

Macon County
Bridge No. 67 on SR 1504 (Rabbit Creek Road)
over Rabbit Creek
Federal Aid Project No. BRZ-1513(7)
W.B.S. No. 46121
S.T.I.P. No. B-5406

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

10/15/15
DATE

Richard W. Hancock
FOR Richard W. Hancock, PE, Manager
Project Development & Environmental Analysis Unit

10-15-15
DATE

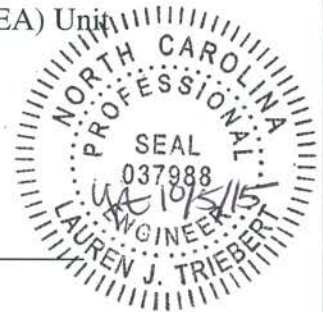
John F. Sullivan, III
for John F. Sullivan, III, Division Administrator
Federal Highway Administration

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CATEGORICAL EXCLUSION

Documentation Prepared for
Project Development and Environmental Analysis (PDEA) Unit

By
VHB Engineering NC, P.C.



10/5/15
DATE

Lauren Triebert
Lauren Triebert, PE
Transportation Engineer
VHB Engineering NC, P.C.

10/15/15
DATE

Marshall Edwards
Marshall Edwards
Project Planning Engineer
PDEA

10.15.2015
DATE

Stacy Oberhausen
Stacy Oberhausen, PE, CPM
Project Development Group Supervisor
PDEA

PROJECT COMMITMENTS

Macon County
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PDEA-Natural Environment Section

Construction authorization will not be requested until ESA compliance is satisfied for the Northern long-eared bat (NLEB).

All Design Groups/Division Resident Construction Engineer

A moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer will be in place from January 15 to April 15 to protect the egg and fry stages of trout.

NES, Roadside Environmental, Division

DWQ has designated Rabbit Creek as class C-trout waters and therefore sediment and erosion control measures will adhere to the Design Standards for Sensitive Watersheds.

Structure Design

The proposed project is located in the Tennessee Valley Authority's (TVA) Land Management District. The project will require approval under Section 26a of the TVA Act.

Hydraulic Unit

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT's Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Division Construction

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Structure Design

The proposed project is located in the Tennessee Valley Authority's (TVA) Land Management District. The project will require approval under Section 26a of the TVA Act.

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INTRODUCTION: The replacement of Bridge No. 67 in Macon County is included in the North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP). The location is shown in Figure 1 – Project Vicinity. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion”.

I. PURPOSE AND NEED STATEMENT

The NCDOT Bridge Maintenance Unit records indicate that Bridge No. 67 has a sufficiency rating of 28.5 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a structural evaluation rating of 3 out of 9 according to Federal Highway Administration (FHWA) standards.

Bridge No. 67 has a 46 year old timber substructure which has a typical life expectancy between 40 and 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 67 is approaching the end of its useful life.

II. EXISTING CONDITIONS

The project is located in Macon County, along SR 1504 (Rabbit Creek Road), just northeast of the intersection with SR 1507 (Ferguson Road) (see Figure 2 – Project Study Area). Development in the area is primarily residential in nature, with very low density, agricultural operations in the form of cropland, and large undeveloped areas.

SR 1504 is classified as a minor collector in the Statewide Functional Classification System and it is not part of the National Highway System.

In the vicinity of the bridge, SR 1504 has a 16-foot pavement width with nominal grass shoulders. The roadway grade is in a sag vertical curve through the project area. The existing bridge is on a tangent. The roadway is situated approximately 13 feet above the creek bed.

Bridge No. 67 is a triple-span structure with a timber floor on I-beams, timber bents and posts. The existing bridge was constructed in 1969. The overall length of the structure is 60 feet. The clear roadway width is 24.3 feet. The posted weight limit on this bridge is 17 tons for single vehicles and 25 tons for TTST’s.

There are no utilities attached to the existing structure. Power, telephone and cable run aerial, crossing over the bridge and the creek approximately 50 feet downstream of the bridge. There may be telephone line that runs underground on SR 1507 (Ferguson Road). The potential impacts to utilities are rated as medium by NCDOT. There are no signage or traffic control conflicts.

The 2014 traffic volume of 612 vehicles per day (vpd) is expected to increase (900 vpd) in the year 2040 design year. The projected volume includes one percent truck-tractor semi-trailer (TTST) and three percent dual-tired vehicles (DT). The posted speed limit on SR 1504 is 35 mph. Six school buses cross the bridge daily on their morning and afternoon routes.

There was one crash reported in the vicinity of Bridge No. 67 during the evaluated 10-year period (2005 – 2015).

This section of SR 1504 is located on County Bike Route 37, Holly Spring Route, and according to the Macon County Comprehensive Transportation Plan (CTP), there are on-road bicycle facilities at the bridge location. There are minimal (2-3 foot offsets) along the bridge structure, with no bicycle accommodations once off the bridge structure. However, because it is along a designated local bike route, the NCDOT Division of Bicycle and Pedestrian Transportation recommends the provision of 4-foot paved shoulders and 42-inch bike-safe railing into the project design. There are no existing or planned pedestrian facilities on the bridge.

III. ALTERNATIVES

A. Preferred Alternative

Bridge No. 67 will be replaced on new alignment to the north of its current location with a culvert while traffic remains on the existing structure during construction (see Figure 3 – Preliminary Design). The total project length of the new alignment will be 600 feet.

The permanent replacement structure will be a triple barrel, 11-foot high by 10-foot wide reinforced concrete box culvert. The culvert size is based on preliminary design information and is set by hydraulic requirements. The roadway grade of the new structure will be approximately the same as the existing structure.

The approach roadway will extend approximately 250 feet from the west end of the new culvert to tie back to existing and 315 feet from the east end of the new culvert. The approaches will accommodate a 20-foot pavement width providing two 10-foot lanes. A four-foot paved shoulder will be provided on each side, with an additional 2 to 3-foot grass shoulder and guardrail as designed. The roadway will be designed as a Rural Local Road using Sub-Regional Tier Guidelines with a 40 mile per hour design speed.

NCDOT Division 14 concurs with the preferred alternative.

B. Alternatives Eliminated from Further Consideration

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 1504.

“Rehabilitation” of the old bridge is not feasible due to its age and deteriorated condition. Components of the timber substructure have experienced an increasing degree of deterioration; specifically the original timber post sills are in poor condition with scattered areas of ½” deep decay. While some timbers have been replaced in the past, these are considered temporary repairs, and the overall bridge deterioration can no longer be addressed by maintenance activities. The bridge is approaching the end of its useful life.

Replacing Bridge No. 67 on the existing alignment was eliminated from further consideration because it would not provide the secondary benefit of improving alignment for the primary through movements. Replacing the bridge south of its current location with a culvert was eliminated from further consideration as it would not improve the alignment either.

IV. ESTIMATED COSTS

The estimated costs for the proposed project as provided by NCDOT, based on 2014 prices, are as follows:

	Preferred Alternative
Structure	\$ 155,000
Roadway Approaches	350,000
Structure Removal	30,000
Misc. & Mob.	185,000
Eng. & Contingencies	105,000
Total Construction Cost	\$ 825,000
Right-of-way Costs*	\$15,000
Right-of-way Utility Costs*	\$12,000
Total Project Cost	\$ 852,000

**Estimate is in 2015 dollars*

V. NATURAL ENVIRONMENT

Natural resources were evaluated and documented in a Natural Resources Technical Report (NRTR) dated June 2013. This section summarizes those evaluations, as well as some updated/current information.

Physical Characteristics

The study area lies in the Blue Ridge physiographic region of North Carolina. Topography in the project vicinity is composed of mountain peaks and valleys with narrow level floodplains along streams. Elevations in the study area range from 2,000 to 2,200 feet above sea level. Land use in the project vicinity consists primarily of rural residential development, agricultural operations, and undeveloped land.

Water Resources

Water resources in the study area are part of the Little Tennessee River Basin. One stream was identified in the study area (Table 1) and the physical characteristics are provided in Table 2. Rabbit Creek is not included on the 2014 Final 303(d) list for sedimentation or turbidity impairments.

Table 1 – Water Resources

Stream Name	NCDWQ Index Number	Best Usage Classification
Rabbit Creek	2-23	C; Tr

Table 2 – Physical Characteristics of Water Resources

Stream Name	Bank Height (ft)	Bankful Width (ft)	Water Depth (ft)	Channel Substrate	Velocity	Clarity
Rabbit Creek	2	7-8	1	Silt, Gravel, Cobble, Bedrock	Fast	Clear
UT to Rabbit Creek	2	3	.3	Silt, Gravel	Moderate	Clear

Biotic Resources

Two terrestrial communities were identified in the study area: Maintained/Disturbed; and Piedmont/Low Mountain Alluvial Forest. Table 3 outlines the coverage of these community types in the study area.

Table 3 – Biotic Resources

Community	Coverage (ac.)
Maintained/Disturbed	4.1
Piedmont/Low Mountain Alluvial Forest	0.1
Total	4.2

Jurisdictional Topics

Surface Waters

Two jurisdictional streams were identified in the study area (Table 4), which are considered cold water streams for the purpose of stream mitigation.

Table 4 – Jurisdictional Streams in Study Area

Stream Name	Length (ft)	Classification	Compensatory Mitigation Req'd	River Basin Buffer
Rabbit Creek	300	Perennial	Yes	Not subject
UT to Rabbit Creek	76	Intermittent	Yes	Not subject

No jurisdictional wetlands were identified in the study area.

Permits

A Nationwide Permit (NWP) 23 will be applicable. A NWP No. 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary. The USACE holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required then a Section 401 Water Quality Certification (WQC) from the NC Division of Water Resources (DWR) will be needed. A TVA 26a permit will also be required.

Construction Moratoria

Rabbit Creek has been designated as trout waters of the State, and therefore a moratorium prohibiting in-stream work and land disturbance within the 25-foot trout buffer will be in place from January 15 to April 15 to protect the egg and fry stages of trout.

Stream Mitigation

The preferred alternative avoids and minimizes impacts to protected resources to the greatest extent practicable. Potential on-site stream mitigation opportunities will be investigated. If on-site mitigation is not feasible, mitigation will be provided by North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP).

Federally Protected Species

As of April 2015, the US Fish and Wildlife Service (USFWS) lists 10 federally protected species for Macon County (Table 5).

Table 5 – Federally Protected Species List for Macon County

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Pegias fabula</i>	Little-wing pearlymussel	E	No	No Effect
<i>Alasmidonta raveneliana</i>	Appalachian elktoe	E	No	No Effect
<i>Erimonax monachus</i>	Spotfin chub (Turquoise shiner)	T	No	No Effect
<i>Isotria medeoloides</i>	Small whorled pogonia	T	No	No Effect
<i>Spiraea virginiana</i>	Virginia spiraea	T	No	No Effect
<i>Gymnoderma lineare</i>	Rock gnome lichen	E	No	No Effect
<i>Glaucomys sabrinus coloratus</i>	Carolina northern flying squirrel	E	No	No Effect
<i>Myotis sodalis</i>	Indiana bat	E	No	No Effect
<i>Clemmys muhlenbergii</i>	Bog turtle	T (S/A)	No	Not Required
<i>Myotis septentrionalis</i> *	Northern long-eared bat	T	Unknown	Unresolved

E – Endangered

T – Threatened

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

* Listing effective May 4, 2015

Northern long-eared bat (*Myotis septentrionalis*)

Threatened

Family: Vespertilionidae

Federally Listed: 2015

Biological Conclusion: Unresolved

In North Carolina, the Northern long-eared bat (NLEB) occurs in the mountains, with scattered records in the Piedmont and coastal plain. In western North Carolina, NLEB spend winter hibernating in caves and mines. During the summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees (typically ≥ 3 inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat 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.

The biological conclusion for this species is unresolved and the NLEB screening and subsequent surveys will be the responsibility of the NCDOT Biological Surveys Group. The USFWS recommended survey window is June 1 – August 15. Construction authorization will not be requested until ESA compliance is satisfied for the NLEB.

Bald Eagle and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest 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. There are no large water bodies within 1 mile and 660 feet of the project study area. Therefore, no survey is needed.

VI. HUMAN ENVIRONMENT

Section 106 Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

Historic Architecture

NCDOT – Human Environment Section (HES), under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no surveys are required (see form dated April 18, 2013 in Appendix A).

Archaeology

NCDOT – HES, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that an archaeological survey was required (see form dated May 6, 2013 in Appendix A). Reddies and Saunook soils in the floodplain within the project area display qualities that are suited for early settlement activities, and one known site along Rabbit Creek (outside of the project area) has been previously identified in the floodplain on Reddies soil. The archaeological investigations for the proposed project suggested no significant archaeological sites within the Area of Potential Effect (APE), and the historic map review identified no significant features. No further archaeological work is required for the proposed project (see form dated June 21, 2013 in Appendix A).

Community Impacts

No notable adverse community impacts are anticipated with this project. Effort should be made to maintain access to local business driveways in the project vicinity during construction. No Environmental Justice populations appear to be present in the area surrounding the bridge; thus, impacts to minority and low income populations do not appear

to be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community. Right-of-way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The project is not in conflict with any plan, existing land use, or zoning regulation. The replacement structure will not permanently alter traffic capacity or travel patterns, reduce travel time, affect access to, or exposure of, adjacent parcels, or create new transportation or land use nodes. Due to its minimal transportation impact causing activities, this project will neither influence nearby land uses nor stimulate growth.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. Construction will take place along new alignment, to the north of existing alignment. There are soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will involve the direct conversion of farmland acreage within these classifications. A preliminary screening with the AD 1006 form resulted in a score of 70 points out of 160, which requires coordination with the Natural Resources Conservation Service (NRCS) branch of the USDA. As is required by the Farmland Protection Policy Act, the Form NRCS-AD-1006 (for point projects) has been completed (see Appendix B of this CE) according to FHWA guidelines. This project received a total point value of less than 160 points, thus falls below the NRCS minimal criteria and will not be evaluated further for farmland impacts. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland. This project will not have a significant impact to farmland.

Noise & Air Quality

The project is located in Macon County, which has been determined to comply with the National Ambient Air Quality Standards. The proposed project is located in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

This project will not result in any meaningful changes in traffic volume, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently this effort is exempt from analysis for MSAT's.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

VII. GENERAL ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations, particularly for bicyclists.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of the current North Carolina Department of Transportation standards and specifications.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

An examination of local, state, and federal regulatory records by the GeoEnvironmental Section revealed no sites with a Recognized Environmental Concern (REC) within the project limits. RECs are most commonly underground storage tanks, dry cleaning solvents, landfills and hazardous waste disposal areas.

Macon County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential. The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT's Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR). In addition, the Division will submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

The Federal Highway Administration has determined that a U.S. Coast Guard Permit is not required for this project.

VIII. COORDINATION & AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, NC Department of Environment & Natural Resources, U.S. Fish & Wildlife Service, N.C Wildlife Resource Commission, N.C. Division of Parks & Recreation, and the **Macon** County Planning Department.

The **N.C. Wildlife Resource Commission** and **U.S. Fish & Wildlife Service** in standardized letters provided a request that they prefer any replacement structure to be a spanning structure.

Response: The proposed structure will be a triple barrel (11' x 10') box culvert due to the intersection geometry and long-term maintenance.

The **U.S. Fish & Wildlife Service** requests that the bridge be inspected for signs of bat use, specifically for two species, Indiana bat (*Myotis sodalists*) and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*).

Response: The NRTR completed evaluated the presence of Indiana bat as it is currently protected as an endangered species; no effect is expected to this species. NCDOT does not directly address other species that do not have federal threatened or endangered designation unless the project involves federal lands, which this one does not.

The **N.C. Division of Water Resources** recommends that, as Rabbit Creek is class C-trout waters, the most protective sediment and erosion control BMPs be implemented, and all disturbances within trout buffers be conducted in accordance with the NC Division of Land Resources and NC Wildlife Resources Commission (NCWRC) requirements. If the waters are identified by NCWRC as naturally reproducing trout waters, NCDOT will be required to observe the NCWRC-recommended moratoria for trout, and strictly adhere to NC regulations "Design Standards in Sensitive Watersheds" throughout design and construction of the project.

Response: Correspondence was sent to NCWRC, dated February 6, 2013 requesting information on possible moratoria for the project. NCDOT will comply with all prevailing regulations, including an in-water construction moratorium for January 1 – April 15 and implement applicable BMPs.

Documentation of this coordination can be found in Appendix C.

IX. PUBLIC INVOLVEMENT

A letter was sent on February 28, 2013 to all property owners affected directly by this project notifying them of the on-going bridge replacement studies. Property owners were invited to comment on the project. No comments have been received to date.

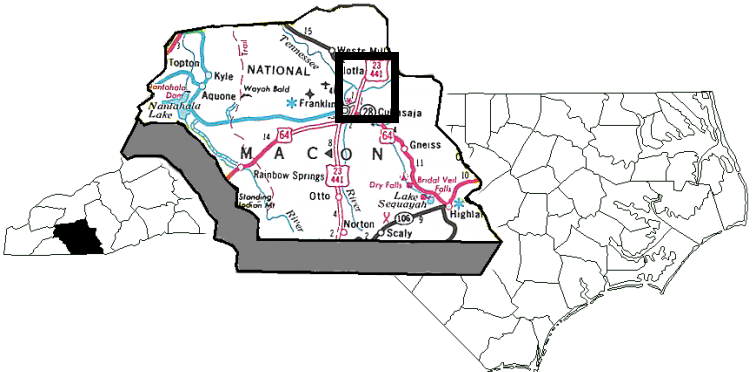
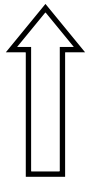
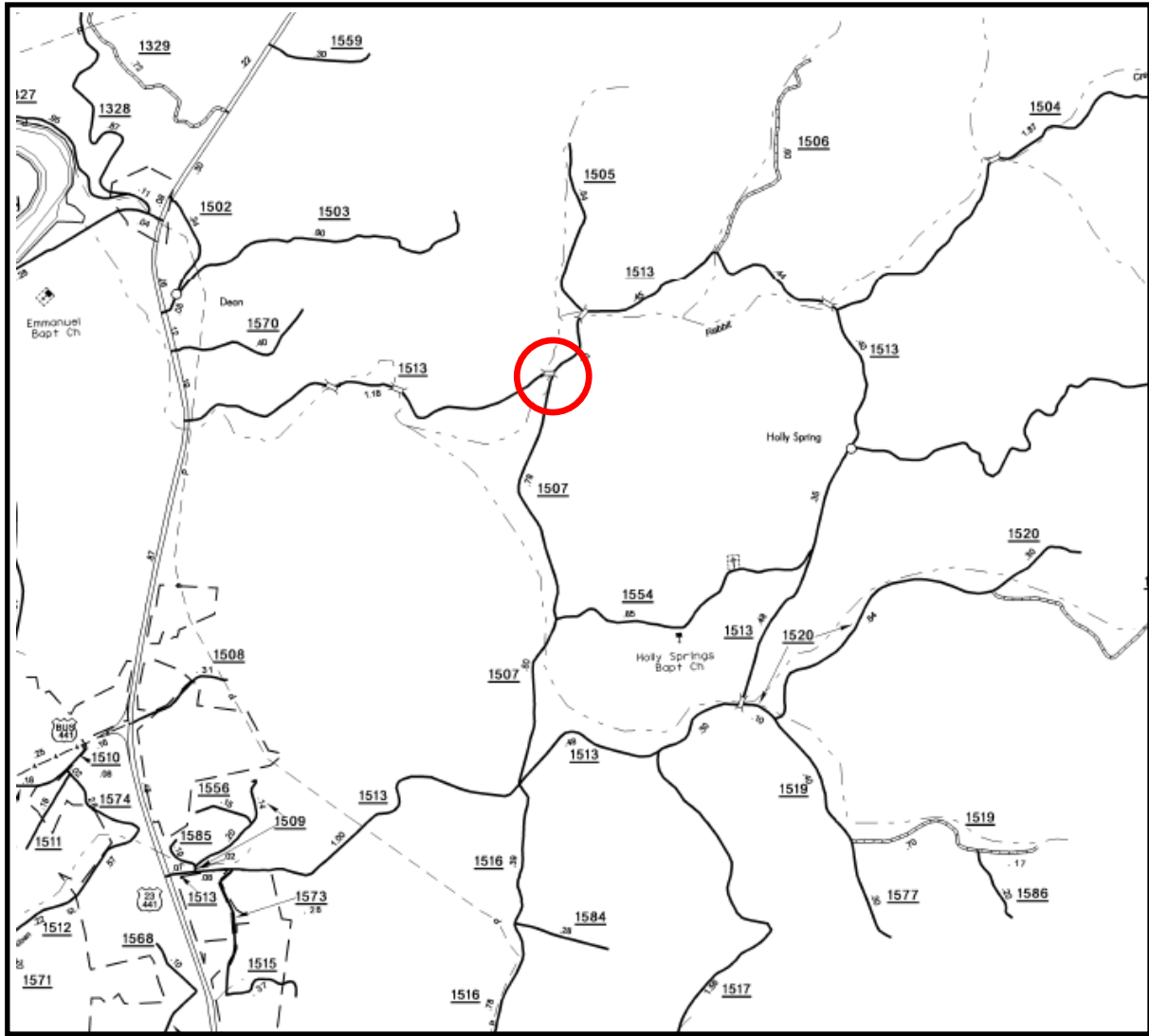
There is no substantial controversy on social, economic, or environmental grounds concerning the project.

X. CONCLUSION

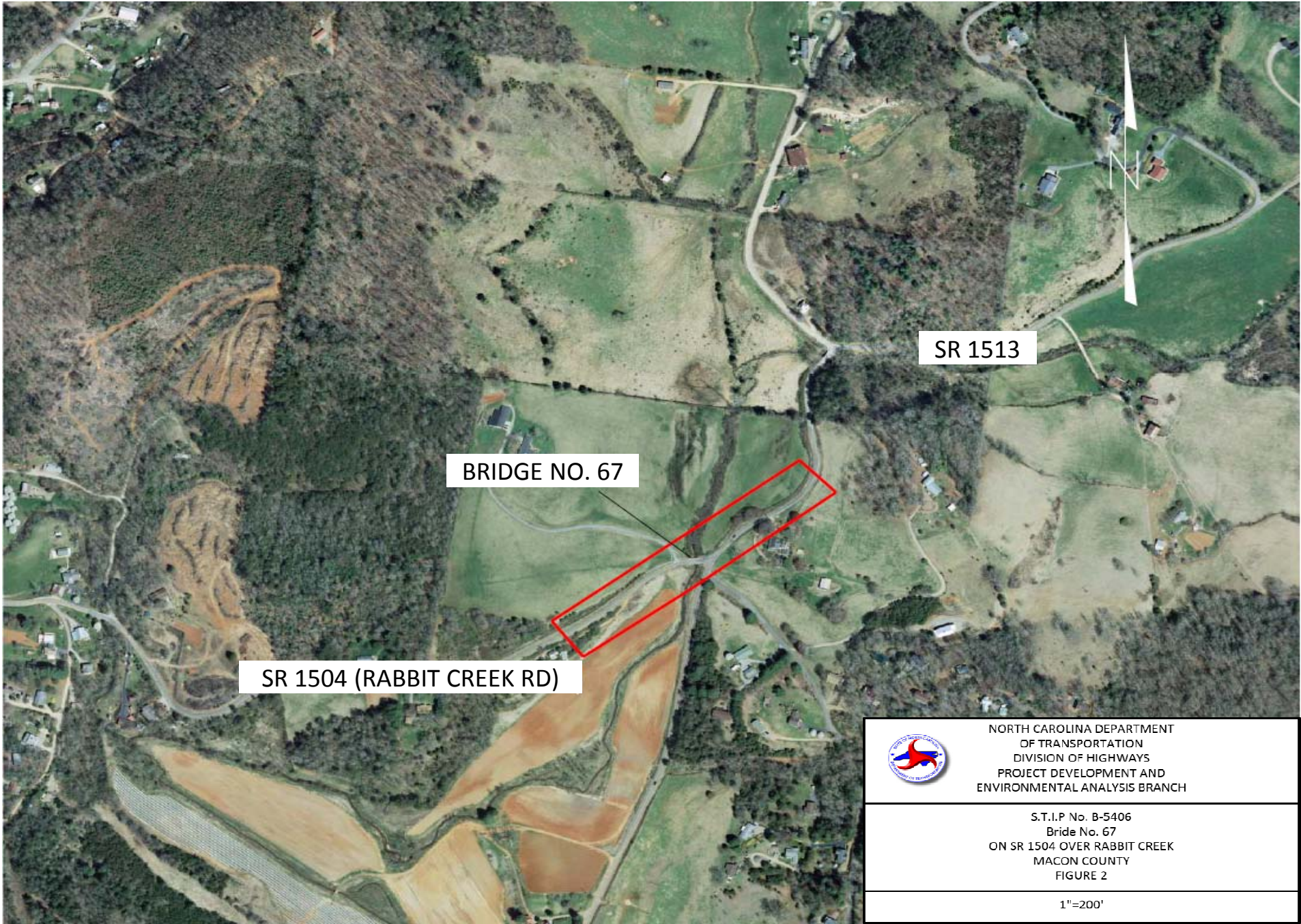
On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

FIGURES

Figure 1	Project Vicinity
Figure 2	Project Study Area
Figure 3	Preliminary Design



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p>
<p align="center">MACON COUNTY REPLACE BRIDGE NO. 67 ON SR 1504 OVER RABBIT CREEK B-5406</p>	
<p align="right">Figure 1</p>	



SR 1513

BRIDGE NO. 67

SR 1504 (RABBIT CREEK RD)



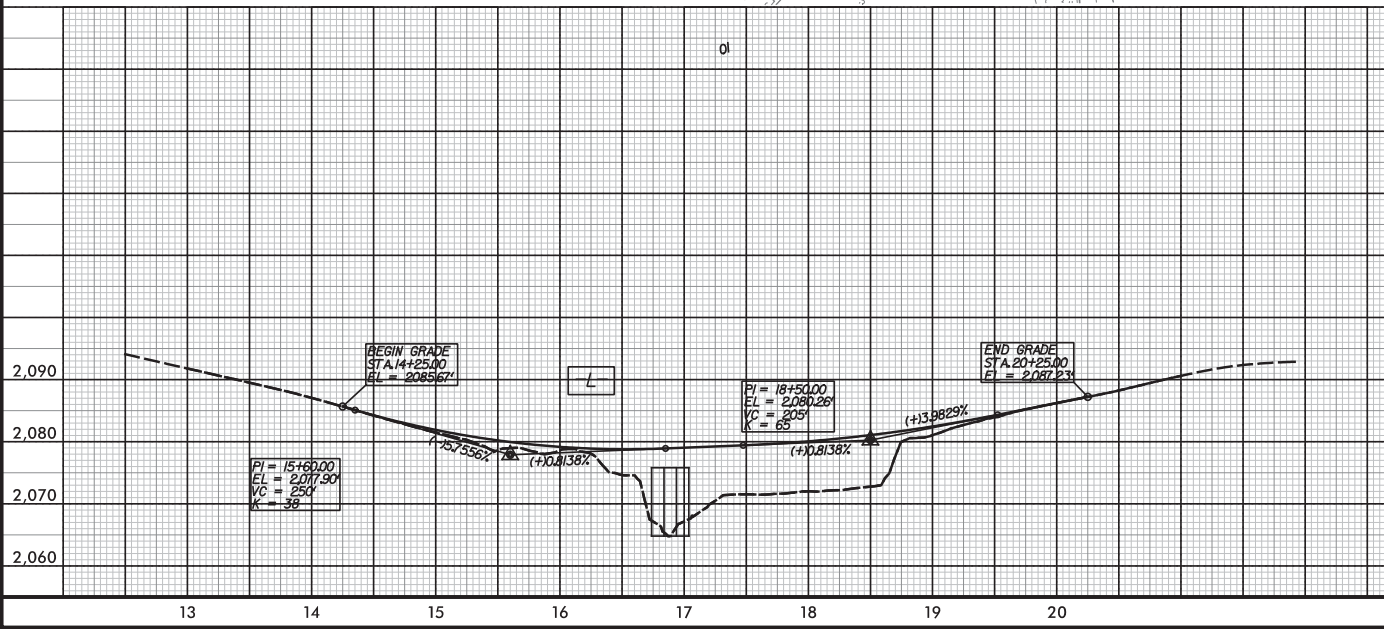
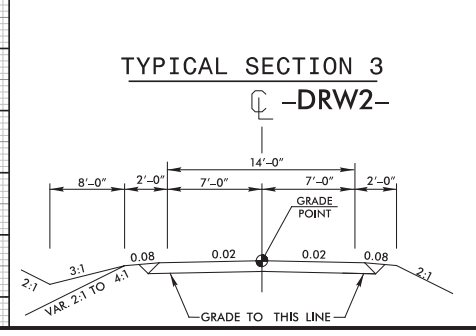
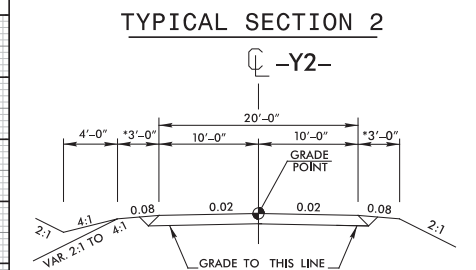
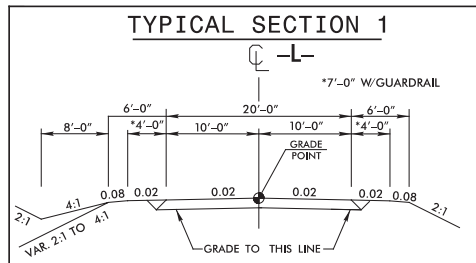
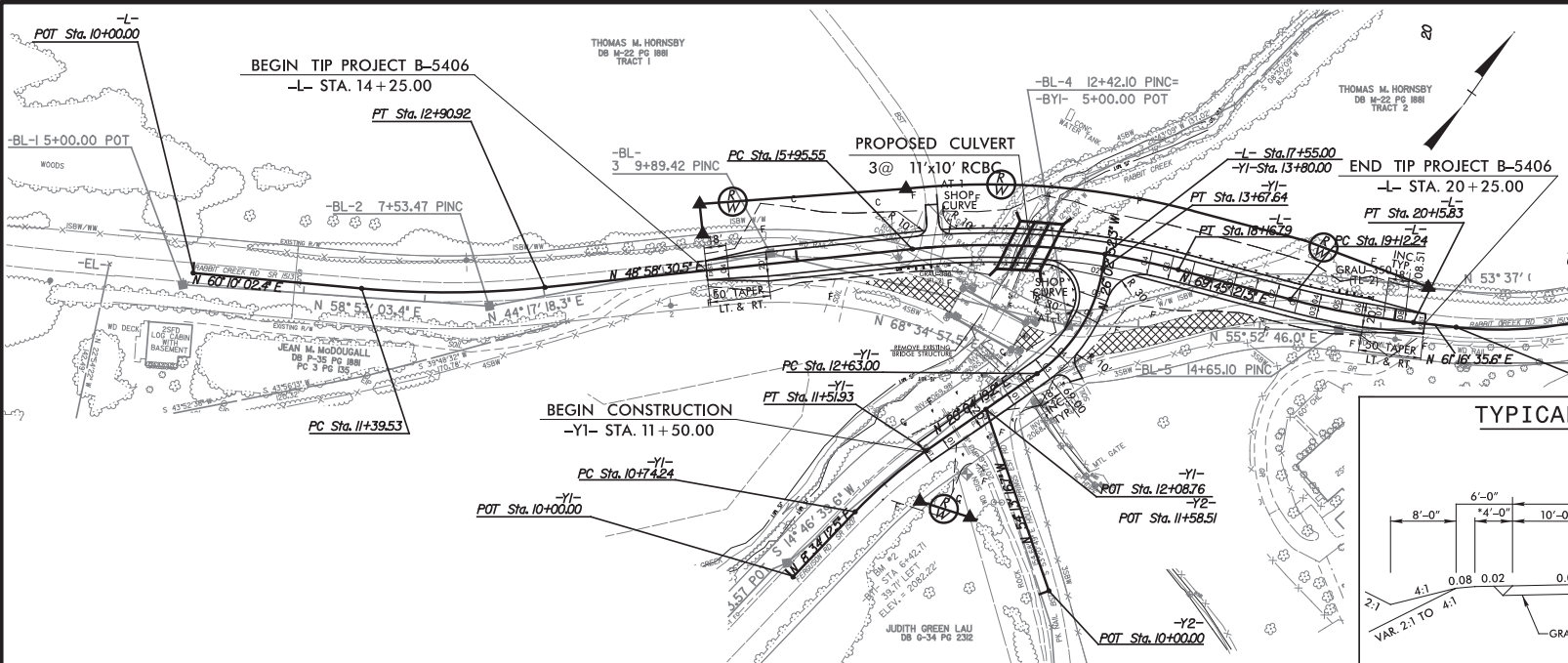
NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

S.T.I.P No. B-5406
Bride No. 67
ON SR 1504 OVER RABBIT CREEK
MACON COUNTY
FIGURE 2

1"=200'

8/17/99

PROJECT REFERENCE NO. B-5406	SHEET NO. 04
R/W SHEET NO. ALT 1	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Figure 3 ALT 1 REPLACE IN NEW LOCATION USE EXIST. AS DETOUR	



8/15/99

APPENDICES

Appendix A	Section 106 Compliance
Appendix B	Form NRCS-AD-1006
Appendix C	Agency Coordination

APPENDIX A

Section 106 Compliance

13-04-0046



HISTORIC ARCHITECTURE AND LANDSCAPES NO SURVEY REQUIRED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	B-5406	County:	Macon
WBS No.:	46121.1.1	Document Type:	PCE or CE
Fed. Aid No.:	BRZ-1513(7)	Funding:	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
Federal Permit(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit Type(s):	
<u>Project Description:</u> Replace Bridge No. 67 over Rabbit Creek on SR 1513 (Rabbit Creek Road) in Macon County. Project length is approximately 1,000 feet. Proposed right-of-way is assumed to be 60 feet. Detour route is unknown.			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions:

Review of HPO quad maps, HPOweb GIS mapping, historic designations roster, and indexes was conducted on 4/17/13. Based on this review, there are no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects (APE). Built in 1951, Bridge No. 67 has not been evaluated for listing to the National Register of Historic Places (NRHP) according to the NCDOT Historic Bridge Inventory; however, it appears to be a standard bridge design of no outstanding architectural or architectural significance according to Google Street View. Macon County GIS mapping and property records revealed two properties over the age of fifty years old within the project APE, however, neither one appears to have the architectural or historical significance needed to merit consideration for eligibility to the NRHP. This is further confirmed by photos of the properties attached to the tax records and from Google Street View imagery. The APE lies just northeast of the Franklin community in Macon County and consists of mostly forested, mountainous areas dotted with patches of farmland and residences. Thus, a survey is not required for this project.

Why the available information provides a reliable basis for reasonably predicting that there are no unidentified significant historic architectural or landscape resources in the project area:

HPO quad maps, HPOweb GIS mapping, Google Street View, Google maps and Macon County property records are considered valid tools for the purposes of determining the likelihood of historic resources being present. A survey is not required for this project.

SUPPORT DOCUMENTATION

Map(s) Previous Survey Info. Photos Correspondence Design Plans

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

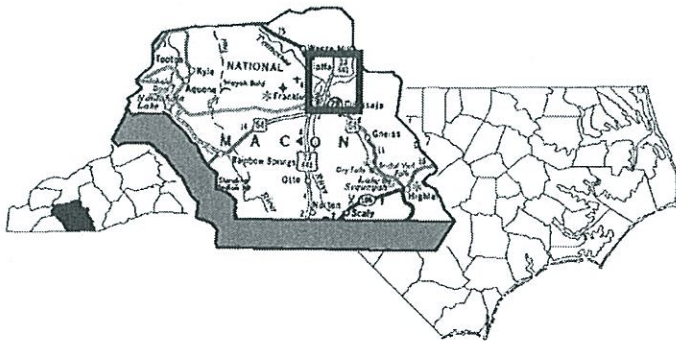
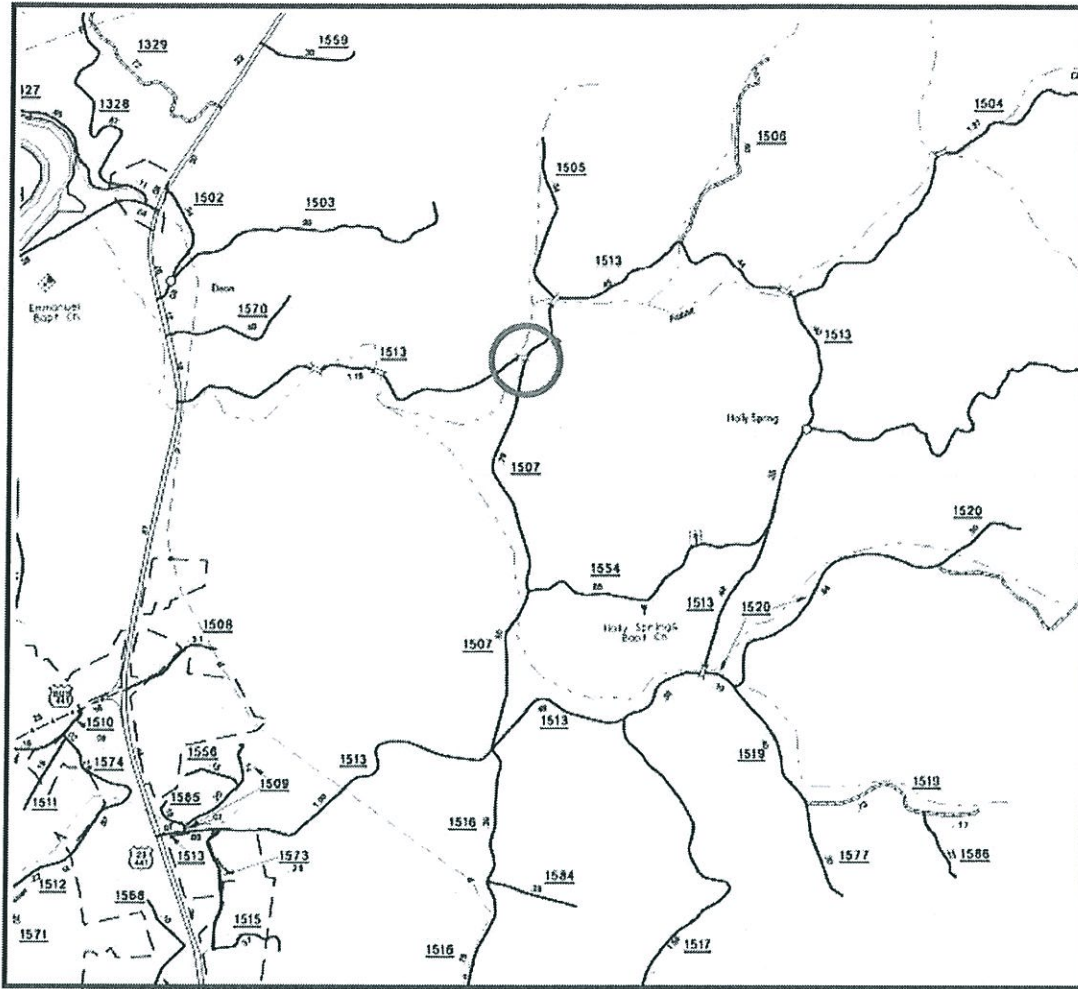
Historic Architecture and Landscapes -- **NO SURVEY REQUIRED**



NCDOT Architectural Historian

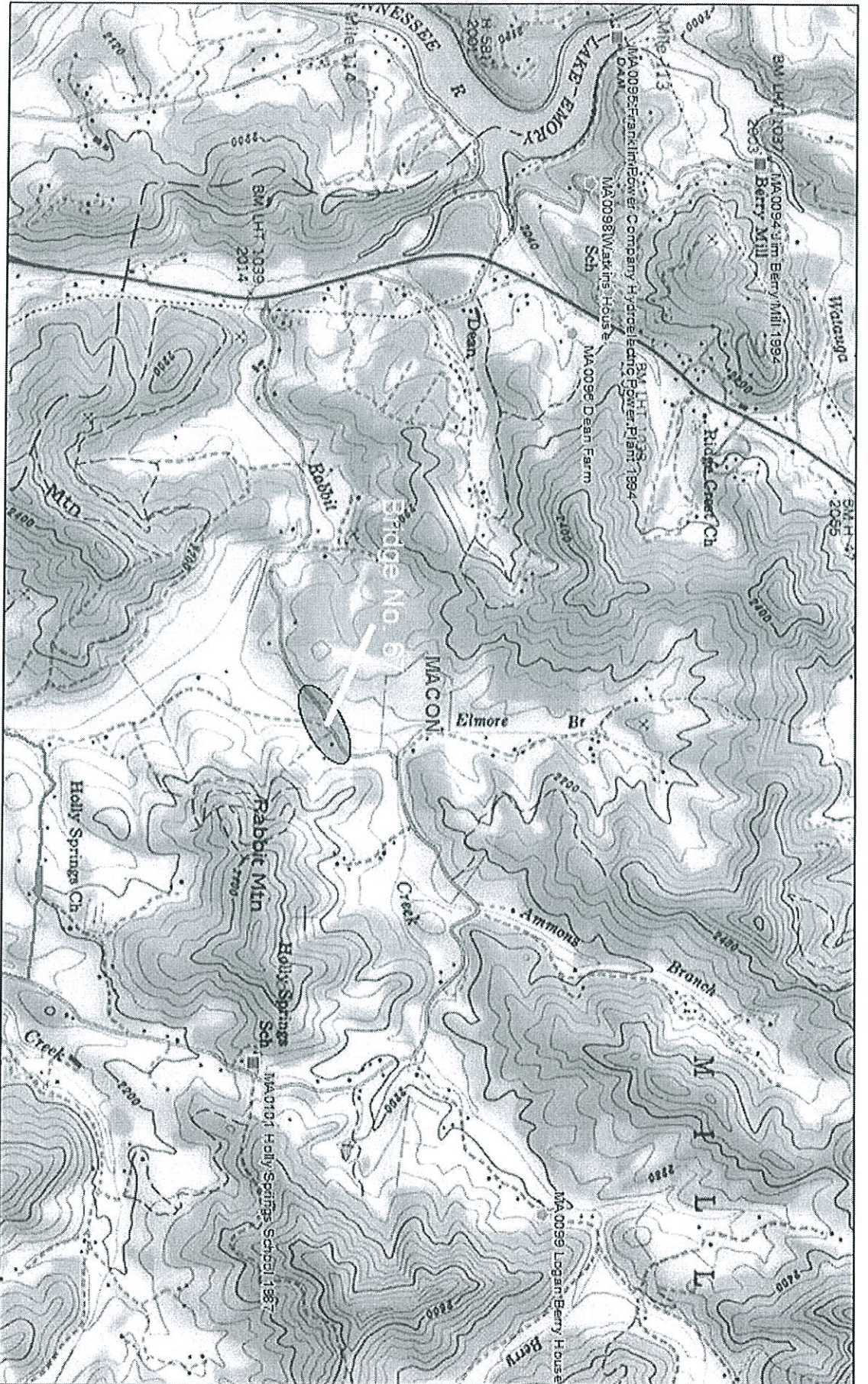
4/18/13

Date



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p>
<p>MACON COUNTY REPLACE BRIDGE NO. 67 ON SR 1513 OVER RABBIT CREEK B-5406</p>	
<p>Figure 1</p>	

NC HPOweb, Macon County



April 15, 2013

◆ <all other values>

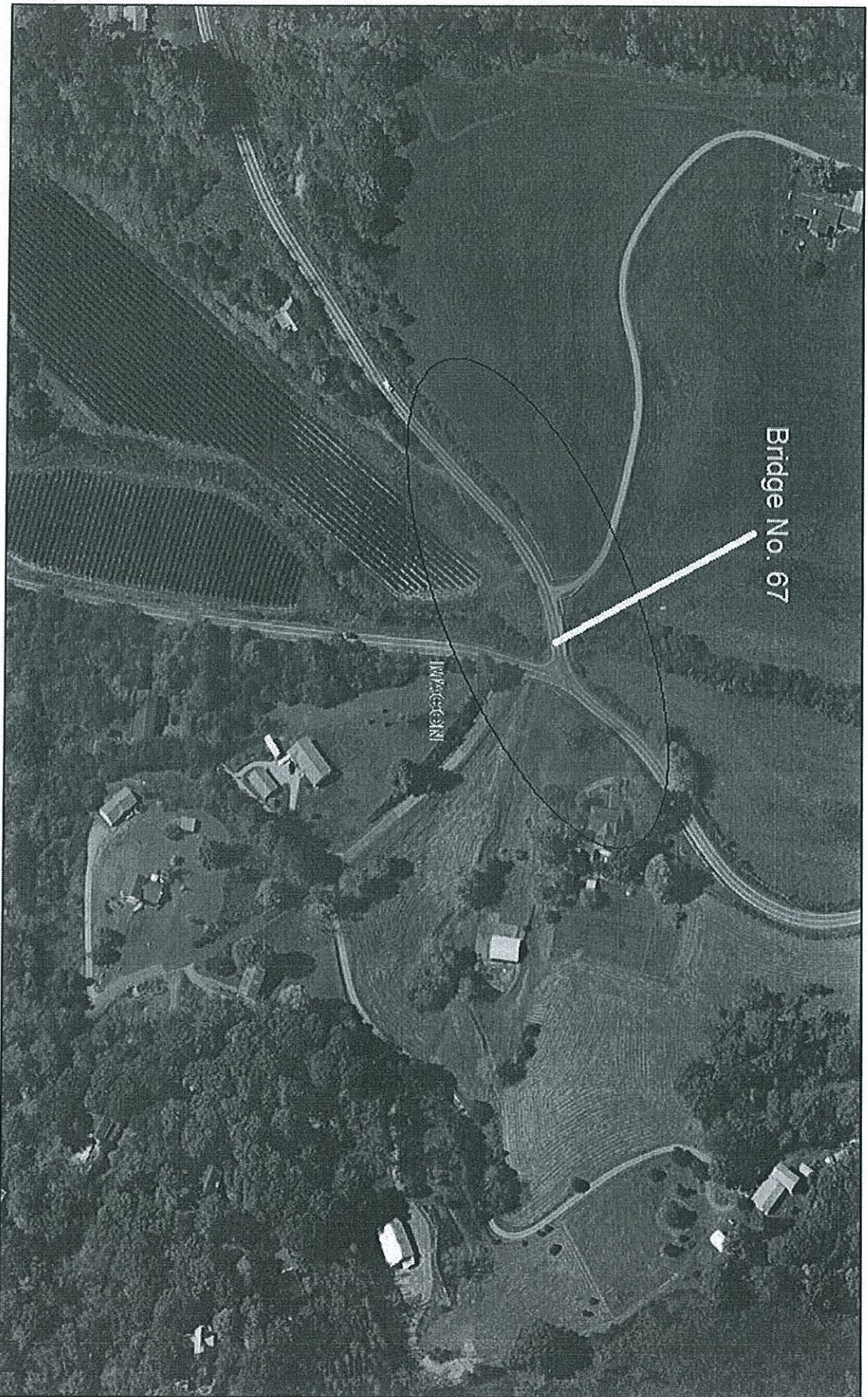
● NR Individual Listing

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NC HPOweb, Macon County



April 15, 2013

- ◆ <all other values>
- NR Individual Listing
- NR Individual Listing
- NR Individual Listing



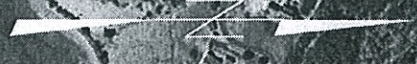
Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



SR 1513 (RABBIT CREEK RD)

BRIDGE NO. 67

SR 1513



NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

MACON COUNTY
REPLACE BRIDGE NO. 67
ON SR 1513 OVER RABBIT CREEK
E-5406

1" = 200'

Parcel : 7505-49-0593 RABBIT CREEK RD 1504

Description

Tax Districts
F01 FRANKLIN FIRE DISTRICT

OWNER INFORMATION		PROPERTY FACTORS		SALES INFORMATION		
ACCT: 1736	HENDERSON, JO ANN C 1221 RABBIT CREEK RD FRANKLIN, NC 28734	Topography	Utilities	Date	Sales Price	BK.PG
		2 ABOVE ROAD LEV	E ELECTRIC	12/31/07		A-10/162
		R ROLLING	W WATER			1A/8866
			S SEPTIC			
		View	Streets/Roads			
			S PVD STATE			

MISCELLANEOUS INFORMATION		ENTRANCE INFORMATION			VALUE SUMMARY		
Township	: MILLSHOAL	Date	Type	Source	Appraiser	Assessed	Current
Address	: 1221 RABBIT CREEK RD	05/31/06		Estimate	TAA	159,730	159,730
Zoning	: R RESIDENTIAL	06/24/05		Estimate	DKM	96,650	96,650
Nbrhood	: AAV AVG-AVG VIEW	10/31/02		Estimate	TAA	256,380	256,380
Map/Alt PN	: 7505.01 / 0250340	07/29/02		Estimate	KM	0	0
Class	: R RESIDENTIAL	10/02/98		Estimate	SS	256,380	256,380
						Net Taxable	

Remarks:
No Remarks on file

--- LAND DATA ---

#	MTH	TYPE	SIZE	PRICE	ADJ	APPR	DEFER	TAX	LAST UPDATED BY	LAST COMPUTED BY
1	A	1	1.00	16,200		16,200	0	16,200	CMC on 01/03/2011	KPR on 01/09/2008
2	A	2	4.00	16,200		64,800	0	64,800		
3	A	3	4.86	16,200		78,730	0	78,730		
Total Acres : 9.86			Land Totals		159,730	0	159,730	Land Adj : 150.00		

--- OUTBUILDINGS ---

BLDG#	TYPE	MTH	DESCRIPTION	REMARKS	WIDTH	LENGTH	AREA	GRD	BUILT	YEAR EFF YR	BUILT	COND	PHYS	FUNC	ECON	TAX VALUE
2	26	P	GARAGE, UNFIN		0	0										300
3	01	P	BARN		0	0										300
CARD 1 OUTBUILDING VALUE																600

End of Page 1

Parcel : 7505-49-0593 RABBIT CREEK RD 1504
Owner : 1736 HENDERSON, JO ANN C

BUILDING DESCRIPTION		+-----A26-----+C4+		SCALE IS 1:205
VAL METHOD	: R	!	!	!
USE CODE	: D DWELLING	!	!	!
STYLE	: CONVENTIONAL	!	!	!
NBR STORIES	: 1.0	!	A22C22	
WALL HEIGHT	:	!	C22!	
FOUNDATION	:	A28	!	!
EXTERIOR WALL	: FRAME	!	!	!
YR BUILT / EFF	: 1925 / 1965	!	!	!
CONDITION	: A AVERAGE	!	!	!
GRADE	: D+10	!	+A4+	
DESIGN FACTOR	:	!	A6	
ROOF TYPE	:	!	!	!
ROOF COVER	:	+--	MA	+-----A17---
BASEMENT AREA	: NO BASEMENT	!	1988	!
ATTIC AREA	: 884 (100 PCT FIN)	A14		!
INTERIOR FLOOR	:	!		A18
INTERIOR WALL	:	!		!
ROOMS / BDRMS	: 8 / 3	!		!
FULL / HALF BATHS	: 1 / 0 ADDL FIX: 0	+B8A8+		!
FIREPLACE TYPE/CNT:		!OP !		!
FIREPLACE OPENINGS: 0 CHIMNEY(S): 0		!600 !		+--B8A8+

4/17/13

gis2.maconnc.org/propcards/7505490593.1.html

AIR COND PCT	:		!	A14		!	!
SPRINKLER PCT	:		B22	B14		A10	!
HEATING TYPE	:	E ELEC BASE BOARD	!	!		B10	B18
HEATING FUEL	:	E ELECTRIC	!	!		!	!
OTHER FEATURES	:		!	+-----B35A35-----+		!	!
% COMPLETE	:	100	!			!	!
DESCRIPTION	:	1/S FR DWLG & A	!			!	!
REMARKS	:		+-----B51-----+			!	!

Heated Sq Ft : 2,872

----- BUILDING SECTION DETAIL -----

LN	TYPE	DESCRIPTION	AREA	VALUE	#ST	P%	F%
1	MA	MAIN AREA	1988	89,950	1.0		
2	OP	OPEN PORCH	600	5,300	1.0		
3	OP	OPEN PORCH	88	800	1.0		

----- BUILDING COMPUTATION -----

RCN 196070

PHYS DEPR 51

FUNC DEPR

ECON DEPR

% COMPLETE 100

RCNLD 96,050

LAST PICTURE DATE :

End of Page 2

Parcel : 7505-28-5731 Description
RABBIT CREEK RD 1504

Tax Districts
F01 FRANKLIN FIRE DISTRICT

OWNER INFORMATION		PROPERTY FACTORS		SALES INFORMATION		
ACCT: 2930	MACLEAN, DONALD J & LOIS G 935 RABBIT CREEK RD FRANKLIN, NC 28734	Topography	Utilities	Date	Sales Price	BK.PG
		R ROLLING	E ELECTRIC			0/0
		R ROLLING	W WATER			
			S SEPTIC			
		View	Streets/Roads			
			S PVD STATE			

MISCELLANEOUS INFORMATION		ENTRANCE INFORMATION				VALUE SUMMARY		
Township	: MILLSHOAL	Date	Type	Source	Appraiser	Assessed	Current	
Address	: 935 RABBIT CREEK RD	05/31/06	8	Estimate	TAA	27,740	27,740	
Zoning	: R RESIDENTIAL	06/24/05	8	Estimate	DKM	54,860	54,860	
Nbrhood	: AAV AVG-AVG VIEW	10/31/02	8	Estimate	TAA	82,600	82,600	
Map/Alt PN	: 7505.01 / 0211912	07/25/02	0	Estimate	KM	0	0	
Class	: R RESIDENTIAL	10/02/98	8	Estimate	SS	82,600	82,600	

Remarks:
No Remarks on file

LAND DATA		UNIT				VALUES			LAST UPDATED BY	
# MTH TYPE		SIZE	PRICE	%ADJ	APPR	DEFER	TAX			
1 A 1 HOMESITE		0.67	41,400		27,740	0	27,740		RAB on 11/22/2005	
Total Acres : 0.67		Land Totals			27,740	0	27,740	Land Adj : 150.00	LKF on 01/18/2007	

OUTBUILDINGS		REMARKS		WIDTH LENGTH		AREA GRD		YEAR EFF YR		BUILT COND PHYS FUNC ECON		TAX VALUE	
BLDG#	TYPE MTH DESCRIPTION												
2 26	O GARAGE, UNFIN			22	22	484	C	1995		A		14,400	
3 61	P STG, FR UTILITY			0	0							200	
											CARD 1	OUTBUILDING VALUE	14,600

End of Page 1

Parcel : 7505-28-5731 Description
RABBIT CREEK RD 1504
Owner : 2930 MACLEAN, DONALD J & LOIS G

BUILDING DESCRIPTION		SCALE IS 1:150			
VAL METHOD	: R				
USE CODE	: D DWELLING				+-----D20C20-----+
STYLE	: CONVENTIONAL				!
NBR STORIES	: 1.0				C8
WALL HEIGHT	:				!
FOUNDATION	:				+-----C20-----+ D12
EXTERIOR WALL	: ASBESTOS SHINGLE				C8WD C4 ! PA D12
YR BUILT / EFF	: 1951 / 1955				! 416 +C4+ 240 !
CONDITION	: A AVERAGE				! ! !
GRADE	: C-10				+-----C44A+4-----D20-----+
DESIGN FACTOR	:				!
ROOF TYPE	:				!
ROOF COVER	:				A12
BASEMENT AREA	: 1,280 UNFINISHED				!
ATTIC AREA	: 640 UNFINISHED				!
INTERIOR FLOOR	:				!
INTERIOR WALL	:				+-----A10+ A28
ROOMS / BDRMS	: 8 / 2				!
FULL / HALF BATHS	: 1 / 0 ADDL FIX: 0				!
FIREPLACE TYPE/CNT:					A16
FIREPLACE OPENINGS: 0 CHIMNEY(S): 0					!

4/17/13

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AIR COND PCT      :                               !
SPRINKLER PCT    :                               !
HEATING TYPE     : F FORCED AIR                 !
HEATING FUEL     : O OIL                       +----A10+      +-B10A10+    +----A10-+
OTHER FEATURES   :                               +-----A14--+ OP  +----A10-+
% COMPLETE       : 100                          B770      B7
DESCRIPTION     : 1/S FR DWLG & A/B            +----B10+
REMARKS         :

```

Heated Sq Ft : 1,280

BUILDING SECTION DETAIL						BUILDING COMPUTATION			
LN	TYPE	DESCRIPTION	AREA	VALUE	#ST	P%	F%	RCN	
1	MA	MAIN AREA	1280	38,260	1.0			134140	
2	OP	OPEN PORCH	70	500	1.0			PHYS DEPR	70
3	WD	WOOD DECK	416	1,300	1.0			FUNC DEPR	
4	PA	PATIO	240	200	1.0			ECON DEPR	
								% COMPLETE	100
								RCNLD	40,260

LAST PICTURE DATE :

End of Page 2

13-04-0046



ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.



PROJECT INFORMATION

Project No: **B-5406** County: **Macon**
 WBS No: **46121.1.1** Document: **PCE or CE**
 F.A. No: **BRZ-1513(7)** Funding: State Federal

Federal Permit Required? Yes No Permit Type: **Unknown at this time**

Project Description:

The project calls for the replacement of Bridge No. 67 on SR 1513 (Rabbit Creek Road) over Rabbit Creek in Macon County. The archaeological Area of Potential Effects (APE) for the project is defined as a 1,000-foot (304.80 m) long corridor running 500 feet (152.40 m) northeast and 500 feet southwest along Rabbit Creek Road from the center of Bridge No. 67. The corridor is approximately 200 feet (60.96 m) wide extending 100 feet (30.48 m) on either side of the road from its present center.

SUMMARY OF ARCHAEOLOGICAL RESOURCES REVIEW: ***SURVEY REQUIRED***

Brief description of review activities, results of review, and conclusions:

Bridge No. 67 is located northeast of Franklin and east of the Little Tennessee River in the northeastern section of Macon County, North Carolina. The project area is plotted in the northwestern portion of the Corbin Knob USGS 7.5' topographic quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on April 19, 2013. No previously recorded archaeological sites are identified within the APE, and only two known sites (31MA85 and 31MA86) are reported within a mile radius of the bridge. In addition, no existing National Register (NRHP), Determined Eligible (DE), State Study Listed (SL), Locally Designated (LD), or Surveyed Site (SS) properties are within or adjacent to the study area according to the North Carolina State Historic Preservation Office online data base (HPOWEB 2013). Topographic maps, USDA soil survey maps, aerial photographs (NC One Map), historic maps (North Carolina maps website), and Google Street View application were examined for information on environmental and cultural variables that may have contributed to prehistoric or historic settlement within the project limits and to assess the level of ground disturbance.

Bridge No. 67 and Rabbit Creek Road cross Rabbit Creek from the southwest to the northeast. The creek drains south and east into the Little Tennessee River. The APE is situated along a narrow floodplain with hillsides on either end (Figure 2). A partial ridge toe falls within the APE as well, but it is occupied by a farm house. SR 1507 (Ferguson Road) intersects with Rabbit Creek Road just southeast of the bridge within the floodplain. A small seasonal drainage is also present to the southeast crossing under Ferguson Road and emptying into Rabbit Creek at the bridge. The area is mostly open with agricultural properties with a couple of residential properties to the east and northwest. Ground disturbance appear minimal from ditches, utilities, and grading along the hillsides.

13-04-0046

According to the USDA soil survey map, the project area is composed of five soil types (Figure 3). These include the Evard-Cowee complex (EvD) and Hayesville clay loam (HaD2) along the hillsides and ridge toe, Reddies fine sandy loam (ReA) and Udorthents-Urban land complex (UfB) in the floodplain, and Saunook loam (ScB, ScC) along the slope of the seasonal drainage and western hillside. The Evard-Cowee complex and Hayesville clay loam are both well drained soils with slope of 15 to 30 percent. Typically, significant sites are not found along landforms with a slope of 15 percent or more. For this reason, no subsurface testing is required on the hillsides. The Reddies fine sandy loam is a moderately well drained soil that has a slope of less than 3 percent. It is also subject to frequent flooding. Due to being well drained, fairly level, and close to fresh water, this series is well suited for early settlement activities and should be subsurface tested. The Udorthents-Urban complex covers only a small area within the APE's southwestern quadrant. It consists of loamy fill material along the floodplain that has been used in order to reduce the hazard of flooding. This soil type is also used to distinguish graded floodplains. No testing is required along this soil series due to previous ground disturbance. Lastly, the Saunook loam is considered well drained with a gentle slope of 2 to 15 percent. It is found mostly in the southeast quadrant, but a small slice is present in the southwest. As with the Reddies series, Saunook loam is typically a high probability soil for yielding archaeological sites and requires subsurface testing.

A review of the site files show that very few archaeological investigations have been carried out within the area. The most notable is the Cherokee Archaeological Project conducted by The University of North Carolina at Chapel Hill from 1964 to 1971. This project identified both of the known sites (31MA85 and 31MA86) within the vicinity of the current project. It is likely this investigation covered the defined APE as well, but no record of areas included or excluded could be found. The first site, 31MA85, is situated in an environmental setting similar to Bridge No. 67. It is located to the west along the Rabbit Creek floodplain on soil composed of Reddies fine sandy loam. The site yielded prehistoric ceramics that could not be dated. The site eligibility for the NRHP is unassessed. The second site, 31MA86, is reported to the south along Cat Creek. Louis Berger and Associates attempted to relocate this site during the Cat Creek Wetland Mitigation project in 2002 but failed. The site is thought to be situated on a ridge toe overlooking the creek, but it might have been incorrectly plotted or destroyed by construction of a golf course and subdivision. Artifacts collected from the site include unidentified prehistoric ceramics. It eligibility has yet to be determined. In general, additional field work is needed in the area before any firm conclusions can be drawn based upon previous investigation. However, there is the slight indication that Reddies soils could yield additional sites in the area.

Finally, a historic map review was conducted. Most early maps from the 18th and 19th centuries provide only general details concerning the region illustrating just major roads and settlements. The 1907 USGS Cowee topographic map is likely one of the first in which the project area can be accurately determined (Figure 4). Although the stream is referred to as Cat Creek on this map, it depicts roads with an alignment similar to Rabbit Creek Road and Ferguson Road with a crossing over Rabbit Creek at or near the current bridge location. The map also shows a historic structure at the location of the current farm house. This is likely the same structures. Subsequent early 20th century maps continue to depict a similar picture as seen with the 1933 soil map for Macon County (Figure 5). From the map review, it appears unlikely for any significant deposits associated with former structures to be impacted by the proposed bridge replacement project.

A preliminary background investigation suggests that additional work is needed within the proposed project area. The Reddies and Saunook soils in the floodplain display qualities that are suited for early settlement activities. In addition, a least one known sites along Rabbit Creek has already been identified in the floodplain on Reddies soil. As a result, archaeological work in the form of a field survey is recommended in order to record possible significant archaeological resources that might be impacted by the proposed replacement of Bridge No. 67 in Macon County.

13-04-0046

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence
 Photocopy of County Survey Notes Other: **Images from historic maps**

FINDING BY NCDOT ARCHAEOLOGIST – SURVEY REQUIRED



5/6/13

C. Damon Jones
NCDOT ARCHAEOLOGIST II

Date

7/31/13

Proposed fieldwork completion date

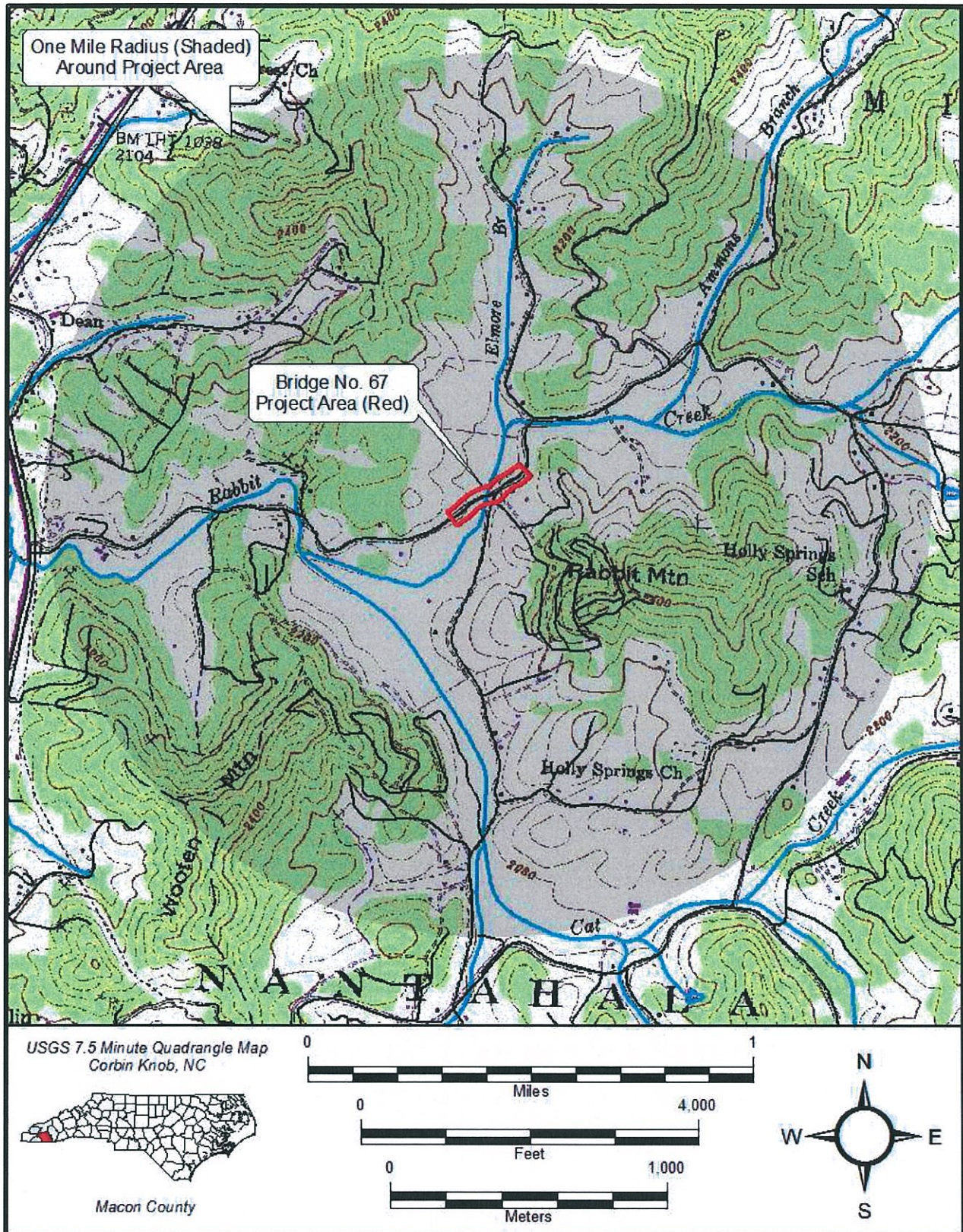


Figure 1. Topographic Setting of the Project Area, Corbin Knob (1946, photorevised 1978), NC, USGS 7.5' Topographic Quadrangle.

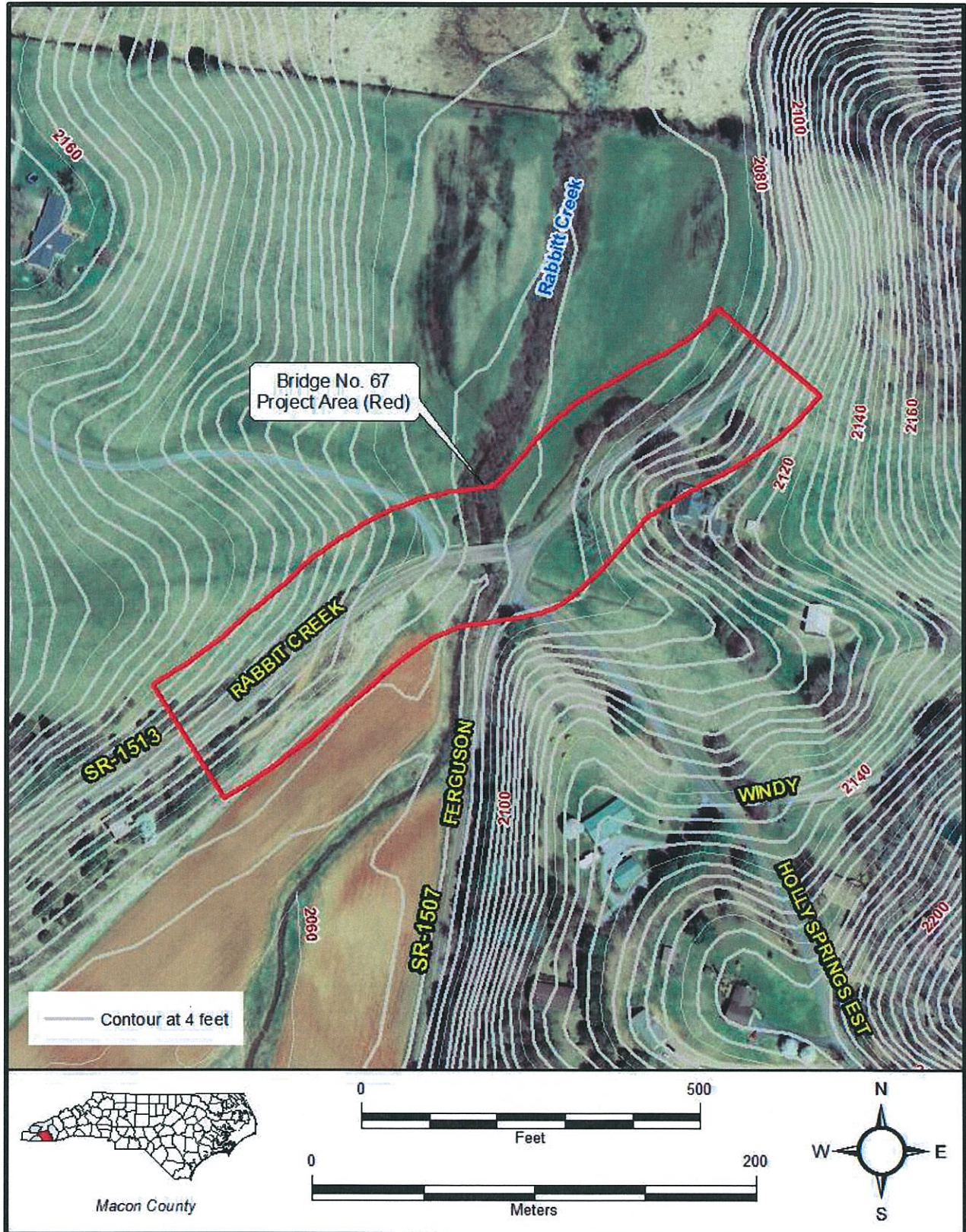


Figure 2. Aerial photograph of the APE showing development and landforms within and near the project area.

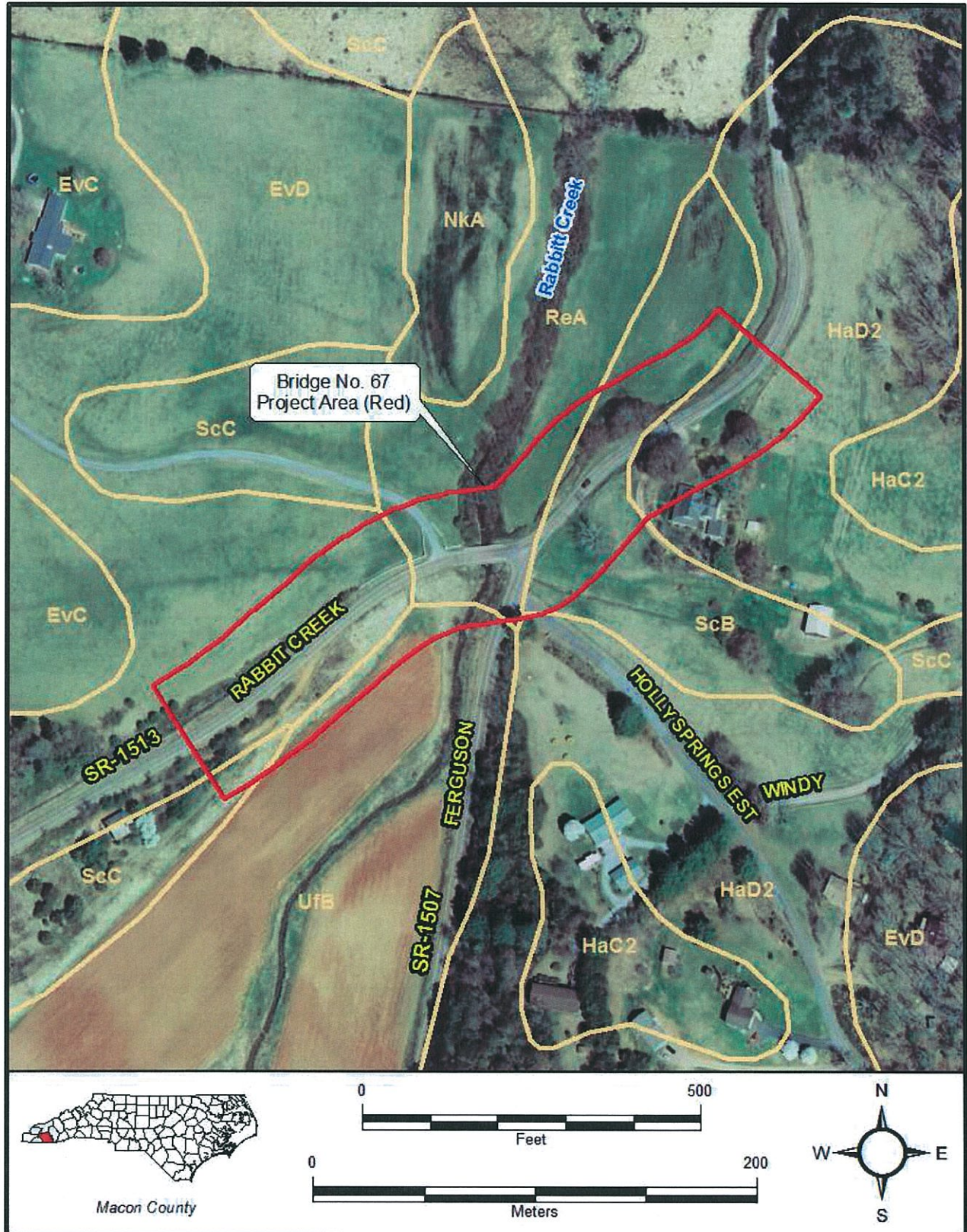


Figure 3. Aerial photograph of the APE showing development and soils within and near the project area.

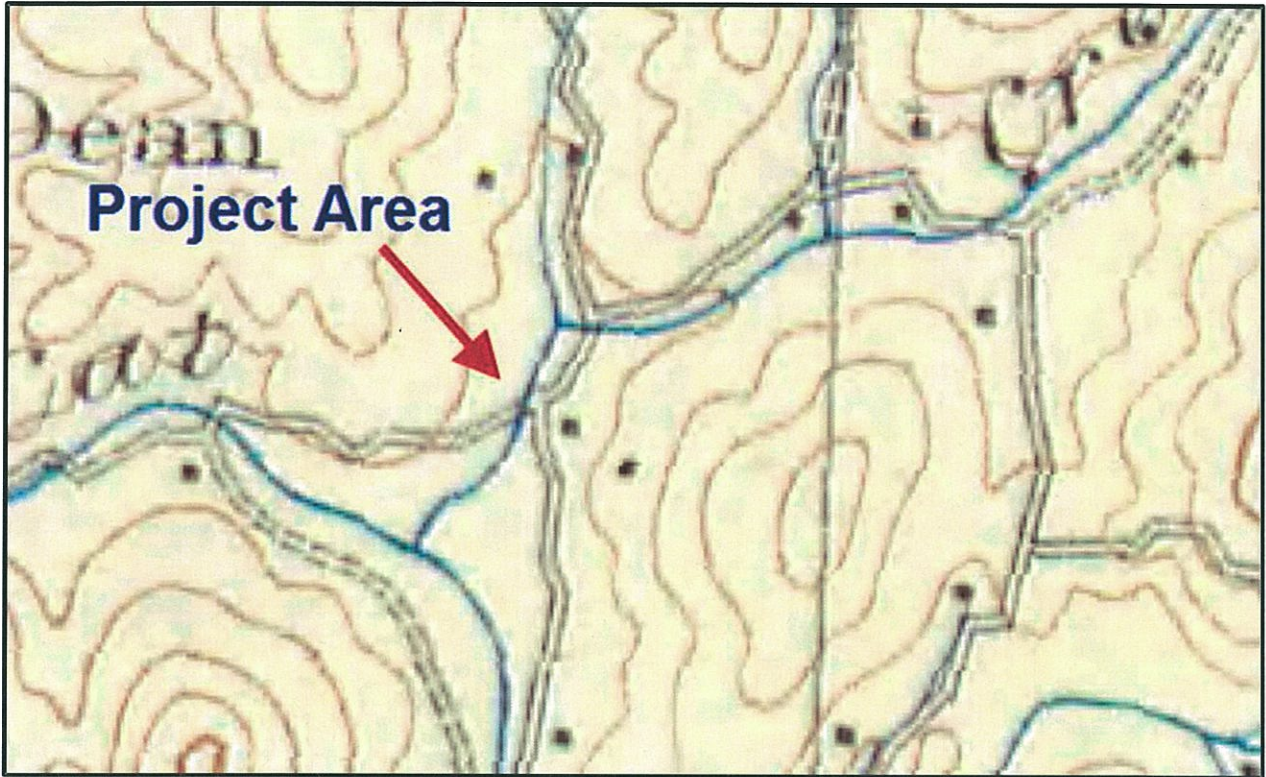


Figure 4. The 1907 USGS Cowee topographic map showing the location of the project area.

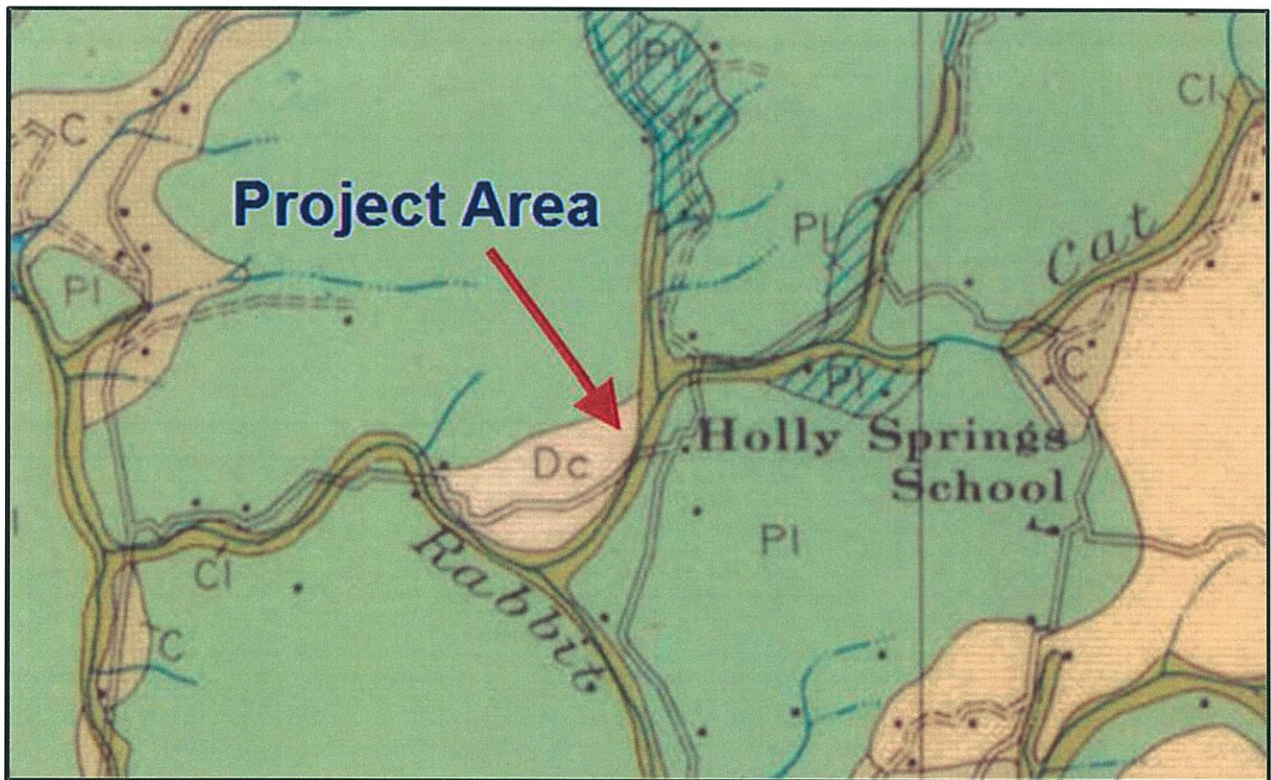


Figure 5. The 1933 Soil Survey map for Macon County showing the location of the project area.

13-04-0046



**NO NATIONAL REGISTER OF HISTORIC PLACES
ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES
PRESENT OR AFFECTED FORM**



This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No: **B-5406** County: **Macon**
 WBS No: **46121.1.1** Document: **PCE or CE**
 F.A. No: **BRZ-1513(7)** Funding: State Federal

Federal Permit Required? Yes No Permit Type: **Not known as of yet**

Project Description:

The project calls for the replacement of Bridge No. 67 on SR 1513 (Rabbit Creek Road) over Rabbit Creek in Macon County. The archaeological Area of Potential Effects (APE) for the project is defined as a 1,000-foot (304.80 m) long corridor running 500 feet (152.40 m) northeast and 500 feet southwest along Rabbit Creek Road from the center of Bridge No. 67. The corridor is approximately 200 feet (60.96 m) wide extending 100 feet (30.48 m) on either side of the road from its present center.

SUMMARY OF ARCHAEOLOGICAL FINDINGS

The North Carolina Department of Transportation (NCDOT) Archaeology Group reviewed the subject project and determined:

- There are no National Register listed ARCHAEOLOGICAL SITES within the project's area of potential effects.
- No subsurface archaeological investigations are required for this project.
- Subsurface investigations did not reveal the presence of any archaeological resources.
- Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
- All identified archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no National Register Eligible or Listed ARCHAEOLOGICAL SITES present or affected by this project. (Attach any notes or documents as needed)

Brief description of review activities, results of review, and conclusions:

Bridge No. 67 is located northeast of Franklin and east of the Little Tennessee River in the northeastern section of Macon County, North Carolina. The project area is plotted in the northwestern portion of the Corbin Knob USGS 7.5' topographic quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on April 19, 2013. No previously recorded archaeological sites are identified within the APE, and only two known sites (31MA85 and 31MA86) are reported within a mile radius of the bridge. In addition, no existing National Register (NRHP), Determined Eligible (DE), State Study Listed (SL), Locally Designated (LD), or Surveyed Site (SS) properties are within or adjacent to the study area according to the North Carolina State Historic Preservation Office online data base (HPOWEB 2013). Topographic maps, USDA soil survey maps, aerial photographs (NC One Map), and historic maps (North Carolina maps website) examined for information on environmental and cultural variables that may have contributed to prehistoric or historic settlement within the project limits and to assess the level of ground disturbance. An archaeological reconnaissance and field survey was carried out on June 18, 2013, to evaluate the project area.

Bridge No. 67 and Rabbit Creek Road cross Rabbit Creek from the southwest to the northeast. The creek drains south and east into the Little Tennessee River. The APE is situated along a narrow floodplain with hillsides on either end (Figure 2). A partial ridge toe falls within the APE as well, but it is occupied by a farm house (Figure 3). SR 1507 (Ferguson Road) intersects with Rabbit Creek Road just southeast of the bridge within the floodplain. A small seasonal drainage is also present to the southeast crossing under Ferguson Road and emptying into Rabbit Creek at the bridge. The area is mostly open with agricultural properties with residential properties to the east and northwest (Figures 4–7). Although ground disturbance is minimal from ditches, utilities, and grading along the hillsides throughout most of the project area, the southwestern quadrant is heavily disturbed from grading and soil erosion with subsoil at the surface.

According to the USDA soil survey map, the project area is composed of five soil types (Figure 8). These include the Evard-Cowee complex (EvD) and Hayesville clay loam (HaD2) along the hillsides and ridge toe, Reddies fine sandy loam (ReA) and Udorthents-Urban land complex (UfB) in the floodplain, and Saunook loam (ScB, ScC) along the slope of the seasonal drainage and western hillside. The Evard-Cowee complex and Hayesville clay loam are both well drained soils with slope of 15 to 30 percent. Typically, significant sites are not found along landforms with a slope of 15 percent or more. For this reason, no subsurface testing is required on the hillsides. The Reddies fine sandy loam is a moderately well drained soil that has a slope of less than 3 percent. It is also subject to frequent flooding. Due to being well drained, fairly level, and close to fresh water, this series is well suited for early settlement activities and was recommended for subsurface testing. The Udorthents-Urban complex is depicted as covering only a small area within the APE's southwestern quadrant, but it actually continues up to Rabbit Creek Road. This soil is usually loamy fill material used in order to reduce the hazard of flooding, but in this location it is used to distinguish a graded floodplain. No testing is required along this soil series due to previous ground disturbance. Lastly, the Saunook loam is considered well drained with a gentle slope of 2 to 15 percent. It is found mostly in the southeast quadrant, but a small slice is present in the southwest. As with the Reddies series, Saunook loam is typically a high probability soil for yielding archaeological sites and requires subsurface testing, but the field survey identified sections of the soil as being highly disturbed from grading or situated in a depression that allowed for ponding.

A review of the site files show that very few archaeological investigations have been carried out within the area. The most notable is the Cherokee Archaeological Project conducted by The University of North Carolina at Chapel Hill from 1964 to 1971. This project identified both of the known sites (31MA85 and 31MA86) within the vicinity of the current project. It is likely this investigation covered the defined APE

13-04-0046

as well, but no record of areas included or excluded could be found. The first site, 31MA85, is situated in an environmental setting similar to Bridge No. 67. It is located to the west along the Rabbit Creek floodplain on soil composed of Reddies fine sandy loam. The site yielded prehistoric ceramics that could not be dated. The site eligibility for the NRHP is unassessed. The second site, 31MA86, is reported to the south along Cat Creek. Louis Berger and Associates attempted to relocate this site during the Cat Creek Wetland Mitigation project in 2002 but failed. The site is thought to be situated on a ridge toe overlooking the creek, but it might have been incorrectly plotted or destroyed by construction of a golf course and subdivision. Artifacts collected from the site include unidentified prehistoric ceramics. It eligibility has yet to be determined. In general, additional field work is needed in the area before any firm conclusions can be drawn based upon previous investigation. However, there is the slight indication that Reddies soils could yield additional sites in the area.

Finally, a historic map review was conducted prior to field work. Most early maps from the 18th and 19th centuries provide only general details concerning the region illustrating just major roads and settlements. The 1907 USGS Cowee topographic map is likely one of the first in which the project area can be accurately determined (Figure 9). Although the stream is referred to as Cat Creek on this map, it depicts roads with an alignment similar to Rabbit Creek Road and Ferguson Road with a crossing over Rabbit Creek at or near the current bridge location. The map also shows a historic structure at the location of the current farm house. This is likely the same structures. Subsequent early 20th century maps continue to depict a similar picture as seen with the 1933 soil map for Macon County (Figure 10). From the map review, it appears unlikely for any significant deposits associated with former structures to be impacted by the proposed bridge replacement project.

The archaeological field investigations at Bridge No. 67 consisted of 6 shovel test placements (STPs) and a surface inspection (see Figures 2 and 8). No STPs were excavated on slope of 15 percent or more, in areas displaying severe ground disturbance, or on poorly drained soils. In the northeastern quadrant, three STPs were dug within the floodplain at 15-m intervals. Additional shovel tests in this quadrant were not excavated due to standing water as the backside of the floodplain sinks into a depression. Only one STP could be place in the southeast quadrant due to slope. The ridge toe was not tested as well as it is occupied by the farmhouse. The soil stratigraphy on this side of the creek consists of two strata. The surface layer or plowzone is a brown (7.5YR 4/4) loam that range in thickness from 10 to 50 cm (4 to 20 in). It is followed by subsoil, which is a reddish brown (5YR 4/4) clay loam or a yellowish red (5YR 4/6) clay. On the west side of the creek, two STPs were excavated with one in each quadrant. Subsoil is present at the surface. No additional STPs were dug in these two quadrants due to slope in excess of 15 percent and sever disturbance from grading. All STPs were negative for cultural material, and the surface inspection along graded floodplain also failed to reveal artifacts.

The archaeological investigations for the proposed replacement of Bridge No. 67 suggest no significant archaeological sites are within the APE. Surface and subsurface investigations failed to produce cultural material, and the historic map review identified no significant features. Portions of the project area not tested fall either on moderately steep slope not suitable for significant sites or in disturbed or poorly drained areas unlikely to yield intact cultural deposits. As long as impacts to the subsurface occur within the defined APE, no further archaeological work is required for replacement of this bridge in Macon County. Should the design plans change to go outside of the APE, further archaeological consultation might be necessary.

13-04-0046

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence

Other: **images of historic maps consulted**

Signed:



C. Damon Jones
NCDOT ARCHAEOLOGIST

6/21/13

Date

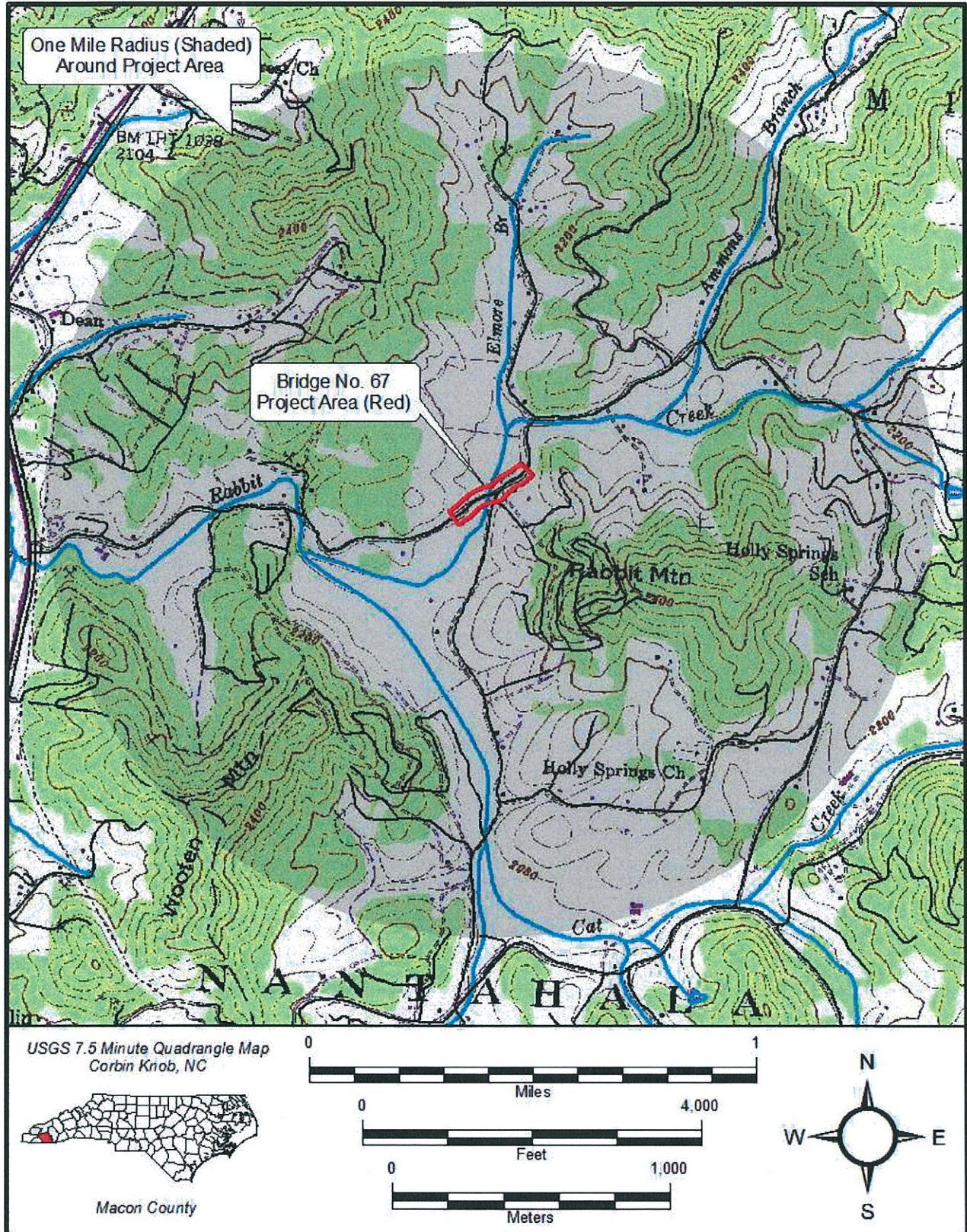


Figure 1. Topographic Setting of Project Area, Corbin Knob (1946; photorevised 1978), NC, USGS 7.5' Topographic Quadrangle.

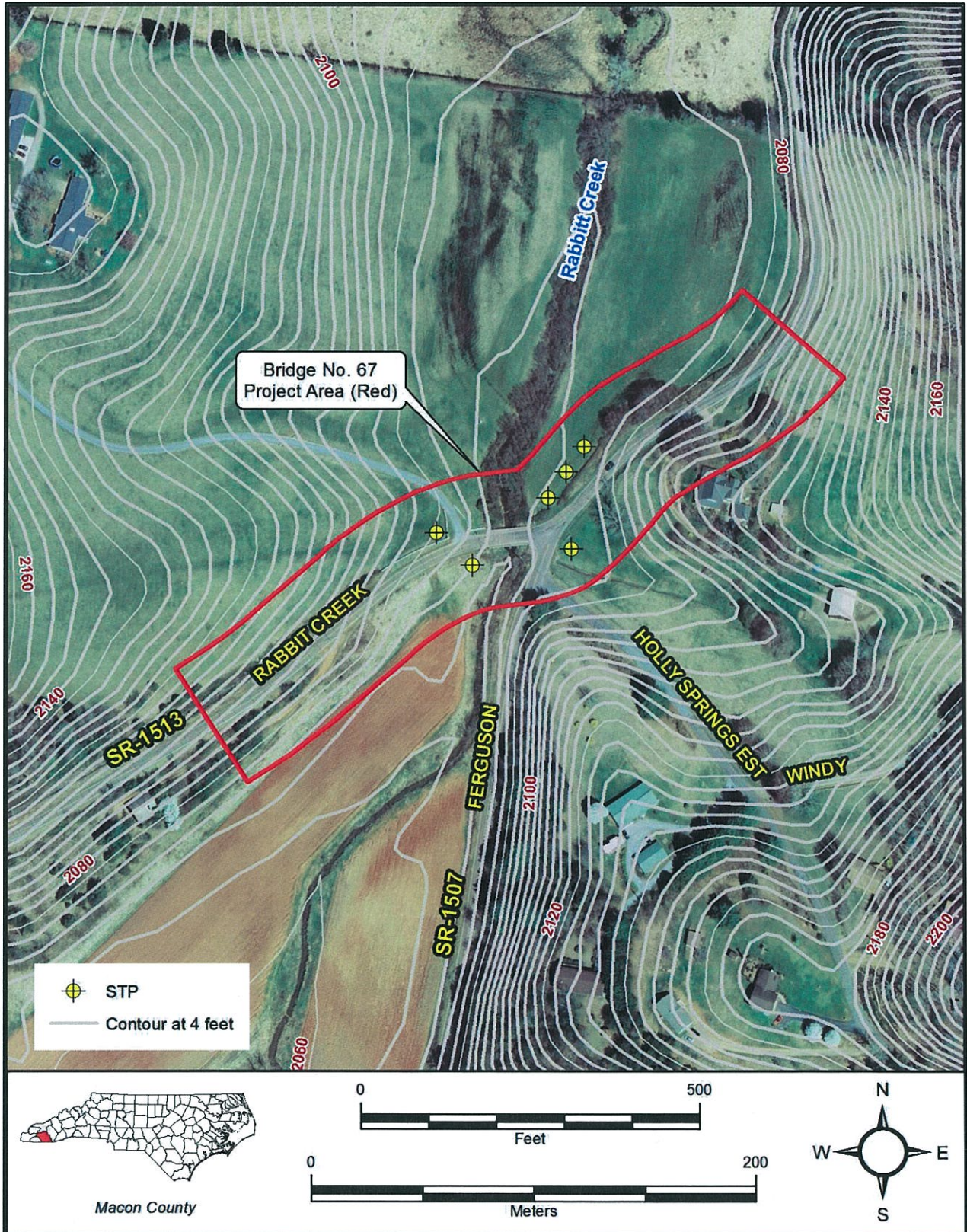


Figure 2. Aerial photograph of the APE showing development, landforms, and STPs within and near the project area.



Figure 3. General View of farm house on ridge toe in the southeast quadrant looking east.



Figure 4. General View of pasture in the northeast quadrant looking east.



Figure 5. General View of field in the northeast quadrant looking northeast.



Figure 6. General View of the field and residential property along the hillside in the northwest quadrant looking southwest.



Figure 7. General View of graded hillside and floodplain in the southwest quadrant looking southwest.

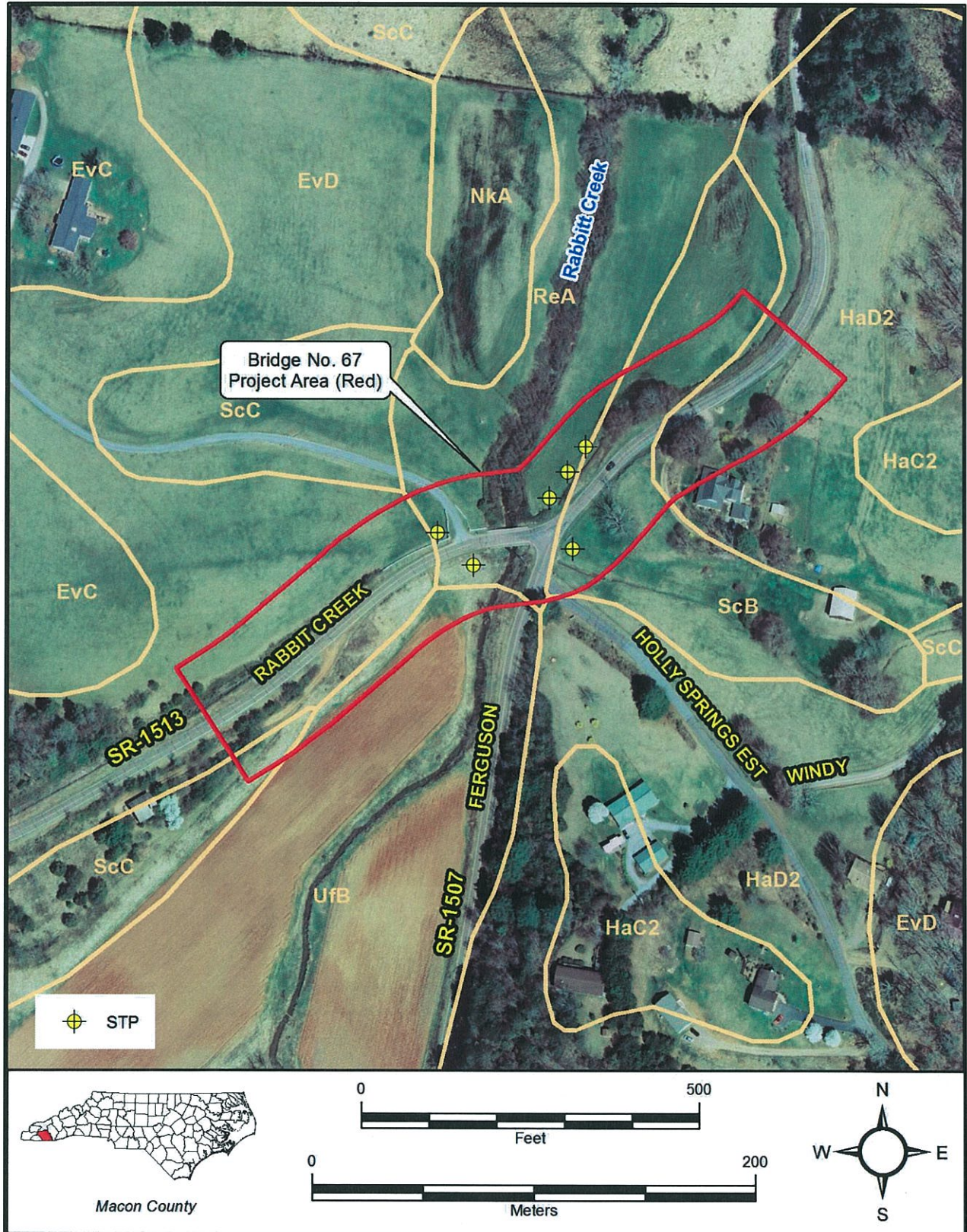


Figure 8. Aerial photograph of the APE showing development, soils, and STPs within and near the project area.

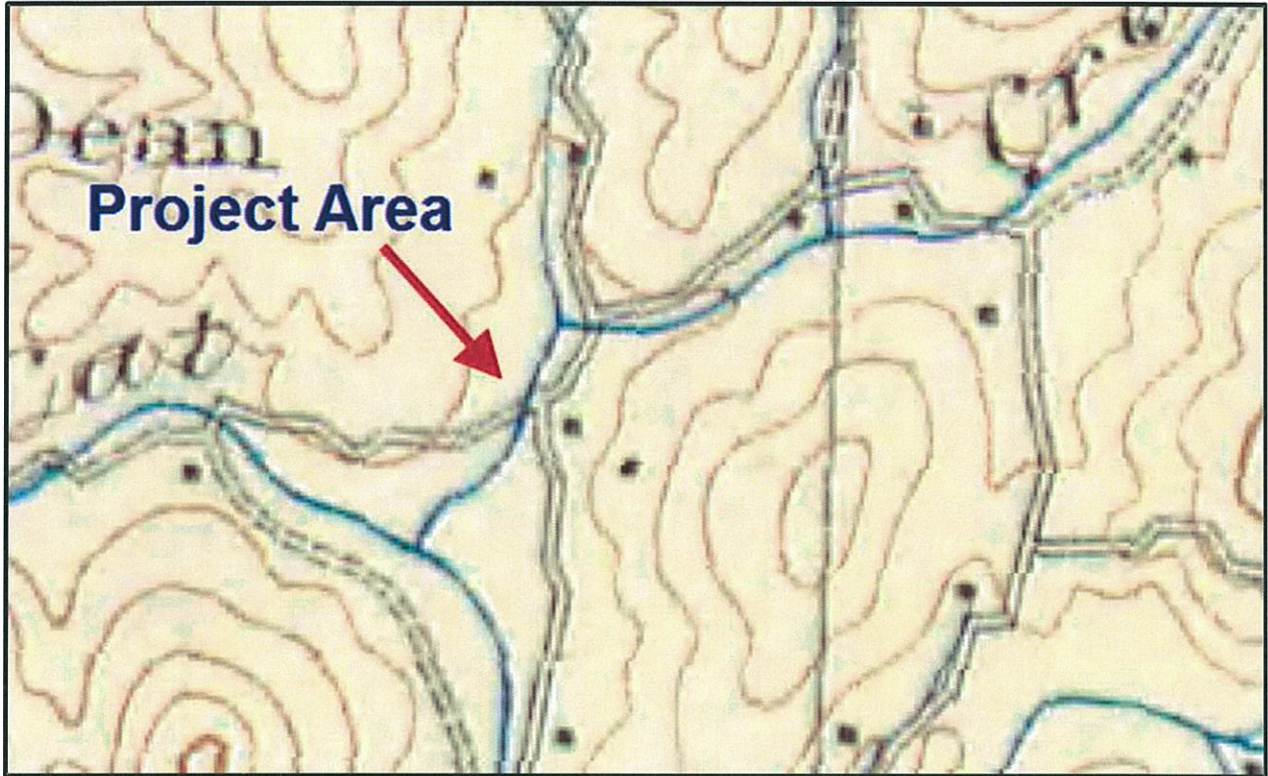


Figure 9. The 1907 USGS Cowee topographic map showing the location of the project area.

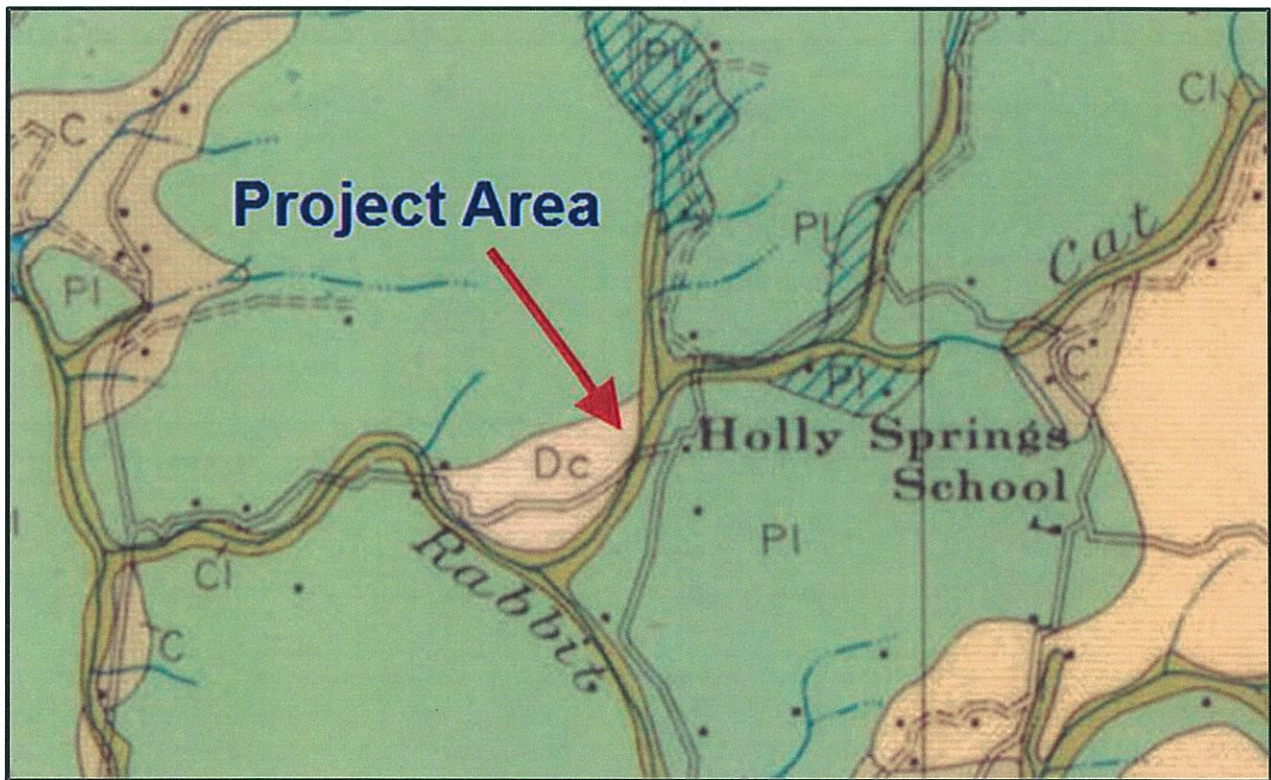


Figure 10. The 1933 Soil Survey map for Macon County showing the location of the project area.

APPENDIX B
Form NRCS-AD-1006

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request			
Name of Project		Federal Agency Involved			
Proposed Land Use		County and State			
PART II (To be completed by NRCS)		Date Request Received By NRCS		Person Completing Form:	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly					
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site					
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide Important or Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)					
PART VI (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)			
2. Perimeter In Non-urban Use		(10)			
3. Percent Of Site Being Farmed		(20)			
4. Protection Provided By State and Local Government		(20)			
5. Distance From Urban Built-up Area		(15)			
6. Distance To Urban Support Services		(15)			
7. Size Of Present Farm Unit Compared To Average		(10)			
8. Creation Of Non-farmable Farmland		(10)			
9. Availability Of Farm Support Services		(5)			
10. On-Farm Investments		(20)			
11. Effects Of Conversion On Farm Support Services		(10)			
12. Compatibility With Existing Agricultural Use		(10)			
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

APPENDIX C

Agency Coordination



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

January 17, 2013

Mr. James Bridges
Bridge Project Planning Engineer
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Bridges:

Subject: Information Request, State Transportation Improvement Project Numbers B-5410, B-5905, B-5910, B-5407, B-5406, B-4462 and B-5405

On December 21, 2012, we received your letters (via email) requesting information on the subject projects to aid in initial project evaluation. We submit the following comments and recommendations in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. §§1531-1543); the Fish and Wildlife Coordination Act, as amended (16 U.S.C. §§661-667e); the National Environmental Policy Act (42 U.S.C. §4321 et seq.); the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§1536, 1538); the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d); and the Clean Water Act (33 U.S.C. §1251 et seq.).

General Recommendations for Replacing Structures that Cross Rivers and Streams - We generally recommend the use of clear-spanning bridge structures designed, at a minimum, to accommodate the active channel width. Use of culverts is discouraged. Properly sized spanning structures will provide for the passage of aquatic species and accommodate the movement of debris and bed material. Furthermore, spanning structures usually: (1) can be constructed with minimal in-stream impacts, (2) do not require stream-channel realignment, and (3) retain the natural streambed conditions; and the horizontal and vertical clearances may be designed to allow for human and wildlife passage beneath the structures. If possible, bridge supports (bents) should not be placed in the streams. Bents can collect debris during flood events, resulting in the scouring of bridge foundations. In-stream bents can also result in hydrologic changes, such as bedload scour or deposition, which may adversely affect in-stream habitat. Deck drains of the spanning structures should not discharge directly into the streams; instead, they should drain through a vegetated area before entering the streams. Removal of vegetation in riparian areas

should be minimized. Armoring of the bank with riprap should be minimized. The reseeding of disturbed areas should be performed promptly after grading, and seed mixes should consist of native vegetation in order to prevent the spread of invasive plant species. New structures should be constructed without the use of in-stream causeways or work pads whenever possible. When causeways are necessary, using the largest washed stone practicable for the application will prevent unnecessary damage to in-stream habitat and will facilitate complete removal. We recommend that all equipment be refueled and receive maintenance outside of the riparian zone. Refueling and maintenance should take place in designated refueling sites that are provisioned to quickly contain any spills of fuel, lubricants, and other fluids.

Migratory Birds - The MBTA (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds (including the bald eagle), their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. To avoid impacts to migratory birds, we recommend conducting a visual inspection of the bridges and any other migratory bird nesting habitat within the project area during the migratory bird nesting season of March through September. If migratory birds are discovered nesting in the project impact area, including on the existing bridges, the North Carolina Department of Transportation (NCDOT) should avoid impacting the nests during the migratory bird nesting season (March through September). If birds are discovered nesting on the bridges during years prior to the proposed construction date, the NCDOT, in consultation with us, should develop measures to discourage birds from establishing nests on the bridges by means that will not result in the take of the birds or eggs, or the NCDOT should avoid construction and demolition activities during the nesting period.

Bald Eagle - The bald eagle has been removed from the federal list of endangered and threatened species due to its recovery. However, this species continues to be afforded protection by the Eagle Act (16 U.S.C. 668-668d) and the MBTA (16 U.S.C. 703-712). The Eagle Act, enacted in 1940 and amended several times, prohibits anyone without a permit issued by the Secretary of the Interior from "taking" bald eagles, including their parts, nests, or eggs. "Take" is defined as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" means "To agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment." In addition to immediate impacts, these definitions also cover impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present if, upon an eagle's return, such alterations agitate or bother the eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits and causes injury, death, or nest abandonment.

If any active nests are located within a half mile of the project sites, we request that work at the sites be restricted from mid-January through July in order to prevent adverse impacts to the bald eagle. This will prevent disturbance of the eagles from the egg-laying period until the young fledge, which encompasses their most vulnerable times. We ask that you consult with this office before construction begins to confirm that the eagles have left the nest. Once this has been confirmed, construction may begin.

B-5410 - Bridge No. 221 on SR 1367 over Little Savannah Creek in Jackson County - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Jackson County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that the project area is approximately 1.3 miles upstream from a known population of the federally endangered Appalachian elktoe (*Alasmidonta raveneliana*). This species is threatened by excessive siltation of its habitat. We request that the NCDOT utilize Design Standards for Sensitive Watersheds to minimize erosion onsite. We also request that the NCDOT design a bridge instead of a culvert to promote long-term bank stability. If space at the construction site allows, we request that there be surface water infiltration basins incorporated that can reduce the velocity of runoff and filter road-derived pollutants. This project has potential for adverse effects to the Appalachian elktoe, and informal consultation should be initiated with our office prior to right-of-way acquisition.

B-5905 – Bridge No. 27 on US 23 Business over Scott Creek in Jackson County - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Jackson County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that the project area is approximately 0.4 miles upstream from a known population of the federally endangered Appalachian elktoe (*Alasmidonta raveneliana*). The Appalachian elktoe is not presently known from Scott Creek, but there are records of this species from similarly sized streams. A survey of Scott Creek should be performed to assess if this species will be directly affected by construction. The Appalachian elktoe is threatened by excessive siltation of its habitat. We request that the NCDOT utilize Design Standards for Sensitive Watersheds to minimize erosion onsite. We also request that the NCDOT design a bridge instead of a culvert to promote long-term bank stability. If space at the construction site allows, we request that there be surface water infiltration basins incorporated that can reduce the velocity of runoff and filter road-derived pollutants. This project has potential for adverse effects to the Appalachian elktoe, and informal consultation should be initiated with our office prior to right-of-way acquisition.

B-5910 - Bridge No. 32 on NC 116 over Savannah Creek in Jackson County - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Jackson County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that the project area is approximately 0.9 mile upstream from a known population of the federally endangered Appalachian elktoe (*Alasmidonta raveneliana*). This species is threatened by excessive siltation of its habitat. We request that the NCDOT utilize Design Standards for Sensitive Watersheds to minimize erosion onsite. We also request that the NCDOT design a bridge instead of a culvert to promote long-term bank stability. If space at the construction site allows, we request that there be surface water infiltration basins incorporated that can reduce the velocity of runoff and filter road-derived pollutants. This project has potential for adverse effects to the Appalachian elktoe, and informal consultation should be initiated with our office prior to right-of-way acquisition.

B-5407 – Bridge No. 34 on SR 1311 over Walnut Creek in Polk County - A full list of federally endangered and threatened species and federal species of concern with known

occurrences in Polk County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that there are no known federally protected species near the proposed action area. Aerial photographs show the area to be primarily in agricultural land use, but there is a moderate forested buffer along Walnut Creek in the project area. The dwarf-flowered heartleaf (*Hexastylis naniflora*), a threatened species, is known from Polk County and can be found in the riparian area along small streams. We suggest that a biologist survey the action area for this species.

B-5406 – Bridge No. 67 on SR 1513 over Rabbit Creek in Macon County - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Macon County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that a population of smoky dace (*Clinostomus funduloides* ssp.), a federal species of concern, is present in Rabbit Creek. We request that the NCDOT adhere to the general recommendations listed above to reduce the effects to this species. Macon County is also likely to have a population of the Indiana bat (*Myotis sodalis*), an endangered species, and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), a federal species of concern. Bridges can often provided important roosting habitat for bats. We request that the bridge be inspected for signs of bat use. If bats are using the structure, please consult with our office about strategies to avoid effects to these species. If trees will be cut as part of this project, we request that any cutting of trees take place in the winter in order to avoid negative effects to bat roost trees.

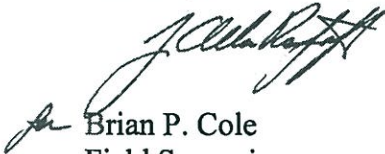
B-4462 – Bridge No. 148 on SR 1127 over Persimmon Creek in Cherokee County - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Cherokee County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that there are no known records of federally protected species near the project action area. Cherokee County is known to have a population of the Indiana bat (*Myotis sodalis*), an endangered species, and Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), a federal species of concern. Bridges can often provided important roosting habitat for bats. We request that the bridge be inspected for signs of bat use. If bats are using the structure, please consult with our office about strategies to avoid effects to these species. If trees will be cut as part of this project, we request that any cutting of trees take place in the winter in order to avoid negative effects to bat roost trees.

B-5405 – Bridge No. 139 on SR 1139 over East Branch Toxaway Creek in Transylvania County - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Transylvania County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that there are no known records of federally protected species near the project action area. However, the green salamander (*Aneides aeneus*), a federal species of concern, is present at a number of sites in this part of Transylvania County and may be present in or around East Branch Toxaway Creek. We request that the NCDOT adhere to the general recommendations listed above to reduce the effects to this species.

If you have questions about these comments, please contact Mr. Jason Mays of our staff at 828/258-3939, Ext. 226. In any future correspondence concerning these projects, please reference our log numbers with your project numbers as follows:

<u>NCDOT</u> <u>Project Nos.</u>	<u>USFWS</u> <u>Log Nos.</u>
• B-5410	4-2-13-089
• B-5905	4-2-13-090
• B-5910	4-2-13-091
• B-5407	4-2-13-092
• B-5406	4-2-13-093
• B-4462	4-2-13-094
• B-5405	4-2-13-095

Sincerely,


Brian P. Cole
Field Supervisor

cc:

Ms. Lori Beckwith, Asheville Regulatory Field Office, U.S. Army Corps of Engineers,
151 Patton Avenue, Room 208, Asheville, NC 28801-5006

Ms. Marla J. Chambers, Western NCDOT Permit Coordinator, North Carolina Wildlife
Resources Commission, 12275 Swift Road, Oakboro, NC 28129

Ms. Amy Euliss, North Carolina Division of Water Quality, 585 Waughtown St., Winston
Salem, NC 27107

Mr. Chuck Howard, Tennessee Valley Authority, 400 W. Summit Hill Drive, Knoxville, TN
37902



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Charles Wakild, P.E.
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

February 1, 2013

MEMORANDUM

TO: James F. Bridges, P.E., Bridge Project Planning Engineer, NCDOT
FROM: Michael R. Parker, NCDWQ, Asheville Regional Office *MRP*
SUBJECT: Bridge Scoping Review Comments

B-4492, Bridge No. 148, NCSR 1127, Cherokee County
B-5405, Bridge No. 139, NCSR 1139, Transylvania County
B-5406, Bridge No. 67, NCSR 1513, Macon County
B-5410, Bridge No. 221, NCSR 1367, Jackson County
B-5905, Bridge No. 27, US 23 Business, Jackson County
B-5910, Bridge No. 32, NC 116, Jackson County

In reply to your letters dated January 2, 2013 in which you requested information for the above referenced projects, the NCDWQ offers the following:

Project Specific Comments

B-4492, Bridge No. 148 over Persimmon Creek, Cherokee County

1. Persimmon Creek is class C waters of the State.
2. There is an unnamed tributary to Persimmon Creek located just upstream of the bridge where NCDWQ will claim jurisdiction.
3. NCDWQ has no specific comments for this bridge project.

B-5405, Bridge No. 139 over Toxaway Creek, Transylvania County

1. Toxaway Creek is class C-trout waters. NCDWQ recommends that the most protective sediment and erosion control BMP's be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers shall be conducted in accordance with the NC Division of Land Resources and NC Wildlife Resources Commission.
2. Should NC Wildlife Resources Commission (NCWRC) identify these waters as naturally reproducing trout waters, NCDOT will be required to observe the NCWRC –recommended moratoria for trout. In additions, NCDWQ will require that NCDOT strictly adhere to North Carolina regulations entitled “Design Standards in Sensitive Watersheds” [15A NCAC 04B .0124] throughout design and construction of the project.
3. There is an unnamed tributary to Toxaway Creek located just downstream of the bridge where NCDWQ will claim jurisdiction.

B-5406, Bridge 67 over Rabbitt Creek, Macon County

1. Rabbitt Creek is class C-trout waters. NCDWQ recommends that the most protective sediment and erosion control BMP's be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers shall be conducted in accordance with the NC Division of Land Resources and NC Wildlife Resources Commission.
2. Should NC Wildlife Resources Commission (NCWRC) identify these waters as naturally reproducing trout waters, NCDOT will be required to observe the NCWRC –recommended moratoria for trout. In additions, NCDWQ will require that NCDOT strictly adhere to North Carolina regulations entitled “Design Standards in Sensitive Watersheds” [15A NCAC 04B .0124] throughout design and construction of the project.

B-5410, Bridge No. 221 over Little Savannah Creek, Jackson County

1. Little Savannah Creek is class C waters; however, the NCWRC recently found that this stream contains rainbow trout. NCDWQ recommends that the most protective sediment and erosion control BMP's be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers shall be conducted in accordance with the NC Division of Land Resources and NC Wildlife Resources Commission.
2. Should NC Wildlife Resources Commission (NCWRC) identify these waters as naturally reproducing trout waters, NCDOT will be required to observe the NCWRC –recommended moratoria for trout. In additions, NCDWQ will require that NCDOT strictly adhere to North Carolina regulations entitled “Design Standards in Sensitive Watersheds” [15A NCAC 04B .0124] throughout design and construction of the project.
3. There may be wetlands located downstream of the bridge within the study area.

B-5905, Bridge No. 27 over Scott Creek, Jackson County

1. Scott Creek is class C-trout waters. NCDWQ recommends that the most protective sediment and erosion control BMP's be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers shall be conducted in accordance with the NC Division of Land Resources and NC Wildlife Resources Commission.
2. Should NC Wildlife Resources Commission (NCWRC) identify these waters as naturally reproducing trout waters, NCDOT will be required to observe the NCWRC –recommended moratoria for trout. In additions, NCDWQ will require that NCDOT strictly adhere to North Carolina regulations entitled “Design Standards in Sensitive Watersheds” [15A NCAC 04B .0124] throughout design and construction of the project.

B-5910, Bridge No. 32 over Savannah Creek, Jackson County

1. Savannah Creek is class C-trout waters. NCDWQ recommends that the most protective sediment and erosion control BMP's be implemented to reduce the risk of turbidity violations in trout waters. In addition, all disturbances within trout buffers shall be conducted in accordance with the NC Division of Land Resources and NC Wildlife Resources Commission.
2. Should NC Wildlife Resources Commission (NCWRC) identify these waters as naturally reproducing trout waters, NCDOT will be required to observe the NCWRC –recommended moratoria for trout. In additions, NCDWQ will require that NCDOT strictly adhere to North Carolina regulations entitled “Design Standards in Sensitive Watersheds” [15A NCAC 04B .0124] throughout design and construction of the project.

General Comments Regarding Bridge Replacement Projects

1. NCDWQ is very concerned with sediment and erosion impacts that could result from these projects. NCDOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
2. If foundation test borings are necessary; it shall be noted in the document Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.
3. Low Impact Bridge Projects must fall under Nationwide Permit No. 3 to qualify for Low Impact; otherwise, standard permitting procedures will be required. Example (Regional General Permit No. 31, Nationwide Permit No. 23, Nationwide Permit No. 13, etc.)
4. Whenever possible, NCDWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the stream banks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) should not be placed in the stream when possible.
5. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDWQ's *Stormwater Best Management Practices*.
6. Strict adherence to the most recent version of NCDOT's Best Management Practices For Bridge Demolition and Removal approved by the US Army Corps of Engineers is a condition of the 401 Water Quality Certification.
7. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from NCDWQ first.
8. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly.
9. All pile driving or drilling activities shall be enclosed in turbidity curtains unless otherwise approved by NCDWQ in this certification.
10. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water.
11. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

12. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
13. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. This equipment shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
14. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
15. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.
16. In most cases, the NCDWQ prefers the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour shall be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure shall be removed and the approach fills removed from the 100-year floodplain. Approach fills shall be removed and restored to the natural ground elevation. The area shall be stabilized with grass and planted with native tree species. Tall fescue shall not be used in riparian areas.

Thank you for the opportunity to provide comments at this time. NCDOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Mike Parker at 828-296-4500.

cc: Lori Beckwith, USACE, Asheville Field Office
Mark Davis, NCDOT, Division 14 Environmental Officer
Marla Chambers, NCWRC
Transportation Permitting Unit