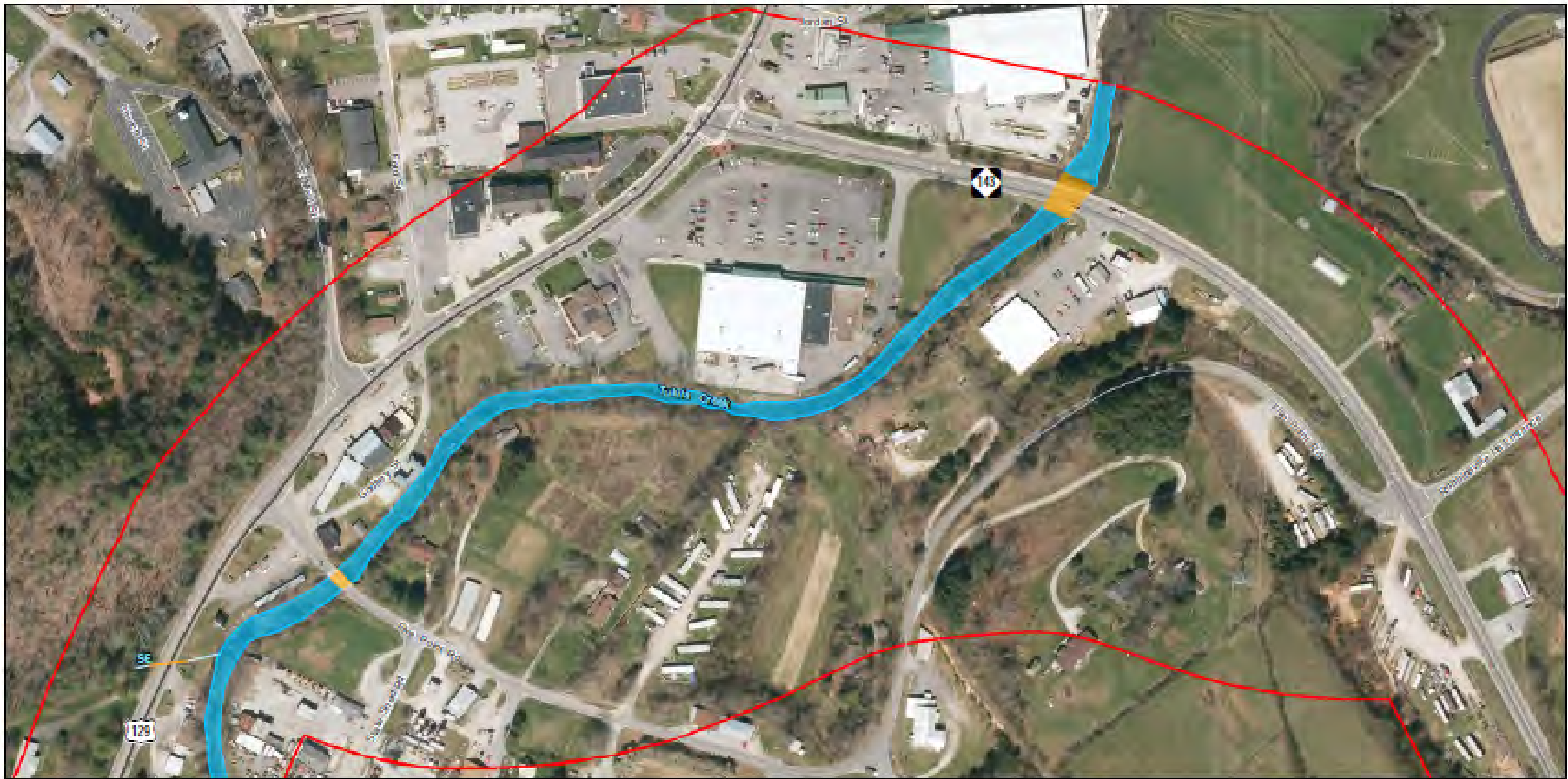


Project Location:
 Wolf Creek Watershed
 Graham County, NC
 Prepared by: JPA/MS on 10/25/15
 Symbolized by: MSB on 10/25/15
 Independent Review by: G.W. on 10/25/15

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 SHP: A-0009C

Figure No:
 3-2

Title:
 Potential Jurisdictional Features Map



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



- Notes**
1. Coordinate System: NAD 1983 StatePlane North Carolina (FTN) 5000 Feet
 2. Jurisdictional Determination completed by far date on June 21, 10, 21, and July 1, 11, 2010.
 3. Date Issued: 11/02/2010

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points



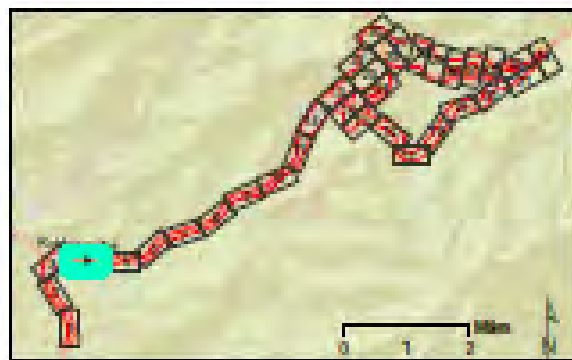
Project Location
Salem/Plainsboro
Catawba County, NC
171001126
Prepared by JPA/SLC on 07/10/10
Reviewed by MBB on 07/10/10
Independent Review by G.W. on 07/10/10


Client/Project
NCDOT - Division 14
Corridor K Project
STIP: A-0009C

Figure No.
3-3

Title
Potential Jurisdictional Features Map

Delaware Technical and Community College - Statewide Campus System, 1101 Technology Center Drive, Newark, DE 19711














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

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Notes
 1. Coordinate System: NAD 83 North Carolina North Carolina State Plane
 2. Jurisdictional Determination completed by Section on June 2, 7, 10, 17, and July 1, 17, 2018.
 3. Date: August 14, 2018.

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Scarp
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



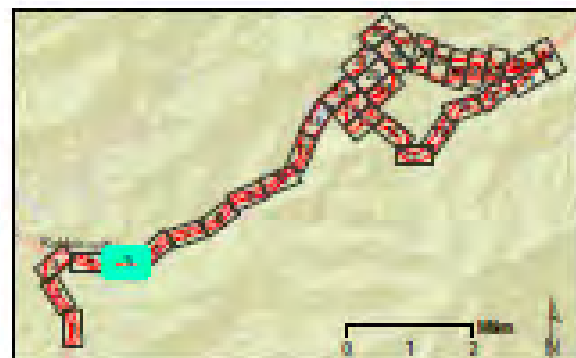
Project Location
 Holden/Hawthorn
 Graham County, NC
 Prepared by: JPA/SLC on 2018 08 18
 Technical Review by: MMB on 2018 08 18
 Independent Review by: G.W. on 2018 08 20

Client/Project
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.
 3-4

Title
 Potential Jurisdictional Features Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet

1:2,400 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane North Carolina 17N 6300 Feet
2. Jurisdictional Determination completed by Sarman on June 2, 6, 10, 27, and July 1, 11, 2019.
3. Date: 06/27/2019

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points



Project Location
Hickory/Harrisville
Catawba County, NC

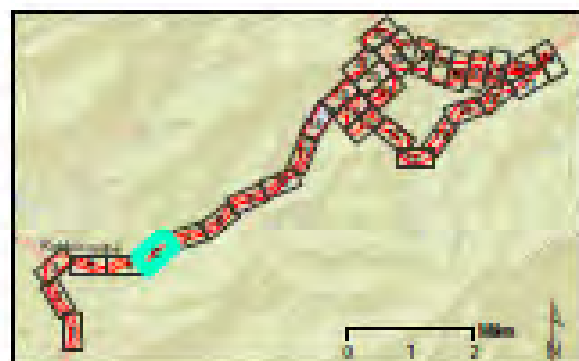
171001126

Prepared by JPA/LLC on 02/18/19
Technical Review by MMB on 02/18/19
Independent Review by KRW on 02/18/19

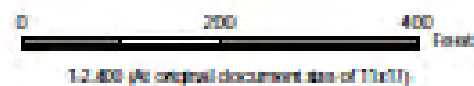
Client/Project
NCDOT - Division 14
Corridor K Project
STIP: A-0009C

Figure No:
3-5

Title
Potential Jurisdictional Features Map



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes

1. Coordinate System: NAD 1983 StatePlane North Carolina 1170 FWS Foot
2. Jurisdictional Delineation completed by Section on June 2, 4, 10, 20, and July 1, 15, 2019.
3. Cartography © NC DOT/MapX, 2019.

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Scarp
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points



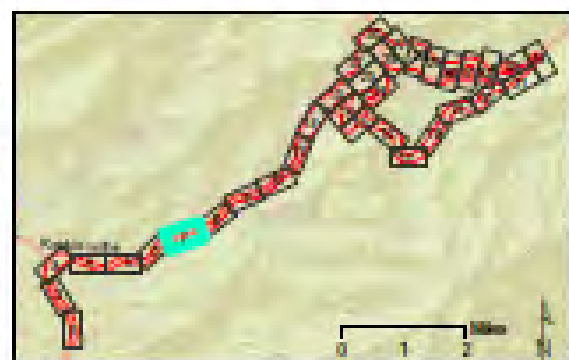
Project Location
Indianville/Overwatch
Graham County, NC


177001126
Designed by JPA/SAC on 2019.08.18
Technical Review by MBE on 2019.08.18
Independent Review by GWM on 2019.08.20

Client/Project
NCDOT - Division 14
Corridor K Project
STIP: A-0009C

Figure No.
3-6

Title
Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

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Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina FIPS 5003 Feet
 2. Jurisdictional Database compiled by Service on June 27, 10, 11, and July 1, 11, 2010
 3. Date: 06/27/2010

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Seep
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points

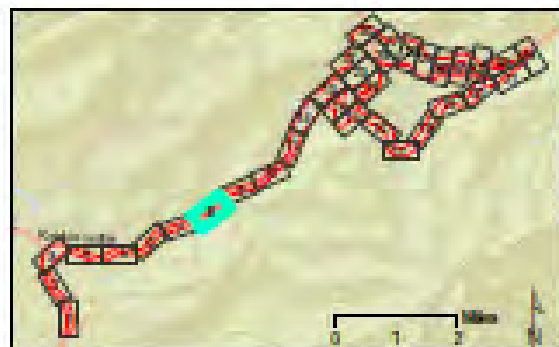
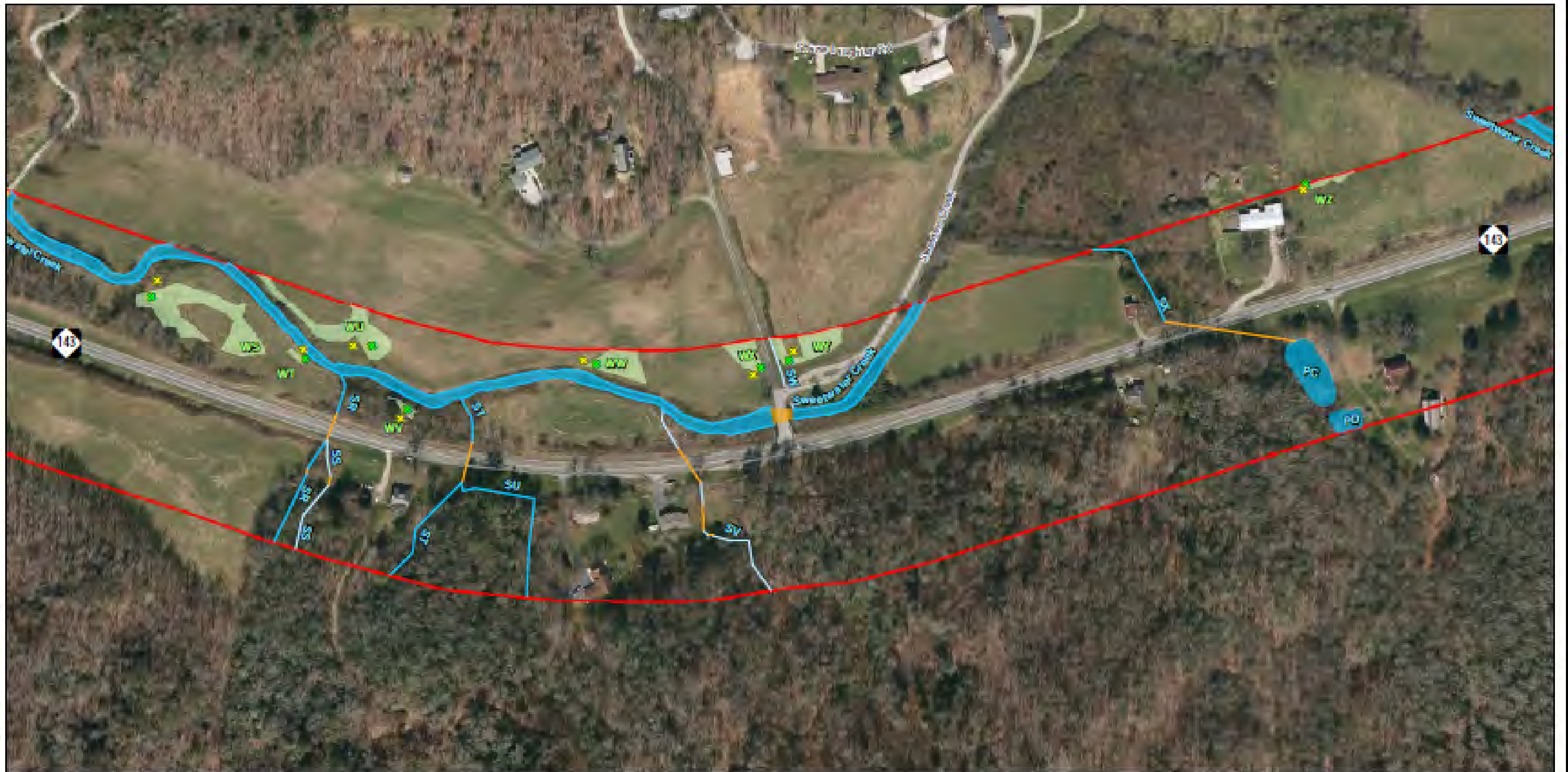


Project Location:
 Baldhead/Plainsville
 Graham County, NC
 177001726
 Prepared by: JF/MLC on 2010.08.10
 Technical Review by: MBR on 2010.08.10
 Independent Review by: G.W on 2010.08.20

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.:
 3-7

Potential Jurisdictional Features Map



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes

1. Coordinate System: NAD 1983 StatePlane North Carolina 1117 FWS Feet
2. Jurisdictional Determination completed by Section on June 2, 2019, and July 2, 2019.
3. Deliberately © NCDOT/Map, 2019.

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points

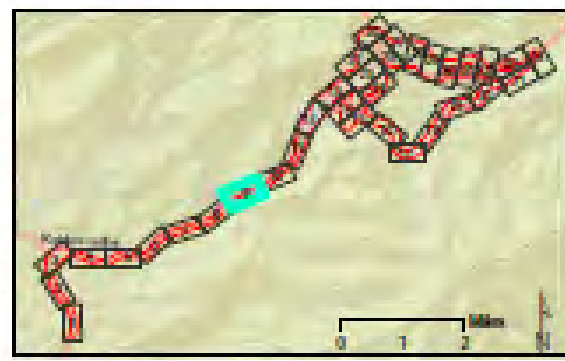



Project Location
Goldsboro/Plainsboro
Carteret County, NC
Prepared by: JVA/MIC on 2019.08.19
Reviewed/Revised by: MBO on 2019.08.19
Independent Review by: GWR on 2019.08.20

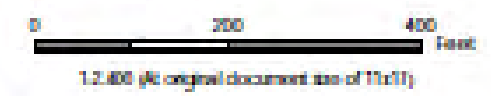
Client/Project
NCDOT - Division 14
Corridor K Project
SIP: A-0009C

Figure No.
3-8

Title
Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 17N FIPS 5003 Feet
 2. Jurisdictional Determination completed by Sertom on June 21, 2021, and July 17, 2021.
 3. Orthorectified © 2021 GeoEye, 2021.

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Seep
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



Project Location:
 Baldhead/Beaverch
 Durham County, NC
 Prepared by: JFAS/EC on 07/16/21
 Technical Review by: MBB on 07/16/21
 Independent Review by: KLR on 07/16/21

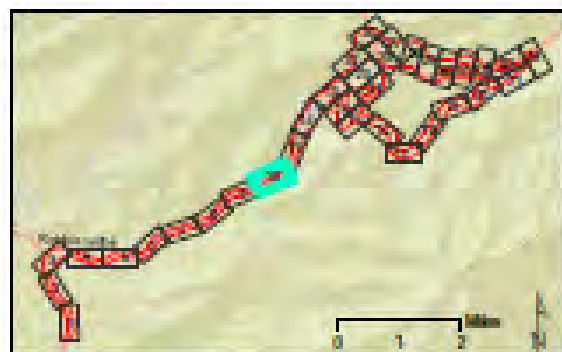
Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.:
 3-9

Title:
 Potential Jurisdictional Features Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes

1. Coordinate System: NAD 1983 StatePlane North Carolina 17N 6000 Feet
2. Jurisdictional Determination completed by Services on June 2, 6, 7, 10, 11, and July 1, 11, 2016.
3. Orthorectified by NCDOT/MapSolutions, 2016.

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points



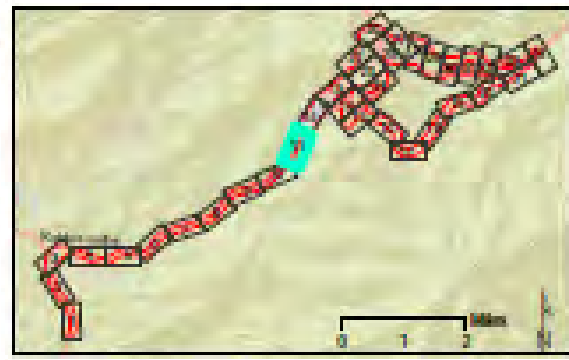
Project Location
Indian Wells Road
Western County, NC


171001126
Prepared by JF/MLC on 05/18/16
Technical Review by MBB on 05/18/16
Independent Review by K.W. on 05/18/16

Client/Project
NCDOT - Division 14
Corridor K Project
STIP: A-0009C

Figure No.
3-10











Title
Potential Jurisdictional Features Map




NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

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Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 11N FIPS 5000 Feet
 2. Jurisdictional Delineation completed by Services on June 23, 10, 25, and July 1, 11, 2010.
 3. Date: 06/23/2010

- Legend**
-  Potential Jurisdictional Intermittent Stream
 -  Potential Jurisdictional Perennial Stream
 -  Potential Jurisdictional Swamp
 -  Select Pipes/Bridges/Culverts
 -  Potential Jurisdictional Pond
 -  Potential Jurisdictional Wetland
 -  Project Study Area
 -  Wetland Data Point
 -  Upland Data Point
 -  Sink Points

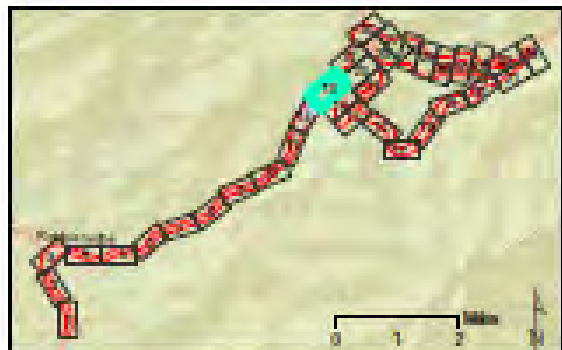



Project Location:
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 177001.126
 177001.126

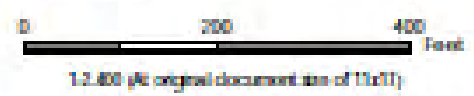
Client/Project:
 WCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.:
 3-11











Title:
 Potential Jurisdictional Features Map




NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes:
 1. Coordinate System: NAD 1983 North Carolina North Carolina (17N) 5000 Feet
 2. Jurisdictional Determination completed by Section on June 2, 4, 10, 15, and July 1, 11, 2019
 3. Date: 06/11/2019 © NCDOT/MapInfo, 2019.

- Legend**
-  Potential Jurisdictional Intermittent Stream
 -  Potential Jurisdictional Perennial Stream
 -  Potential Jurisdictional Scarp
 -  Select Pipes/Bridges/Culverts
 -  Potential Jurisdictional Pond
 -  Potential Jurisdictional Wetland
 -  Project Study Area
 -  Wetland Data Point
 -  Upland Data Point
 -  Sink Points



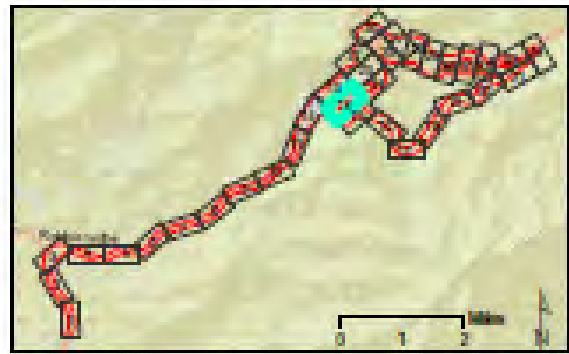
Project Location:
 Interstate 85/285
 Guilford County, NC
 177001126
 Prepared by JVA/NC on 05/18/2019
 Technical Review by MBB on 05/18/2019
 Independent Review by GJW on 05/18/2019

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 SFP: A-0009C

Figure No:
 3-13

Title:
 Potential Jurisdictional Features Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1175 5000 Feet
 2. Jurisdictional Determination completed by Section on June 2, 3, 10, 25, and July 1, 11, 2019
 3. Orthorectified © NCDEM/Mapbox 2019

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points

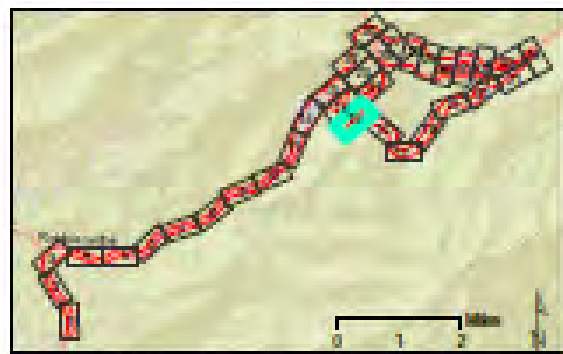


Project Location
 Baldhead/Farmers
 Graham County, NC
 Prepared by JVA/NC on 2019.06.18
 Technical Review by MBB on 2019.06.18
 Independent Review by KRW on 2019.06.20

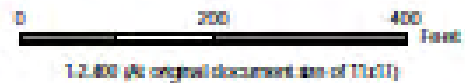
Client/Project
 NCDOT - Division 14
 Corridor X Project
 SITP: A-0009C

Figure No.
 3-14

Title
 Potential Jurisdictional Features Map



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes:

1. Coordinate System: NAD 1983 StatePlane North Carolina 1175, 6300 Feet
2. Spatial Reference Information completed by Survey on June 21, 2012, and July 1, 2012
3. Date: August 7, 2013

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points

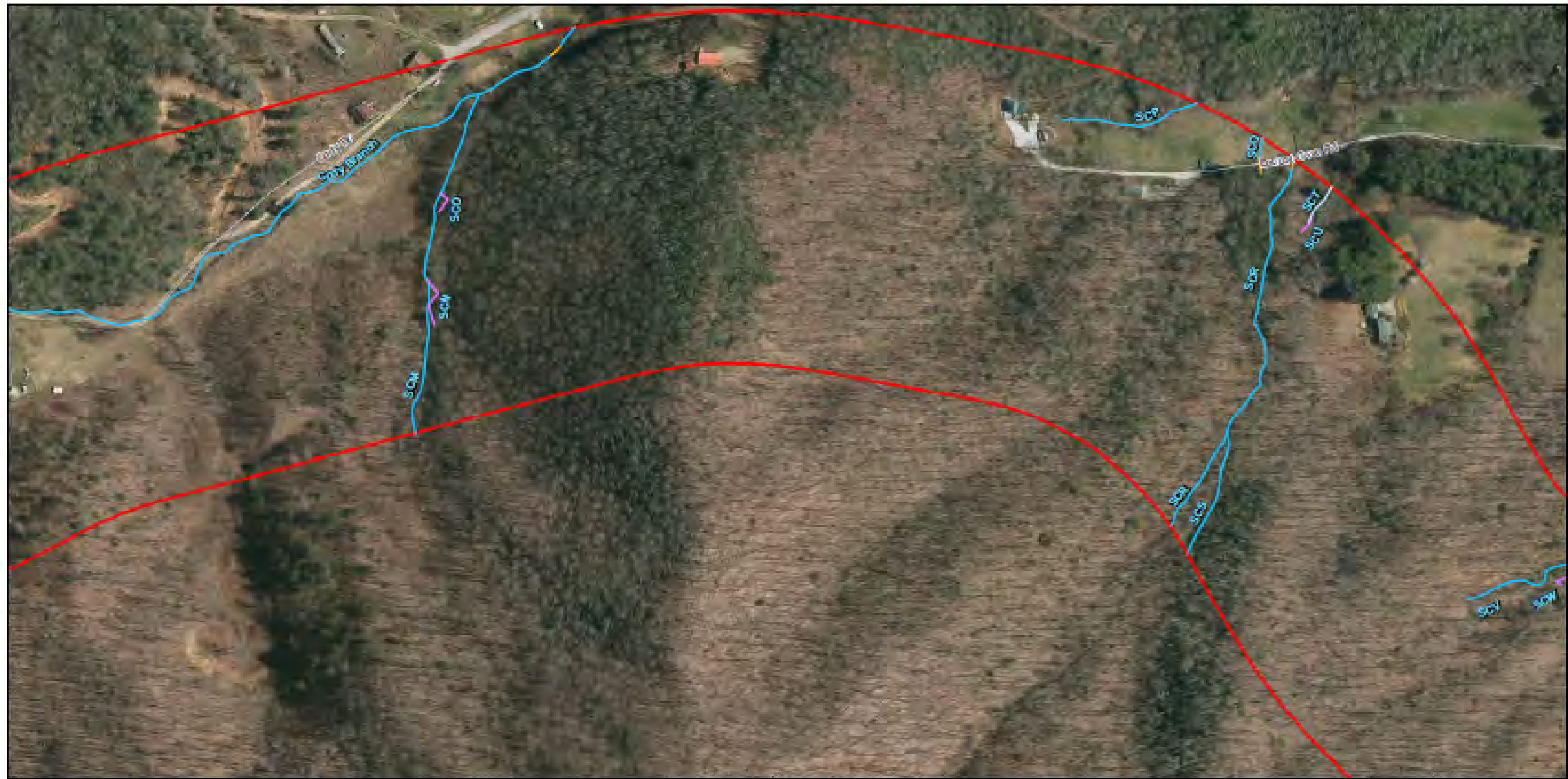



Project Location: 177001126
 177001126
 177001126
 177001126

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No:
 3-15

Title:
 Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1175, 5000 Feet
 2. Jurisdictional Determination completed by Tarrion on June 2, 11, 16, 17, and July 1, 11, 2016
 3. Date: August 4, 2016 (Map Date)

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Seep
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



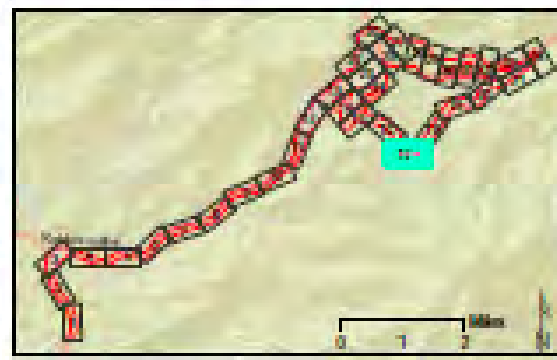
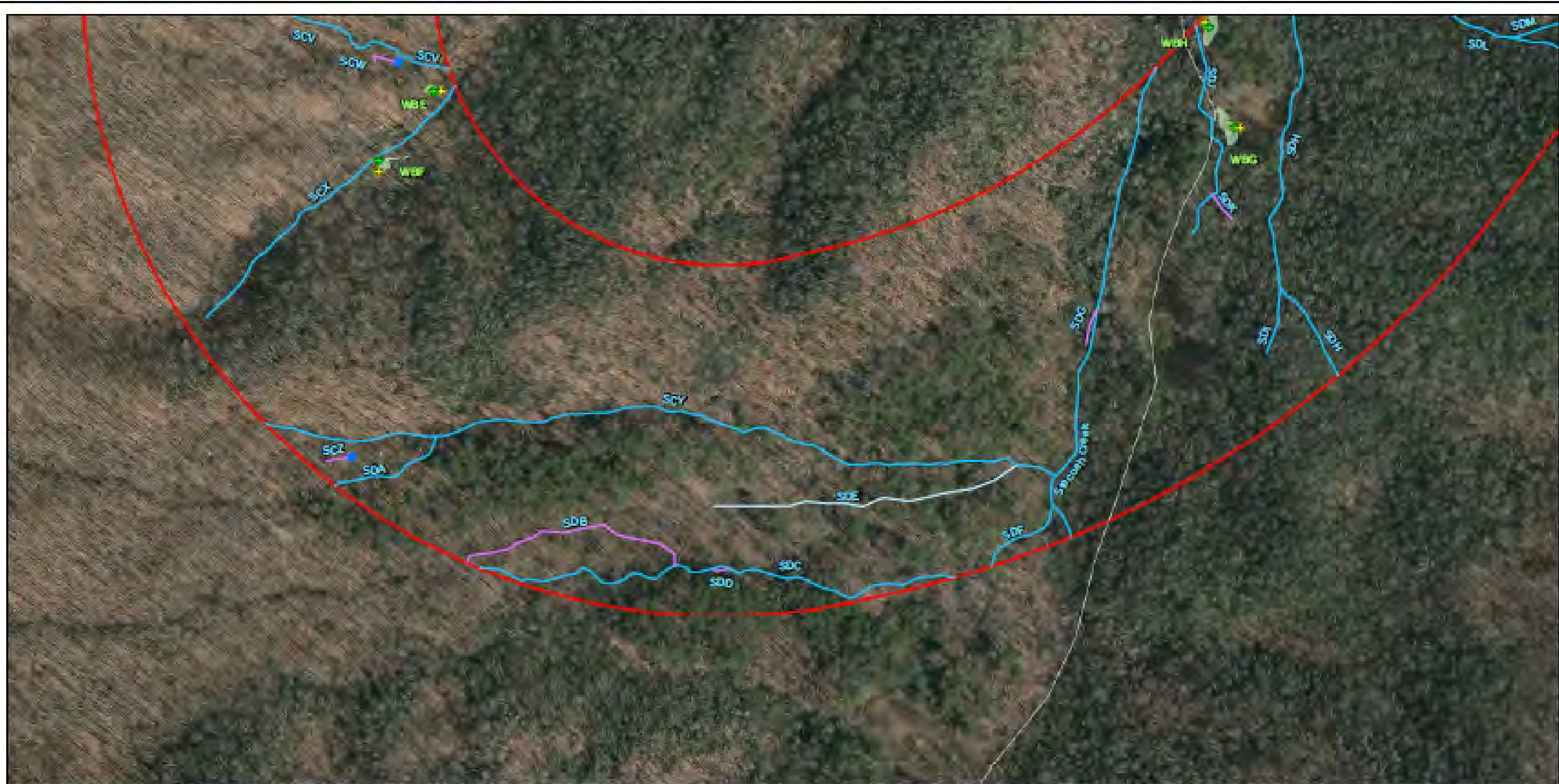
Project Location
 Salisbury/Thomas
 Durham County, NC


171001126
 Prepared by JPA/SIC on 07/16/16
 Technical Review by MBB on 07/16/16
 Independent Review by KRW on 07/16/16

Client/Project
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.
 3-16

Title
Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
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Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1076200 Feet
 2. Jurisdictional Determination completed by Services on June 21, 10/17, and July 1/17, 2019.
 3. Orthorectified NCEM Data/Map: 2011.

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Swamp
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Date Point
-  Upland Date Point
-  Sink Points



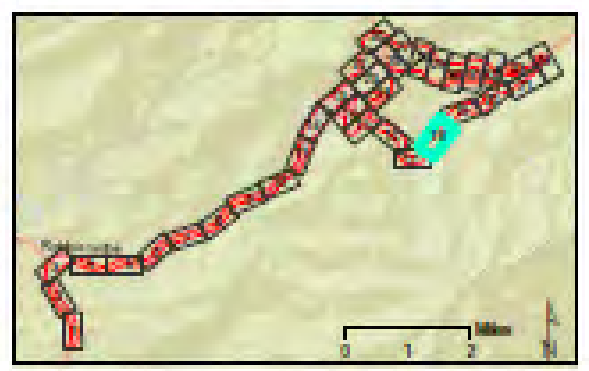
Project Location
 Henderson/Hawthorn
 Eastern County, NC
 171001126
 Prepared by JFAS/EC on 07/10/19 10
 Technical Review by MBR on 07/10/19 10
 Independent Review by GJR on 07/10/19 10


Client/Project
 NCDOT - Division 14
 Corridor & Project
 SHP: A-0009C

Figure No:
 3-17

Title
 Potential Jurisdictional Features Map











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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
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Notes
 1. Coordinate System: NAD 1983 North Carolina State Plane (NAD83) Feet
 2. Jurisdictional Determination completed by Service on June 27, 2018, and July 1, 2018.
 3. Orthorectified © NC2Imagery, 2018.

- Legend**
-  Potential Jurisdictional Intermittent Stream
 -  Potential Jurisdictional Perennial Stream
 -  Potential Jurisdictional Seep
 -  Select Pipes/Bridges/Culverts
 -  Potential Jurisdictional Pond
 -  Potential Jurisdictional Wetland
 -  Project Study Area
 -  Wetland Data Point
 -  Upland Data Point
 -  Sink Points

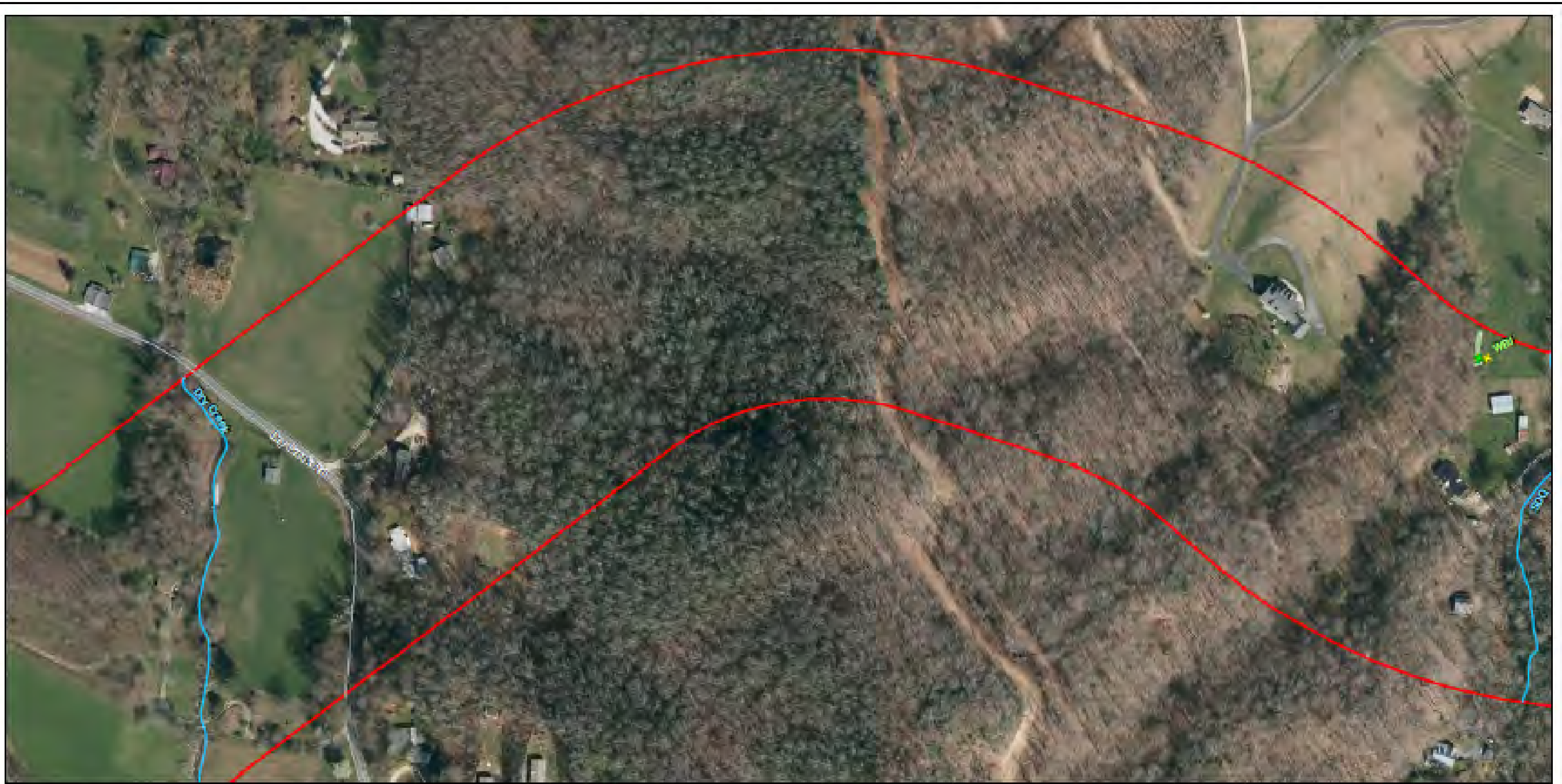



Project Location
 Balderson/Summit
 Graham County, NC
 177001726
 Prepared by JFA/SLC on 2018 08 18
 Technical Review by MBH on 2018 08 18
 Independent Review by GSR on 2018 08 20

Client/Project
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.
 3-18

Title
 Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
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Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1175 FWS Feet
 2. Jurisdictional Determination completed by Section on June 23, 10/25, and July 1/11, 2019.
 3. Orthorectified © NC2DataMapx, 2019.

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Scarp
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



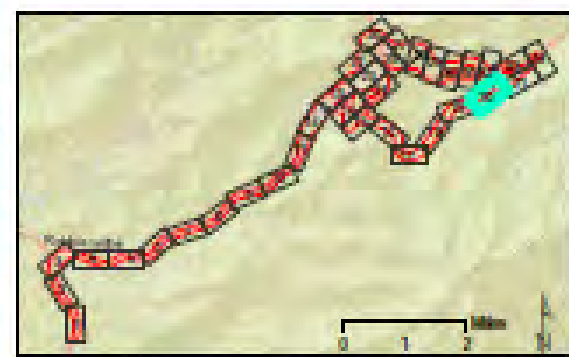
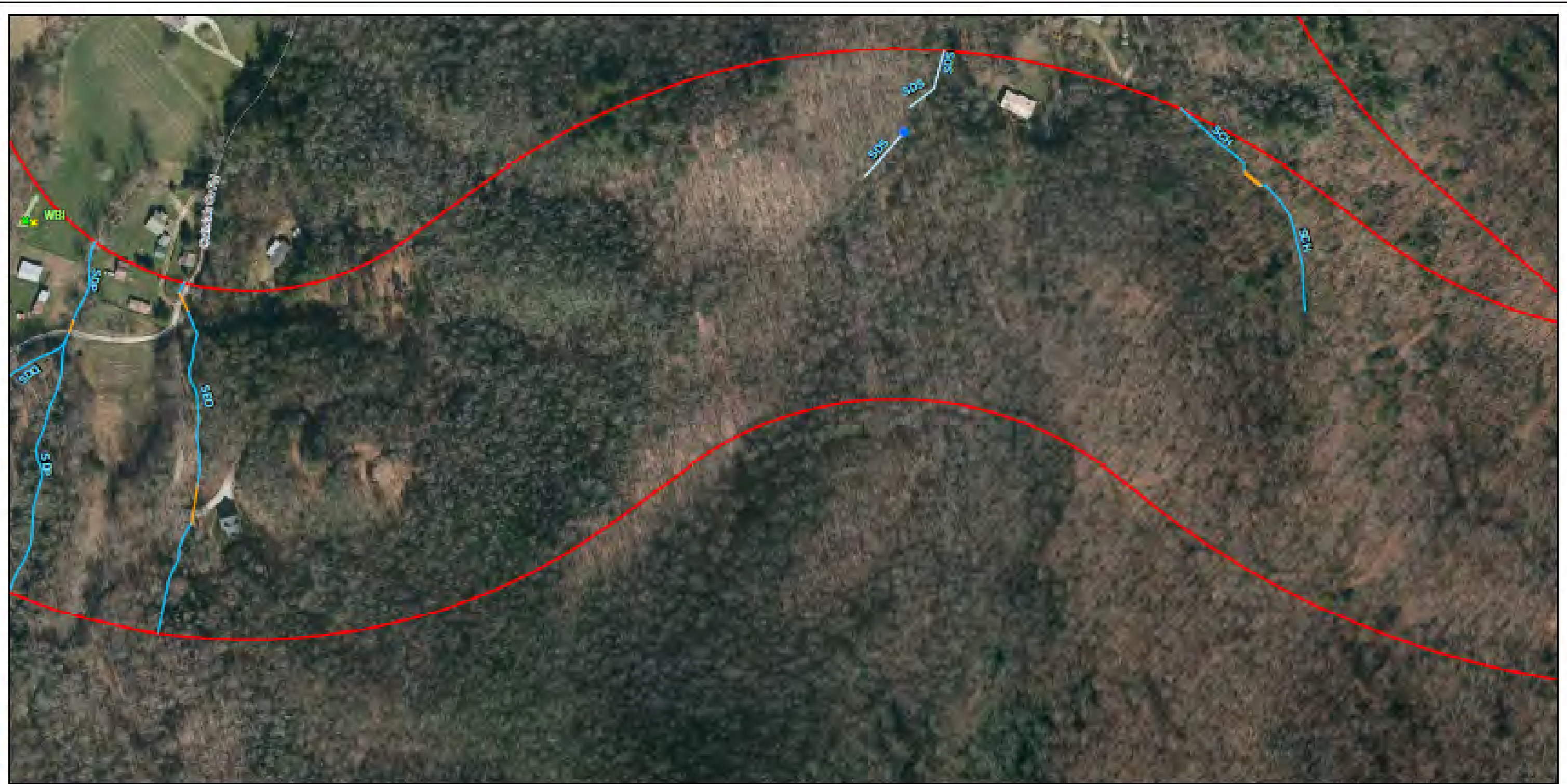
Project Location:
 14140000/000000
 Durham County, NC


171001126
 Prepared by JFAS/EC on 02/18/2019
 Reviewed/Checked by MBB on 02/18/2019
 Interim/Approved by G.W on 02/18/2019

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No:
 3-19

Title:
 Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
 1:2,400 (At original document size of 11x17)

Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina FIPS 5000 Feet
 2. Jurisdictional Determination completed by Service on June 21, 10, 21, and July 1, 11, 2010
 3. Corresponding to NCE2-0469-2010

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Seep
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



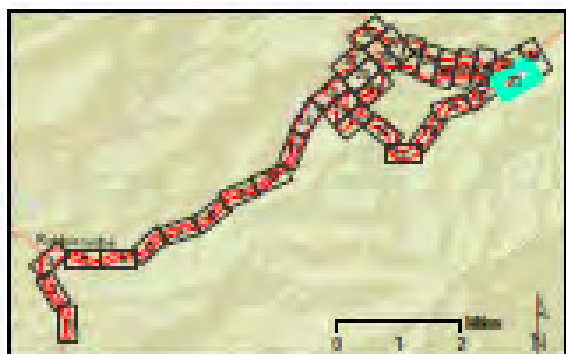
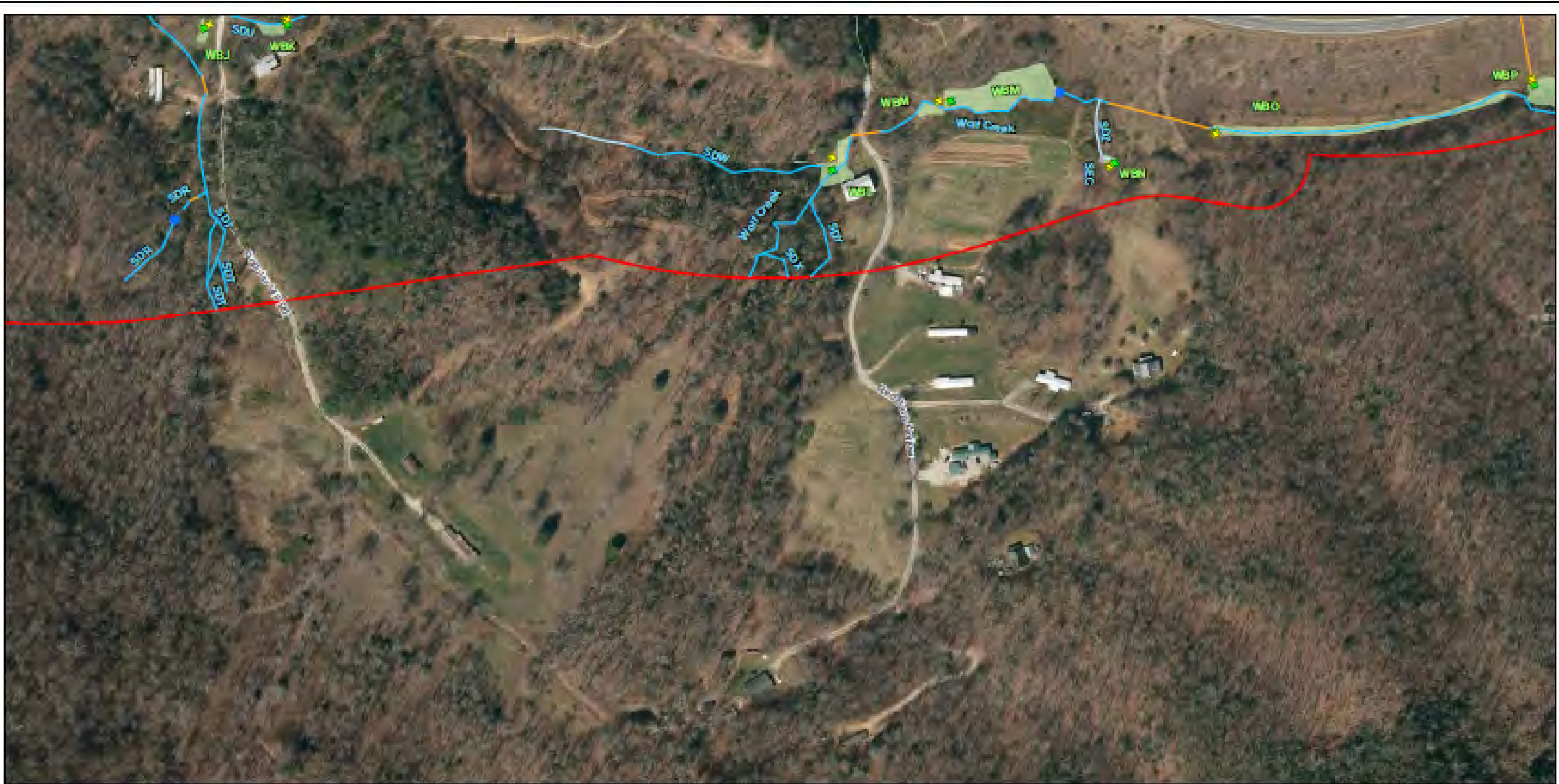
Project Location
 Guilford/Thomas
 Guilford County, NC


Client/Project
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No.
 3-20

Title
 Potential Jurisdictional Features Map

117007126
 Prepared by JF/MLC on 2010 08 18
 Technical Review by MBS on 2010 08 18
 Independent Review by KRW on 2010 08 20














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

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 1:2,400 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane North Carolina 17N 5000 Feet
2. Jurisdictional Determination completed by the user on June 2, 7, 10, 17, and July 1, 11, 2018
3. Orthorectified P-822aMap, 2016

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Seep
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



Project Location
 Guilford/Rowan Co
 Guilford County, NC
 Proposed by JVA/SLC on 2018 08 18
 Technical Review by MBH on 2018 08 18
 Independent Review by GIB on 2018 08 20

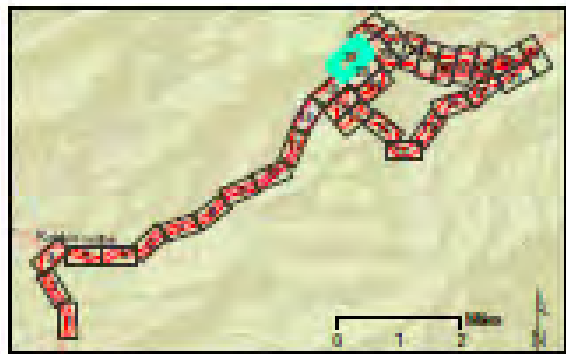
Client/Project
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C


Figure No.
 3-21

Title
 Potential Jurisdictional Features Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
 1:2,000 (At original document size of 11x17)

Notes
 1. Coordinate System: NAD 1983 StatePlane, North Carolina (FTN, 5000 Feet)
 2. Jurisdictional Determination completed by Fisheries on June 21, 10, 11, and July 2, 11, 2010.
 3. Orthorectified © NCEM/GeoEye, 2010.

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Snag
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points

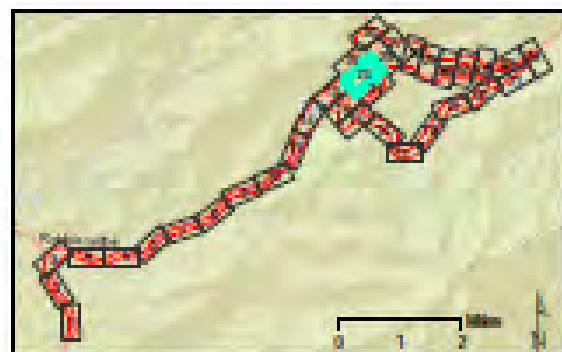


Project Location: 170081126
 Independence/Reynolds
 Graham County, NC
 Prepared by JPA/SLC on 2010.08.10
 Technical Review by MBO on 2010.08.10
 Independent Review by GWR on 2010.08.20

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STIP: A-0009C

Figure No:
 3-22

Title:
 Potential Jurisdictional Features Map



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes

1. Coordinate System: NAD 83 North Carolina North Coordinate (N) 8300 Feet
2. Supplemental Data was compiled by Service on June 2, 2017, and July 1, 2017.
3. Cartography: © NC DOT Maps, 2016.

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Seep
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points



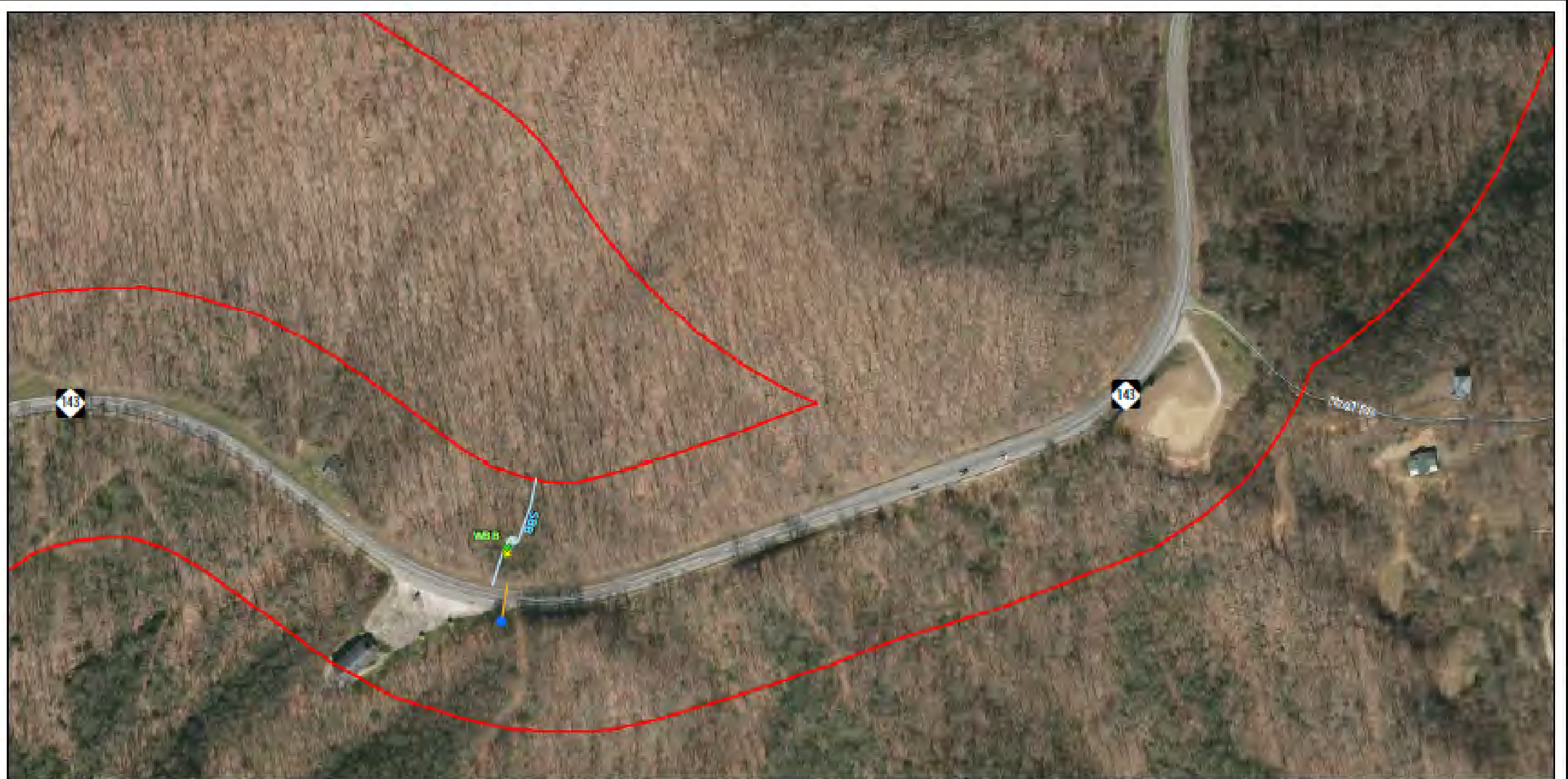
Project Location:
Hickory/Horsebush
Catawba County, NC


171007126
Prepared by JFA/MLC on 2018.08.10
Technical Review by MBW on 2018.08.10
Independent Review by KJW on 2018.08.20

Client/Project:
NCDOT - Division 14
Corridor K Project
STP: A-0009C

Figure No.:
3-23

Title:
Potential Jurisdictional Features Map














NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes:
 1. Coordinate System: NAD 1983 StatePlane North Carolina (17) 5000 Feet
 2. Jurisdictional Determination completed by Services on June 21, 10, 11, and July 1, 11, 2019.
 3. Orthorectified © NC2Imagery, 2015.

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Scarp
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points

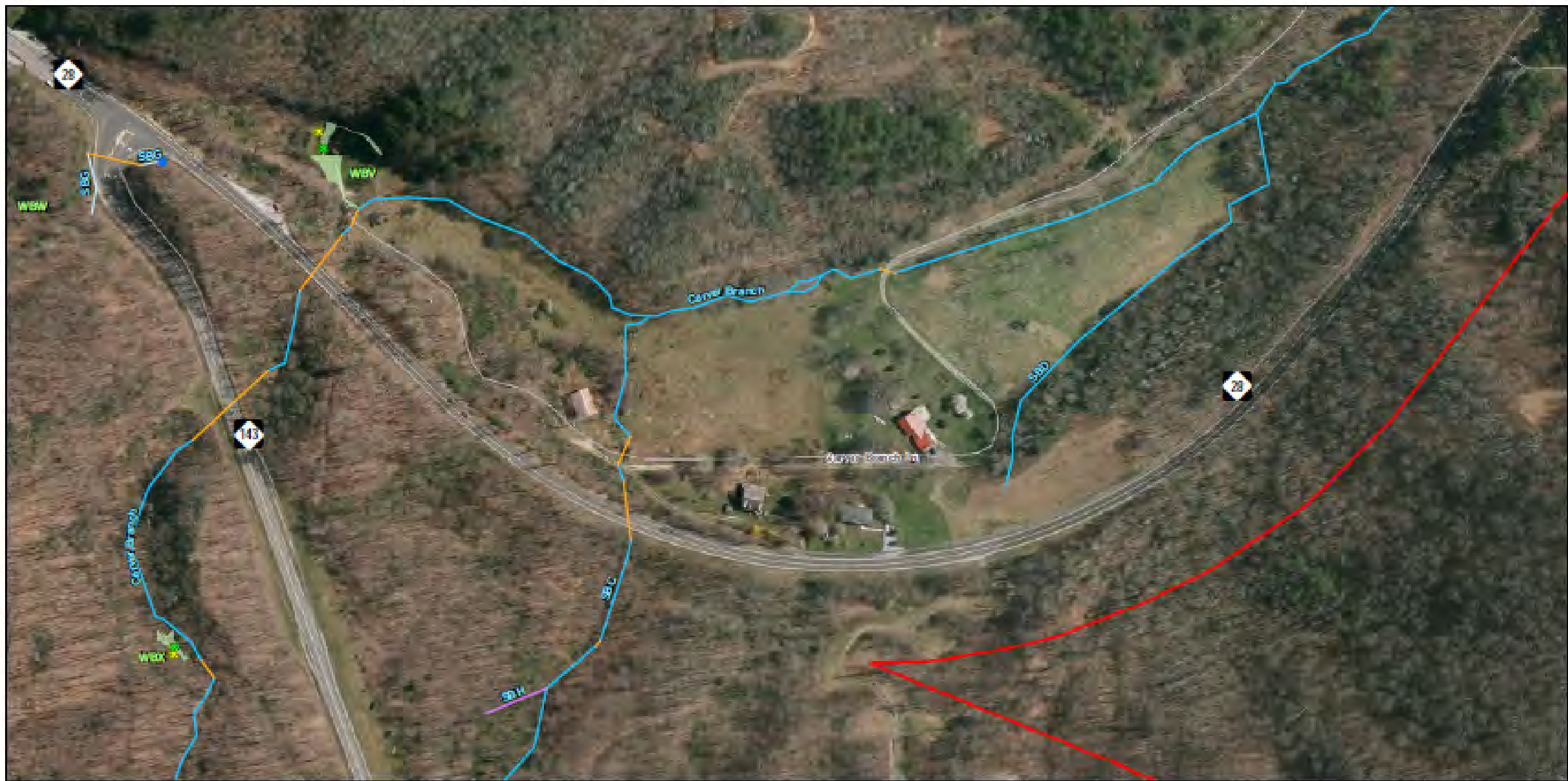


Project Location:
 Henderson/Hessloch
 Graham County, NC
 171001126
 Prepared by JFW/SIC on 2019.06.19
 Technical Review by MMB on 2019.06.19
 Independent Review by SBR on 2019.06.20

Client/Project:
 NCDOT - Division 14
 Corridor K Project
 SIF: A-0009C

Figure No:
 3-24

Title:
 Potential Jurisdictional Features Map



NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
1. Coordinate System: NAD 1983 StatePlane North Carolina 1175 5000 Feet
2. Jurisdictional Determination completed by Tarran on June 27, 10, 11, and July 1, 11, 2010.
3. Data source: © NCDOT/MapX, 2010.

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Scarp
- Select Pipes/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points

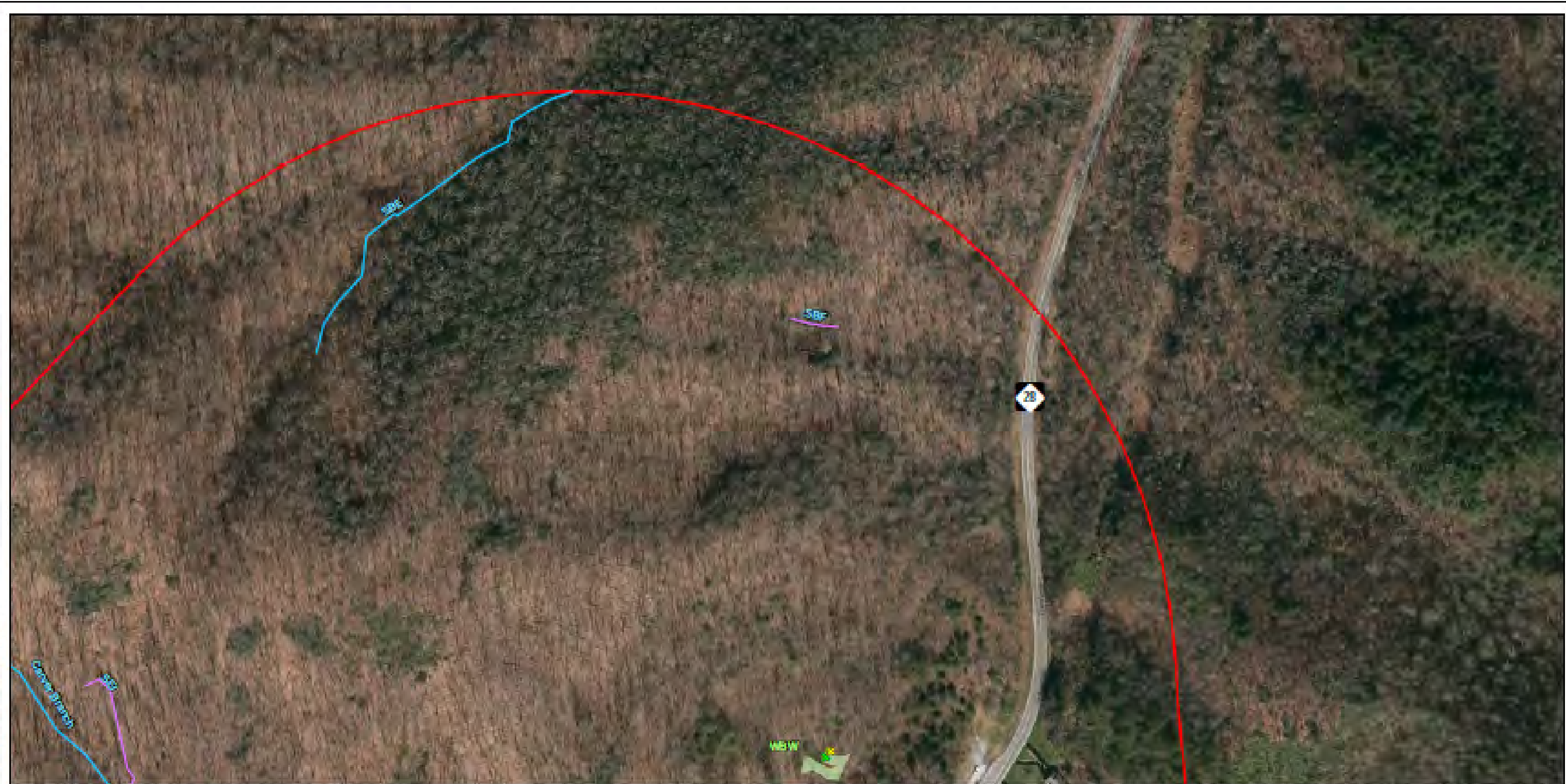



Project Location
Baldwinville/Planwell
Catawba County, NC
Prepared by JPA/ABC on 07/10/10
Reviewed/Revised by MBB on 07/10/10
Independent Review by GWR on 07/10/10

Client/Project
NCDOT - Division 14
Corridor K Project
STIP: A-0009C

Figure No.
3-25











Title
Potential Jurisdictional Features Map




**NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14**



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 117N 6298 Feet
 2. Spectral Data were completed by Services on June 2, 3, 10, 17, and July 1, 17, 2019.
 3. Data courtesy of NCDOT/MapS. 2019.

Legend			
	Potential Jurisdictional Intermittent Stream		Project Study Area
	Potential Jurisdictional Perennial Stream		Wetland Data Point
	Potential Jurisdictional Seep		Upland Data Point
	Select Pipes/Bridges/Culverts		Sink Points
	Potential Jurisdictional Pond		
	Potential Jurisdictional Wetland		



Project Location:
 Indian Wells/Pharmacia
 Graham County, NC

Prepared by JF/ABC on 02/18/20 10
 Technical Review by MRS on 02/18/20 10
 Independent Review by K.R. on 02/18/20 20

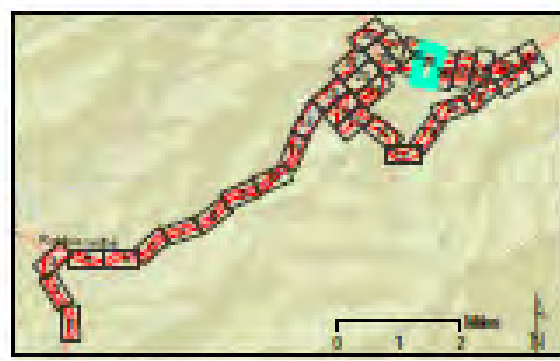
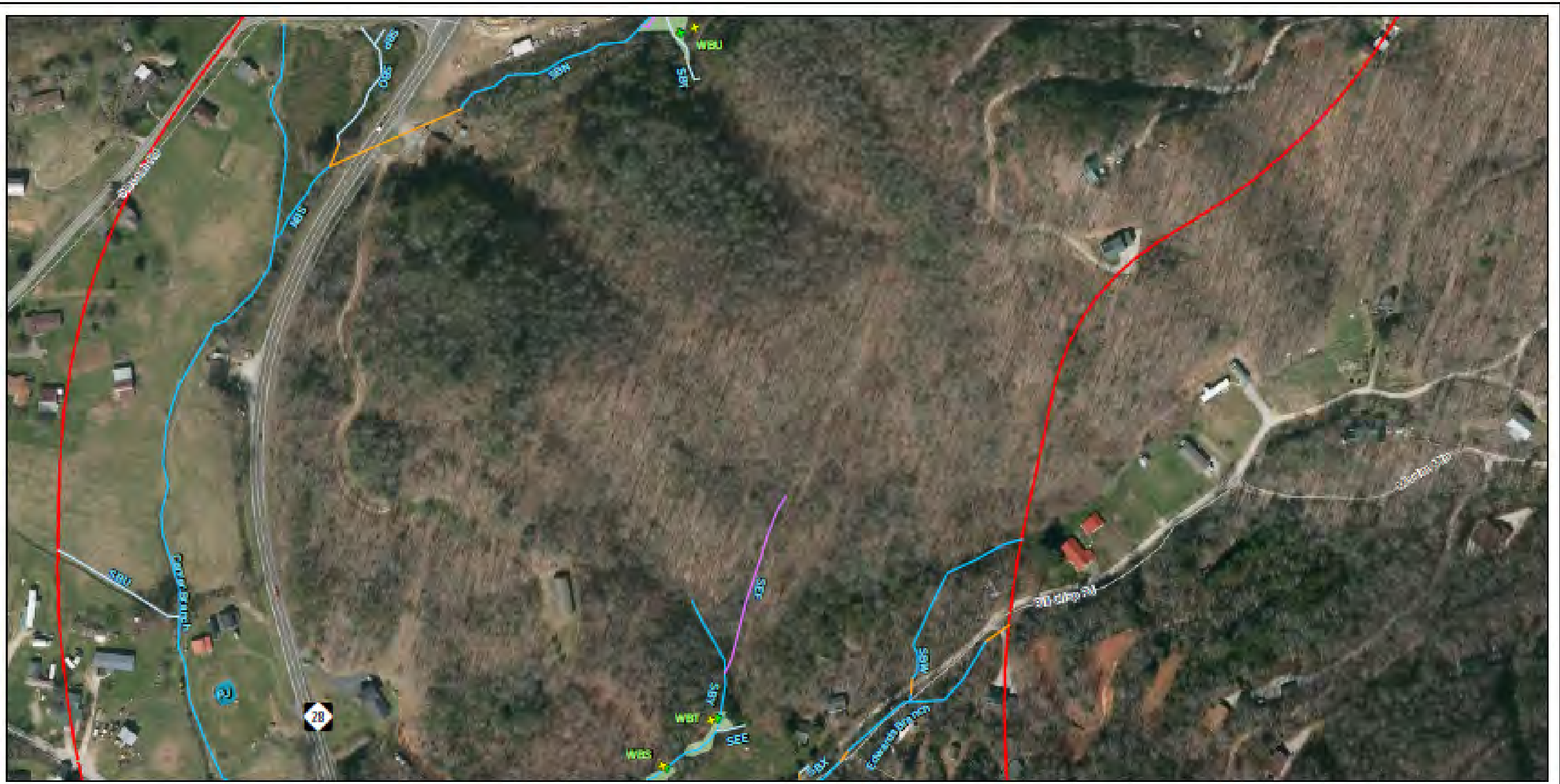
Client/Project:
 NCDOT - Division 14
 Corridor K Project
 STP: A-0009C


Figure No:
 3-26

Title:
 Potential Jurisdictional Features Map

02/18/20 10:28:00 AM J:\Projects\2019\14-0009C\MapS\14-0009C_Potential Jurisdictional Features Map.mxd User: jf/abc











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DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
 1:2,400 (At original document size of 11x17)

Notes
 1. Coordinate System: NAD 1983 North Carolina State Plane (NAD83) / Feet
 2. Jurisdictional Determination completed by Division on June 2, 3, 10, 17, and July 1, 11, 2018
 3. Contouring by WSDotMaps, 2018.

- Legend**
-  Potential Jurisdictional Intermittent Stream
 -  Potential Jurisdictional Perennial Stream
 -  Potential Jurisdictional Seep
 -  Select Pipes/Bridges/Culverts
 -  Potential Jurisdictional Pond
 -  Potential Jurisdictional Wetland
 -  Project Study Area
 -  Wetland Data Point
 -  Upland Data Point
 -  Sink Points



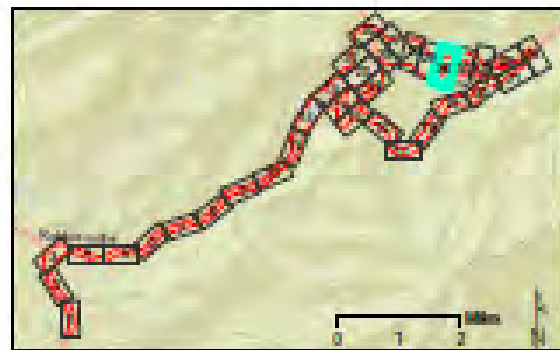
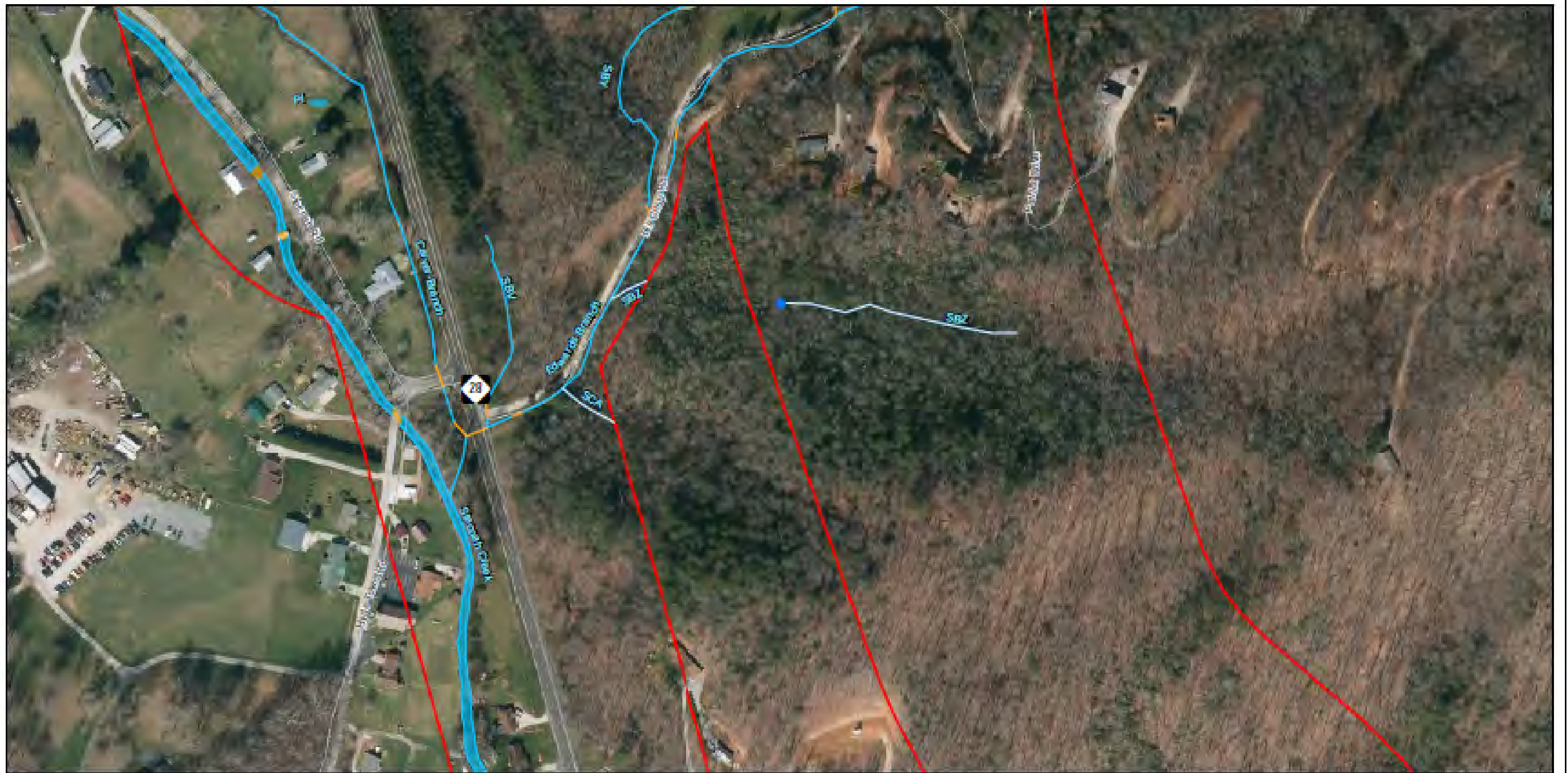
Project Location
 Indian Wells/Thomas
 Graham County, NC
 Proposed by JPA/MLC on 05/18/2018
 Technical Review by MBE on 05/18/2018
 Interdisciplinary Review by GWR on 05/18/2018


Client/Project
 NCDOT - Division 14
 Corridor K Project
 STP: A-0009C
 Map No.
 3-29

Title
 Potential Jurisdictional Features Map

170001726
 Proposed by JPA/MLC on 05/18/2018
 Technical Review by MBE on 05/18/2018
 Interdisciplinary Review by GWR on 05/18/2018

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet
 1:2,400 (At original document size of 11x17)

Notes:
 1. Coordinate System: NAD 1983 StatePlane North Carolina FIPS 5000 Feet
 2. Jurisdictional Determination completed by Section on June 2, 1, 10, 21, and July 1, 11, 2016.
 3. Orthorectified © 2015 GeoEye/Mapbox

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Swamp
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points



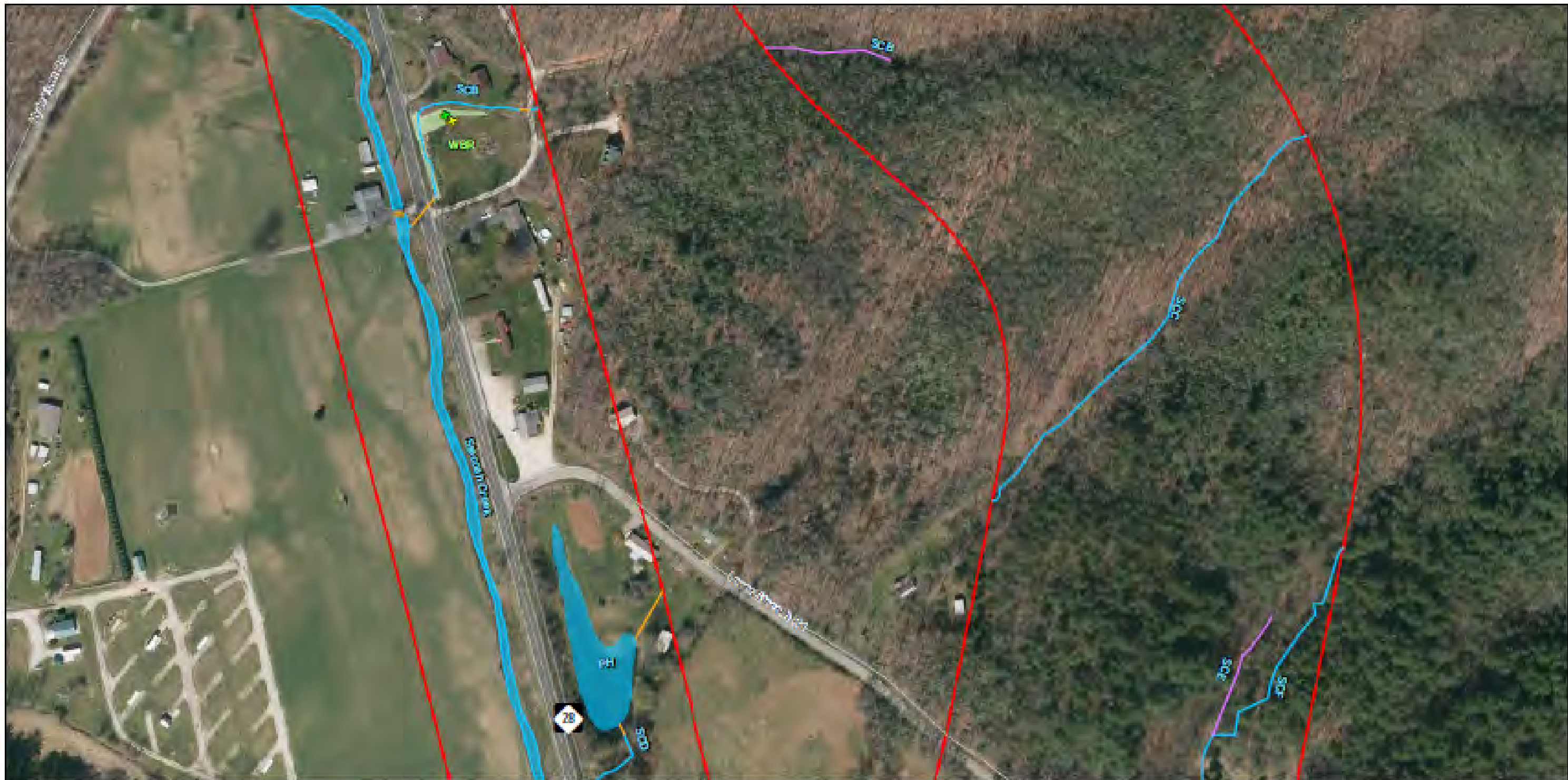
Project Location: **171001126**
 Henderson/Beaufort
 Dareham County, NC
 Prepared by JFW&C on 07/16/16
 Technical Review by MMB on 07/16/16
 Independent Review by G.W. on 07/16/16


Client/Project:
NC DOT - Division 14
Corridor K Project
STIP: A-0009C

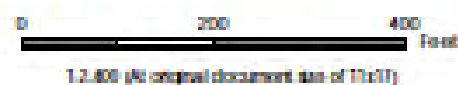
Figure No:
3-30

Title:
Potential Jurisdictional Features Map

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







NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina FIPS 5003 Feet
 2. Jurisdictional Determination completed by Services on June 2, 6, 10, 21, and July 1, 11, 2018
 3. Orthorectified © NCEM/DeLorme, 2018

Legend

-  Potential Jurisdictional Intermittent Stream
-  Potential Jurisdictional Perennial Stream
-  Potential Jurisdictional Scarp
-  Select Pipes/Bridges/Culverts
-  Potential Jurisdictional Pond
-  Potential Jurisdictional Wetland
-  Project Study Area
-  Wetland Data Point
-  Upland Data Point
-  Sink Points

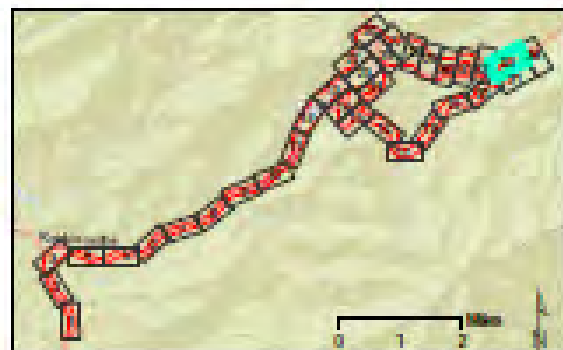


Project Location
 Endicott/Plainsboro
 Graham County, NC
 Project No: 17001126
 Prepared by: JTW/LLC on 07/18/18
 Technical Review by: MBB on 07/18/18
 Independent Review by: S&B on 07/18/18

Client/Project
 NCDOT - Division 14
 Corridor K Project
 SHIP: A-0009C
Figure No:
 3-31

Title
 Potential Jurisdictional Features Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 200 400 Feet

12,400 (At original document size of 11x17)

Notes

1. Coordinate System: NAD 1983 StatePlane North Carolina FIPS 5000 Feet
2. Jurisdictional Database compiled by NHDOT on June 2, 2, 10, 11, and July 1, 11, 2010
3. Data courtesy of NCDOT/Map 1010

Legend

- Potential Jurisdictional Intermittent Stream
- Potential Jurisdictional Perennial Stream
- Potential Jurisdictional Scarp
- Select Pipe/Bridges/Culverts
- Potential Jurisdictional Pond
- Potential Jurisdictional Wetland
- Project Study Area
- Wetland Data Point
- Upland Data Point
- Sink Points



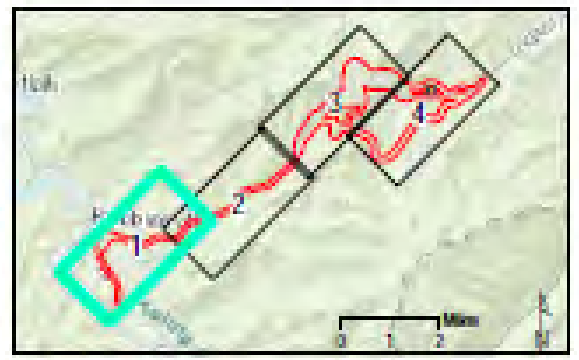
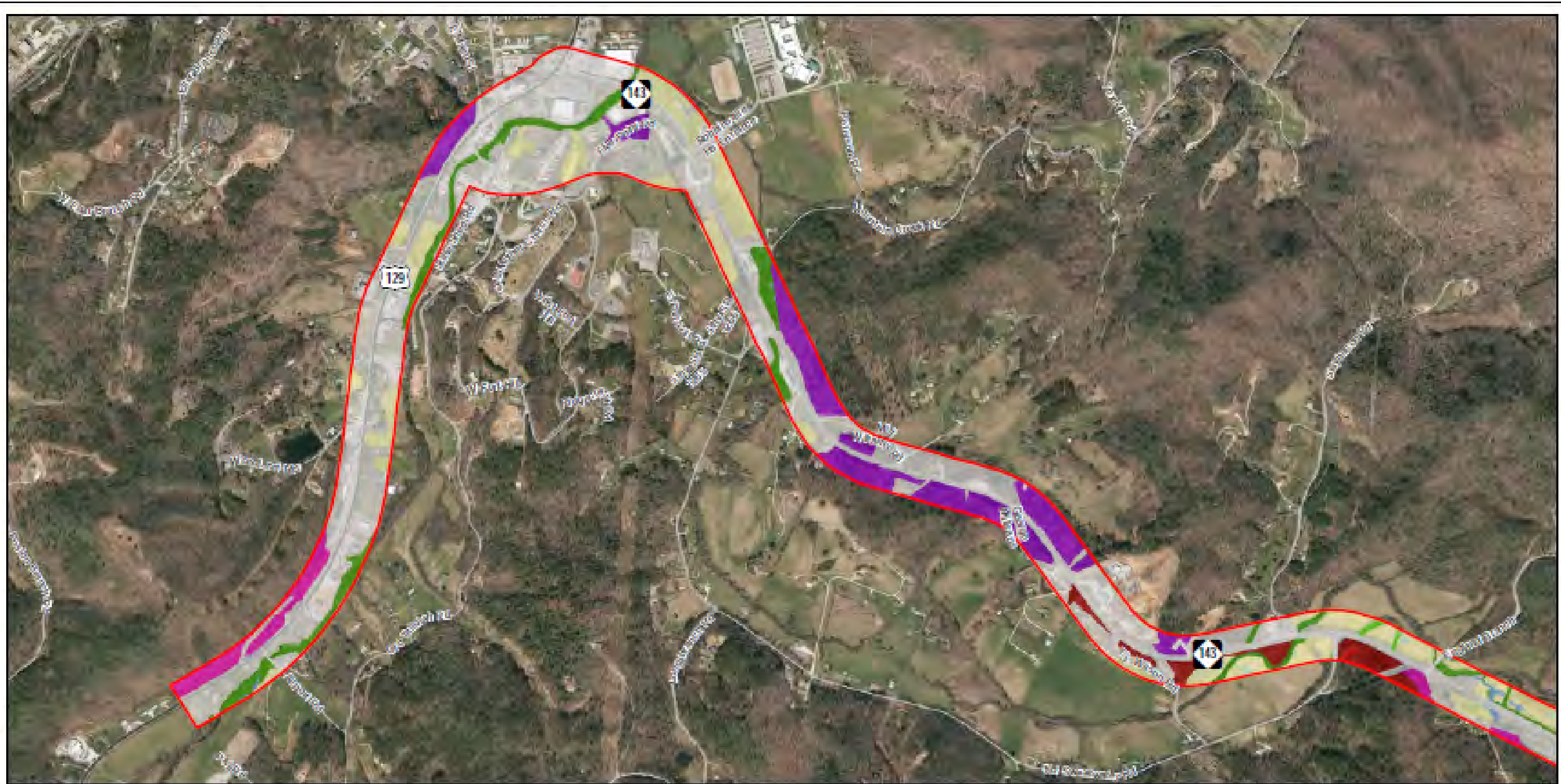
Project Location
Edwardsville/Plainsville
Catawba County, NC


177001726
Prepared by: JFW/LLC on 2/11/10, 10
Technical Review by: MMS on 2/11/10, 10
Independent Review by: SSM on 2/11/10, 20

Client/Project
NCDOT - Division 14
Corridor K Project
STIP: A-0009C

Figure No.
3-33



Title
Potential Jurisdictional Features Map




NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14

0 1,000 2,000 Feet
 1:12,500 (At original document size of 11x17)

Notes:
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1175000 Feet
 2. File/Link compiled by Division on June 23, 2015, and July 7, 2015
 3. Date/Version: 11/02/2015

- Legend**
-  Project Study Area
 - Terrestrial Communities:**
 -  Montane Oak-Hickory Forest
 -  Dry-Mesic Oak-Hickory Forest
 -  Acid Cove Forest
 -  Rich Cove Forest
 -  Cascade Hemlock Forest
 -  White Pine Forest
 -  Montane Alluvial Forest
 -  Headwater Forest
 -  Floodplain Pool
 -  Non-Tidal Freshwater Marsh
 -  Seep
 -  Maintained/Disturbed
 -  Agriculture

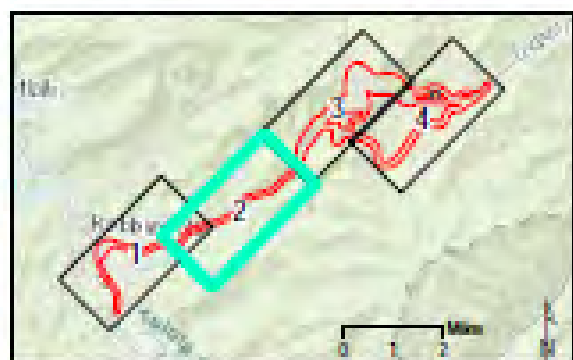



Project Location:
 Indianville/Thomasville
 Graham County, NC
 11/001126
 Prepared by: MJC on 05/18/08 11
 Worksheet Generated by: MJC on 05/18/08 11
 Independent Review by: MJC on 05/18/08 11

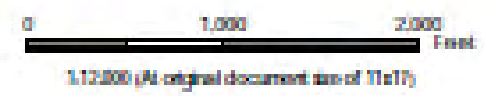
Client/Project:
 NCDOT - Division 14
 Corridor K
 STIP: A-0000C

Figure No.:
 4-1
Title:
 Terrestrial Communities Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1170 FWS Feet
 2. Fieldwork completed by Survey on June 27, 2015, and July 27, 2015
 3. Orthorectified 1:25000 Maps 2015

Legend

- | | |
|--|--|
|  Project Study Area |  Montane Alluvial Forest |
| Terrestrial Communities |  Headwater Forest |
|  Montane Oak-Hickory Forest |  Floodplain Pool |
|  Dry-Mesic Oak-Hickory Forest |  Non-Tidal Freshwater Marsh |
|  Acid Cove Forest |  Seep |
|  Rich Cove Forest |  Maintained/Disturbed |
|  Canada Hemlock Forest |  Agriculture |
|  White Pine Forest | |



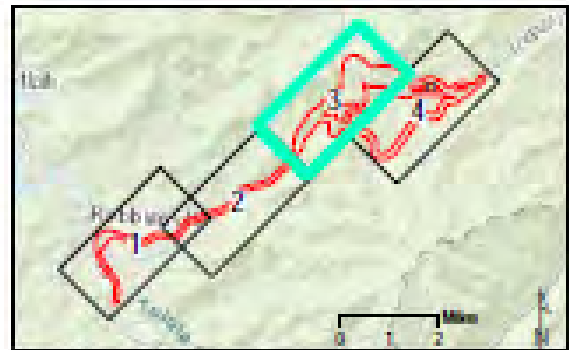
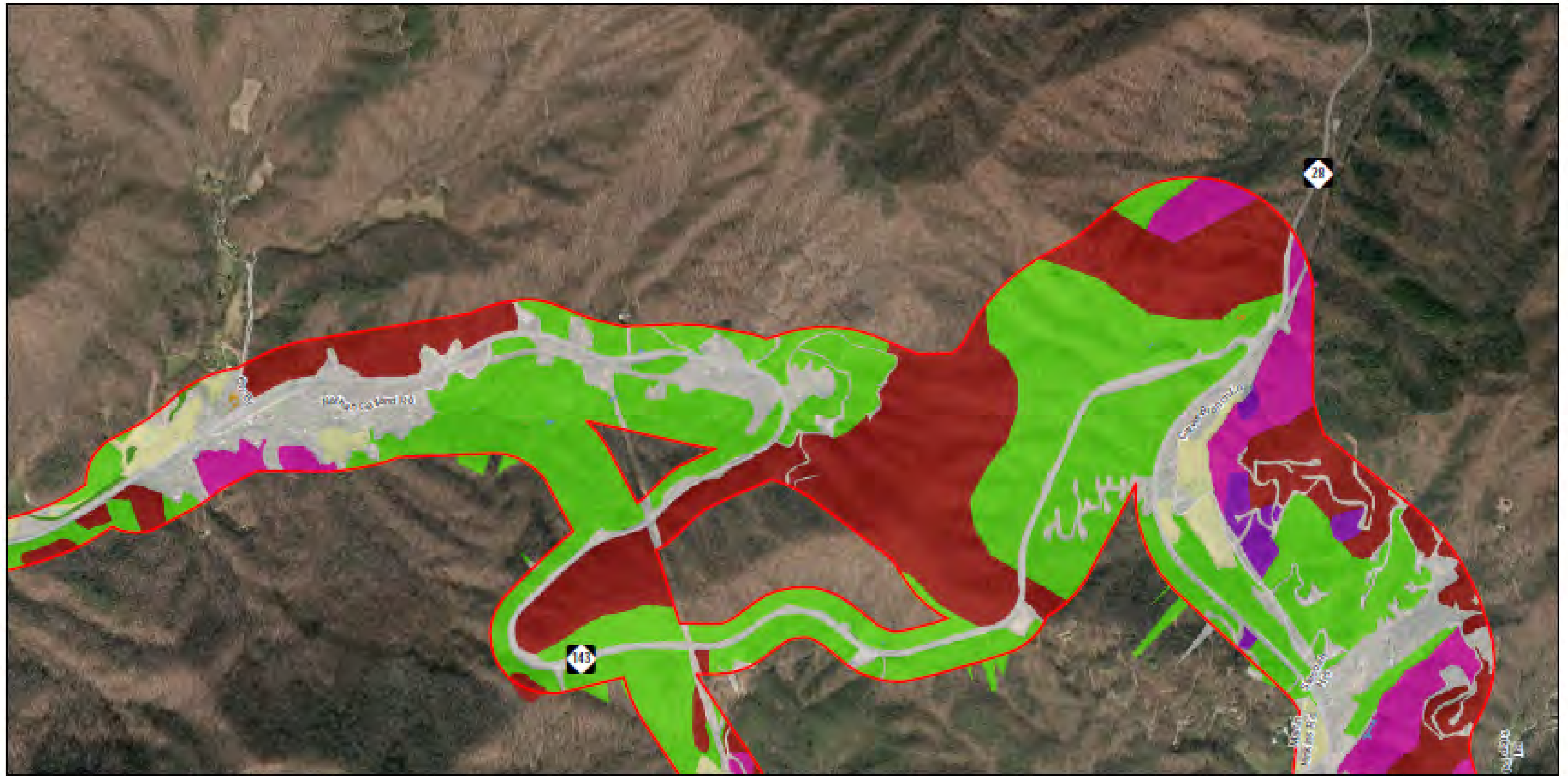
Project Location
 Henderson/Thomas
 Graham County, NC


Project No. 175001206
 Prepared by NCDOT on 05/18/16
 Technical Review by MBB on 05/18/16
 Independent Review by KRM on 05/18/16

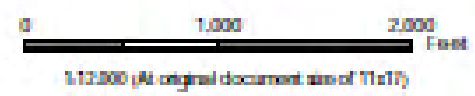
Client/Project
 NCDOT - Division 14
 Corridor K
 STP: A-0009C
Figure No.
 4-2

Title
 Terrestrial Communities Map

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1171,000 Feet
 2. Data/Map compiled by Soriano on June 21, 10, 21, and July 1, 21, 2018.
 3. Date/Map by NCDOT/Map, 2018.

Legend

 Project Study Area	 Montane Alluvial Forest
Terrestrial Communities	 Roadwater Forest
 Montane Oak-Hickory Forest	 Floodplain Pool
 Dry-Mesic Oak-Hickory Forest	 Non-Tidal Freshwater Marsh
 Acid Cove Forest	 Seep
 Rich Cove Forest	 Maintained/Disturbed
 Canada Hemlock Forest	 Agriculture
 White Pine Forest	

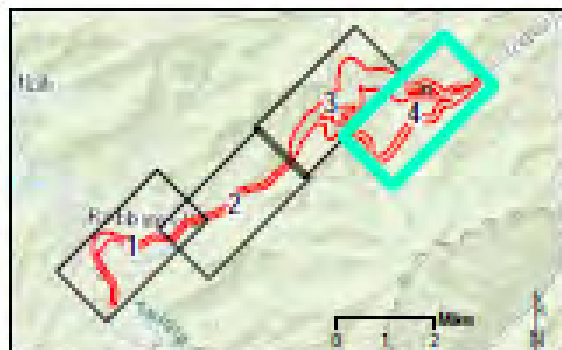
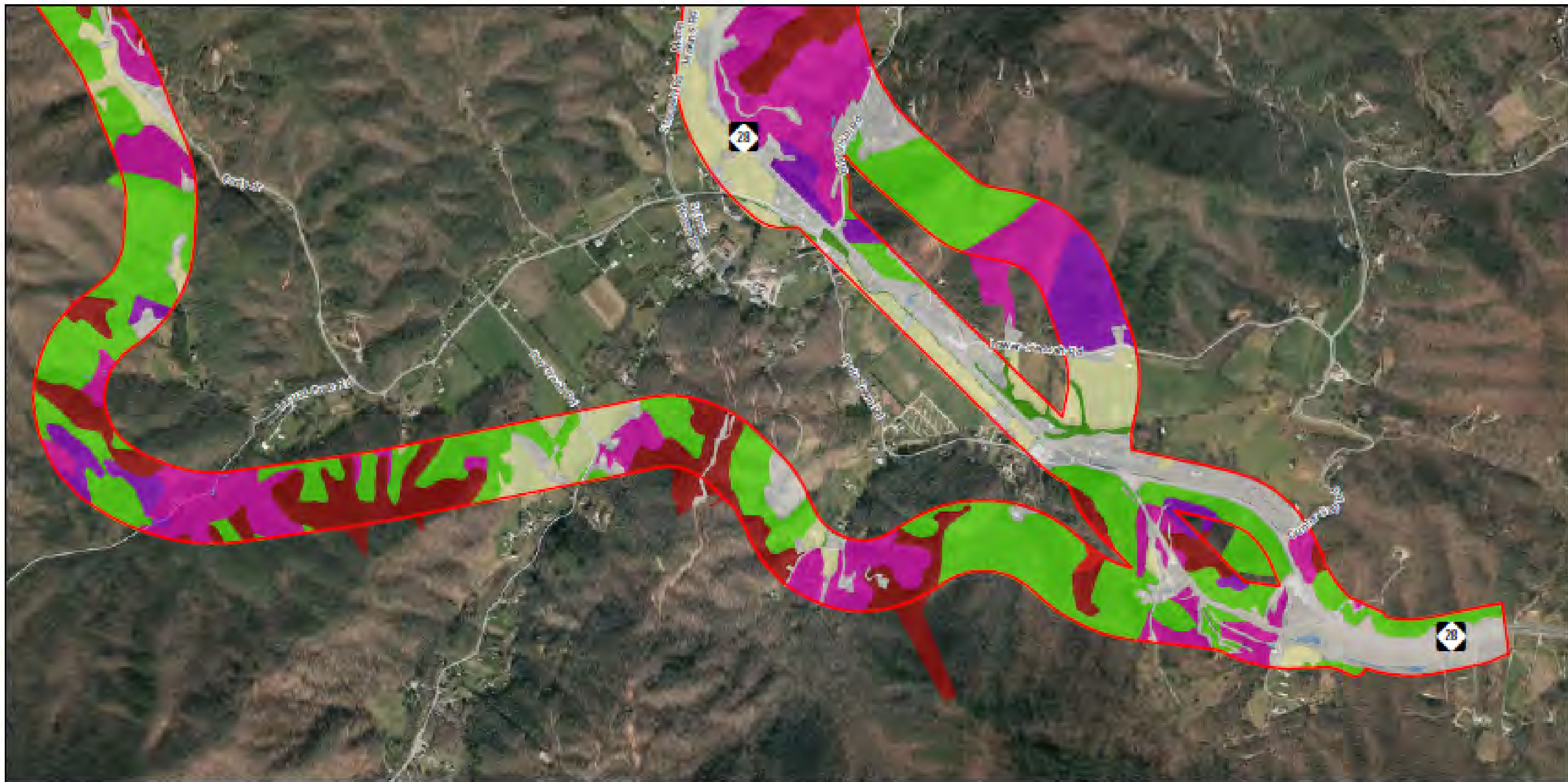


Project Location
 Robinson/Fleming
 Durham County, NC
 Prepared by AEC on 07/18/18, 11
 Technical Review by MBR on 07/18/18, 12
 Independent Review by GBR on 07/18/18, 13

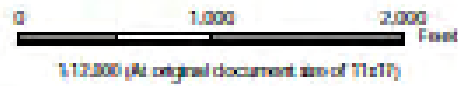
Client/Project
 NCDOT - Division 14
 Corridor K
 STIP: A-0009C

Figure No.
 4-3

Title
 Terrestrial Communities Map



**NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DIVISION 14**



Notes
 1. Coordinate System: NAD 1983 StatePlane North Carolina 1171, 3300 Feet
 2. Fieldwork completed by Sorenson on June 27, 2017, and July 17, 2018.
 3. Cartography by NCDOT/MapSolutions

Legend

- ▬ Project Study Area
- Terrestrial Communities**
- Montane Oak-Hickory Forest
- Dry-Mesic Oak-Hickory Forest
- Acid Cove Forest
- Rich Cove Forest
- Canada Hemlock Forest
- White Pine Forest
- Montane Alluvial Forest
- Headwater Forest
- Floodplain Pool
- Non-Tidal Freshwater Marsh
- Seep
- Maintained/Disturbed
- Agriculture



Project Location
 Henderson/Thomas
 Graham County, NC

1/10/01/20
 Prepared by AEC on 2/19/08, 11
 Supplement Revised by MMS on 2/19/08, 12
 Independent Review by ERM on 2/19/08, 12

Client/Project
 NCDOT - Division 14
 Corridor K
 SIIP: A-0009C

Figure No.
 4-4

Title
 Terrestrial Communities Map

1/10/01/20
 Prepared by AEC on 2/19/08, 11
 Supplement Revised by MMS on 2/19/08, 12
 Independent Review by ERM on 2/19/08, 12

Appendix B

Qualifications of Contributors

- Investigator: Amber Coleman, LSS, PWS
Education: M.S. Soil Science, 2000, B.S. Environmental Science, 1998
Experience: Senior Scientist, Stantec, 2005-Present
Environmental Scientist, BLUE: Land, Water, Infrastructure, PA, 2000-2005
Responsibilities: Project coordination, terrestrial communities assessment and delineation mapping, document preparation, QAQC
- Investigator: Melissa Ruiz, PWS
Education: B.S. Environmental Sciences and Biological Sciences, 1997
M.F. Forestry, 2003
Experience: Environmental Scientist, Stantec, Raleigh, NC, 2005 to present
Environmental Scientist, BLUE: Land, Water, Infrastructure, PA, Raleigh, NC, 2003-2005
Environmental Educator, U.S. Peace Corps Honduras, 1998-2001
Responsibilities: Terrestrial communities assessment, T/E species assessment, stream and wetland delineation, stream and wetland assessment, GPS, document preparation, QAQC
- Investigator: Pamela Ferral, CWB
Education: B.S. Fisheries and Wildlife Science 1985
M.S. Wildlife Biology 1996
Experience: Senior Environmental Scientist, Stantec, 2011 to present
Environmental Scientist, Amec, 2008 to 2011
Director of Science and Stewardship, The Nature Conservancy, 1996-2008
Responsibilities: Wetland and stream delineations, GPS, terrestrial communities assessment, T/E species assessment
- Investigator: Justin Ahn, SSIT
Education: M.S. Environmental Assessment 2019, B.S. Environmental Science, 2015
Experience: Environmental Scientist, Stantec, 2018-Present
Natural Resources Professional, S&ME, 2015-2018
Responsibilities: Wetland and stream delineations, GPS, document preparation, GIS mapping
- Investigator: Mike Williams
Education: M.S. Biology, 1996, B.S. Wildlife and Fisheries Science 1991
Experience: Senior Biologist, Stantec, 2017-Present

Senior Biologist, Barge, Waggoner, Sumner and Cannon, Inc., 2014-2017
Biologist/Transportation Specialist, TDOT, 2004-2014
Biologist, TDEC – Natural Heritage, 1999-2000

Responsibilities: Wetland and stream delineations, GPS, terrestrial communities assessment, T/E species assessment

Investigator: Brittany White

Education: B.S. Environmental Studies, Eastern Kentucky University, 2017

Experience: Environmental Scientist, Stantec, 2017-2019

Responsibilities: T/E species assessments, bat habitat assessments, GPS, wetland and stream delineations, biological assessment

Investigator: Shane Kelley

Education: B.S. Natural Resource and Environmental Science, University of Kentucky, 2014

Experience: Environmental Scientist, Stantec, 2014-Present

Responsibilities: T/E species assessments, bat habitat assessments, GPS, wetland and stream delineations

Investigator: Amanda Voges

Education: M.S. Environmental Studies, 2018, B.S. Environmental Science 2014

Experience: Environmental Scientist, Stantec, 2018 to present

Responsibilities: Wetland and stream delineations, GPS, data preparation

Investigator: Joshua Adams

Education: B.S. Natural Resource Conservation and Management, University of Kentucky, 2008

Experience: Senior Environmental Scientist, Stantec, 2019 to present

Senior Biologist/Principal, Copperhead Environmental Consulting, 2008-2018

Responsibilities: Bat habitat assessments, Lead Author of Biological Assessment and Biological Evaluations

Investigator: Wes Cunningham

Education: B.S. Biology (Botany), Middle Tennessee State University, 2007

Experience: Senior Biologist, Stantec, 2010 to present

Responsibilities: bat habitat assessments, T/E species assessments

Investigator: James Kiser

Education: B.S. Biology, Morehead State University, 1992

M.S. Biology, Coursework Completed, Eastern Kentucky University, 1995

Experience: Senior Environmental Scientist, Stantec, 2006 to present

Responsibilities: T/E species assessments, bat habitat assessments, Biological Assessment

Investigator: Kristin Weidner, PWS
Education: B.S. Chemistry, 2001
M. Environmental Management, 2007
Experience: Senior Scientist, Stantec, Raleigh, NC, 2007 to present
Environmental Scientist, Bermuda Institute of Ocean Science, Bermuda,
2003-2005
Environmental Scientist, ICF, MA, 2001-2003
Responsibilities: document preparation, QAQC

Investigator: Kim Hamlin, PWS
Education: M.S. Natural Resources, 2011
Experience: Environmental Scientist, TGS Engineers, 2016-Present
Environmental Project Scientist, SEPI Engineering, 2012-2016
Responsibilities: Wetland and stream delineations, terrestrial communities assessment,
and T/E species assessment

Investigator: Ryan Elliott
Education: B.A. Biology, 2014
Experience: Environmental Scientist, TGS, 2018-Present
Environmental Scientist, MMI, 2015-2018
Responsibilities: Wetland and stream delineation, terrestrial communities assessment,
GPS, and T/E species assessment

Appendix C

Bat Survey Report