

# STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

ROY COOPER GOVERNOR J.R. "JOEY" HOPKINS Secretary

August 25, 2024

MEMORANDUM TO:		Division Environmental and Construction Units
FROM:	mat	Michael A. Turchy, ECAP Group Leader Environmental Analysis Unit
SUBJECT:		Environmental Permits for the Improvements to NC 150 in Catawba and Iredell Counties Division 12, <b>TIP: R-2307.</b>

Please find enclosed the following permits for this project:

Agency	Permit Type	Permit Expiration
US Army Corps of Engineers Section 404 Clean Water Act Permit	Individual Permit, dated 9/3/2020, Modification & Renewal 8/20/2024	Dec. 31, 2034
NC Division of Water Resources Section 401 Water Quality Certification	Individual Certification, dated 4/17/2019 Modification & Renewal 8/1/2024	Dec. 31, 2034
NC Division of Water Resources Catawba Riparian Buffer Authorization	Authorization, dated 4/17/2019 Modification & Renewal 8/1/2024	Dec. 31, 2034

Work is authorized by the above referenced permit provided it is accomplished in strict accordance with the permitted plans.

The Environmental Coordination and Permitting Group or the Division Environmental Office must be consulted if any deviation from the permit(s) or accompanying drawings is required.

**Site 10**: The previous design proposed a 9' diameter precast manhole connecting an existing RCBC to a proposed 78" RCP at the downstream culvert extension at 784+50 RT (Permit Site 10). NCDOT determined that attaching a precast manhole to the existing RCBC is not feasible and would require a cast in place connection. To avoid this situation, the existing 5'W x 6'H RCBC will be extended. This will result in the outlet of the RCBC shifting 3' west of the previous 78" RCP outlet. However, the inverts, lengths, and channel layout will remain the same. There are no changes to stream impacts.

**Site 12**: Permanent impact decreased from 28 to 27 linear feet due to a corrected measurement (The change is only reflected on the Impact Summary Sheet, no change to the plan view).



September 3, 2020

**Regulatory Division** 

Action ID: SAW-2018-02343

Project Development and Environmental Analysis Unit, Attn: Mr. Philip Harris, P.E., 1548 Mail Service Center Raleigh, NC 27699-1598

Dear Mr. Harris:

Enclosed is a Department of the Army permit for the NC 150 (R-2307 and I-5717) Improvement Project which involves the improvement of approximately 15 miles of existing NC 150 to a median-divided 'superstreet' facility which includes road widening (widened to a four or six-lane divided facility including curb and gutter and a multi-use path), replacing several bridges, and access management measures. Specifically, impacts will involve 1.634 linear feet of stream channel, 0.84 acres of wetlands and 13.18 acres of open water (based on final design for Section B and preliminary design for Section A and not including temporary impacts for Section A). The project is located along existing NC 150 and begins at the intersection of NC 150 with the NC 16 Bypass in Catawba County and extends approximately 15 miles northeast along NC 150 through Catawba County into Iredell County to terminate just west of the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina. The project has been divided into two phases: Section A extends from NC 16 Bypass to SR 1902 (Harvel Road). Section B extends from Harvel Road to just west of the US 21/NC 150 Interchange and includes the I-5717 component, the I-77 interchange. This permit authorization includes final design and final impact numbers for Section B and preliminary designs and impacts for Section A. Approval for final design plans and impacts for Segment A will be completed through a permit modification. The Corps is issuing this permit in response to your written request of December 21, 2018 and the ensuing administrative record.

Any deviation in the authorized work will likely require modification of this permit. If a change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your permit has been modified. Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant conditions require that:

a. You must complete construction before December 31, 2025

b. You must notify this office in advance as to when you intend to commence and complete work.

c. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

d. In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined in the U.S. Army Corps of Engineers, Wilmington District, 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.

You should address all questions regarding this authorization to Crystal Amschler at the Asheville Regulatory Field Office, telephone (828) 271-7980 extension 4231.

FOR THE DISTRICT ENGINEER

Monte Matthe Date: 2020.09.0. 08:00:29 -04'00' Date: 2020.09.03

Monte Matthews Lead Project Manager

Enclosures

Project Development and Environmental Analysis Unit, Attn: Mr. Michael Turchy., 1548 Mail Service Center Raleigh, NC 27699-1598

Mr. Todd Bowers Wetlands Protection Section – Region IV Water Management Division U.S. Environmental Protection Agency 61 Forsyth Street, SW Atlanta, Georgia 30303 Ms. Amy S. Chapman Transportation Permitting Unit NC Division of Water Quality 1617 Mail Service Center Raleigh, NC 27699-1617

Ms. Marla Chambers Western Region Highway Project Coordinator NCWRC 12275 Swift Road Oakboro, NC 28129

US Fish and Wildlife Service Asheville Ecological Services Field Office Attn: Byron Hamstead 160 Zillicoa Street Asheville, NC 28801-1082

Ms. Renee Gledhill-Early Environmental Review Coordinator NC State Historic Preservation Office 4617 Mail Service Center Raleigh, NC 27699-4617

BCC (without enclosures) (via Email):

CESAW-RG-A/Crystal Amschler CESAW-RG-R/Matthews CESAW-RG/McLendon CESAW-OC/Pruitt

### DEPARTMENT OF THE ARMY PERMIT

# Permittee NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ATTN: MR. PHILIP S. HARRIS III, P.E., C.P.M.

Permit No. **SAW-2018-02343** 

Issuing Office **CESAW-RG-A** 

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The NC 150 (R-2307 and I-5717) Improvement Project involves the improvement of approximately 15 miles of existing NC 150 to a median-divided 'superstreet' facility which includes road widening (widened to a four or six-lane divided facility including curb and gutter and a multi-use path), replacing several bridges, and access management measures. Specifically, impacts will involve 1,634 linear feet of stream channel, 0.84 acres of wetlands and 13.18 acres of open water (based on final design for Section B and preliminary design for Section A and not including temporary impacts for Section A). The project is located along existing NC 150 and begins at the intersection of NC 150 with the NC 16 Bypass in Catawba County and extends approximately 15 miles northeast along NC 150 through Catawba County into Iredell County to terminate just west of the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina. The project has been divided into two phases: Section A extends from NC 16 Bypass to SR 1902 (Harvel Road). Section B extends from Harvel Road to just west of the US 21/NC 150 Interchange and includes the I-5717 component, the I-77 interchange. This permit authorization includes final design and final impact numbers for Section B and preliminary designs and impacts for Section A. Approval for final design plans and impacts for Segment A will be completed through a permit modification.

Project Location: The project is located along existing NC 150 and begins at the intersection of NC 150 with the NC 16 Bypass in Catawba County and extends approximately 15 miles northeast along NC 150 through Catawba County into Iredell County to terminate just west of the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on <u>December 31, 2025.</u> If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit,

**Special Conditions:** 

# SEE ATTACHED SPECIAL CONDITIONS

Further Information:

- 1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
  - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
  - (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

- 2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal project.
- 3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.
  - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
- 4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
- 5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
  - a. You fail to comply with the terms and conditions of this permit.
  - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
  - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures

provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit, Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

September 2, 2020 Carla Dagnino <u>+or</u>/ (PERMITTEĚ) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (DATE MR. PHILIP S. HARRIS III, P.E., C.P.M.

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Date: 2020.09.03

08:03:54 -04'00'

FOR THE DISTRICT ENGINEER

FOR -

(DISTRICT COMMANDER) BENJAMIN A. BENNETT, COLONEL

Monte Matthew

(DATE)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE)

(DATE)

1. **Phased Permit:** This permit only authorizes work on Segment B of the NC 150 R2307 Improvement Project. Construction on Segment A shall not commence until: (a) final design has been completed for those sections and submitted to the U.S. Army Corps of Engineers (Corps); (b) the Permittee has minimized impacts to waters and wetlands to the maximum extent practicable and the Corps concurs with this assessment through standard Merger 4B and 4C meetings; (c) any modification to the plans have been approved by the Corps in writing; and (d) a final compensatory mitigation plan has been submitted by the Permittee and approved by the Corps.

2. **Work Limits:** All work authorized by this permit shall be performed in strict compliance with the attached permit plans dated 7/11/2018, which are a part of this permit. The Permittee shall ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any modification to the attached permit plans must be approved by the US Army Corps of Engineers prior to any active construction in waters or wetlands.

3. **Unauthorized Dredge or Fill:** Except as authorized by this permit or any U.S. Army Corps of Engineers approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, or shall any activities take place that cause the degradation of waters or wetlands. There shall be no excavation from, waste disposal into, or degradation of, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and waste activities connected with this project. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands

4. **Permit Distribution:** The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit 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 permit. A copy of this permit, including all conditions, drawings and attachments shall be available at the project site during the construction and maintenance of this project.

5. **Pre-Construction Meeting:** The Permittee shall schedule and attend a preconstruction meeting between its representatives, the contractors representatives, and the U.S. Army Corps of Engineers, Asheville Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all the terms and conditions contained with this

Department of Army Permit. The Permittee shall provide the Corps, Asheville Field Office, NCDOT Project Manager, with a copy of the final permit plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The Permittee shall schedule the preconstruction meeting for a time frame when the Corps, NCDCM, and NCDWQ Project Managers can attend. The Permittee shall invite the Corps, NCDCM, and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting. The thirty (30) day requirement can be waived with the concurrence of the Corps.

6. **Notification of Construction Commencement and Completion:** The Permittee shall notify the U.S. Army Corps of Engineers in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

7. **Reporting Address:** All reports, documentation, and correspondence required by the conditions of this permit shall be submitted to the following: U.S. Army Corps of Engineers, Wilmington District Asheville Regulatory Field Office, Attn: Crystal Amschler 151 Patton Avenue, Room 208 or Crystal.C.Amschler@usace.army.mil. The Permittee shall reference the following permit number, SAW-2018-02343, on all submittals.

8. **Permit Revocation:** The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.

9. **Reporting Violations:** Violation of these permit conditions or violation of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act shall be reported to the Corps in writing and by telephone at: 828-271-7980 within 24 hours of the Permittee's discovery of the violation.

10. **Clean Fill:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, construction debris, metal and plastic products, and concrete block with exposed reinforcement bars. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act. Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source.

11. **Endangered Species Act:** The Permittee shall implement all necessary measures to ensure the authorized activity does not kill, injure, capture, harass, or otherwise harm any federally-listed threatened or endangered species. While accomplishing the authorized work, if the Permittee discovers or observes an injured or dead threatened or endangered species, the U.S. Army Corps of Engineers, Wilmington District Asheville

Regulatory Field Office, Attn: Crystal Amschler, 151 Patton Avenue, Room 208 or Crystal.C.Amschler@usace.army.mil will be immediately notified to initiate the required Federal coordination.

- A. Habitat is present within the project corridor for the Dwarf-flowered heartleaf (*Hexastylis naniflora*) (Iredell and Catawba) and the Schweinitz's sunflower (*Helianthus schweinitzii*) (Catawba). Surveys were conducted for these species on October 24, 2018 and no species were found. The survey for the Dwarf-flowered heartleaf is good for 5 years and the survey for the Schweinitz's sunflower is good for 2 years. As such, new surveys will need to be conducted for these species within permit areas for Segment A and will also need to be conducted for Segment B if construction is not complete prior to survey expiration.
- B. Habitat is present within the project corridor for the Northern long- eared bat (NLEB) (*Myotis septentrionalis*). In order to avoid impacts to potential roosting NLEB, NCDOT will do the following:
  - a. Inspect existing bridges prior to demolition or other work that may affect the NLEB, for the presence of federally listed bats and contact the Corps and FWS if any bats are observed

# 12. Culverts:

1) Unless otherwise requested in the application and depicted on the approved permit plans, culverts greater than 48 inches in diameter shall be buried at least one foot below the bed of the stream or, if prior approval given, set at the current stream bed elevation. Culverts 48 inches in diameter and less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain existing channel slope. Culverts shall be designed and constructed in a manner that minimizes destabilization and head cutting.

2) Measures shall be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed opening shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gauge data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

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

4) Culverts placed within wetlands must be installed in a manner that does not restrict the flows and circulation patterns of waters of the United States. Culverts placed across wetland fills purely for the purposes of equalizing surface water shall not be buried, but the culverts must be of adequate size and/or number to ensure unrestricted transmission of water.

### 13. Sediment and Erosion Control:

1) During the clearing phase of the project, heavy equipment shall not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of non-erodible materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

2) No fill or excavation impacts for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless the impacts are included on the plan drawings and specifically authorized by this permit. This includes, but is not limited to, sediment control fences and other barriers intended to catch sediment losses.

3) The Permittee shall remove all sediment and erosion control measures placed in waters and/or wetlands, and shall restore natural grades on those areas, prior to project completion.

4) The Permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to ensure compliance with the appropriate turbidity water guality standard. Erosion and sediment control practices shall be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to ensure compliance with the appropriate turbidity water quality standards. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project shall remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A, Article 4). Adequate sedimentation and erosion control measures shall be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures shall be inspected and maintained regularly, especially following rainfall events. All fill material shall be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

14. **Temporary Fills:** Within thirty (30) days of the date of completing the authorized work, the Permittee shall remove all temporary fills in waters of the United States and

restore the affected areas to pre-construction contours and elevations. The affected areas shall be re-vegetated with native, non-invasive vegetation as necessary to minimize erosion and ensure site stability.

15. Borrow and Waste: To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the Permittee shall require its contractors and/or agents to identify all areas to be used as borrow and/or waste sites associated with this project. The Permittee shall provide the U.S. Army Corps of Engineers with appropriate maps indicating the locations of proposed borrow and/or waste sites as soon as such information is available. The Permittee shall submit to the Corps site-specific information needed to ensure that borrow and/or waste sites comply with all applicable Federal requirements, to include compliance with the Endangered Species Act and the National Historic Preservation Act, such as surveys or correspondence with agencies (e.g., the USFWS, the NC-HPO, etc.). The required information shall also include the location of all aquatic features, if any, out to a distance of 400 feet beyond the nearest boundary of the site. The Permittee shall not approve any borrow and/or waste sites before receiving written confirmation from the Corps that the proposed site meets all Federal requirements, whether or not waters of the U.S., including wetlands, are located in the proposed borrow and/or waste site. All delineations of aquatic sites on borrow and/or waste sites shall be verified by the U.S. Army Corps of Engineers and shown on the approved reclamation plans. The Permittee shall ensure that all borrow and/or waste sites comply with Special Condition 3 of this permit. Additionally, the Permittee shall produce and maintain documentation of all borrow and waste sites associated with this project. This documentation will include data regarding soils, vegetation, hydrology, any delineation(s) of aquatic sites, and any jurisdictional determinations made by the Corps to clearly demonstrate compliance with Special Condition 3. All information will be available to the U.S. Army Corps of Engineers upon request. The Permittee shall require its contractors to complete and execute reclamation plans for each borrow and/or waste site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the U.S. Army Corps of Engineers within 30 days of the completion of the reclamation work.

16. **Compensatory Mitigation:** 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.

17. **Compliance Inspection:** A representative of the Corps of Engineers will periodically and randomly inspect the work for compliance with these conditions. Deviations from these procedures may result in an administrative financial penalty and/or directive to cease work until the problem is resolved to the satisfaction of the Corps.

18. **NCDWR 401 Cert**: In accordance with 33 U.S.C. 1341(d), all conditions of the North Carolina Division of Water Resources 401 Water Quality Certification No. 3845 dated April 17, 2019 are hereby incorporated as special conditions of this permit

19. **Prohibitions on Concrete:** The permittee shall take measures to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with any water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with concrete shall only be returned to waters of the United States when it no longer poses a threat to aquatic organisms (concrete is set and cured).

20. **Discovery of Previously Unknown Remains and Artifacts:** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

21. **Segment A, Affects to Navigation Evaluation:** Once final plans are completed for Segment A, information regarding potential effects to navigation for the two bridge replacements over Lake Norman on NC 150 in Segment A should be included with the permit modification request. Information should include temporary and permanent impacts to lake users, the boater's safety plan and verification that the bridge replacements will be designed in accordance with the Lake Norman Management Plan.

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

#### Permittee: NCDOT, Project Development and Environmental Analysis Unit Project Name: NC 150 (R-2307 and I-5717) Improvement Project

Action ID: SAW-2018-02343 County: Catawba and Iredell Counties

**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 to the U.S. Army Corps of Engineers (USACE) 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 must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not 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 bank ledger to the Permittee, the USACE Project Manager, and the Wilmington 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: 03050101, Catawba River Basin

Stream Impacts (linear feet)				Wetland Impacts (ad	cres)	
Warm	Cool	Cold	Riparian Riverine	Coastal		
447				0.06		

\*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: 03050101, Catawba River Basin

Stream	n Mitigation (credi	ts)		Wetland Mitigation (	credits)		
Warm	Cool	Cold	Riparian Riverine Riparian Non-Riverine Non-Riparian Coas				
894				0.12			

#### Mitigation Site Debited: NC DMS

(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 USACE, 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 USACE 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 USACE 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. 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 the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE 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 USACE 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 USACE, the Sponsor must obtain case-by-case approval from the USACE 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 USACE administrative records for both the permit and the Bank/ILF Instrument.

#### **Comments/Additional Conditions:**

This form is not valid unless signed below by the USACE 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 USACE Project Manager at the address below, and 3) the Wilmington District Mitigation Office, Attn: Todd Tugwell, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587 (email: todd.tugwell@usace.army.mil). Questions regarding this form or any of the permit conditions may be directed to the USACE Project Manager below.

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

Email:

#### AMSCHLER.CRYSTAL.CAMILLE.1238 614178 Digitally signed by AMSCHLER.CRYSTAL.CAMILLE.1238614178 Date: 2020.08.31 11:23:43 = 04'00' Date: 2020.08.31 11:23:43 = 04'00'

**USACE Project Manager Signature** 

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 <a href="http://ribits.usace.army.mil">http://ribits.usace.army.mil</a>.

Page 2 of 2

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at <a href="http://regulatory.usacesurvey.com/">http://regulatory.usacesurvey.com/</a> to complete the survey online.



DEPARTMENT OF THE ARMY U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT WILMINGTON REGULATORY OFFICE 69 DARLINGTON AVENUE WILMINGTON NORTH CAROLINA 28403

August 20, 2024

**Regulatory Program** 

Sent Via Email: jlwyatt@ncdot.gov

NC Department of Transportation Natural Environment Section Mr. Jeffrey Wyatt Division Environmental Officer P.O. Box 47 Shelby, NC 28151

Dear Mr. Wyatt:

Please reference the Department of the Army (DA) permit issued on September 3, 2020, for the NC 150 (R-2307 and I-5717) Improvement Project located along NC 150 between the intersection of NC 150 with the NC 16 Bypass in Catawba County and the NC 150 intersection with US 21 in Mooresville, Iredell County, North Carolina. Please additionally reference your June 4, 2024, letter requesting the extension of the expiration date of the project to December 31, 2034, the re-evaluation of the project with consideration of the project's effects on the proposed endangered species, the Tricolor Bat and minor changes to impacts to waters of the US. After review of the file and the modification request, we have determined that the proposed project revisions are minor, and a supplemental public notice is not necessary to authorize the modification. Accordingly, your permit is hereby modified to extend the expiration date of the permit to December 31, 2034, and to include the additional conditions and changes to project impacts as listed below.

Revised Wetland & Stream Impacts:

- 1. Site 3: Permanent Surface Water Impacts decreased from 3.11 acres to 3.079 acres due to minor slope stake changes at Lake Norman.
- Site 3: Three temporary Surface Water Impacts were added down to elevation 750 ft on Permit Drawing Sheets 2-5. Temporary Surface Water Impacts increased from 0 to 0.070 acre.
- 3. Due to concerns from Duke Energy regarding boater safety and the alignment of bridge piers with the existing structure, the proposed bridge span arrangement was modified to better match the existing bridge. Permit Drawing Sheets 4-6 and associated footnote on the Impact Summary Sheet were updated.
- 4. Site 4: Permanent Surface Water Impacts decreased from 3.91 acres to 3.859 acres due to minor slope changes at Lake Norman.

- 5. Site 4: Two temporary Surface Water Impacts were added down to elevation 750 ft on Permit Drawing Sheets 7-8. Temporary Surface Water Impacts increased from 0 to 0.162 acre.
- 6. Site 10: The previous design proposed a 9' diameter precast manhole connecting an existing RCBC to a proposed 78" RCP at the downstream culvert extension at 784+50 RT (Permit Site 10). NCDOT determined that attaching a precast manhole to the existing RCBC is not feasible and would require a cast in place connection. To avoid this situation, the existing 5'W x 6'H RCBC will be extended. This will result in the outlet of the RCBC shifting 3' west of the previous 78" RCP outlet. However, the inverts, lengths, and channel layout will remain the same. There are no changes to stream impacts.
- 7. Site 12: Permanent impact decreased from 28 to 27 linear feet due to a corrected measurement (The change is only reflected on the Impact Summary Sheet, no change to the plan view).
- 8. Impact Summary Sheet: Impacts on the previous version were shown to nearest 0.01 acre and now show the nearest 0.001 acre.

2024 Modification SC.1

Endangered Species: In order to avoid and minimize effects to the tricolor bat, NCDOT will comply with the following measures:

- 1. Tree clearing will take place from October 16 to March 31, outside of the bat active season.
- 2. Tree clearing from December 15 February 15 (the winter torpor season for tricolored bat in the year-round active zone 1) will be avoided and minimized to the maximum extent practical.
- The existing bridge and culverts ≥ 3 feet in manufactured diameter within the action area will be surveyed during the summer of 2024. Additionally, structures will be surveyed within 30 days of letting. The U.S. Fish and Wildlife Service (Service) Asheville Field Office will be contacted immediately if bats are observed.
- 4. Temporary lighting for night work will be aimed at the direction of work to minimize lighting the surrounding landscape and will be turned off when not needed for project work.
- 5. The replacement of permanent lighting will be downcast and will not be in excess of what currently exists within the action area.
- 6. Should blasting occur, it will take place after tree clearing within the action area has been completed.

It is understood that all other conditions of the original permit remain applicable.

If you have any questions concerning this correspondence, please contact Crystal Amschler, WRDA Project Manager of the WRDA Transportation Branch at 828-526-6013, by mail at the above address, or by email at crystal.c.amschler@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,

Monte 2024.08.21 Matthews 07:31:28-04'00'

Monte Matthews Chief, Transportation Branch Wilmington District, Regulatory

Enclosures

ROY COOPER Governor ELIZABETH S. BISER Secretary RICHARD E. ROGERS, JR. Director



August 1, 2024 Catawba and Iredell Counties NCDWR Project No 20181732 V 2 TIP# R-2307AB and I-5717 WBS# 37944.1.FR5 STP# 150(19)

### APPROVAL of 401 WATER QUALITY CERTIFICATION and CATAWBA BUFFER APPROVAL with ADDITIONAL CONDITIONS

Mr. Michael Turchy NCDOT, Environmental Analysis Unit 1598 Mail Service Center Raleigh, NC 27699-1598 MATurchy@NCDOT.gov

Subject: Modification/Revision to 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and Catawba Riparian Buffer Impacts with ADDITIONAL CONDITIONS for Proposed improvement to Highway 150 from the intersection with the Highway 16 bypass in Lincoln County to intersection with Highway 21 in Iredell County, including the I-77/Highway 150 interchange, improvements for the whole project are in Lincoln, Catawba, and Iredell Counties, Federal Aid Project No. STP-150(19), State Project No. R-2307AB, I-5717, NCDWR Project No. 20181732 V 2

Dear Mr. Turchy:

Attached hereto is a copy of Water Quality Certification No. 004181 issued to the NCDOT dated August 1, 2024.

This approval is for the purpose and design described in your application dated December 21, 2018, and modification application dated June 3, 2024. This modification/revision approval replaces the one issued April 17, 2019. Please be advised that this project is being constructed under a phased permit. As of the date of its issuance, only impacts for R-2307B and I-5717 are permitted. Before construction can begin on R-2307A, an individual permit must be issued with final design impact numbers on streams, wetlands, and Catawba buffers, as applicable, as well as an updated letter from Division of Mitigation Services.

Additionally, this project has known, and unknown areas of coal ash fill along the entirety of the project. Those areas, whether known or discovered during construction, are subject to the Coal Ash Management Act, North Carolina General Statute 130A-309. Ground disturbance of those properties is subject to the Act.

This letter completes the review of the Division under section 401 of the Clean Water Act, 15A NCAC 02H .0500, and the Catawba Riparian Buffer Rules as described in 15A NCAC 02B.0614. Please contact Mary Plummer at 704-235-2193 or <u>Mary.Plummer@deq.nc.gov</u> if you have any questions or concerns.

Sincoustighed by:

Susan Locklear Richard E. Rogërs Jr., Director Division of Water Resources



Electronic copy only distribution:

Crystal Amschler, US Army Corps of Engineers, Asheville Field Office Rebekah Reid, US Fish and Wildlife Service David McHenry, NC Wildlife Resources Commission Jeff Wyatt, NC Department of Transportation, Division 12 Amanetta Somerville, US Environmental Protection Agency Beth Harmon, Division of Mitigation Services File Copy

#### 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and CATAWBA BUFFER RULES with ADDITIONAL CONDITIONS

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. and 15A NCAC 2B .0243. This certification authorizes the NCDOT to impact 522 linear feet of streams, .061 acres of jurisdictional wetlands, 7.946 acres of open water, and 35,072 square feet in the Catawba River Buffer in Catawba and Iredell Counties. The project shall be constructed pursuant to your application dated and received December 21, 2018, and the modification/revision dated June 3, 2024. The authorized impacts are as described below:

Site	Permanent Fill in Perennial Stream	Permanent Fill in Intermittent Stream Culvert	Temporary Fill in Perennial Stream	Total Stream Impacts	Stream Impacts Requiring Mitigation
7 L 554+25/554+82 LT	-	117	-	117	117
8 L 755+17/755+36 LT	39	-	-	39	39
9 L 755+24/755+53 RT	68	-	17	85	68
10 L 784+30/784+87 RT	97	-	20	117	97
11 L 792+60/793+23 RT	98	,-	19	117	98
12 L 793+40/793+49 LT	27	-	20	47	27
Tatala	329	117	76	522	116
Totais	4	46	70	522	440

#### Stream Impacts (Linear Feet) in the Catawba River Basin.

Total Stream Impacts for Project: 522 Linear Feet.

Site	Zone 1	Minus Wetlands in Zone 1	=Zone 1 Buffer (Not Wetlands)	Zone 1 Buffer Mitigation Required (1:1 Ratio)	Zone 2	Zone Minus Minus Vetlands (Not Not Not (1))		Zone 2 Biffer Mitigation Required (1:1Ratio)	Total Buffer Mitigation
Lake Norman	20,142	-	20,142	20,142	14,930	-	14,930	14,930	35,072
Totals	20,142	-	20,142	20,142	14,930	-	14,930	14,930	35,072

Catawba Riparian Buffer Impacts (Square Feet).

Total Riparian Buffer Impacts for Project: 35,072 Square Feet.



Site	Perma Pipe & Roadway	anent Fill Mechanized Clearing	Total Wetland Impacts	Wetland Impacts Requiring Mitigation	
7 L 554+25/554+82 LT	.051	.01			
	.051 .01		061	0.61	
Totals	•	061	.001	.001	

Wetland Im	pacts (Acre	s) in the	Catawba	River	Basin	(Riverine).
IT CONTRACT AND			Currentine			

Total Wetland Impacts for Project: 0.061 Acres.

	Perman	ent Fill	Tempora						
Site	Pipe w/Rip Rap Causeway		Pipe w/Rip Rap	Causeway	Totals				
1 L 453+21/453+40 LT	.001	-	.006	-	.007				
2 L 458+40/458+74 LT	.006	-	.016	-	.022				
3 L 458+21/467+07 LT	-	3.079	-	.70	3.779				
4 L 476+33/488+33 LT	-	3.859	-	.162	4.021				
5 L 487+17/488+00 LT	.014	-	.019	-	.033				
6 L 519+88/520+50 RT	.02	-	.064	-	.084				
T-4-1-	.041	.041 6.938		.862	7.046				
I otals	6.9	79	.96	7	7.940				

Open Water (Lake/River) Impacts in the Catawba River Basin.

**Total Open Water Impacts for Project: 7.946 Acres.** 

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

This approval is valid solely for the purpose and design described in your application dated and received December 21, 2018, and modification/revision dated June 3, 2024. Should your project change, you must notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts for this project (now or in the future) exceed one acre or 300 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h)(6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B .0243. For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state, or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This certification shall expire on the same date as the expiration date of the corresponding Corps

If you are unable to comply with any of the conditions below, you must notify the DWR Transportation Permitting Branch within 24 hours (or the next business day if a weekend or holiday) from the time the permittee becomes aware of the circumstances. The permittee shall report to the NC Division of Water Resources any noncompliance with the conditions of this Authorization Certificate and/or any violation of state regulated Catawba riparian buffer rules .0614. Information shall be provided orally within 24 hours (or the next business day if a weekend or holiday) from the time the applicant became aware of the circumstances.



#### Condition(s) of Approval and Certification:

- 1. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. [15A NCAC 02B.0614]
- 2. Pursuant to 15A NCAC 2B.0614. sediment and erosion control devices shall not be placed in Zone 1 of any Catawba Buffer without prior approval by the NCDWR. At this time, the NCDWR has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised, and that discharge is released as diffuse flow.
- 3. All stormwater runoffs shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. Sheetflow requirements are waived per request with low velocities achieved per submitted plans and email. [15A NCAC 02B.0614]
- 4. Native riparian vegetation (i.e., trees and shrubs native to your geographic region) must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02B.0614] & [15A NCAC 02B.0506(b)(2)]

### **Project Specific Conditions**

- This project has known, and potentially unknown, coal ash fill areas. Additional requirements will be needed to
  ensure compliance with the Coal Ash Management Act of North Carolina. Please see the sited NCGS for
  additional requirements. NCGS 130A-309
- 2. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted sites. NCDWR staff shall be invited to the pre-construction meeting. [15A NCAC 02H.0506 (b)(2) and (b)(3)]
- 3. The NCDOT shall be in compliance with the NCS00250 issued to the NCDOT, including the applicable requirements of the NCG01000. Please note the extra protections for the sensitive watersheds.
- 4. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)
- 5. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to turbidity shall be designed, constructed, and operated with sediment and erosion control measures that meet Design Standards in Sensitive Watersheds (15A NCAC 4B .0124). However, due to the size of the project, NCDOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.
- 6. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to biological criteria exceedances shall not discharge stormwater directly to surface waters. Storm water shall be treated using appropriate best management practices (e.g., vegetated conveyances, constructed wetlands, detention ponds, etc.) prior to discharging to surface waters.
- The NCDOT shall design, construct, and operate and maintain hazardous spill catch basins (HSCBs) at lake crossings within the WS CA watershed. The HSCBs shall be located at Station numbers L Sta 456+00 and 487+00. [15A NCAC 02B.0200]



- 8. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
- 9. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit, please refer to the most recent version of the *North Carolina Department of Transportation Stormwater Best Management Practices Toolbox* for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]
- 10. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]
- 11. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)
- 12. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank, or during the removal of bents from an old bridge. This condition can be waived with prior approval from the NCDWR. [15A NCAC 02H .0506(b)(3)
- 13. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. [15A NCAC 02H .0506(b)(3)
- 14. Existing stream dimensions (including pattern and profile) are to be maintained above and below locations of each culvert. The structures shall be designed and installed to allow for fish and other wildlife movement as well as prevent headcutting of the stream. The applicant may be required to provide evidence that the equilibrium has been maintained if requested in writing by the NCDWR. [15A NCAC 02H.0506(b)(2)]
- 15. Unless otherwise approved in this certification, placement of culverts and other structures in open waters and streams, shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
- 16. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross sections as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage. [15A NCAC 02H.0506(b)(2)]
- Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed. [15A NCAC 02H.0506(b)(2)]
- 18. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation



responsible for maintaining the stream bank stability. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species. [15A NCAC 02H.0506(b)(2)]

- 19. Pipes and culverts used exclusively to maintain equilibrium in wetlands, where aquatic life passage is not a concern, shall not be buried. These pipes shall be installed at natural ground elevation.
- 20. Wetland areas impacted by temporary clearing shall be stabilized and reseeded with native wetland seed. [15A NCAC 02H.0506(b)]
- 21. Due to the possibility that compaction and/or other site alterations might prevent the temporary wetland impact area from re-attaining jurisdictional wetland status; the permittee shall provide an update on the wetland areas temporarily impacted. This update shall be conducted two growing seasons after completion of the work and shall consist of photographs and a brief report on the progress of the areas in re-attaining wetland jurisdictional status. Upon submission of this update to the NCDWR, the permittee shall schedule an agency field meeting with the NCDWR to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, the NCDWR shall determine if additional compensatory wetland mitigation is to be required.
- 22. Compensatory mitigation for 446 linear feet of impacts to streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Division of Mitigation Service (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. The DMS has indicated in a letter dated December 19, 2018, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the DMS Mitigation Banking Instrument signed July 28, 2010.
- 23. Compensatory mitigation for impacts to 20,142 square feet of protected riparian buffers in Zone 1 and 14,930 square feet of protected riparian buffers in Zone 2 shall be required. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP). Mitigation for unavoidable impacts to Catawba Riparian Buffers shall be provided in the Catawba River Basin and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated December 19, 2018, that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed June 14, 2016.
- 24. Compensatory mitigation for impacts to .061 acres of riverine wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands through the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP), and that the DMS has agreed to implement the mitigation for the project. DMS has indicated in a letter dated December 19, 2018, that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed July 28, 2010.

#### **General Conditions**

- 1. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 2. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]



- 3. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials. [15A NCAC 02H.0506(b)(3)]
- 4. All work in or adjacent to stream waters shall be conducted per approved BMP measures from the most current version of NCDOTs Construction and Maintenance Activities manual. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 5. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
- Stormwater shall be directed to vegetated buffer areas, grass-lined ditches or other means appropriate to the site for the purpose of pre-treating storm water runoff prior to discharging directly into streams. (15A NCAC 02B.0224 and .0225)
- If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. [15A NCAC 02B.0200]
- 8. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S. or protected riparian buffers. [15A NCAC 02H.0506(b)(2)]
- The dimensions, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions. [15A NCAC 02H.0506(b)(2)]
- 10. The use of rip-rap above the Normal High-Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage. [15A NCAC 02H.0506(b)(2)]
- 11. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
- 12. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
- 13. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If the NCDWR determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
- 14. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
- 15. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification, and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
- 16. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]



- 17. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
- 18. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
- 19. Upon completion of the project (including any impacts at associated borrow or waste sites), an appointee shall complete and return the enclosed "Certification of Completion Form" to notify the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
- 20. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 21. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 22. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface water standards [15A NCAC 02H.0506(b)(3) and (c)(3)]
  - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
  - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
  - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
  - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
- 23. Where placement of sediment and erosion control devices in wetlands and/or waters is unavoidable, they shall be removed, and the natural grade restored upon completion of the project. [15A NCAC 02H.0506(b)(3) and (c)(3)]
- 24. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506 {b)(3) and (c)(3) and 15A NCAC 02B .0200]
- 25. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *NCDOT Sediment and Erosion Control Manual*.
- 26. All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.



- 27. For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.
- 28. If sediment or other pollutants are found to be discharged from the stormwater outfalls, DWR may take enforcement action. NCDOT and DWR shall assess the damage to water quality standards and implement an appropriate action plan to address the impacts. The action plan shall provide an appropriate timeline for implementation as agreed upon by both DWR and NCDOT. This may require NCDOT to obtain a modification to its current 401 and 404 permits.
- 29. If the project occurs in water or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-1, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds* [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]
- 30. Sediment and erosion control measures shall not be placed in wetlands or surface waters, or within 5 feet of the top of the bank, without prior approval from DWR. [15A NCAC 02H.0506(b)(3) and (c)(3)]

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

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

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

A party filing a Petition must serve a copy of the Petition on: William F. Lane, General Counsel Department of Environmental Quality 1601 Mail Service Center Raleigh, NC 27699-1601

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

#### This Authorization shall expire five (5) years from the date of this letter.

This letter completes the review of the Division under the Catawba Riparian Buffer Rules as described in 15A NCAC 02B.0614. Please contact Mary Plummer at Mary.Plummer@deq.nc.gov or 704-235-2193 if you have any questions or concerns.



This the 1<sup>st of</sup> August 2024

### DIVISION OF WATER RESOURCES

DocuSigned by:

Susan Locklear -04351F033762414...

Richard E. Rogers Jr., Director

WQC No. 004181



ROY COC Governor	PPER							
ELIZABET Secretary	TH S. BISER		+ Est CLUM VIDD *					
RICHARD Director	E. ROGERS, JR.		NORTH CAROLINA Environmental Quality					
	NCDWR Project No.:		County:					
	Applicant:							
	Project Name:							
	Date of Issuance of 401 V	Water Quality Certif	fication:					
	Certificate of Completion Upon completion of all we any subsequent modificati Unit, North Carolina Divis may be returned to NCDW necessary to send certifica <i>Applicant's Certification</i>	<b>n</b> ork approved within th ons, the applicant is re- sion of Water Resource VR by the applicant, th tes from all of these.	he 401 Water Quality Certification or applicable Buffer Rule required to return this certificate to the 401 Transportation Pa ces, 1617 Mail Service Center, Raleigh, NC, 27699-1617. T he applicant's authorized agent, <b>or</b> the project engineer. It is	es, and ermitting Ihis form is not				
	I,		_, hereby state that, to the best of my abilities, due care and o such that the construction was observed to be built within su Certification and Buffer Rules, the approved plans and	diligence ubstantial				
	Signature:		Date:					
	Agent's Certification							
	I, was used in the observation compliance and intent of t specifications, and other s	on of the construction he 401 Water Quality upporting materials.	_, hereby state that, to the best of my abilities, due care and o such that the construction was observed to be built within su certification and Buffer Rules, the approved plans and	diligence ubstantial				
	Signature:		Date:					
	Engineer's Certification							
	Partial	Final						
	I, Carolina, having been auth Permittee hereby state that construction such that the Water Quality Certification	horized to observe (pe t, to the best of my ab construction was obse n and Buffer Rules, th	, as a duly registered Professional Engineer in the State or eriodically, weekly, full time) the construction of the project ilities, due care and diligence was used in the observation of erved to be built within substantial compliance and intent of he approved plans and specifications, and other supporting n	of North for the f the the 401 naterials.				
	Signature		Registration No	-				
	Date							
	Completed hard copies ca NCDEQ Transportation P 1617 Mail Service Center Raleigh NC 27699-1617	n be emailed to <u>kristil</u> ermitting	l <u>ynn.carpenter@deq.nc.gov</u> or mailed to:					

STATE OF



Highway       North Carolina Department of Transportation         Highway Stormwater Program       Highway Stormwater Program         STORMWATER MANAGEMENT PLAN       FOR NCDOT PROJECTS											
WBS Element:	37944.1.FR5/50134	TIP No.:	R-2307B/I-571	7	County(ies):	Catawba Iredell				Page 1	of 6
				G	eneral Project l	nformation					
WBS Element:		37944.1.FR5/50	134.1.FS1	TIP Number:	R-2307B/I-571	7	Project	: Type:	Roadway Relocation	Date:	12/22/2017
NCDOT Contact:		Craig A. Freema	ın, PE			Contractor / Desig	jner:	TGS Engin	eers (David B. Petty, PE	)	
	Address:	1590 Mail Servio	e Center				Address:	706 Hillsbo	rough Street		
		Raleigh, NC 276	99-1590					Suite 200			
								Raleigh NC	, 27603		
	Phone:	919-707-6721					Phone:	<mark>919-773-88</mark>	87 ext. 104		
	Email:	cafreeman2@no	dot.gov				Email:	dpetty@tgs	engineers.com		
City/Town:			Moores	sville, NC		County(ies):	Cata	wba	Iredell		
River Basin(s):		Cat	awba			CAMA County?	N	0	No		
Wetlands within Pro	ject Limits?	Yes									
					Project Desc	ription					
Project Length (lin. )	miles or feet):	6.94	miles	Surrounding	Land Use:	Commercial, Mediu	Im Density Res	sidential			
				Proposed Project	ct				Existing Site	9	
Project Built-Upon A	vrea (ac.)		121.0		ac.			69.0	ac.		
Typical Cross Section	on Description:	four lane should	er section with 23	'+ grassed median	and four to six la	ane curb and gutter	two lane undi	vided should	ler section and four lane	undivided curb and	gutter section -
		section with 0' to	23' raised grass	ed median - all 12'	lanes		all 12' lanes				
Annual Avg Daily Tra	affic (veh/hr/day):	Design/Futur	e: t	58860	Year:	2039	Existing:		47900	Yea	r: 2019
General Project Narrative:       (Description of Minimization of Water         Quality Impacts)       The proposed project involves widening NC 150, an existing two & four-lane undivided arterial, to a four & six-lane median divided superstreet to improve vehicular mobility safety from Greenwood Rd (SR 1840) in Catawba County to US 21 in Iredell County. The existing 10-span, approximately 1170-ft long by 34-ft wide bridge will carry two westbour in place and transition from one lane in each direction to two eastbound lanes. A proposed 9-span, approx. 1210-ft by 52-ft wide bridge will carry two westbour ianes and a 10-ft multiuse path just upstream of the existing bridge. Bridge to be constructed from anchored barges. Existing causeways will be widened on the upstream using rock fill up to 2 ft above Duke Energy Full Pond elevation and then grassed sideslopes from there up. There are five proposed culvert extensions over UT's toward or project – riprap is proposed in base of channels to reduce discharge velocities.         Roadway runoff in the vicinity of the Lake Norman crossing is routed to two hazardous spill basins. Dry detention/filtration basins are proposed on sheets 14, 17(dry deter only) 19, 20 & 22 for both peak attenuation and treatment. Otherwise, stormwater diversion has been minimized. Grassed swales are used for treatment throughout the project to the maximum extent practicable.						r Lake Norman o westbound ie upstream side T's toward end of 7(dry detention ighout the project,					
					Waterbody Inf	ormation					
Surface Water Body	(1):	Catawb	a River (Lake No	rman below elevati	on 760)	NCDWR Stream In	Idex No.:		11.	-(75)	
NCDWR Surface Wa	ter Classification fo	r Water Body		Primary Classific Supplemental Cl	cation: lassification:	Water Supply I None	V (WS-IV)	C	Class B C	ritical Area (CA)	
Other Stream Classi	fication:	N	one								
Impairments:		N	one								
Aquatic T&E Species	s?	Yes	Comments	per EA: no effect	on Dwarf-flowere	ed heartleaf&Schwei	initz's sunflowe	er; unresolve	d on Northern long-eare	d bat	
NRTR Stream ID:								Buffer Rule	es in Effect:	(	Catawba
Project Includes Brid	dge Spanning Wate	r Body?	Yes	Deck Drains Dis	charge Over Bu	ffer?	No	Dissipator	Pads Provided in Buff	er?	N/A
Deck Drains Dischar	rge Over Water Bod	v?	No	(If yes, provid	le justification in	the General Project	Narrative)	(If yes, d	escribe in the General P	Project Narrative; if r	no, justify in the
(If yes, provid	de justification in the	General Project N	larrative)						General Pro	ject Narrative)	

Version 2.07; Released October 2016)			North Carolina Departme Highway Stormw STORMWATER MAN FOR NCDOT F					3		
WBS Element: 37944.1.FR5/50134	TIP No.:	R-2307B/I-571	7 County(ies):	Catawba Iredell			Page	2	of	6
			Additional Waterbo	dy Information						
Surface Water Body (2):		McCrar	y Creek	NCDWR Stream In	dex No.:	11-91				
NCDWP Surface Water Classification fr	w Water Body		Primary Classification:	Water Supply I	V (WS-IV)	Class B	Critical Are	ea (CA)		
NCDWR Surface Water Classification ic	Water Body		Supplemental Classification: None None		•					
Other Stream Classification:	Noi	ne								
Impairments:	Noi	ne								
Aquatic T&E Species?	Yes	Comments:	per EA: no effect on Dwarf-flowere	ed heartleaf&Schwei	nitz's sunflowe	er; unresolved on Northern lor	ng-eared bat			
NRTR Stream ID:						Buffer Rules in Effect:			N/A	
Project Includes Bridge Spanning Wate	r Body?	No	Deck Drains Discharge Over Bu	ffer?	N/A	Dissipator Pads Provided	in Buffer?		N/A	
Deck Drains Discharge Over Water Bod	ly?	N/A	(If yes, provide justification in	the General Project	(If yes, describe in the Ge	eneral Project Na	arrative; if r	no, justify in	the	
(If yes, provide justification in the	General Project Na	eneral Project Narrative) General Project Narrative)								

(Version 2	07; Released October 2016)	North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NODOT PROJECTS									Page			<b>S</b>	
	WBS Element	37944.1.FR5	TIP NO.:	R-2307B/I-5	0/1/	County(les):	Catawba Iredeli					Page	3	OT	6
							Swales		-		-		-		
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
4	-Y- 10+50 RT -Y- 11+00 RT	(1)Catawba River (Lake	0.0	3.0	3.0	0.3	33	50	2.30%	0.6	1.4	0.7	1.5	No	Yes
4	-L- 433+00 LT -L- 434+00 LT	(1)Catawba River (Lake	0.0	6.0	6.0	1.0	100	100	2.40%	3.0	1.9	3.9	2.0	No	Yes
5	-L- 436+50 RT -L- 440+00 RT	(1)Catawba River (Lake	0.0	6.0	4.0	1.0	103	350	2.60%	2.6	1.9	3.3	2.0	No	Yes
5	-L- 443+20 RT -L- 445+65 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.5	50	245	2.60%	1.3	1.6	1.7	1.7	No	Yes
5	-L- 440+20 LT -L- 442+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	0.7	72	230	2.60%	2.1	1.8	2.7	1.9	No	Yes
5	-L- 442+50 LT -L- 445+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	0.9	85	300	2.60%	2.3	1.9	3.0	2.3	No	Yes
5/6	-L- 445+50 LT -L- 450+00 LT	(1)Catawba River (Lake	0.0	6.0	4.0	1.0	97	450	0.3 to 2.2%	2.6	1.9	3.4	2.0	No	Yes
6	-L- 449+00 MED -L- 453+50 MED	(1)Catawba River (Lake	0.0	3.0	4.0	0.4	41	50	1.0 to 0.7%	1.2	1.2	1.5	1.3	No	Yes
6	-L- 453+50 MED -L- 457+50 MED	(1)Catawba River (Lake	0.0	3.0	4.0	0.7	72	400	0.50%	1.9	1.2	2.5	1.3	No	Yes
6	-L- 457+50 MED -L- 459+00 MED	(1)Catawba River (Lake	0.0	4.0	4.6	0.3	31	150	0.50%	0.8	0.8	1.0	0.9	No	Yes
6/7	-L- 459+00 MED -L- 465+50 MED	(1)Catawba River (Lake	0.0	4.0	4.6	1.1	114	650	0.30%	2.9	1.1	3.8	1.2	No	Yes
8	-L- 478+00 MED -L- 479+25 MED	(1)Catawba River (Lake	0.0	5.0	4.0	0.3	26	125	0.40%	0.6	0.7	0.8	0.7	No	Yes
8	-L- 479+25 MED -L- 481+50 MED	(1)Catawba River (Lake	0.0	5.0	4.0	0.6	63	225	0.40%	1.5	1.0	1.9	1.1	No	Yes
8	-L- 481+50 MED -L- 485+00 MED	(1)Catawba River (Lake	0.0	4.4	4.0	0.7	71	350	0.30%	1.9	1.0	2.5	1.0	No	Yes
8	-L- 485+00 MED -L- 488+50 MED	(1)Catawba River (Lake	0.0	4.4	4.0	0.6	60	350	0.30%	1.7	1.0	2.3	1.0	No	Yes
9	-L- 497+50 RT -L- 499+50 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.4	42	200	3.00%	1.1	1.7	1.5	1.8	No	Yes
9	-L- 501+00 RT -L- 506+00 RT	(1)Catawba River (Lake	0.0	3.0	3.0	1.9	193	500	0.40%	5.3	1.6	6.9	1.8	No	Yes
9	-L- 503+50 LT -L- 505+00 LT	(1)Catawba River (Lake	0.0	4.0	6.0	0.4	44	150	0.60%	0.8	0.8	1.0	0.9	No	Yes
9*	-Y2- 13+00 LT -Y2- 14+40 LT	(1)Catawba River (Lake	2.0	4.0	4.0	1.5	152	95	1.90%	3.5	1.9	4.5	2.0	No	Yes
							1.0								

Swales have been added to attenuate runoff and promote sedimentation and infiltration before discharging through the riparian buffer. Where slope (and drainage area/discharge) vary, max. applicable velocity is entered. \*200+ ft of existing swale upstream of Sheet 9 -Y2- swale.

(Version 2	.07; Released October 2016)					North Carolin Highy STORMV	na Department of T way Stormwater Pr VATER MANAGEM FOR NCDOT PROJECT	Transportatio rogram ENT PLAN	on						۶
-	WBS Element:	: 37944.1.FR5	TIP No.:	R-2307B/I-5	5717	County(ies):	Catawba Iredell					Page	4	of	6
							Swales								
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
9	-Y2- 13+70 RT -Y2- 14+40 RT	(1)Catawba River (Lake	0.0	4.0	4.0	0.4	44	70	1.30%	1.2	1.6	1.6	1.7	No	Yes
10	-L- 505+50 LT -L- 508+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	1.1	110	300	0.3 to 2.0%	2.4	2.0	3.1	2.2	No	Yes
10	-L- 516+00 RT -L- 517+50 RT	(1)Catawba River (Lake	6.0	3.0	3.0	1.7	170	150	2.00%	5.4	2.0	7.0	2.2	No	Yes
11	-L- 523+50 RT -L- 525+75 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.5	46	225	3.10%	1.3	1.8	1.7	1.9	No	Yes
11	-L- 526+50 RT -L- 529+50 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.8	82	300	2.4 to 0.8%	2.4	1.9	3.1	2.4	No	Yes
11	-L- 527+50 LT -L- 529+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	0.5	46	200	2.30%	1.3	1.8	1.7	2.0	No	Yes
12*	-L- 532+50 RT -L- 534+00 RT	(1)Catawba River (Lake	2.0	4.0	4.0	2.7	273	150	0.80%	6.4	1.9	8.3	2.0	No	Yes
12*	-L- 539+50 RT -L- 541+00 RT	(1)Catawba River (Lake	2.0	3.0	3.0	1.7	167	150	1.40%	4.7	1.8	6.1	2.3	No	Yes
12*	-L- 546+00 RT -L- 547+50 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.3	34	150	2.90%	1.0	1.9	1.3	2.0	No	Yes
25	-Y31- 29+85 LT -Y31- 31+50 LT	(1)Catawba River (Lake	0.0	6.0	4.0	1.1	110	165	1.70%	1.9	1.5	2.5	1.9	No	Yes
25	-Y31- 34+60 LT -Y31- 35+50 LT	(1)Catawba River (Lake	0.0	6.0	6.0	0.4	40	90	1.50%	0.9	1.2	1.2	1.2	No	Yes
25	-Y31- 29+63 RT -Y31- 31+50 RT	(1)Catawba River (Lake	0.0	6.0	4.0	0.7	70	187	1.00%	1.2	1.1	1.5	1.2	No	Yes
25	-Y31- 34+10 RT -Y31- 36+70 RT	(1)Catawba River (Lake	0.0	6.0	4.0	1.6	160	260	1.80%	3.6	1.8	4.7	1.9	No	Yes
33	-Y17- 27+00 RT -Y17- 34+50 RT	(1)Catawba River (Lake	0.0	4.0	4.0	1.1	112	750	1.9 to 0.3%	1.8 to 3.1	1.9	2.4 to 4.0	2.1	No	Yes
35**	-Y26A- 19+20 RT -Y26A- 20+15 RT	(2)McCrary Creek	4.0	3.0	3.0	2.6	260	65	0.30%	9.2	1.5	11.9	1.6	No	Yes
36***	-Y39- 13+50 RT -Y39- 14+25 RT	(1)Catawba River (Lake	6.0	4.0	3.0	2.3	230	75	2.10%	5.9	2.0	7.7	2.2	No	Yes
6	-L- 455+50 LT -L- 457+50 LT	(1)Catawba River (Lake	0.0	3.0	4.0	0.2	21	200	0.40%	0.4	0.7	0.6	0.7	No	Yes
	2	-													
		-													
						A	Additional Commer	nts							

Swales have been added to attenuate runoff and promote sedimentation and infiltration before discharging through the riparian buffer.

Where slope (and drainage area/discharge) vary, max. applicable velocity is entered. \*Sheet 12 has three separate swales inline for total DA of 2.73 ac (recommend treatment=273 ft) with 450 ft provided. \*Sheet 35 swale ties into an existing 115 ft swale. \*\*\* 400+ ft of existing swale upstream of Sheet 36 swale.

(Version 2.07;	North Carolina Department of Transportation       Image: Construction         Highway Stormwater Program       STORMWATER MANAGEMENT PLAN         rsion 2.07; Released October 2016)       FOR NCDOT PROJECTS											
	WBS Element:         37944.1.FR5/50134.1.         TIP No.:         R-2307B/I-5717         County(ies):         Catawba         Iredell         Page         5         of											
				Level Sprea	aders, Hazardo	us Spill Basins, and Forebays						
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Level Spreader, Hazardous Spill Basin, or Forebay?	Drainage Area (ac)	New Built- Upon Area (ac)	Required / Minimum Treatr	Required / Minimum Treatment Achiev		eatment Achieved		ient ved	BMP Associated w/ Buffer Rules?
6	-L- 457+69 LT N: 35 60434 F: -80 94847	(1)Catawba River (Lake	Hazardous Spill Basin	9.6	3.60	2yr, tc=10 min, td= 5 min storm runoff + 1,550 cf (cf)	9474.0	cf	9721.0	cf	N/A	
8	-L- 488+59 RT N: 35.60578, E: -80.93816	(1)Catawba River (Lake	Hazardous Spill Basin	17.7	4.60	2yr, tc=10 min, td= 5 min storm runoff + 1,550 cf (cf)	15449.0	cf	15541.0	cf	N/A	
14	<u>-L- 560+88 RT</u> N: 35.60149, E: -80.91484	(1)Catawba River (Lake	Forebay	12.9	1.6	0.1 inches of runoff from NBUA	581.0	cf	3753.0	cf	Yes	
19	-L- 634+54 RT N: 35.59951, E: -80.89236	(1)Catawba River (Lake	Forebay	10.5	4.30	0.1 inches of runoff from NBUA	1561.0	cf	3312.0	cf	Yes	
20	-L- 655+67 LT N: 35.59840, E: -80.88523	(1)Catawba River (Lake	Forebay	35.2	4.60	0.1 inches of runoff from NBUA	1670.0	cf	4257.0	cf	Yes	
22	-L- 677+04 RT N: 35.59578, E: -80.87873	(1)Catawba River (Lake	Forebay	15.0	2.70	0.1 inches of runoff from NBUA	980.0	cf	2430.0	cf	Yes	
		-										
		-										
		-										
		-										
		-										
		-										
		-										
*Hazardous	spill basins are pollution prevention r	measures desig	ned for spill containmer	t rather than sto	ormwater treatm	ent. Under Required / Minimum Treatment an	d Treatment	Achieved	l, provide the	e minimu	m required volume	

"Hazardous spill basins are pollution prevention measures designed for spill containment rather than stormwater treatment. Under Required / Minimum Treatment and Treatment Achieved and the actual HSB volume, respectively. Refer to the NCDOT Stormwater Best Management Practices Toolbox (2014) for design guidance.

Additional Comments

Two hazardous spill basins have been provided at the Lake Norman crossing to protect against the accidental spill of hazardous materials due to NC 150 being classified as an arterial and the crossing being within 1/2 mile of the critical area of a water supply source classified as WS-IV. Roadway and adjacent ditch runoff on the bridge, causeways and each adjacent sag is routed to these basins. Forebays used to provide pretreatment by diffusing flow and removing debris for the basins shown on SMP sheet 6.

(Version 2.07;	North Carolina Department of Transportation       Highway Stormwater Program         STORMWATER MANAGEMENT PLAN         Version 2.07; Released October 2016)									
WBS	Element: 37944.1.FR5/50134.1.FS1		TIP No.: R-2307B/I-5717	Catawba Iredell	Page 6	of 6				
	Other Best Management Practices									
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	ВМР Туре	Drainage Area (ac)	New Built-Upon Area (ac)	Volume Treated (ac-ft)	Precipitation Depth Treated over NBUA (in)	BMP Associated w/ Buffer Rules?		
14	-L- 560+88 RT N: 35.60149. E: -80.91484	(1)Catawba River (Lake	Dry Detention Basin/Filtration Basin	12.9	1.6	0.547	4.32	Yes		
17	-L- 602+99 RT N: 35.60326, E: -80.90193	(1)Catawba River (Lake	Dry Detention Basin	11.5	2.5	0.392	1.98	Yes		
19	-L- 634+54 RT N: 35.59951, E: -80.89236	(1)Catawba River (Lake	Dry Detention Basin/Filtration Basin	10.5	4.3	0.577	1.69	Yes		
20	-L- 655+67 LT N: 35.59840, E: -80.88523	(1)Catawba River (Lake	Dry Detention Basin/Filtration Basin	35.2	4.6	0.873	2.40	Yes		
22	-L- 67/+04 RT N: 35.59578, E: -80.87873	(2)McCrary Creek	Dry Detention Basin/Filtration Basin	15.0	2.7	0.341	1.59	Yes		
		-								
		_								
		_								
		_								
		_								
-										
		_								
			A	dditional Comments						
Dry detentior downgrade e	basins have been incorporated to account fo rosion. Filtration basins have been used to fil	r the increase in im ter stormwater and	pervious area and the extension of curb a reduce pollutants and solids. Forebays h	& gutter section by attenuate also been used to pr	lating the 10-yr peak basi ovide pretreatment by dif	n outflow to at or below the ex fusing flow and removing deb	kisting peak discharge, and t ris.	hereby minimizing		













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TGS	GS ENGINEERS	PROJECT REFERENCE NO	D. SHEET NO.
	ALEIGH, NC 27603	R-2307B / 1-5	17/7 <u>40</u>
	LICENSE NO.: C-0275	ENGINEER	ENGINEER
EXISTING GROUND			
LEFT DITCH GRADE			
RIGHT DITCH GRADE			
SHEET	9 OF 22	_	
		DOCUMENT NOT O	ONSIDERED FINAL
		UNLESS ALL SIGNA	
			010
			800
			790
			780
END_MED_GRASS	ED-SWATE		//0
-1 = L = STA 488+00 EL = 773.56	MED		
			760
			700
			750
			740
			730
			700
			/20
			710
			710
			700
			690
			680
			470
			0/0
			660
			650
			640
487	488	489	490























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				WE	LAND IMPA	CTS			SURFA	CE WATER IN	/IPACTS	
							Hand			Existing	Existing	
			Permanent	Temp.	Excavation	Mechanized	Clearing	Permanent	Temp.	Channel	Channel	Natura
Site	Station	Structure	Fill In	Fill In	in	Clearing	in	SW	SW	Impacts	Impacts	Strear
No.	(From/To)	Size / Type	Wetlands	Wetlands	Wetlands	in Wetlands	Wetlands	impacts	impacts	Permanent	Temp.	Desig
			(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ac)	(ft)	(ft)	(ft)
1	-L- 453+21/453+40 LT	18" PIPE						0.001	0.006			
2	-L- 458+40/458+74 LT	36" CSP						0.006	0.016			
3	-L- 458+21/467+07 LT	ROCK CAUSEWAY						3.079	0.070			
4	-L- 476+33/488+33 LT	ROCK CAUSEWAY						3.859	0.162			
5	-L- 487+17/488+00 LT	42" PIPE						0.014	0.019			
6	-L- 519+88/520+50 RT	30" PIPE						0.020	0.064			
7**	-L- 554+25/554+82 LT	24" PIPE	0.051			0.010		0.011		117		
8	-L- 755+17/755+36 LT	60" RCP						0.013		39		
9	-L- 755+24/755+53 RT	60" RCP						0.010	0.002	68	17	
10	-L- 784+30/784+87 RT	5'x'6 RCBC EXTENSION						0.013	0.003	97	20	
11	-L- 792+60/793+23 RT	60" RCP						0.004	0.001	98	19	
12	-L- 793+40/793+49 LT	60" RCP						0.003	0.002	27	20	
			0.051			0.010		7.033	0 3/15	116	76	
17120 .			0.001			0.010		7.000	0.040	110	10	
ounded t	otals are sum of actual im	ipacts										
TEQ												
2 acres of	f Permanent SW impacts for t	oridge interior bents at 466+75, 46	7+75, 469+25, 47	0+75, 472+25	5. 473+75. 475	+25 and 476+7	5.					στλτιΩ
Site 7 we	etland is accounted for as a to	tal take per 4C meeting minutes.			,,,				NC D		OF HIGHWAV	S S
										1/20	2/2024	5
												TIDO
										CALAW RATIRE	, , , , , , , , , , , , , , , , , , , ,	TTP.S



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			RIPARI		UFFER	IMPAC	TS SL	JMMA	RY		
							IMPACT				
				TYPE		AL	LOWABL	MITIGABLE			
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TOTAL (ft <sup>2</sup> )	ZONE 1 (ft <sup>2</sup> )	ZONE 2 (ft <sup>2</sup> )	TC (
1	Roadway	-L- 436+90/437+28 LT			х					415	4
2	Roadway	-L- 439+50/439+85 LT			х					474	4
3	Ditch	-L- 452+83/453+36 LT			х	1,072	882	1,954			
4	Ditch	-L- 457+90/458+53 LT	х			1,254	1,125	2,379			
5	Roadway	-L- 457+71/458+93 LT	х						5,565	3,820	9
6	Roadway	-L- 485+78/488+83 LT	х						11,213	4,284	15
7	Shoreline Protection	-L- 488+18/488+35 RT	х				225	225			
8	Roadway	-L- 493+96/495+76 RT			х				3,364	5,171	8
9	Ditch	-L- 519+85/520+46 RT			х	1,962	1,262	3,224			
10	Temp. S&EC	-L- 522+76/523+07 LT			х					766	
		•									
TOTAL:						4,288	3,494	7,782	20,142	14,929	34

Notes:

There are no wetland impacts within buffer impacts on this project.

N.C. DE DI\

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	BUFFER								
	REPLACEMENT								
OTAL	ZONE 1	ZONE 2							
(ft <sup>2</sup> )	(ft <sup>2</sup> )	(ft <sup>2</sup> )							
415									
474									
9,385									
5,497									
8,535									
34 306	0.0	0.0							
, , , , , , , , , , , , , , , , , , ,	0.0	0.0							
	TRANSDOPT	ΔΤΙΩΝ							
EPT. OF TRANSPORTATION IVISION OF HIGHWAYS									
R-2307									
CT: 3794	4WBA/ IREDELL COUNTIES CT: 37944.1.FR5 / 50134.1.FS1								
DATE	1/29/2024								