

Rutherford County
Bridge No. 76 on SR 1576 (East Church Street)
over Puzzle Creek
Federal Aid Project No. BRSTP-1576(2)
W.B.S. No. 39919.1.2
S.T.I.P. No. B-4986

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

08.29.2016

DATE

Stacy Oberhausen

Stacy Oberhausen, PE
Project Development & Environmental Analysis Unit

9/2/2016

DATE

DocuSigned by:

Ronald G. Lucas

7707B71B714A4F1...

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

**Rutherford County
Bridge No. 76 on SR 1576 (East Church Street)
over Puzzle Creek
Federal Aid Project No. BRSTP-1576(2)
W.B.S. No. 39919.1.2
S.T.I.P. No. B-4986**

CATEGORICAL EXCLUSION

Documentation Prepared by:
Simpson Engineers & Associates

8-24-16

DATE

Robin Pugh

Robin Pugh, AICP
Consultant Project Manager

8-24-16

DATE

David B. Simpson, Jr.

David B. Simpson, Jr., PE
Consultant Project Engineer



Documentation Prepared for:
North Carolina Department of Transportation

8-29-16

DATE

Tracy Walter

Tracy Walter, PE
Project Development Engineer

PROJECT COMMITMENTS

Rutherford County
Bridge No. 76 on SR 1576 (East Church Street)
Over Puzzle Creek
Federal Aid Project No. BRSTP-1576(2)
W.B.S. No. 39919.1.2
STIP Project No. B-4986

Hydraulic Unit

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine the 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.

Division Construction, Natural Environment Section, NCDOT-Project Management

Construction authorization will not be requested until Endangered Species Act (ESA) compliance is satisfied for the Indiana bat and the Northern Long-eared bat.

Rutherford County
Bridge No. 76 on SR 1576 (East Church Street)
over Puzzle Creek
Federal Aid Project No. BRSTP-1576(2)
W.B.S. No. 39919.1.2
S.T.I.P. No. B-4986

INTRODUCTION: Bridge No. 76 is included in the latest approved North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP). The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion”.

I. PURPOSE AND NEED STATEMENT

NCDOT Bridge Management Unit records indicate Bridge No. 76 has a sufficiency rating of 32.21 out of a possible 100 for a new structure. The bridge was built in 1967 and is considered structurally deficient due to a superstructure condition appraisal of 4 out of 9 and a substructure condition appraisal of 4 out of 9 according to Federal Highway Administration (FHWA) standards. The bridge is also considered to be functionally obsolete due to a structural evaluation of 3 out of 9. The structure has had temporary repairs to keep the bridge open. The posted weight limit on the bridge is down to 19 tons for single vehicles and 25 tons for truck-tractor semi-trailers (TTST).

The substructure of Bridge No. 76 consists of prestressed precast concrete caps with timber piles which are 49 years old. Portions of some timber piles have been replaced and encased in concrete. Timber components have a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few elements are damaged or prematurely deteriorated. However, past a certain degree of deterioration, most timber elements become impractical to maintain and upon eligibility are programmed for replacement. Timber components of Bridge No. 76 are experiencing an increasing degree of deterioration that can no longer be addressed by reasonable maintenance activities. The bridge is approaching the end of its useful life and is in need of replacement.

II. EXISTING CONDITIONS

The project is located along SR 1576 (East Church Street) at the southeastern corner of the Town of Bostic in Rutherford County. (Figure 2) The surrounding area is primarily rural with single-family residences and pasture, interspersed with commercial and institutional land uses. SR 1576 is a major road between East Rutherford Middle School (located approximately 0.4 miles northwest of Bridge No. 76) and East Rutherford High School (located approximately 1.3 miles southeast of Bridge No. 76).

SR 1576 is classified as a rural local road in the Statewide Functional Classification System and it is not a National Highway System Route.

In the vicinity of the bridge, SR 1576 has a 22-foot pavement width with grass shoulders. The roadway on the bridge is in a horizontal curve; however, the existing bridge is on a tangent. The existing roadway alignment includes a T-intersection with SR 1575 (Kiser Road) southeast of the bridge. The roadway is situated approximately 13 feet above the creek bed.

Bridge No. 76 is a four-span structure that consists of precast, prestressed concrete channels with an asphalt-wearing surface. The end bents and interior bents consist of reinforced concrete caps on timber piles. The overall length of the structure is 121 feet. The clear roadway width is 29.6 feet.

There are no utilities attached to the existing structure, but overhead power lines and a fiber optic line cross Puzzle Creek on the southwest side of the bridge, then cross SR 1576 south of the bridge at the intersection with SR 1575 (Kiser Road). Underground telephone cables along the northeast side of SR 1576 go aerial to cross Puzzle Creek. A Town of Bostic water line is along the northeast side of SR 1576 and ends at a hydrant approximately 170 feet from the bridge.

The 2015 traffic volume of 1,400 vehicles per day (VPD) is expected to increase to 1,800 VPD by the year 2040. The projected volume includes one percent TTST and five percent dual-tired vehicles (DT). The posted speed limit is 40 miles per hour in the project area. Eight school buses cross the bridge daily on their morning and afternoon routes, making a total of 32 trips.

There were five accidents reported in the vicinity of Bridge No. 76 during a recent five-year period (February 2010 through January 2015). It does not appear that these accidents were associated with the alignment or geometry of the bridge or its approach roadway.

This section of SR 1576 is not a part of a designated bicycle route nor is it listed in the STIP as a bicycle project. However, the current bridge includes offsets of approximately 4 feet on each side of the bridge. The NCDOT Division of Bicycle and Pedestrian Transportation supports maintaining this moderate 4-foot offset on both sides of the bridge.

III. ALTERNATIVES

A. Preferred Alternative

Bridge No. 76 will be replaced on new alignment to the southwest side while traffic remains on the existing structure during construction (Figure 2). The total project length of the new alignment will be 1,200 feet.

The permanent replacement structure will be a bridge approximately 140 feet long providing a minimum 30 feet 10 inch (30' 10") clear deck width. The bridge will include two 11-foot lanes and 4 foot 5 inch-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 realigned approach roadway will extend approximately 650 feet from the north end of the new bridge and 400 feet from the south end of the new bridge. The approaches will include two 11-foot lanes with four-foot shoulders (two feet paved, two feet turf) on each side (7-foot shoulders where guardrail is included). The roadway will be designed as a rural local road using Sub Regional Tier Guidelines with a 45 mile per hour design speed.

Although the cost and environmental impacts of a new alignment are higher than a replace in-place structure with off-site detour, concerns regarding an off-site detour are high and are detailed in Section III. B.

NCDOT Division 13 concurs that this is 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 1576.

“Rehabilitation” of the old bridge is not practical due to its age and deteriorated condition. The bridge was constructed in 1967 and the timber and concrete materials within the bridge are reaching the end of their useful life. Portions of some piles have been replaced and encased in concrete. Additional temporary repairs were made to keep the bridge open. Rehabilitation would require replacing the bridge components which would constitute effectively replacing the bridge.

Staged Construction is not feasible for this bridge because the 31-foot deck width and beam configuration will not support removal of a portion and maintenance of traffic on the remaining portion.

Replacing the bridge in place with off-site detour was considered. The off-site detour would include SR 1006 (Bostic Sunshine Hwy), US 74 Business, and SR 1595 (Old US 74). NCDOT Guidelines for Evaluation of Off-site Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the off-site detour. The detour for the average road user would result in at least 3 minutes additional travel time (1.9 miles additional travel). However, delays at unsignalized intersections would increase travel time considerably, especially while school is in session. Up to a 9-month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone, the detour is acceptable. However, Rutherford County officials expressed concern about the detour. SR 1576 (East Church Street) is the major road between East Rutherford Middle School in Bostic and East Rutherford High School and an off-site detour would substantially impact travel between the two schools. School buses make 32 trips across Bridge No. 76 each day.

The Rutherford County Schools Transportation Manager noted that closing the bridge would have a high impact on school transportation services due to delays at intersections.

NCDOT Division 13 expressed concerns for substantial delays, especially for school buses making left turns at the unsignalized intersection of SR 1006 (Bostic Sunshine Highway) and US 74, based on experience with another project in the area. In that case, there were substantial delays, especially for school buses making left turns at SR 1006 (Bostic Sunshine Hwy) and US 74. Police officers were needed for temporary traffic control.

Bostic officials also noted that closing the bridge would cause traffic congestion on SR 1006 (Bostic Sunshine Highway) and emergency response times in the Kiser Road area would be negatively impacted. Response times were estimated to increase by up to ten minutes.

NCDOT concurs with these concerns and believes that an off-site detour is not justifiable.

IV. ESTIMATED COSTS

The estimated costs, based on 2016 prices, are as follows:

Table 1: Estimated Costs

Item	Alternative 1 Preferred
Structure	\$ 528,000
Roadway Approaches	425,000
Detour Structure and Approaches	56,000
Structure Removal	59,000
Misc. & Mob.	149,000
Eng. & Contingencies	183,000
Total Construction Cost	\$ 1,400,000
Right-of-way Costs	153,000
Utility Costs	55,000
Total Project Cost	\$1,608,000

V. NATURAL ENVIRONMENT

A. Physical Characteristics

The study area lies in the piedmont physiographic region of North Carolina. Topography in the project vicinity is moderately steep, sloping down to narrow stream corridors. Land use in the project vicinity consists of agriculture and forestry land, interspersed with residential development along roadways and natural forestland along stream corridors.

1. Water Resources

Water resources in the study area are part of the Broad/Santee River basin [US Geological Survey (USGS) Hydrologic Unit 03050105]. Four streams were identified in the study area

Puzzle Creek has been designated as WS-V from its source to its confluence with the Second Broad River. No waters classified as High Quality Waters, Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), or Outstanding Resource Waters occur in the study area or within one mile of the study area. The North Carolina 2014 Final 303(d) list of impaired waters identifies no impaired waters in the study area or within 1.0 mile downstream of the study area.

2. Biotic Resources

Four terrestrial communities were identified in the study area: maintained/disturbed, piedmont headwater stream forest (typic subtype), mesic mixed hardwood forest (piedmont subtype), and dry-mesic oak-hickory forest (piedmont subtype).

B. Jurisdictional Topics

1. Surface Waters and Wetlands

Four jurisdictional streams were identified in the study area. The jurisdictional streams in the study area have been designated as warm water streams for the purposes of stream mitigation.

Four jurisdictional wetlands were identified within the study area. All wetlands in the study area are within the Broad/Santee River basin.

2. Permits

A Nationwide Permit (NWP) 23 will likely be applicable. A NWP No. 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The US Army Corps of Engineers (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 from the NC Department of Environmental Quality (NCDEQ)-Division of Water Resources (DWR) will be needed. A Water Quality Certification 3891 is required for NWP 23 projects. Other required 401 certifications may include a Water Quality Certification 3893 for temporary construction access and dewatering.

C. Federally Protected Species

1. Federally Threatened and Endangered Species

As of July 24, 2015, the US Fish and Wildlife Service (USFWS) lists six federally protected species for Rutherford County.

Federally protected species listed for Rutherford County

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Gymnoderma lineare</i>	Rock gnome lichen	E	No	No Effect
<i>Hexastylis naniflora</i>	Dwarf-flowered heartleaf	T	Yes	No Effect
<i>Isotria medeoloides</i>	Small whorled pogonia	T	Yes	No Effect
<i>Myotis sodalis</i>	Indiana bat	E	Yes	Unresolved
<i>Myotis septentrionalis</i>	Northern long-eared bat	T	Unknown	Unresolved
<i>Sisyrinchium dichotomum</i>	White irisette	E	Yes	No Effect

E – Endangered, T – Threatened

Dwarf-flowered heartleaf

Biological Conclusion: No Effect

Potentially suitable habitat for this species exists within forested portions of the study area. Two detailed surveys for this species were performed by Ecological Engineering personnel on March 3, 2015 and May 19, 2015. Survey methods included linear pedestrian transects by two staff in tandem, guided by handheld GPS throughout potentially suitable habitats. Few specimens of a related taxon, *H. arifolia*, were observed. No specimens of dwarf-flowered heartleaf were observed within the study area. In addition, a review of the NCNHP database on March 24, 2015 revealed no known occurrences of this species within 1.0 mile of the project study area. Project implementation will not affect this species.

Small whorled pogonia

Biological Conclusion: No Effect

Potentially suitable habitat for this species exists within forested portions of the study area. A detailed survey for this species was performed by Ecological Engineering personnel on May 19, 2015. Survey methods included linear pedestrian transects by two staff in tandem, guided by handheld GPS throughout potentially suitable habitats. No specimens of small whorled pogonia were observed within the study area. A review of the NCNHP database on March 24, 2015 revealed no known occurrences of this species within 1.0 mile of the project study area. Project implementation will not affect this species.

Indiana bat

Biological Conclusion: Unresolved

According to the NCDOT publication Bat Survey Protocols (NCDOT 2007), Indiana bats have been documented in Rutherford County only in winter months, during which the species hibernates primarily in caves and mines, but may also roost under bridges and in abandoned buildings.

Surveys for the Indiana bat in the project study area will be conducted by the NCDOT-Biological Surveys Group within two years of project let. Construction authorization will not be requested until Endangered Species Act (ESA) compliance is satisfied for this species.

Northern long-eared bat

Biological Conclusion: Unresolved

It has not been determined if habitat for the Northern long-eared bat (NLEB) is present within the project study area. A review of the NCNHP database on March 24, 2015 revealed no known occurrences of this species within 10 miles of the project study area.

Surveys for the NLEB in the project study area will be conducted by the NCDOT-Biological Surveys Group within two years of project let. Construction authorization will not be requested until Endangered Species Act (ESA) compliance is satisfied for this species.

White irisette

Biological Conclusion: No Effect

Marginally suitable habitat exists within the study area in the form of forested areas. The elevation of the study area (824-868 feet above sea level) is lower than elevations at which the species is known to occur (1,312 - 3,280 feet). Soil types within the study area are of similar pH to soils on which the species is known to grow; however, no study area soils are specifically listed as being associated with this species. A detailed survey for this species was performed by Ecological Engineering personnel on May 19, 2015. Survey methods included linear pedestrian transects by two staff in tandem, guided by handheld GPS throughout potentially suitable habitats. No specimens of white irisette were observed within the study area. A review of NHP the NCNHP database on March 24, 2015 revealed no known occurrences of this species within 1 mile of the project study area. Project implementation will not affect this species.

2. Bald 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. Due to the lack of habitat, known occurrences, and minimal impact anticipated for this project, it has been determined that this project will not affect this species.

VI. HUMAN ENVIRONMENT

A. 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.

1. Historic Architecture

NCDOT – Human Environment Unit, under the provisions of a Programmatic Agreement with FHWA, NCDOT, Historic Preservation Office (HPO), Office of State Administration (OSA) and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no properties listed or eligible for listing in the National Register of Historic Places are present within the project's area of potential effects (APE). (See form dated January 15, 2010 in the Appendix).

2. Archaeology

NCDOT – Human Environment Unit, 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 there are no National Register listed archaeological sites within the project's APE. (See form dated August 26, 2014 in the Appendix).

B. Community Impacts

Four properties will be impacted by right of way acquisition, including two properties with single-family homes. A total of approximately 1.5 acres of right of way is needed. No relocatees are expected with implementation of the proposed alternative. Access to the two homes may be temporarily impacted during construction.

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. No change in land use is expected to result from the construction of the project.

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. There are no soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

C. Noise & Air Quality

The project is located in Rutherford County, which has been determined to comply with the National 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.

While the proposed bridge replacement is on new alignment approximately 40 feet southwest of the existing bridge, it does not include a substantial horizontal or vertical alteration from the existing alignment. No traffic noise analysis is needed to meet the requirement of 23 CFR 772.

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 NCDOT 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 underground storage tank sites, hazardous waste sites, landfills, or other geoenvironmental concerns within the study area.

Rutherford County is a participant in the National Flood Insurance Program. 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 FHWA has determined that a US Coast Guard Permit is not required for this project.

VIII. COORDINATION & AGENCY COMMENTS

NCDOT sought input from the following agencies as part of the project development for B-4986: US Army Corps of Engineers, USFWS, FHWA, US Environmental Protection Agency, Eastern Band of Cherokee Indians, NC Department of Natural and Cultural Resources-Division of Parks and Recreation, NCDEQ-Division of Water Resources,

Rutherford County, Rutherford County EMS, Rutherford County Schools, and the Town of Bostic.

The **NC Wildlife Resources Commission** in a standardized letter commented “state SR crayfish occur in Puzzle Creek and the Santee chub (*Cyprinella zanema*), also state SR, occur a ways downstream in the Second Broad River. No special precautions are indicated at this time. Standard recommendations should apply.” The NC Wildlife Resources Commission also commented that they prefer any replacement structure to be a spanning structure.

Response: NCDOT will be replacing the existing bridge with a new bridge.

Local officials from Rutherford County, Rutherford County Schools, and the Bostic Volunteer Fire Department expressed concerns about the impact of an off-site detour route.

IX. PUBLIC INVOLVEMENT

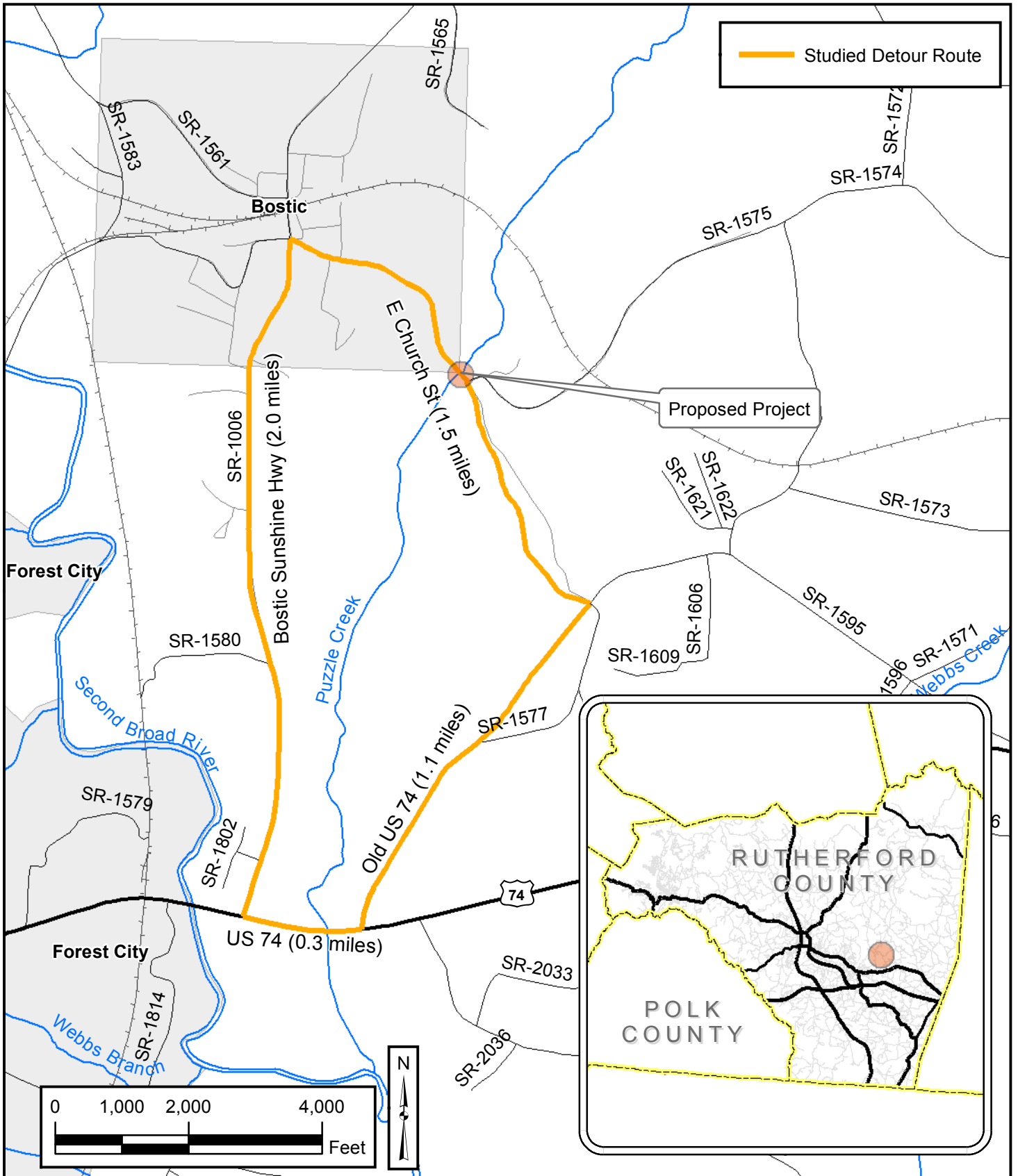
A letter dated February 10, 2015 was sent by the Project Development and Environmental Analysis (PDEA) Unit to all property owners affected directly by this project. Property owners were invited to comment.

One property owner, Ms. Sophia Sneed, contacted the PDEA Project Development Engineer by email regarding erosion along the banks of a stream on her property. She asked if the erosion problem could be addressed by the project. The roadway alignment is proposed to be shifted away from her property; therefore, the project would not impact the stream or address the erosion problem. Ms. Sneed also asked about the project schedule. The current schedule was provided. No additional comments have been received to date.

There is not 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.



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

VICINITY MAP
BRIDGE REPLACEMENT
BRIDGE NO 76 OVER
PUZZLE CREEK
 RUTHERFORD COUNTY
 TIP PROJECT B-4986

County:	RUTHERFORD	
Div:	13	TIP# B-4986
WBS:	39919.1.2	
Date:	FEB 2015	

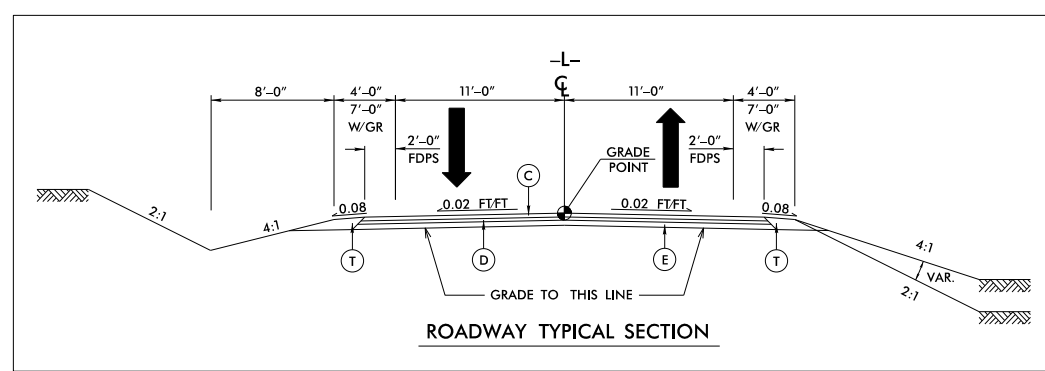
Figure
1

RUTHERFORD COUNTY

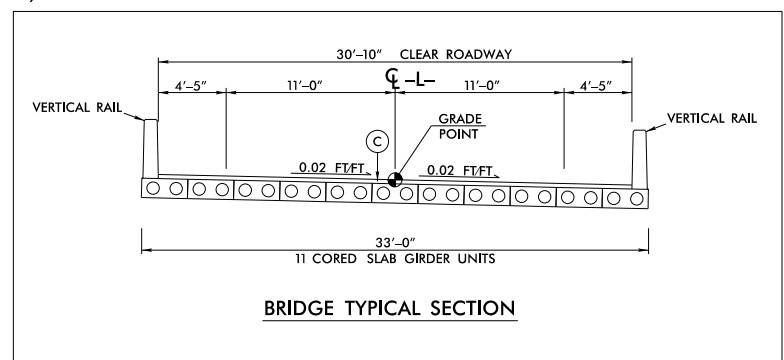
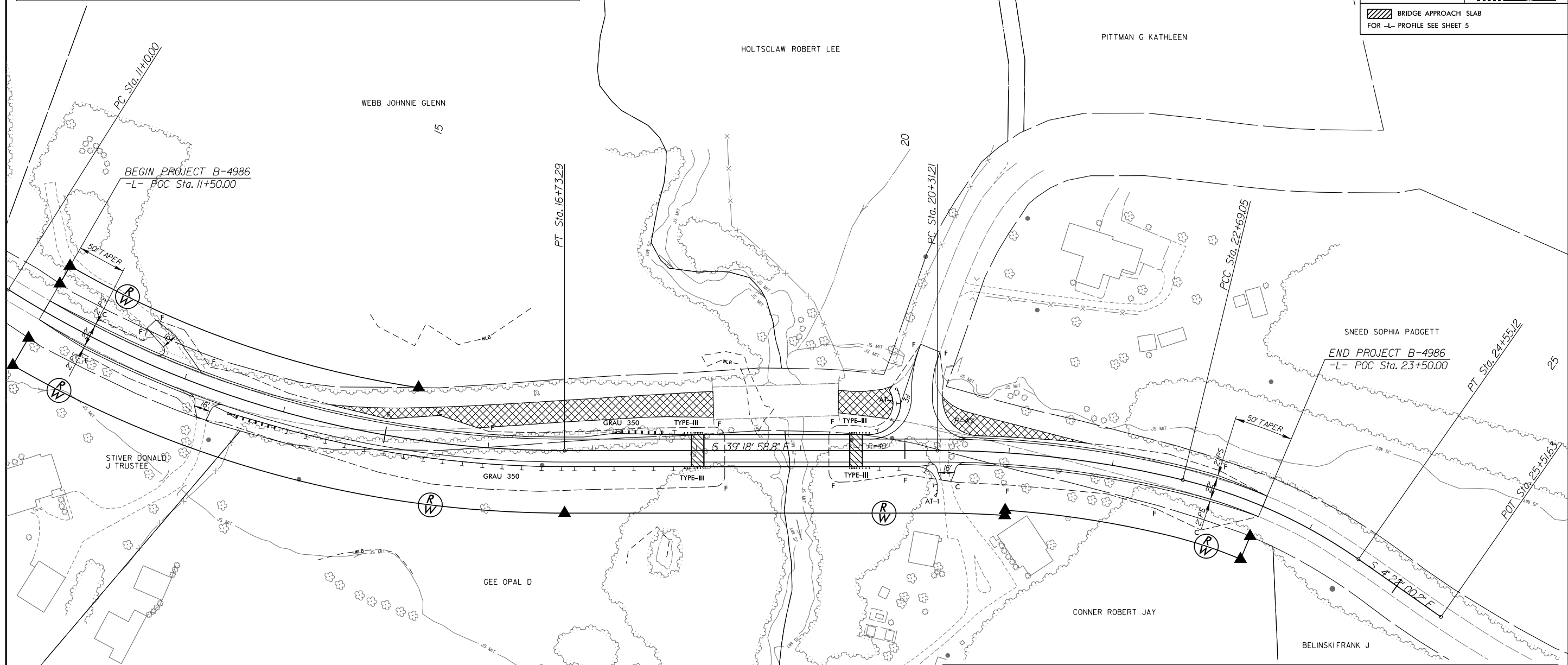
B-4986

REPLACE ON NEW ALIGNMENT MAINTAIN TRAFFIC ON EXISTING

Figure 2



PROJECT REFERENCE B-4986 - RUTHERFORD 76	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
MOTT MACDONALD 18 E, LLC LICENSE NO. F-0669	
Prepared in the Office of:	M MOTT MACDONALD PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com
HORIZONTAL SCALE 25' 0 25' 50'	
BRIDGE APPROACH SLAB FOR -L- PROFILE SEE SHEET 5	



<i>-L-</i> PI Sta 13+99.34 $\Delta = 32' 16'' 26.6''$ (LT) $D = 5' 43'' 46.5''$ $L = 563.29'$ $T = 289.34'$ $R = 1,000.00'$	PI Sta 21+50.69 $\Delta = 13' 37'' 37.0''$ (RT) $D = 5' 43'' 46.5''$ $L = 237.83'$ $T = 119.48'$ $R = 1,000.00'$	PI Sta 23+63.77 $\Delta = 21' 19'' 21.6''$ (RT) $D = 11' 27'' 33.0''$ $L = 186.08'$ $T = 94.13'$ $R = 500.00'$
-----------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------

ANTICIPATED DESIGN DATA			
DESIGN SPEED	= 45 MPH	DESIGN EXCEPTION	= None
ADT (2015)	= 1400	DESIGN STANDARDS	= SUB REGIONAL TIER
ADT (2040)	= 1800	MAX GRADE	= 12%
DHV	= 25%	K SAG	= 79
D	= 55%	K CREST	= 61
DUAL	= 5%	SE MAX	= 0.06
TTST	= 1%	CLASSIFICATION	= LOCAL RURAL
MIN. RADIUS	= 643'	TERRAIN	= MOUNTAINOUS

7/13/2016 9:10:43 AM
R:\Roadway\Pro\B4986_rdy_psh.dgn
Ph:56855

09-11-0028

NO PREHISTORIC OR HISTORIC PROPERTIES PRESENT FORM

PROJECT INFORMATION

Project No: B-4986 *County:* Rutherford
WBS No: 39919.1.1 *Document:* CE
F.A. No: BRSTP-1576(2) *Funding:* State Federal

Federal (USACE) Permit Required? Yes No *Permit Type:*

Project Description:

Replace Bridge No. 76 over Puzzle Creek on SR 1576 (E. Church Street) near Bostic

SUMMARY OF FINDINGS

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

Historic Architecture/Landscapes

- There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- There are no properties within the project's area of potential effects.
- There are properties over fifty years old within the area of potential effects, but they do not meet the criteria for listing on the National Register.
- All properties greater than 50 years of age located in the APE have been considered and all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.

Archaeology

- There are no National Register-listed or Study Listed properties 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.

SUMMARY OF CULTURAL RESOURCES REVIEW

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


Review of HPO quad maps, historic designations roster, and indexes was undertaken on 29 December 2009. Based on this review, there were no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects. The CRS also reviewed Rutherford County GIS aerials and tax data information and noted two properties over fifty years of age located within the APE. Thus a site visit was warranted.

NCDOT CR staff conducted a site visit on 12 January 2010. Properties located at 404 E. Church Street (1925 farm house, substantially altered) and 120 Kaiser Road (1950 ranch house) do not meet the National Register listing criteria. Section 106 for historic architecture is complete.

SUPPORT DOCUMENTATION

See attached: Map of the project area showing the location of the two properties over fifty years of age.

Signed:


 Cultural Resources Specialist, NCDOT

15 JANUARY 2010
 Date

 Representative, HPO

 Date

HPO/OSA Comments:

09-11-0028



**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-4986** County: **Rutherford**
 WBS No: **39919.1.1** Document: **CE/PCE**
 F.A. No: **BRSTP-1576(2)** Funding: State Federal
 Federal Permit Required? Yes No Permit Type: **unknown**

Project Description: NCDOT intends to replace Bridge No. 76 on SR 1576, East Church Street, over Puzzle Creek. While there are no preliminary plans currently available, the Archaeology Group obtained general Study Area mapping with a delineated area approximately 1,350 feet in length. The maximum width of the Study Area is approximately 425 feet and tapers to approximately 200 feet on either side the creek. This Study Area is the basis for the 11.16-acre Area of Potential Effects (APE) for archaeological resources reported here.

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:

As noted on the Survey Required Form, and based on updated background research conducted in July 2014 at the Office of State Archaeology, no previously identified archaeological sites are recorded within the APE, and no archaeological investigations have been carried out in the project vicinity. However, the project area includes water sources and several habitable landforms.

On August 5th, 2014, an archaeological survey of the Study Area or APE was completed by Coastal Carolina Research (CCR) archaeologists Lindsay Flood, M.A., RPA, and Amanda Stamper. J. Eric Deetz, M.A., RPA, was the project principal investigator. The survey consisted of pedestrian inspection and shovel testing at 15-m intervals (n=42). Full consideration was given to the entire APE; however, areas that were wet, disturbed, or steeply sloped were visually inspected but not intensively surveyed. No archaeological resources were recorded within the APE.

The USDA soil survey mapping for Rutherford County suggest that the majority of the soils in the area of Bridge No. 76 should be composed largely of frequently flooded Chewacla soils with 0 to 2 percent slopes (ChA) and well-drained Pacolet-Bethlehem soils with 15 to 25 percent slopes (PbD2). Areas of moderate to steep slope were encountered in various parts of the study area. Soils encountered during the shovel testing were generally consistent with the soil mapping. In areas that were not steeply sloped or low and wet, a typical shovel test profile had a dark yellowish brown topsoil or plow zone of silty loam over a strong brown upper subsoil zone and a yellowish red lower subsoil zone characterized as silty clay. Tested areas closer to Puzzle Creek revealed soil profiles with dark yellowish brown silty clay loam (likely a plow zone) over mottled/hydric silty clay soils or clayey coarse sand. Disturbed areas included areas graded for leveling of home lots. No cultural material was encountered during the survey.

No further archaeological investigations are recommended for the replacement of Bridge No. 176 as proposed. Should the project change further investigation may be necessary. The project as described should be considered to be compliant with Section 106 and NCGS 121-12(a).

References Used in Attachments:

ArcGIS Image Service

2014 ESRI World Imagery. Electronic document, http://services.arcgisonline.com/ArcGIS/rest/services/world_imagery/Mapserver, accessed August 11, 2014.

SUPPORT DOCUMENTATION

See attached: Map(s) Previous Survey Info Photos Correspondence
 Other: Shovel Test Results.

Signed:

Shane C. Petersen**August 26, 2014****NCDOT ARCHAEOLOGIST II****Date**