

**Transylvania County
Bridge No. 196 on SR 1532 (Island Cove Rd.)
over Crab Creek
Federal Aid Project No. BRZ-1532(5)
W.B.S. No. 46118.1.1
T.I.P. No. B-5403**

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

5/27/14
DATE

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

6/3/14
DATE

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

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Documentation Prepared in
Project Development and Environmental Analysis Unit By:

5-27-14

DATE

Natalie Lockhart

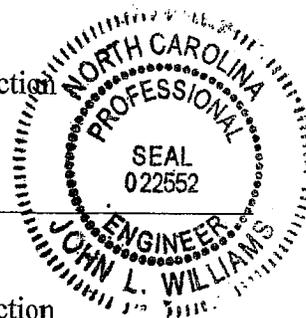
Natalie Lockhart
Project Planning Engineer
Bridge Project Development Section

5-29-14

DATE

John L. Williams

John L. Williams, PE
Project Engineer
Bridge Project Development Section



PROJECT COMMITMENTS:

**Transylvania County
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Structure Design – TVA Permit

The proposed project is located in the Tennessee Valley Authority's (TVA) Land Management District. If the bridge is replaced along existing alignment, as proposed, an approval under Section 26a of the TVA Act will not be needed. However, TVA will review final bridge design plans to confirm this determination.

Roadside Environmental Unit, Division Resident Engineer – High Quality Waters

Crab Creek is designated, as High Quality Waters and will be subject to all Design Standards in Sensitive Watersheds

Hydraulic Unit – FEMA Coordination

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

Division Construction-FEMA

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.

Natural Environment Unit - Mussels

The proposed project involves sensitive trout streams and is located within a critical habitat area for the federally protected Appalachian elktoe mussel. This portion of Crab Creek does not support trout. Based on limited impacts NCDOT anticipates pursuing concurrence from USFWS concurrence on May Affect, Not Likely to Adversely Affect upon completion of the hydraulic plans. Construction authorization will not be requested until consultation with USFWS is completed.

Natural Environment Unit-Northern long-eared bat

NCDOT is working closely with the USFWS to understand how this proposed listing may impact NCDOT projects. NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.

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INTRODUCTION: Bridge No. 196 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program. 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. 196 has a sufficiency rating of 24.29 out of a possible 100 for a new structure. The bridge is considered functionally obsolete due to deck geometry of 3 out of 9 and structurally deficient due to structural evaluation of 3 out of 9 according to Federal Highway Administration (FHWA) standards.

Bridge No. 196 has a fifty-six year old timber substructure with 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 members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 196 is approaching the end of its useful life.

Bridge No. 196 carries 300 vehicles per day with 400 vehicles per day projected for the year 2040. The posted weight limit on the bridge is 10 tons for single vehicles and 14 tons for truck-tractor semi-trailers. The substandard deck width, bridge railing and approach guardrail is becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located in southeast Transylvania County, approximately 8 miles east of the city of Brevard and approximately 3 miles south of the Transylvania County airport (see Figure 1). Development in the area is agriculture and residential in nature. Davis Farm is located approximately 400 feet from the bridge in the southeast quadrant.

SR 1532 is classified as a Rural Local Route in the Statewide Functional Classification System and it is not a National Highway System Route.

In the vicinity of the bridge, SR 1532 has an 18-foot pavement width with 2-foot grass shoulders (see Figure 3). The terrain of the roadway in the immediate vicinity of the bridge is more or less level however, the larger vicinity is considered to be rolling. The existing

horizontal alignment is on a tangent. The roadway is situated approximately 11.0 feet above the creek bed.

Bridge No. 196 is a single-span structure that consists of a timber deck, caps, and piles. The bridge has vertical abutments, wooden rails, and steel girders. The existing bridge (see Figure 3) was constructed in 1958. The overall length of the structure is 28 feet. The clear roadway width is 20 feet. The posted weight limit on this bridge is 10 tons for single vehicles and 14 tons for TTST's.

There are no utilities attached to the existing structure. There is a buried telephone cable parallel to west side shoulder that goes aerial over the creek before returning underground and CATV attached to poles underneath power lines. Utility impacts are anticipated to be low.

The current traffic volume of 300 vehicles per day (VPD) is expected to increase to 400 VPD by the year 2040. The projected volume includes one percent truck-tractor semi-trailer (TTST) and five percent dual-tired vehicles (DT). The posted speed limit is 25 miles per hour in the project area. One school bus crosses the bridge daily on its morning and afternoon routes. There were no accidents reported in the vicinity of Bridge No. 196 during a recent three-year period.

This section of SR 1532 is not part of a designated bicycle route nor is it listed in the T.I.P. as needing incidental bicycle accommodations. Sidewalks do not exist on the existing bridge and there is no indication of pedestrian usage on or near the bridge. Neither permanent nor temporary bicycle nor pedestrian accommodations are required for this project

III. ALTERNATIVES

A. Project Description

The replacement structure will consist of a bridge approximately 70-foot long. The bridge length is based on preliminary design information and is set by hydraulic requirements. The bridge will be of sufficient width to provide for two 10-foot lanes with 2.5-foot offsets on each side. The roadway grade of the new structure will be approximately the same as the existing grade.

The existing roadway will be widened to a 20-foot pavement width to provide two 10-foot lanes. Two-foot shoulders will be provided on each side; which will be paved in accordance with the current NCDOT Design Policy (The shoulder will include three additional feet where guardrail is required). This roadway will be designed as a Local Route using Sub-Regional Tier Guidelines with no design exceptions.

B. Reasonable and Feasible Alternatives

Three alternatives for replacing Bridge No. 196 that were studied in detail are described below.

Alternate 1

Alternate 1 involves replacement of the structure on new location to the east of the existing bridge using the existing as a detour. Improvements to the approach roadways will be required for a distance of approximately 477 feet to the south and 463 feet to the north of the new structure. This alternate will be designed using Sub-Regional Tier guidelines with a design speed of 40 miles per hour. A vertical and horizontal curve design exception will not be required. Traffic will be maintained on the existing bridge during the construction period.

Alternate 2

Alternate 2 involves replacement of the structure in place using staged construction. Improvements to the approach roadways will be required for a distance of approximately 251 feet to the south and 279 feet to the north of the structure. This alternate will be designed using Sub-Regional Tier guidelines with a design speed of 40 miles per hour. A horizontal and vertical curve design exception is not required for this alternative.

Alternate 3 (Preferred)

Alternate 3 involves replacement of the structure in place with a 1000 foot temporary onsite detour upstream of the existing bridge. Improvements to the approach roadways will be required for a distance of approximately 353 feet to the south and 378 feet to the north of the structure. This alternate will be designed using Sub-Regional Tier guidelines with a design speed of 40 miles per hour. A horizontal and vertical curve design exception is not required for this alternative.

C. 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 1532.

“Rehabilitation” of the old bridge is not practical due to its age and deteriorated condition. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement.

An off-site detour is not feasible because SR 1532 is a dead end road.

D. Preferred Alternative

Bridge No. 196 will be replaced at the existing location as shown by Alternative 3 in Figure 2C. Although the cost is higher, this alternate minimizes impacts to the strawberry farm on the east side and improves the alignment of SR 1532 better than Alternate 1 and Alternate 2.

NCDOT Division 14 concurs with the selection of Alternative 3 as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs, based on 2013 prices, are as follows:

| | Alternative 1 | Alternative 2 | Alternative 3 Preferred |
|---------------------------------|---------------|---------------|----------------------------|
| Structure | \$ 195,000 | \$ 224,000 | \$ 168,000 |
| Roadway Approaches | 199,000 | 179,000 | 347,000 |
| Detour Structure and Approaches | - 0 - | - 0 - | 62,000 |
| Structure Removal | 11,000 | 11,000 | 16,000 |
| Misc. & Mob. | 121,000 | 115,000 | 189,000 |
| Eng. & Contingencies | 79,000 | 81,000 | 118,000 |
| Total Construction Cost | \$ 605,000 | \$ 610,000 | \$ 900,000 |
| Right-of-way Costs | 24,000 | 23,000 | 23,000 |
| Right-of-way Utility Costs | 8,000 | 8,000 | 8,000 |
| Total Project Cost | \$ 637,000 | \$ 641,000 | \$ 931,000 |

V. NATURAL ENVIRONMENT

Physical Characteristics

Water Resources

Water resources in the study area are part of the French Broad River basin [U.S. Geological Survey (USGS) Hydrologic Unit 06010105]. Five streams were identified in the study area (Table 1). The physical characteristics of these streams are provided in Table 2.

Table 1. Water resources in the study area.

| Stream Name | Map ID | NCDWQ Index Number | Best Usage Classification |
|------------------|------------|-----------------------|------------------------------|
| Crab Creek | Crab Creek | 6-38-23 | C; Tr; HQW |
| UT to Crab Creek | SA | 6-38-23 | C; Tr; HQW |
| UT to Crab Creek | SB | 6-38-23 | C; Tr; HQW |
| UT to Crab Creek | SC | 6-38-23 | C; Tr; HQW |
| UT to Crab Creek | SD | 6-38-23 | C; Tr; HQW |

Table 2. Physical characteristics of water resources in the study area.

| Map ID | Bank Height (ft) | Bankful Width (ft) | Water Depth (in) | Channel Substrate * | Velocity | Clarity |
|------------|------------------|--------------------|------------------|---------------------|----------|---------|
| Crab Creek | 8 | 20 | 1-3 | Sa, Gr, Co | Moderate | Clear |
| SA | 2-3 | 1-3 | 3-6 | Sa, Gr | Moderate | Clear |
| SB | 1 | 1-2 | 2 | Sa, Gr | Moderate | Clear |
| SC | 0.5-2 | 1-2 | 2-6 | Sa, Gr | Moderate | Clear |
| SD | 2-3 | 4-5 | 4 | Sa, Co | Moderate | Clear |

* Sa=sand; Co=Cobble; Gr=Gravel

Crab Creek has been designated a High Quality Water (HQW) from its source to its confluence with Little River. Crab Creek is not a North Carolina Wildlife Resource Commission (NCWRC) trout water. There are no designated anadromous fish waters or Primary Nursery Areas (PNA) present in the study area. This section of Crab Creek is not included on the North Carolina 2012 Final 303(d) list of impaired waters.

Biotic Resources

Table 3. Coverage of terrestrial communities in the study area.

| Community | Coverage (ac.) |
|-----------------------|----------------|
| Maintained/ Disturbed | 12.20 |
| Riparian Forest | 0.47 |
| White Pine Forest | 0.29 |
| Total | 12.96 |

Jurisdictional Topics

Surface Waters and Wetlands

Three jurisdictional wetlands were identified within the study area. Based on current available design, there will be no wetland impacts; however, future design that includes construction easements may result in minor wetland impacts.

Permits

The proposed project has been designated as a Categorical Exclusion (CE) for the purposes of National Environmental Policy Act (NEPA) documentation. As a result, 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 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 NCDWQ will be needed.

Federally Protected Species

Table 4. Federally protected species listed for Transylvania County

| Scientific Name | Common Name | Federal Status | Habitat Present | Biological Conclusion |
|--------------------------------------|-----------------------------------|----------------|-----------------|-----------------------|
| <i>Alasmidonta raveneliana</i> | Appalachian elktoe | E | Yes | unresolved |
| <i>Glyptemys muhlenbergii</i> | Bog turtle | T(S/A) | No | Not Required |
| <i>Glaucomys sabrinus coloratus</i> | Carolina northern flying squirrel | E | No | No Effect |
| <i>Sarracenia rubra ssp. jonesii</i> | Mountain sweet pitcher plant | E | Yes | No Effect |
| <i>Myotis septentrionalis</i> | Northern long-eared bat | P | TBD | unresolved |
| <i>Gymnoderma lineare</i> | Rock gnome lichen | E | No | No Effect |
| <i>Isotria medeoloides</i> | Small whorled pogonia | T | Yes | No Effect |
| <i>Geum radiatum</i> | Spreading avens | E | No | No Effect |
| <i>Helonias bullata</i> | Swamp pink | T | Yes | No Effect |
| <i>Spiraea virginiana</i> | Virginia spiraea | T | Yes | No Effect |

E - Endangered

T - Threatened

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

P – Proposed

Appalachian elktoe

NCDOT biologists conducted a survey for Appalachian elktoe in Crab Creek on May 3, 2011. No mussels were identified during the survey; however, there are Appalachian elktoe downstream (approximately 1 mile) in the Little River. NCDOT is currently in discussions with the USFWS to determine the appropriate biological conclusion, and to determine if, and what type, of consultation and document will be required. Based on limited impacts NCDOT anticipates pursuing concurrence from USFWS concurrence on May Affect not likely to Adversely Affect upon completion of the project.

Biological Conclusion: **Unresolved**

Mountain sweet pitcher plant

There is marginal habitat at the site for mountain sweet pitcher plant, along the banks of Crab Creek and the banks of the unnamed tributaries and associated wetlands. There are no mountain bogs at the site. Surveys were conducted by NCDOT biologists throughout areas of suitable habitat on May 19, 2011. No individuals of mountain sweet pitcher plant were observed. A review of NCNHP records, updated November, 2010, indicates no known occurrences of this species within 1.0 mile of the study area.

Biological Conclusion: **No Effect**

Northern long-eared bat

A US Fish and Wildlife Service proposal for listing the Northern Long-eared Bat (*Myotis septentrionalis*) as an endangered species was published in the Federal Register in October 2013. The listing may become effective as soon as October 2014. Furthermore, this species is included in USFWS's current list of protected species for Transylvania County. NCDOT is working closely with the USFWS to understand how this proposed listing may impact NCDOT projects. NCDOT will continue to coordinate appropriately with USFWS to determine if this project will incur potential effects to the Northern long-eared bat, and how to address these potential effects, if necessary.

Biological Conclusion: **Unresolved**

Small whorled pogonia

There is habitat at the site for small whorled pogonia, in the riparian forest community; however, the habitat is marginal as the areas under canopy and the open areas are heavily vegetated with herbaceous species. Surveys were conducted by NCDOT biologists throughout areas of suitable habitat on May 19, 2011. No individuals of small whorled pogonia were observed. A review of NCNHP records, updated November, 2010, indicates no known occurrences of this species within 1.0 mile of the study area.

Biological Conclusion: **No Effect**

Swamp pink

There is habitat for swamp pink, near the small wetlands and small perennial streams at the site. Surveys were conducted by NCDOT biologists throughout areas of suitable habitat on May 19, 2011. No individuals of swamp pink were observed. A review of NCNHP records, updated November, 2010, indicates no known occurrences of this species within 1.0 mile of the study area.

Biological Conclusion: **No Effect**

Virginia spiraea

Habitat for Virginia spiraea is present in the study area along the banks of Crab Creek, particularly along the northeast stream bank (upstream of the bridge, on the north stream bank), where bank scour has occurred. NCDOT biologists visited the Asheville Botanical Gardens on May 19, 2011, to view the species prior to conducting surveys. Surveys were conducted by NCDOT biologists on May 14, 2013. No individuals of Virginia spiraea were observed. No known occurrences of this species within 1.0 mile of the study area.

Biological Conclusion: **No Effect**

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.

A desktop-GIS assessment of the project study area, as well as the area within a 1.13 mile radius (1.0 mile plus 660 feet) of the project limits, was performed on February 15, 2011, using 2009 color aerials. No water bodies large enough or sufficiently open to be considered potential feeding sources were identified. Since there was no foraging habitat within the review area, a survey of the project study area and the area within 660 feet of the project limits was not conducted. Additionally, a review of the NCNHP database on February 2011 revealed no known occurrences of this species within 1.0 mile of the project study area. 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

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 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 no surveys are required (see form dated May 31, 2011).

Archaeology

NCDOT – The Human Environment Section's Archaeology Group reviewed the proposed project under the provisions of the Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009) and determined that an archaeological survey was necessary within the project's Area of Potential Effects. The archaeological survey within the proposed project limits was carried out on April 6, 2011. As a result of the survey, it was determined that no archaeological resources will be affected by the project (see attached Archaeological PA# 11-02-0026 "No Prehistoric or Historic Properties Present/Affected" form dated April 8, 2011).

Community Impacts

No adverse impact on families or communities is anticipated. 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. 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. All construction will take place along 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. As is required by the Farmland Protection Policy Act, the Form NRCS-AD-1006 (for point projects) has been completed according to FHWA guidelines. Since this project received 68 points in Parts III and VI, it was submitted to NRCS for review. After NRCS review, the project received a point total of 166, which exceeds the 160 point rating and therefore constitutes a significant impact to farmland. Alternatives exceeding a point total of 160 are those most suitable for protection under FPPA. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland. Alternate 3 will only have a temporary impact on farmlands and will be restored to farmland upon completion of the project.

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

Noise & Air Quality

The project is located in Transylvania 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.

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.

Transylvania 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 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, Tennessee Valley Authority, N.C. Division of Parks & Recreation, North Carolina State Historic Preservation Office, Transylvania County Planning Department, and City of Brevard.

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

The **Division of Water Quality** stated that Crab Creek is Class C-Trout-HQW waters of the State. NCDWQ recommends that the most protective sediment and erosion control BMP's be implemented to reduce the risk of turbidity violations in trout waters. Should NC Wildlife Resource Commission (NCWRC) identify these waters as naturally reproducing trout waters. NCDOT will be required to observe the NCWRC-recommended moratoria for trout. NCDWQ will require that NCDOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" throughout design and construction of the project.

Response: This portion of Crab Creek does not support trout, but Crab Creek is considered HQW. “Design Standards in Sensitive Watersheds” will be implemented on this project.

The City of Brevard, the N.C., the Army Corps of Engineers, Transylvania County Planning Department, North Carolina State Historic Preservation Office, and Tennessee Valley Authority had no special concerns for this project.

IX. PUBLIC INVOLVEMENT

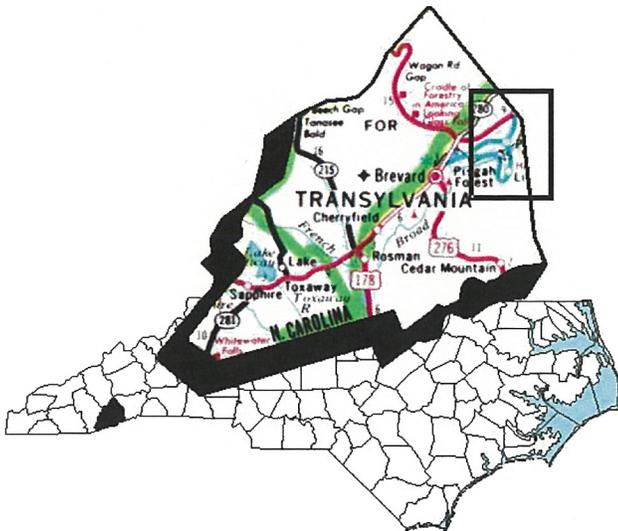
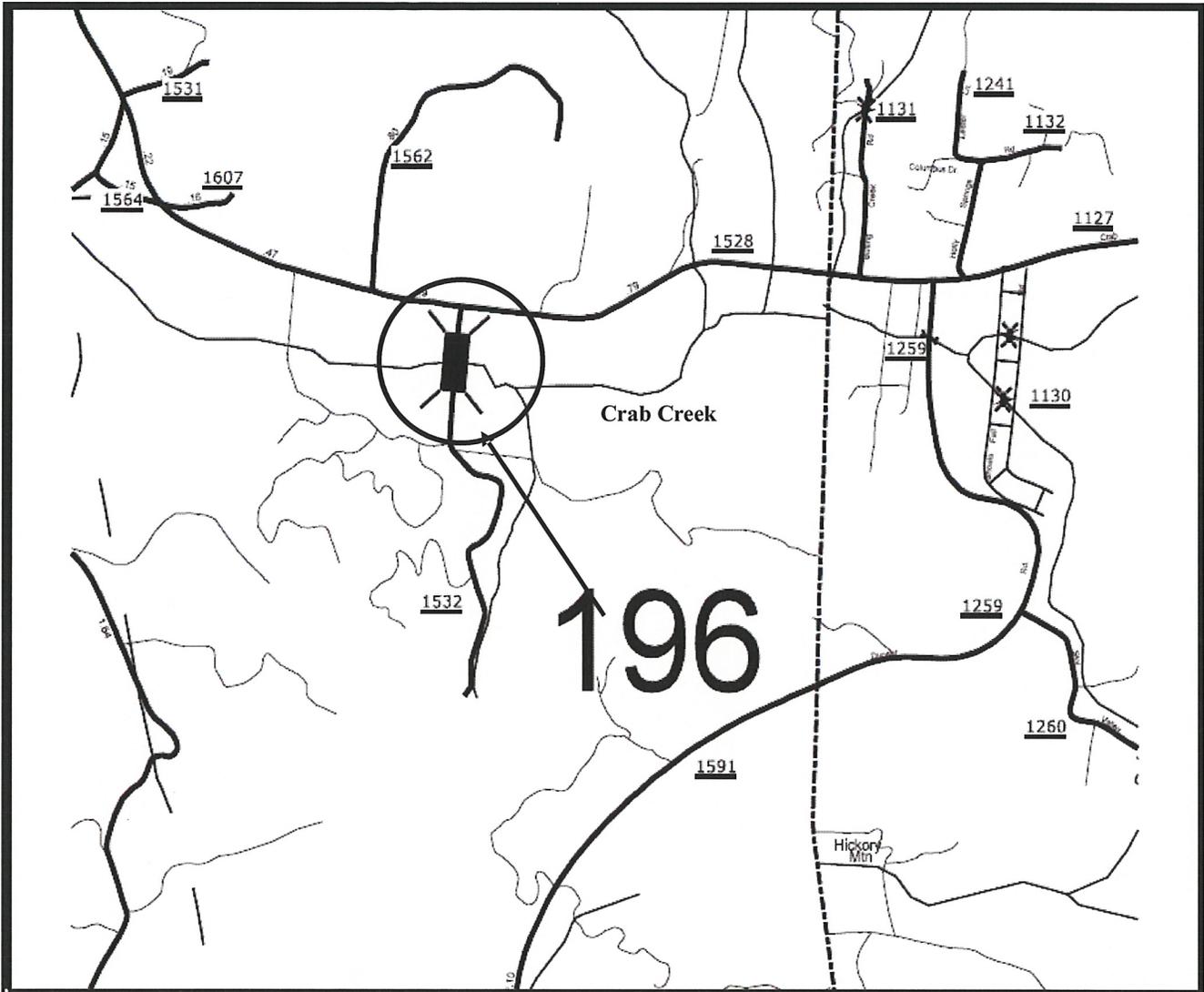
A newsletter has been sent to all those living along SR 1532. No comments have been received to date.

Based on the lack of responses to the newsletter, a Public Meeting was determined unnecessary.

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.



| | |
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| | <p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH</p> |
| <p>TRANSYLVANIA COUNTY REPLACE BRIDGE NO. 196 ON SR 1532 OVER CRAB CREEK B-5403</p> | |
| <p>Figure 1</p> | |



Legend

- Delineated Wetlands and Streams
- Edge of Pavement
- NC Bridge
- Transylvania Parcels (2011)



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

ALTERNATE 1: NEW LOCATION
Replacement of Bridge No. 196 on
SR 1532 over Crab Creek
in Transylvania County
TRANSLYVANIA COUNTY
TIP PROJECT B-5403



| | |
|-------------------------|----------------|
| County: Transylvania | |
| Div: 14 | TIP# B-5403 |
| WBS: 46118.1.1 | |
| Date: April 2014 | |

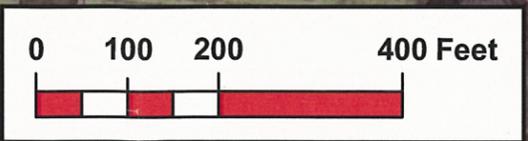
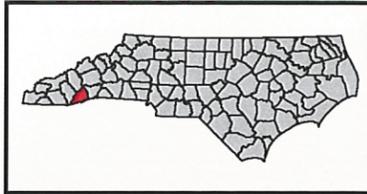


Figure
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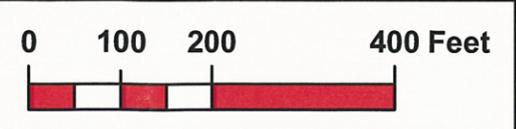
By: J.TORTORELLA



Legend

- Edge of Pavement
- Delineated Wetlands and Streams
- NC Bridge
- Transylvania Parcels (2011)

Alternate 2




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

**ALTERNATE 2 : REPLACE IN PLACE
(STAGED CONSTRUCTION)**
Replacement of Bridge No. 196 on
SR 1532 over Crab Creek
in Transylvania County
TRANSYLVANIA COUNTY
TIP PROJECT B-5403



| | |
|-------------------------|----------------|
| County: Transylvania | |
| Div: 14 | TIP# B-5403 |
| WBS: 46118.1.1 | |
| Date: April 2014 | |

**Figure
2b**



Legend

- Edge of Pavement
- Delineated Wetlands and Streams
- NC Bridge
- Transylvania Parcels (2011)



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

**ALTERNATE 3 : TEMPORARY ONSITE
DETOUR UPSTREAM**
Replacement of Bridge No. 196 on
SR 1532 over Crab Creek
in Transylvania County
TRANSYLVANIA COUNTY
TIP PROJECT B-5403

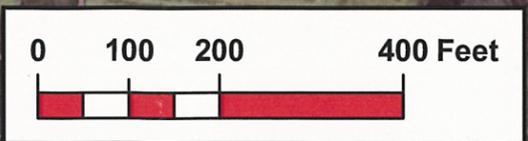


County:
Transylvania

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| Div: 14 | TIP# B-5403 |
|------------|----------------|

WBS:
46118.1.1

Date:
April 2014



**Figure
2c**

By: J.TORTORELLA

NC OneMap, NC Center for Geographic Information and Analysis, NC 911 Board

B-5403

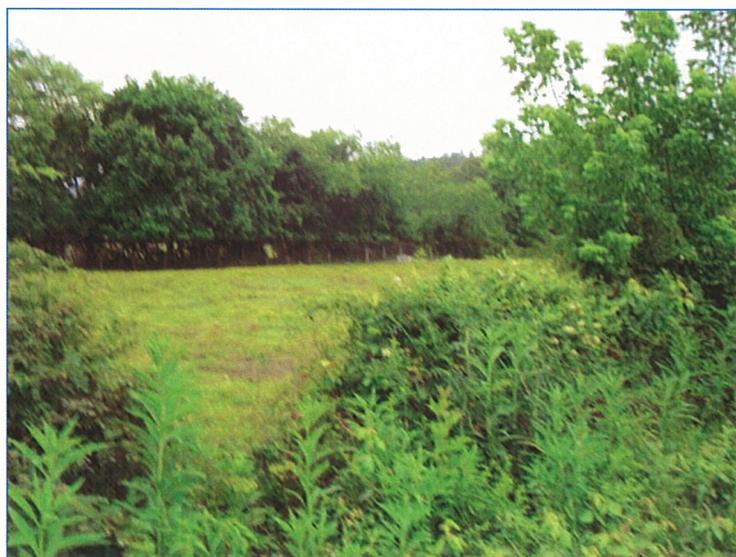
Bridge No. 196 on SR 1532 over Crab Creek

Figure 3

West Approach



Farm in Southeast Quadrant



(HA)11-02-0026

**NO PREHISTORIC OR HISTORIC PROPERTIES
PRESENT/AFFECTED FORM**

PROJECT INFORMATION

Project No: **B-5403** County: **Transylvania**
WBS No: **46118.1.1** Document:
F.A. No: **BRZ-1532(5)** Funding: State **X** Federal

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

Project Description: **Replace Bridge No. 196 on SR 1532 (Island Cove Road) over Crab Creek.**

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.
- X** There are no historic properties present or **affected** by this project. *(Attach any notes or documents as needed)*

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.
- There are no historic properties present or affected by this project. *(Attach any notes or documents as needed)*

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions: HPO quad maps, historic designations roster, and indexes and HPOWeb reviewed on 29 April 2011 and yielded no NR, SL, DOE, LD, or SS properties in the Area of Potential Effects (APE). Transylvania County current GIS mapping and tax information identified cultivated fields and eight properties containing pre-1960 resources in the APE. The Transylvania County architectural survey and related publication (Laura A. W. Phillips and Deborah Thompson, *Transylvania – the Architectural History of a Mountain County* (Brevard: The Transylvania County Joint Historic Preservation Commission, 1998)) recorded no properties in the APE. Constructed in 1958, Bridge No. 196 is not eligible for the National Register according to the NCDOT Historic Bridge Survey as it is not historically, architecturally, or technologically significant. The APE is centered on existing Bridge 196 and extends 200 feet from the centerline to the E and W and 1200 feet to the N and S to encompass proposed construction activities.

The absence of reliable aerial photography and other imagery, as well as the presence of the pre-1960 properties, indicated an architectural survey, conducted on 25 May 2011. The survey included investigation of 100% of the APE by automobile and on foot, and the identification, photographing, and mapping of all above-ground resources over fifty years of age in the APE. While eight properties contain resources dating from the 1920s to the 1950s, none are exceptional examples of their types according to National Register standards, and none should be impacted by the project as currently defined.

A finding of "no historic properties affected" will satisfy both GS 121-12(a) and Section 106 compliance requirements.

**Should the design of the project change,
please notify NCDOT Historic Architecture as additional review may be necessary.**

SUPPORT DOCUMENTATION

See attached: **Location and survey maps. Photographs on file, NCDOT Historic Architecture.**

Signed:



Cultural Resources Specialist, NCDOT



Date

11-02-0026

SURVEY REQUIRED FORM**PROJECT INFORMATION**

Project No: **B-5403** County: Transylvania
 WBS No: 46118.1.1 Document: Minimum Criteria Sheet
 F.A. No: BRZ-1532(5) Funding: State Federal

Federal (USACE) Permit Required? Yes No Permit Type: Information not known as of yet

Project Description:

The project calls for the replacement of Bridge No. 196 over Crab Creek on SR 1532 (Island Cove Road). The archaeological Area of Potential Effects (APE) for the project is defined as a 1,660-foot (505.97 m) long corridor running south along Island Cove Road from its junction with SR 1528 (Crab Creek Road). The APE also includes two additional corridors. The first is at the northern end of the project area. It is a 950-foot (289.56 m) long corridor running east-west along Crab Creek Road. This corridor extends 550 feet (167.64 m) west and 400 feet (121.92 m) east from its junction with Island Cove Road. The second is at the southern end of the project area. This is a 600-foot (182.88 m) corridor running east-west along Moose Haven Drive and Bay Leaf Cove Road. This corridor extends 300 feet (91.44 m) west along Moose Haven Drive and 300 feet (91.44 m) east along Bay Leaf Cove Road from their junction with Island Cove Road. All corridors are approximately 200 feet (60.96 m) wide, which extends 100 feet (30.48 m) on either side of Island Cove Road, Crab Creek Road, Moose Haven Drive, and Bay Leaf Cove Road.

SUMMARY OF CULTURAL RESOURCES REVIEW – SURVEY REQUIRED*Brief description of review activities, results of review, and conclusions:*

The project area is situated east of Brevard, southeast of the French Broad River, and near the eastern boundary of Transylvania County, North Carolina. The project area is found on the Standingstone Mountain quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on March 15, 2011. No previously recorded archaeological sites have been identified within the presently defined APE or adjacent to the APE, but seven sites (31TV122, 31TV129–31TV131, 31TV458, 31TV588, and 31TV607) have been identified within a mile radius of the project area. In addition, no existing National Register of Historic Places (NRHP), State Study List (SL), Locally Designated (LD), Determined Eligible (DE), or Surveyed Site (SS) properties are within or adjacent to the APE. Topographic maps, USDA soil survey maps, aerial photographs (Google and USDA), historic maps (North Carolina maps website), and Google street view map application were inspected to assess environmental factors that may have contributed to historic or prehistoric settlement within the project limits and to evaluate the level of modern, residential, hydrological, and erosive type disturbances within the archaeological APE.

Island Cove Road and Bridge 196 run north-south and are situated in the Crab Creek floodplain and along terraces above the creek (see Figure 1). Crab Creek Road, Moose Haven Drive, and Bay Leaf Cove Road run east-west and are situated along terraces and foot slopes. Bridge 196 crosses Crab Creek, which is a tributary of Little River to the west. These streams are part of the French Broad drainage basin. According to aerial photos and Google street view application, modern development in the project area

varies from light to moderate with structures primarily along Crab Creek Road in the north and Moose Haven Drive and Bay Leaf Cove Road in the south. However, the majority of the floodplain and terraces within the APE are in open fields.

A review of the USDA soil survey map indicates three soil types within the APE. The first, Rosman fine sandy loam (Ro), is situated in the floodplain on either side of the creek. This soil is well-drained to moderately well-drained, but subject to frequent flooding for very brief periods. Delanco fine sandy loam (DeB) is located on terraces above the floodplain. This series is moderately well-drained with a gentle 2 to 6 percent slope. Flooding is infrequent and only for brief periods. Lastly, Tate fine sandy loam (TeD) is situated at the northern and southern ends of the APE. This soil is generally located on foot slopes. It is well-drained and gently sloping with 6 to 15 percent slope. As reported by Ruth Wetmore in her comprehensive 1993 archaeological survey of Transylvania County, the highest percent of archaeological sites in the county are located on sandy loam. This includes several sites which have been recommended as potential eligible for the NRHP. Based upon her results, it seems possible significant archaeological deposits could be encountered within the project area.

The site file search revealed seven previously recorded sites (31TV122, 31TV129–31TV131, 31TV458, 31TV588, and 31TV607) within a mile of the APE. All are located to the west and southwest along Crab Creek and the Little River. Also, it appears no previous investigations have been conducted east of the project area along Crab Creek. The location for the previously recorded sites share some of the same environmental features as found in the project area. The sites are all situated on the floodplain or along terraces overlooking the streams. Four of the sites (31TV122 and 31TV129–31TV131) were identified along the Little River by the University of North Carolina at Chapel Hill (UNC-CH) during the Appalachian Summit investigations conducted from 1964 to 1971. The site forms on file at OSA are incomplete. They contain no site descriptions or evaluations, but do record that each site yielded prehistoric lithic and/or ceramic artifacts. Two sites (31TV122 and 31TV131) are located on Tate fine sandy loam, while sites 31TV129 and 31TV130 are on Rosman fine sandy loam. Their eligibility for the NRHP has not been assessed. The remaining three sites (31TV458, 31TV588, and 31TV607) are located along Crab Creek. Site 31TV458 contains prehistoric and historic components. The prehistoric components dates to the Archaic and Early Woodland periods, while the historic artifacts dates to the 20th century. The site is on Rosman fine sandy loam and has been recommended as ineligible for the NRHP. Site 31TV588 is a prehistoric isolated find, which dates to an unknown period. It is found on Brevard loam and is ineligible. The final site, 31TV607, is an Archaic period site that sits on Delanco fine sandy loam. The eligibility for this site has not been assessed. In general, all seven sites are situated on landforms and soils similar to those found in the APE. This suggests that additional sites might be located within the project area.

Early historical maps show few if any details of the project area. The earliest map, which appears to show Crab Creek and Crab Creek Road, is a circa 1868 untitled pen and ink sketch map of the county (Figure 3). The road is illustrated in faint red ink, but the exact project area is difficult determined due to the scale and/or schematic nature of the map. Island Cove Road is not present on this map. The first map to depict the project area with any great accuracy is the 1892 USGS Pisgah topography map (Figure 4). This map plots a road with a similar alignment as Crab Creek Road, but Island Cove Road is still not present. Also, no structures are identified within the APE. The following 1905 USGS Pisgah map and 1906 soil map for Transylvania County are very similar and shows few if any changes to the area (Figures 5 and 6). Two structures are plotted near the northern end of the APE along Crab Creek Road. However, it is likely both of these structures are outside the APE. Subsequent historic maps from the early 20th century continue to show Crab Creek Road, but Island Cove Road and the bridge are not depicted until the North Carolina State Highway Commission map of 1962 (Figure 7). In addition, this map shows no structures. Due to a lack of historic occupation represented on the maps, it appears unlikely any significant remains associated with former historic structures would be found within the APE.

Although the review of historic maps suggest no historic occupation until fairly recently, previous archaeological investigations on sandy loam in the county has suggested that the Crab Creek floodplain and terraces could possibly yield prehistoric cultural resources. Just within a mile of the project area, seven prehistoric sites have been recorded, which share some of the same environmental features as found in the project area. In addition, the lack of sites east of the project area is due to no archaeology investigations in this area. Further work is necessary to determine if any intact archaeological deposits are present. An intensive archaeological survey consisting of shovel test pits (STPs) at regular intervals is recommended to evaluate the project area.

SUPPORT DOCUMENTATION

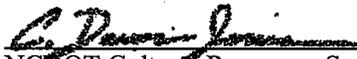
See attached: Map(s), Previous Survey Info, Photos, Correspondence, Photocopy of notes from county survey.

FINDING BY NCDOT CULTURAL RESOURCES PROFESSIONAL -- *SURVEY REQUIRED*

Archaeology

Historic Architecture

(circle one)


NCDOT Cultural Resources Specialist

March 28, 2011

Date

April 29, 2011

Proposed fieldwork completion date

**NO PREHISTORIC OR HISTORIC PROPERTIES
PRESENT/AFFECTED FORM**

PROJECT INFORMATION

Project No: **B-5403** County: Transylvania
 WBS No: 46118.1.1 Document: Minimum Criteria Sheet
 F.A. No: BRZ-1532(5) Funding: State Federal
 Federal (USACE) Permit Required? Yes No Permit Type: Information not known as of yet

Project Description:

The project calls for the replacement of Bridge No. 196 over Crab Creek on SR 1532 (Island Cove Road). The archaeological Area of Potential Effects (APE) for the project is defined as a 1,660-foot (505.97 m) long corridor running south along Island Cove Road from its junction with SR 1528 (Crab Creek Road). The APE also includes two additional corridors. The first is at the northern end of the project area. It is a 950-foot (289.56 m) long corridor running east-west along Crab Creek Road. This corridor extends 550 feet (167.64 m) west and 400 feet (121.92 m) east from its junction with Island Cove Road. The second is at the southern end of the project area. This is a 600-foot (182.88 m) corridor running east-west along McMahan Lane/Moose Haven Drive and Bay Leaf Cove Road. This corridor extends 300 feet (91.44 m) west along McMahan Lane/Moose Haven Drive and 300 feet (91.44 m) east along Bay Leaf Cove Road from their junction with Island Cove Road. All corridors are approximately 200 feet (60.96 m) wide, which extends 100 feet (30.48 m) on either side of Island Cove Road, Crab Creek Road, McMahan Lane/Moose Haven Drive, and Bay Leaf Cove Road.

SUMMARY OF FINDINGS

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

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.
- There are no historic properties present or affected by this project. (*Attach any notes or documents as needed*)

SUMMARY OF CULTURAL RESOURCES REVIEW

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

The project area is situated east of Brevard, southeast of the French Broad River, and near the eastern boundary of Transylvania County, North Carolina. The project area is found on the Standingstone Mountain quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on March 15, 2011. No previously recorded archaeological sites have been identified within the presently defined APE or adjacent to the APE, but seven sites (31TV122, 31TV129–31TV131, 31TV458, 31TV588, and 31TV607) have been identified within a mile radius of the project area. In addition, no existing National Register of Historic Places (NRHP), State Study List (SL), Locally Designated (LD), Determined Eligible (DE), or Surveyed Site (SS) properties are within or adjacent to the APE. Topographic maps, USDA soil survey maps, aerial photographs (Google and USDA), historic maps (North Carolina maps website), and Google street view map application were inspected to assess environmental factors that may have contributed to historic or prehistoric settlement within the project limits and to evaluate the level of modern, residential, hydrological, and erosive type disturbances within the archaeological APE. An archaeological reconnaissance and field survey of the project area was conducted on April 6, 2011, to assess the project area.

Island Cove Road and Bridge No. 196 run north-south and are situated in the Crab Creek floodplain and along terraces above the creek (see Figure 1; Figures 2 and 3). Crab Creek Road, McMahan Lane/Moose Haven Drive, and Bay Leaf Cove Road run east-west and are situated along terraces and foot slopes. Bridge 196 crosses Crab Creek, which is a tributary of Little River to the west. These streams are part of the French Broad drainage basin. Modern development varies from light to moderate with structures primarily at the northern and southern ends of the APE (Figure 4). The majority of the floodplain and terraces within the APE are in pasture and former strawberry fields. A wide and deep drainage ditch is present in the southwest quad between Island Cove Road and a pasture. Smaller drainage ditches are located in the other quads.

A review of the USDA soil survey map indicates three soil types within the APE. The first, Rosman fine sandy loam (Ro), is situated in the floodplain on either side of the creek. This soil is well-drained to moderately well-drained, but subject to frequent flooding for very brief periods. Delanco fine sandy loam (DeB) is located on terraces above the floodplain. This series is moderately well-drained with a gentle 2 to 6 percent slope. Flooding is infrequent and only for brief periods. Lastly, Tate fine sandy loam (TeD) is situated at the northern and southern ends of the APE. This soil is generally located on foot slopes. It is well-drained and gently sloping with 6 to 15 percent slope. In Ruth Wetmore comprehensive 1993 archaeological survey of Transylvania County, the highest percent of archaeological sites in the county are identified on sandy loam. This includes several sites which have been recommended as potential eligible for the NRHP.

The site file search revealed seven previously recorded sites (31TV122, 31TV129–31TV131, 31TV458, 31TV588, and 31TV607) within a mile of the APE. All are situated on landforms and soils similar to those found in the APE. The sites are located to the west and southwest on the floodplain or terraces along Crab Creek and the Little River. Four of the sites (31TV122 and 31TV129–31TV131) were identified along the Little River by the University of North Carolina at Chapel Hill (UNC-CH) during the Appalachian Summit investigations conducted from 1964 to 1971. The site forms on file at OSA are incomplete. They contain no site descriptions or evaluations, but do record that each site yielded prehistoric lithic and/or ceramic artifacts. Two sites (31TV122 and 31TV131) are located on Tate fine sandy loam, while sites 31TV129 and 31TV130 are on Rosman fine sandy loam. Their eligibility for the NRHP has not been assessed. The remaining three sites (31TV458, 31TV588, and 31TV607) are located along Crab Creek. Site 31TV458 contains prehistoric and historic components. The prehistoric

components dates to the Archaic and Early Woodland periods, while the historic artifacts dates to the 20th century. The site is on Rosman fine sandy loam and has been recommended as ineligible for the NRHP. Site 31TV588 is a prehistoric isolated find, which dates to an unknown period. It is found on Brevard loam and is ineligible. The final site, 31TV607, is an Archaic period site that sits on Delanco fine sandy loam. The eligibility for this site has not been assessed. It also appears no previous investigations have been conducted east of the project area along Crab Creek.

The current archaeological survey consisted of 19 shovel test pits (STPs), which were excavated at 30-m intervals in three of the four quads (see Figure 4). STPs were not plotted in areas if livestock prevented access, ground disturbance appeared heavy, surface visibility was 100 percent, or slope was 15 percent or greater. In the northeast quad, seven STPs (STPs 1.1–1.7) were excavated with six along Island Cove Road and one along Crab Creek Road (Figure 5). Most of this area had once been cultivated for strawberries, but was presently fallow. A small portion of the quad along Crab Creek road, however, had recently been plowed. This area provided excellent surface visibility. The stratigraphy in this quad is composed of two to three strata. The upper layer is a very dark grayish brown (10YR 3/2) sandy loam that is 30 to 45 cm (12 to 18 in) thick. It is followed by light yellowish brown (10YR 6/4) sandy loam or sandy clay loam near the stream, while very dark gray (10YR 3/1) loam is found towards the north. This layer extends at least 80 cm (32 in) below the surface. Typically, grayish brown (10YR 4/2) sandy clay is present beneath the very dark gray loam in the northern STPs. No STPs were excavated in the northwest quad due to a bull in the pasture and disturbance along Crab Creek Road from residential houses (Figure 6). In the southeast quad, four STPs (STPs 2.1–2.4) were excavated in a former strawberry field located between the stream and a horse pasture to the south (Figure 7). No STPs were excavated within the horse pasture at the property owner's request. The stratigraphy is made up of two layers. The upper layer is very dark grayish brown (10YR 3/2) sandy loam that is 40 to 60 cm (16 to 24 in) thick. The bottom layer is very dark gray (10YR 3/1) sandy clay loam next to the stream or light brownish gray (10YR 6/2) sandy clay towards the south. The final eight STPs (STPs 3.1–3.8) were excavated in the southwest quad (Figure 8). The stratigraphy in this quad was the same as in the southeast except the upper layer extends to at least 75 cm (30 in) below the surface near the stream. Finally, no STPs were excavated north of Crab Creek Road or at the southern end of the APE due to disturbance from residential houses or slope of 15 percent or greater. No cultural material was recovered from any STPs or observed on the surface.

Early historical maps show few if any details of the project area. The earliest map, which appears to show Crab Creek and Crab Creek Road, is a circa 1868 untitled pen and ink sketch map of the county (Figure 9). The road is illustrated in faint red ink, but the exact project area is difficult determined due to the scale and/or schematic nature of the map. Island Cove Road is not present on this map. The first map to depict the project area with any great accuracy is the 1892 USGS Pisgah topography map (Figure 10). This map plots a road with a similar alignment as Crab Creek Road, but Island Cove Road is still not present. Also, no structures are identified within the APE. The following 1905 USGS Pisgah map and 1906 soil map for Transylvania County are very similar and shows few if any changes to the area (Figures 11 and 12). Two structures are plotted near the northern end of the APE along Crab Creek Road. However, it is likely both of these structures are outside the APE. Subsequent historic maps from the early 20th century continue to show Crab Creek Road, but Island Cove Road and the bridge are not depicted until the North Carolina State Highway Commission map of 1962 (Figure 13). In addition, this map shows no structures. Due to a lack of historic occupation represented on the maps, it appears unlikely any significant remains associated with former historic structures would be found within the APE.

The archaeological investigations for the replacement of Bridge No. 196 over Crab Creek consisted of a total of 19 STPs excavated at 30-m intervals in three of the four quads. Although the entire project area was not systematically surveyed, a sample of various locations along the floodplain and terraces were investigated. No evidence of past occupation was observed in the STPs or along the surface. As a result, it appears unlikely from the survey that any significant archaeological deposits are within the APE. In addition, property owners within the APE could not recall ever observing archaeological artifacts on the

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surface when the project area was plowed. They did identify the location of an uninvestigated prehistoric archaeological site, which is south of Crab Creek and east of the project area. Since this site is outside of the current APE, it was not tested or recorded. In addition, historic maps suggest no historic occupation until fairly recently. Overall, It is unlikely any prehistoric or historic archaeological sites that are potentially eligible for the NRHP are present within the project area. No further archaeological work is recommended within the APE for the replacement of Bridge No. 196 and subsequent improvement to Island Cover Road. If the project expands and impacts subsurface areas beyond the defined APE, further archaeological consultations might be necessary.

SUPPORT DOCUMENTATION

See attached: Map(s), Previous Survey Info, Photos, Correspondence, Photocopy of notes from survey.

Signed:



Cultural Resources Specialist, NCDOT

04/08/11

Date