



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

December 21, 2022

U. S. Army Corps of Engineers  
Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28805

NC Division of Water Resources  
Transportation Permitting Branch  
1617 Mail Service Center  
Raleigh NC 27699-1617

ATTN: Ms. Lori Beckwith,  
NCDOT Coordinator

Mr. Kevin Mitchell  
NCDOT Coordinator

Subject: **Application for Section 404 Regional General Permit 50, and Section 401 Water Quality Certification** for the Proposed Replacement of Bridge 19 on NC 226 over Cub Creek in Mitchell County, Division 13, TIP No. B-5893, Debit \$240 from WBS 48086.1.1.

Dear Madam and Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge number 19 on NC 226 over Cub Creek with a new bridge just north of the existing location. The bridge replacement will be staged by using a signalized one-lane two-way detour with traffic being maintained on the existing bridge while a new bridge is constructed.

As a result of stabilizing banks under the new bridge and at a ditch outlet, there will be a total of 79 linear feet of permanent stream bank stabilization impacts, and 36 linear feet (<0.01 ac) of temporary impacts. These impacts do not require permanent fill in the stream bed, therefore, under Section 404 of the Clean Water Act, do not constitute Loss of Waters of the U.S., and are not subject to compensatory mitigation.

Please see enclosed copies of the Pre-Construction Notification (PCN), Stormwater Management Plan, Permit Drawings, Protected Species Reports, Tribal Coordination Documents, and Minimum Criteria Determination Checklist (MCDC).

This project calls for a letting date of June 20, 2023 and a review date of May 2, 2023.

A copy of this permit application has been posted on the NCDOT Website at:  
<http://connect.ncdot.gov/resources/Environmental>. If you have any questions or need additional information, please contact Erin Cheely at [ekcheely@ncdot.gov](mailto:ekcheely@ncdot.gov) or (919) 707-6108.

Sincerely,

Michael A. Turchy  
Environmental Coordination and Permitting Group Leader

cc: NCDOT Permit Application Standard Distribution List

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
ENVIRONMENTAL ANALYSIS UNIT  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1598

Telephone: (919) 707-6000  
Customer Service: 1-877-368-4968  
Website: [www.ncdot.gov](http://www.ncdot.gov)

Location:  
1000 BIRCH RIDGE DRIVE  
RALEIGH NC 27610



## Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits  
(along with corresponding Water Quality Certifications)

April 13, 2022 Ver 4.3

Please note: fields marked with a red asterisk \* below are required. You will not be able to submit the form until all mandatory questions are answered.

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

<https://edocs.deq.nc.gov/WaterResources/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf>

### A. Processing Information

Pre-Filing Meeting Date Request was submitted on: \*

4/29/2022

If this is a courtesy copy, please fill in this with the submission date.

County (or Counties) where the project is located: \*

Mitchell

Is this a NCDMS Project? \*

☐ Yes ☒ No

Click Yes, only if NCDMS is the applicant or co-applicant.

Is this project a public transportation project? \*

☒ Yes ☐ No

This is any publicly funded by municipal, state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project? \*

☒ Yes ☐ No

(NCDOT only) T.I.P. or state project number:

B-5893

WBS # \*

48086.1.1

(for NCDOT use only)

1a. Type(s) of approval sought from the Corps: \*

- ☒ Section 404 Permit (wetlands, streams and waters, Clean Water Act)  
☐ Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

Has this PCN previously been submitted? \*

☐ Yes  
☒ No

1b. What type(s) of permit(s) do you wish to seek authorization? \*

- ☐ Nationwide Permit (NWP)  
☒ Regional General Permit (RGP)  
☐ Standard (IP)

1c. Has the NWP or GP number been verified by the Corps? \*

☐ Yes ☒ No

Regional General Permit (RGP) Number:

201902350 - Work associated with bridge construction, widening, replacement, and interchanges

RGP Numbers (for multiple RGPs):

List all RGP numbers you are applying for not on the drop down list.

1d. Type(s) of approval sought from the DWR: \*

check all that apply

- ☒ 401 Water Quality Certification - Regular  
☐ Non-401 Jurisdictional General Permit  
☐ Individual 401 Water Quality Certification  
☐ 401 Water Quality Certification - Express  
☐ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?

\*

For the record only for DWR 401 Certification:

☐ Yes ☒ No

For the record only for Corps Permit:

☐ Yes ☒ No

1f. Is this an after-the-fact permit application? \*

☐ Yes ☒ No

1g. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?

If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

☐ Yes ☒ No

Acceptance Letter Attachment

Click the upload button or drag and drop files here to attach document

FILE TYPE MUST BE PDF

1h. Is the project located in any of NC's twenty coastal counties? \*

☐ Yes ☒ No

1j. Is the project located in a designated trout watershed? \*

☒ Yes ☐ No

You must submit a copy of the appropriate Wildlife Resource Commission Office.

Link to trout information: <http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx>

## B. Applicant Information



1a. Who is the Primary Contact? \*

Erin Cheely

1b. Primary Contact Email: \*

ekcheely@ncdot.gov

1c. Primary Contact Phone: \*

(xxx)xxx-xxxx

(919)707-6108

1d. Who is applying for the permit? \*

☒ Owner

(Check all that apply)

☐ Applicant (other than owner)

1e. Is there an Agent/Consultant for this project? \*

☐ Yes ☒ No

## 2. Owner Information

2a. Name(s) on recorded deed: \*

NC Department of Transportation

2b. Deed book and page no.:

2c. Contact Person:

(for Corporations)

2d. Address \*

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699

State / Province / Region

NC

Country

USA

2e. Telephone Number: \*

(xxx)xxx-xxxx

(919)707-6108

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: \*

maturchy@ncdot.gov

## C. Project Information and Prior Project History



### 1. Project Information



1a. Name of project: \*

B-5893: Replace Bridge 19 over Cub Creek on NC 226

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: \*

Bakersville

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

Postal / Zip Code

State / Province / Region

Country

2d. Site coordinates in decimal degrees

Please collect site coordinates in decimal degrees. Use between 4-6 digits (unless you are using a survey-grade GPS device) after the decimal place as appropriate, based on how the location was determined. (For example, most mobile phones with GPS provide locational precision in decimal degrees to map coordinates to 5 or 6 digits after the decimal place.)

Latitude: \*

36.018253

ex: 34.208504

Longitude: \*

-82.183394

-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: \*

Cub Creek

3b. Water Resources Classification of nearest receiving water: \*

C; Tr

[Surface Water Lookup](#)

3c. What river basin(s) is your project located in? \*

French Broad

3d. Please provide the 12-digit HUC in which the project is located. \*

06010108

[River Basin Lookup](#)

4. Project Description and History

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: \*

Surrounding land use is primarily forested with residential throughout and some agricultural.

4b. Have Corps permits or DWR certifications been obtained for this project (including all prior phases) in the past? \*

☐ Yes ☒ No ☐ Unknown

4f. List the total estimated acreage of all existing wetlands on the property:

0

4g. List the total estimated linear feet of all existing streams on the property:

(intermittent and perennial)

1505

4h. Explain the purpose of the proposed project: \*

The purpose of this project is to replace a structurally deficient bridge. Bridge No. 19 was built in 1935. NCDOT Bridge Management Unit records indicate Bridge No. 19 has a sufficiency rating of 58.11 out of 100 for a new structure. The bridge is considered functionally obsolete by Federal Highway Administration (FHWA) standards due to the deck geometry being a 2 out of 4. Components of the deck have experienced an increasing degree of section loss, deterioration, spalling or scour that can no longer be addressed by maintenance activities.

4i. Describe the overall project in detail, including indirect impacts and the type of equipment to be used: \*

This project is the replacement of NCDOT Bridge No. 19. The existing bridge consists of 1 @ 22'-0" reinforced concrete slab with vertical concrete abutments. It is to be replaced by 1 @ 40'-0" 21" cored slab units with vertical abutments. The replacement of Bridge No. 19 will be staged by using a signalized one-lane two-way detour with traffic being maintained on the existing bridge in Phase 1, while a new bridge is constructed. The new bridge will be on an alignment shifted slightly to the north of the existing bridge. Standard road building equipment such as trucks, dozers, and cranes will be used.

5. Jurisdictional Determinations

5a. Have the wetlands or streams been delineated on the property or proposed impact areas? \*

☒ Yes

☐ No

☐ Unknown



Comments:

Only three perennial named streams in the project area.

5b. If the Corps made a jurisdictional determination, what type of determination was made? \*

☐ Preliminary ☐ Approved ☒ Not Verified ☐ Unknown ☐ N/A

Corps AID Number:

Example: SAW-2017-99999

5c. If 5a is yes, who delineated the jurisdictional areas?

Name (if known): Ron Johnson and Paul Gerlach

Agency/Consultant Company: AECOM

Other:

6. Future Project Plans

6a. Is this a phased project? \*

☐ Yes ☒ No

Are any other NWP(s), regional general permit(s), or individual permits(s) used, or intended to be used, to authorize any part of the proposed project or related activity? This includes other separate and distant crossing for linear projects that require Department of the Army authorization but don't require pre-construction notification.

No.

D. Proposed Impacts Inventory

1. Impacts Summary

1a. Where are the impacts associated with your project? (check all that apply):

☐ Wetlands ☒ Streams-tributaries ☐ Buffers  
☐ Open Waters ☐ Pond Construction

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

"S." will be used in the table below to represent the word "stream".

	3a. Reason for impact * (?)	3b.Impact type *	3c. Type of impact *	3d. S. name *	3e. Stream Type * (?)	3f. Type of Jurisdiction *	3g. S. width *  Average (feet)	3h. Impact length *  (linear feet)
S1	Site 1 - bridge	Permanent	Bank Stabilization	Cub Creek	Perennial	Both	12 Average (feet)	67 (linear feet)
S2	Site 1 - bridge	Temporary	Bank Stabilization	Cub Creek	Perennial	Both	12 Average (feet)	20 (linear feet)
S3	Site 2 - ditch outlet	Permanent	Bank Stabilization	Cub Creek	Perennial	Both	12 Average (feet)	12 (linear feet)
S4	Site 2 - ditch outlet	Temporary	Bank Stabilization	Cub Creek	Perennial	Both	12 Average (feet)	16 (linear feet)

\*\* All Perennial or Intermittent streams must be verified by DWR or delegated local government.

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

79

3i. Total temporary stream impacts:

36

3i. Total stream and ditch impacts:

115

3j. Comments:

Permanent impact total: 0.02ac. Temporary impact total: <0.01ac. Temporary impacts are associated with disturbance from bank stabilization

E. Impact Justification and Mitigation

1. Avoidance and Minimization

**1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing the project: \***

The new bridge will span Cub Creek and will not contain deck drains. Stormwater from the bridge is captured in a closed drainage system at -L- 12+43.93 RT and discharged through a riprap pad where flow is dispersed prior to entering Cane Creek. Stormwater from the beginning of the project, up to the storm water drainage system at 12+43.93 RT, flows across the road and onto the right grass shoulder. A ditch from 10+50 to 12+00 LT captures off-site flow and is directed through a 18" RCP under NC 226 into a riprap pad at -L- 11+05 RT where flow is dispersed prior to entering Cane Creek. Stormwater coming from the end of the project will flow into a proposed grass lined ditch from 18+00 to 13+81 LT through a 18" RCP and into a riprap lined ditch from 13+44 to 13+06 LT before discharging into Cub Creek. The design described above mirrors all existing drainage patterns into Cub Creek and Cane Creek.

**1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques: \***

Design Standards in Sensitive Watersheds will be adhered to due to the Tr classification. (The Wildlife Resources Commission does not expect significant trout resources at this location, and is not requesting a trout moratorium.) NCDOT will also adhere to Best Management Practices for Construction and Maintenance Activities.

## 2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

**2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?**

☐ Yes ☒ No

**2b. If this project DOES NOT require Compensatory Mitigation, explain why:**

The NCDOT does not propose mitigation for the temporary and bank stabilization impacts associated with this project. These impacts do not require permanent fill in the stream bed, therefore, under Section 404 of the Clean Water Act, do not constitute Loss of Waters of the U.S., and are not subject to compensatory mitigation.

NC Stream Temperature Classification Maps can be found under the Mitigation Concepts tab on the Wilmington District's [RIBITS](#) website.

## F. Stormwater Management and Diffuse Flow Plan (required by DWR)

\*\*\* Recent changes to the stormwater rules have required updates to this section .\*\*\*

### 1. Diffuse Flow Plan

**1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?**

☐ Yes ☒ No

For a list of options to meet the diffuse flow requirements, click [here](#).

**If no, explain why:**

No buffered resources within project area.

### 2. Stormwater Management Plan

**2a. Is this a NCDOT project subject to compliance with NCDOT's Individual NPDES permit NCS000250? \***

☒ Yes ☐ No

Comments:

## G. Supplementary Information

### 1. Environmental Documentation

**1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? \***

☒ Yes ☐ No

**1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)? \***

☒ Yes ☐ No

**1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) \***

☒ Yes ☐ No

### 2. Violations (DWR Requirement)

**2a. Is the site in violation of DWR Water Quality Certification Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), or DWR Surface Water or Wetland Standards or Riparian Buffer Rules (15A NCAC 2B .0200)? \***

☐ Yes ☒ No

### 3. Cumulative Impacts (DWR Requirement)

**3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? \***

☐ Yes ☒ No

**3b. If you answered "no," provide a short narrative description.**

Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.

## 4. Sewage Disposal (DWR Requirement)

4a. Is sewage disposal required by DWR for this project? \*

☐ Yes ☐ No ☒ N/A

## 5. Endangered Species and Designated Critical Habitat (Corps Requirement)

5a. Will this project occur in or near an area with federally protected species or habitat? \*

☒ Yes ☐ No

5b. Have you checked with the USFWS concerning Endangered Species Act impacts? \*

☐ Yes ☒ No

5d. Is another Federal agency involved? \*

☒ Yes ☐ No ☐ Unknown

What Federal Agency is involved?

USACE

5e. Is this a DOT project located within Division's 1-8? \*

☐ Yes ☒ No

5f. Will you cut any trees in order to conduct the work in waters of the U.S.? \*

☒ Yes ☐ No

5g. Does this project involve bridge maintenance or removal? \*

☒ Yes ☐ No

5g(1). If yes, have you inspected the bridge for signs of bat use such as staining, guano, bats, etc.? Representative photos of signs of bat use can be found in the NLEB SLOPES, Appendix F, pages 3-7.

☒ Yes ☐ No

Link to the NLEB SLOPES document: [http://saw-reg.usace.army.mil/NLEB/1-30-17-signed\\_NLEB-SLOPES&apps.pdf](http://saw-reg.usace.army.mil/NLEB/1-30-17-signed_NLEB-SLOPES&apps.pdf)

If you answered "Yes" to 5g(1), did you discover any signs of bat use? \*

☐ Yes ☒ No ☐ Unknown

\*\*\* If yes, please show the location of the bridge on the permit drawings/project plans.

5h. Does this project involve the construction/installation of a wind turbine(s)?\* \*

☐ Yes ☒ No

5i. Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.? \*

☒ Yes ☐ No

5j. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? \*

As of December 12, 2022 the USFWS identifies six federally protected species (gray bat, northern long-eared bat, Appalachian elktoe, bog turtle, Virginia spiraea, and rock gnome lichen) and one proposed endangered species (tricolored bat) in IPaC within the project area.

The project was assessed for evidence of bats in 2018 and 2022. See attached survey memo. No evidence of bats was observed, but a biological conclusion of May Affect, Not Likely to Adversely Affect is proposed for all listed (and proposed) bats due to presence of foraging and commuting habitat.

Aquatic surveys were conducted on this project in 2016 and 2022. See attached survey reports. Though no Appalachian elktoe (or evidence of any native mussels) were identified in either survey, a biological conclusion of May Affect, Not Likely to Adversely Affect is proposed due to proximity to a known population within the North Toe River.

No habitat is present for the three remaining listed species. No wetlands are present within the project footprint to provide habitat for bog turtle. The banks of Cub Creek within the construction footprint are incised and densely vegetated with trees. The stream channel runs parallel to Cub Creek Road and is very straight with almost no meander, providing no scoured banks or bars to provide suitable habitat for Virginia spiraea. Site elevations within the project footprint do not exceed 2,480 feet above MSL, therefore no habitat is present for rock gnome lichen.

## 6. Essential Fish Habitat (Corps Requirement)

6a. Will this project occur in or near an area designated as an Essential Fish Habitat? \*

☐ Yes ☒ No

6b. What data sources did you use to determine whether your site would impact an Essential Fish Habitat? \*

NMFS County Index

## 7. Historic or Prehistoric Cultural Resources (Corps Requirement)

Link to the State Historic Preservation Office Historic Properties Map (does not include archaeological data: <http://gis.ncdcr.gov/hpweb/>)

7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? \*

☐ Yes ☒ No

**7b. What data sources did you use to determine whether your site would impact historic or archeological resources? \***

Historic Architecture and Archaeology reviews (documented in the MCDC) and Tribal coordination (attached).

## 8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: <https://msc.fema.gov/portal/search>

**8a. Will this project occur in a FEMA-designated 100-year floodplain? \***

☒ Yes ☐ No

**8b. If yes, explain how project meets FEMA requirements:**

**8c. What source(s) did you use to make the floodplain determination? \***

FEMA Maps

## Miscellaneous

### Comments

Tree clearing acreage = 1.02 ac

**Please use the space below to attach all required documentation or any additional information you feel is helpful for application review. Documents should be combined into one file when possible, with a Cover Letter, Table of Contents, and a Cover Sheet for each Section preferred.**

Click the upload button or drag and drop files here to attach document

B-5893 Mitchell December 2022.pdf

10.37MB

File must be PDF or KMZ

## Signature

\*

☒ By checking the box and signing below, I certify that:

- The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief; and
- The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

**Full Name: \***

Michael Turchy

**Signature \***

*Michael Turchy*

**Date**

12/20/2022



## North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS

(Version 2.08; Released April 2018)

WBS Element:	48086.1.1	TIP No.:	B-5893	County(ies):	Mitchell	Page	1	of	2	
General Project Information										
WBS Element:	48086.1.1	TIP Number:	B-5893	Project Type:	Bridge Replacement	Date:	6/20/2019			
NCDOT Contact:	Tierre Peterson, PE			Contractor / Designer:	WSP USA / John F. Watson, PE					
Address:	1000 Birch Ridge Dr. Raleigh, NC 27610			Address:	434 Fayetteville St. Suite 1500 Raleigh, NC					
	Phone:	919-707-6488			Phone:	1(919)836-4040				
	Email:	trpeterson@ncdot.gov			Email:	John.F.Watson@wsp.com				
City/Town:	Bakersville			County(ies):	Mitchell					
River Basin(s):	French Broad			CAMA County?	No					
Wetlands within Project Limits?	No									
Project Description										
Project Length (lin. miles or feet):	0.152 mi		Surrounding Land Use:	Rural, Residential, Agricultural						
	Proposed Project			Existing Site						
Project Built-Up Area (ac.)	1.1 ac.			0.6 ac.						
Typical Cross Section Description:	-L- includes 2 - 11' asphalt paved lanes with grass shoulders. Has 2 proposed ditches in the left quadrants with 4:1 front slopes and Cane Creek runs along the RT of NC 226. -Y- includes 2 - 8' paved lanes with grass shoulders. Parallel to Cub Creek (LT).			-L- includes 2 - 10' asphalt paved lanes with grass shoulders. Has 2 existing ditch and Cane Creek runs along the RT of NC 226. -Y- includes 2 - 8' paved lanes with grass shoulders. Parallel to Cub Creek (LT).						
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	2300	Year:	2040	Existing:	2000	Year:	2016		
General Project Narrative: (Description of Minimization of Water Quality Impacts)	State project B-5893 involves the replacement of Bridge No. 600019 over Cub Creek on NC 226. The existing bridge consists of 1 @ 22'-0" reinforced concrete slab with vertical concrete abutments. It is to be replaced by 1 @ 40'-0" 21" cored slab units with vertical abutments.  The proposed bridge does not contain deck drains, all stormwater from the bridge is captured in a closed drainage system at -L- 12+43.93 RT and discharged through a riprap pad where flow is dispersed prior to entering Cane Creek. Stormwater from the beginning of the project, up to the storm water drainage system at 12+43.93 RT, flows across the road and onto the right grass shoulder. A ditch from 10+50 to 12+00 LT captures off-site flow and is directed through a 18" RCP under NC 226 into a riprap pad at -L- 11+05 RT where flow is dispersed prior to entering Cane Creek. Stormwater coming from the end of the project will flow into a proposed grass lined ditch from 18+00 to 13+81 LT through a 18" RCP and into a riprap lined ditch from 13+44 to 13+06 LT before discharging into Cub Creek. The design described above mirrors all existing drainage patterns into Cub Creek and Cane Creek.									
Waterbody Information										
Surface Water Body (1):	Cub Creek			NCDWR Stream Index No.:	7-2-59-11					
NCDWR Surface Water Classification for Water Body	Primary Classification:			Class C						
	Supplemental Classification:			Trout Waters (Tr)						
Other Stream Classification:	None									
Impairments:	None									
Aquatic T&E Species?	No	Comments:								
NRTR Stream ID:				Buffer Rules in Effect:		N/A				
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?		No	Dissipator Pads Provided in Buffer?		N/A			
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)					
(If yes, provide justification in the General Project Narrative)										



North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN  
FOR NCDOT PROJECTS



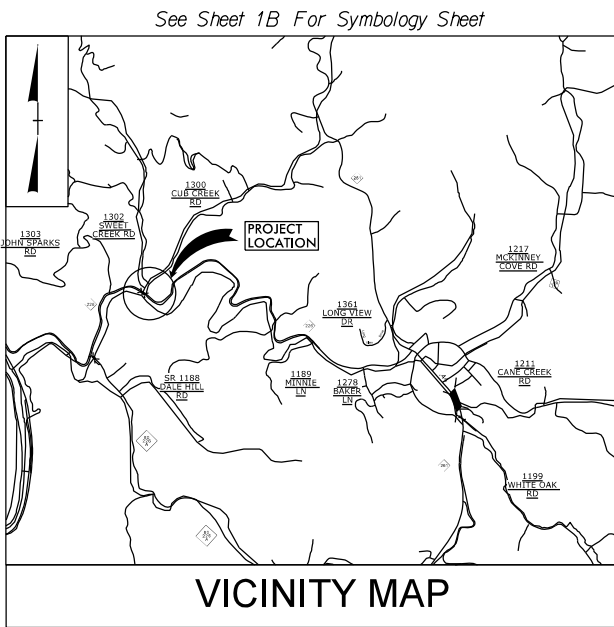
(Version 2.08; Released April 2018)

WBS Element:	48086.1.1	TIP No.:	B-5893	County(ies):	Mitchell	Page	2	of	2
Additional Waterbody Information									
Surface Water Body (2):	Cane Creek			NCDWR Stream Index No.:	7-2-59				
NCDWR Surface Water Classification for Water Body			Primary Classification:	Class C					
			Supplemental Classification:	Trout Waters (Tr)					
Other Stream Classification:	None								
Impairments:	None								
Aquatic T&E Species?	No			Comments:					
NRTR Stream ID:					Buffer Rules in Effect:	N/A			
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?			N/A		
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
(If yes, provide justification in the General Project Narrative)									

09/08/99

TIP PROJECT: B-5893

CONTRACT:



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

MITCHELL COUNTY

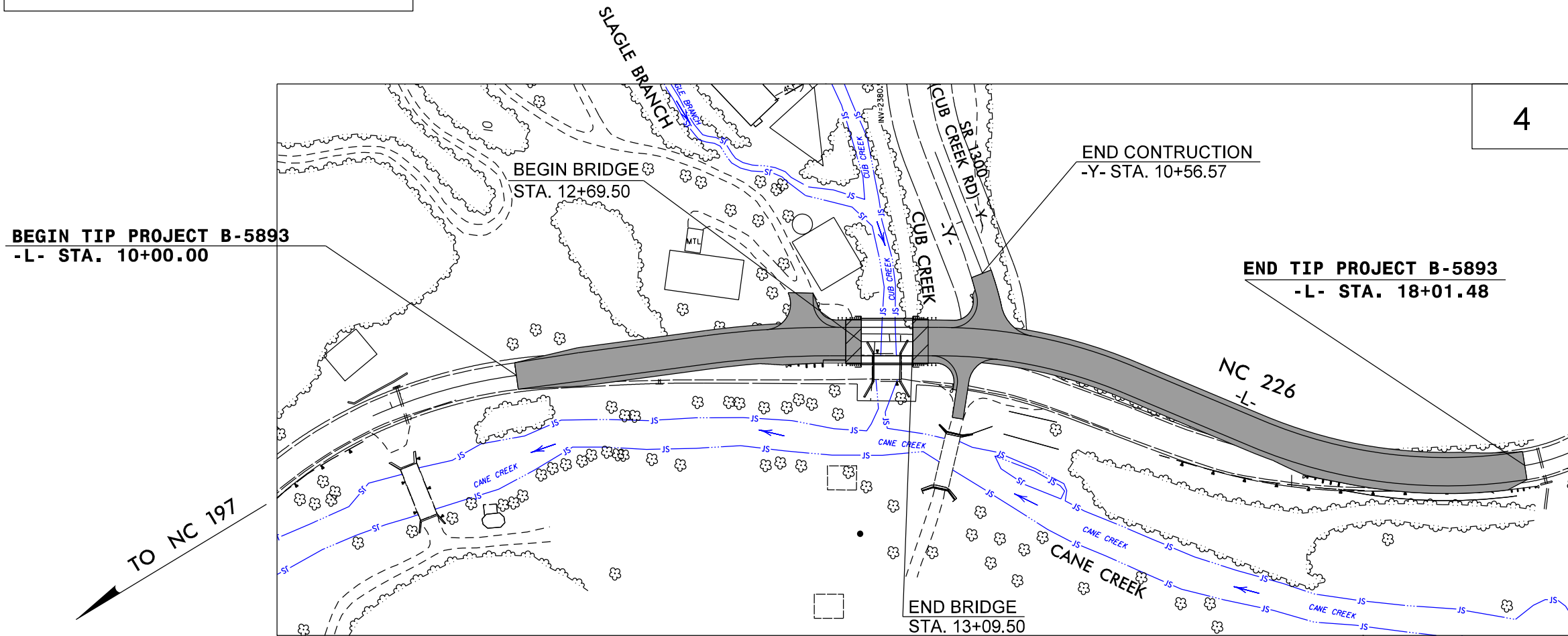
LOCATION: REPLACE BRIDGE No. 19 OVER CUB CREEK ON NC 226

TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALL, AND STRUCTURE

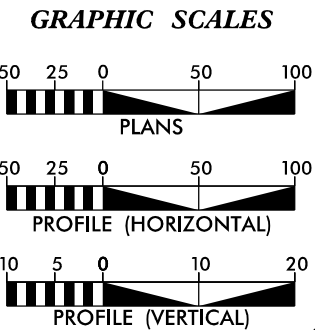
WETLAND AND STREAM IMPACTS 6-20-2019

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5893	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
48086.1.1	N/A	PE	

PERMIT DRAWING  
SHEET 1 OF 5



THIS PROJECT HAS NO CONTROL OF ACCESS  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_.



DESIGN DATA

ADT 2016 = 2000 VPD  
ADT 2040 = 2300 VPD  
K = 12 %  
D = 55 %  
T = 4 % \*  
V = 45 MPH  
\* TTST =1% DUAL 3%  
FUNC CLASS =  
LOCAL  
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5893 = 0.139 MI  
LENGTH STRUCTURE TIP PROJECT B-5893 = 0.013 MI  
TOTAL LENGTH TIP PROJECT B-5893 = 0.152 MI

Prepared In the Office of  
**wsp**  
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: APRIL 17, 2019

LETTING DATE: APRIL 17, 2020

RONYELL THIGPEN, PE  
PROJECT ENGINEER

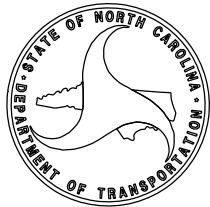
HOLLY CHRISTENBURY, PE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



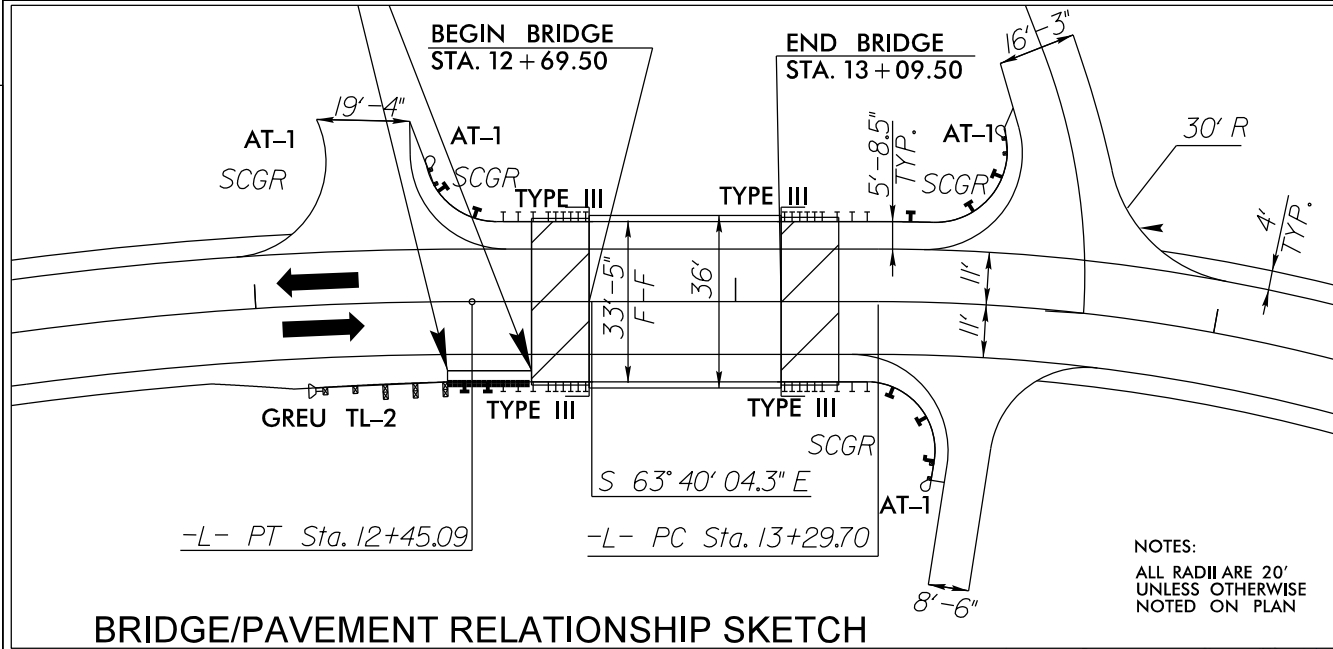
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8/17/99

REVISIONS

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\*\*\*\*\*DGN\*\*\*\*\*  
\*\*\*\*\*CHN\*\*\*\*\*  
\*\*\*\*\*PLOT\*\*\*\*\*  
\*\*\*\*\*END\*\*\*\*\*



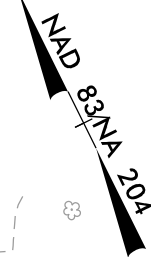
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PAVED SHOULDER

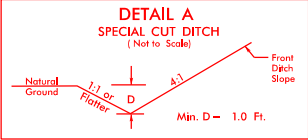
### WETLAND & STREAM IMPACTS

**wsp**  
WSP USA  
434 FAYETTEVILLE STREET  
SUITE 100  
RALEIGH, NC 27601  
TEL: 1.919.836.4040  
FAX: 1.919.836.4099  
LICENSE NO. F-0165

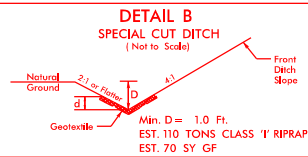
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SHEET 2 OF 5



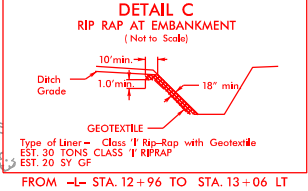
PROJECT REFERENCE NO.		SHEET NO.
B-5893		4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



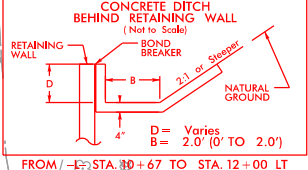
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FROM -L- STA. 17+50 TO STA. 18+00 LT  
FROM -L- STA. 10+50 TO STA. 12+00 LT



FROM -L- STA. 13+06 TO STA. 13+45 LT

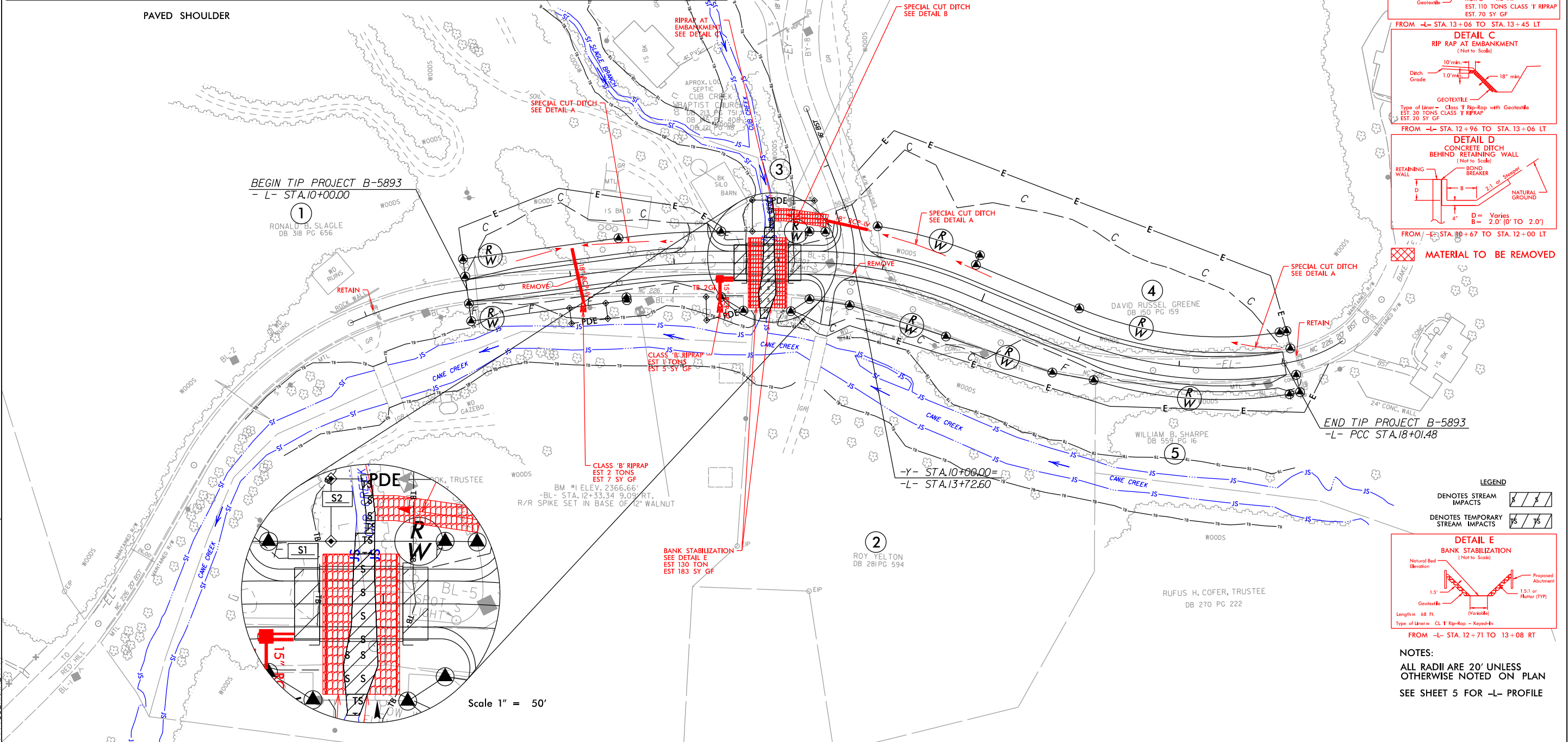


FROM -L- STA. 12+96 TO STA. 13+06 LT



FROM -L- STA. 10+67 TO STA. 12+00 LT

MATERIAL TO BE REMOVED





PERMIT DRAWING  
SHEET 3 OF 5

## BRIDGE/PAVEMENT RELATIONSHIP SKETCH

PAVED SHOULDER

END TIP PROJECT B-5893  
-L- PCC STA.18+01.48

**DETAIL E**

**BANK STABILIZATION**

(Not to Scale)

Natural Bed Elevation

1.5'

Geotextile

Proposed Abutment

1.5:1 or flatter (TYP)

Length = 68 Ft.

Type of Liner = CL 1' Rip-Rap - Keyed-In

FROM -L- STA. 12+71 TO 13+08 RT

NOTES:  
ALL RADII ARE 20' UNLESS  
OTHERWISE NOTED ON PLAN  
SEE SHEET 5 FOR -L- PROFILE

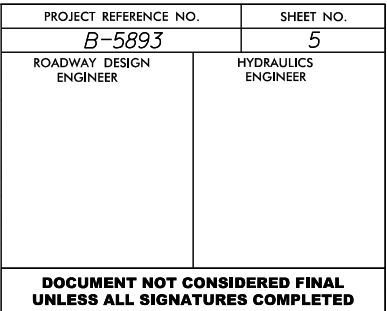
REVISIONS

8/17/99

\$\$\$\$SYTIME\$\$\$\$  
 \$\$\$\$SYGN\$\$\$\$  
 \$\$\$\$JGNAME\$\$\$



USERNAME



# WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 12+85.13 CL	Bank Stabilization						0.02	< 0.01	67	20	
2	-L- 12+96.07 LT	Bank Stabilization						< 0.01	< 0.01	12	16	
TOTALS*:								0.02	< 0.01	79	36	0

\*Rounded totals are sum of actual impacts

NOTES:  
 Site 1 Existing Channel Impacts: Permanent / Temporary = 828.2 SF / 174.2 SF  
 Site 2 Existing Channel Impacts: Permanent / Temporary = 51.7 SF / 70.4 SF  
  
 Tree Clearing acreage = 1.02 ac (LT Wooded Cut Slopes)

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 06/20/2019  
 Mitchell County  
 B-5893  
 48086.1.1  
 SHEET 5 OF 5



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

October 27, 2022

TO: Erin Cheely, Environmental Program Consultant  
Environmental Coordination & Permitting Group, EAU

FROM: Melissa Miller, Environmental Program Consultant  
Biological Surveys Group, EAU

SUBJECT: Section 7 survey results for the gray bat (*Myotis grisescens*, MYGR), northern long-eared bat (*Myotis septentrionalis*, MYSE), tricolored bat (*Perimyotis subflavus*, PESU) and little brown bat (*Myotis lucifugus*, MYLU), associated with the replacement of Bridge Number 19 over Cub Creek on NC 226 in Mitchell County, **TIP No. B-5893.**

The North Carolina Department of Transportation (NCDOT, Division 13) proposes to replace Bridge No. 19 over Cub Creek on NC 226 in Mitchell County, TIP No. B-5893. The existing bridge is a single span structure with a concrete deck, end walls and guard rails. The overall length of the bridge is 22 feet. No culverts meeting NCDOT's Standard Operating Procedures for Preliminary Bat Habitat Assessments were identified meeting the criteria of greater than 3 feet wide and 60 feet in length during this site visit.

On July 20, 2022, Three Oaks biologists assessed all of the structures in the project study area. No crevices suitable for roosting were present on the structure. No evidence of bats (bats, staining, guano) was observed on the structure. Trees greater than 3" dbh occur within the project footprint. Bridge No. 19 was previously surveyed in 2018 by NCDOT biologists. No evidence of bats was observed during this survey as well. There are no known caves or mines within one half mile of the project footprint and no caves or mines were observed during the field visit. Large, continuous forests are present in the project vicinity, providing potential foraging and commuting habitat.

As of October 27, 2022, the following federally protected bat species are listed in IPaC (<https://ecos.fws.gov/ipac/>) as occurring in the action area:

Species	Federal Status	Habitat Present*	Biological Conclusion	Distance to Nearest Record**
MYGR	E	No	MANLTAA	8.2 mile SW
MYSE	T	Yes	MANLTAA	6 mile NE
PESU	PE	Yes	MANLTAA	3.3 mile S
MYLU***	FL	Yes	MANLTAA	6 mile NE

\*See detailed habitat information in table below

\*\*Nearest known record from latest NHP, WRC, or NCDOT data

\*\*\* The Little Brown Bat (*Myotis lucifugus*), which may become federally listed in the future (FL), may also be found in Mitchell County.

MANLTAA=May Affect Not Likely To Adversely Affect

Presence (✓) or Probable Absence (X) of various habitat types for bat species present in project area.

Species	Summer Roosting		Winter Roosting	Foraging Habitat	Commuting Habitat
	Tree	Structure			
MYGR	NA	X	X	✓	✓
MYSE	✓	X	X	✓	✓
PESU	✓	X	X	✓	✓
MYLU	✓	X	X	✓	✓

A Biological Conclusion of May Affect Not Likely To Adversely Affect is given to each of the above species based on the presence of suitable foraging and commuting habitat. No evidence of bats was found on the structure, no suitable roosting crevices are present, no caves or mines are in the area, and a large area of alternative available suitable habitat exists in the project vicinity. Permanent roadway lighting is not present in the project area and BSG is not aware of any plans to install new roadway lighting with this project. If nighttime work during the bat active season becomes necessary, temporary lighting will only be used to illuminate work areas. If avoidance and minimization measures, such as prohibiting tree clearing during the active season can be implemented, this project is Not Likely to Adversely Affect federally listed bats.

If you need any additional information, please contact Melissa Miller at 919-707-6127.

## **Freshwater Mussel Survey Report**

Replacement of Bridge No. 19 on NC 226  
Over Cub Creek  
Mitchell County, North Carolina  
TIP number B-5893  
WBS Element # 48086.1.1

Prepared For:



NC Department of Transportation  
Raleigh, North Carolina

Contact Person:

Jared Gray  
Biological Surveys Group  
North Carolina Department of Transportation  
[jgray@ncdot.gov](mailto:jgray@ncdot.gov)  
1598 Mail Service Center  
Raleigh NC 27699-1598

July 24, 2017

Prepared by:



900 Ridgefield Drive, Suite 350  
Raleigh, NC 27609

Contact Person:

Neil Medlin  
Senior Project Scientist  
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919-878-9560

## Table of Contents

1.0	Introduction	1
2.0	Waters Affected	1
2.1	NPDES Dischargers	1
2.2	303(d) Classification	1
3.0	Target Federally Protected Species Description	1
3.1	Appalachian Elktoe ( <i>Alasmidonta raveneliana</i> )	1
3.1.1	Characteristics	1
3.1.2	Distribution and Habitat Requirements	2
3.2	Survey Efforts	2
3.3	Stream Conditions at Time of Survey: Cub Creek	2
3.4	Methodology	3
3.5	Results	3
4.0	Discussion/Conclusions	3
5.0	References	4

### Appendix A. Figures:

Figure 1: Project Vicinity & Survey Location

Figure 2: NCNHP Element Occurrences

Figure 3: NPDES Dischargers and 303(d) Listed Streams



## **1.0 Introduction**

The North Carolina Department of Transportation (NCDOT) proposes the replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell County (Appendix A, Figure 1). The project bridge crosses Cub Creek of the French Broad River Basin. The Federally Endangered Appalachian Elktoe (*Alasmidonta raveneliana*) is listed by the U.S. Fish and Wildlife Service (USFWS) for Mitchell County.

According to the NC Natural Heritage Program database (NCNHP 2015), last accessed on December 21, 2016, the nearest element occurrence (EO) for Appalachian Elktoe is located in North Toe River approximately 1.25 stream miles downstream from the study location (Figure 2). This EO (Number 70/EO ID 21349) was first observed on October 16, 1991 and was last observed on April 22, 2014.

As part of the federal permitting process that requires an evaluation of potential project-related impacts to federally protected species, Rummel, Klepper, and Kahl Engineering (RK&K) was contracted by NCDOT to conduct the freshwater mussel survey targeting the Appalachian Elktoe.

## **2.0 Waters Affected**

Cub Creek is located in the French Broad River basin (HUC# 06010108). From the project location, Cub Creek flows approximately 25 meters to Cane Creek. Cane Creek flows approximately 1.22 stream miles to the North Toe River.

### **2.1 NPDES dischargers**

The closest permitted NPDES discharger is on Cane Creek (USEPA 2015). Bakersville WWTP (NPDES Permit # NC0025461) is owned by the Town of Bakersville and is located approximately 2.2 stream miles upstream from the study location (Figure 3).

### **2.2 303(d) Classification**

Cub Creek is not on the North Carolina Department of Environmental Quality (NCDEQ, formerly NC Department of Environment and Natural Resources, NCDENR) - Division of Water Resources 2014 303(d) list of impaired streams. However, the nearest 303(d) listed stream is Cane Creek (the confluence of Cub Creek with Cane Creek is 25 meters downstream of the study location). Cane Creek is impaired based on fair fish community (Figure 3).

### **3.0 Target Federally Protected Species Description**

#### **3.1 Appalachian Elktoe (*Alasmodonta raveneliana*)**

##### **3.1.1 Characteristics**

This species was described by Isaac Lea in 1834. The Appalachian Elktoe has a thin, kidney-shaped shell, extending to about 10 centimeters (4 inches). Juveniles generally have a yellowish-brown periostracum (outer shell surface), while the periostracum of the adults is usually dark brown to greenish-black in color. Although rays are prominent on some shells, particularly in the posterior portion of the shell, many individuals have only obscure greenish rays. The shell nacre (inside shell surface) is shiny, often white to bluish-white, changing to a salmon, pinkish, or brownish color in the central and beak cavity portions of the shell; some specimens may be marked with irregular brownish blotches.

##### **3.1.2 Distribution and Habitat Requirements**

Currently, the Appalachian Elktoe has a very fragmented, relict distribution. The species still survives in scattered pockets of suitable habitat in portions of the Little Tennessee River system, Pigeon River system, Mills River, and Little River in North Carolina, and the Nolichucky River system in North Carolina and Tennessee. In the Pigeon River system in North Carolina, a small population of the Appalachian Elktoe occurs in small scattered sites in the West Fork Pigeon River and in the main stem of the Pigeon River, above Canton, in Haywood County.

The species has been reported from relatively shallow, medium-sized creeks and rivers with cool, clean, well-oxygenated, moderate- to fast-flowing water. The species is most often found in riffles, runs, and shallow flowing pools with stable, relatively silt-free, coarse sand and gravel substrate associated with cobble, boulders, and/or bedrock. Stability of the substrate appears to be critical to the Appalachian Elktoe, and the species is seldom found in stream reaches with accumulations of silt or shifting sand, gravel, or cobble. Individuals that have been encountered in these areas are believed to have been scoured out of upstream areas during periods of heavy rain, and have not been found on subsequent surveys.

#### **3.2 Survey Efforts**

A mussel survey was conducted in association with this project by RK&K personnel Neil Medlin (Permit # 16-ES00030) and John Merritt on October 04, 2016.

#### **3.3 Stream Conditions at Time of Survey: Cub Creek/Cane Creek**

The subject project is over Cub Creek (small 1-2 meters wide, high gradient stream); however, the confluence of Cub Creek with Cane Creek is immediately downstream of Bridge 19. Cane Creek parallels NC 226. The Cane Creek channel exhibited run, riffle, and pool flow. The channel was six meters wide with a bank height of 1.5 meters. The maximum depth here was 1.0 meter with an average depth of 0.25 meter. The substrate was composed of silt, sand, gravel, cobble, boulder and bedrock throughout the surveyed reach, with cobble and gravel dominant

and sub dominant, respectively. Stream substrate, in pool and deeper run locations, was buried by sediment. Stream banks here consisted of rocks. A narrow forested buffer is present along the majority of the survey location.

### **3.4 Methodology**

The mussel survey was conducted from approximately 400 meters downstream to approximately 100 meters upstream of the Cub Creek/Cane Creek confluence, for a distance of approximately 500 meters. Areas of appropriate habitat were searched, concentrating on the stable habitats preferred by the target species. Visual surveys were conducted using glass bottom view buckets (bathyscopes). All freshwater mollusks were recorded and returned to the substrate.

### **3.5 Results**

A total of 1.0 person hour of survey time was spent in the survey location, with no native freshwater mussel species observed. One live Asian clam (*Corbicula fluminea*) along with gastropods in the genera *Physella* (5 individuals) and *Elimia* (19 individuals) were present at the survey location.

### **4.0 Discussion/Conclusions**

The results indicate that the study area is unlikely to support any native freshwater mussel fauna. Appalachian Elktoe was not found during the survey.

Previous surveys near the current survey location vicinity, have resulted in the discovery of Appalachian Elktoe. Three previous surveys, conducted in the North Toe River, ranged from 1.5 to 2.8 stream miles downstream of the current survey location. These previous surveys occurred on; October 16, 1991, October 04, 2005, October 22, 2008 and April 22, 2014.

Based on the medium/high gradient habitat, distance to known Appalachian Elktoe records and these survey results, impacts to Appalachian Elktoe are unlikely to occur in the study area. A Biological Conclusion on potential impacts from the subject project to the Appalachian Elktoe is provided below.

**Biological Conclusion for Appalachian Elktoe: May Affect; Not Likely to Adversely Affect**

## 5.0 References



- Adams, W. F., J. M. Alderman, R. G. Biggins, A. G. Gerberich, E. P. Keferl, H. J. Porter, and A. S. Van Devender. 1990. A report on the conservation status of North Carolina's freshwater and terrestrial molluscan fauna. N.C. Wildlife Resources Commission, Raleigh. 246 pp, Appendix A, 37 pp.
- LeGrand, Jr., H.E., J.T. Finnegan, S.E. McRae, S.P. Hall. 2010. Natural Heritage Program List of the Rare Animal Species of North Carolina. N.C. Natural Heritage Program, Raleigh, NC.
- North Carolina Department of Natural Resources (NCDENR) - Division of Water Resources. 2014. 2014 North Carolina 303(d) List. <http://portal.ncdenr.org/web/wq/ps/mtu/assessment>
- North Carolina Natural Heritage Program (NCNHP). 2016. nheo-2016-10. Natural Heritage Element Occurrence polygon shapefile. October 19, 2016.
- North Carolina Wildlife Resources Commission. Unpublished Aquatics Database.
- North Carolina Department of Environmental Quality. NPDES Wastewater Treatment Facility Permits. Accessed December 21, 2016. [http://data-ncdenr.opendata.arcgis.com/datasets/a86af4f7549343419b4c8177cedb3e4b\\_0](http://data-ncdenr.opendata.arcgis.com/datasets/a86af4f7549343419b4c8177cedb3e4b_0)
- U.S. Fish and Wildlife Service (USFWS). 1996. Appalachian elktoe (*Alasmidonta raveneliana*) Recovery Plan. Atlanta, Georgia. 32 pp.
- U.S. Fish and Wildlife Service (USFWS). 2011. Appalachian elktoe (*Alasmidonta raveneliana*) Species Profile. Raleigh Ecological Field Office Web site (Accessed 12/06/16). [https://www.fws.gov/raleigh/species/es\\_appalachian\\_elktoe.html](https://www.fws.gov/raleigh/species/es_appalachian_elktoe.html)

## **APPENDIX A**

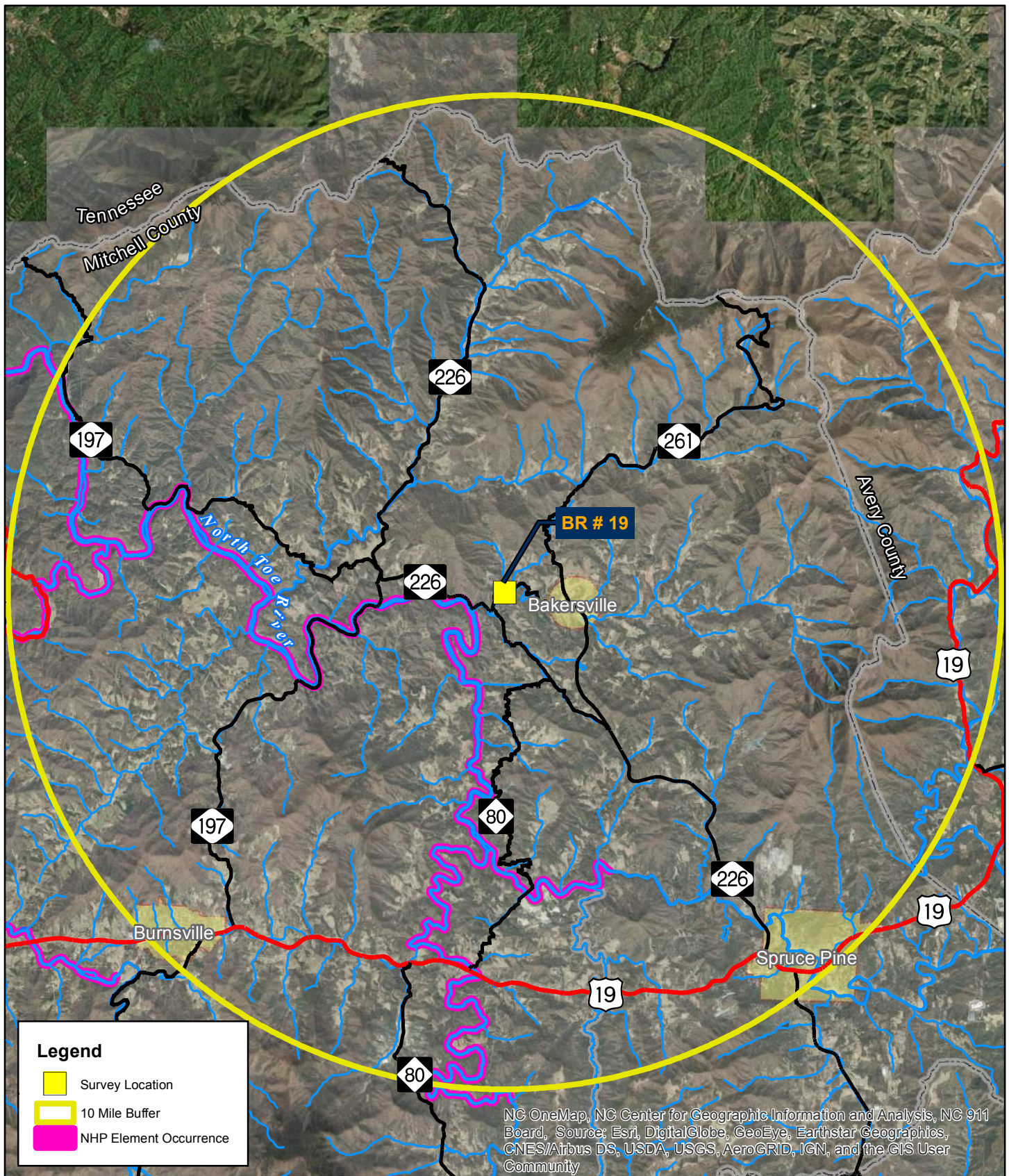
### **Figures**







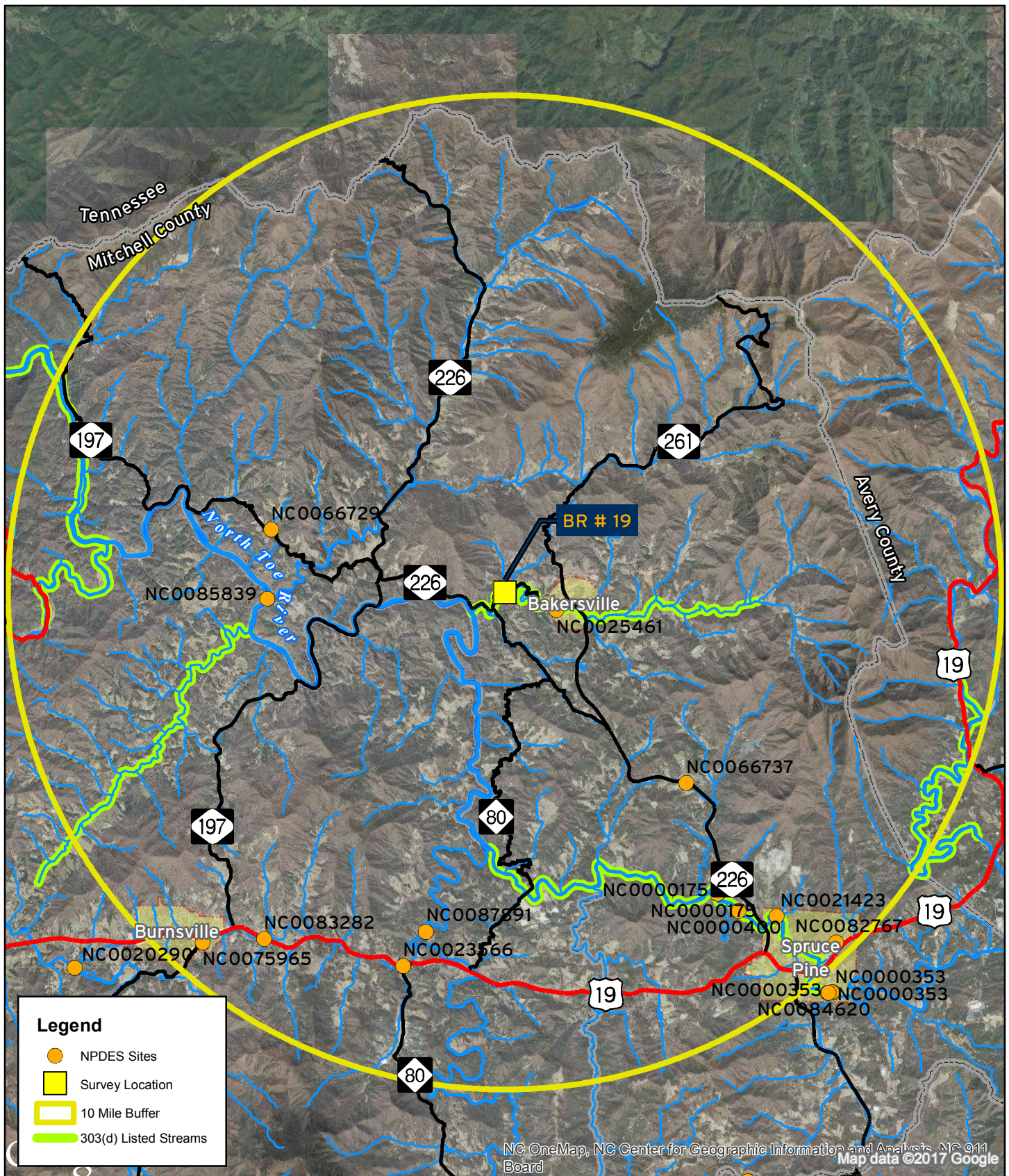
<p>Prepared By:</p> 	<p>Prepared For:</p> 	<p><b>FRESHWATER MUSSEL SURVEY</b> BRIDGE # 19 on NC 226 OVER CUB CREEK B-5923</p> <p>MITCHELL COUNTY</p>	<p>Date: July 2017</p> <p>Scale 0 200 Feet</p> <p>Job No. B-5923</p> <p>Drawn by: DCW      Checked by: KNM</p>	<p><b>Figure 1</b></p>
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Prepared By: 	Prepared For: 	<b>NC NHP</b> <b>Element Occurrence</b> <b>BRIDGE # 19 on NC 226</b> <b>OVER CUB CREEK</b> <b>B-5893</b> <b>MITCHELL COUNTY</b>	Date: July 2017 Scale: 0 2 Miles Job No. B-5893 Drawn by: DCW    Checked by: KNM	<b>Figure</b> <b>2</b>
---	--	--	---	---------------------------





Prepared By: 	Prepared For: 	<b>NPDES DISCHARGERS and 303(d) LISTED STREAMS</b> BRIDGE # 19 on NC 226 OVER CUB CREEK B-5923  MITCHELL COUNTY	Date: July 2017 Scale: 0 2 Miles Job No. B-5923 Drawn by: DCW    Checked by: KNM	<b>Figure 3</b>
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## **Aquatic Species Survey Report**

Replacement of Bridge No. 19 on NC 226  
Over Cub Creek  
Mitchell County, North Carolina

TIP # B-5893  
WBS Element # 48086.1.1

Prepared For:



NC Department of Transportation  
Raleigh, North Carolina

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November 30, 2022

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919-878-9560

## Table of Contents

<b>1.0</b>	<b>Introduction</b>	1
<b>2.0</b>	<b>Waters Affected</b>	1
2.1	National Pollutant Discharge Elimination System (NPDES) Dischargers	1
2.2	303(d) Classification	1
<b>3.0</b>	<b>Target Species Descriptions</b>	2
3.1	Appalachian Elktoe ( <i>Alasmodonta raveneliana</i> )	2
3.1.1	Characteristics	2
3.1.2	Distribution and Habitat Requirements	2
<b>4.0</b>	<b>Survey Efforts</b>	2
4.1	Waterway Conditions at Time of Survey: Cub Creek and Cane Creek	2
4.2	Methodology	3
4.2.1	Mussel Survey	3
<b>5.0</b>	<b>Results</b>	3
5.1	Mussel Survey	3
<b>6.0</b>	<b>Critical Habitat</b>	3
<b>7.0</b>	<b>Discussion/Conclusions</b>	3
<b>8.0</b>	<b>References</b>	5

### Appendix A. Figures:

Figure 1: Project Vicinity & Survey Location

Figure 2: NCNHP Element Occurrences

Figure 3: NPDES Dischargers and 303(d) Listed Waters

## 1.0 Introduction

The North Carolina Department of Transportation (NCDOT) proposes the replacement of Bridge No. 19 over Cub Creek on NC 226 in Mitchell County (Appendix A, Figure 1). As of November 10, 2022, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) webpage listed Appalachian Elktoe (*Alasmidonta raveneliana*) as a protected species under the Endangered Species Act (ESA) that potentially may be affected by activities in the project location. The IPaC webpage indicated there is no critical habitat that overlaps with the project location.

A review of the NC Natural Heritage Program (NCNHP) records, last accessed on October 26, 2022, indicated that an element occurrence (EO) exists for the target species within a 5-mile buffer of the project location (Table 1; Figure 2).

Table 1. NC Natural Heritage Program Element Occurrence records and approximate distance from the project location (i.e., stream miles (SM)).

Species	EO ID	EO Status	Waterway	First Observation	Last Observation	SM
Appalachian Elktoe	21349	Current	North Toe River	October 1991	October 2020	1.24

As part of the federal permitting process that requires an evaluation of potential project related impacts to federally protected species, RK&K was contracted by NCDOT to conduct an aquatic survey for Appalachian Elktoe.

## 2.0 Waters Affected

The waterway potentially affected by the project is Cub Creek within the French Broad River Basin HUC# 06010108. From the project location, Cub Creek flows approximately 0.02 SM to the confluence with Cane Creek, which flows approximately 1.22 SM to the confluence with the North Toe River.

### 2.1 National Pollutant Discharge Elimination System (NPDES) Dischargers

There is one NPDES permitted discharger in a location that could directly affect the project area within the 5-mile project area buffer (Figure 3). The Town of Bakersville WWTP (Permit No. NC0025461) is a minor facility that is located approximately 2.2 stream miles upstream on Cane Creek.

### 2.2 303(d) Classification

Cub Creek is not on the North Carolina Department of Environmental Quality (NCDEQ) - Division of Water Resources 2022 303(d) list of impaired waters (Figure 3). However, Cane Creek is on the NCDEQ - Division of Water Resources 2022 303(d) list of impaired waters for a Fair, Poor, or Severe Bioclassification rating and a Fair Fish Community rating (Figure 3).

### **3.0 Target Species Descriptions**

#### **3.1 Appalachian Elktoe (*Alasmodonta raveneliana*)**

##### **3.1.1 Characteristics**

The Appalachian Elktoe (*Alasmodonta raveneliana* (Lea 1834)) is a thin, “kidney-shaped” freshwater mussel that rarely exceeds 80 millimeters in length. The periostracum is typically yellowish-brown for juveniles and brown to black for adults. Rays are prominent on some shells, particularly in the posterior portion of the shell. The nacre is shiny and often bluish-white, changing to a salmon or brownish color in the central and beak cavity portions of the shell.

Maximum age for the Appalachian Elktoe is unknown, but it is known to be a long-term brooding (bradytic) species. Specifically, the species spawns in late summer and gravid females release glochidia before June. Host fish species include the Mottled Sculpin (*Cottus bairdi*), Banded Sculpin (*Cottus carolinae*), and Central Stoneroller (*Campostoma anomalum*).

##### **3.1.2 Distribution and Habitat Requirements**

Historically, the Appalachian Elktoe was found in tributaries to the Tennessee River in western North Carolina and eastern Tennessee; however, current populations are fragmented and restricted to a small portion of the former range. The Appalachian Elktoe occupies portions of the Little Tennessee, Pigeon, and French Broad watersheds in North Carolina, and the Nolichucky River watershed in North Carolina and Tennessee.

The Appalachian Elktoe occupies relatively shallow, medium-sized creeks and rivers with cool, clean, moderately to fast-flowing water. It inhabits riffles, runs, and flowing pools that contain stable substrate comprised of coarse sand and gravel that is associated with cobble, boulders, and bedrock.

### **4.0 Survey Efforts**

A mussel survey was conducted by RK&K personnel Tyler Black (Federal Permit# ES67197D, NC Permit # 22-ES00554) and Josh Tutt on July 27, 2022. Prior mussel surveys were conducted by RK&K personnel on August 9, 2018, and October 4, 2016.

#### **4.1 Waterway Conditions at Time of Survey: Cub Creek and Cane Creek**

At the project location, Cub Creek is a small, high gradient stream (1-2 meters (m) wide) with riffle, run, and pool habitat. Due to Cub Creek’s dimensions/gradient and the projects proximity to Cane Creek (20 m downstream of bridge location), the mussel survey was conducted primarily in Cane Creek. At the survey location, Cane Creek is a medium size stream with riffle, run, and pool habitat. Wetted width was approximately 5-7 m and depth ranged from 0.25-1.25 m but averaged approximately 0.50 m. The substrate was a mix of silt, sand, gravel, cobble, boulder, and bedrock. The dominant benthic substrate was cobble, and boulder was the subdominant

substrate. The bank height was approximately 0.5-1.0 m, and some bank erosion/undercutting areas were observed. Evidence of American Beaver (*Caster canadensis*) activity in the form of gnawed sticks was noted at the time of the survey. A narrow buffer with an intermittent woodland extent was present along the survey location.

## **4.2 Methodology**

### **4.2.1 Mussel Survey**

A mussel survey was conducted from approximately 20 m downstream of the bridge crossing on Cub Creek (i.e., confluence with Cane Creek) to approximately 30 m upstream of the bridge crossing on Cub Creek, and within Cane Creek from approximately 300 m downstream of the Cub Creek confluence to approximately 50 m upstream of the confluence for a total of approximately 400 meters. Areas of appropriate habitat were searched, concentrating on the stable habitats preferred by the target species. Visual surveys were conducted with bathyscopes along with tactile methods that were employed where appropriate. All bivalves were recorded and returned to the substrate. Timed survey efforts typically provide Catch Per Unit Effort (CPUE) data for each species.

## **5.0 Results**

### **5.1 Mussel Survey**

Evidence of native mussels was not observed within Cub Creek/Cane Creek during the 2016, 2018, or 2022 survey. Asian Clam (*Corbicula fluminea*) was observed during the current survey, but abundance was classified as rare. No Appalachian Elktoe individuals were observed during the survey. A total of 1.0-person hour of survey time was spent in the survey location during each survey event.

## **6.0 Critical Habitat**

The project is not located within designated Critical Habitat for Appalachian Elktoe.

## **7.0 Discussion/Conclusions**

The results from multiple survey efforts indicate that the survey area may not support a native mussel community. The survey area contains potential habitat for Appalachian Elktoe; however, a NPDES Permitted WWTP discharger is located upstream on Cane Creek and Cane Creek continues to be listed on the NCDEQ 303(d) list of impaired streams, indicating potential water quality issues within Cane Creek. Although no Appalachian Elktoe individuals were detected during the survey, given the presence of stable instream habitat and close proximity to a known Appalachian Elktoe population in the North Toe River, completion of this project may affect Appalachian Elktoe.

**Recommended Biological Conclusion for Appalachian Elktoe: May Affect; Not Likely to Adversely Affect**

The federal action agency, or its nonfederal designee (NCDOT), must render a biological conclusion for each species.

## 8.0 References



- Adams, W. F., J. M. Alderman, R. G. Biggins, A. G. Gerberich, E. P. Keferl, H. J. Porter, and A. S. Van Devender. 1990. A report on the conservation status of North Carolina's freshwater and terrestrial molluscan fauna. NC Wildlife Resources Commission, Raleigh, NC.
- Levine, J. F., C. B. Eads, R. Greiner, and A. E. Bogan. 2011. Propagation and Culture of Federally Listed Freshwater Mussel Species. Final Report. NC Department of Transportation, Raleigh, NC.
- North Carolina Department of Environmental Quality - Division of Water Resources. 2022. North Carolina 303(d) List. Available: <https://edocs.deq.nc.gov/WaterResources/DocView.aspx?dbid=0&id=2361776&cr=1>. (August 2022).
- North Carolina Department of Environmental Quality. 2022. NPDES Wastewater Discharge Permits. Available: <https://data-ncdenr.opendata.arcgis.com/datasets/npdes-wastewater-discharge-permits?geometry=-87.493%2C33.635%2C-72.200%2C36.776>. (August 2022).
- North Carolina Natural Heritage Program. 2022. Natural Heritage Element Occurrence polygon shapefile. (October 2022).
- North Carolina Wildlife Resources Commission. 2022. Unpublished Aquatics Database. (November 2022).
- Parmalee, P. W. and A. E. Bogan. 1998. The Freshwater Mussels of Tennessee. The University of Tennessee Press, Knoxville, TN.
- U.S. Fish and Wildlife Service. 2022. Information for Planning and Consultation (IPaC). Available: <https://ecos.fws.gov/ipac/>. (November 2022).
- U.S. Fish and Wildlife Service. 1996. Appalachian Elktoe Recovery Plan. Atlanta, GA.



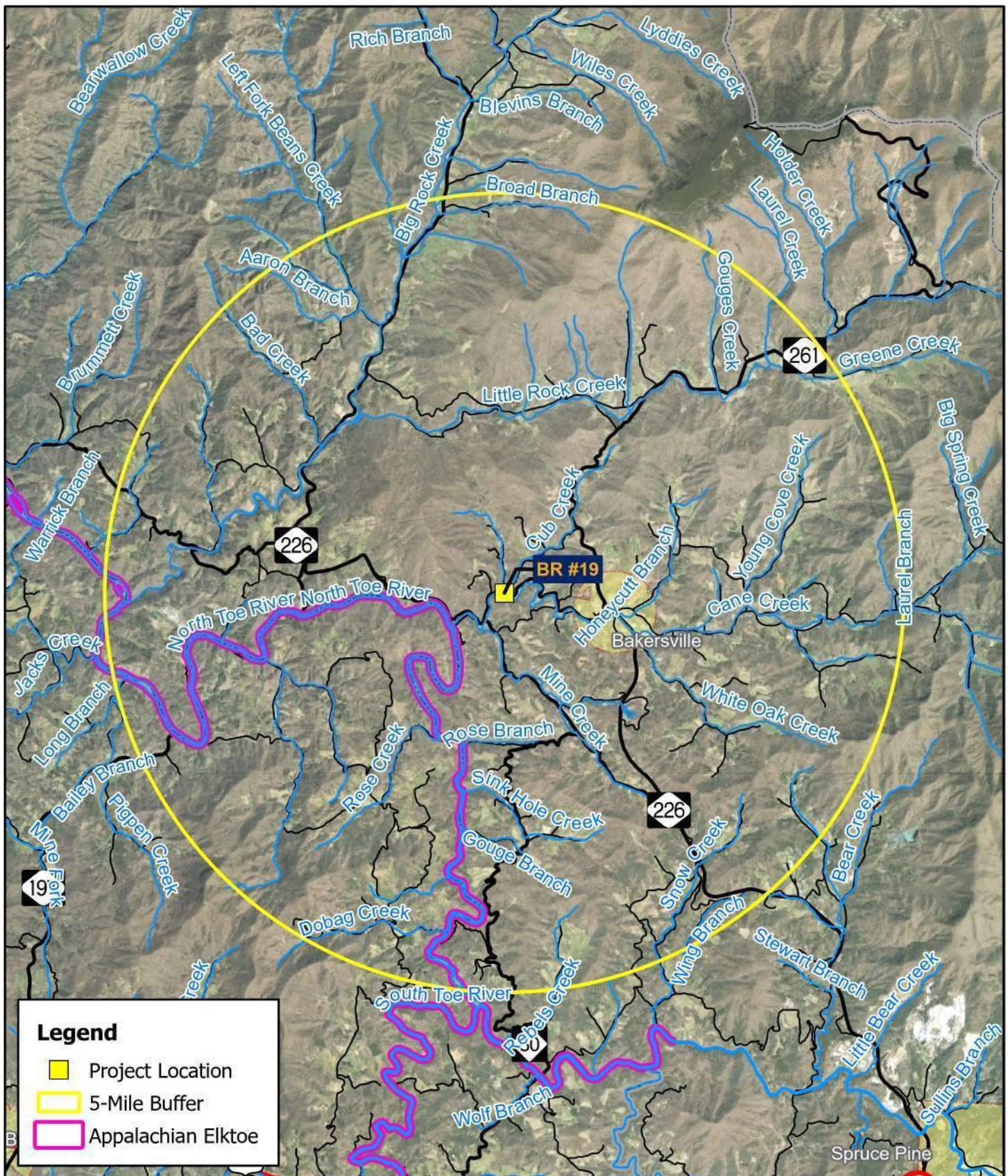
## **Appendix A**

### **Figures**





Prepared By: 	Prepared For: 	<b>Aquatic Species Survey</b> BRIDGE No. 19 ON NC 226 OVER CUB CREEK B-5893 MITCHELL COUNTY	Date: November 2022 Scale 0 100 200 Feet Job No. B-5893 Drawn by: GSM      Checked by: TRB	<b>Figure 1</b>
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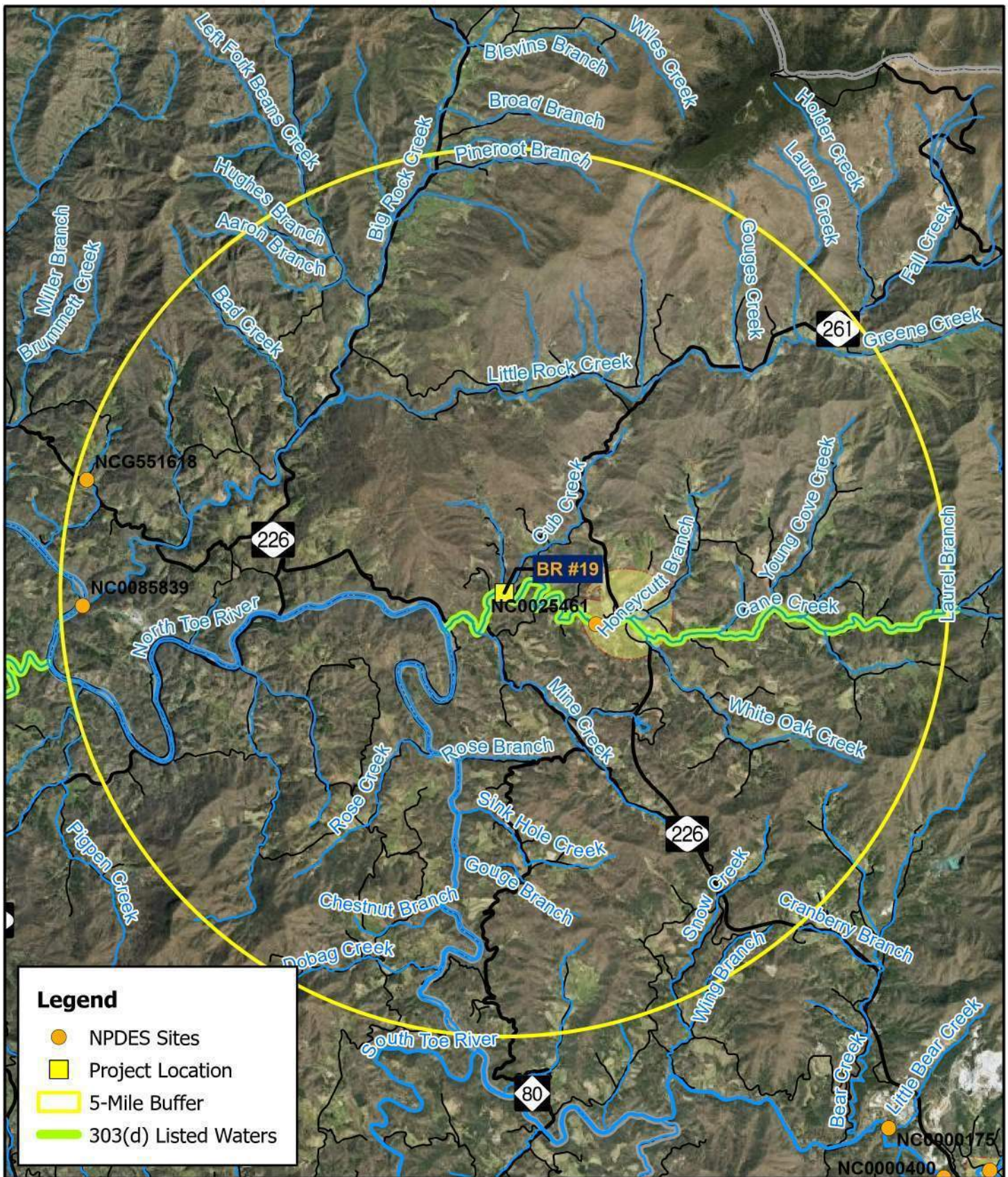




**Legend**

- Project Location
- 5-Mile Buffer
- Appalachian Elktoe

Prepared By: 	Prepared For: 	<p align="center"><b>NC NHP</b>  <b>Element Occurrence</b>          BRIDGE No. 19 ON NC 226          OVER CUB CREEK          B-5893          MITCHELL COUNTY</p>		Date: November 2022 Scale: 0 — 1.5 Miles Job No. B-5893 Drawn by: GSM      Checked by: TRB	<p align="center"><b>Figure</b>  <b>2</b></p>
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Prepared By: 	Prepared For: 	<b>NPDES Dischargers and 303(d) Listed Waters</b> BRIDGE No. 19 ON NC 226 OVER CUB CREEK B-5893 MITCHELL COUNTY	Date: November 2022 Scale: 0 1.5 Miles Job No. B-5893 Drawn by: GSM Checked by: TRB	<b>Figure 3</b>
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

December 7, 2021

Russel Townsend  
Tribal Historic Preservation Office  
Eastern Band of Cherokee Indians  
2077 Governors Island Road  
Bryson City, NC 28713

Dear Mr. Townsend,

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the proposed replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell County, as project B-5893. The United States Army Corps of Engineers (USACE) is the lead federal agency for compliance with the State Environmental Policy Act (SEPA) and Section 106 of the National Historic Preservation Act (NHPA) through the Section 404 permitting process. A project vicinity map is attached. The coordinates of this project are approximately 36.018243, -82.183385.

We would appreciate any information you might have that would be helpful in evaluating potential environmental impacts of the project including recommendation of alternates to be studied. Your comments may be used in the preparation of a National Environmental Policy Act (NEPA)/SEPA Environmental Document.

In accordance with Section 106 of the NHPA, we request that you inform us of any historic properties of traditional religious or cultural importance that you are aware of that may be affected by the proposed project. Be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, we will maintain strict confidentiality about certain types of information regarding historic properties.

Enclosed and available for review are copies of the historic architecture and archaeology reviews conducted by NCDOT.

Please respond by January 7 so that your comments can be used in the scoping of this project. If you have any questions concerning this project, or would like any additional information, please contact David S. Stutts, Structures Project Engineer, at 919-707-6442 or by email at [dstutts@ncdot.gov](mailto:dstutts@ncdot.gov).

*Mailing Address:*  
NC DEPARTMENT OF TRANSPORTATION  
STRUCTURES MANAGEMENT UNIT  
1581 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1581

*Telephone:* 919-707-6400  
*Fax:* 919-250-4082  
*Customer Service:* 1-877-368-4968

*Website:* [ncdot.gov](http://ncdot.gov)

*Location:*  
1000 BIRCH RIDGE DRIVE  
RALEIGH, NC 27610

Sincerely,

DocuSigned by:

A handwritten signature in black ink that reads "David Stutts". The signature is written in a cursive style with a large initial "D".

A4A2999A8BC64F2...

David S. Stutts, P.E.

NCDOT Structures Project Engineer

cc: Matt Wilkerson, NCDOT Archaeology Team Leader  
Lori Beckwith, USACE Project Contact

Attachments (Vicinity Map, No Historic Properties Present or Affected Form, and No Archaeological Survey Required Form)



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

December 7, 2021

Elizabeth Toomb  
Tribal Historic Preservation Officer  
Cherokee Nation  
PO Box 948  
Tahlequah, OK 74465

Dear Ms. Toomb,

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the proposed replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell County, as project B-5893. The United States Army Corps of Engineers (USACE) is the lead federal agency for compliance with the State Environmental Policy Act (SEPA) and Section 106 of the National Historic Preservation Act (NHPA) through the Section 404 permitting process. A project vicinity map is attached. The coordinates of this project are approximately 36.018243, -82.183385.

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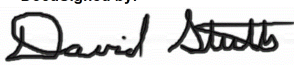
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NCDOT Structures Project Engineer

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Lori Beckwith, USACE Project Contact

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

December 7, 2021

Acee Watt  
Section 106 Coordinator  
United Keetoowah Band of Cherokee Indians  
PO Box 746  
Tahlequah OK, 74465

Dear Mr. Watt,

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the proposed replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell County, as project B-5893. The United States Army Corps of Engineers (USACE) is the lead federal agency for compliance with the State Environmental Policy Act (SEPA) and Section 106 of the National Historic Preservation Act (NHPA) through the Section 404 permitting process. A project vicinity map is attached. The coordinates of this project are approximately 36.018243, -82.183385.

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Sincerely,

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David S. Stutts, P.E.

NCDOT Structures Project Engineer

cc: Matt Wilkerson, NCDOT Archaeology Team Leader

Lori Beckwith, USACE Project Contact

Attachments (Vicinity Map, No Historic Properties Present or Affected Form, and No Archaeological Survey Required Form)



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

December 7, 2021

LeeAnne Wendt  
Tribal Historic Preservation Officer  
Muscogee (Creek) Nation  
PO Box 580  
Okmulgee, OK 74447

Dear Ms. Wendt,

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the proposed replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell County, as project B-5893. The United States Army Corps of Engineers (USACE) is the lead federal agency for compliance with the State Environmental Policy Act (SEPA) and Section 106 of the National Historic Preservation Act (NHPA) through the Section 404 permitting process. A project vicinity map is attached. The coordinates of this project are approximately 36.018243, -82.183385.

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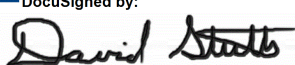
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Sincerely,

DocuSigned by:  


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NCDOT Structures Project Engineer

cc: Matt Wilkerson, NCDOT Archaeology Team Leader  
Lori Beckwith, USACE Project Contact

Attachments (Vicinity Map, No Historic Properties Present or Affected Form, and No  
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

December 7, 2021

Dr. Wenonah Haire  
Tribal Historic Preservation Officer  
Catawba Indian Nation  
1536 Tom Steven Road  
Rock Hill, SC 29730

Dear Dr. Haire,

The North Carolina Department of Transportation (NCDOT) has started the project development, environmental and engineering studies for the proposed replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell County, as project B-5893. The United States Army Corps of Engineers (USACE) is the lead federal agency for compliance with the State Environmental Policy Act (SEPA) and Section 106 of the National Historic Preservation Act (NHPA) through the Section 404 permitting process. A project vicinity map is attached. The coordinates of this project are approximately 36.018243, -82.183385.

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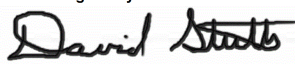
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Sincerely,

DocuSigned by:  


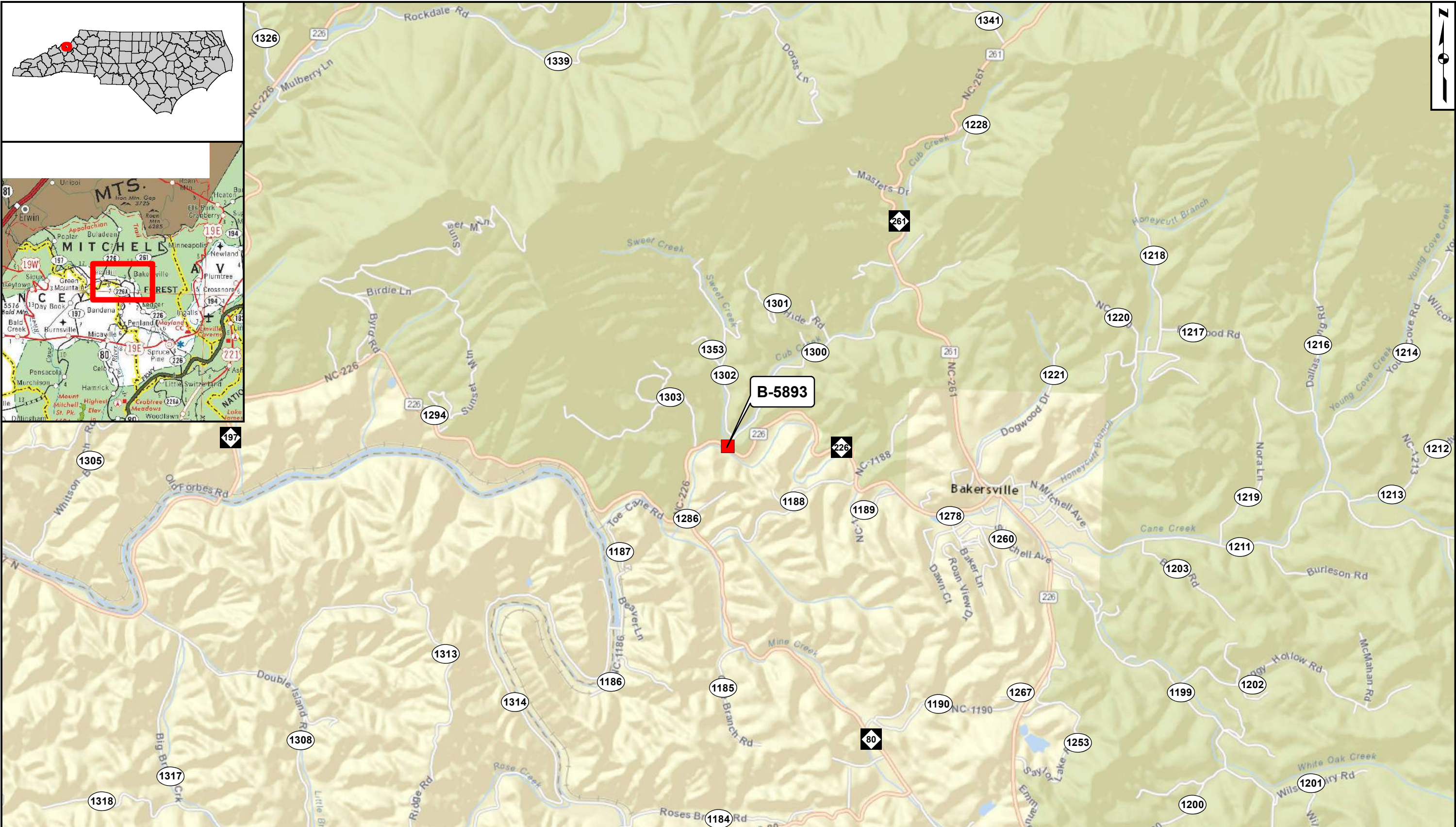
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David S. Stutts, P.E.


NCDOT Structures Project Engineer

cc: Matt Wilkerson, NCDOT Archaeology Team Leader  
Lori Beckwith, USACE Project Contact

Attachments (Vicinity Map, No Historic Properties Present or Affected Form, and No  
Archaeological Survey Required Form)





 <p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT</p>	<p><b>VICINITY MAP</b> <b>Replace Bridge No. 19 on NC 226</b> <b>over Cub Creek in Mitchell County</b>  TIP Project B-5893</p>	<p>0 0.5 Miles</p>	<table border="1"><tr><td>Div: 13</td><td>TIP# B-5893</td></tr><tr><td colspan="2">Date: DECEMBER 2015</td></tr></table>	Div: 13	TIP# B-5893	Date: DECEMBER 2015		<p><b>Figure</b> <b>1</b></p>
Div: 13	TIP# B-5893							
Date: DECEMBER 2015								



16-01-0093



## HISTORIC ARCHITECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT OR AFFECTED FORM

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

### PROJECT INFORMATION

<b>Project No:</b>	B-5893	<b>County:</b>	Mitchell
<b>WBS No.:</b>	48086.1.1	<b>Document Type:</b>	CE
<b>Fed. Aid No:</b>	N/A	<b>Funding:</b>	<input checked="" type="checkbox"/> State <input type="checkbox"/> Federal
<b>Federal Permit(s):</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Permit Type(s):</b>	NWP
<b><u>Project Description:</u></b> Replace Bridge No. 19 on NC226 over Cub Creek.			

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

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

**Date of field visit:** April 14, 2016

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

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on January 25, 2016. Based on this review, there are no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects, which defined on the following maps. Several properties are within the APE, and a survey was required to assess these structures and performed in April 2016. A one-story frame house and barn is situated directly northwest of Bridge No. 19. The plain house and barn appear to date to the mid-20<sup>th</sup> century; they are unremarkable and are no eligible for National Register listing. A one-story brick church, also c. mid-20<sup>th</sup> century, is northeast of the bridge. This property falls outside of the APE and will not be affected by this project. All other properties are under fifty years of age. There are no National Register listed or eligible properties within the APE. If design plans change, additional review will be required.

## SUPPORT DOCUMENTATION

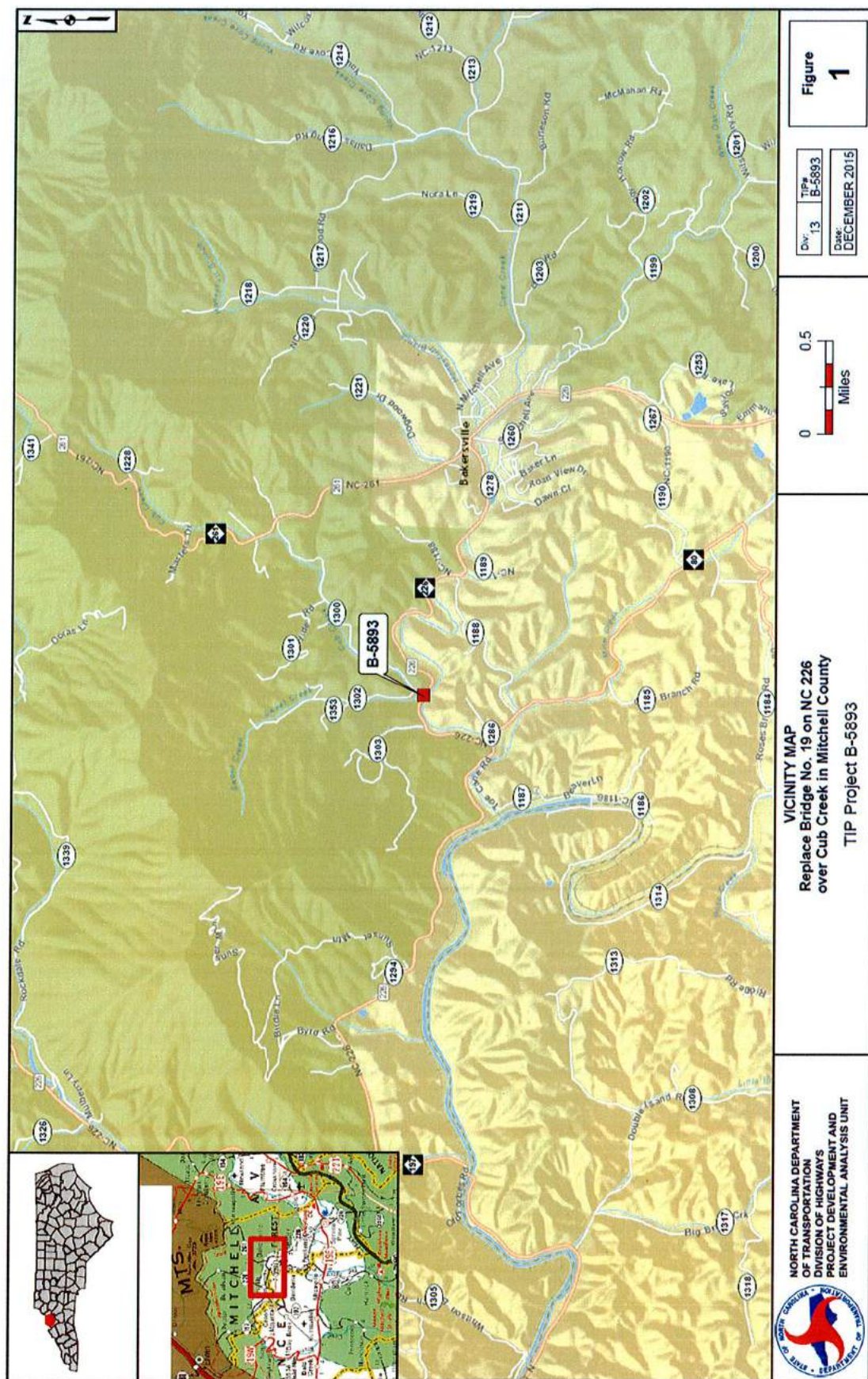
☒ Map(s)      ☐ Previous Survey Info.      ☐ Photos      ☐ Correspondence      ☐ Design Plans

### FINDING BY NCDOT ARCHITECTURAL HISTORIAN

**Historic Architecture and Landscapes -- NO HISTORIC PROPERTIES PRESENT OF AFFECTED**

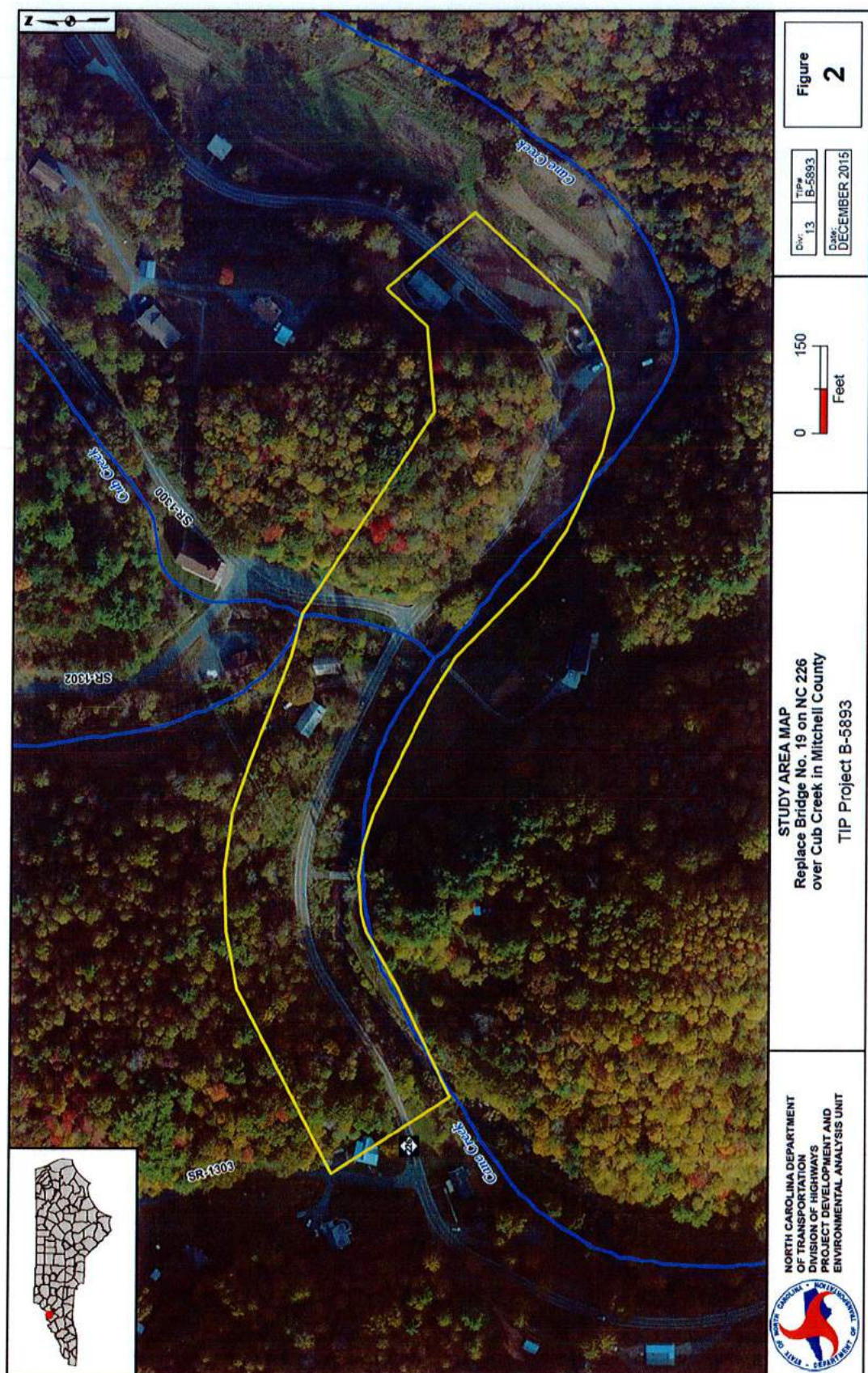
Kate Hubbard 5/2/2016  
NCDOT Architectural Historian Date





Historic Architecture and Landscapes NO HISTORIC PROPERTIES PRESENT OR AFFECTED form for Minor Transportation Projects as Qualified in the 2007 Programmatic Agreement.





Historic Architecture and Landscapes NO HISTORIC PROPERTIES PRESENT OR AFFECTED form for Minor Transportation Projects as Qualified in the 2007 Programmatic Agreement.





**House and barn directly northwest of bridge. Not eligible for NR listing.**



**Church northeast of bridge. Will not be affected by this project.**



## NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

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



### PROJECT INFORMATION

**Project No:** B-5893      **County:** Mitchell  
**WBS No:** 48086.1.1      **Document:** Categorical Exclusion  
**Federal Aid No:**      **Funding:** ☒ State      ☐ Federal  
**Federal Permit Required?** ☒ Yes      ☐ No      **Permit Type:** **Nationwide**

**Project Description:** Replace Bridge 19 on NC 226 over Cub Creek. Area of Potential Effects (A.P.E.) is approximately 549 meters (1,800 ft.) long and 92 meters (300 ft.) wide. No design plans provided.

### SUMMARY OF CULTURAL RESOURCES REVIEW

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

The review included an examination of a topographic map, an aerial photograph, and listings of previously recorded sites, previous archaeological surveys, and previous environmental reviews at the Office of State Archaeology (O.S.A.). Also, a visual reconnaissance of the project area was conducted on 2/25/2016. The bridge is oriented at 130° (approximately east-west).

The topographic map (Bakersville, N.C.) shows the A.P.E. is located in a narrow creek valley with steep walls. Sweet Creek joins Cub Creek a short distance to the north of the bridge. Cub Creek joins Cane Creek a short distance to the south of the bridge. NC 226 runs approximately east-west along the north side of Cane Creek. The landform in the northwest quadrant appears to be level land along the north side of Cane Creek, in the valley where Sweet Creek and Cub Creek join it. The landform in the southwest and southeast quadrants appears to be a narrow strip of land between NC 226 and Cane Creek. The landform in the northeast quadrant appears to be the base of a steep slope.

The aerial photograph shows that most of the A.P.E. is wooded. There are three structures in the northwest quadrant, one in the northeast quadrant, and one in the southeast quadrant.

A review of information at the O.S.A. shows there are no previously recorded sites within or adjacent to the A.P.E. The A.P.E. has not been previously surveyed for archaeological sites. The A.P.E. is not within any areas that have been reviewed by the State Historic Preservation Office (HPO).

A visual reconnaissance of the project area was conducted by NCDOT archaeologists Scott Halvorsen and Caleb Smith on 2/25/2016. The reconnaissance found that the landforms within the A.P.E. have a low potential for archaeological sites. The A.P.E. in the northwest quadrant is occupied by a parking area, a residential yard, and then a sloped hillside. There is a collapsed structure on the north side of NC 226 approximately 120 meters (394 ft.) west of the bridge. The southwest quadrant is a narrow strip of land between NC 226 and Cane Creek. The

southeast quadrant is a driveway next to the bridge, and then a narrow strip between NC 226 and Cane Creek. The northeast quadrant is a level, elevated terrace from the creek east for approximately 20 meters (66 ft.), then Cub Creek Rd. (SR 1300), and then a steep hillside. The level terrace is too narrow to have much archaeological potential, and may be disturbed by roadside uses. There is a sign for the Cub Creek Baptist Church there now.

*Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:*

Visual examination of the landforms within the A.P.E. indicate they have low potential for archaeological sites.

## SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☐ Previous Survey Info ☒ Photos ☐ Correspondence  
☐ Photocopy of County Survey Notes Other:

## FINDING BY NCDOT ARCHAEOLOGIST

### NO ARCHAEOLOGY SURVEY REQUIRED

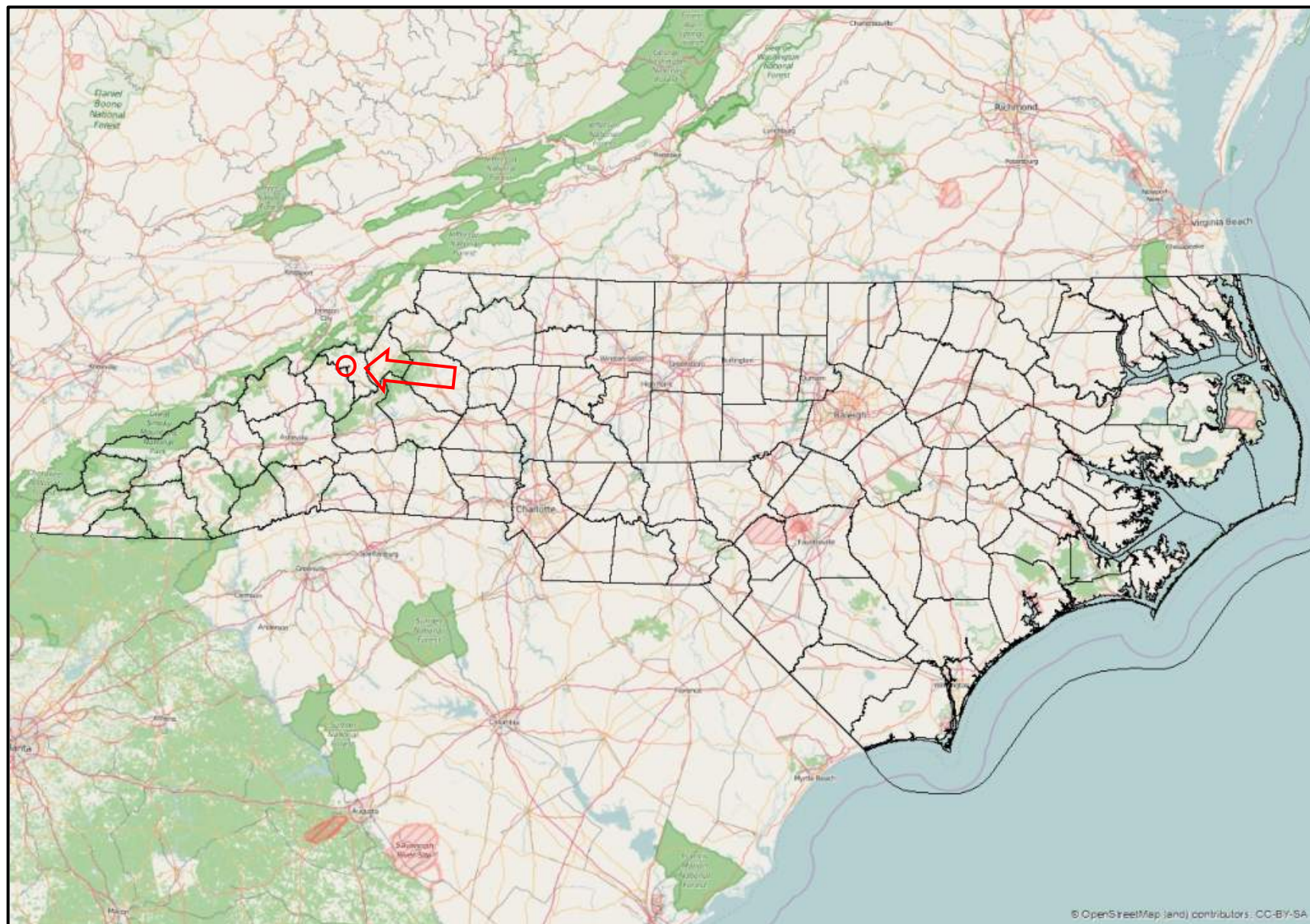
Caleb Smith

4/13/2016

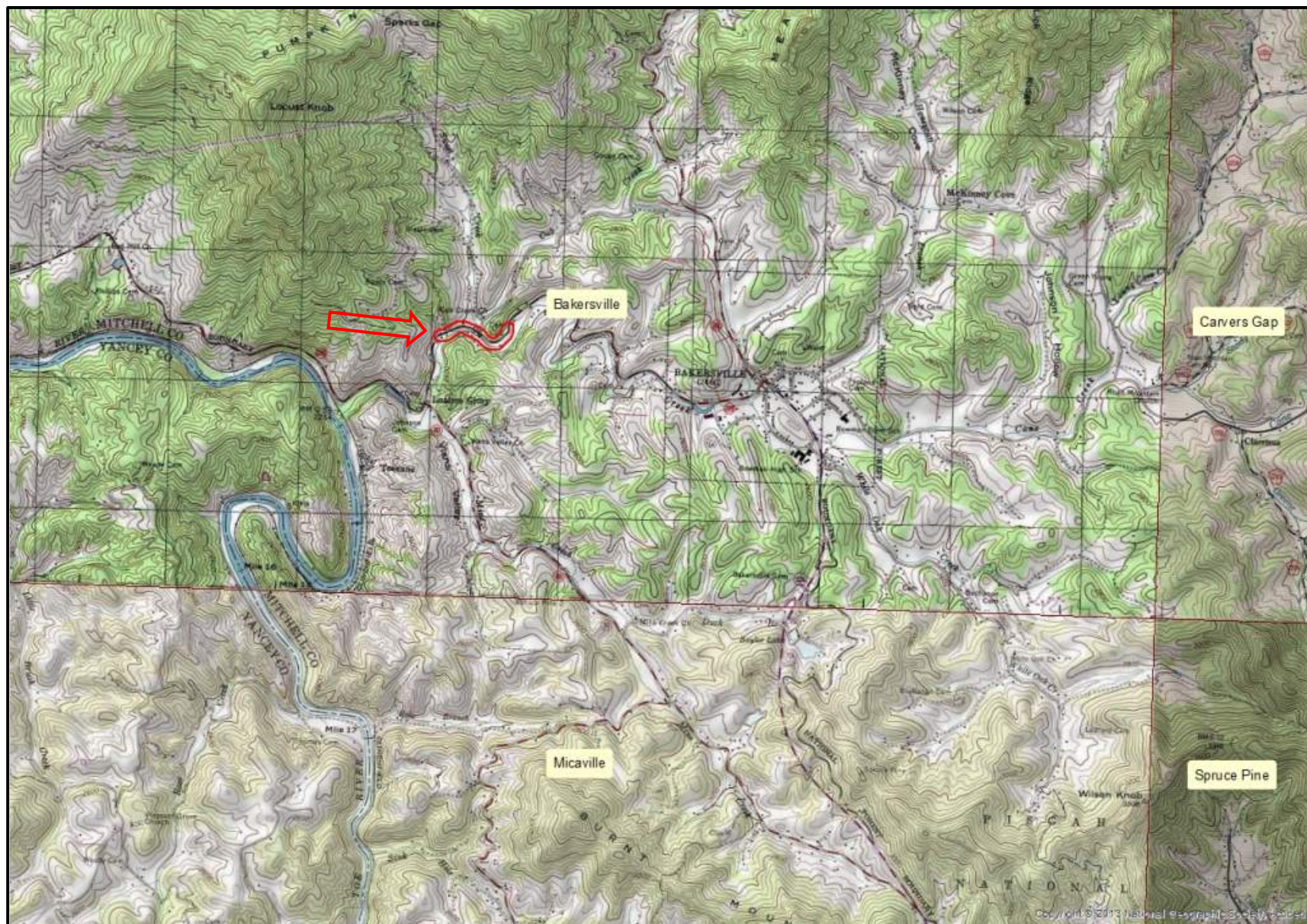
NCDOT ARCHAEOLOGIST II

Date















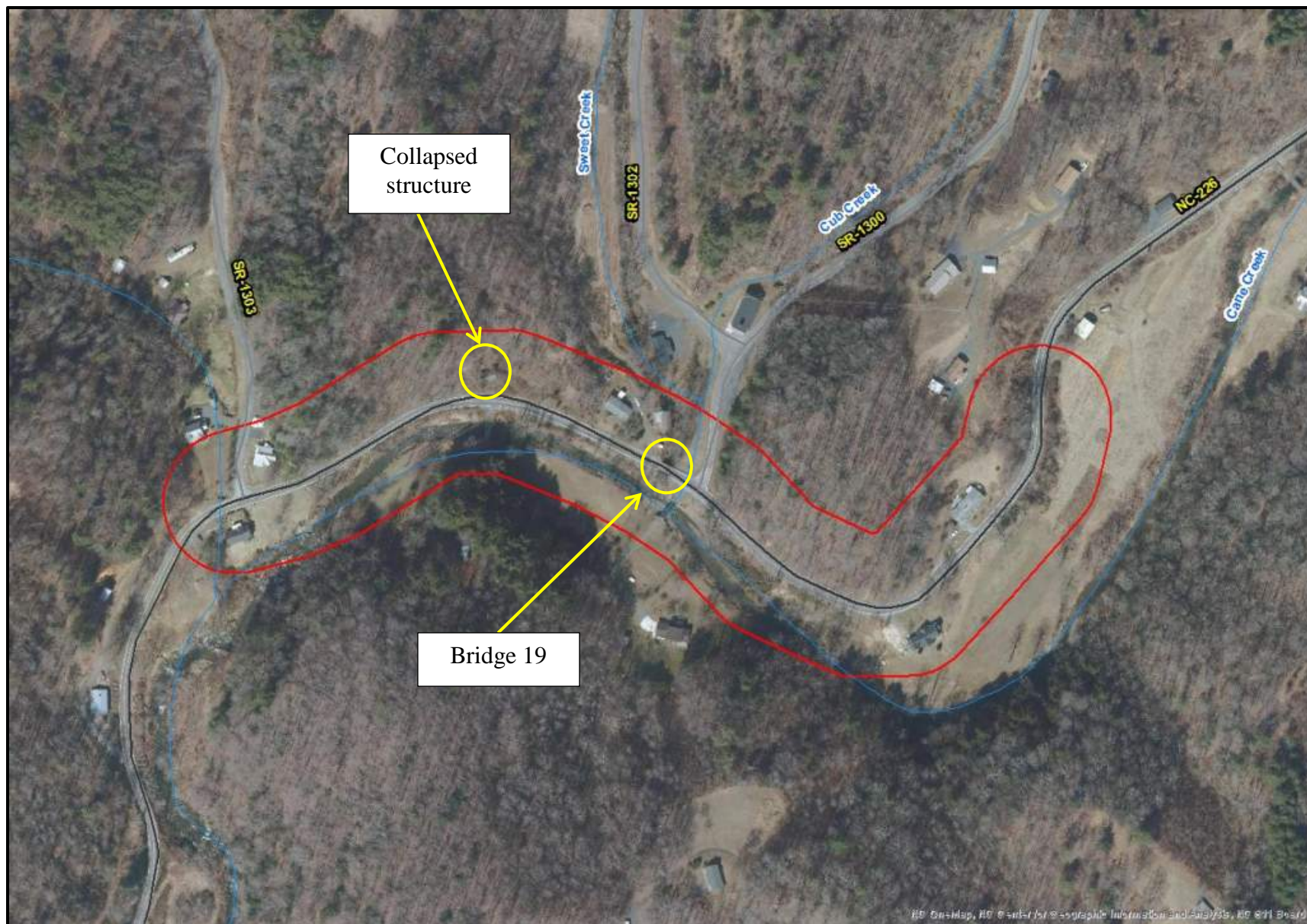






Figure 1: West view of Bridge 19.



Figure 2: West view of the northwest quadrant.





Figure 3: West view of the southwest quadrant.



Figure 4: Southeast view of the southeast quadrant.

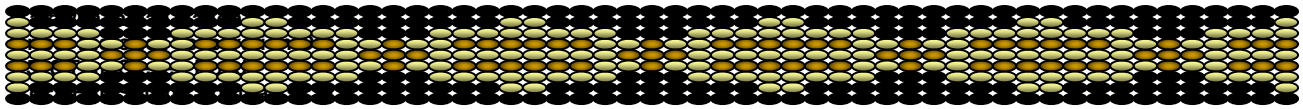




Figure 5: North view of the level terrace in the northeast quadrant.



Figure 6: Southeast view of the northeast quadrant.



Office 803-328-2427  
Fax 803-328-5791

January 11, 2022,

Attention: David Stutts  
NC Department of Transportation  
1581 Mail Service Center  
Raleigh, NC 27699

Re. THPO #	TCNS #	Project Description
2022-193-51		Proposed replacement of Bridge No. 19 on NC 226 over Cub Creek in Mitchell Co. as project B-5893

Dear Mr. Stutts,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail [Caitlin.Rogers@catawba.com](mailto:Caitlin.Rogers@catawba.com).

Sincerely,

Wenonah G. Haire  
Tribal Historic Preservation Officer

## MINIMUM CRITERIA DETERMINATION CHECKLIST

The following questions provide direction in determining when the Department is required to prepare environmental documents for state-funded construction and maintenance activities. Answer questions for Parts A through C by checking either “Yes” or “No”. Complete Part D of the checklist when Minimum Criteria Rule categories #8, 12(i) or #15 are used.

**TIP Project No.:** B-5893

**State Project No.:** 48086.1.1

**Project Location:** Bridge No. 19 on NC 226 over Cub Creek in Mitchell County.

**Project Description:** The proposed project involves replacing Bridge No. 19 on NC 226 over Cub Creek in Mitchell County (see Figure 1). The replacement structure will be a bridge approximately 40 feet long (see Figure 2). The bridge will have a minimum 39 feet roadway width, with two 11-foot lanes and 4-foot paved shoulders with a minimum of 42-inch-high bicycle safe railing on each side. Six foot shoulders (9 feet with guardrail) will be included on the roadway approaches. The bridge length is based on preliminary design information and is set by hydraulic requirements. The roadway grade of the new structure will account for the low chord of the existing structure. Construction will be staged using a signalized one-lane two-way detour with traffic being maintained on the existing bridge in Phase 1.

Project construction will extend approximately 315 feet west and 261 feet east from the bridge. NC 226 will be widened to two 11-foot lanes with 4-foot paved shoulder approaches. The roadway will be designed as a major collector using Sub-Regional Tier Guidelines. The design speed will be 45 mph using Sub-Regional Tier Guidelines.

**Purpose and Need:** The purpose of this project is to replace a structurally deficient bridge. Bridge No. 19 was built in 1935. The bridge is 22 feet long with approximately 19 feet and 2 inches of clear roadway width. The superstructure of the bridge is reinforced concrete slab. The substructure of the bridge consists of reinforced concrete abutments.

NCDOT Bridge Management Unit records indicate Bridge No. 19 has a sufficiency rating of 58.11 out of 100 for a new structure. The bridge is considered functionally obsolete by Federal Highway Administration (FHWA) standards due to the deck geometry being a 2 out of 4.

Components of the deck have experienced an increasing degree of section loss, deterioration, spalling or scour that can no longer be addressed by maintenance activities. Bridge No. 19 has an Average Annual Daily Traffic (AADT) volume of 2,000 vehicles

per day (vpd) for the year 2016 and future traffic of 2,300 AADT for the year 2040. Replacement of the bridge will improve traffic operations.

**Anticipated Permit or Consultation Requirements:** Nationwide Permit (NWP) 14 will likely be required for this project. The U.S. 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 N.C. Division of Water Resources will be needed.

**Special Project Information:**

**Alternatives Eliminated from Further Discussion:**

**No Build Alternative** - The No Build alternative would result in eventually closing the road which is unacceptable given the volume of traffic served by NC 226.

**Rehabilitation Alternative** - The bridge was constructed in 1935 and the reinforced concrete slab structure and abutments of the bridge substructure are reaching the end of their useful life. Rehabilitation would require replacing the reinforced concrete slab and abutments which would constitute effectively replacing the bridge.

**Offsite Detour**- NC 226 is a primary east-west route through Mitchell County. The Mitchell County EMS base of operation is in the Town of Bakersville approximately two miles east of the project site. A local planning official noted that NC 226 is a primary route for emergency services. The detour length would be approximately 6.2 miles and add an additional 10 minutes of travel time, which would be unacceptable for EMS response times. NCDOT concurs with this concern and believes that an offsite detour is not feasible.

**Preferred Alternate:**

**Staged Construction** - Bridge No. 19 will be staged by using a signalized one-lane two-way detour with traffic being maintained on the existing bridge in Phase 1, while a new bridge is constructed. The proposed bridge would be 40 feet long. Staged construction would allow for minimal impacts to local school traffic, residents, and EMS operations. NCDOT concurs that this is the preferred alternative.

**Cost:**

Construction Cost: \$245,000

**Agency Comments:** As part of project scoping, comments were requested from state, federal, and local agencies.

The **US Forest Service** stated in an email dated January 27, 2016 that the bridge is not located on or are expected to impact the National Forest System (NFS) lands.



**Cultural Resources:** No architectural survey is required for this project (see letter dated August 5, 2016). No archeological sites are present within the project area (see letter dated April 13, 2016).

**Bike and Pedestrian Division:** NC 226 carries State Bicycle Route NC 2 (Mountains to Sea) as well as several regional bicycle routes: Burnsville Metric, Roan Mountain Loop, and Harrill Hill Loop (Mitchell County). The High Country Regional Bicycle Plan (<http://www.regiond.org/Bike-Plan-2014-final.pdf>) indicates that 4 foot paved shoulders are recommended to accommodate bicycle transportation on NC 226 at this location, which is part of Route Segment #3, connecting Burnsville and Bakersville. It is recommended that 4 foot paved shoulders on each side of the replacement bridge, as well as bicycle-safe railing be included in the design. The railing should be at least 42 inches high, with heights of 48 and 54 inches recommended for moderate or serious hazards such as high winds, high traffic and speeds of vehicles, and/or high drop-off to the ground surface.

**Public Involvement:**

Landowner notification letters were sent out February 16, 2016 to all property owners affected by this project. No comments were received to date.

## **PART A: MINIMUM CRITERIA**

### ***Item 1 to be completed by the Engineer.***

	<b>YES</b>	<b>NO</b>
1. Is the proposed project listed as a type and class of activity allowed under the Minimum Criteria Rule in which environmental documentation is <u>not</u> required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If the answer to number 1 is “no”, then the project does not qualify as a minimum criteria project. A state environmental assessment is required.

If yes, under which category? **9**

If either category #8, #12(i) or #15 is used complete Part D of this checklist.

## **PART B: MINIMUM CRITERIA EXCEPTIONS**

### ***Items 2 – 4 to be completed by the Engineer.***

	<b>YES</b>	<b>NO</b>
2. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Is the proposed activity of such an unusual nature or does the proposed activity have such widespread implications, that an uncommon concern for its environmental effects has been expressed to the Department?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### ***Item 5-8 to be completed by Division Environmental Officer.***

5. Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or ground water impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- |   | <b>YES</b>               | <b>NO</b>                           |
|---|--------------------------|-------------------------------------|
| 8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits or shellfish, finfish, wildlife, or their natural habitats | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

If any questions 2 through 8 are answered “yes”, the proposed project may not qualify as a Minimum Criteria project. A state environmental assessment (EA) may be required. For assistance, contact:

Manager, Environmental Analysis Unit  
 1598 Mail Service Center  
 Raleigh, NC 27699-1598  
 (919) 707 – 6000  
 Fax: (919) 212-5785

### **PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS**

#### ***Items 9- 12 to be completed by Division Environmental Officer.***

- |  | <b>YES</b>                          | <b>NO</b>                           |
|--|-------------------------------------|-------------------------------------|
| 9. Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action?  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 10. Does the action require the placement of temporary or permanent fill in waters of the United States?   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 11. Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs? | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 12. Is the proposed action located in an Area of Environmental Concern, as defined in the coastal Area Management Act?   | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

#### ***Items 13 – 15 to be completed by the Engineer.***

- |  |                          |                                     |
|--|--------------------------|-------------------------------------|
| 13. Does the project require stream relocation or channel changes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|--|--------------------------|-------------------------------------|

#### **Cultural Resources**

- |   |                          |                                     |
|---|--------------------------|-------------------------------------|
| 14. Will the project have an “effect” on a property or site listed on the National Register of Historic Places?                 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Questions in Part “C” are designed to assist the Engineer and the Division Environmental Officer in determining whether a permit or consultation with a state or federal resource agency may be required. If any questions in Part “C” are answered “yes”, follow the appropriate permitting procedures prior to beginning project construction.



**Response to Question 9:**

**Northern Long Eared Bat (NLEB)-** Since this project is state-funded, the U.S. Army Corps of Engineers (USACE) will act as the lead agency for issues related to the northern long-eared bat (NLEB). Therefore 4(d) does not apply. The USACE has developed a Standard Local Operating Procedure for Endangered Species (SLOPES) to address NLEB when they are the lead agency, which NCDOT will follow for this project. The requirements of the SLOPES for NLEB will be completed prior to Let and will be submitted to USACE.

**Appalachian Elktoe-** Surveys were conducted by RK&K biologists, with no native freshwater mussel species observed. One live Asian clam (*Corbicula fluminea*) along with gastropods in the genera *Physella* (5 individuals) and *Elimia* (19 individuals) were present at the survey location. The results indicate that the study area is unlikely to support any native freshwater mussel fauna. Appalachian Elktoe was not found during the survey. Previous surveys near the current survey location vicinity have resulted in the discovery of Appalachian Elktoe. Four previous surveys, conducted in the North Toe River, ranged from 1.5 to 2.8 stream miles downstream of the current survey location. These previous surveys occurred on October 16, 1991, October 04, 2005, October 22, 2008, and April 22, 2014. Based on the medium/high gradient habitat, distance to known Appalachian Elktoe records and these survey results, impacts to Appalachian Elktoe are unlikely to occur in the study area and a Biological Conclusion of May Affect, Not Likely to Adversely Affect has been rendered for this species. Any additional coordination needed will be handled by the U.S. Army Corps of Engineers (USACE), who will consult with the U.S. Fish and Wildlife Services (USFWS) on the effect call for the Appalachian Elktoe.

**Response to Question 10:** Temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction and rehabilitation. Potential fill would be associated with a temporary causeway to get equipment to an interior bent which is in the water. The US Army Corps of Engineers hold the final discretion as to what permit will be required.

**PART D:( To be completed when either category #8, 12(i) or #15 of the rules are used.)**

***Items 16- 22 to be completed by Division Environmental Officer.***

- |  |            |
|--|------------|
| 16. Project length:                                | <u>N/A</u> |
| 17. Right of Way width:                            | <u>N/A</u> |
| 18. Project completion date:                       | <u>N/A</u> |
| 19. Total acres of newly disturbed ground surface: | <u>N/A</u> |
| 20. Total acres of wetland impacts:                | <u>N/A</u> |
| 21. Total linear feet of stream impacts:           | <u>N/A</u> |
| 22. Project purpose:                               | <u>N/A</u> |

If Part D of the checklist is completed, send a copy of the entire checklist document to:

Don G. Lee  
State Roadside Environmental Engineer  
Mail Service Center 1557  
Raleigh, NC 27699-1557  
(919) 707-2920  
Fax (919) 715-2554  
Email: dlee@ncdot.gov

Reviewed by:  ED10A18D08EC406... Date: 6/14/2018  
SMU Representative

**Mitchell County**  
**Bridge No. 19 on NC 226 over Cub Creek**  
**State Project No. 48086.1.1**  
**TIP No. B-5893**

**Hydraulics Unit, Division 13 Construction- FEMA**

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program 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).

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

**Division 13 Construction- Endangered Species**

**Northern Long-Eared Bat (NLEB)** – Since this project is state-funded, the U.S. Army Corps of Engineers (USACE) will act as the lead agency for issues related to the northern long-eared bat (NLEB). Therefore 4(d) does not apply. The USACE has developed a Standard Local Operating Procedure for Endangered Species (SLOPES) to address NLEB when they are the lead agency, which NCDOT will follow for this project. The requirements of the SLOPES for NLEB will be completed prior to Let and will be submitted to USACE.

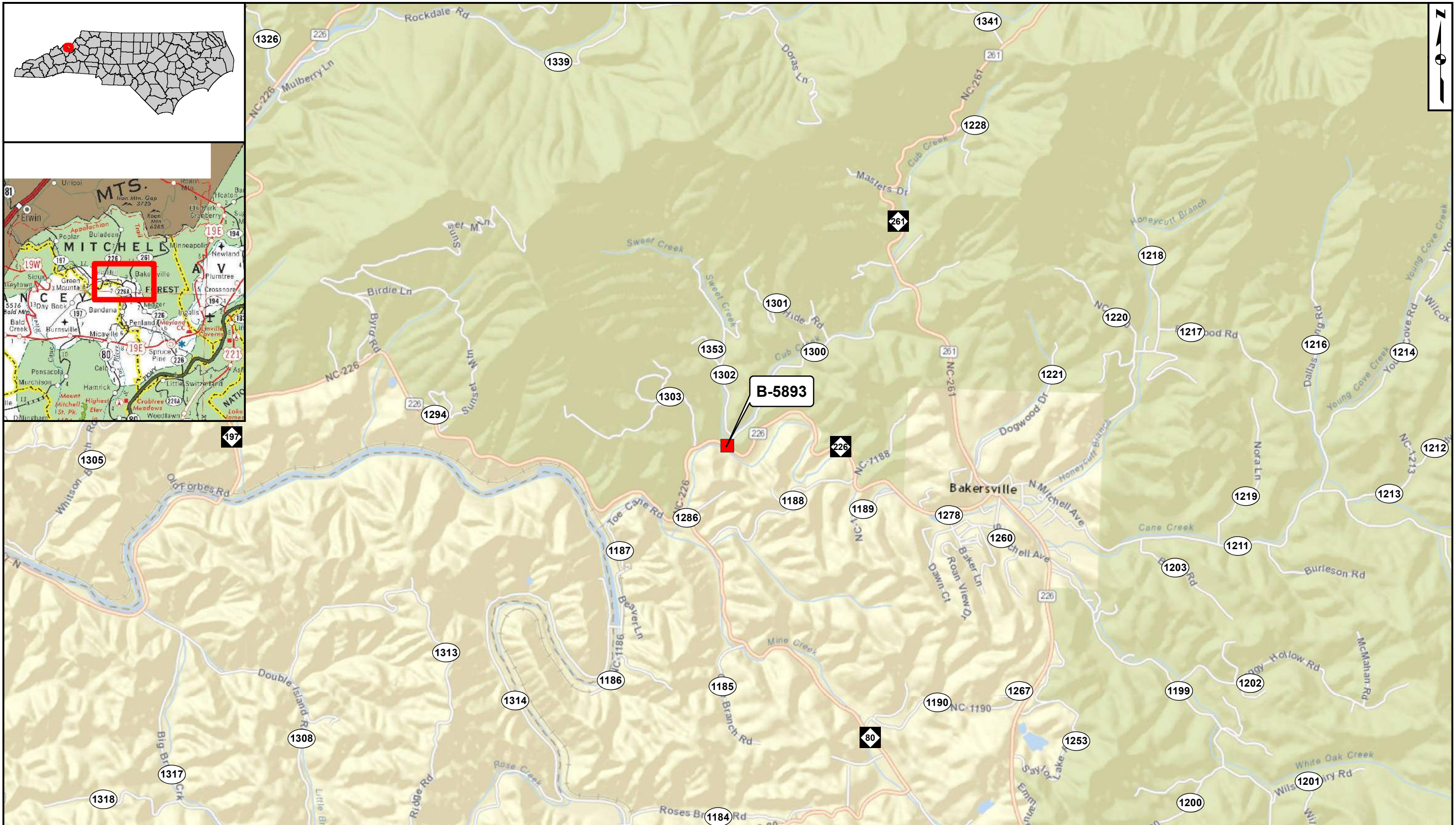
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# **APPENDIX A**

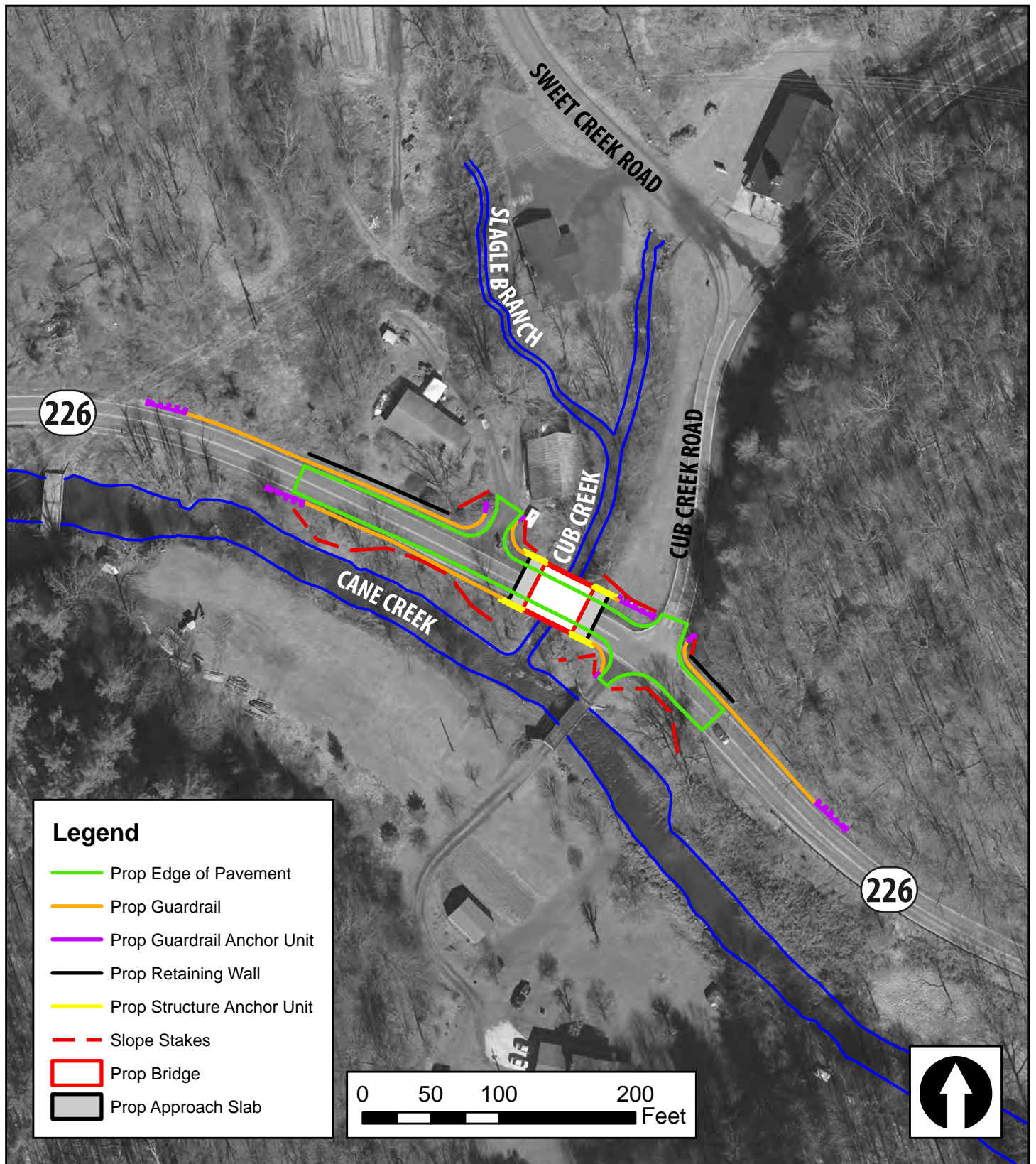
## **Figures**





 <p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT</p>	<p><b>VICINITY MAP</b> Replace Bridge No. 19 on NC 226 over Cub Creek in Mitchell County TIP Project B-5893</p>	<p>0 0.5 Miles</p>	<table border="1"><tr><td>Div: 13</td><td>TIP# B-5893</td></tr><tr><td colspan="2">Date: DECEMBER 2015</td></tr></table>	Div: 13	TIP# B-5893	Date: DECEMBER 2015		<p><b>Figure</b> <b>1</b></p>
Div: 13	TIP# B-5893							
Date: DECEMBER 2015								

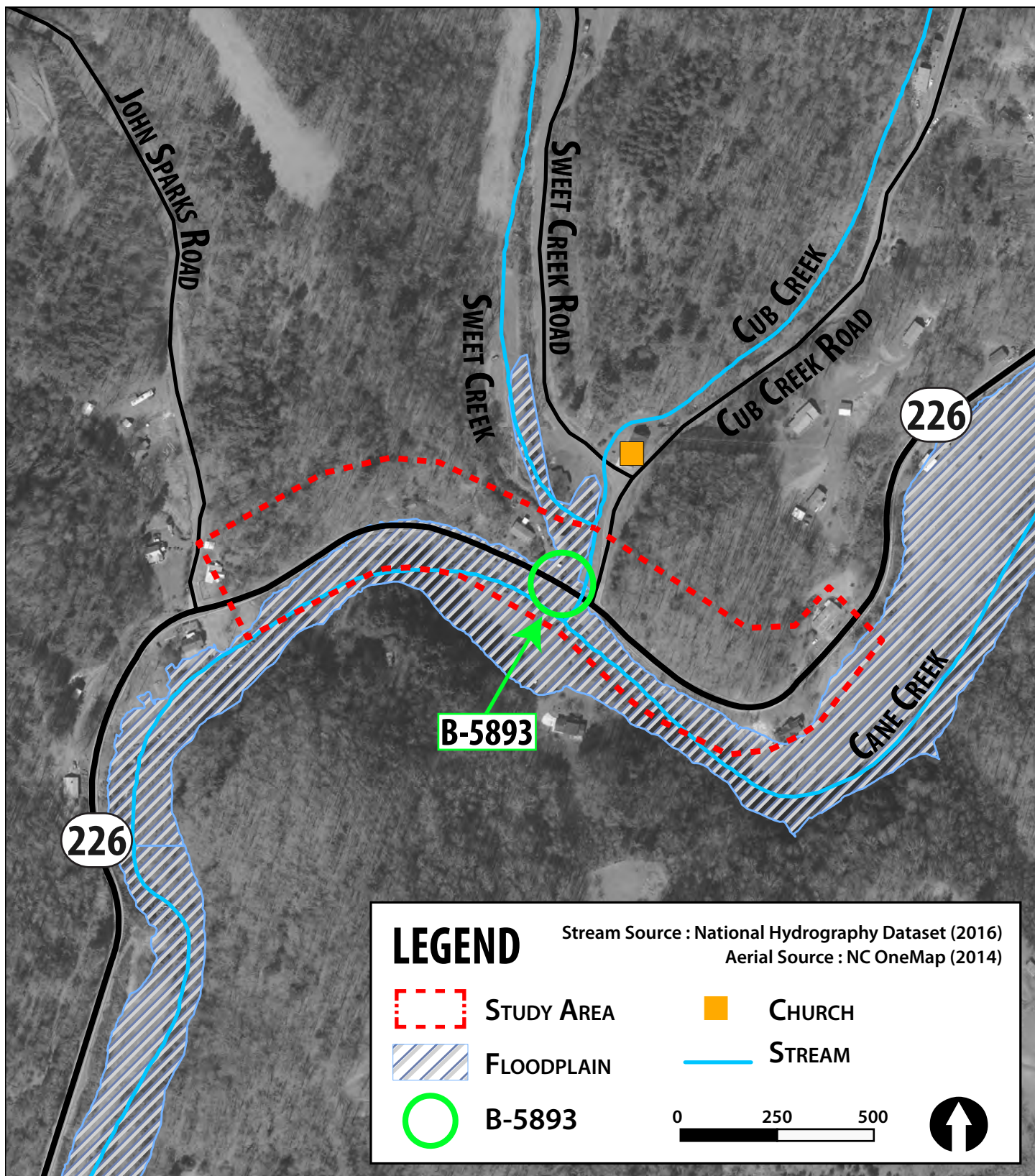




# **Proposed Improvements** Replace Bridge No. 19 on NC 226 over Cub Creek with Staged Construction **Mitchell County** B-5893

Figure 2





## Environmental Constraints Map

Replace Bridge No. 19 on NC 226  
over Cub Creek with Staged Construction

**Mitchell County**

B-5893

Figure 3





Bridge No. 19 Upstream Bridge Face



Bridge No. 19 West Approach



**Photos**

Replace Bridge No. 19 on NC 226  
over Cub Creek with Staged Construction

**Mitchell County**  
B-5893

Figure 4

# **APPENDIX B**

## **Reference Letters**





## NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

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



### PROJECT INFORMATION

**Project No:** B-5893      **County:** Mitchell  
**WBS No:** 48086.1.1      **Document:** Categorical Exclusion  
**Federal Aid No:**      **Funding:** ☒ State      ☐ Federal  
**Federal Permit Required?** ☒ Yes      ☐ No      **Permit Type:** **Nationwide**

**Project Description:** Replace Bridge 19 on NC 226 over Cub Creek. Area of Potential Effects (A.P.E.) is approximately 549 meters (1,800 ft.) long and 92 meters (300 ft.) wide. No design plans provided.

### SUMMARY OF CULTURAL RESOURCES REVIEW

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

The review included an examination of a topographic map, an aerial photograph, and listings of previously recorded sites, previous archaeological surveys, and previous environmental reviews at the Office of State Archaeology (O.S.A.). Also, a visual reconnaissance of the project area was conducted on 2/25/2016. The bridge is oriented at 130° (approximately east-west).

The topographic map (Bakersville, N.C.) shows the A.P.E. is located in a narrow creek valley with steep walls. Sweet Creek joins Cub Creek a short distance to the north of the bridge. Cub Creek joins Cane Creek a short distance to the south of the bridge. NC 226 runs approximately east-west along the north side of Cane Creek. The landform in the northwest quadrant appears to be level land along the north side of Cane Creek, in the valley where Sweet Creek and Cub Creek join it. The landform in the southwest and southeast quadrants appears to be a narrow strip of land between NC 226 and Cane Creek. The landform in the northeast quadrant appears to be the base of a steep slope.

The aerial photograph shows that most of the A.P.E. is wooded. There are three structures in the northwest quadrant, one in the northeast quadrant, and one in the southeast quadrant.

A review of information at the O.S.A. shows there are no previously recorded sites within or adjacent to the A.P.E. The A.P.E. has not been previously surveyed for archaeological sites. The A.P.E. is not within any areas that have been reviewed by the State Historic Preservation Office (HPO).

A visual reconnaissance of the project area was conducted by NCDOT archaeologists Scott Halvorsen and Caleb Smith on 2/25/2016. The reconnaissance found that the landforms within the A.P.E. have a low potential for archaeological sites. The A.P.E. in the northwest quadrant is occupied by a parking area, a residential yard, and then a sloped hillside. There is a collapsed structure on the north side of NC 226 approximately 120 meters (394 ft.) west of the bridge. The southwest quadrant is a narrow strip of land between NC 226 and Cane Creek. The

southeast quadrant is a driveway next to the bridge, and then a narrow strip between NC 226 and Cane Creek. The northeast quadrant is a level, elevated terrace from the creek east for approximately 20 meters (66 ft.), then Cub Creek Rd. (SR 1300), and then a steep hillside. The level terrace is too narrow to have much archaeological potential, and may be disturbed by roadside uses. There is a sign for the Cub Creek Baptist Church there now.

*Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:*

Visual examination of the landforms within the A.P.E. indicate they have low potential for archaeological sites.

## SUPPORT DOCUMENTATION

See attached: ☒ Map(s)    ☐ Previous Survey Info    ☒ Photos    ☐ Correspondence  
☐ Photocopy of County Survey Notes    Other:

## FINDING BY NCDOT ARCHAEOLOGIST

### NO ARCHAEOLOGY SURVEY REQUIRED

Caleb Smith

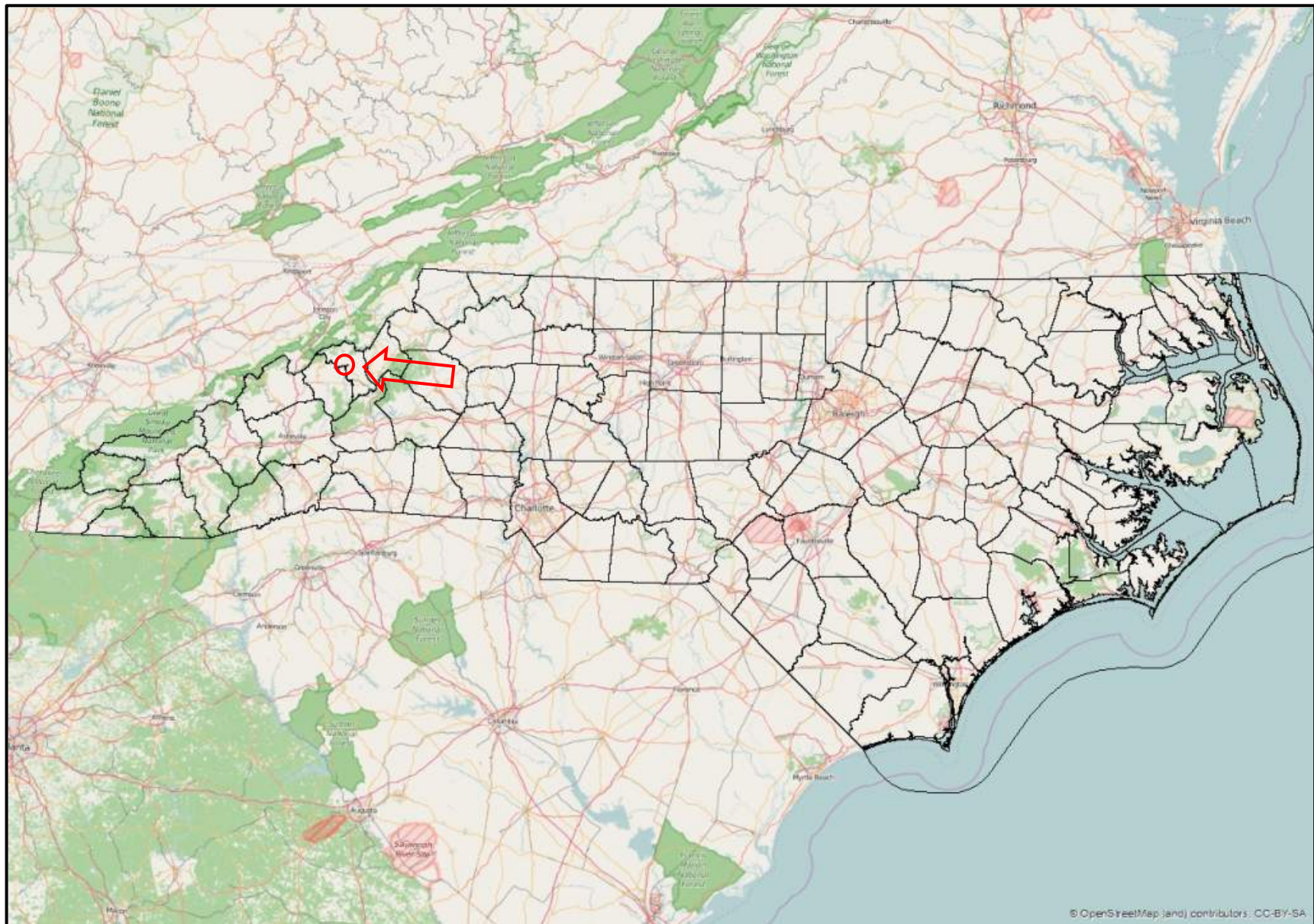
4/13/2016

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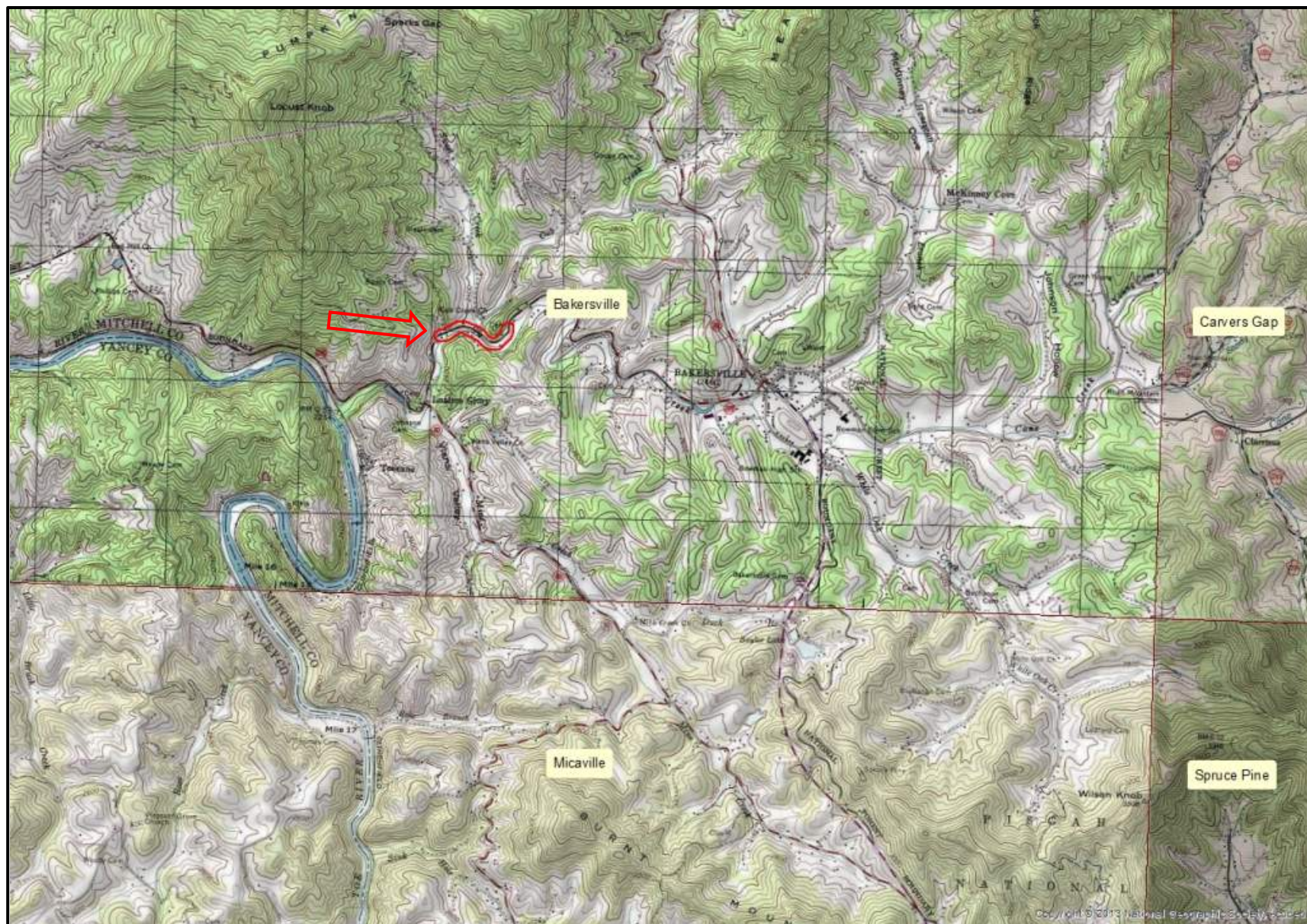
NCDOT ARCHAEOLOGIST II

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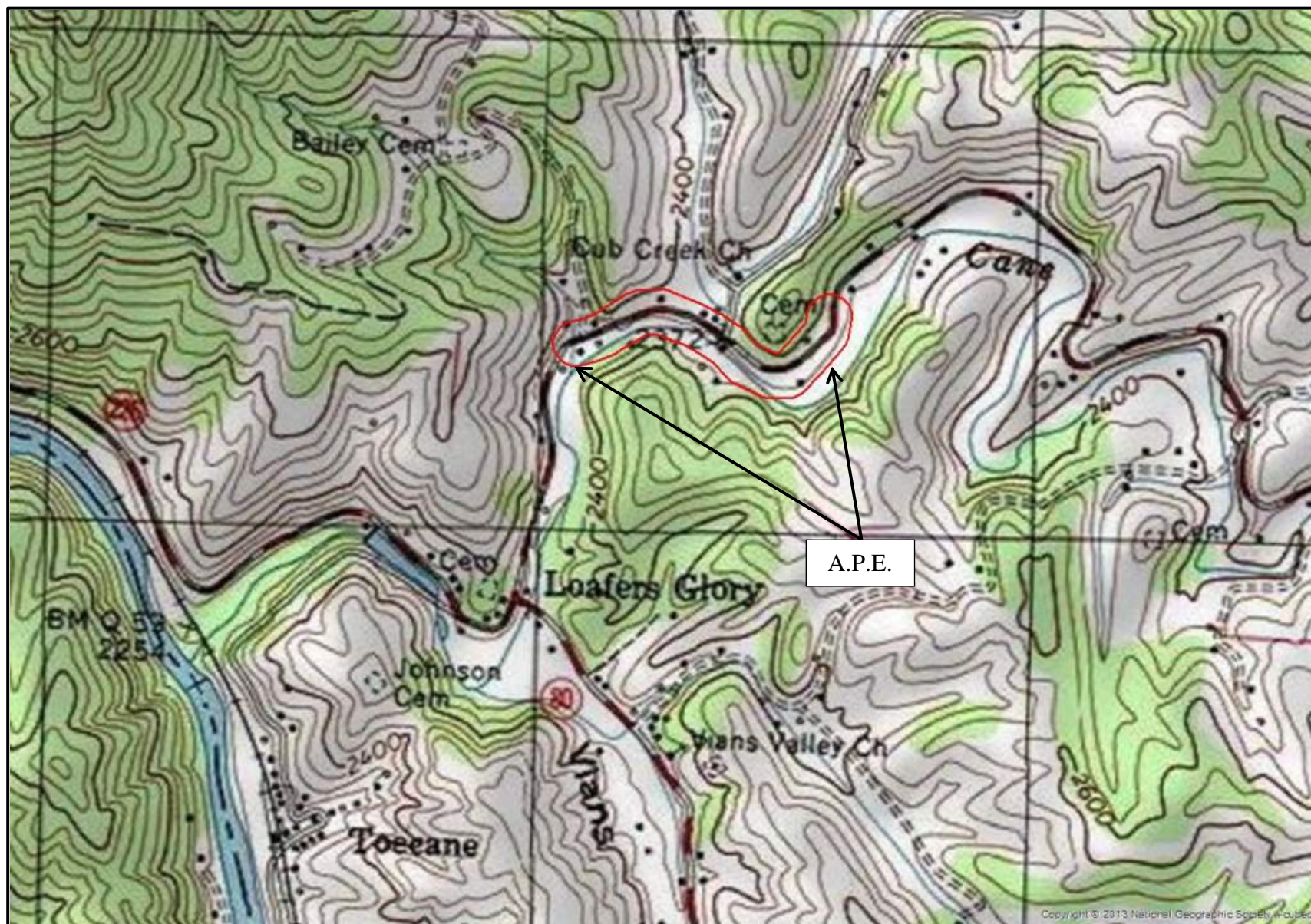
Date













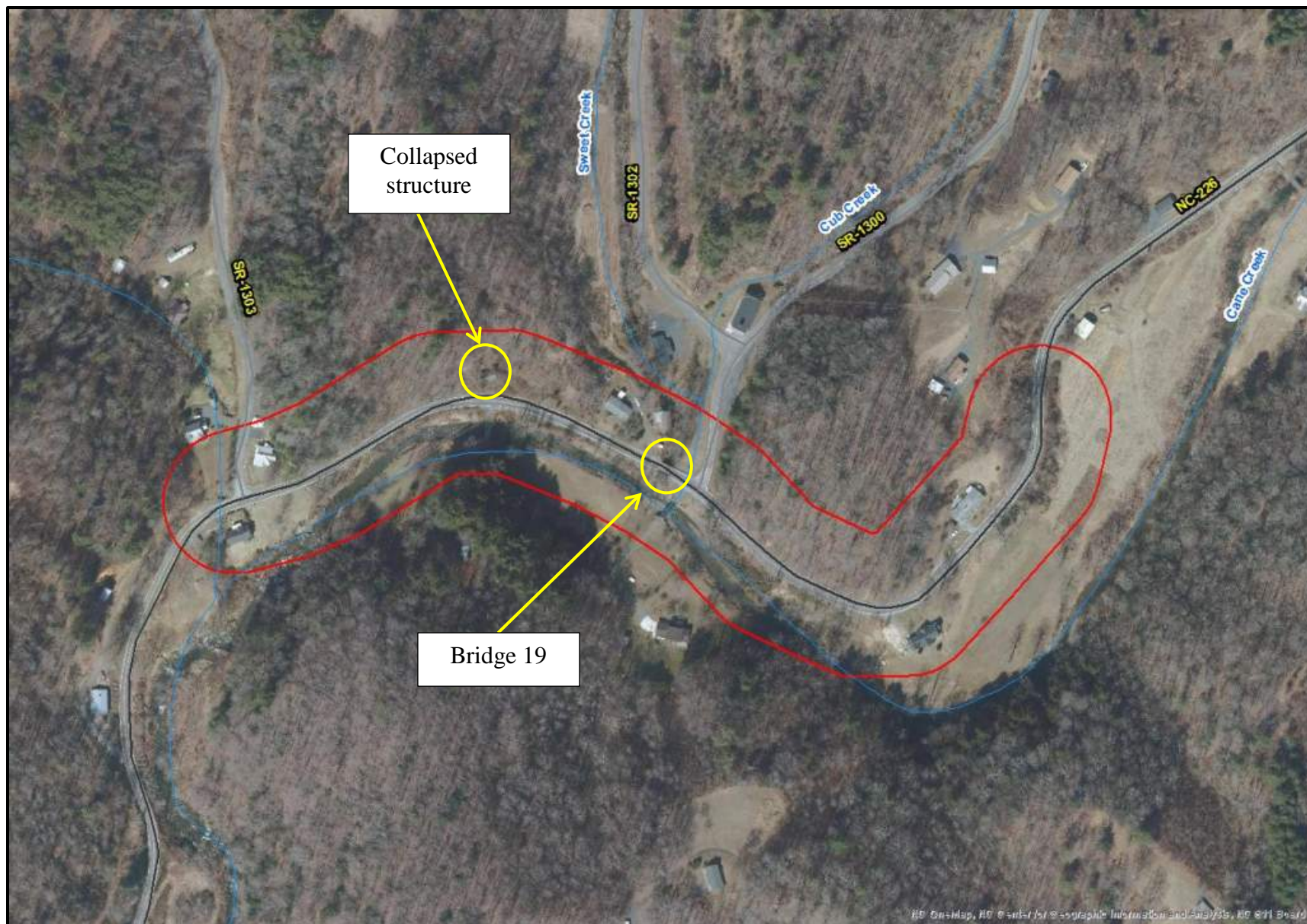






Figure 1: West view of Bridge 19.



Figure 2: West view of the northwest quadrant.





Figure 3: West view of the southwest quadrant.



Figure 4: Southeast view of the southeast quadrant.





Figure 5: North view of the level terrace in the northeast quadrant.



Figure 6: Southeast view of the northeast quadrant.



16-01-0093



## HISTORIC ARCHITECTURE AND LANDSCAPES NO HISTORIC PROPERTIES PRESENT OR AFFECTED FORM

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

### PROJECT INFORMATION

<b>Project No:</b>	B-5893	<b>County:</b>	Mitchell
<b>WBS No.:</b>	48086.1.1	<b>Document Type:</b>	CE
<b>Fed. Aid No:</b>	N/A	<b>Funding:</b>	<input checked="" type="checkbox"/> State <input type="checkbox"/> Federal
<b>Federal Permit(s):</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Permit Type(s):</b>	NWP
<b><u>Project Description:</u></b> Replace Bridge No. 19 on NC226 over Cub Creek.			

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

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

**Date of field visit:** April 14, 2016

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

Review of HPO quad maps, HPO GIS information, historic designations roster, and indexes was undertaken on January 25, 2016. Based on this review, there are no existing NR, SL, LD, DE, or SS properties in the Area of Potential Effects, which defined on the following maps. Several properties are within the APE, and a survey was required to assess these structures and performed in April 2016. A one-story frame house and barn is situated directly northwest of Bridge No. 19. The plain house and barn appear to date to the mid-20<sup>th</sup> century; they are unremarkable and are no eligible for National Register listing. A one-story brick church, also c. mid-20<sup>th</sup> century, is northeast of the bridge. This property falls outside of the APE and will not be affected by this project. All other properties are under fifty years of age. There are no National Register listed or eligible properties within the APE. If design plans change, additional review will be required.

~~1~~

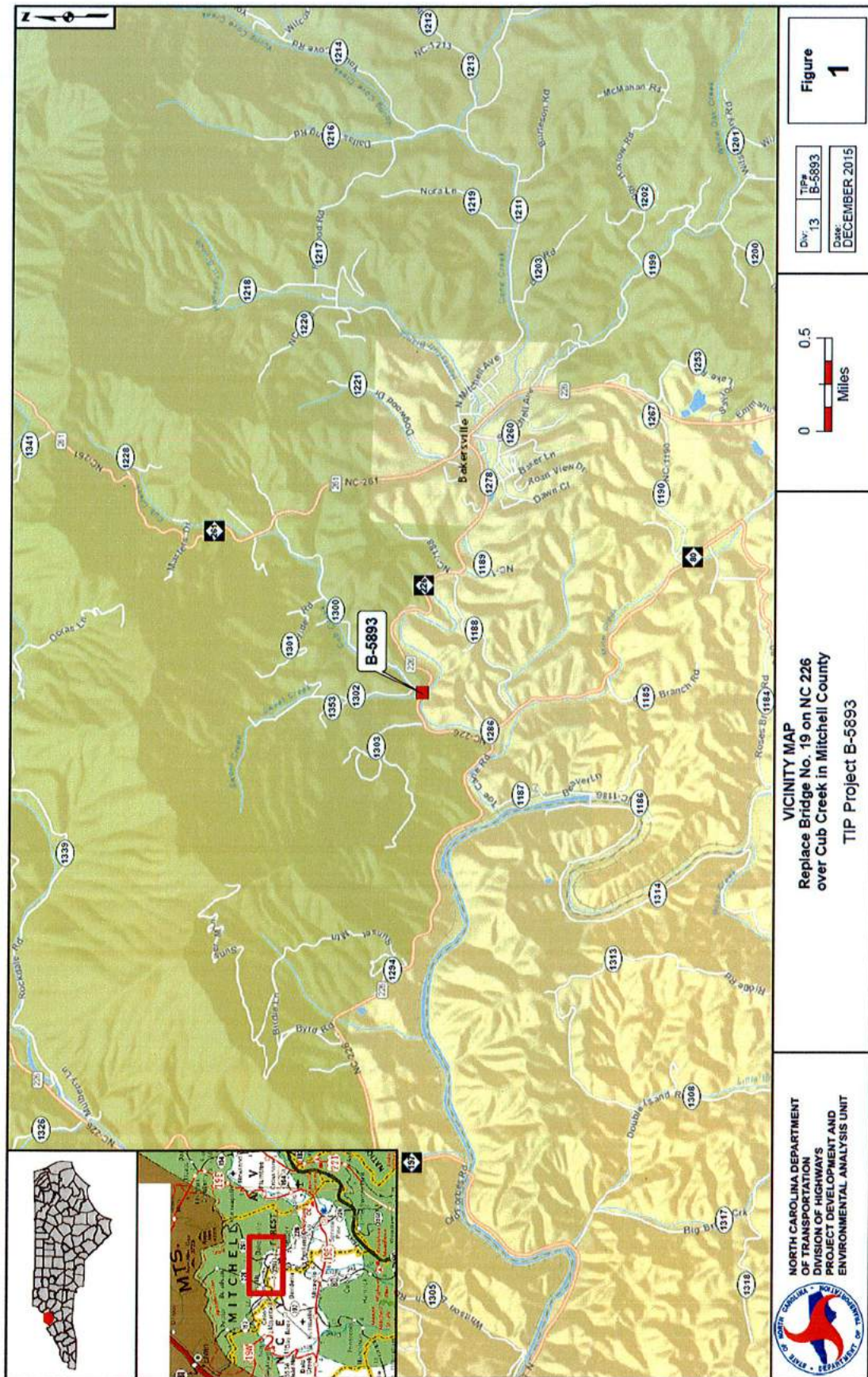
## □ Design Plans

**Historic Architecture and Landscapes -- NO HISTORIC PROPERTIES PRESENT OF AFFECTED**

5/2/2016

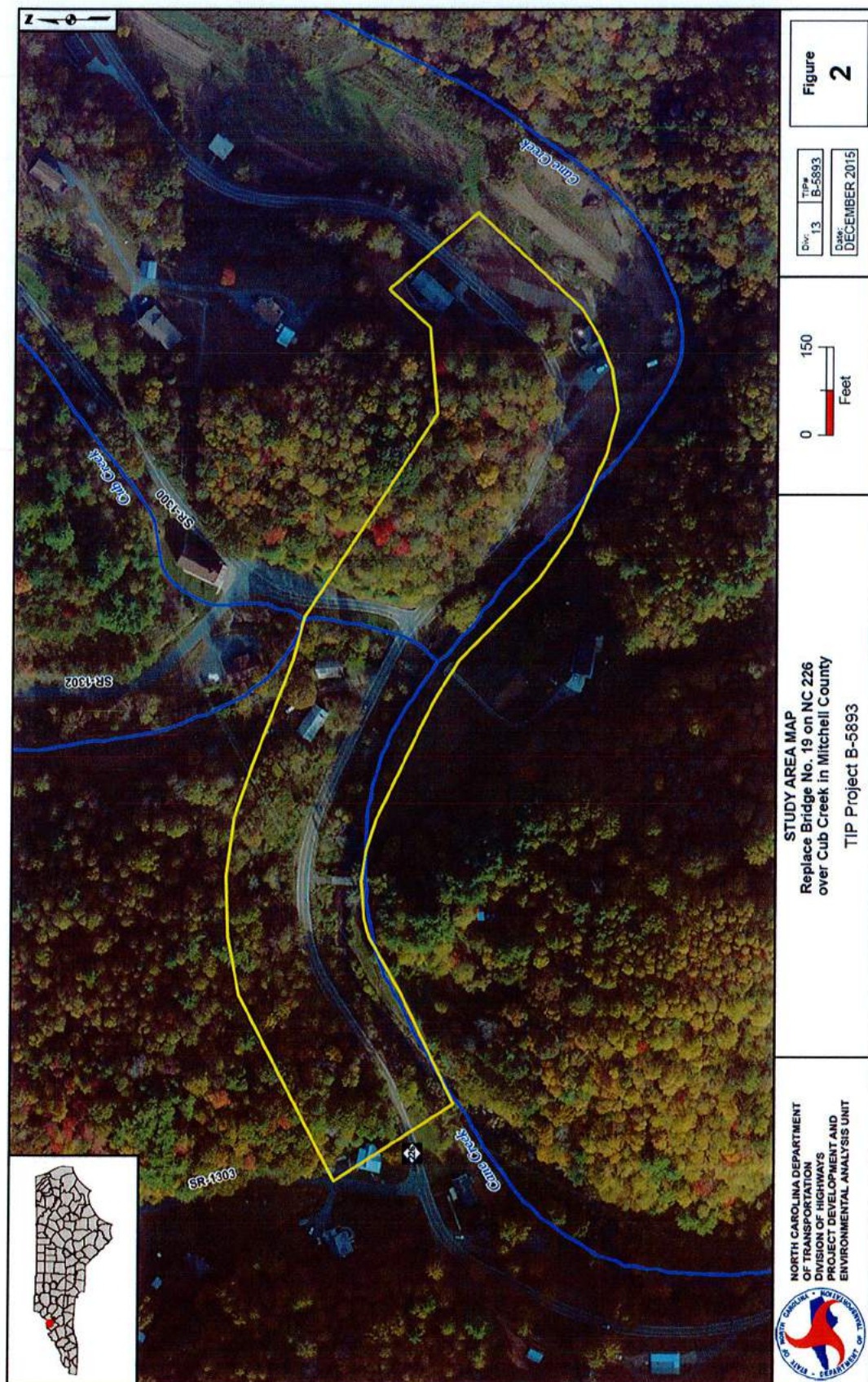
Date \_\_\_\_\_





Historic Architecture and Landscapes NO HISTORIC PROPERTIES PRESENT OR AFFECTED form for Minor Transportation Projects as Qualified in the 2007 Programmatic Agreement.





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**House and barn directly northwest of bridge. Not eligible for NR listing.**



**Church northeast of bridge. Will not be affected by this project.**