

**Cherokee County  
Bridge No. 148 on SR 1127 (Bell Hill Road)  
over Persimmon Creek  
Federal Aid Project No. BRZ-1127(12)  
W.B.S. No. 38376  
S.T.I.P. No. B-4462**

CATEGORICAL EXCLUSION

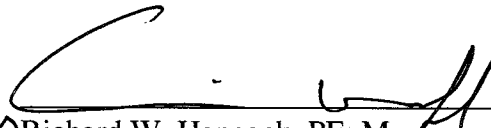
UNITED STATES DEPARTMENT OF TRANSPORTATION

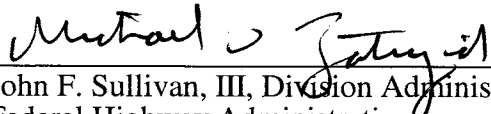
FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

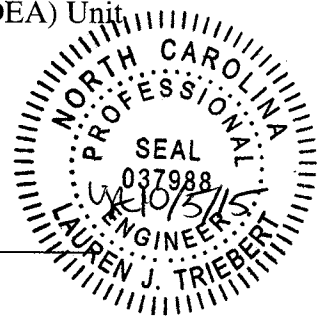
10/23/15  
DATE *FOR*   
Richard W. Hancock, PE, Manager  
Project Development & Environmental Analysis Unit

10-15-15  
DATE *for*   
John F. Sullivan, III, Division Administrator  
Federal Highway Administration

**Cherokee County  
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S.T.I.P. No. B-4462**

**CATEGORICAL EXCLUSION**

Documentation Prepared for  
Project Development and Environmental Analysis (PDEA) Unit  
By  
VHB Engineering NC, P.C.



10/5/15  
DATE

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VHB Engineering NC, P.C.

10/15/15  
DATE

Marshall Edwards  
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Project Planning Engineer  
PDEA

10.15.2015  
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Project Development Group Supervisor  
PDEA

## PROJECT COMMITMENTS

**Cherokee County  
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### **PDEA-Human Environment Section**

Archaeological Site 31CE802 will require data recovery excavations as the project is currently proposed. The data recovery excavations will require drafting of a data recovery plan and completion of a Memorandum Of Agreement (MOA) in consultation with the North Carolina Historic Preservation Office (HPO). The excavations will be initiated *after* Right of Way is acquired from all parcels containing portions of the site that will be subjected to the data recovery excavations. The Right of Way Unit will notify the Human Environment Section's Archaeology Group Supervisor of the date of availability for the parcels containing site 31CE802. Data recovery excavations will require 9 months to complete *after* right of way is acquired. No construction related activities will be performed within the limits of site 31CE802 until all field investigations have been completed and accepted by the HPO.

### **PDEA-Natural Environment Section**

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

### **Hydraulic Unit**

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of the 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 – TVA Permit**

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. 148 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. 148 has a sufficiency rating of 18.24 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.

Components of the timber substructure have experienced an increasing degree of deterioration; specifically the piles, post, sills and bracing are in poor condition and can no longer be addressed by maintenance activities. The bridge is approaching the end of its useful life. The aging bridge has a posted limit of 16 tons for single vehicles and 20 tons for truck-tractor semi-trailers. Continued maintenance of the structure is no longer prudent. A NCDOT Safety Review dated March 15, 2005 identified concerns with the sight distance at the intersection of Bell Hill Road and Sunny Point Road to the west of the bridge. Replacement of the bridge and realignment of Bell Hill Road will result in safer traffic operation.

## **II. EXISTING CONDITIONS**

The project is located in Cherokee County, along SR 1127 (Bell Hill Road), just east of the intersection with SR 1130 (Sunny Point Road) and NC 136 (see Figure 2 – Project Study Area). Land use in the vicinity of the bridge is primarily residential in nature, with very low density, agricultural operations in the form of cropland, and large forested areas.

SR 1127 is classified as a local road in the Statewide Functional Classification System and it is not part of the National Highway System.

In the vicinity of the bridge, SR 1127 has a 19-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 9 feet above the creek bed.

Bridge No. 148 is a single-span steel structure on timber end bents with two lanes of bituminous surface treatment on gravel or stone. The end bents consist of timber caps and posts with concrete sills. There are no interior bents. The existing bridge was constructed in

1964. The overall length of the structure is 36 feet. The clear roadway width is 19.2 feet. The posted weight limit on this bridge is 16 tons for single vehicles and 20 tons for TTST's.

There are no utilities attached to the existing structure, but underground telephone line is located southwest and southeast of the bridge and telephone line is aerial over the south side of the bridge. There are no utility conflicts on this project. There are no signage or traffic control conflicts.

The 2013 traffic volume of 200 vehicles per day (VPD) is expected to increase to 300 VPD by the year 2035. The projected volume includes one percent truck-tractor semi-trailer (TTST) and two percent dual-tired vehicles (DT). There is no posted speed limit on this roadway. Two school buses cross the bridge daily on their morning and afternoon routes.

One accident was reported in the vicinity of Bridge No. 148 during the evaluated 10-year period (2005-2015). A separate analysis for the 1999-2003 time period showed one crash on SR 1130 (Sunny Point Road) to the west of the SR 1127 (Bell Hill Road) intersection.

This section of SR 1127 is not part of a designated bicycle route nor is it listed in the S.T.I.P. as needing incidental bicycle accommodations. This is a rural, two-lane road that has very little pedestrian or bicycle traffic.

### **III. ALTERNATIVES**

#### **A. Preferred Alternative**

Bridge No. 148 will be replaced on new alignment to the north side while traffic remains on the existing structure during construction (see Figure 3 – Preliminary Design). The total project length of the new alignment will be 735 feet.

The replacement structure will be a bridge approximately 60 feet long providing a minimum 25 feet clear deck width. The bridge will include two 10-foot lanes and 2'-5" offsets. The bridge length 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 310 feet from the west end of the new bridge to Sunny Point Road and 365 feet from the east end of the new bridge around the curve in Bell Hill Road. The approaches will accommodate a 20-foot pavement width providing two 10-foot lanes. Three-foot grass shoulder will be provided on each side, and the shoulder will be widened an additional 3 feet where there is guardrail. The roadway will be designed as a Rural Local Road using Sub-Regional Tier Guidelines with a 30 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 1127.

“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 piles, post, sills and bracing are in poor condition and can no longer be addressed by maintenance activities. The bridge is approaching the end of its useful life.

Replacing Bridge No. 148 on the existing alignment was eliminated from further consideration because it did not address the sight distance concern at the Bell Hill Road and Sunny Point Road intersection. Replacing the bridge in place would not serve to correct or improve this safety concern.

#### **IV. ESTIMATED COSTS**

The estimated costs for the proposed project based on 2015 prices are as follows:

	<b>Preferred Alternative</b>
Structure	\$ 202,000
Roadway Approaches	246,000
Structure Removal	18,000
Misc. & Mob.	144,000
Eng. & Contingencies	115,000
Total Construction Cost	\$ 725,000
Right-of-way Costs	\$39,000
Right-of-way Utility Costs	n/a
Total Project Cost	\$ 764,000

#### **V. NATURAL ENVIRONMENT**

Natural resources were evaluated and documented in a Natural Resources Technical Report (NRTR) by NCDOT, 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 1,500 to 1,800 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 Hiwasee River Basin. Two streams were identified in the study area (Table 1) and the physical characteristics of these streams are provided in Table 2. Persimmon 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
Persimmon Creek	1-63	C
UT to Persimmon Creek	1-63	C

**Table 2 – Physical Characteristics of Water Resources**

Stream Name	Bank Height (ft)	Bankful Width (ft)	Water Depth (ft)	Channel Substrate	Velocity	Clarity
Persimmon Creek	6	15-20	1.5	Sand, Gravel, Cobble	Fast	Clear
UT to Persimmon Creek	0.5-1	3	0.5	Sand	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	0.8
Piedmont/Low Mountain Alluvial Forest	0.1
<b>Total</b>	<b>0.9</b>

**Jurisdictional Topics**

**Surface Waters**

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

**Table 4 – Jurisdictional Streams in the Study Area**

Stream Name	Length (ft)	Classification	Compensatory Mitigation Req'd	River Basin Buffer
Persimmon Creek	93	Perennial	Yes	Not subject
UT to Persimmon Creek	32	Perennial	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 causeways. 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.

**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 seven federally protected species for Cherokee County (Table 5).

**Table 5 – Federally Protected Species List for Cherokee County**

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Villosa trabalis</i>	Cumberland bean (pearlymussel)	E	No	No Effect
<i>Pegias fabula</i>	Little-wing pearlymussel	E	No	No Effect
<i>Epioblasma florentina walker i</i>	Tan riffleshell	E	No	No Effect
<i>Isotria medeoloides</i>	Small whorled pogonia	T	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: 1988**

**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. Since this species is not known to be a long-distance migrant, and caves and subterranean mines are extremely rare in eastern North Carolina, it is uncertain whether or where NLEB hibernate in eastern North Carolina. During the summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees (typically  $\geq 3$  inches dbh). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat 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 conducted. 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. Lake Cherokee, located approximately one mile from the project, is large enough and sufficiently open to be considered a potential feeding source. No individuals were observed within site distance from the project area during a field visit on February 25, 2013. A review of the NCNHP database, updated on January 2, 2013, revealed no known occurrences of this species within 1.0 mile of the project study area. Due to the lack of known occurrences and minimal impact anticipated for this project, it has been determined that this project will not affect this species.

## **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 17, 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 April 30, 2013 in Appendix A). That survey was completed in June 2014 and indicates one investigated site in the APE (Site 31CE802) that is eligible for the National Register of Historic Places under Criterion D because of its potential to provide significant information concerning the prehistoric occupations within the project area. HPO concurred with the findings of the archaeological survey report and the eligibility of site 31CE802 (ER 14-1686) (see form dated August 14, 2014 in Appendix A). Archaeological Site 31CE802 will require data recovery excavations as the project is currently proposed. The data recovery excavations will require drafting of a data recovery plan and completion of a Memorandum Of Agreement (MOA) in consultation with HPO. The excavations will be initiated *after* Right of Way is acquired from all parcels containing portions of the site that will be subjected to the data recovery excavations. The Right of Way Unit will notify the Human Environment Section’s Archaeology Group Supervisor of the date of availability for the parcels containing site 31CE802. Data recovery excavations will require 9 months to complete *after* right of way is acquired. No construction related activities will be performed within the limits of site 31CE802 until all field investigations have been completed and accepted by the HPO.

## **Community Impacts**

No notably adverse community impacts are anticipated with this project and no Environmental Justice populations appear to be affected; 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, and no denial of benefit is expected. 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 bridge 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 65 points out of 160, which requires coordination with the Natural Resources Conservation Service (NRCS) branch of the USDA. The AD-1006 Farmland Conversion Impact Rating form was completed, resulting in an impact total of 155 points, which is less than the NRCS 160 point minimal criteria for impact, thus the proposed project will not be evaluated further for farmland impacts. No 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 Cherokee 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.

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.

Cherokee 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 Highways 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 Cherokee 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 bridge will span the active channel width.

Documentation of this coordination can be found in Appendix B.

## **IX. PUBLIC INVOLVEMENT**

A letter was sent in February 2013 to all property owners affected directly by this project notifying the, 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.

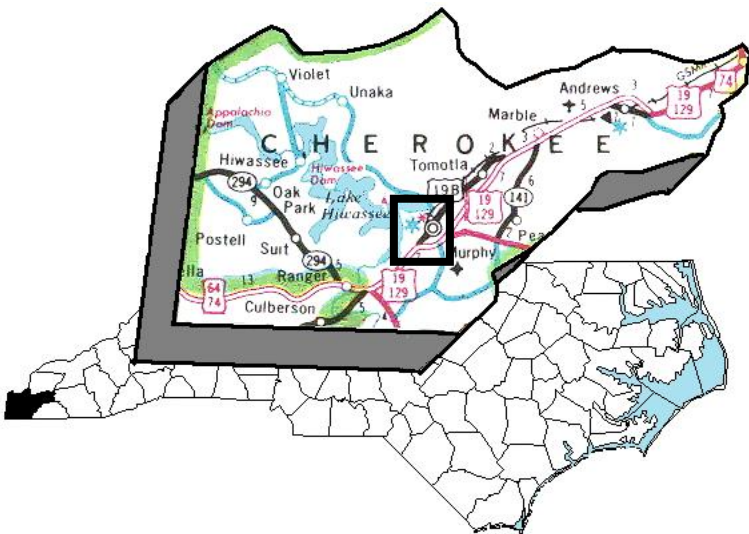
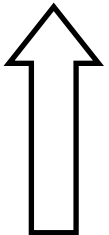
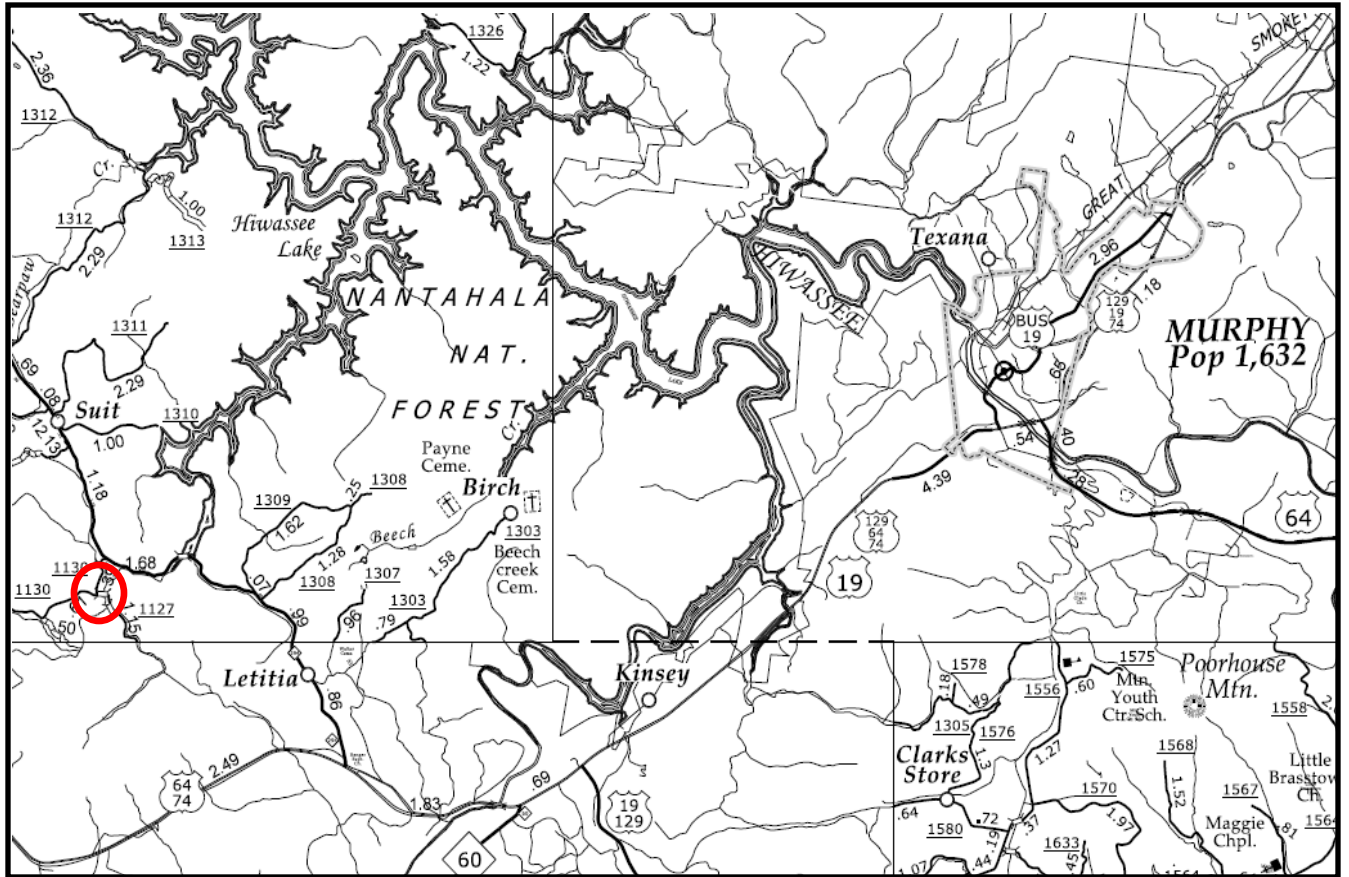


# FIGURES

<b>Figure 1</b>	<b>Project Vicinity</b>
<b>Figure 2</b>	<b>Project Study Area</b>
<b>Figure 3</b>	<b>Preliminary Design</b>







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

**CHEROKEE COUNTY  
REPLACE BRIDGE NO. 148 ON SR 1127  
OVER PERSIMMON CREEK  
B-4462**

Figure 1



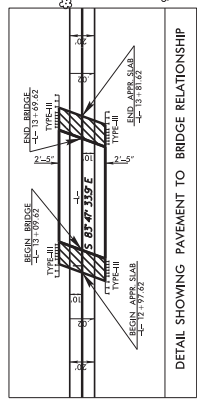
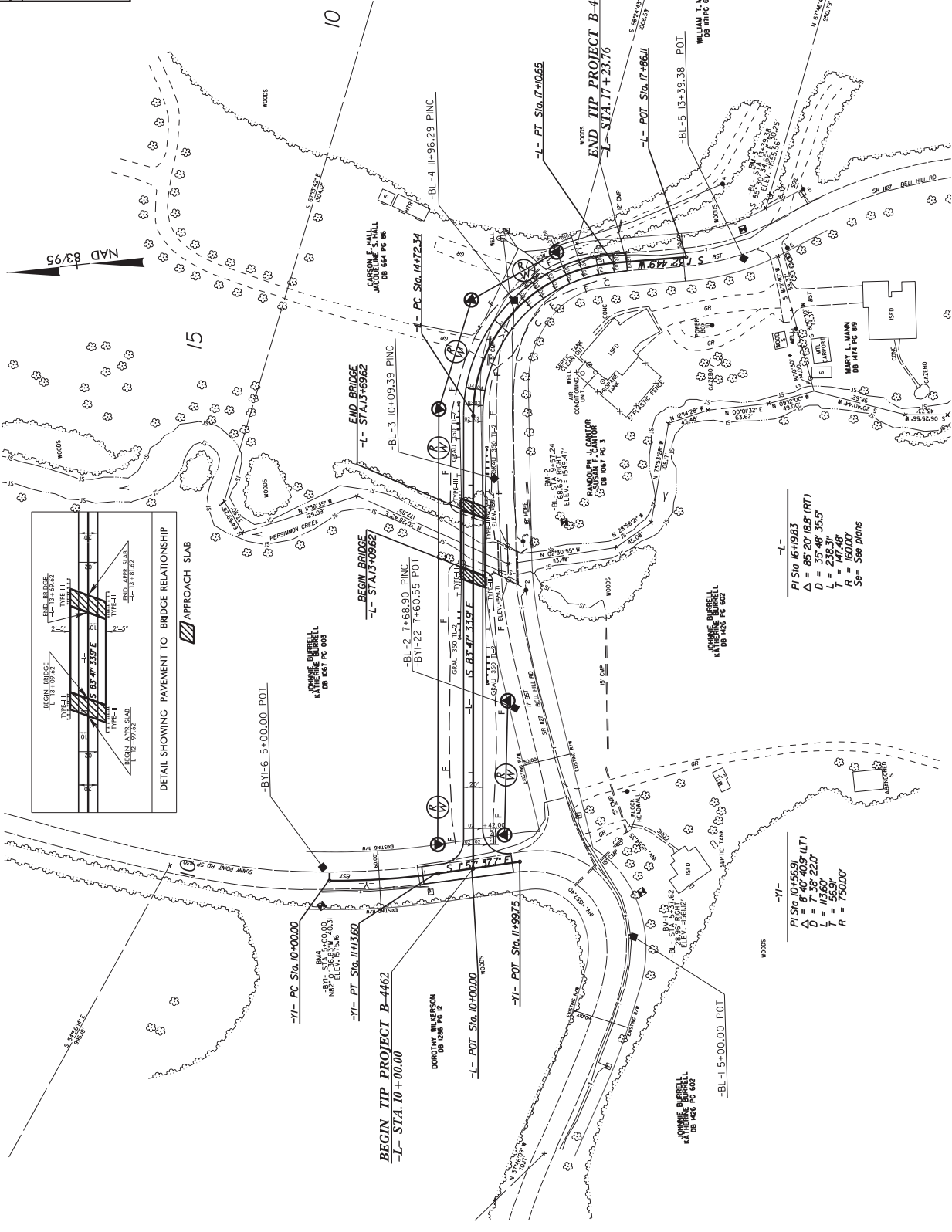


NORTH CAROLINA DEPARTMENT  
OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT AND  
ENVIRONMENTAL ANALYSIS BRANCH

CHEROKEE COUNTY  
REPLACE BRIDGE NO. 148  
ON SR 1127 OVER PERSIMMON CREEK  
B-4462

Figure 2





-I-  
 PI STA 16+19.83  
 Δ = 65.20' (BR/RT)  
 Δ = 35.48' 35.5"  
 L = 239.31'  
 T = 147.48'  
 R = 160.00'  
 S<sub>c</sub> = SEE PLANS

-YI-  
 PI STA 10+56.91  
 Δ = 6' 40' 40.5" (LT)  
 Δ = 7' 38' 22.0"  
 L = 115.60'  
 T = 56.00'  
 R = 750.00'



# APPENDICES

**Appendix A**      **Section 106 Compliance**  
**Appendix B**      **Agency Coordination**





# **APPENDIX A**

## **Section 106 Compliance**



13-04-0041



## 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

<b>Project No:</b>	B-4462	<b>County:</b>	Cherokee
<b>WBS No.:</b>	38376.1.1	<b>Document Type:</b>	PCE or CE
<b>Fed. Aid No:</b>	BRZ-1127(9)	<b>Funding:</b>	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
<b>Federal Permit(s):</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Permit Type(s):</b>	
<b><u>Project Description:</u></b> Replace Bridge No. 148 over Persimmon Creek on SR 1127 (Bell Hill Rd.).			

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

**Description of review activities, results, and conclusions:**

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on April 17, 2013. Based on this review, there are no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects, which is 75' from the centerline each way and 300' from each end of the bridge. Cherokee County GIS/Tax information indicates that there is a one-story frame house west of the bridge built c. 1940 (2980 Bell Hill Road). The house appears to be vernacular in design and unremarkable; it is not National Register eligible. East of the bridge are two houses built in the 2000s. There are no National Register listed or eligible properties within the APE and no survey is required. In addition, Bridge No. 221 is under fifty years of age and not NR eligible. If design plans change, additional review will be required.

**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 and GIS information recording NR, SL, LD, DE, and SS properties for the Cherokee County survey, Cherokee County GIS/Tax Information, and Google Maps are considered valid for the purposes of determining the likelihood of historic resources being present. There are no National Register listed or eligible properties within the APE and no survey is required.

### SUPPORT DOCUMENTATION

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

### FINDING BY NCDOT ARCHITECTURAL HISTORIAN

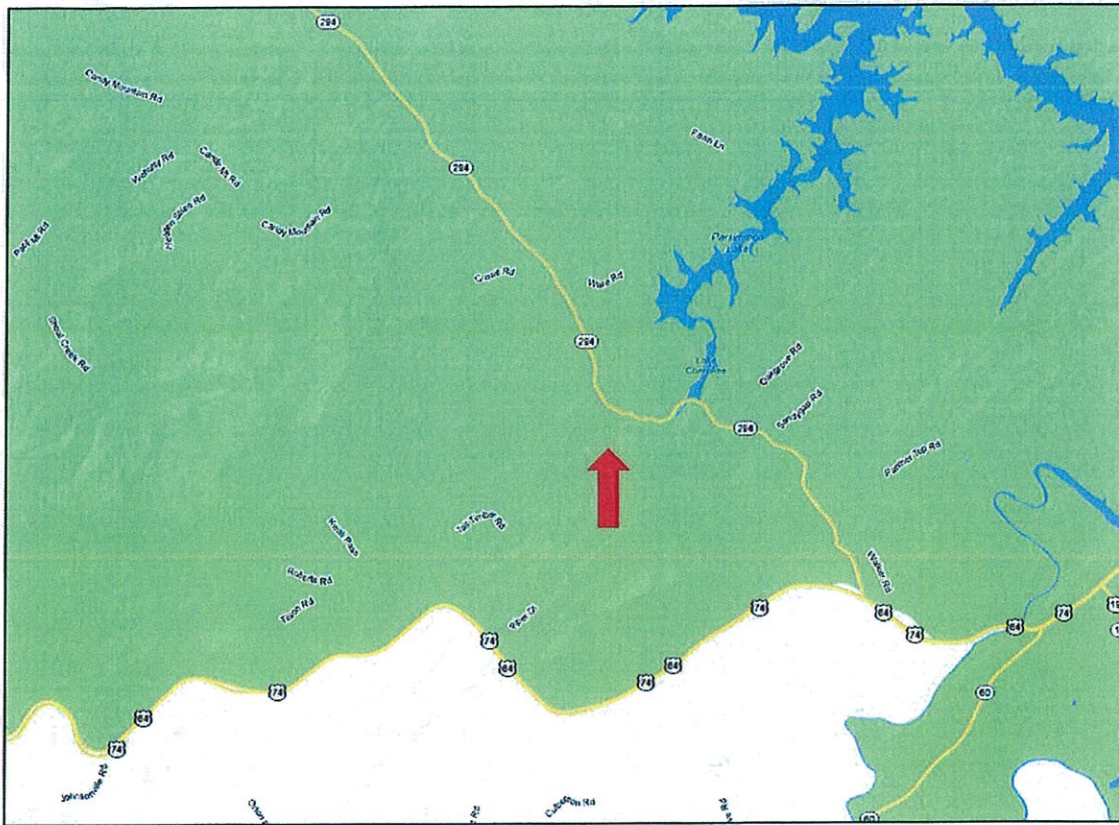
Historic Architecture and Landscapes -- NO SURVEY REQUIRED

*Katherine L. Hubbard*

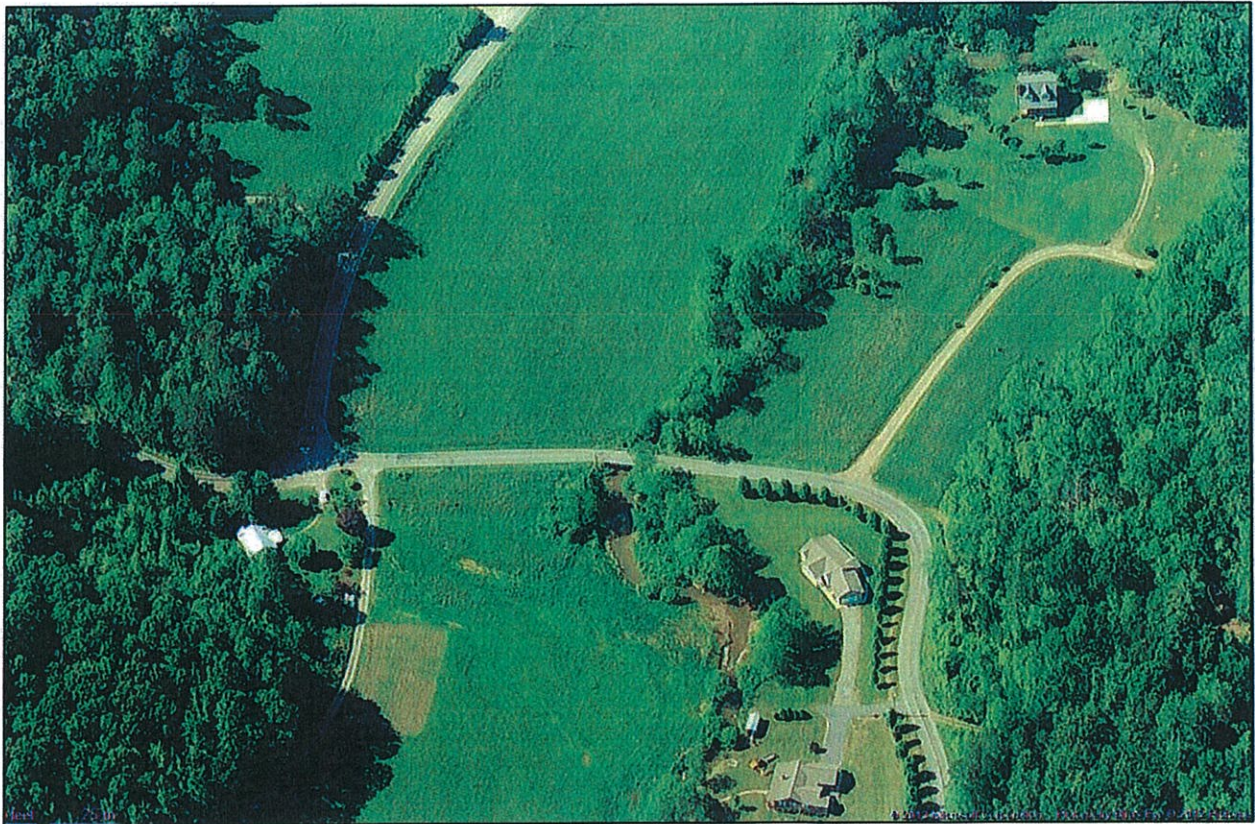
April 17, 2013

NCDOT Architectural Historian

Date



**Project Location.**



**Bing Maps Bird's Eye View, looking north.**



**HPO GIS.**

13-04-0041



## 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-4462** County: **Cherokee**  
 WBS No: **38376.1.2** Document: **PCE or CE**  
 F.A. No: **BRZ-1127(9)** 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. 148 on SR 1127 (Bell Hill Road) over Persimmon Creek in Cherokee County. The archaeological Area of Potential Effects (APE) for the project is defined as a 560-foot (170.69 m) long corridor running 280 feet (85.34 m) east and 280 feet west along Bell Hill Road from center of Bridge No. 148. 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. 148 is southwest of Murphy and north of US 64 in the southwestern portion of Cherokee County, North Carolina. The project area is plotted near the center of the Persimmon Creek 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 have been identified within or adjacent to the APE, but six known sites (31CE684, 31CE685, 31CE733, 31CE734, 31CE786, and 31CE788) have been reported within a mile radius of bridge. In addition, no existing National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), or Surveyed Site (SS) properties are within or adjacent to the archaeological APE 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) were utilized to gage 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. 148 and Bell Hill Road cross Persimmon Creek east to west. The creek flows north into Hiwassee Lake and River. The project area resides along the Persimmon Creek floodplain and a stream terrace at the western end of the APE (Figure 2). The surrounding area is open with residential properties primarily to the east and grassy fields to the west. Ground disturbance appears minimal to moderate from landscaping activities near residential structures and ditches and utilities alongside the road.

According to the USDA soil survey map, the APE encompasses two soil types (Figure 3). The floodplain consists of Rosman loam (RsA). This is a well drained soil with a slope of less than 3 percent. It is subject to occasionally flooding for short periods, but it is typically dry. The stream terrace consists of

**13-04-0041**

Statler loam (StB). This series is also well drained, but has a slope of 1 to 5 percent. Flooding is rare on this soil. Both soil types have the potential of producing archaeological sites due to being dry, fairly level, and close to fresh water. They also have the potential of containing intact cultural deposits due to the presence of a light to moderately disturbed surface layer. As a result, it is recommended that subsurface testing be conducted.

A review of the site files show that very few archaeological investigations have been carried out within a one mile radius of the bridge. This has resulted in the identification of six sites (31CE684, 31CE685, 31CE733, 31CE734, 31CE786, and 31CE788) within this range. Sites 31CE684 and 31CE685 are unknown prehistoric sites situated along ridge tops near Hiwassee Lake on the Junaluska-Brasstown soil complex (JbC). They are both small lithic scatters that have been determined ineligible for the NRHP. Sites 31CE733 and 31CE734 are prehistoric isolated finds discovered during investigations for NC 294 Section A in 2007. Although both are located along the Persimmon Creek floodplain, they are situated on the somewhat poorly drained Cullowhee fine sandy loam (CwA) which typically yields insignificant sites. Being isolated artifact occurrences, both sites not eligible. Lastly, sites 31CE786 and 31CE788 were recorded during investigations for NC 294 Section B in 2012. Both of these sites contain an unknown prehistoric component with a late 19th or 20th century historic component. They are situated on stream terraces along Hickey Branch that are composed of the Thurmont-Dillard soil complex (ThB). Both of these sites are also ineligible for the NRHP. Overall, additional archaeological work is needed throughout the area in order to better understand settlement patterns in this section of the county before any firm conclusions can be drawn on site predictability based upon past investigations. However, investigations over a wider section of the region show that Rosman and Statler soils have a high potential of yielding sites as compared to the previously investigated Junaluska-Brasstown, Cullowhee, and Thurmont-Dillard soil series.

Finally, a historic map review was conducted. Most early maps prior to the 20th century provide few details concerning the project area. One of the earliest in which an approximate location can be determined is the 1837–1838 U.S. Army survey map (Figure 4). This map was produced under the guidance of Major W.G. Williams in preparation for the removal of the Cherokee Indians. The map illustrates Persimmon Creek and a nearby road/trail to its west, but no depictions of a crossing or home site are shown in vicinity of the current bridge location. Much later maps from the 20th century such as the 1914 USGS Murphy topographic map and the 1921 soil survey map for Cherokee County continue to show a road to the west of Persimmon Creek, but no other features are in close proximity to the project area (Figures 5 and 6). By the late 1920s and 1930s, a crossing over the creek is plotted on highways maps for the county. However, no structures are shown in the area. Although this review of historic maps suggests that any potential and significant deposits associated with former historic structures are unlikely be encountered within the APE, it does not rule out the possibility of an undocumented Cherokee farmstead being situated near the project area. Few maps exist other than the 1837–1838 U.S. Army survey map that show their locations. For example, one such undocumented early 19th century farmstead (31CE781) was found recently during a field survey for a proposed DOT waste site approximately 5 miles northwest of the current project area. With close proximity to a known 19th century access road/trail and a major drainage, it is possible that unrecorded Cherokee farmsteads were once located along Persimmon Creek.

A preliminary background investigation suggests that additional work is needed within the proposed project area. The landforms and Rosman and Statler soils are typically well suited for early settlement activities since they are dry, fairly level, and close to fresh water. In addition, the presence of a light to moderately disturbed surface layer suggests the possibility of intact buried deposits. Also, undocumented Cherokee farmsteads are situated in this region and could be present. Additional work in the form of a reconnaissance and field survey is recommended in order to record possible sites that might be impacted by the proposed replacement of Bridge No. 148 in Cherokee County.

**13-04-0041**

**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**

  
C. Damon Jones  
NCDOT ARCHAEOLOGIST II

4/30/13

Date

7/31/13

Proposed fieldwork completion date



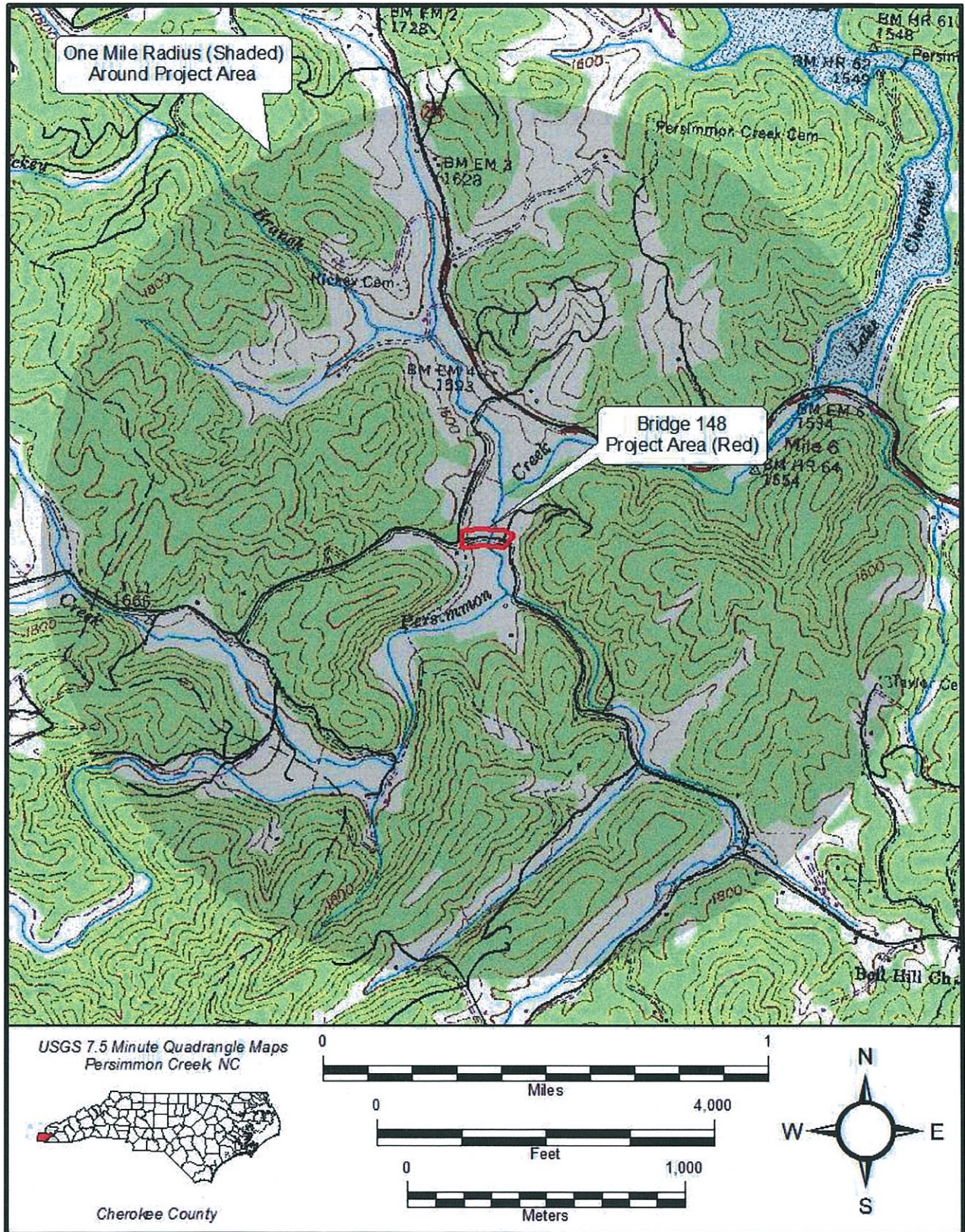


Figure 1. Topographic Setting of the Project Area, Persimmon Creek (1957; photorevised 1978), NC, USGS 7.5' Topographic Quadrangle.

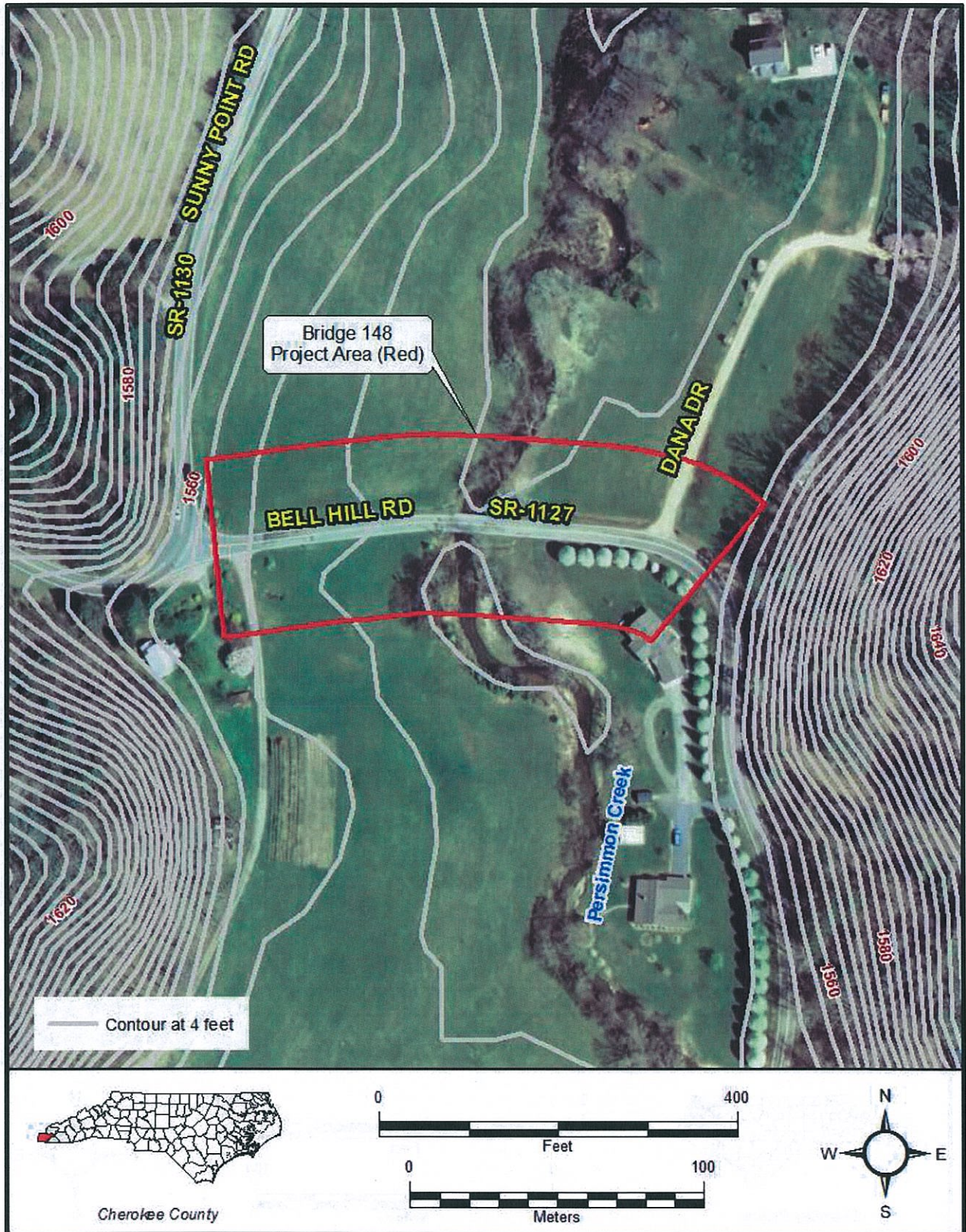


Figure 2. Aerial photograph of the APE showing development and landforms within and near the project area.

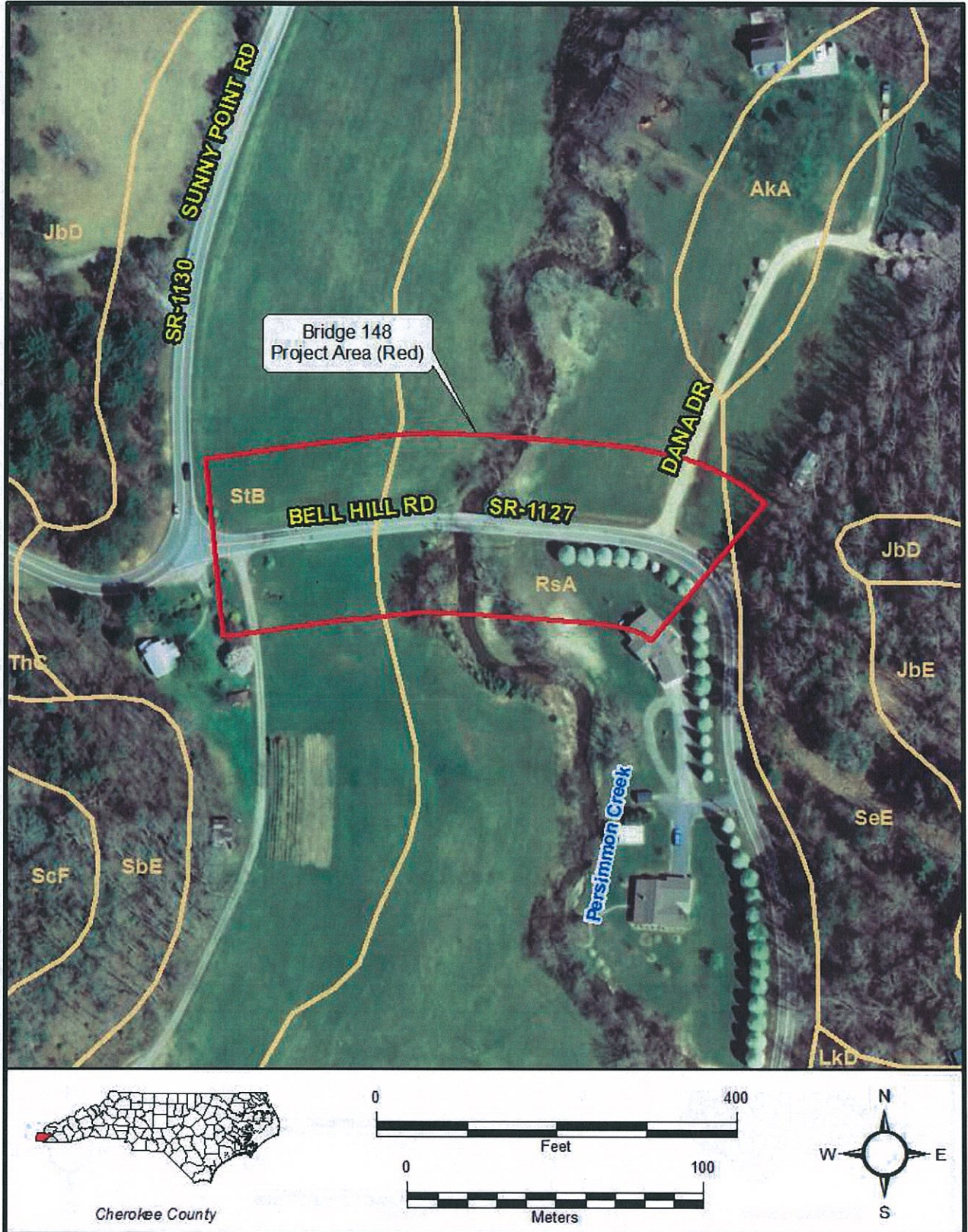


Figure 3. Aerial photograph of the APE showing development and soils within and near the project area.

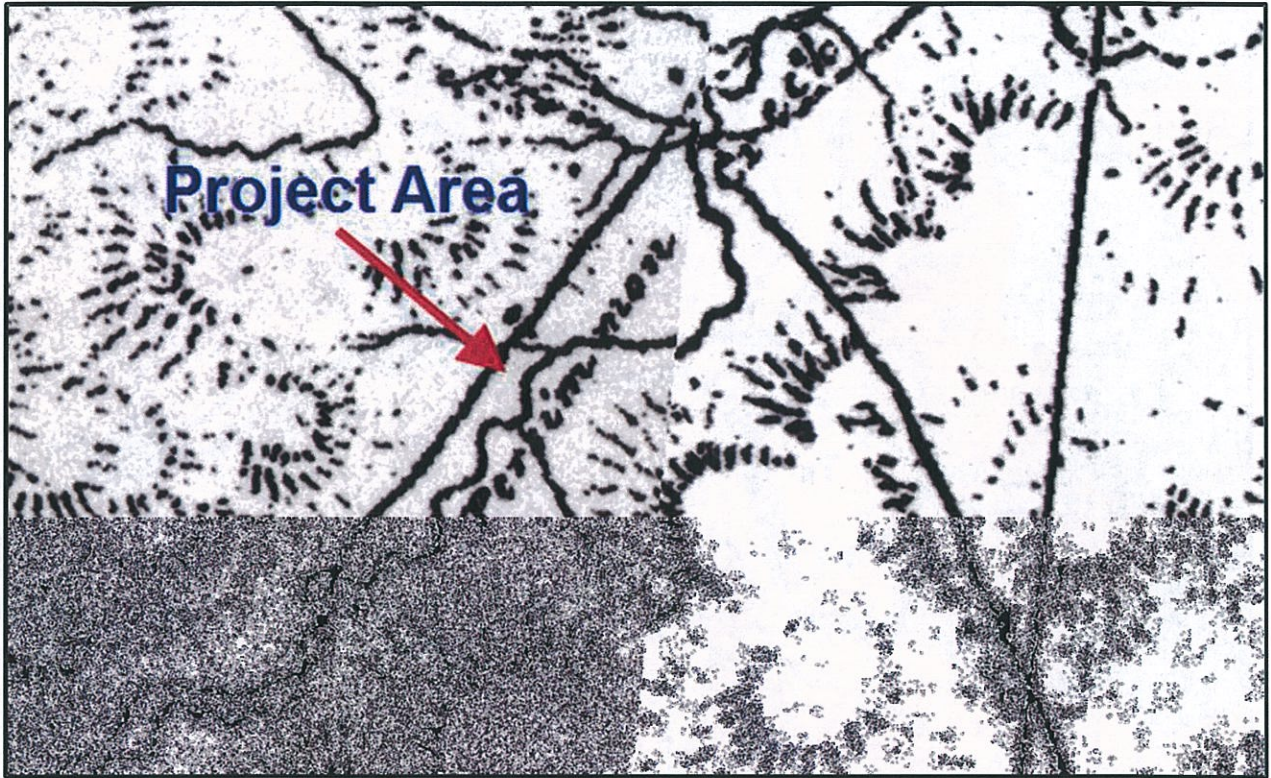


Figure 4. The 1837–1838 U.S. Army survey map showing the approximate project area location.

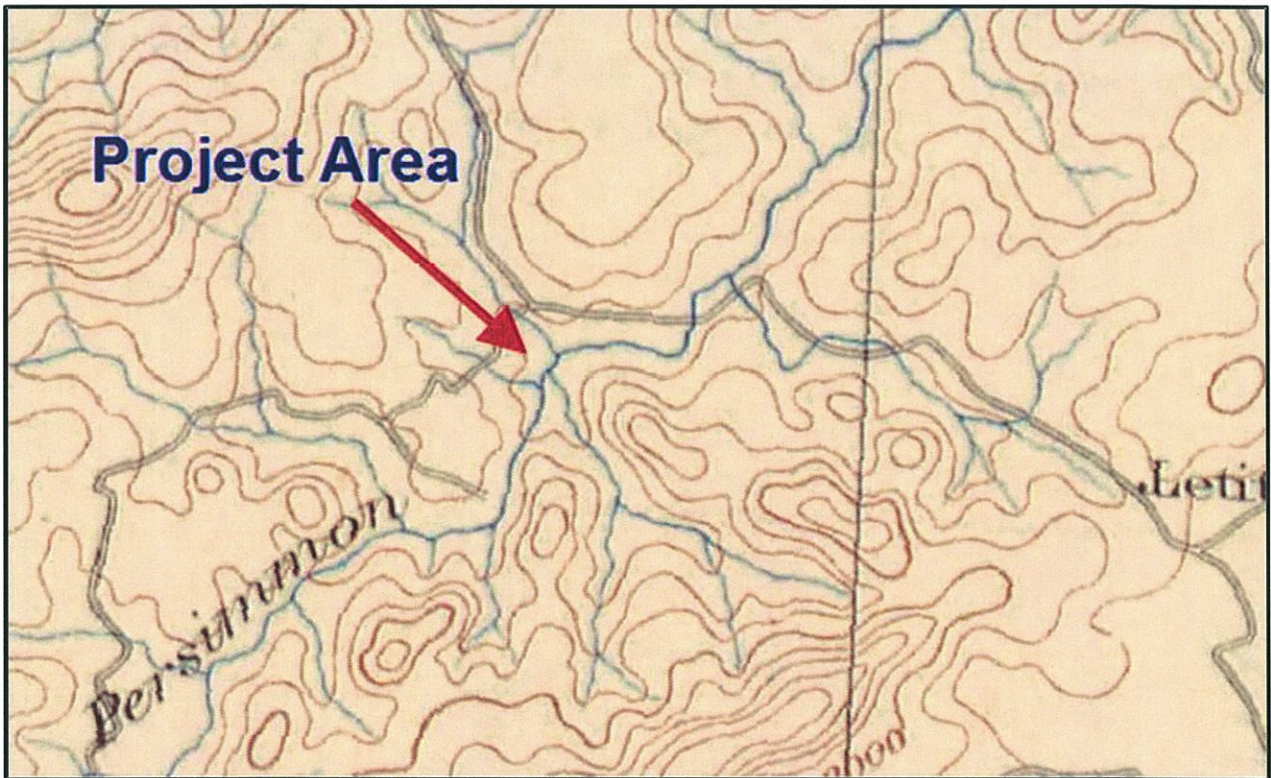


Figure 5. The 1914 USGS Murphy topographic map showing the location of the project area.

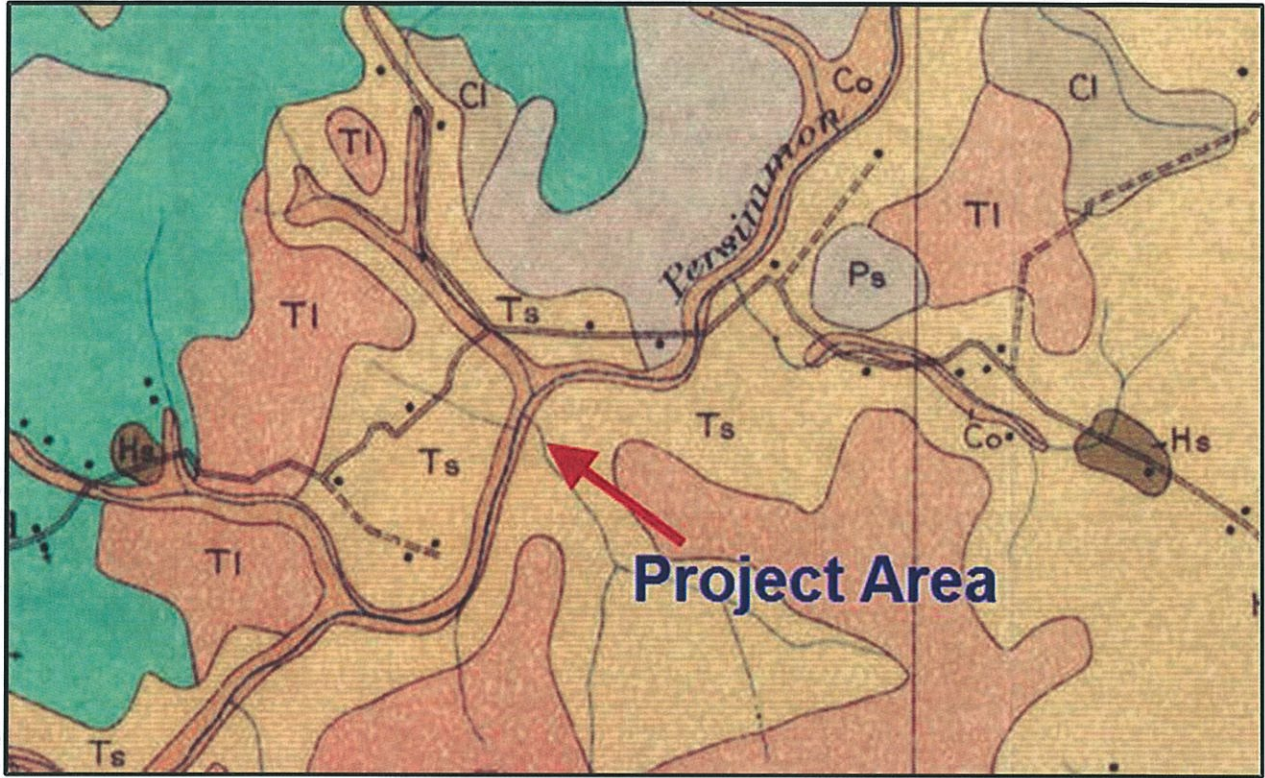


Figure 6. The 1921 Soil Survey map for Cherokee County showing the location of the project area.



**North Carolina Department of Cultural Resources**  
**State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

August 14, 2014

MEMORANDUM

TO: Matt Wilkerson  
Office of Human Environment  
NCDOT Division of Highways

FROM: Ramona M. Bartos

*Re: for Ramona M. Bartos*

SUBJECT: Bridge 148 on SR 1127 over Persimmon Creek, B-4462, Cherokee County, ER 14-1686

Thank you for your letter of July 22, 2014, transmitting the archaeological survey report by NCDOT staff archaeologist C. Damon Jones for the above project. The report meets our guidelines and those of the Secretary of the Interior.

During the course of the survey, one prehistoric archaeological site, 31CE802, was located within the project area. For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that **31CE802 is eligible** for listing in the National Register of Historic Places under Criterion D. This site has substantial artifact density and subsurface integrity, and the potential to yield important information concerning the Middle Woodland and other periods of prehistory in far western North Carolina.

Mr. Jones has recommended that data recovery excavation be undertaken at 31CE802 if this site cannot be avoided by construction activities. We concur with this recommendation, and look forward to receipt of the data recovery plan.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

# **APPENDIX B**

## **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 provide 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 provide 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



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

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ANTHONY J. TATA  
SECRETARY

MEMO TO: Joseph Qubain  
Project Development – Bridge Section

FROM: Allen Hodges  
Division of Bicycle and Pedestrian Transportation

DATE: March 19, 2013

SUBJECT: Scoping Review for Bridge Replacement Project – **B-4462**  
Replacement of Bridge No. 148 over Persimmon Creek on SR 1127  
(Bell Hill Rd.) in Cherokee County

In response to your request for information on **B-4462** in Murphy, the Division of Bicycle and Pedestrian Transportation has the following comments: Bridge # 148 crosses over Persimmon Creek on SR 1127 (Bell Hill Rd.) in Cherokee County.

Bell Hill Rd. is a rural, two-lane road that probably has very little pedestrian or bicycle traffic.

Because of this our office would recommend maintaining the existing offsets on the bridge.

The Division of Bicycle and Pedestrian Transportation appreciates the opportunity to comment. Please contact me if there is a need for additional information.

cc: Lauren Blackburn, AICP, Director, Division of Bicycle and Pedestrian Transportation

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