



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

June 10, 2019

MEMORANDUM TO: Mr. Mike Mills, P.E.
Division 7 Engineer

FROM: Philip S. Harris, III, P.E., Manager *Carla Dagnino*
for Environmental Analysis Unit

SUBJECT: Guilford County; Greensboro Eastern Loop from US 70 Relocation to
SR 2303 (Lawndale Drive); WBS 34821.1.1; **TIP U-2525B & C.**

Attached are the U.S. Army Corps of Engineers Nationwide Permit, N.C. Division of Water Resources Water Quality Certification, and Jordan Lake Watershed Buffer Authorization. All environmental permits have been received for the construction of this project.

A copy of this permit package will be posted on the NCDOT website at:

<https://xfer.services.ncdot.gov/pdea/Permlssued/>

Named: U-2525B_C Modification and Extension Guilford June 10 2019

cc: w/o attachment (see website for attachments)

Mr. Ron Davenport, P.E. Contracts Management
Ms. Jerry Parker, Division 7 Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Mr. Carl Barclay, P.E., Utilities Unit
Mr. Stephen Morgan, P.E., Hydraulics Unit
Mr. Brian Hanks, P.E., Structures Management Unit
Mr. Mark Staley, Roadside Environmental Unit
Mr. Lamar Sylvester, P.E., State Roadway Construction Engineer
Ms. Laura Sutton, P.E., Project Delivery
Ms. Beth Harmon, Division of Mitigation Services
Ms. Cheterra Sheff, Single Audit Compliance

PROJECT COMMITMENTS

TIP Project No. U-2525B and U-2525C
Greensboro Eastern Loop from US 70 Relocation
to SR 2303 (Lawndale Drive)
Guilford County
WBS Element 34821.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Project Development and Environmental Analysis Unit/ Human Environment Section

Noise abatement measures will continue to be considered throughout the design phase of the project.

U-2525B NOTES: Based on the noise wall survey results, the noise wall at the SR 2827 (Four Mile Loop Road) – Relocated US 70(Burlington Road) interchange will not be built. Landscape screening will be utilized instead of a noise wall. The landscape plans will be developed and planting will occur after the roadway construction is completed. Also, based on the noise analyses performed for the SR 2568 (Assembly Road) area at the US 29 interchange, the results showed that there are no anticipated noise impacts in accordance with NCDOT's Traffic Noise Abatement Policy. Noise abatement is not required for Quail Oaks subdivision.

The Kerenoff neighborhood service road redesign developed in 2011 was reviewed, and noise abatement is not required for Kerenoff subdivision.

The southeast quadrant of the US 29/Greensboro Loop interchange was reviewed since this interchange quadrant was not included in previous studies. A noise barrier was predicted to provide at least a 5 dB (A) noise reduction for three receptors, and as much as a 7 dB (A) noise level reduction for one front row receptor. However, the total area of the barrier per predicted benefited receptor was above the allowable square footage per benefit; therefore, a noise barrier in this location would not be reasonable and is not recommended for construction.

U-2525C NOTE: No noise walls meet feasible and reasonable justification within U-2525C project limits. Noise abatement measures shown on the U-2525C design plans are justified under the U-2524D project and will be constructed under U-2524D.

Sidewalks will be incorporated into the project. Further coordination is needed with the City of Greensboro regarding the specific sidewalk locations. A municipal agreement will be executed for Greensboro's participation.

NOTES: According to NCDOT's Pedestrian Policy guidelines, any pedestrian facilities that the City of Greensboro wishes to incorporate into the project plans must be sent in writing to NCDOT by the Project Final Field Inspection (FFI) date.

The City of Greensboro has verbally requested that sidewalks be incorporated into all proposed curb and gutter construction along –Y- lines. NCDOT will provide the City with cost estimates to initiate the municipal agreement process.

Response to NOTES: The municipal agreement is currently being finalized for signatures.

U-2525C NOTE: Sidewalks and wider proposed structures to accommodate the City of Greensboro's future plans to add features such as sidewalk and bike lanes will be incorporated into the project. The wider proposed structures over the Greensboro Loop are requested at the following locations: SR 2526 (Summit Avenue), SR 2523 (Yanceyville Road), and N. Church Street. Further coordination will be needed with the City of Greensboro to discuss costs. A municipal agreement will be executed for Greensboro's participation.

Hydraulics Unit

The final designs will be coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway and floodplain regulations.

NOTE: Standard Commitment.

The design of any necessary drainage structures at greenways will be coordinated with the Guilford County Parks and Recreation Department.

NOTE: There are no greenways located within the U-2525B or U-2525C project limits.

Bridges will be considered during the design phase at major waterway and floodplain crossings.

U-2525B NOTE: Bridges span North Buffalo Creek and the bridge at SR 2825 (Camp Burton Road) was lengthened to span an unnamed tributary of North Buffalo Creek and wetlands.

U-2525C NOTE: No proposed bridges over waterways or floodplain crossings are needed based on the limited drainage area sizes located within the U-2525C project limits.

Location & Surveys Unit

Geodetic survey control monuments will be located during design and the U.S. Coastal and Geodetic Survey and North Carolina Geodetic Survey will be notified of their location.

NOTE: Standard commitment.

Roadside Environmental Unit, Hydraulics Unit, and Division 7

NCDOT's "Best Management Practices for Protection of Surface Waters" will be implemented, where applicable, including hazardous spill catch basins in water supply watershed critical areas where the roadway crosses a water supply.

NOTE: Standard commitment.

U-2525C NOTE: For portions of the project that drain to the Reedy Fork (Lake Brandt, Lake Townsend) section, sedimentation and erosion control measures shall adhere to NCDOT's "Design Standards in Sensitive Watersheds".

Geotechnical Unit and Division 7

Any underground storage tanks discovered during construction will be reported to the North Carolina Division of Environmental Management.

NOTE: Standard Commitment.

Project Development and Environmental Analysis Unit

Mitigation for unavoidable wetland loss will be provided through implementation of a wetland mitigation plan developed during the permitting phase of the project.

NOTE: Standard Commitment.

Recommendations to restore stream segments to resemble the destroyed habitat will be considered where practicable. Banks and beds of relocated channels will be stabilized with vegetation or other protective devices as practicable, including consideration of using logs to line banks.

NOTE: NCDOT plans to use on-site stream mitigation, including relocation, restoration, and enhancement to offset unavoidable impacts to existing streams caused by the Greensboro Eastern Loop construction.

Response to NOTE: The on-site mitigation commitment has been fulfilled. NCDOT has provided 2,055 LF of on-site stream mitigation at three sites through stream relocation and restoration. The remainder of the mitigation will be provided by the Ecosystem Enhancement Program (EEP) Division of Mitigation Services (DMS).

Surveys for small whorled pogonia will be required for U-2525B due to the presence of potential, but limited, habitat. These surveys will be conducted within two to three years of the project Let date.

NOTE: Small whorled pogonia surveys will be conducted within the project area later this year (2012) in the appropriate season.

Response to NOTE: Surveys for small whorled pogonia were conducted by Atkins, Inc. biologists on June 13-15 and June 18-19, 2012 in areas of suitable habitat. No specimens were found. A review of the North Carolina Natural Heritage Program (NCNHP) database on November 13, 2013, indicated no occurrences of small whorled pogonia within one mile of the project study area. Therefore, the biological conclusion of 'No Effect' was determined for small whorled pogonia which will remain valid for five years. Surveys for small whorled pogonia were conducted within the U-2525C footprint on June 8 and July 1, 2014. No specimens were found and the biological conclusion remains 'No Effect'.

A combined Screening ICE and ICE Land Use Scenario Assessment will be completed prior to obtaining permits for the project.

NOTE: The ICE and ICE Land Use Scenario Assessment report was completed on October 30, 2009.

NCDOT will mitigate for all of the wetland and stream impacts contained within Quadrant D of the US 29 interchange including areas not directly impacted by construction.

NOTE: The permit included this mitigation.

U-2525 B and C will be permitted together using a phased permit. Preliminary plans for U-2525 C will need to be submitted when permit drawings for U-2525 B are submitted.

NOTE: The permit included this commitment.

Project Development and Environmental Analysis Unit and Division 7 **Historic Architecture Stipulations:**

1. *Recordation:*
Prior to the initiation of construction, NCDOT will record the existing condition of the Schoolfield-Hatcher Farm and its surroundings in accordance with the attached Historic Structures and Landscape Recordation Plan.

NOTE: The Schoolfield-Hatcher Farm Historic Structures and Landscape Recordation Plan was completed in October 2010.

2. *Landscape Plan:*
In consultation with SHPO and the property owner, NCDOT will develop a landscape plan for the Schoolfield-Hatcher property. Installation of plantings will be limited to the non-wooded areas of the parcel north and east of the

roadway. As the installed plantings mature, they are intended to form a natural buffer between the roadway and the farm's primary structures. NCDOT will replace in kind any landscape elements which die within two years of installation.

NOTE: The Schoolfield-Hatcher Farm landscape plan was developed and approved by the State Historic Preservation Office on January 21, 2014. See Appendix A for the landscape plan. A separate contract for landscaping will be developed by Division 7, and the landscaping will be installed after the roadway construction is completed. NCDOT will replace in kind any landscape elements planted as a buffer for the Schoolfield-Hatcher property which die within two years of installation.

3. *Shifted Roadway Alignment:
The original middle alternative alignment (ALT-1) will be shifted away from the farm's primary structures as described in the shifted alternative (ALT-2).*

NOTE: The alignment was shifted as described in the shifted alternative (ALT-2) to reduce impacts to the Schoolfield-Hatcher Farm.

4. *Access:
The new transportation facility with control-of-access fencing will divide the farm into two discontinuous parcels. Access to the first parcel, containing the house and primary farm structures, will be retained via the current driveway. NCDOT will provide a cul-de-sac to allow access to the second parcel.*

NOTE: The driveway and cul-de-sac are included in the U-2525B final design plans.

Division 7, Right of Way Unit, Environmental Analysis Unit – Archaeology Group
Archaeological Commitments:

1. *Archaeological Monitoring
The NCDOT will monitor initial ground-disturbing activities within the property limits of Sites 31GF452** (Schoolfield-Hatcher Farm, U-2525B) and 31GF466 (Site in SE Quadrant of the proposed SR 2352 (North Elm Street) interchange, U-2525C) in accordance with the attached Archaeological Monitoring Plan.*

Archaeological Monitoring Plan (to be included in the construction contract proposal)

*NCDOT (Archaeology Group) Contact Information:
Matt Wilkerson, Archaeology Group Leader, 919-707-6089
Paul J. Mohler, Archaeologist, 919-707-6080*

- *The contractor will contact the NCDOT (Archaeology Group) when ground-disturbing activities are anticipated within the property limits of Site 31GF452** (Schoolfield-Hatcher Farm) and Site 31GF466 (i.e., SE quadrant of Elm Street Interchange).*

- *The contractor will provide 48-hours notice to the NCDOT (Archaeology Group) prior to ground-disturbing activities within the property limits of Site 31GF452** (Schoolfield-Hatcher Farm) and Site 31GF466 (i.e., SE quadrant of Elm Street Interchange). The 48-hour period will begin upon acknowledgment by the NCDOT (Archaeology Group) that the contractor has contacted them.*
- *The NCDOT (Archaeology Group) will be on-site during ground-disturbing activities in order to monitor said activities within the property limits of Site 31GF452** (Schoolfield-Hatcher Farm) and Site 31GF466 (i.e., SE quadrant of Elm Street Interchange). Monitoring activities may include, but not be limited to: 1) cleaning and photographing areas exposed during construction, 2) mapping both plan and profile views of open trenches, and 3) collecting materials or artifacts exposed during construction. The NCDOT (Archaeology Group) will have the authority to halt all construction work within the property limits of Site 31GF452** (Schoolfield-Hatcher Farm) and Site 31GF466 (i.e., SE quadrant of Elm Street Interchange) in order to assess the need for further archaeological excavations.*
- *Should archaeological resource(s) deemed eligible for the National Register of Historic Places (NRHP) be discovered during the monitoring phase as determined by the NCDOT (Archaeology Group), then all work will be halted within the limits of the NRHP resource and the State Historic Preservation Office will be contacted. As per the Memorandum of Agreement (MOA), the NC-HPO will consult with the NCDOT (Archaeology Group), on-site if necessary, in order to develop appropriate protection/mitigation measures for the resource(s). Appropriate measures for the resource(s) may include preservation in place, photographing and mapping, and/or additional archaeological excavations.*
- *Both the NC-HPO and the NCDOT (Archaeology Group) will agree upon and provide to the contractor a written description of the measures required for the resource(s). The description will include a schedule for implementing and completing the measures. Upon receipt of written confirmation from the NCDOT (Archaeology Group) that the resource measures have been completed, construction activities may resume in the location containing the resource.*

2. *U-2525C Archaeological Data Recovery*

Sites 31GF456 (Site near Summit Avenue, U-2525C) and 31GF466 (Site in SE Quadrant of the proposed SR 2352 (North Elm Street) interchange, U-2525C) are recommended as eligible for the National Register of Historic Places (NRHP). Both archaeological sites will be avoided by the Undertaking as currently designed; however, if design plans change prior to construction thereby causing an adverse impact to either of these sites, the NCDOT, in consultation with the NC-HPO and USACE will develop archaeological Data Recovery Plans (DRPs) in order to mitigate the adverse impact(s) to these sites. Given their proximity to the Undertaking, a visual barrier will be placed along the proposed ROW in order to avoid and prevent any disturbance(s) to these sites.

NOTE: Both sites are located within the U-2525C project limits and will be reviewed during future consultations for U-2525C.

Response to NOTE: U-2525C – Site 31GF466

This site was to be avoided by the Undertaking; however, design plans have changed thereby causing an adverse effect to this site. The NCDOT Archaeology Group, in consultation with the NC-HPO and USACE developed a Data Recovery Plan (DRP) in order to mitigate the adverse effect to Site 31GF466.

Data Recovery investigations were completed at Site 31GF466 in June 2017. Once concurrence on the fieldwork was received from the NC-HPO, the Right-of-Way Unit was notified by the NCDOT Archaeology Group in August 2017 so that they could proceed with any work on this property.

Response to NOTE: U-2525C – Site 31GF456

This site will be avoided by the Undertaking as currently designed; however if design plans change prior to construction thereby causing an adverse effect to this site, the NCDOT Archaeology Group, in consultation with the NC-HPO and USACE will develop a Data Recovery Plan (DRP) in order to mitigate the adverse effect to Site 31GF456.

Given the proximity of Site 31GF456 to the Undertaking, the Right-of-Way Unit will place a visual barrier (e.g. orange construction fencing) along the Proposed ROW/Controlled Access in order to avoid and prevent any inadvertent disturbance to Site 31GF456.

The Right-of-Way Unit will contact the NCDOT Archaeology Group prior to any ground-disturbing activities in order to obtain the location of Site 31GF456 for proper placement of the visual barrier.

3. Cemetery Removal and Relocation

*The May/Hudson Cemetery (Site 31GF445** in the NE quadrant of the proposed interchange at SR 2770 (Huffine Mill Road), U-2525 B) cannot be avoided and will be relocated in accordance with the provisions of NCGS Chapter 65.*

*U-2525B NOTE: The May/Hudson Cemetery (Site 31GF445**) was removed and relocated in June 2014 per North Carolina General Statute 65, in coordination with the Right-of-Way Unit.*

4. Access-Denied Areas

Of the five (5) areas not surveyed during the study due to denial of access, only the Louise Coble parcel (15.64 acres within the proposed SR 2770 (Huffine Mill Road) interchange, U-2525 B) is to be affected by the Undertaking and will require additional investigations once access has been granted or ROW has been acquired and prior to any construction activities.

NOTE: The Coble Parcel archaeological survey was completed in January 2014 and identified one archaeological site and two isolated finds with unknown prehistoric lithic components. None of the sites are recommended eligible for the NRHP, and no further archaeological investigation is recommended for this project as it is currently defined.

Project Development and Environmental Analysis Unit, Roadside Environmental Unit and Division 7

NCDOT will adhere to Design Standards for Sensitive Watersheds in the areas of the 5 unnamed tributaries (UTs) of South Buffalo Creek that drain into a section of the creek designated as Section 303(d) waters due to turbidity.

NOTE: Since South Buffalo Creek and its UTs are not listed on the 2012 303(d) Final List of Impaired Waters of North Carolina for turbidity or sedimentation, NCDOT will not need to adhere to Design Standards for Sensitive Watersheds as previously mentioned.

COMMITMENTS FROM PERMITTING

Division 7, Environmental Analysis Unit, and Hydraulics Unit

This permit only authorizes work on Section B of TIP U-2525. Construction on Section C of TIP U-2525 shall not commence until final design has been completed for this section, the permittee has minimized impacts to waters and wetlands to the maximum extent practicable, any modifications to the plans, and a compensatory mitigation plan, have been approved by the US Army Corps of Engineers (the Corps). Preliminary plans for U-2525C were provided with the August 28, 2013 application (Sheets 1-89) however, these plans are not to be used for construction purposes.

When final design plans are completed for U-2525C, a modification to the 401 Water Quality Certification shall be submitted with two copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. No construction activities that impact any wetlands, streams, surface waters, or buffers located in U-2525C shall begin until after the permittee applies for, and receives a written modification of the 401 Water Quality Certification from the NC Division of Water Quality.

NOTE: Final plans for U-2525C were submitted and permitted via Phased 404 and 401 Modification in December 2017.

Environmental Analysis Unit and Division 7

The Permittee shall fully implement the compensatory mitigation plan, entitled, Mitigation Plan Greensboro Eastern Loop, Guilford County North Carolina T.I.P Number U-2525B dated August 12, 2013 and revised March 17, 2014. The mitigation plan includes 14 plan sheets received on August 28, 2013 (OSM-1, OSM-1A, OSM-1B, OSM-2, OSM-2A, OSM-2B, OSM-2C, OSM-2D, OSM-2E, OSM-2F, OSM-3, OSM-4, OSM-5, OSM-6, OSM-7). These mitigation

plans are for the unavoidable impacts to 2,055 linear feet of streams. Activities prescribed by this plan shall be initiated prior to, or concurrently with, commencement of any construction activities within jurisdictional areas authorized by this permit. The permittee shall relocate and restore 2,055 linear feet of streams in accordance with the plan with the following conditions:

a) The permittee, NCDOT, is the party responsible for the implementation, performance and long term management of the compensatory mitigation project.

b) Any changes or modifications to your mitigation plan shall be approved by the Corps.

c) The permittee shall maintain the entire mitigation site in its natural condition, as altered by the work in the mitigation plan, in perpetuity. Prohibited activities within the mitigation site specifically include, but are not limited to: Filling; grading; excavating; earth movement of any kind; construction of roads, walkways, buildings, signs, or any other structure; any activity that may alter the drainage patterns on the property; the destruction, cutting, removal, mowing, or other alteration of vegetation on the property; disposal or storage of any garbage, trash, debris or other waste material; graze or water animals, or use for any agricultural or horticultural purpose; or any other activity which would result in the property being adversely impacted or destroyed, except as specifically authorized by this permit.

d) All mitigation areas shall be monitored for a minimum of 5 years or until deemed successful by the Corps in accordance with the monitoring requirements included in the mitigation plan.

Compensatory mitigation for impacts to 8,083 linear feet of streams at a replacement ratio of 1:1 is required. Partial compensatory mitigation for impacts to jurisdictional streams shall be provided by onsite stream relocations of 2,055 linear feet of stream. The onsite stream relocation shall be constructed in accordance with the design submitted in the August 27, 2013 application. All on-site mitigation sites shall be protected in perpetuity by a conservation easement or through NCDOT fee simple acquisition and recorded in the NCDOT Natural Environment Section mitigation geodatabase. Please be reminded that as-builts for the completed streams shall be submitted to the North Carolina Division of Water Resources 401 Wetlands Unit with the as-builts for the rest of the project. If the parameters of this condition are not met, then the permittee shall supply additional stream mitigation for the 2,055 linear feet of impacts. All channel relocations shall be allowed to stabilize for an entire growing season. All stream relocations shall have a 50-foot wide native wooded buffer planted on both sides of the stream unless otherwise authorized by this Certification. A transitional phase incorporating rolled erosion control product (RECP) and appropriate temporary ground cover is allowable. The stream mitigation site shall be monitored annually for five years or until success criteria are satisfied. Monitoring protocols shall follow the Monitoring Level I outlined in the Stream Mitigation Guidelines, April 2003. Success of the mitigation site shall be determined by the NCDWR during an on-site visit at or near the end of the monitoring period.

NOTE: The on-site mitigation commitment has been fulfilled. NCDOT has provided 2,055 LF of on-site stream mitigation at three sites through stream relocation and restoration. The remainder of the mitigation will be provided by the Division of Mitigation Services (DMS).

Human Environment Section and Division 7

The Permittee shall fully implement the Archaeological Monitoring Plan, which was one of the environmental commitments agreed to by NCDOT, and is listed on Page 5 of 8 of this Greensheet.

Permit Modification:

As a result of the 401 and 404 permit modifications issued March 18, 2016, the following special conditions were added due to modifications made near Permit Site 37 on U-2525B:

401 Condition 1: Downstream bi-monthly monitoring reports as described in the [March 9, 2016] application shall be submitted to NCDWR for review as soon as is practicable or within 15 days following the monitoring event.

404 Condition x: Within three days of the conclusion of bank stabilization installation described herein, the temporary wetland impact area shown on permit drawing Sheet 38A2 must be restored by re-establishing the pre-impact grade and contour, ameliorating areas of soil compaction by disking or similar means, and seeding with wetland seed mix comprised of native species.

404 Condition xx: NCDOT shall monitor the bank stabilization area described herein, as well as the stream bank within 200 feet up and downstream of the bank stabilization area, for further stream bank instability. Monitoring reports shall be submitted to the Corps beginning within two weeks of the conclusion of bank stabilization installation described herein, and continuing on a bi-monthly basis for a period of six months. These monitoring reports shall include geo-referenced color photographs of the bank stabilization area as well as the entire stream bank within 200 feet up and downstream of the bank stabilization area. In addition, the monitoring reports shall include narrative descriptions of the relative stability of the stream bank monitoring area and detailed descriptions of any stream bank erosion occurring within this area.

404 Condition xxx: In the event that stream bank erosion occurs within the stream bank monitoring area during the monitoring period, NCDOT shall provide a stream bank restoration or contingency plan for Corps review and approval.



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

May 28, 2019

Action ID: SAW-2005-21386

Mr. Philip S. Harris III, P.E., C.P.M.
Natural Environment Section Head
North Carolina Department of Transportation
Division of Highways
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Reference the Department of the Army (DA) permit issued on April 15, 2014, to Ms. Deborah Barbour of the North Carolina Department of Transportation, for impacts associated with the project identified as U-2525BC. The project is a 9.7 mile, four-lane/six-lane divided facility on new location extending from the US 70 relocation to SR 2303 (Lawndale Drive) in Greensboro, Guilford County, North Carolina. Section B of this project begins at the US 70 relocation and terminates at US 29, and Section C begins at US 29 and ends at SR 2303 (Lawndale Drive). Coordinates (in decimal degrees) for the site are: 36.089772° North, -79.697302° West for the eastern terminus and 36.141773° North, -79.825120° West for the western terminus.

The site contains portions of four (4) unnamed tributaries to South Buffalo Creek, twenty (20) unnamed tributaries to North Buffalo Creek, five (5) unnamed tributaries to an unnamed tributary at Camp Herman, fourteen (14) unnamed tributaries to Reedy Fork, a portion of Richland Creek, and ten (10) unnamed tributaries to Richland Creek, as well as 50 (50) adjacent wetland areas and five (5) open water ponds in the Cape Fear River Basin (8-Digit Cataloging Unit 03030002).

Impacts authorized by the permit (including U-2525C conceptual impacts) as well as subsequent permit modifications dated June 18, 2014, October 31, 2014, December 4, 2014, March 12, 2015, July 24, 2015, and March, 18, 2016 included: 1) the permanent placement of fill material into 23,467 linear feet of jurisdictional stream channel, 9.95 acres of adjacent riparian wetlands, and 2.32 acres of jurisdictional open waters and, 2) the temporary placement of fill material into 785 linear feet of jurisdictional stream channel and 0.31 acre of adjacent riparian wetlands associated with construction access and the relocation of utility lines.

In addition, permit modifications dated August 11, 2016, December 19, 2016, and November 28, 2017 released U-2525C Permit Sites 1-4, 4A, 5-9, 9A, 10, 10A, 11-13, 13A and B, 14, 15, 15A, 16, 17, 17A, 18, 18A, 19, 19A, and 20-23 for construction, including 1) the permanent placement of fill material into 12,238 linear feet of jurisdictional stream channel, 2.96 acres of adjacent riparian wetlands, and 1.52 acres of open water, and 2) the temporary placement of fill material into 1,059 linear feet of jurisdictional stream channel and 0.03 acre of adjacent riparian wetlands associated with construction access. Compensatory mitigation was implemented for the unavoidable impacts by payment into the North Carolina Ecosystem Enhancement Program, now known as the North Carolina Division of Mitigation Services (NCDMS), as well as permittee responsible mitigation referenced in the permit special conditions.

Also reference your permit modification request letter dated May 1, 2019, and revised information sent via email on May 24, 2019, proposing the following:

- 1) At U-2525C Permit Site 20, authorization of permanent discharge of fill material into an additional 11 total linear feet of stream channel,
 - a. Placing 26 additional linear feet of stream channel in a culvert resulting in permanent loss of waters;
 - b. Reducing the rip rap bank stabilization by 15 linear feet of stream channel;
- 2) The extension of the time limit to complete the authorized activities per General Condition "1", from December 31, 2019, to December 31, 2023.

The additional stream impacts proposed are a result of errors in the original fill line drawing on the previously authorized plan sheet, rather than a change in design or fill slope steepness. Following evaluation of the information submitted in your modification request, the U.S. Army Corps of Engineers, Wilmington District has determined that it is appropriate and reasonable and not contrary to the public interest, and no public notice is required for this modification. Therefore, the permit is modified as described in the May 1, 2019 permit modification request letter, including the requested additional stream impacts and time extension. This work must be constructed as follows:

- 1) for U-2525C Permit Site 20, as shown on the Wetland and Stream Impacts drawings for U-2525C (Permit Drawing Sheets 57A and 70) submitted in the revised information sent via email on May 24, 2019;

General Condition "1" of your permit is hereby modified to read:

"The time Limit for completing the work authorized ends on December 31, 2023. 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."

In addition, the following special conditions regarding additional compensatory mitigation have been incorporated:

x) In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.

All other conditions of the permit and subsequent modifications remain in effect as written. The U-2525BC project now totals permanent impacts to 23,070 linear feet of jurisdictional stream channel, 10.37 acres of adjacent riparian wetlands, and 2.14 acre of open water ponds, and 2) the temporary placement of fill material into 1,844 linear feet of jurisdictional stream channel and 0.34 acre of adjacent riparian wetlands, and 3) indirect impacts to 751 linear feet of stream channel. Should you have questions, contact Mr. David E. Bailey, Raleigh Regulatory Field Office at telephone (919) 554-4884, Extension 30.

FOR THE COMMANDER:


Sgt/ Robert J. Clark
Colonel, U.S. Army
District Commander

Copies Furnished with Attachment:

Ms. April Norton
Transportation Permitting Unit
Division of Water Resources
North Carolina Department of
Environment and Natural Resources
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

Mr. Jerry Parker
Division Environmental Supervisor, Division 7
North Carolina Department of Transportation
Post Office Box 14996
Greensboro, North Carolina 27415

Copies Furnished without Attachment:

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Mr. Chris Werner, P.E.
Technical Services Administrator
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Mr. Travis Wilson
North Carolina Wildlife Resources Commission
1718 Hwy 56 West
Creedmoor, North Carolina 27522

U.S. ARMY CORPS OF ENGINEERS

Wilmington District

Compensatory Mitigation Responsibility Transfer Form

Permittee: North Carolina Department of Transportation
Project Name: NCDOT/U-2525 B and C/Division 7

Action ID: SAW-2005-21386
County: Guilford

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: 03030002, Cape Fear River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
20,797				10.36		

*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: 03030002, Cape Fear River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
37,490.5				20.7		

Mitigation Site Debited: North Carolina Division of Mitigation Services (NCDMS)

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

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the 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 supersedes the Compensatory Mitigation Responsibility Transfer Forms dated April 14, 2014, October 31, 2014, December 4, 2014, July 23, 2015, and November 28, 2017 that were included as part of the DA Permit dated April 15, 2014 and subsequent Permit Modifications.
- This modification results in a net INCREASE in the number of stream credits required (52 additional), with no change in the number of wetland credits required, relative to the most recent Permit Modification (dated November 28, 2017).
- Additional on-site mitigation was required by special permit condition included in the original DA Permit dated April 15, 2014. This requirement has not changed as a result of this modification.

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: David Bailey
USACE Field Office: Raleigh Regulatory Field Office
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587
Email: David.E.Bailey2@usace.army.mil



USACE Project Manager Signature

May 28, 2019

Date of Signature

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

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 <http://regulatory.usacesurvey.com/> to complete the survey online.



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Director

May 28, 2019

Mr. Philip S. Harris, III, P.E., CPM
Natural Environment Section Head
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: REVISED - Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act and Jordan Lake Buffer Rules for the proposed improvements to Greensboro Eastern Loop from US 70 Relocation to SR 2303 (Lawndale Drive) in Guilford County, WBS No. 34821.1.1.1; TIP U-2525B and U-2525C; NCDWR Project No. 20130918 V. 11; Certification No. 3978.

Dear Mr. Harris:

Attached hereto is a modification of Certification No. 3978 originally issued to The North Carolina Department of Transportation (NCDOT) dated February 6, 2014 with subsequent modifications on the following dates: June 24, October 15, and December 11, 2014; March 18 and July 21, 2015; March 18, August 12, and December 20, 2016; and December 8, 2017. This modification will be Version 11.

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

Sincerely,

DocuSigned by:

Amy Chapman

9C9886312DCD474...
Linda Culpepper, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

David Bailey, US Army Corps of Engineers, Raleigh Field Office
Jerry Parker, Division 7 Environmental Supervisor
Della Moore, Division 7 Assistant
Colin Mellor, NC Department of Transportation
Carla Dagnino, NC Department of Transportation
Eric Cheely, NC Department of Transportation
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Division of Mitigation Services
April Norton, NC Division of Water Resources



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1617 Mail Service Center | Raleigh, North Carolina 27699-1611
919.707.9000

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

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact an additional 22 linear feet of jurisdictional streams at Site 20 in Guilford County. The project shall be constructed pursuant to the application dated May 1, 2019. The authorized impacts are as described below:

Stream Impacts in the Cape Fear River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Bank Stabilization in Intermittent Stream (linear ft)	Total Stream Impacts (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
20	620	15	635	--
Totals	620	15	635	--

Total Stream Impacts for Modification at Site 20: 635 linear feet

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

This approval is valid solely for the purpose and design described in your application (unless modified below). **All authorized activities and conditions associated with the original Water Quality Certification dated and received February 6, 2014 with subsequent modifications on June 24, October 15, and December 11, 2014; March 18 and July 21, 2015; March 18, August 12, and December 20, 2016; and December 8, 2017 still apply.** 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 total wetland fills for this project (now or in the future) exceed one acre, or if total impacts to streams (now or in the future) exceed 300 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the certification and any additional conditions listed below.

Additionally, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Conditions of Certification:

1. As a condition of this 401 Water Quality Certification, if bridge demolition occurs now or in the future, the bridge demolition 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)]
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)]

3. 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)]
4. 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]
5. 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)]
6. The dimension, 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)]
7. The use of riprap above the Normal High-Water Mark shall be minimized. Any riprap 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)]
8. 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)]
9. 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)]
10. Heavy equipment shall be operated from the banks rather than in the stream channel to minimize sedimentation and reduce the introduction of other pollutants into the stream. [15A NCAC 02H.0506(b)(3)]
11. 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)]
12. 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)]
13. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
14. 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]
15. 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)]
16. A copy of this Water Quality Certification shall be maintained on the construction site always. 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)]

17. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification. [15A NCAC 02H.0501 and .0502]
18. The issuance of this certification does not exempt the Permittee from complying with 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.
19. 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)]
20. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer (or whomever is the authorized agent if a non-NCDOT project) 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)]
21. 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.0506(b)(2)]
22. 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 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)]
23. 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 to protect surface waters standards [15A NCAC 02H.0506(b)(3) and (c)(3)]:
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
24. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]
25. All sediment and erosion control devices shall be removed, and the natural grade restored within two (2) months of the date that the Division of Energy, Mining and Land Resources (DEMLR) or locally delegated program has released the specific area within the project. [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.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-providing the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel
Department of Environmental Quality
1601 Mail Service Center

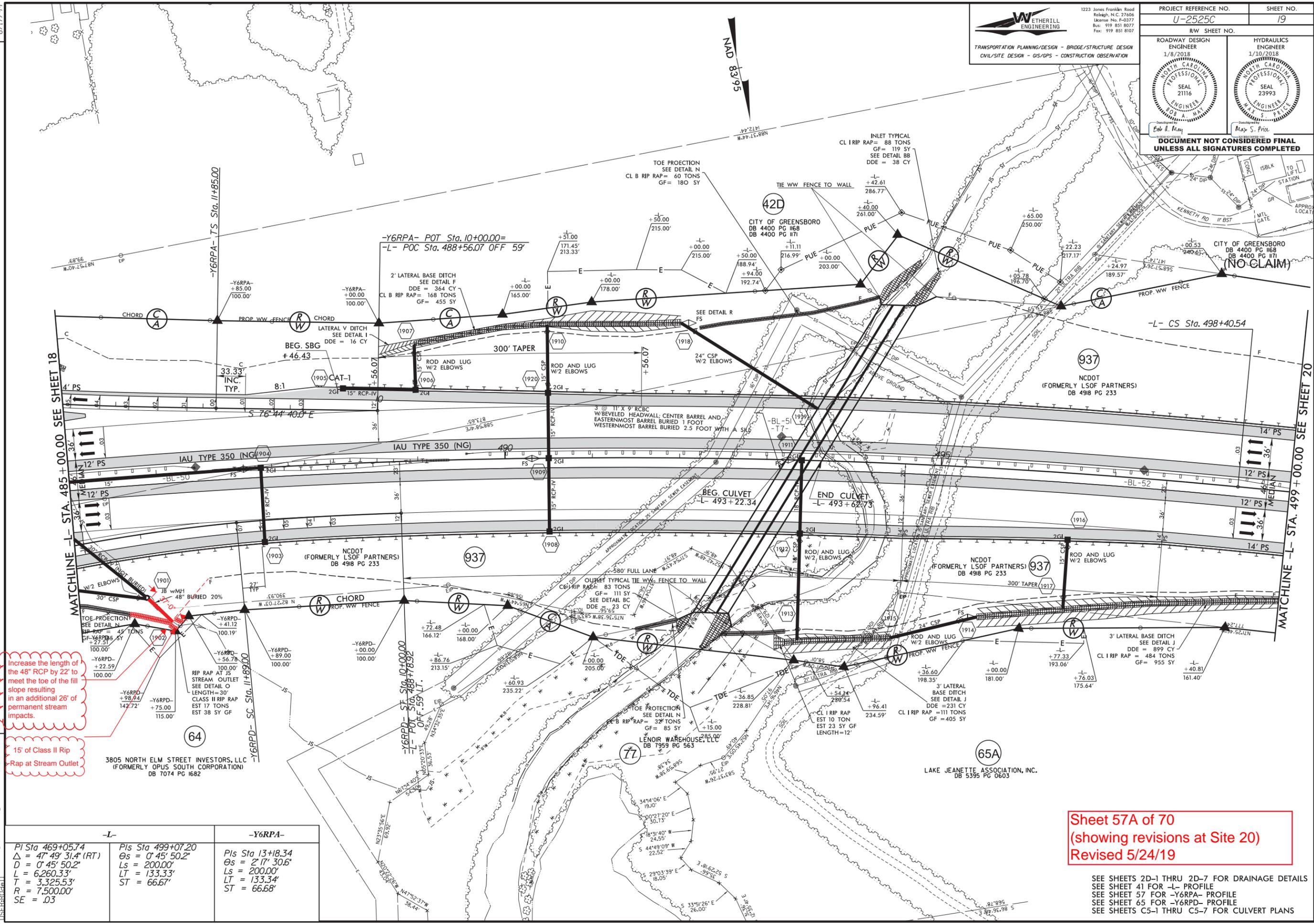
This is the 28th day of May 2019

DIVISION OF WATER RESOURCES

DocuSigned by:

99886312DCD474
Linda Culpepper, Director

WQC No. 3978__



REVISIONS

Increase the length of the 48" RCP by 22' to meet the toe of the fill slope resulting in an additional 26' of permanent stream impacts.

15' of Class II Rip Rap at Stream Outlet

-L-	-Y6RPA-
Pls Sta 469+05.74 $\Delta = 47^{\circ} 49' 31.4" (RT)$ $D = 0' 45' 50.2"$ $L = 6,260.33'$ $T = 3,325.53'$ $R = 7,500.00'$ $SE = .03$	Pls Sta 499+07.20 $\Theta_s = 0' 45' 50.2"$ $L_s = 200.00'$ $LT = 133.33'$ $ST = 66.67'$
	Pls Sta 13+18.34 $\Theta_s = 2' 17' 30.6"$ $L_s = 200.00'$ $LT = 133.34'$ $ST = 66.68'$

Sheet 57A of 70
 (showing revisions at Site 20)
 Revised 5/24/19

SEE SHEETS 2D-1 THRU 2D-7 FOR DRAINAGE DETAILS
 SEE SHEET 41 FOR -L- PROFILE
 SEE SHEET 57 FOR -Y6RPA- PROFILE
 SEE SHEET 65 FOR -Y6RPD- PROFILE
 SEE SHEETS C5-1 THRU C5-7 FOR CULVERT PLANS

12/27/2017 12:25:25e...rdy_psh...19.dgn

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
14	415+71/418+52 (L)	Bank Stabilization						< 0.01		71		
15	429+04/431+89 (L)	1@8'x8' RCBC	0.60		0.04	0.03		0.08	0.01	518	88	
15A	429+08/431+25 (L)	Roadway						0.02	< 0.01	169	57	
16	439+20/442+23 (L)	Roadway	< 0.01			0.01			0.01		46	
16	439+20/442+23 (L)	Pond						0.93				
17	463+00/470+25 (L)	72" conc.						0.05	< 0.01	410	51	
17	465+74/466+06 (L)	Bank Stabilization						< 0.01		26		
17A	462+70/463+24	Temp Impacts							< 0.01		56	
18	16+16/21+69 (Y6)	Roadway						0.05	< 0.01	551	15	
18A	14+36/14+72 (Y6)	Roadway						< 0.01	< 0.01	80	10	
19	469+29/473+17 (L)	1@8'x8', 1@8'x8', 2@72" EXT						0.12	0.02	775	150	
19	473+05/473+17 (L)	Bank Stabilization						< 0.01		40		
19	472+77/473+38 (L)	Loss of Function						0.02		183		
19A	32+24/33+21 (Y6)	dual 60" conc.						0.03	0.01	61	21	
19A	32+92/33+13 (Y6)	Bank Stabilization						< 0.01		32		
20	481+94/486+19 (L)	Roadway						0.07	< 0.01	620	18	
20	481+94/486+19 (L)	Bank Stabilization						< 0.01		15		
21	491+15/494+96 (L)	3@11'x11' RCBC	0.11		0.05	0.10		0.19	0.04	632	78	
22	505+06/510+10 (L)	Roadway	0.02					0.08	< 0.01	745	3	
22	505+06/505+11 (L)	Bank Stabilization						< 0.01		10		
23	527+89/531+24 (L)	Roadway	0.02			0.01		0.04	< 0.01	424	47	
23	530+94/531+11 (L)	Bank Stabilization						< 0.01		19		
Total impacts from previously permitted sites (1,2,3,11, & 12)			0.51		0.04	0.06		0.12	0.01	777	30	
Total new impacts			1.94		0.15	0.25		3.02	0.17	12223	956	
TOTAL IMPACTS FOR U-2525C*			2.45		0.20	0.32		3.14	0.18	13000	986	

*Rounded totals are sum of actual impacts

Totals on this sheet include the summed amounts from previous sheet

NOTES:

Actual wetland impact numbers			
Previously Permitted	0.508	0.044	0.062
New Impacts	1.939	0.154	0.254
TOTAL IMPACTS	2.447	0.198	0.316

Revised Sheet 70 of 70
May 24, 2019

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/23/2017
Guilford County
U-2525C