



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

August 28, 2025

Regulatory Division
SAW-2025-01371

North Carolina Department of Transportation
Attention: Mr. Kevin Hining
Division 11 PDEA Engineer
801 Statesville Road
PO Box 250
North Wilkesboro, North Carolina 28659
Sent Via Email: kjhining@ncdot.gov

Dear Mr. Hining,

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 July 10, 2025, for a Department of the Army general permit verification to replace a double barrel CMPA (**Culvert 378**) that was damaged by **Hurricane Helene**. The replacement structure would be a double barrel RCBC. This project is located in Valley Creek under NC 105 in Watauga County, North Carolina (36.1441, -81.7998) and has been assigned file number SAW-2025-01371. In order to perform this work, NCDOT proposes to conduct the following activities in waters of the U.S.:

Summary of Proposed Impacts

Impact ID #	NWP / GP #	Open Water (ac)		Wetland (ac)		Stream (lf)	
		Temporary	Permanent	Temporary	Permanent	Temporary	Permanent
Site 1 (Valley Creek)	<u>NWP 14</u>					6' / dewater	17' / rock vane
Site 2 (Valley Creek)	<u>NWP 14</u>						37' / inlet rock plating
Site 3 (Valley Creek)	<u>NWP 14</u>					91' / dewater for culvert and plating work	12' / outlet rock plating
Impact Totals		0	0	0	0	97'	66'
Required wetland compensatory mitigation			0	Required stream compensatory mitigation			*39'

*The piped section of the stream would be reduced by 10' and rock plating would be mitigated at a 1:1 ratio.

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 and 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. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.
2. The U.S. Fish and Wildlife Service (USFWS) issued a document titled, "Modified 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 July 8, 2025. NCDOT shall comply with the Avoidance and Minimization and Conservation Measures (AMCMs) (Section 2.3) of this document. Failure to comply with these AMCMs would constitute non-compliance with your authorization for this project. The USFWS is the appropriate authority to determine compliance with the AMCMs of its letter and with the ESA.
3. NCDOT shall comply with conditions 1 and 2 of the North Carolina Wildlife Resources Commission letter dated July 14, 2025.

4. 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,

A handwritten signature in black ink that reads "M. Scott Jones". The signature is written in a cursive, flowing style.

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

Enclosures

Compliance Certification Form

File Number: SAW-2025-01371

County: Watauga

Permittee: NCDOT, Mr. Kevin Hining

**Project Name: NCDOT / Hurricane Helene / DF18311.1095024.PR / Culvert 378
Replacement / NC Hwy 105 / Watauga / Div 11**

Date Verification Issued: August 28, 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.**

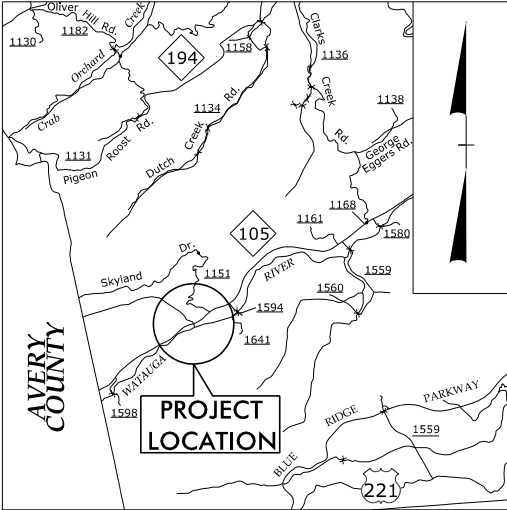
Signature of Permittee

Date

TIP PROJECT: 18311.1095024.PR

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP (NTS)

REVISED PRELIMINARY ROADWAY PLANS

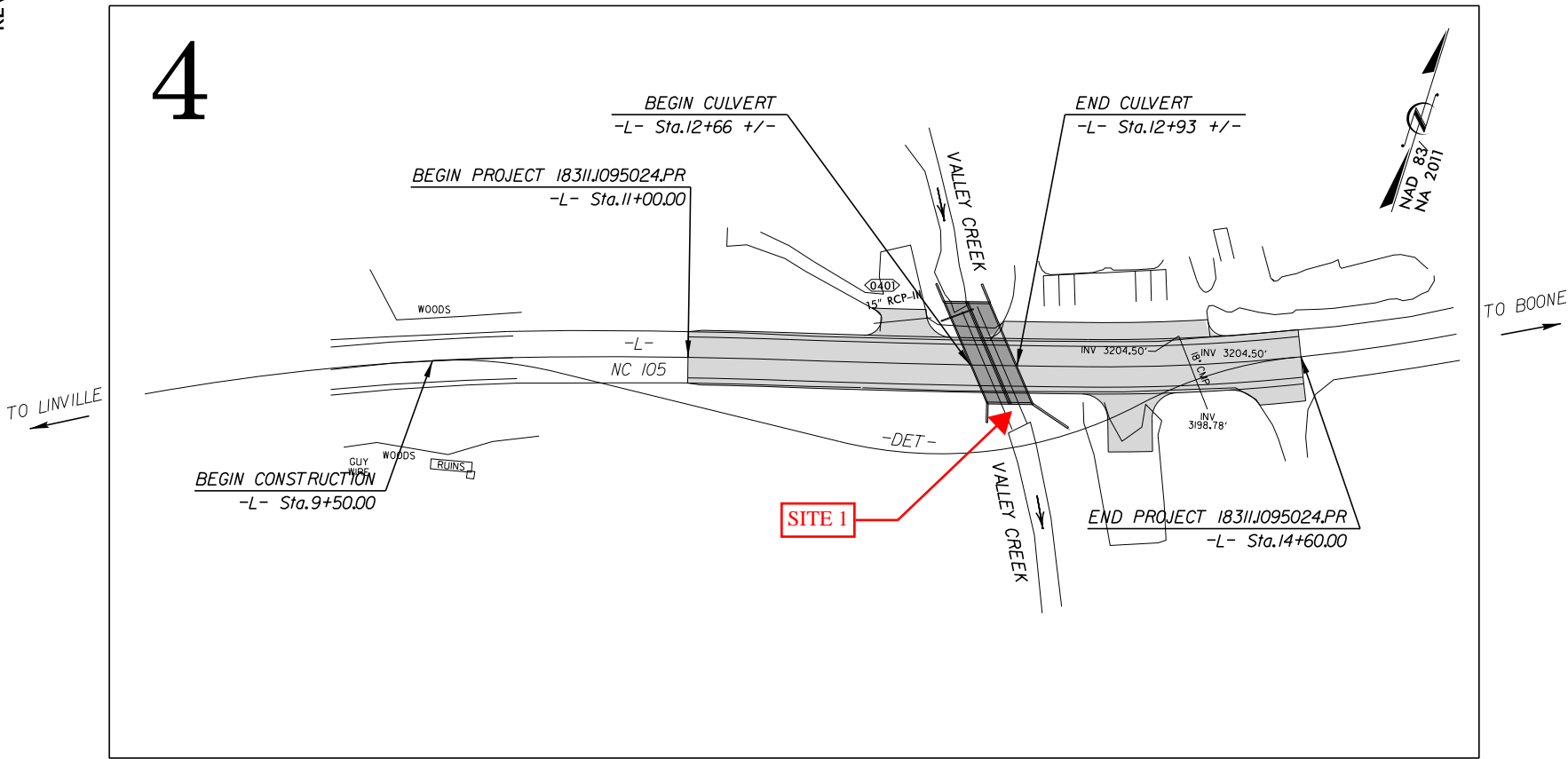
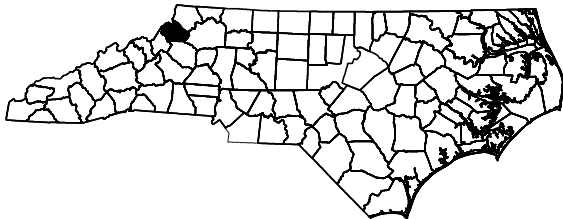
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WATAUGA COUNTY

PERMIT DRAWING
SHEET 1 OF 7

LOCATION: REPLACE STRUCTURE 940378 ON NC 105 OVER VALLEY CREEK

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

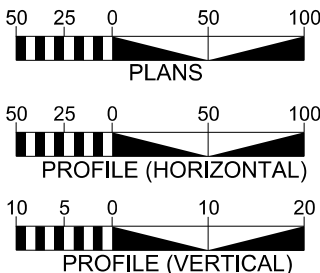
WETLAND AND SURFACE WATER IMPACTS PERMIT



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

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

GRAPHIC SCALES



DESIGN DATA

ADT 2025 = 12,500
ADT 2045 =
K = %
D = %
T = % *
V = 45 MPH
* TTST = % DUAL = %
FUNC CLASS =
PRINCIPAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT 18311.1095024.PR = 0.063 MI
LENGTH STRUCTURE TIP PROJECT 18311.1095024.PR = 0.005 MI
TOTAL LENGTH TIP PROJECT 18311.1095024.PR = 0.068 MI

NCDOT CONTACT:
TRAVIS CHRISAWN, PE
RESIDENT ENGINEER
1829 HWY 194 N
BOONE, NC 28607
828-268-6023
TWCHRISAWN@NCDOT.GOV



FOR
DIVISION OF HIGHWAYS

2024 STANDARD SPECIFICATIONS
2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 2025

LETTING DATE:
JULY 2025

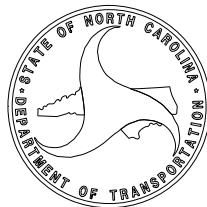
BENJAMIN STORMER, P.E.
PROJECT ENGINEER

MADOLYN KORKA, E.I.T.
PROJECT DESIGN ENGINEER

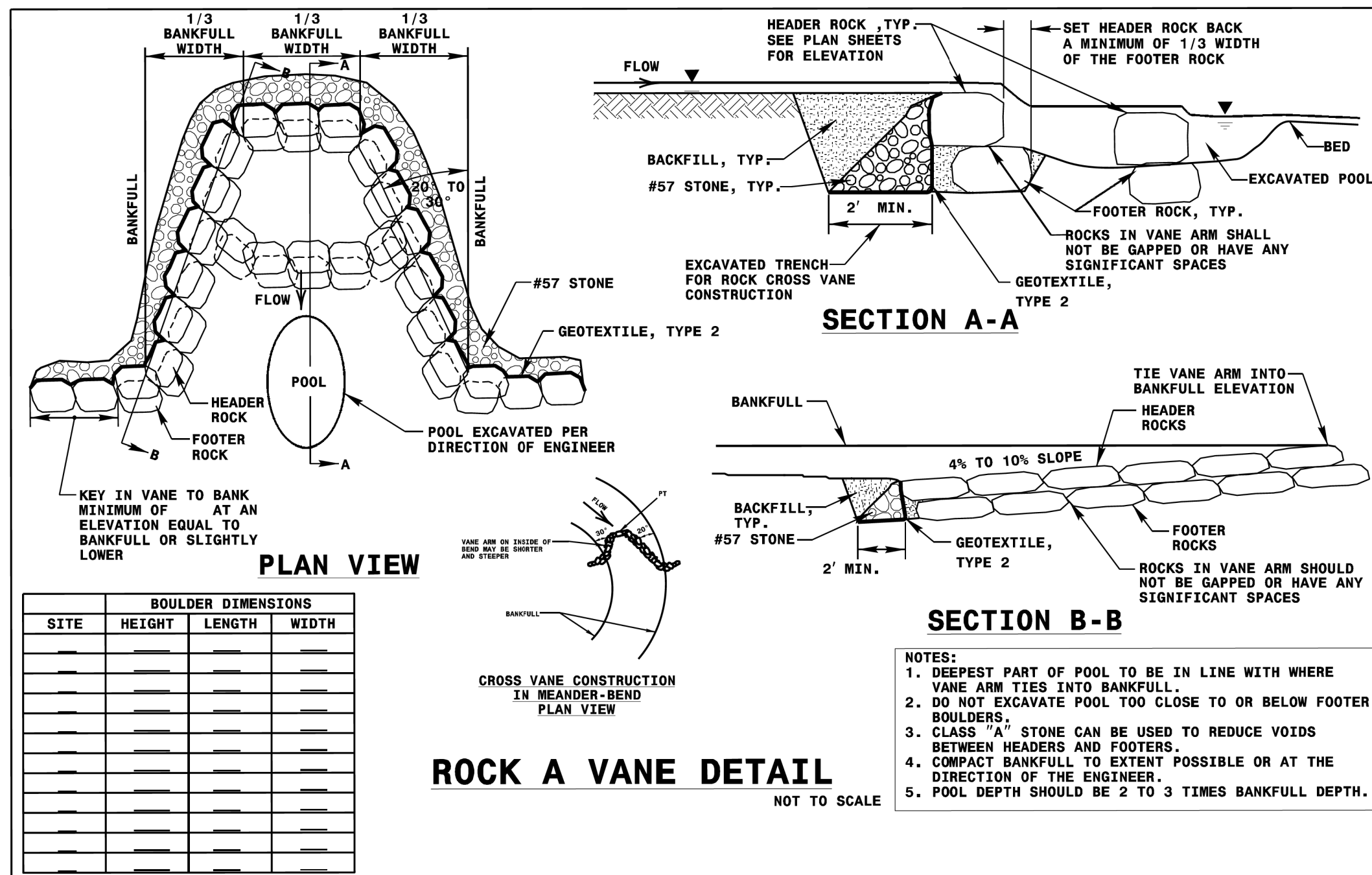
HYDRAULICS ENGINEER

SIGNATURE: P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.



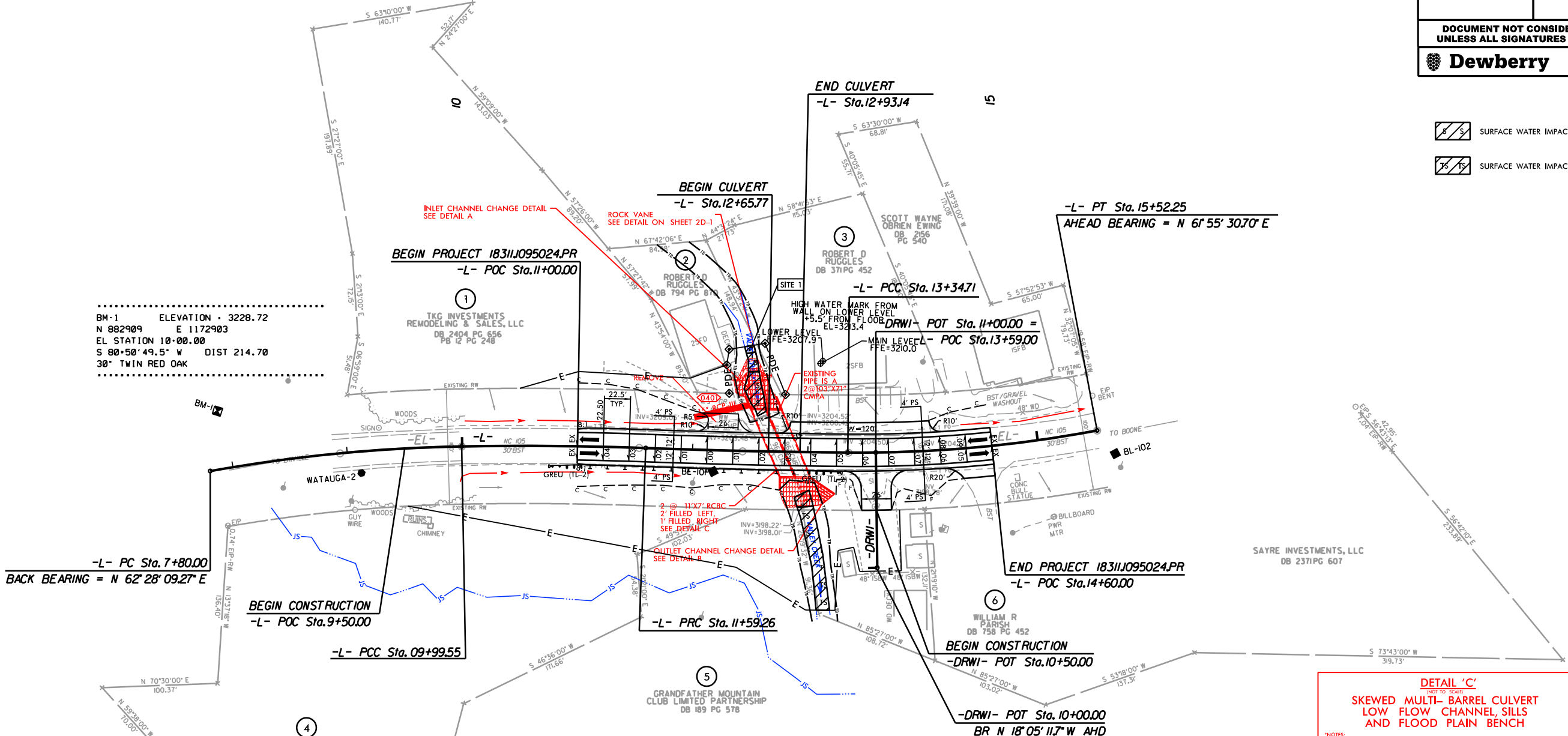
PERMIT DRAWING
SHEET 2 OF 7



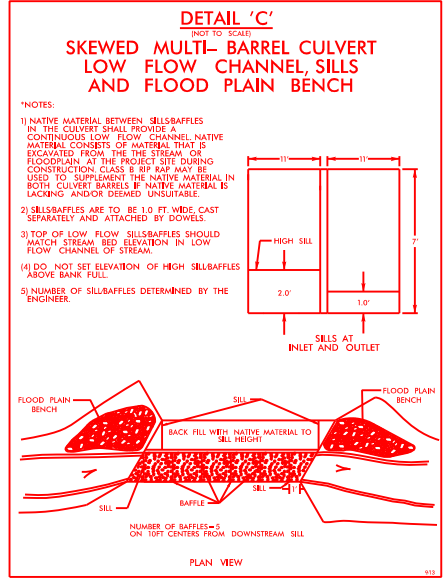
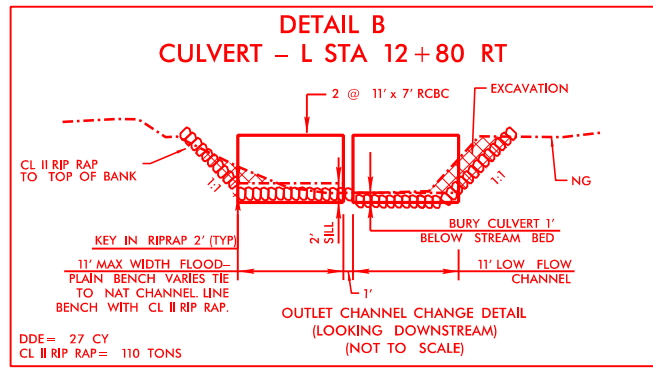
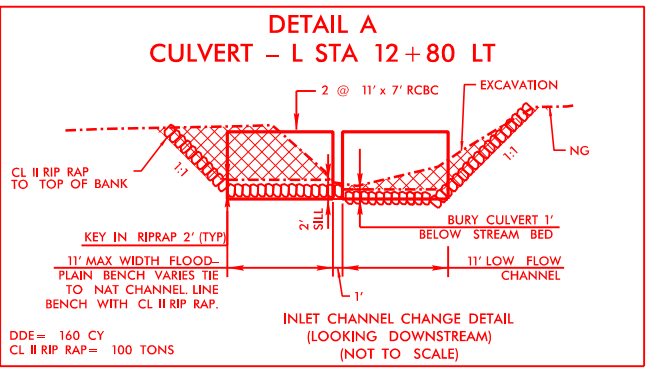
CURVE DATA FOR -L-			
-L- PI Sta 8+90.01 $\Delta = 9^{\circ}06'55.4"$ (RT) $D = 4^{\circ}09'06.7"$ $L = 219.55'$ $T = 110.01'$ $R = 1,380.00'$ SE = EXIST RO = EXIST	-L- PI Sta 10+79.42 $\Delta = 3^{\circ}04'55.9"$ (RT) $D = 1^{\circ}55'47.6"$ $L = 159.71'$ $T = 79.87'$ $R = 2,968.85'$ SE = SEE PLAN RO = SEE PLAN	-L- PI Sta 12+46.99 $\Delta = 1^{\circ}29'53.6"$ (LT) $D = 0^{\circ}51'14.0"$ $L = 175.46'$ $T = 87.73'$ $R = 6,710.00'$ SE = SEE PLAN RO = SEE PLAN	-L- PI Sta 14+43.83 $\Delta = 11^{\circ}14'36.3"$ (LT) $D = 5^{\circ}10'06.5"$ $L = 217.54'$ $T = 109.12'$ $R = 1,108.57'$ SE = SEE PLAN RO = SEE PLAN

PERMIT DRAWING
SHEET 3 OF 7

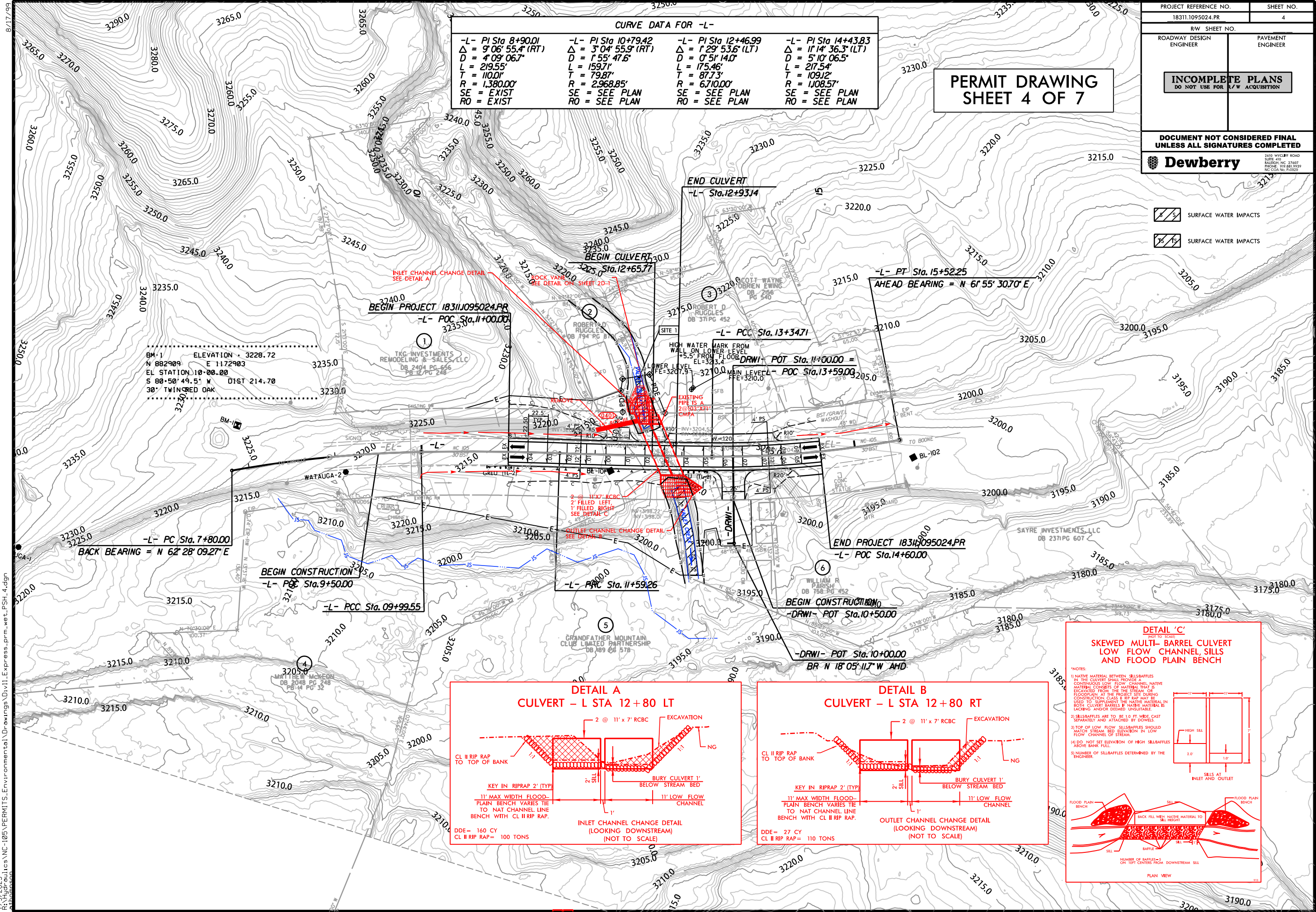
PROJECT REFERENCE NO. 18311.1095024.PR		SHEET NO. 4
RW SHEET NO.		PAVEMENT ENGINEER
ROADWAY DESIGN ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
Dewberry		2010 WYCLIFF ROAD SUITE 100 RALEIGH, NC 27607 PHONE: 919.881.9259 NC CDA NO. F-20023



- SURFACE WATER IMPACTS
- SURFACE WATER IMPACTS

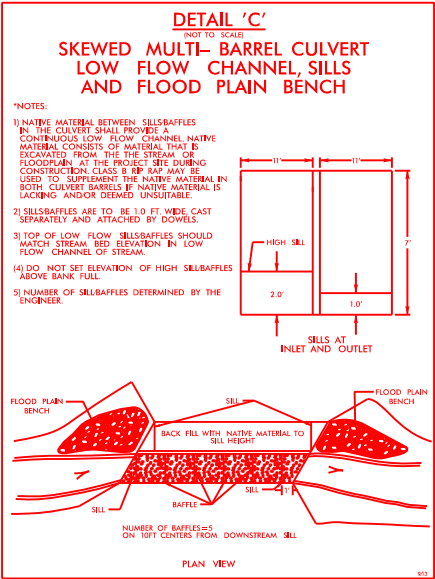
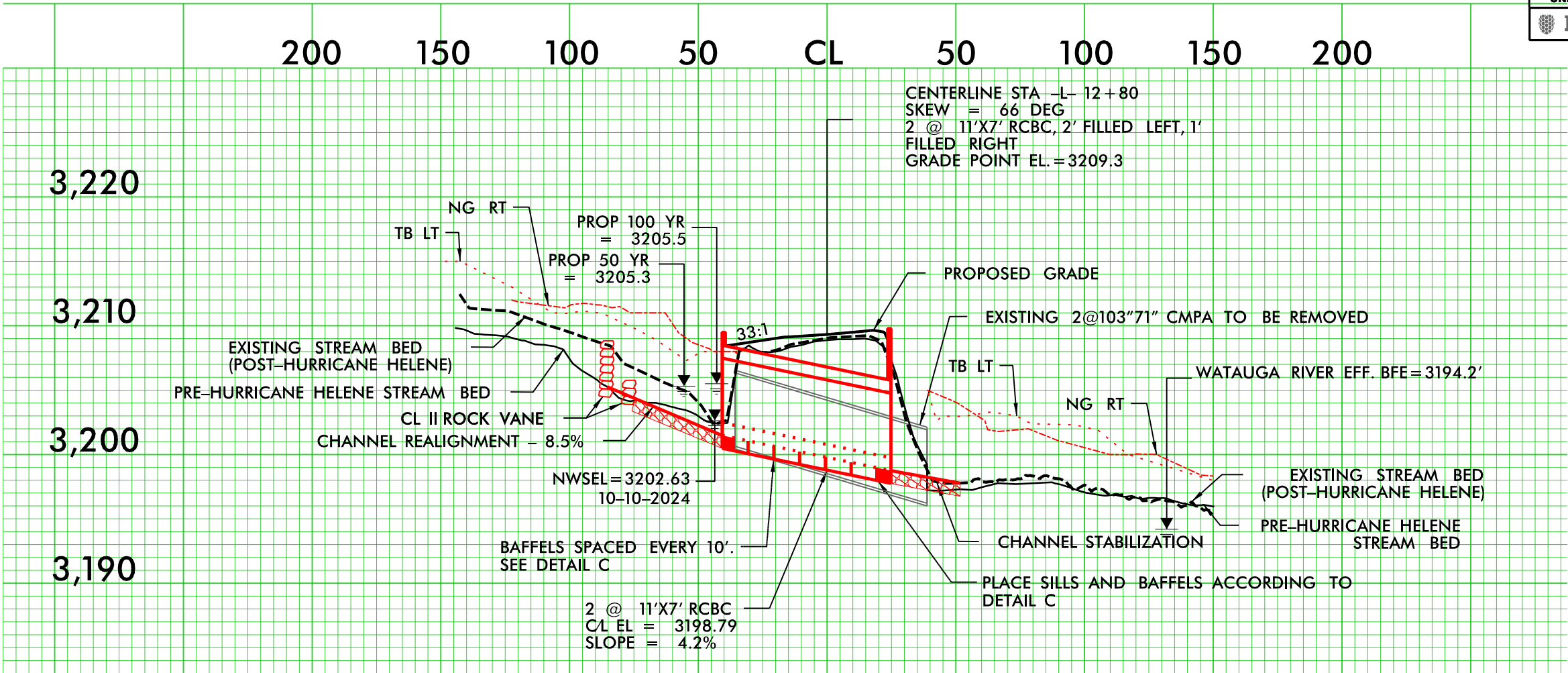


7/9/2025
R:\Projects\18311\18311_095024\Drawings\Civil\Express\pm\wet\PSH_4.dgn
18311_095024



PERMIT DRAWING
SHEET 5 OF 7

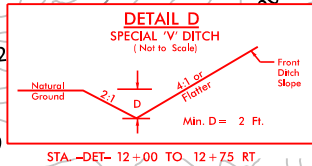
PROJECT REFERENCE NO. 18311.1095024.PR		SHEET NO.	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		PAVEMENT ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Dewberry		2610 MYCLIFF ROAD SUITE 410 RALEIGH, NC 27607 PHONE: 919.881.8809 NC CDA No. F-2003	



PERMIT DRAWING
SHEET 6 OF 7

CURVE DATA FOR -DET-		
-DET- PI Sta 10+37.04 $\Delta = 16^{\circ} 51' 25.2" (RT)$ $D = 22' 55' 05.9"$ $L = 73.55'$ $T = 37.04'$ $R = 250.00'$ SE = EXIST RO = EXIST	-DET- PI Sta 13+39.32 $\Delta = 41^{\circ} 36' 13.7" (LT)$ $D = 22' 55' 05.9"$ $L = 181.53'$ $T = 94.98'$ $R = 250.00'$ SE = .04 RO = 66	-DET- PI Sta 14+74.63 $\Delta = 22^{\circ} 04' 04.0" (RT)$ $D = 22' 55' 05.9"$ $L = 96.29'$ $T = 48.75'$ $R = 250.00'$ SE = EXIST RO = EXIST

CURVE DATA FOR -DRWDET-
-DRWDET- PI Sta 10+49.05 $\Delta = 23^{\circ} 02' 06.8" (LT)$ $D = 114' 35' 29.6"$ $L = 201.0'$ $T = 101.9'$ $R = 50.00'$



PROJECT REFERENCE NO. 18311.1095024.PR	SHEET NO. 2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Dewberry 2410 WYCLIFF ROAD SUITE 110 RALEIGH, NC 27607 PHONE: 919.881.9259 NC CCA NO. F-20023	

BM-1 ELEVATION = 3228.72
N 882909 E 1172903
EL STATION 10+00.00
S 80°50'49.5" W DIST 214.70
30" TWIN RED CHAIN
-DET- PC Sta. 10+00.00 = 3230.0
-DET- L- PC Sta. 9+50.00
BACK BEARING = N 69°31'38.69" E

TKG INVESTMENTS
REMODELING & SALES, LLC
DB 2404 PG 656
PG 12 PG 248

HIGH WATER MARK FROM
WALL ON LOWER LEVEL
15.5' FROM FLOOR
EL=3213.4
LOWER LEVEL
FFE=3207.5
MAIN LEVEL
FFE=3210.0

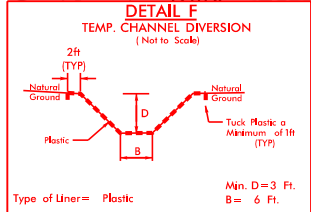
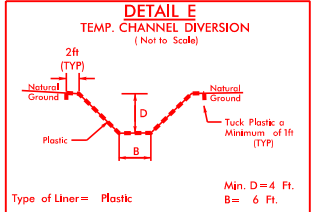
-DET- PT Sta. 15+22.17 =
-L- PC Sta. 14+57.00
AHEAD BEARING = N 66°50'54.19" E

-DET- PC Sta. 14+25.88
-DRWDET- PT Sta. 10+58.97

-DRWDET- PC Sta. 10+38.87

BEGIN CONSTRUCTION
-DRWDET- PT Sta. 10+15.00

-DRWDET- POT Sta. 10+00.00
BR N 18°05'11.7" W AHD



WETLAND AND SURFACE 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)
1	-L- 12+65 LT	Rock Vane **						< 0.01	< 0.01	17	6	17
1	-L- 12+65 LT	Inlet Channel Change						0.01		37		
1	-L- 12+93 RT	Outlet Channel Change						< 0.01	0.02	12	91	
TOTALS*:								0.02	0.03	66	97	17

*Rounded totals are sum of actual impacts

NOTES:

**17 LF of natural stream design at the culvert inlet accounts for the proposed rock vane.

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

7/9/2025

WATAUGA

NC-105

18311.1095024.PR

SHEET

7

OF

7

U.S. ARMY CORPS OF ENGINEERS
Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: North Carolina Department of Transportation
Project Name: Culvert 378, NC 105, WBS #18311.1095024.PR

Action ID: SAW-2025-01371
County: Watauga

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that Wilmington District Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one Mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate Mitigation Sponsors.

Instructions to Sponsor: The Sponsor verifies that the mitigation requirements (credits) shown below have been released and are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated ledger to the Permittee, the Project Manager who issued the permit, the Bank Project Manager, and the District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Permitted Impacts and Compensatory Mitigation Requirements

Permitted Impacts Requiring Mitigation*: **8-digit HUC and Basin:** 06010103, Watauga River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
		49				

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

Compensatory Mitigation Requirements: **8-digit HUC and Basin:** 06010103, Watauga River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
		39				

Mitigation Site Debited: NCDMS

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the Wilmington District, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: _____

Name of Sponsor's Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

**USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2**

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the District is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the District is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. When NCDMS provides mitigation for authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by NCDMS must be provided to the District within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the District has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the District Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the District, the Sponsor must obtain case-by-case approval from the District Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the District administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

For the inlet and outlet rock plating = 49'. Since the pipe length would be reduced by 10', $49' - 10' = 39'$. Since there was no NCSAM form, the stream is considered to be medium quality, which requires a 2:1 ratio = 78' of mitigation; however, this type of impact typically requires a lower mitigation ratio than other fills, such as a new culvert or relocation, so this 78' would be reduced down to 39' of compensatory mitigation required.

This form is not valid unless signed below by the District Project Manager and by the Mitigation Sponsor on Page 1. ***Once signed, the Sponsor should provide copies of this form along with an updated bank ledger to: 1) the Permittee, 2) the District Project Manager at the address below, 3) the Bank Manager listed in RIBITS, and 4) the Wilmington District Mitigation Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (or by email to SAWMIT@usace.army.mil).***

Questions regarding this form or any of the permit conditions may be directed to the District Mitigation Office.

USACE Project Manager: Lori Beckwith
USACE Field Office: Asheville Regulatory Field Office
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

Email: loretta.a.beckwith@usace.army.mil

**Loretta A.
Beckwith**

Digitally signed by Loretta A.
Beckwith
Date: 2025.08.29 09:47:14 -04'00'

Wilmington District Project Manager Signature

August 29, 2025

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



◻ North Carolina Wildlife Resources Commission ◻

M. Kyle Briggs, Executive Director

July 14, 2025

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

Kaylie 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 Watauga Culvert 378 on NC
 105 in Valley Creek. **DF18311.1095024.PR**
 DWR 20250892 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 culvert was washed-out by Hurricane Helene, temporarily replaced, and is now being permanently replaced with a 2@11'x7' reinforced concrete box culvert (RCBC) set at a 4.2% slope. A cross vane is proposed upstream of the culvert to help with sediment transport through the new structure. The RCBC was designed with sills and baffles according to NCDOT hydraulic design guidelines, however there is a desire to only include inlet sills to facilitate possible future maintenance.

Valley Creek supports naturally reproducing populations of Brown Trout (*Salmo Trutta*) and Rainbow Trout (*Oncorhynchus mykiss*). The NCWRC waived the upcoming trout moratorium for this project to

facilitate urgent storm repairs and because of the currently poor spawning conditions in many stream reaches.

As a pre-existing culverted crossing, the NCWRC does not object to its replacement with a new RCBC. We support the proposed cross-vane upstream of the proposed RCBC because sediment transport issues, particularly inlet and/or outlet aggradation, are not uncommon with newly installed RCBC's. As described, the proposed cross-vane may help reduce aggradation particularly with the high flow pipe.

While we support some of the proposal, we do have concerns about not constructing it as designed due to potential implications for aquatic life passage. Based on the proposed baffle spacing and culvert slope, each proposed baffle would provide backwatering of the next upstream baffle. This water "pooling" can facilitate fish passage should the culvert not retain any bedload, or only partially retain bedload except near the outlet. With no or limited bedload retention and no baffles, the culvert would likely have shallow and fast baseflow near its upper end, which would impede or prevent aquatic passage.

The NCWRC recommends constructing the RCBC as designed and monitoring its performance. The baffles would be cast separately and held in place with dowels. So, while it would be challenging it might also be possible to sawcut and pull them if sediment transport issues continue with the proposed RCBC.

In addition to considering the preceding concerns, the following conditions are requested to help conserve wildlife resources affected by the project:

1. Erosion controls comparable to *Design Standards in Sensitive Waters* (see part (d) of 15A NCAC 04B .0124) should apply to construction due to effects on wild trout habitats. (Note: While basins will not be necessary with this project, this provision would permit the use of more effective ground covers and sediment flocculants, as needed).
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.

Thank you for the opportunity to review and provide recommendations on this project. Please contact me at david.mchenry@ncwildlife.gov 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

Modified 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

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PEEPLES
Date: 2025.07.08 11:24:26 -04'00'

Gary Peeples
Acting 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.
- **March 19, 2025:** Service signed and finalized the Biological and Conference Opinion document and provided it to NCDOT.
- **July 1, 2025:** NCDOT submitted request for expedited modification to the Biological and Conference Opinion document, with complete information provided at that time.

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 in several watersheds, destroying thousands of transportation sites as well as homes and entire communities. Widespread landslides and tree 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. **This document supersedes the March 19, 2025 Biological and Conference Opinions and Informal Consultations – Batch Format document.**

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.

Note: This modification covers updates to the actions associated with Service Log #s **25-124, 25-127, and 25-128** and the resulting updates to the effect determinations for listed and proposed bat species. The incorporation of additional avoidance and minimization measures for these projects, as noted in the “Rationale” portions in the table below, resulted in effect determinations changing from “Likely to Adversely Affect” to NLAA for multiple listed and one proposed bat species. These changes necessitated a modification to the informal and Biological and Conference Opinion sections of this consultation document.

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 (<i>Myotis grisescens</i>), Indiana bat (<i>Myotis sodalis</i>), northern long-eared bat (<i>Myotis septentrionalis</i>), tricolored bat (<i>Perimyotis subflavus</i>), Virginia big-eared bat (<i>Corynorhinus townsendii virginianus</i>). Rationale: Temporary bridge provides marginal roosting habitat, presence considered unlikely. No tree clearing. NE: Rock gnome lichen (<i>Gymnoderma lineare</i>). Rationale: Absence of suitable habitat.
050125	Elk River	25-130	NE: Gray bat, rock gnome lichen (<i>Gymnoderma lineare</i>), 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	NLAA: Indiana bat, northern long-eared bat, tricolored bat. Rationale: Minimal amount of tree clearing of marginal forested habitat to occur outside of May 15-July 1 non-volant pup season. Remaining structure doesn’t meet suitable roost habitat criteria but still surveyed 6/2/2025 – no signs of bats observed. 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 (<i>Helonias bullata</i>). 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, presence considered unlikely. Minimal tree clearing but trees lack roosting features.
378	Valley Creek	25-127	NLAA: Gray bat, Indiana bat, northern long-eared bat, tricolored bat. Rationale: Minimal amount of tree clearing of marginal forested habitat to occur outside of May 15-July 1 non-volant pup season. Remaining structure surveyed 6/2/2025 – no signs of bats observed.; Virginia big-eared bat. Rationale: Unlikely for species to utilize crossing structure or riparian vegetation for roosting. NE: Heller's blazingstar (<i>Liatris helleri</i>) Rationale: Absence of suitable habitat.
940258	Howard Creek	25-128	NLAA: Indiana bat, northern long-eared bat, tricolored bat. Rationale: Minimal amount of tree clearing of marginal forested habitat to occur outside of May 15-July 1 non-volant pup season. Remaining structure doesn't meet suitable roost habitat criteria but still surveyed 6/2/2025 – no signs of bats observed. NE: Gray bat, Virginia big-eared bat, Virginia spiraea (<i>Spiraea virginiana</i>). 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 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. A conference opinion is equivalent to a biological opinion but addresses species that are not yet listed under the ESA and/or proposed critical habitats not yet designated. Therefore, the ESA prohibitions against jeopardy, adverse modification, and taking do not yet apply. The Service may adopt a conference opinion as a biological opinion if the evaluated species/critical habitat are eventually listed/designated and while the action agency maintains discretion and involvement in the action.

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 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

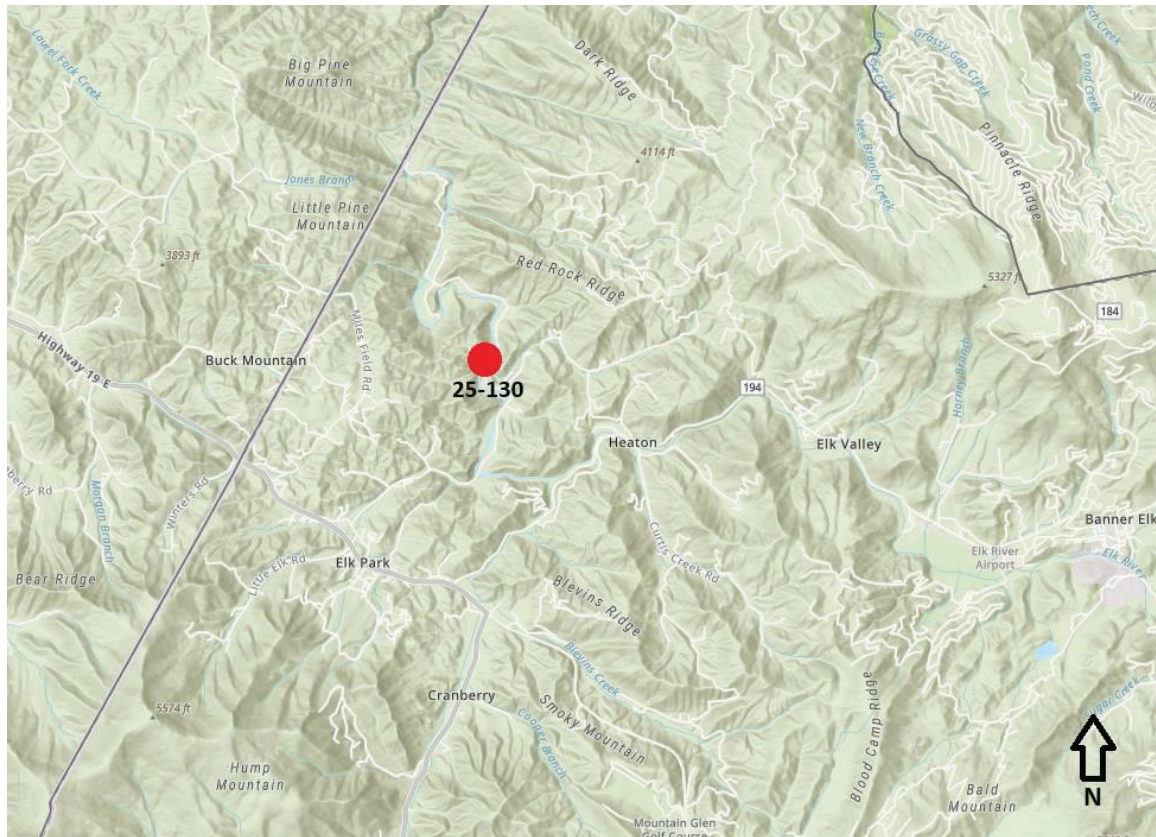
The project action area is all areas of construction and include any portions of the waterbody, as indicated in Table 3, that may be affected by direct or indirect effects. The action area is comprised of the:

- 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. Project that is 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

Figure 1. Project that is Likely to Adversely Affect (LAA) Listed Species



2.2 Project Description

The details of the proposed project design for the crossing structure in Table 3 is 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 per structure replacement location is 0.10 acre. That amount will likely be less, 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 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, the action agency will implement to further recovery of the species under review. The beneficial effects of CMs are considered in determining 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 as time of year clearing will occur is unknown. 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 is unknown, an assumed clearing acreage of 0.1 acre will be used based on estimates from previous clearing work at bridges (NCDOT 2015). The formula is calculated as follows:

$\$5,190 \times 0.1 \text{ ac} = 519 \times 2 \text{ (critical life stage multiplier)} = \$1,038 \text{ contribution}$

**Structures with documented bat use are generally larger than the average bridge, with a median size of 0.10 acre (length x width) (KYTC 2019). Therefore 0.10 acre per bridge is used to calculate the amount of suitable bat habitat lost for projects involving structure impacts. However, the displacement affects to bats that must find a new roost while a new structure is being constructed are considered temporary in nature because the new structure will be replaced with a similar structure that will provide adequate roosting habitat again. Therefore, the ratio multiplier was reduced to 1.5:1 vs 2:1 used in the tree clearing contribution explained above. If the structure is demolished after March 15 when bats return to the landscape, a payment will be required, if not, no payment is required. The formula is calculated as follows: $\$5,190 \times 0.1 \text{ ac} = 519 \times 1.5$ (temporary affect 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 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 Indiana Bat

Scientific Name:	<i>Myotis sodalis</i>
Status:	Endangered
Date of Listing:	March 11, 1967
Critical Habitat:	Established in 1976

3.1.1 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).

3.1.2 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 update (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 Appalachia 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.

3.1.3 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.

3.2 Northern long-eared Bat

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

3.2.1 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. Along with trees, the species has been documented roosting in 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; Francel 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).

3.2.2 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).

3.2.3 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.

3.3 Tricolored Bat

Scientific Name:	<i>Perimyotis subflavus</i>
Status:	Proposed Endangered
Date of Proposed Listing:	September 14, 2022
Critical Habitat:	None proposed

3.3.1 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. Additionally, tricolored bats have been observed roosting among pine needles, in eastern red cedar (*Juniperus virginiana*), within artificial roost structures, beneath porch roofs, bridges, concrete bunkers, and rarely within caves. Female tricolored bats form maternity colonies and switch roost trees regularly. Maternity colonies typically consist of one to several females and pups. They usually have twins in late spring or early summer, which are capable of flight in four weeks.

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. Additionally in the southern United States, hibernation length is shorter compared to northern portions of the range. Hibernating tricolored bats do not typically form large clusters; most commonly roosting 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.

3.3.2 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 (RPU), 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).

3.3.3 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 Area

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 area contains the existing crossing structure and the roadway approaches, along with the existing utilities and surrounding riparian areas in which project work will occur. 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 multiple 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 remain in place; however, suitable structural roosting habitat is extensively reduced and degraded from pre-storm conditions. The number of northern long-eared bats and Indiana bats observed roosting on bridges in WNC is between one and two individuals at any given time. In more detail, Natural Heritage data shows one bridge roost location in Swain County for Indiana bat and shows one bridge roost location in Graham County, one in Madison, and two in Swain (all pre-WNS except 1 one 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 individuals per structure. Within the action area of the damaged crossing structure, given the degraded and reduced roosting habitat available, and based on existing WNC data, it is estimated that one individual per species could be present within each structure at these crossing locations.

Trees

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, one 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 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 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

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, while adults may be able to flush, any non-volant pups present 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.

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, while adults may be able to flush, any non-volant pups present 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.

This structure replacement is 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 Indiana Bat, Northern Long-eared Bat, and Tricolored Bat

After reviewing the current status of 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 Indiana bat, northern long-eared bat, or tricolored bat. This opinion is based on the following factors: Effects of the action occur as a result of the tree clearing at Avery County crossing structure 125. This action area comprises only a small amount of active season habitat within the overall ranges of these species. No changes in the long-term viability of 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 the crossing structure location (that is, an estimate of one individual per species per structure and an estimate of one Indiana bat, one northern long-eared bat, and one tricolored bat per forested area within each action area), and the occurrence range-wide of each species –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 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 Indiana Bat, Northern Long-eared Bat, and Tricolored Bat

The Service anticipates incidental take of the Indiana bat, northern long-eared bat, and tricolored bat may occur as a result of the tree clearing associated with replacement of Avery County crossing structure 125. Specifically, take of these species may occur as a result of clearing suitable roost trees during times of year when these bats could be tree-roosting within the action area, which would be expected to 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 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 one individual of northern long-eared bat, Indiana bat, or tricolored bat are estimated to be present within the action areas of the 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 structure 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 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 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 NCDOT 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.
 - 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)(1) 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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