STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

March 28, 2025

MEMORANDUM TO: Division Environmental and Construction Units

FROM: Michael A. Turchy, ECAP Group Leader
Environmental Analysis Unit

SUBJECT: Environmental Permits for the Replacement of Bridge 125 on SR 1306 (Hicks Hollow Road) over the Elk River in Avery County, Division 11, **TIP: B-5835.**

Please find enclosed the following permits for this project:

Agency	Permit Type	Permit Expiration
US Army Corps of Engineers Section 404 Clean Water Act Permit	Nationwide Permit 14	March 14, 2026
NC Division of Water Resources Section 401 Water Quality Certification	Individual Certification No. 007590	March 14, 2026

Work is authorized by the above referenced permits provided it is accomplished in strict accordance with the permitted plans. The Environmental Coordination and Permitting Group or the Division Environmental Office must be consulted if any deviation from the permit(s) is required.

The General Conditions and Certifications for Nationwide and Regional Permits can be referenced at: https://xfer.services.ncdot.gov/pdea/PermIssued/_General_Conditions_and_Certifications/

The Project Commitments "Greensheet" is located on the Preconstruction SharePoint Dashboard at: https://connect.ncdot.gov/site/preconstruction

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

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

March 26, 2025

Regulatory Division
SAW-2025-00651

North Carolina Department of Transportation
Attn: Mr. Michael A. Turchy
Environmental Coordination and Permitting Group Leader
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
Sent Via Email: recrowther@ncdot.gov

Dear Mr. Turchy

This letter is in response to the application you submitted to the U.S. Army Corps of Engineers (USACE), Wilmington District, WRDA/Transportation Branch, on February 12, 2025, for a Department of the Army general permit verification. This project, the **replacement of Bridge No. 125 / B-5835,** has been assigned file number SAW-2025-00651 and is located on SR 1306 over the Elk River in Avery County, North Carolina (36.1802, -81.96415). Note that the existing bridge was destroyed by **Hurricane Helene**. In order to replace the bridge, NCDOT proposes to impact waters of the U.S. as follows:

Summary of Proposed Impacts

Impact ID #	NWP / GP #	Open Water (ac)		Wetland (ac)		Stream (lf)	
		Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Site 1A (Elk River)	**NWP 14**					**67'/0.06 ac (causeway/ work pad)**	
Site 1B (Elk River)	**NWP 14**						**6' (bank stabilization)**
Site 1C (Elk River)	**NWP 14**						**6' (bank stabilization)**
Site 1C (ATF impact - Elk River)	**NWP 14**					**28'/0.031 ac (temp crossing)**	
Impact Totals		**0**	**0**	**0**	**0**	**95'/0.091 ac**	**12**
Total Loss of waters of the U.S. (wetlands and/or open waters)			**0**	Total Loss of waters of the U.S.			**0**
Required wetland compensatory mitigation			**0**	Required stream compensatory mitigation			**0**

We have reviewed the proposed activities in waters of the U.S. and have determined that the activities are authorized by Nationwide Permit (NWP) 14 pursuant to authorities under Section 404 of the Clean Water Act (33 U.S.C § 1344). The proposed work must be accomplished in strict accordance with the following:

- enclosed NWP general conditions
- enclosed NWP regional conditions
- special conditions of the verification letter for this project (see below)
- information in the PCN and attachments
- enclosed plans

If the extent of the project area and/or nature of the authorized impacts to waters are modified, a request detailing the proposed changes must be submitted to this office for written approval before work is initiated. Any deviation from the terms and conditions of the permit, the special conditions of this letter, the information contained in the PCN, or your submitted plans, may subject the permittee to enforcement action.

This verification is valid until **March 14, 2026**, unless the subject NWP is suspended, revoked, or is modified prior to that date such that the activity no longer complies with the terms and conditions of the NWP.

Project Specific Special Conditions:

1. The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO) titled, "Biological and Conference Opinions and Informal Consultations – Batch Format, Replace Multiple Crossing Structures Destroyed by Tropical Storm Helene in Ashe, Avery, Watauga Counties, North Carolina, Service Log #25-123 through 25-130" on March 19, 2025. This BO contains mandatory Reasonable and Prudent Measures and Terms and Conditions that are associated with "incidental take" for this project. Your authorization under NWP 14 and this verification letter is conditional upon your compliance with the mandatory reasonable and prudent measures and terms and conditions associated with incidental take for the species associated with this project, as detailed in this BO; the terms and conditions are incorporated by reference in this verification letter. Failure to comply with these reasonable and prudent measures and terms and conditions, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your authorization for this project. The USFWS is the appropriate authority to determine compliance with the reasonable and prudent measures and terms and conditions of its BO, and with the Endangered Species Act.

2. The permittee shall ensure that the causeways constrict no more than 50% of river flow at any one time.

3. The permittee shall implement all reasonable and practicable measures to ensure that equipment, structures, causeways, fill pads, work, and operations associated with this project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, flooding, and/or stream bank erosion. The permittee shall routinely monitor for these effects, cease all work when detected, take initial corrective measures to correct actively eroding areas, and notify this office immediately. Permanent corrective measures may require additional authorization by the U.S. Army Corps of Engineers.

4. The permittee shall ensure that any equipment that is placed on the causeways is removed when either of the following situations is forecasted or anticipated: (1) the water level will rise to a point where the equipment could be flooded (even during work days), and/or (2) the water level is expected to rise overnight, or over a non-work period of time, to a point where the equipment could be flooded.

5. Upon completion of work that requires the causeways to be in the river, the permittee shall remove all readily detectible causeway material, to the extent practicable, while removing as little of the original riverbed as possible.

6. Conditions 1-6 of the North Carolina Wildlife Resources Commission letter of February 12, 2025, are hereby incorporated as special conditions of this permit.

7. NCDOT shall require its contractors and/or agents to comply with the terms and conditions of this authorization letter in the construction and maintenance of this project and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this authorization letter, all conditions, and any authorized modifications. A copy of this authorization letter, all conditions, and any authorized modifications, shall be available at the project site during construction and maintenance of this project.

This general permit verification and any associated authorizations does not preclude the necessity to obtain any other Federal, State, or local permits, licenses, and/or certifications, which may be required.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Lori Beckwith, Regulatory Project Manager of the WRDA/Transportation Branch, at 828-230-0483, by mail at the above address, or by email at loretta.a.beckwith@usace.army.mil.

Please take a moment to complete our customer satisfaction survey located at https://regulatory.ops.usace.army.mil/customer-service-survey/.

Sincerely,

M. Scott Jones, PWS
WRDA/Transportation Branch Chief
USACE, Wilmington District

Enclosures

Copy furnished:

NCDOT, Ms. Erin Cheely

Compliance Certification Form

File Number: SAW-2025-00651 **County: Avery**

Permittee: NCDOT, Mr. Michael Turchy

Project Name: Hurricane Helene / B-5835 / NCDOT / Bridge No. 125 / Avery Co

Date Verification Issued: March 26, 2025

Project Manager: Lori Beckwith

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
Wilmington District
Attn: Lori Beckwith
151 Patton Avenue, Room 208
Asheville, NC 28801-5006
or
loretta.a.beckwith@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the USACE suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit, and mitigation (if applicable), has been completed in accordance with the terms and conditions of the said permit and verification letter, including all applicable conditions.

Date Authorized Work Started: _____ **Completed: _____**

Describe any deviations from permit (attach drawing(s) depicting the deviations):

_____

_____

***Note: The description of any deviations on this form does not constitute approval by the USACE.**

_____ _____

Signature of Permittee **Date**

Biological and Conference Opinions and Informal Consultations – Batch Format

Replace Multiple Crossing Structures Destroyed by Tropical Storm Helene in Ashe, Avery, Watauga Counties, North Carolina

Service Log #25-123 through 25-130

Prepared by:

U.S. Fish and Wildlife Service
Asheville Ecological Services Office
160 Zillicoa Street
Asheville, North Carolina 28801

JANET MIZZI Digitally signed by JANET MIZZI
Date: 2025.03.19 13:12:18
-04'00'

Janet Mizzi
Field Supervisor
Asheville Ecological Services Field Office
Asheville, North Carolina

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Consultation History

December 2, 2024: Discussion between U.S. Fish and Wildlife Service (Service) and North Carolina Department of Transportation (NCDOT) regarding consultation batching processes and applicable avoidance and minimization and conservations measures for projects related to Tropical Storm (TS) Helene damage.
December 3-6, 2024: Email correspondence between the Service and NCDOT discussing aspects of batching process and need for a virtual discussion.
December 11, 2024: Virtual meeting between NCDOT and the Service to discuss batching process and avoidance and minimization and conservations measures.
February 19, 2025: NCDOT submitted batched request for informal and formal consultation to the Service.

Background

On September 27, 2024, TS Helene moved across a large swath of Western North Carolina (WNC). Extreme rainfall and high winds resulted in catastrophic damage across much of the region. Record flooding occurred throughout several watersheds, destroying thousands of transportation sites as well as homes and entire communities. Widespread landslides and timber fall contributed to the damage. In the wake of this disastrous event, the North Carolina Department of Transportation (NCDOT) is tasked with responding to, repairing, and [to the extent possible] replacing the transportation infrastructure destroyed by TS Helene. The following informal and formal consultations are presented in batched format to streamline and expedite review of one group of many similar projects. The format utilized in this consultation is intended for TS Helene-related projects and is tailored to the unique challenges and constraints precipitated by this event. Biological determinations presented below are based on the best available scientific data at the time of this document and incorporate the expertise of WNC's Service and partner resource agency biologists.

Projects

The table below represents the projects reviewed in this batch of TS Helene-related projects. Work will involve the replacement of damaged or wholly destroyed crossing structures, which may include minimal tree clearing, grading, demolition, and in-water construction. The current estimated timeline is for these projects to be carried out over the next 1.5 years, with completion expected in late fall of 2026. Additional description of the project-associated activities is provided in Section 2 of this document.

Table 1. Batched Consultation Projects – Crossing Structures

Structure Number	Waterbody	County	Location	Status	Service Log No.
050101	Elk River	Avery	36.191317, - 81.97197	Bridge gone, temp bridge in place	25-123
050125	Elk River	Avery	36.18023, -81.96406	Bridge partially gone, temp bridge in place	25-130
BP-006-2064	Hanging Rock Creek	Avery	36.152983, -81.863139	Damaged culvert to be replaced	25-124
040121	North Fork New River	Ashe	36.549208, -81.373166	Bridge gone, no temp bridge	25-125

940178	Cove Creek	Watauga	36.267358, -81.782124	Bridge gone, temp bridge in place	25-126
378	Valley Creek	Watauga	36.144106, -81.800133	Damaged culvert to be replaced	25-127
940258	Howard Creek	Watauga	36.260359, -81.698407	Damaged culvert to be replaced	25-128
940095	Cove Creek	Watauga	36.264218, -81.783925	Bridge gone, no temp bridge	25-129

Informal Consultation

The NCDOT assessed each project location addressed in this document for the presence of suitable habitat for listed species and for the potential effects of project work on listed species with suitable habitat present. The following table outlines the project locations and associated "No Effect" (NE) and "May Affect, Not Likely to Adversely Affect" NLAA determinations, with supporting biological rationale.

Table 2. Species NLAA and NE Determinations

Structure Number	Waterbody	Service Log No.	NE and NLAA Species
050101	Elk River	25-123	**NLAA**: Gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), tricolored bat (*Perimyotis subflavus*), Virginia big-eared bat (*Corynorhinus townsendii virginianus*). **Rationale**: Temporary bridge provides marginal roosting habitat, considered unlikely. No tree clearing. **NE**: Rock gnome lichen (*Gymnoderma lineare*). **Rationale**: Absence of suitable habitat.
050125	Elk River	25-130	**NE**: Gray bat, Rock gnome lichen (*Gymnoderma lineare*), Virginia big-eared bat. **Rationale**: Absence of suitable habitat for rock gnome lichen. Absence of suitable roosting habitat for gray bat and Virginia big-eared bat.
BP-006-2064	Hanging Rock Creek	25-124	**NE**: Gray bat, Rock gnome lichen, Virginia big-eared bat. **Rationale**: Absence of suitable habitat for rock gnome lichen. Absence of suitable roosting habitat for gray bat and Virginia big-eared bat.
040121	North Fork New River	25-125	**NE**: Gray bat, swamp pink (*Helonias bullata*). **Rationale**: Absence of suitable habitat for swamp pink. Absence of roosting habitat for gray bat.
940178	Cove Creek	25-126	**NLAA**: Gray bat, Indiana bat, Virginia big-eared bat. **Rationale**: Temporary bridge provides marginal roosting habitat, considered unlikely. Minimal tree clearing but trees lack roosting features.
378	Valley Creek	25-127	**NLAA**: Virginia big-eared bat. **Rationale**: Unlikely for species to utilize crossing structure or riparian vegetation for roosting. **NE**: Heller's blazingstar (*Liatris helleri*) **Rationale**: Absence of suitable habitat.

940258	Howard Creek	25-128	**NE**: Gray bat, Virginia big-eared bat, Virginia spiraea (*Spiraea virginiana*). **Rationale**: Absence of suitable habitat for green floater and Virginia spiraea. Absence of suitable roosting habitat for bats.
940095	Cove Creek	25-129	**NE**: Gray bat, Indiana bat, Virginia big-eared bat **Rationale**: Absence of suitable structure or tree roosting habitat for bats.

In instances where suitable habitat is absent from the action area, or where project actions would not result in impacts to suitable habitat within the action area, we agree that NE determinations are appropriate.

The NLAA determinations for listed bats are based on the presence of suitable riparian roosting, commuting, or foraging habitat and the lack of suitable structure roosting habitat; or on the presence of marginally suitable roosting habitat on temporary bridges where roosting would be considered unlikely, as addressed in the table. For these projects, adverse impacts to the noted bat species are not expected – that is, any impacts from the clearing of riparian vegetation or the removal of marginally suitable bridge structures is considered discountable, meaning extremely unlikely to occur based on what is known about the species, the site conditions, and the anticipated activities. Additionally, general protective measures will be implemented to the maximum extent possible. These measures are listed in Section 2.3 of this document, below, and further serve to reduce the likelihood that project work could adversely affect any bats occurring within the action areas.

We believe the requirements under section 7 of the ESA are fulfilled for the species addressed above in relation to the designated projects. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) this proposed action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the proposed action.

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat as endangered under the ESA. As a result, NCDOT has requested a conference for the tricolored bat as the projects may be on-going after the effective date of any final listing rule, if one is published. Based on the information provided and the analysis discussed for listed bat species above which also has applicability here, we have determined that the proposed projects designated in the table above as NLAA for tricolored bat, will not jeopardize the continued existence of the tricolored bat. Additionally, we would concur with the NCDOT's determination that the projects are NLAA the tricolored bat should the species become listed.

On December 13, 2024, eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*) was proposed for listing as endangered under the ESA. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective, the prohibitions against jeopardizing its continued existence and "take" will apply. Through discussion with the Service, NCDOT has chosen not to conference on eastern hellbender at the time of this consultation but will consider the species and coordinate with partner resource agencies as project actions move forward.

On July 26, 2023, the Service published a proposal in the Federal Register to list the green floater (*Lasmigona subviridis*) as endangered under the ESA, with inclusion of Critical Habitat designation for

the species. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective, the prohibitions against jeopardizing its continued existence and "take" will apply. Through discussion with the Service, NCDOT has chosen not to conference on green floater at the time of this consultation, but has chosen to voluntarily include measures considered protective of and beneficial to the species. Those measures and the location at which they apply are as follows:

At Ashe County Bridge 121 over North Fork New River (Log # 25-125), suitable habitat is present for green floater and previous mussel surveys in the greater area have revealed presence of the species in North Fork New River. Because the proposed work is likely to result in adverse impacts to the species at this location, NCDOT will:

- Proactively and voluntarily contribute* $10,000 to the NC Nongame Aquatic Species Fund. **Contribution amount reached through discussion between NCDOT aquatics group and Service aquatics recovery biologist, with contribution amount tailored to support ongoing and upcoming conservation and recovery efforts for imperiled mussel species, including green floater*.
- Prior to project construction, the Service Asheville Field Office [NCDOT liaison and aquatic species recovery biologist] and the NC Wildlife Resources Commission NCDOT liaison will be contacted to discuss the potential for aquatic species relocation, if applicable and practicable.
- Adhere to the general avoidance and minimization measures for aquatic concerns, as shared in Section 2.3 below.

Should new information on green floater or eastern hellbender become available in the near future, including any updates on listing decision timelines, the Service will work with NCDOT to expeditiously conduct any needed section 7 consultation on behalf of the species for the projects covered in this consultation – if impactful work is still underway.

Biological Opinion and Conference Opinion

1. Introduction

A biological and conference opinion (Opinion) is the document that states the opinion of the Service in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (ESA), as to whether a Federal action is likely to jeopardize the continued existence of species listed as endangered or threatened; or result in the destruction or adverse modification of designated critical habitat.

This document transmits the Service's biological and conference opinions (Opinion) and is based on our review of the proposal to replace several crossing structures (Table 3) and their effects on the federally endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), and northern long-eared bat (*Myotis septentrionalis*), and federally proposed endangered tricolored bat (*Perimyotis subflavus*). This Opinion is based on information provided in the assessment submitted to the Service by the NCDOT, field investigations, correspondence between NCDOT and the Service, communications with experts on the affected species, and other sources of information as cited. The Federal Highway Administration is the lead Federal action agency for these projects, with consultation authority delegated to the NCDOT.

2. Proposed Action

As defined in the Service's section 7 regulations (50 CFR 402.02), "*action*" means "*all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas*." The "*action area*" is defined as "*all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action*." The direct and indirect effects of the actions and activities must be considered in conjunction with the effects of other past and present Federal, state, or private activities, as well as the cumulative effects of reasonably certain future state or private activities within the action areas.

2.1 Action Areas

The project action areas are all areas of construction and include any portions of the project waterbodies, as indicated in Table 3, that may be affected by direct or indirect effects. The action areas are comprised of the:

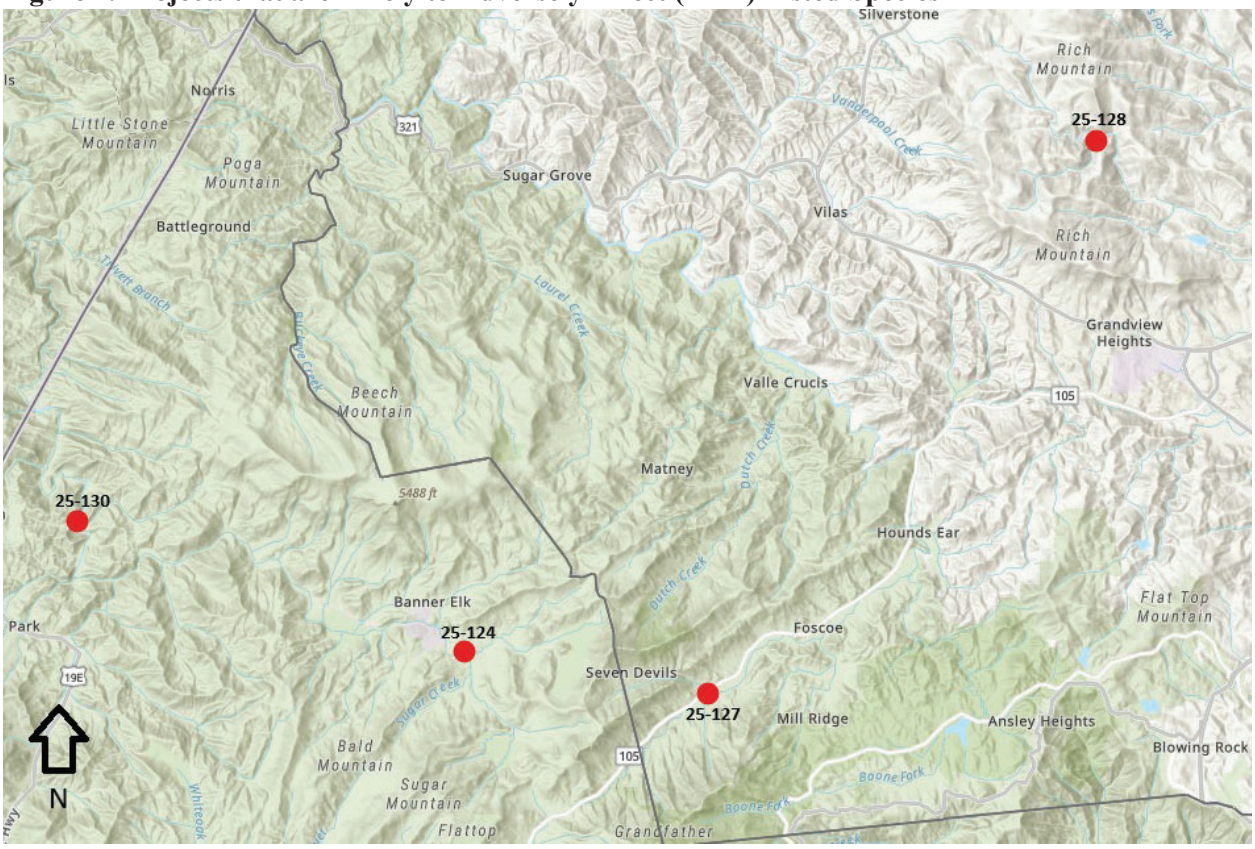
1.) Project construction limits including all project related work such as tree-clearing and grading.
2.) Limits of sedimentation effect, anticipated to extend 100 meters (m) (328 feet (ft)) upstream from each bridge and 400 m (1,314 ft) downstream from each crossing structure in each respective river or stream.

Table 3. Projects that are Likely to Adversely Affect (LAA) Listed Species

Structure Number	Waterbody	County	Location	Service Log No.
050125	Elk River	Avery	36.18023, -81.96406	25-130
BP-006-2064	Hanging Rock Creek	Avery	36.152983, -81.863139	25-124
378	Valley Creek	Watauga	36.144106, -81.800133	25-127

940258	Howard Creek	Watauga	36.260359, -81.698407	25-128

Figure 1. Projects that are Likely to Adversely Affect (LAA) Listed Species



2.2 Project Description

The details of the proposed project designs for each of the crossing structures in Table 1 are not yet known, given the mass response/repair/rebuild efforts for the hundreds of infrastructure failure projects due to TS Helene destruction. The scale of destruction from TS Helene, and associated response efforts, compel a batched consultation response, and the design-build process be expedited. Thus, exact designs and associated action area impact details are not known at the time of this review. However, project activities and estimated impacts, based on the "knowns" associated with NCDOT's crossing structure replacement work, are available. At the time of this consultation, the expectation is that the majority of the replacement bridges will be concrete box beam or cored slab structures and the culvert structures will be the same or similar materials to those previously in place. The general and expected elements of these crossing structure replacement projects are described below. The current estimated timeline is for these projects to be completed by late fall of 2026.

In-water impacts

Considering the range in structure and waterbody sizes analyzed in this review, and basing amounts on past similarly-sized structure and waterbody NCDOT crossing structure projects in WNC, the estimate of combined temporary and permanent in-water impacts for these projects range from 0.01 – 0.35 acres (or 4,356 – 15,246 square feet) per structure. Some structure replacements will fall in the lower portion of

that range of in-water impacts while some will fall in the higher range. These impacts may be in the form of work pad causeways, bent removal and/or placement, and placement of stream-bank stabilization materials.

Tree Clearing, Access Roads, and Demolition
The maximum estimate for tree clearing at structure replacement locations is 0.10 acre. That amount will likely be less at most locations, given the variability in site conditions and the extreme scour (and resulting loss of riparian vegetation) during TS Helene flooding. The season during which clearing will occur is not known for each location. Clearing and grading will occur to allow for access roads and general construction functionality.

Where damaged structures or portions of damaged structures remain in place, demolition will occur. The details of demolition activities and seasonality of demolition will vary by project.

2.3 Avoidance and Minimization and Conservation Measures

NCDOT will employ the following agency Standards, Guides, and Best Practices to avoid and minimize project mediated activities that could negatively impact listed/proposed species or their habitat.

2.3.1 Avoidance and minimization measures (AMMs)

General (regardless of species): The following General AMMs will be implemented on all projects to minimize impacts to listed/proposed species and habitat:

General AMM1. NCDOT will ensure that all operators, employees, and contractors working in areas of suitable habitat for federally listed/proposed species are aware of all NCDOT environmental commitments, including all applicable AMMs and all associated NCDOT guidance documents.

General AMM2. NCDOT's best management practices (BMP) and sediment and erosion control (SEC) measures will be utilized to prevent non-point source pollution, control storm water runoff, and minimize sediment damage to avoid and reduce overall water quality degradation.
https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/Erosion%20and%20Sediment%20Control%20Design%20and%20Construction%20Manual_Rev20220519.pdf

General AMM3. Areas of disturbance, such as tree clearing, grubbing, and grading, will be limited to the maximum extent possible.

Bats - The General AMMs will minimize impacts to listed and proposed bat species. **To the maximum extent possible**, the following AMMs will also be incorporated into project work – though implementation of all bat AMMs below cannot be guaranteed at the time of this consultation, given the scale, scope, and timeline constraints addressed previously.

- Bat AMM Noise - Percussive activities will occur only after tree clearing within the action area has been completed, helping to reduce the exposure of any tree-roosting bats within the action area to high decibel noise.

- Bat AMM Lighting - No new lighting will be added to the action area. Any lighting needed for night work will be directed at the work area and shielded from surrounding waters/landscape, only on when needed, no brighter than necessary, and blue light emissions will be limited.

- Bat AMM Riparian Planting – Disturbed riparian areas will be replanted with native, fast-growing tree and shrub species where feasible, with the understanding that plantings likely cannot be done in utility/drainage/construction easements.

Aquatics- The General AMMs above will minimize impacts to listed/proposed terrestrial and aquatic species. **To the maximum extent possible**, the following AMMs will also be incorporated into project work – though implementation of all aquatic AMMs below cannot be guaranteed at the time of this consultation, given the scale, scope, and timeline constraints addressed previously.

- Aquatic AMM Structure – To the maximum extent possible, structure will be built in the same location as the previous structure, with minimal impact [such as in-water bents] to the water resource, and built to NCDOT's current improved highway and hydraulic standards.

- Aquatic AMM Equipment – To the maximum extent possible, heavy machinery will not be utilized within the waterbody. Additionally, staging and storage areas for equipment and materials will be managed in such a way to ensure that potential spills and leaks do not have access to the waterbody.

- Aquatic AMM Temporary and Permanent Fill – Any temporary fill (i.e. causeways) or permanent (i.e. bents/piers) fill in excess of what was previously present will be avoided and minimized to the maximum extent possible.

- Aquatic AMM Abutments - Existing abutments will be completely removed unless removal results in destabilizing of banks or increases the adverse effect to listed/proposed aquatic species.

- Aquatic AMM Deck Drains – Deck drains that empty directly to the waterbody below will not be included in new bridge designs. Surface water drainage transport will be designed to incorporate improved treatment prior to drainage entering the waterbody.

- Aquatic AMM Erosion Control Matting – Coir fiber matting will be utilized instead of plastic or other synthetic matting.

2.3.2 Conservation Measures (CMs)

CMs represent actions, pledged in the project description, that the action agency will implement to further the recovery of the species under review. The beneficial effects of CMs are considered in making determinations of whether the projects will jeopardize the species under consideration in this document.

Bat CM - Tree Clearing Bat Fund Contribution: For individual bridge projects that are likely to adversely affect bat species during tree removal, the NCDOT will contribute a payment* to the N.C. Nongame Terrestrial Species Fund (or other Service-approved Fund) in support of the recovery of federally protected bat species.

Bat CM Structure Removal Bat Fund Contribution: For individual bridge projects that are LAA bat species during structure removal, the NCDOT will contribute a payment** to the N.C. Nongame Terrestrial Species Fund (or other Service-approved Fund) in support of the recovery of federally listed bat species.

*Contributions made will be based on a 2:1 ratio multiplier specified for the non-volant pup season (May 15-July 31). This ratio offers the most protective coverage based on the current unknowns surrounding time-of-year clearing. The amount will be determined using the United States Department of Agriculture Farm Real Estate Value for North Carolina for 2024 ($5,190/acre).
https://www.nass.usda.gov/Publications/Todays_Reports/reports/land0824.pdf
If tree clearing amount is unknown, an assumed clearing acreage of 0.1 acre will be used based on estimates from previous clearing work at crossing structures (NCDOT 2015). The formula is calculated as follows:
$5,190 x 0.1 ac = 519 x 2 (critical life stage multiplier) = $1,038 contribution.

**Structures with documented bat use are generally larger than the average bridge, with a median size of 0.10 acre (length x width) (Service 2020b). Therefore 0.10 acre per crossing structure is used to calculate the amount of suitable bat habitat lost for projects involving structure impacts. However, the impacts to bats that may be displaced during structure demolition/construction are considered temporary in nature because the replacement structures are understood to provide adequate roosting habitat, as addressed in the project description. Additionally, the structures being analyzed here are all damaged and understood to provide reduced areas of suitable bat roosting habitat. Therefore, the 1.5:1 ratio multiplier was determined to be appropriate. If the structures are demolished between March 15 – November 15 (the period during which gray bats could be present on the landscape, which also encompasses the northern long-eared bat and tricolored bat active seasons) a structure-related payment will be made; if not, no structure-related payment will be made. The formula is calculated as follows: $5,190 x 0.1 ac = 519 x 1.5 (temporary impact multiplier) = $779 contribution/structure.

3. Status of the Species

This section summarizes best available data about the biology and current condition of the federally endangered gray bat (*Myotis grisescens*), Indiana bat (*Myotis sodalis*), and northern long-eared bat (*Myotis septentrionalis*), and federally proposed endangered tricolored bat (*Perimyotis subflavus*) throughout their ranges that are relevant to formulating an opinion about the actions. More in-depth species information such as species status assessments can be found at the species-specific pages at the Service's Environmental Conservation Online System (ECOS): ecos.fws.gov/ecp/

3.1 Gray Bat

Scientific Name: *Myotis grisescens*
Status: Endangered
Date of Listing: April 28, 1976
Critical Habitat: None designated

3.1.1 Description and Life History

The gray bat is a medium-sized insectivorous bat with an overall length of about 3.5 inches and a wingspan of 10 to 11 inches. As the name implies, gray bats have gray fur, but the hair often bleaches to reddish-brown by early summer. The gray bat largely occurs in limestone karst areas, meaning a landscape marked by caves, sinkholes, springs and other features, of the southeastern and midwestern United States.

Gray bats use caves year-round for roosting and hibernating. Seasonal occupancy of caves differs between summer roost and winter hibernacula, and gray bats are known to migrate more than 300 miles between the two. While gray bats are predominantly found roosting in caves, they are known to roost in structures including buildings, bridges and culverts. Bats emerge from summer roosts early in the evening

and forage along waterbodies adjacent to forested areas. The species has been documented traveling from a few miles to 20 or more miles between their day roosts and nightly foraging areas.

Adult bats mate upon arrival at the wintering caves in September or early October. Hibernation occurs in deep vertical caves in the winter, where colder temperatures are preferable. Gray bats require consistently cold temperatures to maintain hibernation and conserve energy in the winter months. The adult females will emerge from hibernation in late March or early April. At that time, the females who have mated will begin their pregnancy, while dispersing to maternity caves. Males and juveniles emerge shortly after the females and disperse to bachelor caves. Gray bats are documented using bridges and culverts as roosting habitat during the spring, summer, and fall and show strong philopatry to their summer ranges and typically use the same roost sites year after year (Tuttle 1976; Martin 2007). Gray bats are most commonly observed in bridges of concrete material and their preferred roosting location is in the vertical expansion joints of a bridge deck above piers (NCDOT 2023a), though they can also roost in clogged deck drains and other sheltered areas on crossing structures. According to approximately 2,000 bridge surveys conducted throughout WNC from 2000 - 2023, gray bats have been recorded roosting in bridges at a usage rate of 3% (NCDOT 2023a), with bridge use observed in the covered area from March – November. Up to 1,000 individuals, including males and females, have been observed day-roosting throughout the summer in expansion joints between box beams at two separate bridges (Weber et al. 2020). Sporadic summer use of other concrete type bridges has also been noted for smaller numbers of day-roosting gray bats (NCDOT, 2023a). Gray bats have also been observed within culverts, most commonly of concrete material.

Gray bats primarily forage over open water bodies, such as rivers, streams, lakes, and reservoirs, and associated riparian areas (Tuttle 1976; LaVal et al. 1977; Weber et al. 2020). While foraging, the gray bat consumes a variety of insects, most of which are aquatic (Brack and LaVal 2006). Bats typically travel individually or in small groups that forage in an area for a short period before moving to another area. Studies suggest that gray bats visit multiple foraging areas during the night and travel frequently between these areas.

3.1.2 Status and Distribution

The primary range of gray bats is concentrated in the cave regions of Alabama, Arkansas, Kentucky, Missouri and Tennessee, though its overall range stretches from Virginia to Oklahoma, and Missouri to Alabama. WNC is on the eastern edge of the bat's range. In North Carolina, the gray bat is currently documented from 14 western counties and is possible in an additional 10 counties. Most gray bat occurrences in WNC are centered on the French Broad and Pigeon River watersheds. Gray bats are generally present in North Carolina from March 15 to November 15, when they leave for winter hibernacula. It is believed that many of the gray bats in North Carolina migrate to hibernacula in Tennessee, using the French Broad River as a commuting pathway. The closest active hibernaculum is near Newport, Tennessee (Weber et al. 2020), approximately 20 miles from the border with Haywood and Madison Counties in North Carolina.

Ellison et al. (2003) of the U.S. Geological Survey (USGS) statistically analyzed 1,879 observations of gray bats obtained from 334 roost locations in 14 south-central and southeastern states. They determined that 94.4% of the populations showed stable or increasing populations while 6% revealed a decreasing population. For populations where there was a downward population trend, decreases in population numbers were mostly attributed to continued problems with human disturbance. This increasing population trend has been reflected in the work of Sasse et al. (2007), Martin (2007), and again by Elliott

in 2008 in looking at high-priority caves. It is estimated that more than 95% of the species range-wide population hibernate in only 9 caves.

Emergence counts conducted by Indiana State University researchers at known roosts in WNC from 2018-2019 suggested there were at least 2,820 gray bats in the French Broad River basin (Weber et al. 2020). Throughout WNC, there are 58 current element occurrences of the gray bat based on N.C. Natural Heritage Program, NCWRC, and NCDOT records; most are from built structures (largely bridges). The number of gray bats found at each occurrence range from 1 to about 1,500 bats, with some roosts surveyed in the Weber et al. (2020) study hosting >1,000 gray bats during certain times of the season. The most recent winter population estimate of gray bats in the closest hibernaculum to the action area (Rattling Cave, near Newport TN) was 250,689 bats (TWRA 2019).

3.1.3 Threats

Cave disturbance and alteration, loss of forested habitat, pollution of waterways, and significant natural factors including those caused by climate change (flooding, freezing, and forest destruction) are threats to gray bats. Gray bats have been infected by the invasive fungus *Pseudogymnoascus destructans,* the causative agent of white-nose syndrome (WNS), a fungal disease contributing to the declines of several bat species in the U.S.; however, WNS is not considered a major threat to the species.

3.2 Indiana Bat

Scientific Name: *Myotis sodalis*
Status: Endangered
Date of Listing: March 11, 1967
Critical Habitat: Established in 1976

3.2.1 Description and Life History

The Indiana bat is a temperate, insectivorous, migratory bat that hibernates colonially in caves and mines in the winter. The species is widely distributed in a variety of wooded habitats, ranging from highly fragmented woodlands in agricultural landscapes to extensively forested areas. Roosting areas are preferred in forest stands with uneven-aged trees that can supply the canopy with large, dead trees in more direct sunlight and are near foraging areas and water sources. Some roosts do occur in living trees (primarily shagbark hickory) or damaged trees from several species. During winter, Indiana bats are restricted to suitable underground hibernacula. Most of these sites are caves located in karst areas of the east-central United States; however, Indiana bats also hibernate in other cave-like locations, including abandoned mines.

Maternity colonies form in early May and remain together until August. Females will rear a single pup from May into July. Temperatures and weather will alter the length of the time a pup will stay in the primary roost and females will relocate the pup to another snag to manage temperatures and environmental conditions. In summer, most reproductive females occupy roost sites under the exfoliating bark of dead trees that retain large, thick slabs of peeling bark. Habitats in which maternity roosts occur include riparian zones, bottomland and floodplain habitats, wooded wetlands, and upland communities. Indiana bats typically forage in semi-open to closed (open understory) forested habitats, forest edges, and riparian areas.

Fall swarming and mating takes place between August and November and are at different sites from the actual hibernaculum. Typically, hibernation begins in November and lasts through March. Several variables influence hibernacula selection, but generally Indiana bats prefer caves with stable temperatures

that remain below 50°F with humidity greater than 74 percent. Indiana bats emerge from hibernation in March or April and remain near the hibernacula to refuel before migrating to summer ranges. Migration distances vary but have been observed greater than 300 miles. Bats may be concentrated near hibernacula and often roost in trees during fall swarming and spring staging.

Indiana bats primarily feed on flying insects, including some from orders with both an aquatic and terrestrial stage. Numerous foraging habitat studies have found that Indiana bats often forage in closed to semi-open forested habitats and forest edges located in floodplains, riparian areas, lowlands, and uplands; however, old fields and agricultural fields are also used (Service 2007). Drinking water is essential, especially when bats actively forage. Indiana bats obtain water from streams, ponds, and water-filled road ruts in forest uplands. Consistent use of moths, flies, beetles, and caddisflies throughout the year at various colonies suggests that Indiana bats are selective predators to a certain degree, but incorporation of other insects into the diet also indicates that these bats can be opportunistic (Murray and Kurta 2002).

3.2.2 Status and Distribution

Indiana bats can be found primarily in the midwestern and eastern part of the United States, with a range stretching east to west from Vermont to Oklahoma, and north to south from Michigan to Alabama, and comprising approximately 403,883 square miles. WNC falls on the southeast edge of their range. No known active hibernacula are present in WNC and summer maternity colonies are widely dispersed, with most locations unknown (Service 2019a).

According to the 2024 population status updated (Service 2024), range-wide there are approximately 631,786 Indiana bats, using 194 hibernacula across 15 states. The nine most populous hibernacula are home to 91% of Indiana bats, though none are in North Carolina or adjacent states. The Service divides the Indiana bat range into four recovery units, delineating evidence of population discreteness and genetic differentiation, differences in population trends, and broad-level differences in macrohabitats and land use. North Carolina is part of the Appalachia Recovery Unit, which includes all of West Virginia, as well as portions of Pennsylvania, Virginia, and Tennessee. The Appalachian recovery unit represents 0.2% of the overall Indiana bat population.

There are 20 element occurrences of the Indiana bat in WNC based on NCNHP records, five of these are considered historical. There are several records of Indiana bats roosting in concrete-material bridges associated with a water crossing and of concrete material (NCDOT 2023a). According to approximately 2,000 bridge surveys conducted throughout WNC from 2000 - 2023, Indiana bats have been recorded roosting in WNC bridges at a usage rate of 0.2% (NCDOT 2023a) with use documented to occur from March - July. There are currently no records in North Carolina of Indiana bats roosting in culverts (NCDOT 2023b), though they have been found in culverts in other states. White Oak Blowhole cave in Tennessee (Great Smoky Mountains National Park) is located within five miles of the North Carolina border. Therefore, part of the designated spring staging and fall swarming habitat associated with this hibernaculum extends into Swain County, NC.

3.2.3 Threats

Threats to the Indiana bat include modifications to caves, mines, and surrounding areas that change airflow and alter microclimate in the hibernacula. Human disturbance and vandalism pose significant threats during hibernation through direct mortality and by inducing arousal and consequent depletion of fat reserves. Natural catastrophes can also have a significant effect during winter because of the concentration of individuals in a relatively few sites. During summer months, possible threats relate to the loss and degradation of forested habitat. Migration pathways and swarming sites may also be affected by

habitat loss and degradation. Although populations have increased in recent years, WNS poses an additional threat that has caused and may continue to cause population declines.

3.3 Northern long-eared Bat

Scientific Name: *Myotis septentrionalis*
Status: Endangered
Date of Listing: April 1, 2015 as Threatened; November 30, 2022 as Endangered
Critical Habitat: None designated

3.3.1 Description and Life History

The northern long-eared bat is a wide-ranging species, found in 37 states and eight provinces in North America. The species typically overwinters in caves and mines and spends the remainder of the year in forested habitats. As its name suggests, the northern long-eared bat is distinguished by its long ears, particularly as compared to other bats in the genus *Myotis*.

Northern long-eared bats are a forest bat species that roosts in a variety of forest types and structures. They are known to roost in trees and have also been documented using roost sites such as buildings, artificial roosts, and bridges. During the active season, northern long-eared bats typically roost singly or in maternity colonies underneath bark or more often in cavities or crevices of both live trees and snags (Service 2023). Males' and non-reproductive females' summer roost sites may also include cooler locations, such as caves and mines (Service 2023). With one exception, all bridge roost records in North Carolina are associated with a water crossing (NCDOT 2023a). Northern long-eared bats have been recorded roosting in WNC bridges at a usage rate of 0.2% (NCDOT 2023a). Northern long-eared bat bridge use has been documented to occur in WNC from May – October (NCDOT 2023a). There are no records of northern long-eared bats roosting in culverts in North Carolina, though they have been documented using culverts in other states. Northern long-eared bats will overwinter in caves or mines and have been documented using railroad tunnels, storm sewers, and bunkers. Length of hibernation varies depending on location. They may hibernate singly or in small groups and can be found hibernating in open areas but typically prefer caves with deep crevices, cracks, and bore holes that protect from drafts. They typically hibernate from September or October to March or April. More than 780 hibernacula have been documented within the northern long-eared bat range.

Prior to hibernation between mid-August and mid-November, bat activity will increase during the evenings at the entrance of a hibernaculum (fall swarming). Suitable fall swarming habitat is similar to roosting, foraging, and commuting habitat selected during the summer and is most typically within 4-5 miles of a hibernaculum (Service 2023). Likewise, in the spring they emerge from and stage near hibernacula before moving to maternity areas typically in early April to mid-May; however, they may leave as early as March. Northern long-eared bats also roost in trees near hibernacula during spring staging, and Thalken et al. (2018) found that roost trees were situated within 1.2 miles (2km) of hibernacula during spring staging and the early maternity season. The species migrates relatively short distances between maternity areas and hibernacula.

Northern long-eared bats are more likely to forage under the canopy on forested hillsides and ridges (Nagorsen and Brigham 1993) rather than along riparian areas (Brack and Whitaker 2001; LaVal et al. 1977). Because of this, alternative water sources like seasonal woodland pools may be an important source of drinking water for these bats (rather than just streams and ponds; Francl 2008). Mature forests may be an important habitat type for foraging (Service 2015). Northern long-eared bats have a diverse

diet including moths, beetles, flies, leafhoppers, caddisflies, and arachnids (Service 2020a), which they catch while in flight or by gleaning insects off vegetation (Ratcliffe and Dawson 2003).

3.3.2 Status and Distribution

The species' range includes all or portions of 37 eastern and mid-western states and the District of Columbia in the U.S. The northern long-eared bat's range also includes eight Canadian provinces. In WNC, the species range includes all or portions of 26 counties in the western portion of the state.

Prior to the emergence of WNS, northern long-eared bat was abundant and widespread throughout much of its range with 737 occupied hibernacula, a maximum count of 38,181 individuals and its range being spread across >1.2 billion acres in 29 states and 3 Canadian provinces. Numbers vary temporally and spatially, but abundance and occurrence on the landscape were stable (Cheng et al. 2022, p. 204; Wiens et al. 2022, p. 233). Currently, declining trends in abundance and occurrence are evident across much of northern long-eared bat's summer range. Range-wide summer occupancy declined by 80% from 2010–2019. Data collected from mobile acoustic transects found a 79% decline in range-wide relative abundance from 2009–2019 and summer mist-net captures declined by 43–77% compared to pre-WNS capture rates.

There are approximately 169 element occurrences for northern long-eared bat in NC, based on N.C. Natural Heritage Program records, 19 of which are considered historical. The number of bats found at each occurrence ranges from one to more than 80. There have been 22 documented hibernacula, all in caves or mines; however, northern long-eared bats have not been observed using hibernacula in North Carolina since 2014 (NCWRC personal communication September 2022). The Service estimates that there has been an occupancy drop of 85% and a 24% loss of winter colony sites across the Southeast Representation Unit (RPU) overall since 2006 when white-nose syndrome was first documented (Service 2022a).

3.3.3 Threats

The primary factor influencing the viability of the northern long-eared bat range-wide population is WNS. Other primary factors that influence the decline in northern long-eared bat numbers include wind energy mortality, effects from climate change, and habitat loss.

3.4 Tricolored Bat

Scientific Name: *Perimyotis subflavus*
Status: Proposed Endangered
Date of Proposed Listing: September 14, 2022
Critical Habitat: None proposed

3.4.1 Description and Life History

The tricolored bat is one of the smallest bats in North America. The once common species is wide-ranging across the eastern and central US and portions of southern Canada, Mexico and Central America. As its name suggests, the tricolored bat is distinguished by its unique tricolored fur that appears dark at the base, lighter in the middle and dark at the tip.

During the winter, tricolored bats are found in caves and mines, although in the southern US, where caves are sparse, tricolored bats are often found roosting in culverts. During the spring, summer and fall, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves. Female

tricolored bats form maternity colonies and switch roost trees regularly. Maternity colonies typically consist of 1 to several females and pups. They usually have twins in late spring or early summer, which are capable of flight in four weeks. Additionally, tricolored bats have been observed roosting among pine needles, eastern red cedar (*Juniperus virginiana*), within artificial roost structures, beneath porch roofs, bridges, concrete bunkers, and rarely within caves. According to approximately 2,000 bridge surveys conducted throughout WNC from 2000 - 2023, tricolored bats have been recorded roosting in bridges at a usage rate of 1.5% (NCDOT 2023a). Tricolored bat bridge use has been documented to occur in WNC from April – October (with one outlier record from 2013 citing February use). Similarly, tricolored bats have been found using culverts in WNC at a relatively low rate (0.8% observed use). Approximately 900 surveys have been conducted in WNC from 2010 – 2023 (NCDOT 2023b) with year-round data coverage. Culvert use has been observed in WNC from January – April.

During the winter, across much of their range tricolored bats hibernate in caves and mines; although, in the southern United States, where caves are sparse, they often hibernate in culverts, as well as sometimes in tree cavities and abandoned water wells. In the southern US, hibernation length is shorter compared to northern portions of the range and in the warmest portions of its range. Hibernating tricolored bats do not typically form large clusters; most commonly roost singly, but sometimes in pairs, or in small clusters of both sexes away from other bats (Service 2021). Tricolored bat hibernacula following population crashes from WNS generally host <100 individuals (Service 2021), though solitary hibernation can often occur with this species (Whitaker and Hamilton 1998).

Before entering hibernacula for the winter, tricolored bats demonstrate 'swarming' behavior. The peak swarming period for tricolored bats in much of WNC/eastern Tennessee generally starts in mid to late August and extends into November and is a sensitive period for bats. Suitable fall swarming habitat is similar to roosting, foraging, and commuting habitat selected during the summer. Spring staging is the time period between winter hibernation and spring migration to summer habitat (Service 2023). During this time, bats begin to gradually emerge from hibernation, exit the hibernacula to feed, but re-enter the same or alternative hibernacula to resume daily bouts of torpor (state of mental or physical inactivity). Tricolored bats also roost in trees near hibernacula during spring staging.

Tricolored bats are opportunistic feeders and consume small insects including caddisflies, moths, beetles, wasps, flying ants and flies. The species most commonly forages over waterways and along forest edges

3.4.2 Status and Distribution

Tricolored bats have a very wide range that encompasses most of the eastern US from Canada to Florida and west to New Mexico (39 states). They can be found throughout North Carolina and are one of the most commonly encountered cave-dwelling species seen in winter, albeit at much lower densities than prior to the arrival of WNS in the state.

There are 147 NC element occurrences of the tricolored bat based on N.C. Natural Heritage Program records, seven of which are considered historical. The number of bats found at each occurrence range from 1 to 3,000 bats. There have been 79 tricolored bat hibernacula documented, including caves (50), mines (22), root cellars (4), and culverts (3).

For tricolored bats, the Service split the bat's range into three Representation Units (RPUs), two of which, the Northern and Southern RPUs, include the western and eastern halves of WNC, respectively. The Service estimates that, since 2006, the Northern RPU has experienced a 17% decline in summer

occupancy and a 57% decline in the number of winter colonies, while the Southern RPU has experienced a 37% decline in summer occupancy and a 24% decline in the number of winter colonies (Service 2021).

3.4.3 Threats

WNS is the primary driver of the species' decline and is predicted to continue to be the primary influence into the future. Wind energy-related mortality is also considered a consequential driver to the bat's viability. Although habitat loss is considered pervasive across the species' range, severity has likely been low given historical abundance and spatial extent; however, as tricolored bat's spatial extent is projected to decline in the future (i.e., consolidation into fewer winter and summer colonies) negative impacts (e.g., loss of a hibernaculum or maternity colony) may be significant.

4. Environmental Baseline for Listed and Proposed Bats Within the Action Areas

The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process [50 CFR §402.02].

The project action areas contain the existing crossing structures and the roadway approaches, along with the existing utilities and surrounding riparian areas in which project work will occur, and are located in the Environmental Protection Agency Blue Ridge Ecoregion in WNC. Past impacts include the original construction and placement of the crossing structures within waterbodies to facilitate transportation in the surrounding locations. Because this document addresses several projects, more detailed information regarding other human activities at each location is not included for the purposes of this consultation review.

Structures

Portions of damaged Avery County structure 125 and Watauga structure 378 remain in place; however, suitable structural roosting habitat is extensively reduced and degraded from pre-storm conditions. For gray bats, primary roost structures can support several hundred to over 1,000 individuals, while the majority of structures with observed roosting gray bats in WNC contain 1 to 10 individuals. The structures supporting those higher numbers of gray bats, whether culvert or bridge, are larger than average. The northern long-eared bats and Indiana bats observed roosting on bridges in WNC is between 1 and 2 individuals at any given time. In more detail, Natural Heritage data shows 1 bridge roost location in Swain County for Indiana bat and shows 1 bridge roost location in Graham County, 1 in Madison, and 2 in Swain (all pre-WNS except 1 Swain County location) for northern long-eared bat. There are currently no culvert roosting records for northern long-eared bat or Indiana bat in NC. Records of tricolored bat roosting in bridges and culverts in WNC consist mainly of 1-2 individual per structure. Within the action area of these damaged crossing structures, given the degraded and reduced roosting habitat available, and based on existing WNC data, it is estimated that 1 individual per species could be present within each structure at these crossing locations.

Trees

Gray bats are not considered "tree-roosting" species. While individuals have been observed utilizing trees in rare occasions, they are generally considered a cave/structure-specific roosting species; therefore, no gray bats are expected to be roosting in trees within the action areas. Indiana bats, northern long-eared bats and tricolored bats roost in trees during the warmer months. Given the minimal amount of riparian

vegetation and trees remaining within the action areas, it is unlikely that high number of bats would be utilizing the small amount of available habitat. Based on that rationale, 1 individual per species (of Indiana bat, northern long-eared bat and tricolored bat) could be present in trees within the action area per crossing structure location.

5. Effects of the Action on Gray Bat, Indiana Bat, Northern Long-eared Bat, and Tricolored Bat

Under section 7(a)(2) of the ESA, "effects of the action" refers to the consequences, both direct and indirect, of an action on the species or critical habitat. The effects of the proposed action are added to the environmental baseline to determine the future baseline, which serves as the basis for the determination in this Opinion. Should the effects of the Federal action result in a situation that would jeopardize the continued existence of the species, we may propose reasonable and prudent alternatives that the Federal agency can take to avoid a violation of section 7(a)(2).

5.1 Proximity of the Action, Nature of the Effect, and Disturbance Duration for Bats

Based on the description of the action and the species' biology, stressors to gray bat, Indiana bat, northern long-eared bat, and tricolored bat have been identified and are shared below. The proximity of these actions will be within the entire action area of each project, including the structures, waterways, riparian zone, and any existing forested areas. Duration of disturbance is expected primarily during the construction phase of project work.

5.2 Effects Analysis for Bats

Replacement structures: Due to the constraints associated with the TS Helene response, such as the high volume of projects and timeline unknowns, the exact designs of replacement crossing structures are not known at the time of this document. However, according to information provided by NCDOT, the majority of replacement bridge structures are expected to be either cored slab or box beam bridges. Such precast concrete bridges may provide suitable bat roosting habitat depending on factors such as spacing between beams/girders, arrangement above any bents, and other design elements that could result in potential roosting crevices. Generally, concrete is a favorable material for roosting due to its thermal stability.

Direct Impacts – Direct effects are caused by the action and occur at the same time and place (50 CFR 402.02).

Structure Work

The demolition of remaining portions of structures, if conducted while bats are present, could result in causing bats to flush, which would expose them to risk of predation and would cause increased energy expenditure and create the need for bats to find alternative roost locations. It could also result in physical wounding or death. High-decibel percussive noises associated with demolition or construction may cause bats roosting in close proximity to flush, exposing them to harm and increased energy expenditure. Additionally, if non-volant pups are present, while adults may be able to flush, pups would be left behind with mortality as the likely outcome. In summary, these activities, should they occur while bats are present, are expected to result in harm to gray bat, Indiana bat, northern long-eared bat, and tricolored bat.

Tree Removal

The removal of suitable roost trees, if conducted while Indiana bats, northern long-eared bats, or tricolored bats are present, could result in causing bats to flush, which would expose them to risk of

predation and would cause increased energy expenditure and create the need for bats to find alternative roost locations. It could also result in physical wounding or death. Given the presence of alternative forested habitat in close proximity to the action areas, bats could likely find trees for roosting. Harm would be expected in the increased exposure to predation from flushing and from the potential for wounding or killing when trees are felled. Additionally, if non-volant pups are present, while adults may be able to flush, pups would be left behind with mortality as the likely outcome. In summary, these activities, should they occur while bats are present, are expected to result in harm to Indiana bat, northern long-eared bat, and tricolored bat.

Indirect Impacts – Indirect effects are defined as those that are caused by the proposed action and are later in time but are still reasonably certain to occur (50 CFR 402.02).

If bats were utilizing structures or trees (when considering Indiana bat, northern long-eared bat, and tricolored bat) within the action areas as roost sites prior to demolition/clearing/construction, and return to those roost sites to find the habitat gone or altered, the bats may then have to expend extra energy in finding alternative roosting areas. While this could occur, it is considered unlikely to result in adverse effects given that replacement structures are expected to offer suitable roosting features and alternative forested habitat is available in close proximity to the action areas.

Operational Effects

Because these projects are limited to the replacement of damaged or destroyed crossing structures and their approaches, which will not result in changes to traffic volumes, any operational effects above the existing baseline conditions are not expected to occur; or, if they do occur, are expected to be minimal.

5.3 Cumulative Effects

Cumulative effects are defined as "those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR 402.02). Future federal actions unrelated to the proposed action are not considered because they require separate consultation pursuant to Section 7 of the ESA.

These structure replacements are not expected to induce land development or substantially change the function of the roadways. Any potential effects are anticipated to be localized and consistent with baseline land use patterns. Many private landowners and local governments are recovering from TS Helene and rebuilding homes/businesses and infrastructure. Therefore, there will likely be increased construction in WNC Counties for an undefined period of time. Some of this work will be conducted during seasons when bats are active on the landscape, potentially increasing exposure to construction-related stressors. However, other effects from these private actions cannot be determined at this time.

6. Conclusion and Jeopardy Determination for Gray Bat, Indiana Bat, Northern Long-eared Bat, and Tricolored Bat

After reviewing the current status of gray bat, Indiana bat, northern long-eared bat, and tricolored bat, the environmental baselines for the action areas, the effects analyses and cumulative effects, the Service's biological and conference opinions are shared below.

It is the Service's biological and conference opinion that the proposed actions are not likely to jeopardize the continued existence of gray bat, Indiana bat, northern long-eared bat, or tricolored bat. This opinion is based on the following factors: Effects of the actions occur as a result of the replacement of Avery County

crossing structures 125 and BP-006-2064 and Watauga County crossing structures 258 and 378, and/or the associated tree clearing at these locations. These action areas comprise only a small amount of active season habitat within the overall ranges of these species. No changes in the long-term viability of gray bat, Indiana bat, northern long-eared bat, or tricolored bat are expected because, given the low numbers of each species which could be expected to occur at each crossing structure location (that is, an estimate of 1 individual per species per structure and an estimate of 1 Indiana bat, 1 northern long-eared bat, and 1 tricolored bat per forested area within each action area), and the occurrence range-wide of each species – gray bat in 14 states, Indiana bat in 27 states, northern long-eared bat in 37 states, and tricolored bat in 39 states as well as in portions of other North and Central American countries – only a miniscule percentage of those overall populations may be affected. Crossing structure construction activities are likely to negatively affect gray bat, Indiana bat, northern long-eared bat, and tricolored bat within the action areas but the incorporated conservation measures are expected to reduce impacts.

7. Incidental Take Statement

Section 9 of the Endangered Species ESA and Federal regulations pursuant to section 4(d) of the Endangered Species Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take "*means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct*" (16 U.S.C §1532). Harm is further defined by the Service as "*an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering*" (50 CFR 17.3). Incidental taking "*means any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity*" (50 CFR 17.3). Harass is defined by the Service as "*an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering*" (50 CFR 17.3). Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered to be prohibited under the Endangered Species Act, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

7.1 Amount of Take for Gray Bat, Indiana Bat, Northern Long-eared Bat, and Tricolored Bat

The Service anticipates incidental take of the gray bat, Indiana bat, northern long-eared bay, and tricolored bat may occur as a result of the demolition (if applicable) and construction of Avery County crossing structures 125 and BP-006-2064 and Watauga County crossing structures 258 and 378, and/or the associated tree clearing at these locations. Specifically, take of these species may occur as a result of flushing, wounding, or direct mortality during demolition activities (if applicable); or, for northern long-eared bat Indiana bat, and tricolored bat, take may occur as a result of clearing suitable roost trees during times of year that these bats could be tree-roosting within the action area, which may similarly result in flushing, wounding, or direct mortality during clearing activities.

Incidental take of bats is difficult to measure or detect given that 1) the animals are small, cryptic, and generally difficult to observe, 2) finding dead or injured bats during or following project implementation is unlikely, and 3) some incidental take is in the form of non-lethal harm and not directly observable. Given this, the 1) maximum estimated tree clearing (for northern long-eared bat, Indiana bat, and tricolored bat only) and 2) number of structures replaced, are used as surrogate measures of take for this Opinion. Additionally, as discussed in the Environmental Baseline, no more than 1 individual of gray bat

or 2 individuals of northern long-eared bat, Indiana bat, or tricolored bat (given structure and tree roosting) are estimated to be present within the action areas of each crossing structure.

Therefore, the incidental take permitted by the Opinion would be exceeded if:

1. *Tree clearing amount exceeds 0.10 acre at a single structure location for the crossing structures listed at the beginning of section 7.1.
2. Any more than one structure is demolished/replaced per crossing structure, as listed at the beginning of section 7.1.

**For northern long-eared bat, Indiana bat, and tricolored bat only*

Exceedance of take as defined above will represent new information that was not considered in this Opinion and shall result in reinitiation of this consultation. The incidental take of gray bat, Indiana bat, northern long-eared bat, and tricolored bat is expected to be in the form of harm, wounding, or death.

7.3 Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure(s) are necessary and appropriate to minimize take of gray bat, Indiana bat, northern long-eared bat, and tricolored bat. These non-discretionary measures reduce the level of take associated with project activities and include only actions that occur within the action area.

1. NCDOT shall ensure that the contractor(s) understands and follows the measures listed in the "Conservation Measures", "Reasonable and Prudent Measures," and "Terms and Conditions" sections of this Opinion.
2. NCDOT shall minimize the area of disturbance within the action areas to only the area necessary for the safe and successful implementation of the proposed actions.
3. NCDOT shall monitor and document any take numbers and the surrogate measures of take and report those to the Service in a batched format.

7.4 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and/or monitoring requirements. When incidental take is anticipated, the terms and conditions must include provisions for monitoring project activities to determine the actual project effects on listed fish or wildlife species (50 CFR §402.14(i)(3)). These terms and conditions are nondiscretionary. If this conference opinion is adopted as a biological opinion following a listing or designation, these terms and conditions will be non-discretionary.

1. NCDOT shall adhere to all measures as listed in the Avoidance and Minimization and Conservation Measures section as summarized in this Opinion.
2. The NCDOT will immediately inform the Service if the amount or extent of incidental take in the incidental take statement is exceeded.
3. When incidental take is anticipated, the Terms and Conditions must include provisions for monitoring project activities to determine the actual project effects on listed fish or wildlife species (50 CFR §402.14(i)(3)). In order to monitor the impact of incidental take, the NDOT must report the action impacts on the species to the Service according to the following:
    a. The NCDOT will submit a report each year not later than September 30 identifying, per individual project (via Service Log # and NCDOT identifiers), the following for the preceding calendar year ending December 31:
        i. Acreage and dates of tree removal (if any), if LAA for bats (excepting gray bat).

ii. Dates of structure removal (if any), if LAA for bats.
iii. List of implemented AMMs and BMPs [as listed in Section 2.3].

8. Conservation Recommendations

Section 7(a)(l) of the Endangered Species ESA directs Federal agencies to use their authorities to further the purposes of the Endangered Species ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- **Eastern Hellbender**: Occurrence records for eastern hellbender exist at Watauga structures 095 and 178 in Cove Creek, Ashe structure 121 in North Fork New River, Avery structure 101 in Elk River. Ahead of work at these locations, coordinate with the NCWRC and the Service to survey for/relocate any hellbender that may be within the action area and vulnerable to impacts from project work.
- **State Species of Concern**: Several aquatic species with North Carolina designations occur at Ashe County structure 121. While these species are not currently afforded legal protection under the ESA, we recommend the most protective sediment and erosion control measures possible be used in waters occupied by these species, and we encourage you to coordinate any relocation efforts of such species with the NCWRC.
- **Refueling and Materials Storage**: Refuel construction equipment outside the 100-year floodplain or at least 200 feet from all water bodies (whichever distance is greater) and protected with secondary containment. Store hazardous materials, fuel, lubricating oils, or other chemicals outside the 100-year floodplain or at least 200 feet from all water bodies (whichever distance is greater).
- **Provide Terrestrial Wildlife Passage**: Where riparian corridors suitable for wildlife movement occur adjacent to a project, a spanning structure that also spans a portion of the floodplain and provides or maintains a riprap-free level path underneath for wildlife passage would provide a safer roadway and facilitate wildlife passage. A 10-foot strip may be ideal, though smaller widths can also be beneficial. Alternatively, a “wildlife path” can be constructed with a top-dressing of finer stone (such as smaller aggregate or on-site alluvial material) to fill riprap voids if full bank plating is required. If a multi-barrel culvert is used, the low flow barrel(s) should accommodate the entire stream width and the other barrel should have sills to the floodplain level and be back-filled to provide dry, riprap-free wildlife passage and well as periodic floodwater passage.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

9. Reinitiation Notice

This concludes formal consultation on the action(s) outlined in the consultation request dated December 12, 2024. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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North Carolina Wildlife Resources Commission

M. Kyle Briggs, Executive Director

February 12, 2025

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

Kylie Yankura
401 and Buffer Transportation Permitting Branch
North Carolina Department of Environmental Quality
450 Hanes Mill Road, Suite 300
Winston-Salem, NC 27105

SUBJECT: Comments on GP/WQC Application for Replacement of Bridge 125 on SR 1306 (Hicks Hollow Road) over Elk River, Avery County (**B-5835**)
DWR 20250190 ver.1

The North Carolina Department of Transportation (NCDOT) applied for a 404 Permit and 401 Certification for the subject project. The North Carolina Wildlife Resources Commission's (NCWRC) comments are offered to help conserve the wildlife resources affected by the project and to promote wildlife-based recreation in accordance with applicable provisions of the Clean Water Act of 1977 (33 U.S.C. 466 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The existing steel truss bridge number 125 over the Elk River in Avery County was washed-out by Hurricane Helene in 2024. The existing abutments are being used with a temporary steel/wood deck while the new permanent bridge is being constructed to the immediate north.

The Elk River (B Tr) at the project site is not designated by the NCWRC as a trout water. However, it supports naturally reproducing Brown Trout (*Salmo trutta*) and Rainbow Trout (*Onchorynchus mykiss*) populations, though survey data near the bridge are not available. In prior scoping comments (November 2, 2016 NCWRC letter to NCDOT), an October 15 to April 15 trout moratorium was recommended to

protect trout eggs and fry from construction disturbance and sedimentation. However, adherence to the current trout moratorium (ending April 15, 2025) and the upcoming October 15, 2025 to April 15, 2026 trout moratorium is not necessary since this bridge is considered urgently needed to restore reliable and safe access in the area.

The NCWRC requests that the following conditions be included in authorizations to help conserve trout and other aquatic resources affected by the project:

1. Applicable measures from the current *NCDOT Erosion and Sediment Control Design and Construction Manual* should be adhered to. *Design Standards in Sensitive Waters* should be incorporated into the project's erosion control to help ensure protection of trout spawning (see part (d) of 15A NCAC 04B .0124).
2. In accordance with standard GC conditions, matting used in riparian areas should not contain nylon mesh because it entangles and kills wildlife. Coir matting should be used on disturbed stream banks that are steep or susceptible to high water. Matting should be anchored with wooden stakes according to NCDOT specifications.
3. Heavy equipment needs to be well-maintained and concrete pouring needs to be closely monitored to avoid and quickly mitigate fuel, fluid, or wet concrete losses in or near streams.
4. Removal of vegetation in riparian areas and wetlands should be minimized.
5. Sandbags, rock berms, cofferdams, or other diversion structures should be used where excavation or other periods of extended stream disturbance has the potential for downstream sedimentation. Any excavation in flowing water should be minimized particularly if it occurs during the typical trout spawning period (October 15 to April 15).
6. The natural dimension, pattern, and profiles of streams and the grades of wetlands should be restored where temporarily impacted.

Thank you for the opportunity to review and provide recommendations on this project. Please contact me at david.mchenry@ncwildlife.org or (828) 476-1966 if you have any questions about these comments.

Sincerely,

Dave McHenry, NCWRC Western DOT Coordinator

cc: Kevin Hining and Chris Wood, NCDOT Division 11 Environmental

JOSH STEIN
Governor
D. REID WILSON
Secretary
RICHARD E. ROGERS, JR.
Director

NORTH CAROLINA
Environmental Quality

February 18, 2025

Rob Crowther
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699
recrowther@ncdot.gov

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed Replacement of Bridge No. 125 on SR 1306 (Hicks Hollow Road) over the Elk River in Avery County, TIP No. B-5835
NCDWR Project No. 20250190

Dear Mr. Crowther:

Attached hereto is a copy of Certification No. 007590 (this is the Individual Certification No.) issued to The North Carolina Department of Transportation (NCDOT) dated February 18, 2025.

This approval is for the purpose and design described in your application. The plans and specifications for this project are incorporated by reference as part of this Water Quality Certification. If you change your project, you must notify the Division and you may be required to submit a new application package with the appropriate fee. If the property is sold, the new owner must be given a copy of this Certification and is responsible for complying with all conditions. [15A NCAC 02H .0507(d)(2)]. This Certification does not relieve the permittee of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Signed by:
Susan Locklear
375CAE2BB9F540C...

Richard E. Rogers, Jr., Director
Division of Water Resources

Attachments

ec: Lori Beckwith ,USACE, Asheville Regulatory Office
Michael Turchy, NCDOT
Erin Cheely, NCDOT
Holland Youngman, US Fish and Wildlife Service
Dave McHenry, NC Wildlife Resources Commission
File Copy

401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 79 linear feet of jurisdictional stream in Avery County. The project shall be constructed pursuant to the application dated and received February 12, 2025. The authorized impacts are as described below:

Stream Impacts in the Watauga River Basin

Site	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
S1	-	67	67	-
S2	6	-	6	-
S3	6	-	6	-
Total	12	67	79	-

Total Stream Impact for Project: 79 linear feet

The application provides adequate assurance that the discharge of fill material into the waters of the Watauga River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application dated and received February 12, 2025. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed 0.1 acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7).

For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

This Water Quality Certification neither grants nor affirms any property right, license, or privilege in any lands or waters, or any right of use in any waters. This Water Quality Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and does not create any prescriptive right or any right of priority regarding any usage of water. This Water Quality Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Water Quality Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded. Upon the presentation of proper credentials, the

Division may inspect the property.

Condition(s) of Certification:

1. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. [15A NCAC 02H .0506(b)(3)]

2. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]

3. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]

4. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)]

5. Bridge deck drains shall not discharge directly into the open water. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the open water. To meet the requirements of NCDOT's NPDES permit NCS0000250, please refer to the most recent version of the North Carolina Department of Transportation Stormwater Best Management Practices Toolbox manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]

6. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]

7. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]

8. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours. [15A NCAC 02H.0506(b)(2)]

9. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S. or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]

10. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and surface waters shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]

11. The use of riprap above the Normal High Water Mark shall be minimized. Any riprap placed for stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]

12. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

13. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]

14. Heavy equipment shall be operated from the banks and/or temporary causeway rather than in the stream in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]

15. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]

16. No rock, sand or other materials shall be dredged from the surface waters except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]

17. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]

18. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]

19. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

20. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]

21. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.

22. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]

23. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0507]

24. Native riparian vegetation (i.e., herbaceous, trees, and shrubs native to your geographic region) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0506(b)(2)]

25. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]

26. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within jurisdictional wetlands. [15A NCAC 2H.0506; 15A NCAC 2H.0507]

27. Erosion and sediment control practices must be in full compliance with all specifications governing the proper

design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3)]:

a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

28. Sediment and erosion control measures shall not be installed in wetlands or waters except within the footprint of temporary or permanent impacts authorized by this Certification. If placed within authorized impact areas, then placement of such measures shall not be conducted in a manner that results in dis-equilibrium of any wetlands, streambeds, or stream banks. Any silt fence installed within wetlands shall be removed from wetlands and the natural grade restored and revegetated within two months of project completion. [15A NCAC 2H.0506(b); 15 A NCAC 2H.0507(c)]

29. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506{b)(3) and (c)(3) and 15A NCAC 02B .0200]

30. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the North Carolina Sediment and Erosion Control Manual, or for linear transportation projects, the NCDOT Sediment and Erosion Control Manual.

31. All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

32. For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the North Carolina Surface Mining Manual. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

33. If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, Trout, WS-I, WS-II, High Quality Waters (HQW), Outstanding Resource Waters (ORW), Critical Area (CA), and/or 303(d) Impaired Waters, then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*. [15A NCAC 02H.0506(b)(3) and (c)(3)]

34. For projects impacting waters classified by the NC Environmental Management Commission as Trout (Tr), High Quality Waters (HQW), or Water Supply I or II (WSI, WSII) stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. Mowing of existing vegetated buffers is strongly discouraged.

35. DWR approves the stormwater drainage design as shown in the 401 application, under the assumption that it meets the requirements of the NCDOT NPDES permit #NCS000250. These plans are enforceable by DWR. Changes to the approved plans are prohibited without prior approval from DWR. If sediment or other pollutants are found to be discharged from the stormwater outfalls, DWR may take enforcement action. NCDOT and DWR

shall assess the damage to water quality standards and implement an appropriate action plan to address the impacts. The action plan shall provide an appropriate timeline for implementation as agreed upon by both DWR and NCDOT. This may require NCDOT to obtain a modification to its current 401 and 404 permits.

This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of $25,000.00 per day for each violation.

This approval and its conditions are final and binding unless contested [G.S. 143-215.5]. Please be aware that impacting waters without first applying for and securing the issuance of a 401 Water Quality Certification violates Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states that any person desiring issuance of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Quality. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of $25,000.00 per day for each violation.

This Certification can be contested as provided in Chapter 150B of the North Carolina General Statutes by filing a Petition for a Contested Case Hearing (Petition) with the North Carolina Office of Administrative Hearings (OAH) within sixty (60) calendar days. Requirements for filing a Petition are set forth in Chapter 150B of the North Carolina General Statutes and Title 26 of the North Carolina Administrative Code. Additional information regarding requirements for filing a Petition and Petition forms may be accessed at http://www.ncoah.com/ or by calling the OAH Clerk's Office at (919) 431-3000.

A party filing a Petition must serve a copy of the Petition on:

William F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center
Raleigh, NC 27699-1601

If the party filing the Petition is not the permittee, then the party must also serve the recipient of the Certification in accordance with N.C.G.S 150B-23(a).

This the 18th day of February 2025

DIVISION OF WATER RESOURCES

Signed by:
Susan Locklear
375CAE2BB9F540C...
Richard E. Rogers, Jr., Director

WQC No. 007590

ROY COOPER
Governor
MARY PENNY KELLEY
Secretary
RICHARD E. ROGERS, JR.
Director

NORTH CAROLINA
Environmental Quality

NCDWR Project No.: _____ **County:** _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, **or** the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date:_____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____

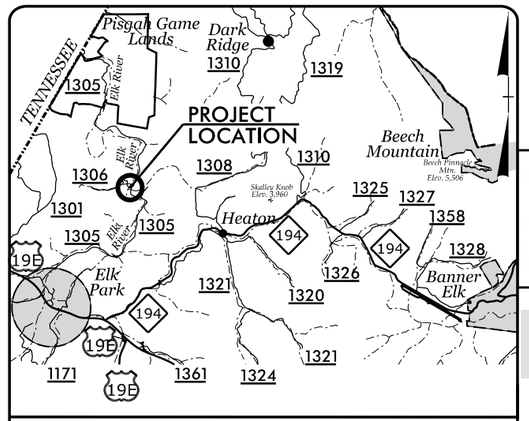
Completed hard copies can be emailed to kristilynn.carpenter@ncdenr.gov or mailed to:
NCDEQ Transportation Permitting
1617 Mail Service Center
Raleigh NC 27699-1617

09/08/99

TIP PROJECT: B-5835

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Plan Sheet Symbols
See Sheet 1C-1 For Survey Control Sheet



VICINITY MAP

CFI PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

AVERY COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5835	1	

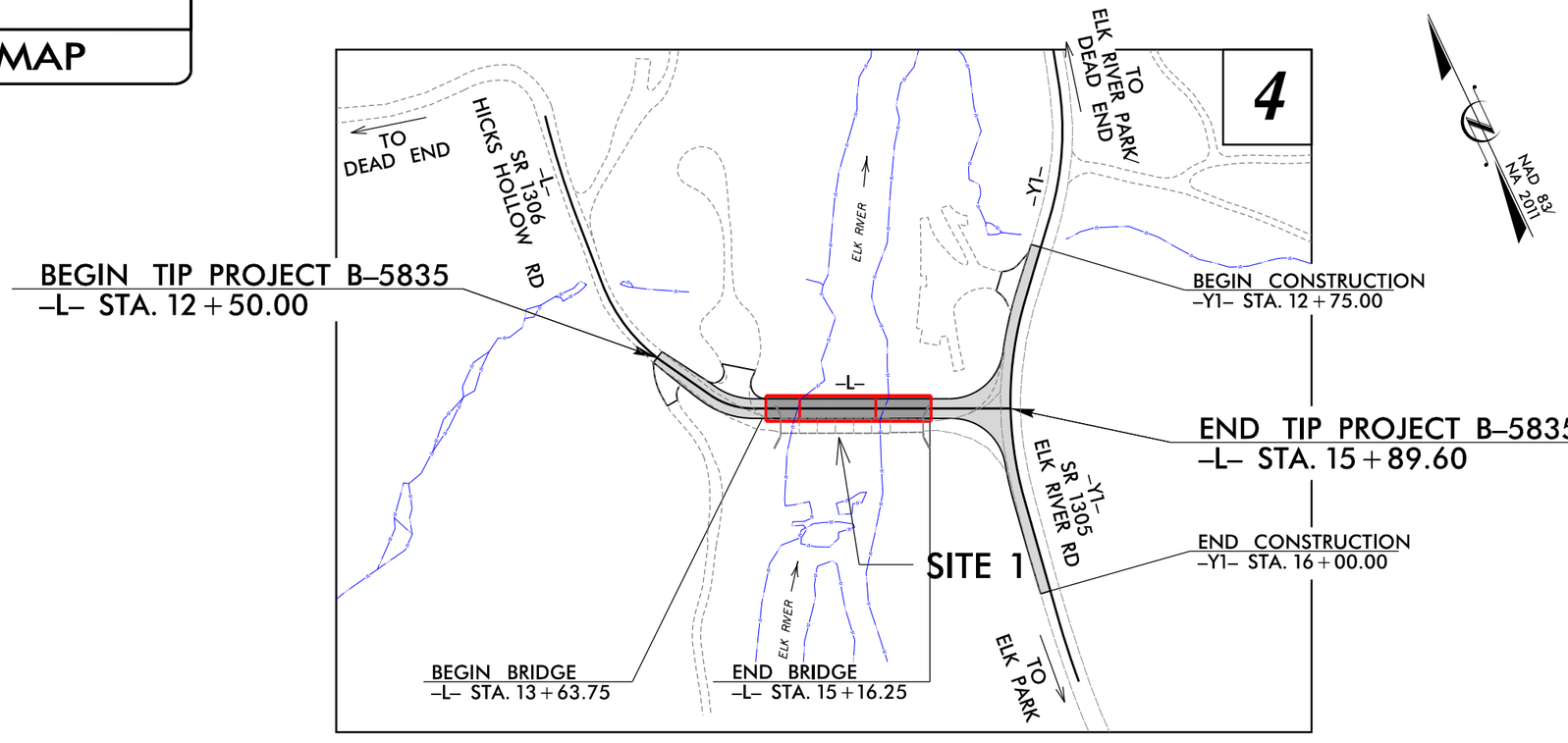
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45788.1.2	N/A	PE
45788.2.1	BRZ-1306(030)	R/W
45788.2.2	N/A	UTIL.
45788.3.1	BRZ-1306(030)	CONST.

PERMIT DRAWING
SHEET 1 OF 5

LOCATION: REPLACE BRIDGE NO. 125 OVER ELK RIVER ON SR 1306

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

WETLAND AND SURFACE WATER IMPACTS PERMIT



BEGIN TIP PROJECT B-5835
-L- STA. 12+50.00

BEGIN CONSTRUCTION
-Y1- STA. 12+75.00

END TIP PROJECT B-5835
-L- STA. 15+89.60

END CONSTRUCTION
-Y1- STA. 16+00.00

NAD 83/ NA 2011

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS 30 15 0 30 60

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2021 = 110
ADT 2041 = 164
K = – %
D = – %
T = – % *
V = 20 MPH
* TTST =–% DUAL –%
FUNC CLASS = LOCAL
SUB-REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5835	=	*0.035 mile*
LENGTH STRUCTURES TIP PROJECT B-5835	=	*0.029 mile*
TOTAL LENGTH TIP PROJECT B-5835	=	*0.064 mile*

Prepared For:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610
By:
TGS ENGINEERS
706 HILLSBOROUGH ST
SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
DECEMBER 13, 2024

LETTING DATE:
DECEMBER 16, 2025

V. MARCUS LOWERY, PE
PROJECT ENGINEER

OLIVIA L. PILKINGTON, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

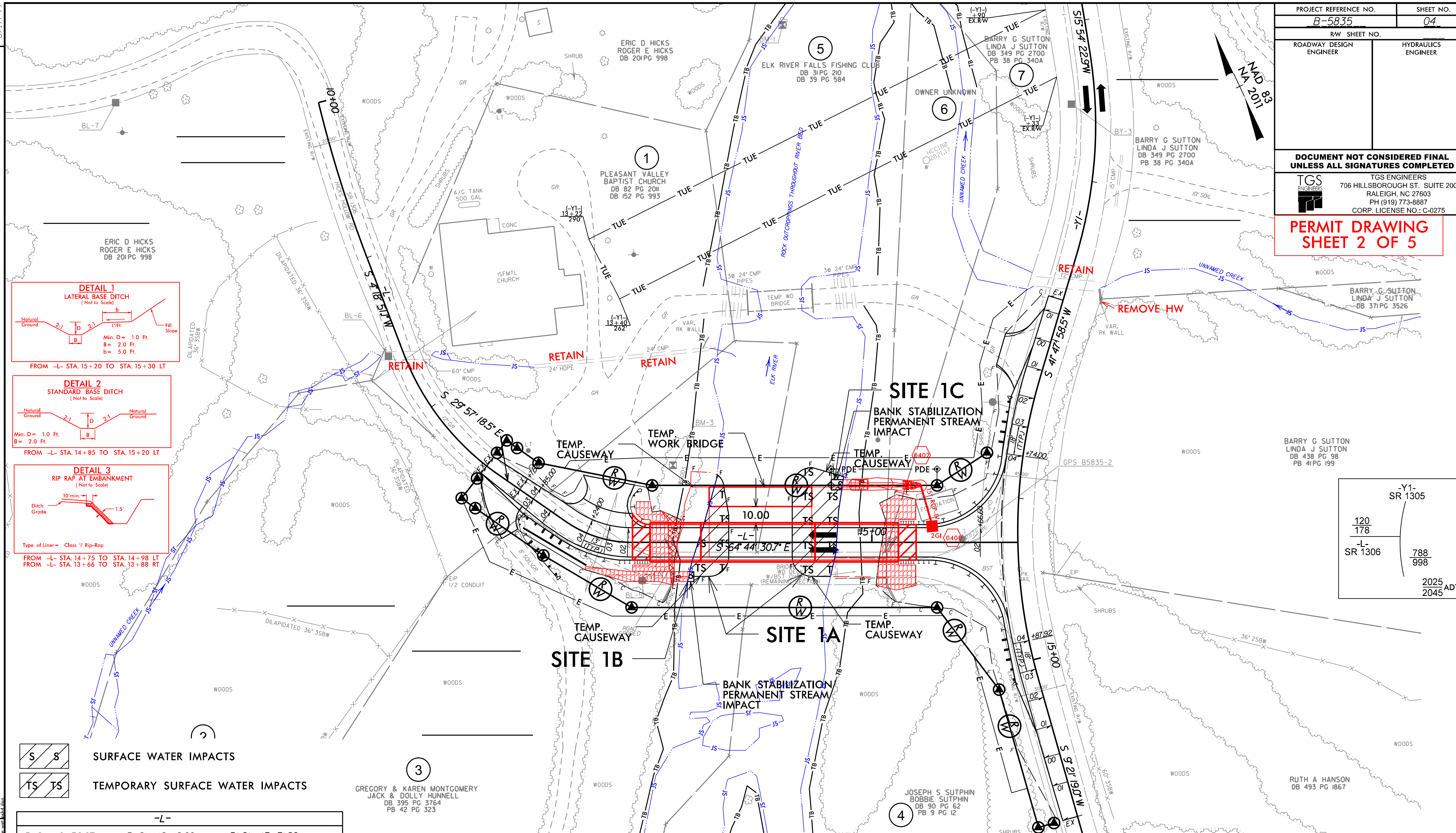
STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PERMIT DRAWING
SHEET 2 OF 5


NAD 83
NA 2011
ERIC D HICKS
ROGER E HICKS
DB 201 PG 998
ELK RIVER FALLS FISHING CLUB
DB 31 PG 210
DB 39 PG 584
BARRY G SUTTON
LINDA J SUTTON
DB 349 PG 2700
PB 38 PG 340A
OWNER UNKNOWN
PLEASANT VALLEY
BAPTIST CHURCH
DB 82 PG 2011
DB 152 PG 993
ROCK OUTCROPPINGS THROUGHOUT RIVER BED
UNNAMED CREEK
RETAIN
REMOVE HW
BARRY G SUTTON
LINDA J SUTTON
DB 371 PG 3526
DETAIL 1
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
FROM -L- STA. 15+20 TO STA. 15+30 LT
DETAIL 2
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
B= 2.0 Ft.
FROM -L- STA. 14+85 TO STA. 15+20 LT
DETAIL 3
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= Class 'I' Rip-Rap
FROM -L- STA. 14+75 TO STA. 14+98 LT
FROM -L- STA. 13+66 TO STA. 13+88 RT
SITE 1C
BANK STABILIZATION
PERMANENT STREAM
IMPACT
TEMP. CAUSEWAY
TEMP. WORK BRIDGE
SITE 1A
SITE 1B
TEMP. CAUSEWAY
BANK STABILIZATION
PERMANENT STREAM
IMPACT
ELK RIVER
BARRY G SUTTON
LINDA J SUTTON
DB 438 PG 98
PB 41 PG 199
-Y1-
SR 1305
120
178
-L-
SR 1306
788
998
2025
2045
ADT
GREGORY & KAREN MONTGOMERY
JACK & DOLLY HUNNELL
DB 395 PG 3764
PB 42 PG 323
JOSEPH S SUTPHIN
BOBBIE SUTPHIN
DB 90 PG 62
PB 9 PG 12
RUTH A HANSON
DB 493 PG 1867
S 4° 18' 51.1" W
S 29° 57' 18.5" E
S 64° 44' 30.7" E
S 41° 47' 58.5" W
S 15° 54' 22.9" W
S 9° 21' 19.0" W
10.00
15+00

S / S	SURFACE WATER IMPACTS
TS / TS	TEMPORARY SURFACE WATER IMPACTS

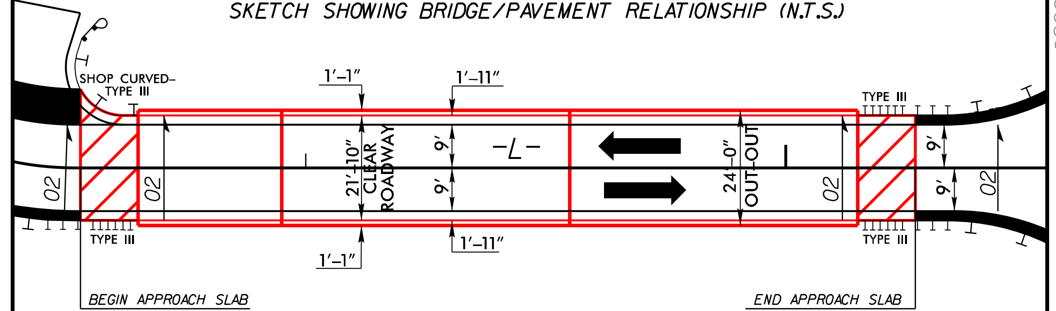
-L-

PI Sta 10+50.07	PI Sta 12+12.60	PI Sta 13+31.80
Δ = 7° 09' 43.1" (LT)	Δ = 34° 16' 09.6" (LT)	Δ = 34° 47' 12.2" (LT)
D = 7° 09' 43.1"	D = 35° 48' 35.5"	D = 81° 51' 04.0"
L = 100.00'	L = 95.70'	L = 42.50'
T = 50.07'	T = 49.33'	T = 21.93'
R = 800.00'	R = 160.00'	R = 70.00'
		SE = 0.04 (NON-STD.)
		Lr = 52'

-Y1-

PI Sta 11+83.41	PI Sta 14+21.07	PI Sta 16+58.19
Δ = 25° 53' 35.6" (RT)	Δ = 32° 26' 39.5" (LT)	Δ = 4° 31' 18.0" (LT)
D = 20° 27' 46.0"	D = 17° 21' 44.5"	D = 7° 38' 22.0"
L = 126.54'	L = 186.87'	L = 59.19'
T = 64.37'	T = 96.01'	T = 29.61'
R = 280.00'	R = 330.00'	R = 750.00'
	SE = 0.04 (NON-STD.)	
	Lr = 72'	

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP (N.T.S.)



FDPS=FULL DEPTH PAVED SHOULDER

SCALE: 1" = 30'

FOR -L- & -Y1- PROFILES SEE SHEET 05

12/12/2024
clewis
X:\NCDOT\B-5835\Hydraulics\PERMITS Environmental\Drawings\2 - B-5835_Hyd_prm_wet_psh4.dgn

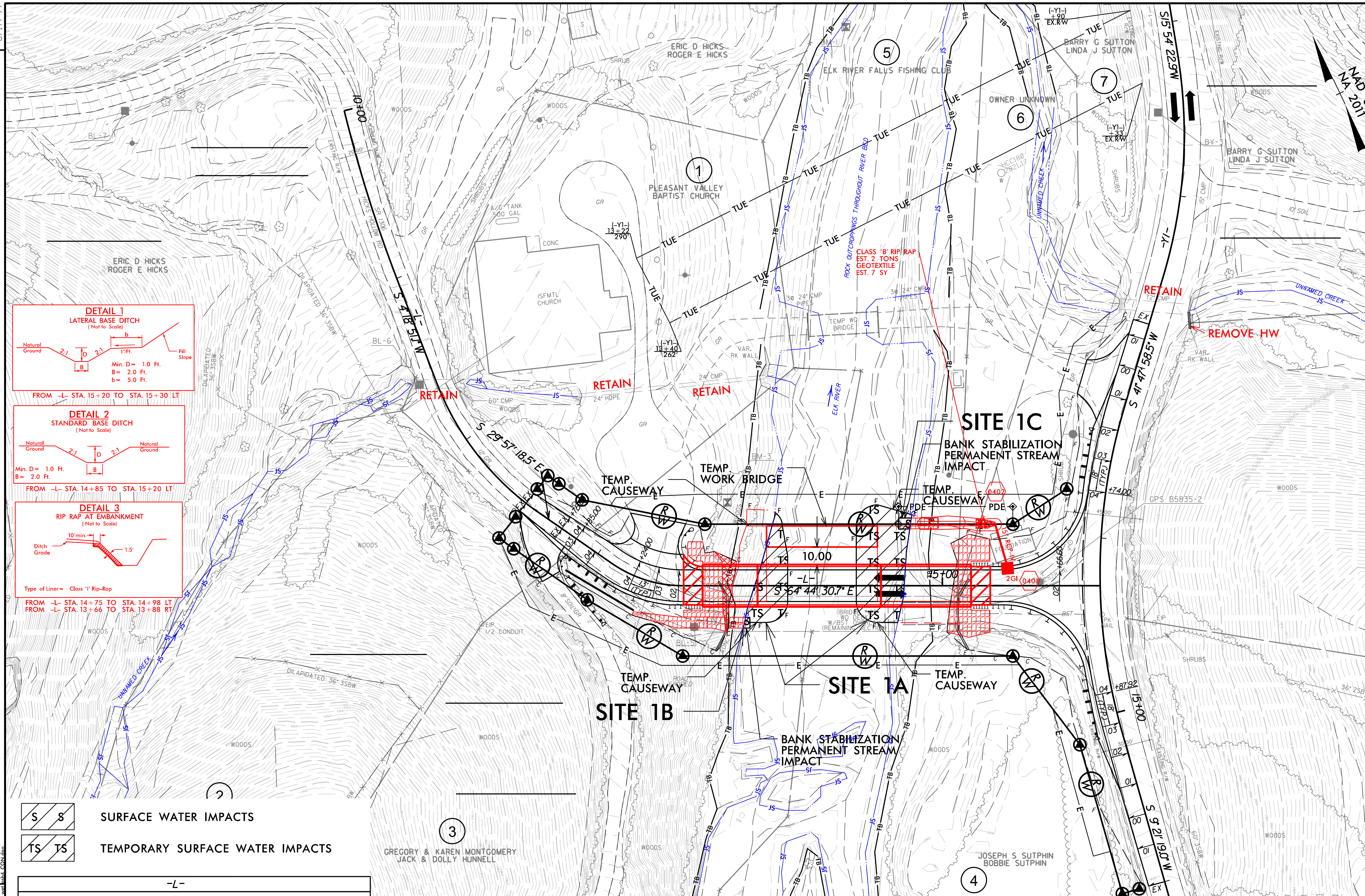
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-5835	04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PERMIT DRAWING SHEET 3 OF 5



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ELK RIVER FALLS FISHING CLUB
BARRY G SUTTON
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PLEASANT VALLEY BAPTIST CHURCH
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S 29° 57' 18.5" E
S 64° 44' 30.7" E
S 41° 47' 58.5" W
S 9° 21' 19.0" W
RETAIN
REMOVE HW
CLASS 'B' RIP RAP
EST. 2 TONS
GEOTEXTILE
EST. 7 SY
SITE 1C
BANK STABILIZATION
PERMANENT STREAM
IMPACT
TEMP. CAUSEWAY
TEMP. WORK BRIDGE
SITE 1A
SITE 1B
DETAIL 1
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.
FROM -L- STA. 15+20 TO STA. 15+30 LT
DETAIL 2
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
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FROM -L- STA. 14+85 TO STA. 15+20 LT
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RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= Class 'I' Rip-Rap
FROM -L- STA. 14+75 TO STA. 14+98 LT
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GREGORY & KAREN MONTGOMERY
JACK & DOLLY HUNNELL
JOSEPH S SUTPHIN
BOBBIE SUTPHIN
RUTH A HANSON
-Y1- SR 1305
-L- SR 1306
2025 ADT
2045
NAD 83 NA 2011

S / S	SURFACE WATER IMPACTS
TS / TS	TEMPORARY SURFACE WATER IMPACTS

-L-

PI Sta 10+50.07	PI Sta 12+12.60	PI Sta 13+31.80
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		Lr = 52'

-Y1-

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Δ = 25° 53' 35.6" (RT)	Δ = 32° 26' 39.5" (LT)	Δ = 4° 31' 18.0" (LT)
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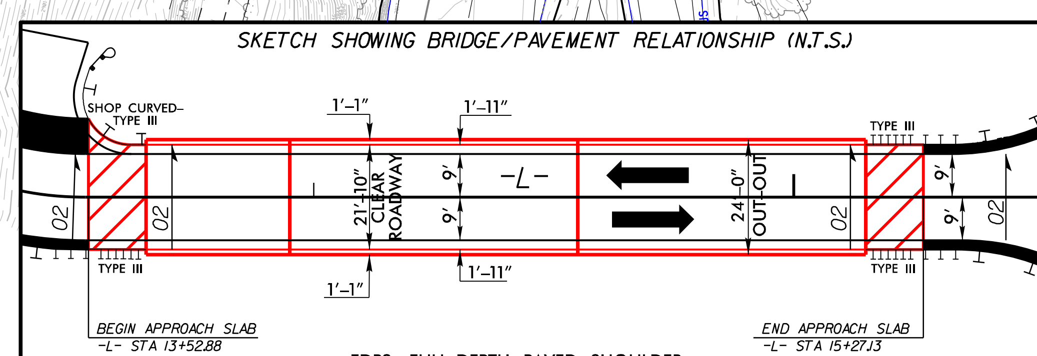
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP (N.T.S.)



FDPS = FULL DEPTH PAVED SHOULDER

SCALE: 1" = 30'

FOR -L- & -Y1- PROFILES SEE SHEET 05

5/28/99

TGS ENGINEERS
706 HILLSBOROUGH ST., SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

PROJECT REFERENCE NO.	SHEET NO.
B-5835	05
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EXISTING GROUND
PROPOSED GRADE
LEFT DITCH GRADE
RIGHT DITCH GRADE

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 4 OF 5

–L–
SR 1306

PROPOSED 3-SPAN CORED SLAB BRIDGE
152.5' X 24' (90° SKEW) STA 14+40.00 –L–

PI = 13+45.00
EL = 2833.65'
VC = 40'
K = 4
V < 15 MPH

BEGIN GRADE
–L– STA. 12+75.00
ELEV=2842.67'

BEGIN BRIDGE
–L– STA. 13+63.75

EXISTING BRIDGE TO BE REMOVED

END BRIDGE
–L– STA. 15+16.25

END GRADE
–L– STA. 15+79.60=
–Y1– STA. 14+26.96
(10' RT)
ELEV=2829.35'

(–)12.8857%
(–)11.8329%
(–)14.0000%
(+) 5.9180%

4' CAPS (TYP.)
EXCAVATE TO ELEV. 2823.5'
3.5' KEY-IN (TYP.)
FEMA 100YR = 2824.16'
100YR = 2825.2'
25YR = 2823.6'
CL 'B' RIP-RAP
CL 'A' RIP-RAP

MAINTAIN EXISTING GRADE
–L– STA 12+50
TO STA 12+75

APPROX. W.S. ELEV. ON MAY 7, 2020

MIN. TOP ELEV. FOR CAUSEWAY = 2823.0'

LOW SIDE/LOW CHORD

TEMP. WORK BRIDGE/CAUSEWAY

–L– STA.15+89.60=
–Y1– STA.14+27.16
ELEV=2828.95

BM3 ELEVATION = 2830.12'
N 897638 E 1125284
–L– STA. 13+78 47 LT.
RR SPIKE IN 24" OAK

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	5800	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	2823.6	FT
BASE DISCHARGE	=	8000	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	2825.2	FT
OVERTOPPING DISCHARGE	=	15000+	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	2829.0*	FT
* LOW POINT AT –L– AND –Y1– INTERSECTION	=		FT
DATE OF SURVEY	=	MAY 7, 2020	
W.S. ELEVATION AT DATE OF SURVEY	=	2816.0	FT

TS TEMPORARY SURFACE WATER IMPACTS

FOR –L– PLAN SEE SHEET 04

–Y1–
SR 1305

FOR –Y1– PLAN SEE SHEET 04

10/24/2024
dewitt
X:\NCDOT\B-5835\Hydraulics\PERMITS Environmental Drawings\4 -B-5835_Hyd_prm_wet_pfl.dgn
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WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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)
1A	13+85 to 14+85	Causeway/Work Bridge							0.06		67	
1B	13+90	Bank Stabilization						< 0.01		6		
1C	14+78	Bank Stabilization						< 0.01		6		
TOTALS*:								< 0.01	0.06	12	67	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
12/12/2024
AVERY COUNTY
B-5835
45788.1.2
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