



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

DANIEL H. JOHNSON
SECRETARY

October 27, 2025

MEMORANDUM TO: Becca Gallas, P.E.
Division 5 Engineer

FROM: Alan Shapiro, P.E.
NCTA Chief Engineer

SUBJECT: Triangle Expressway Southeast Extension (Complete 540) from NC 55 Bypass in Apex to US 64/264 (I-87) in Knightdale, Wake and Johnston Counties; Federal Aid No. STP-0540(19), STP-0540(20), and STP-0540(21); WBS Nos. 37673.1.TA1, 35516.1.TA1, and 35517.1.TA1; STIP Project Nos. R-2721, R-2828, and R-2829

DocuSigned by:

Alan Shapiro

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Attached are the modified US Army Corps of Engineers (USACE) Phased Section 404 Individual Permit, NC Division of Water Resources (NCDWR) Section 401 Individual Water Quality Certification, Neuse Riparian Buffer Authorization, and Non-404 Jurisdictional Wetlands and Waters Permit for the construction of the Triangle Expressway Southeast Extension (Complete 540) from NC 55 Bypass in Apex to US 64/264 (I-87) in Knightdale, Wake and Johnston Counties. STIP Nos. R- 2721, R-2828, and R-2829. ***The changes are based on the October 22, 2025 email requesting modification of the permit to authorize change of impacts at Permit Site 57 for R-2828.*** Subject to any requisite permit modifications, all environmental permits have been received for the construction of the final design sections of this project.

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

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

cc: w/o attachment (see website for attachments)
Mr. Ron Davenport, P.E. Contracts Management
Mr. Clarence Coleman, P.E., FHWA
Mrs. Heather Montague, Division 5
Mr. Mark Craig, P.E., Division 5
Mr. Boyd Tharrington, P.E., Deputy Chief Engineer
Mr. Bill Martin, P.E., Programming and TIP
Mr. Timothy Ritacco, Utilities Unit
Mr. Matt Lauffer, P.E., Hydraulics Unit
Mr. David Snoke, P.E., Structures Management Unit
Mr. Mark Staley, Roadside Environmental
Mr. John Jamison, Environmental Policy Unit
Ms. Beth Harmon, NCDMS
Ms. Deanna Riffey, Natural Environment Unit-Environmental Coordination & Permitting

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
TURNPIKE AUTHORITY
1599 MAIL SERVICE CENTER
RALEIGH, NC 27699-1599

Telephone: (919) 707-2700
Fax: (919) 715-5511
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
2501 AERIAL CENTER PARKWAY
SUITE 200
MORRISVILLE, NC 27560



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT
RALEIGH FIELD OFFICE
3331 HERITAGE TRADE DRIVE SUITE 105
WAKE FOREST NC 27587

October 27, 2025

Regulatory Program

Alan Shapiro, P.E.
Chief Engineer
North Carolina Turnpike Authority
1599 Mail Service Center
Raleigh, NC 27699-1599

Dear Mr. Shapiro:

Reference the Department of the Army permit issued to the North Carolina Department of Transportation (NCDOT) on October 24, 2019, and subsequently modified, to authorize the discharge of fill material into waters of the United States, for construction of the Triangle Expressway Southeast Extension (Complete 540) from NC 55 Bypass in Apex to US 64/264 (1-87) in Knightdale, Wake and Johnston Counties. Sections included within this permit are R-2721, R-2828, and R-2829.

Also, please reference your October 22, 2025, email, requesting modification of the permit to authorize change of impacts at Permit Site 57, for R-2828. The modifications are necessary to remediate a scour hole and channel instability that have formed due to riprap displacement by high flows. The modification requests the following impact changes: Convert 10 linear feet (LF) of temporary stream impacts to permanent channel impacts with the inclusion of additional rip rap to fill in the scour, extend the permanent riprap impacts an additional 8 LF, countersunk (for a total of 18 LF of additional permanent stream impact), and then an additional 5 LF of temporary impacts for the necessary sandbags and pump around (so work can be done in the dry).

No additional stream impacts requiring mitigation are proposed, as the proposed riprap will be countersunk, and while considered permanent fill, is not a permanent loss of function.

The Corps has completed the evaluation of your request and has determined that it is appropriate and reasonable, and that no public notice is required for this modification. Therefore, the permit is modified as requested and as shown on the enclosed R-2828 Mod Permit Drawings, Sheets 128-131, and 170 of 171, last revised September 26, 2025.

The special conditions for the permit are also enclosed, and have not changed from the revised Special Conditions provided with the December 13, 2024, modification. The revised permit expiration date remains December 31, 2029.

Should you have any questions, contact Mr. Eric Alsmeyer, via email at Eric.C.Alsmeyer@usace.army.mil or by telephone at (919) 817-1570. Please take a moment to complete our customer satisfaction survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

Sincerely,

A handwritten signature in black ink that reads "M. Scott Jones". The signature is written in a cursive style with a large "M" and "J". There are small red marks above the "M" and below the "J".

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

Enclosures

cc: Jennifer Harris, NC Turnpike Authority (via ext-jhharris1@ncdot.gov)
Deanna Riffey, NCDOT (via driffey@ncdot.gov)

JOSH STEIN
Governor

D. REID WILSON
Secretary

RICHARD E. ROGERS, JR.
Director



October 24, 2025

Alan Shapiro, P.E., Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699
awshapiro@ncdot.gov

Subject: MODIFICATION of 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed construction of the Triangle Expressway Southeast Extension (NC 540) in Wake & Johnston Counties, Federal Aid Project No. 050047, State Project No. 35517.3.TA1, TIP Nos, R-2721, R-2828, & R-2829. (TIP R-2828 for This Modification)
NCDWR Project No. 20181249 version 25.

Dear Mr. Shapiro:

Attached hereto is a copy of Modification to Certification No. 4179 issued to The North Carolina Department of Transportation (NCDOT), Turnpike Authority, originally dated February 15, 2019 and most recent modification dated October 24, 2025

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

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

Sincerely,

Signed by:

Faith Hardin

3185423002EA45E...

Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

Attachments

Cc: Eric Alsmeyer, US Corps of Engineers, Raleigh Field Office (Eric.C.Alsmeier@usace.army.mil)
Jennifer Harris, PE, NC Turnpike Authority (ext-jharris1@ncdot.gov)
Deanna Riffey, NCDOT Environmental Analysis (driffey@ncdot.gov)
Nicole Duprey, NC Turnpike Environmental (ext-njduprey@ncdot.gov)
File Copy



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1650 Mail Service Center | Raleigh, North Carolina 27699-1650
919.707.9000

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

THIS MODIFIED 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 modification authorizes the NC Turnpike Authority to impact 8.798 acres of jurisdictional wetlands and 10517 linear feet of jurisdictional streams in Wake & Johnston Counties for section **R-2828** of the Complete 540 project. The project shall be constructed pursuant to the modification application received October 22, 2025. The authorized additional impacts for this modification are as described below:

Additional R-2828 Stream Impacts in the Neuse River Basin	
Site	Additional Riprap in Perennial Stream
57	18 lf

Total Additional Stream Impacts for R-2828: 18 linear feet

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

This approval is only valid for the purpose and design that you submitted in your modification application received November 14, 2024. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7).

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

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

Condition of Certification:

1. All conditions in the Water Quality Certification for this project dated December 10, 2024, and all other versions thereof, are still applicable to this approval.



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

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

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

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

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

This the 24th day of October 2025

DIVISION OF WATER RESOURCES

Signed by:

Faith Hardin

3185423002EA45E...

Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

WQC No. 4179



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1650 Mail Service Center | Raleigh, North Carolina 27699-1650
919.707.9000

JOSH STEIN
Governor

D. REID WILSON
Secretary

RICHARD E. ROGERS, JR.
Director



NORTH CAROLINA
Environmental Quality

October 24, 2025

DWR #20181249 ver 25
Wake & Johnston Counties

Alan Shapiro, P.E., Chief Engineer
North Carolina Turnpike Authority
1578 Mail Service Center
Raleigh, NC 27699
awshapiro@ncdot.gov

Subject: MODIFICATION of APPROVAL of NEUSE RIPARIAN BUFFER IMPACTS WITH ADDITIONAL CONDITIONS

PROJECT: TIP #R-2828: NC 540 Extension of Triangle Expressway

Dear Mr. Shapiro:

You have our approval for the impacts listed below for the purpose described in your Modification application received by the Division of Water Resources (Division) on October 22, 2025. These impacts are covered by the Neuse Buffer Rules and the conditions listed below. Please note that you should get any other federal, state or local permits before proceeding with your project, including those required by (but not limited to) Sediment and Erosion Control, Non-Discharge, and Water Supply Watershed regulations.

The following additional impacts are hereby approved, provided that all of the Conditions listed below and all of the conditions of the Neuse Buffer Rules are met. No other impacts are approved, including incidental impacts. [15A NCAC 02B.0611(b)(2)]

R-2828 Additional Neuse Riparian Buffer Impacts

Site	Additional Zone 1 Impact (sq ft)	Additional Zone 2 Impact (sq ft)
57	30	0

Total Additional Buffer Impact: 30 square feet

This approval is for the purpose and design described in your modification application. The plans and specifications for this project are incorporated by reference as part of this Authorization Certificate. If you change your project, you must notify the Division and you may be required to submit a new application package. If the property is sold, the new owner must be given a copy of this Authorization Certificate and is responsible for complying with all conditions. [15A NCAC 02B.0611(b)]. If you are unable to comply with any of the conditions below, you must notify the DWR Transportation Permitting



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1650 Mail Service Center | Raleigh, North Carolina 27699-1650
919.707.9000

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 riparian buffer rules [15A NCAC 02B.0611(b)]. 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.

Conditions of Approval:

1. All prior conditions of the original Neuse Buffer Authorization for this project issued February 15, 2019, and all subsequent modifications since, are still all applicable.

This approval and its conditions are final and binding unless contested. [G.S. 143-215.5]
This Authorization Certificate can be contested as provided in Chapter 150B of the North Carolina General Statutes by filing a Petition for a Contested Case Hearing (Petition) with the North Carolina Office of Administrative Hearings (OAH) **within sixty (60) calendar days**. Requirements for filing a Petition are set forth in Chapter 150B of the North Carolina General Statutes and Title 26 of the North Carolina Administrative Code. Additional information regarding requirements for filing a Petition and Petition forms may be accessed at <http://www.ncoah.com/> or by calling the OAH Clerk's Office at (919) 431-3000. One (1) copy of the Petition must also be served to the North Carolina Department of Environmental Quality:

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

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

This letter completes the review of the Division under the Neuse Riparian Buffer Rules as described in 15A NCAC 02B.0714. Please contact Rob Ridings at rob.ridings@deq.nc.gov or 919-707-8786 if you have any questions or concerns.

Sincerely,

Signed by:

3185423002EA45E...

Faith Hardin, Supervisor
401 & Buffer Transportation Permitting Branch

Cc: Eric Alsmeyer, US Corps of Engineers, Raleigh Field Office (Eric.C.Alsmeyer@usace.army.mil)
Jennifer Harris, PE, NC Turnpike Authority (ext-jharris1@ncdot.gov)
Deanna Riffey, NCDOT Environmental Analysis (driffey@ncdot.gov)
Nicole Duprey, NC Turnpike Environmental (ext-njduprey@ncdot.gov)
File Copy



Revised SPECIAL CONDITIONS

Action ID SAW-2009-02240; Complete 540; TIPS R-2721, R-2828, and R-2829

Note: Special Condition 9 was modified on October 28, 2024, and Special Condition 30 was added on December 12, 2024.

1. **Work Limits:** All work authorized by this permit shall be performed in strict compliance with the attached permit plans submitted on September 12, 2018, and revised on February 8, 2019, 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 U.S. Army Corps of Engineers (Corps) prior to any active construction in waters or wetlands.

2. **Unauthorized Dredge and/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.

3. **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 and drawings shall be available at the project site during construction and maintenance of this project.

4. **Preconstruction Meeting:** The Permittee shall conduct an onsite preconstruction meeting between its representatives, the contractor's representatives and the appropriate U.S. Army Corps of Engineers Project Manager prior to undertaking any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all terms and conditions contained within the Department of the Army permit. The Permittee shall schedule the preconstruction meeting for a time frame when the Corps, and NCDWR Project Managers can attend. The Permittee shall invite the Corps, and NCDWR 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.

5. 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.

6. 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 Raleigh Regulatory Field Office, Attn: Eric Alsmeyer, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587, or eric.c.alsmeyer@usace.army.mil. The Permittee shall reference the following permit number, SAW-2009-02240, on all submittals.

7. 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.

8. 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: 919.554.4884, extension 23, within 24 hours of the Permittee's discovery of the violation.

9. Endangered Species

1) 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, except as authorized by the October 15, 2019 US Fish and Wildlife Service BIOLOGICAL/CONFERENCE OPINION, as modified by the September 30, 2024 ADDENDUM. 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 Raleigh Field Office, telephone 919.554.4884, extension 23, email to eric.c.alsmeyer@usace.army.mil will be immediately notified to initiate the required Federal coordination.

2) Atlantic Sturgeon: In order to protect the federally-listed Atlantic sturgeon, no temporary causeways or work bridges will block more than 50% of the Neuse River below its ordinary high water mark, and will be removed at the end of the project's construction.

3) DWM Biological Opinion: This Department of the Army permit does not authorize you to take an endangered species, in particular the Dwarf wedgemussel, *Alasmodonta heterodon*. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a BO under ESA Section 7, with “incidental take” provisions with which you must comply). The attached October 15, 2019 US Fish and Wildlife Service BIOLOGICAL/CONFERENCE OPINION, as modified by the September 30, 2024 ADDENDUM (B/CO-A), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that is also specified in the B/CO-A. Your authorization under this permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached B/CO-A, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your permit. The U.S. Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its B/CO-A, and with the ESA.

4) NLEB Programmatic Biological Opinion: 11. The Wilmington District, Federal Highway Administration, U.S. Fish and Wildlife Service (USFWS), and the North Carolina Department of Transportation (NCDOT) have conducted programmatic Section 7(a)(2) consultation for the Northern long-eared bat (NLEB) for NCDOT projects located in Divisions 1-8. The result of this programmatic consultation is a Programmatic Biological Opinion (PBO) issued by the USFWS titled, “Programmatic Biological Opinion – Revised, NCDOT Program Effects on the Northern Long-eared Bat in Divisions 1-8”, dated December 15, 2022. This PBO contains agreed upon conservation measures which would minimize take of NLEB. As noted in the PBO, applicability of these conservation measures varies depending on the location of the project. The USFWS has documented that no reasonable and prudent measures, nor terms and conditions, are necessary or appropriate to minimize the amount or extent of incidental take of NLEB caused by the Action; therefore, the incidental take statement does not provide reasonable and prudent measures for this species. Department of the Army (DA) authorization under general permit or standard permit (Individual Permit) is conditional upon the permittee’s compliance with applicable, agreed upon conservation measures of the PBO, which is incorporated by reference in this permit. Failure to comply with the applicable conservation measures, where a take of the NLEB occurs, would constitute an unauthorized take by the permittee, and would also constitute permittee non-compliance with this permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO and the ESA. All PBOs can be found on our website at: <https://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/ESA/>.

5) TCB Programmatic Biological Opinion: The U.S. Fish and Wildlife Service’s (USFWS’s) Programmatic Conference Opinion (PCO) titled “NCDOT Program Effects on the Tricolored Bat in Divisions 1-8”, dated November 20, 2023, contains

mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that are specified in the PCO. Your authorization under this Corps permit is conditional upon your compliance with all the mandatory terms and conditions associated with incidental take of the PCO, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the PCO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PCO, and with the ESA.

10. Maintain Flows and Circulation Patterns of Waters: 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 waters or wetlands or to reduce the reach of waters and/or wetlands.

11. 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 quality 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.

12. Clean Fill: The Permittee shall use only clean fill material for this project. The fill material shall be free of items such as trash, construction debris, metal and plastic products, and concrete block with exposed metal 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.

13. Water Contamination: All mechanized equipment shall be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the Permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-3300 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act shall be followed.

ANADROMOUS FISH / AQUATIC LIFE

14. Aquatic Life Movement: No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. All discharges of dredged or fill material within waters of the United States shall be designed and constructed to maintain low flows to sustain the movement of aquatic species.

15. Prohibitions on Concrete: The Permittee shall take measures necessary 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).

COMPENSATORY MITIGATION

16. 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.

CULTURAL RESOURCES

17. Historic Properties (MOA): The Permittee shall fully implement the Memorandum of Agreement between the Permittee, the North Carolina State Historic Preservation Officer and the U.S. Army Corps of Engineers, Wilmington District, dated last signed 3/11/2018, which is incorporated herein by reference.

CULVERTS

18. 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. 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. The bottom of the culvert shall be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions. Culverts shall be designed and constructed in a manner that minimizes destabilization and head cutting.

19. Measures shall be included in the culvert 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 culvert or pipe 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.

20. 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.

21. 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.

PONDS

22. Sediment Sluicing: The release of sediments from ponds (sluicing) is not authorized by this permit. The Permittee shall take all measures necessary to control any bottom

sediments that may be sluiced during the drainage of pond(s) on the project site.

UTILITY LINES

23. Temporary Impacts Restoration Measures: 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. In wetland areas where pipeline installation via trenching is authorized, wetland topsoil shall be segregated from the underlying subsoil, and the top 6 to 12 inches of the trench shall be backfilled with topsoil from the trench.

24. Cleared wetland areas shall be re-vegetated with a wetland seed mix or a mix of native woody species. Fescue grass or any invasive species such as *Lespedeza* spp., shall not be used within the wetland areas.

25. Prior to construction within any jurisdictional areas, the Permittee shall correctly install silt fencing (with or without safety fencing) parallel with the utility line corridor, on both sides of the jurisdictional crossing. This barrier is to serve both as an erosion control measure and a visual identifier of the limits of construction within any jurisdictional area. The Permittee shall maintain the fencing, at minimum, until the wetlands have re-vegetated and stabilized.

26. Hydraulic Fracturing (Fracking): When directional boring or horizontal directional drilling (HDD) under waters of the United States, including wetlands, the Permittee shall closely monitor the project for hydraulic fracturing or “fracking” and material from the drilling operation leaching to the surface and into jurisdictional areas. Any discharge from fracking or leaching into waters of the United States, including wetlands, shall be reported to U.S. Army Corps of Engineers, Wilmington District Raleigh Field Office, telephone 919.554.4884, extension 23, email to eric.c.alsmeyer@usace.army.mil within 48 hours. Restoration and/or mitigation may be required as a result of any unintended discharges.

NCDOT STANDARD PERMIT CONDITIONS

27. Phased Permit and Mitigation: This permit only authorizes work on Sections A and B of TIP R-2721. Construction on Sections of TIP, R-2828 and R-2829 shall not commence until all the following occur:

(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 for the relevant TIP project has been submitted by the Permittee and approved by the Corps.

28. 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.

29. 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 2 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 2. 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.

30. Boater Safety Plan: The permittee shall implement the *NEUSE RIVER & NEUSE RIVER GREENWAY TRAIL USER SAFETY PLAN*, attached, submitted 9/16/2024, which would mitigate the impacts to personal watercraft use of this portion of the Neuse River by providing safety signage, buoys, ring buoys, and designated portage routes during construction of bridge spans over the Neuse.



NEUSE RIVER & NEUSE RIVER GREENWAY TRAIL USER SAFETY PLAN

NC 540 (R-2829B)

Triangle Expressway Southeast Extension

from south of SR 2542 (Rock Quarry
Road) to I-87/US 64/US 264

**SUBMITTED
9/16/2024**

Submitted by

FLATIRON

In partnership with

**ICE of
CAROLINAS, PLLC**



*NC 540 Triangle Expressway Southeast Extension (R-2829B)
from south of SR 2542 (Rock Quarry Road) to I-87 / US 64 / US 264*

Neuse River and Neuse River Greenway Trail Safety Plan

The R-2829B project includes construction activities at, across and above the Neuse River and the existing Neuse River Greenway Trail. This plan provides details of the safety measures to be incorporated into the construction operations to ensure that users of both the Neuse River and the Neuse River Greenway Trail are informed of ongoing construction hazards and are protected from construction activities while passing through the construction area.

General Safety Procedures and Precautions:

Throughout the duration of construction, the Flatiron-Fred Smith JV will have the following measures in place for both the Neuse River and the Neuse River Greenway Trail:

- Flatiron-Fred Smith JV will comply with all Contract and RFP requirements while implementing this safety plan.
- As required per Division One of the NCDOT Standard Specifications Section 108-3, modified by the RFP, Flatiron-Fred Smith JV will provide a Site Specific Safety Plan (SSSP) prior to starting any work. The SSSP with spill control and response plan will be provided to all on-site staff and shall include details on spill prevention and cleanup, marine operations, and emergency/crisis management.
- This plan shall be reviewed annually, at a minimum, by Flatiron-Fred Smith JV and NCDOT to determine if any adjustments need to be made to improve the functionality of the plan or address any changes on-site.
- Regular safety inspections of all equipment will be performed monthly to ensure everything is in proper condition and working order.
- Contractor will have monitors and/or flaggers to direct river and greenway users away from active or hazardous construction areas and activities.
- Unless work is being performed outside of the allowable public use of the greenway (dawn to dusk), if an overhead operation is ongoing without a greenway trail detour or river user diversion in place, the contractor will have monitors / flaggers on each side of the construction zone to stop construction work while users pass beneath an overhead operation.

The greenway and river traffic will be shifted to the proposed detour / portage routes when any unprotected overhead work is ongoing in an area. When the new bridge girders are in place, the SIP decking is installed, and the overhangs with plywood protection are installed, this will prevent materials from falling onto the active portions of the greenway trail or Neuse River.

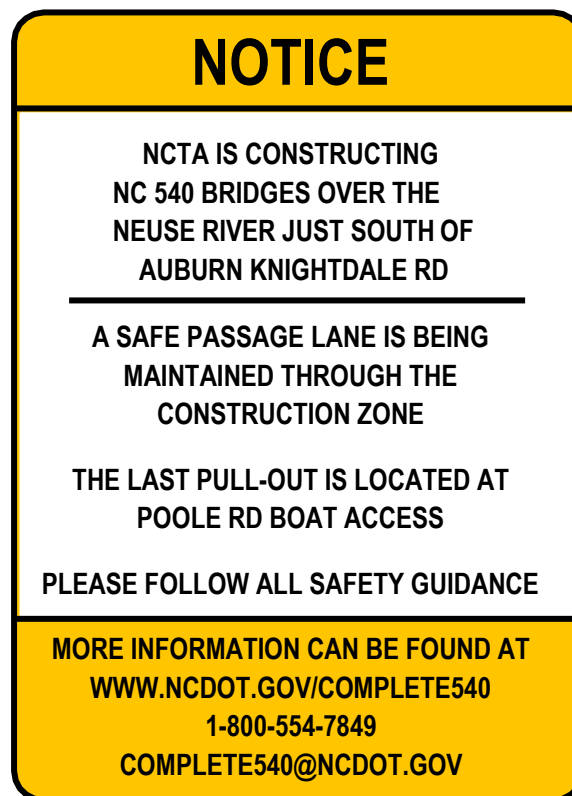
- In the event of a storm being forecast in the area that could result in localized flooding or overtopping the temporary access causeway, the Contractor will remove all materials and equipment in advance of the storm.

Neuse River Specific Safety Precautions:

Paddlers or other users of the Neuse River waterway will be protected from construction operations as follows:

- Advanced warning Signage will be installed and maintained by Flatiron-Fred Smith JV at the following canoe / kayak access points upstream and downstream of the project location:
 - o Lower Milburnie Dam (1101 Old Milburnie Rd, Raleigh, NC 27604)
 - o Anderson Point Boat Access (120 N Rogers Ln, Raleigh, NC 27610)
 - o Poole Road Boat Access (6501 Poole Rd, Raleigh, NC 27610)
 - o Mial Plantation Road Access (near 6008 Mial Plantation Rd, Raleigh, NC 27610)
 - o Hwy 42 Boat Launch (2075 NC Highway 42 E, Clayton, NC)
 - o Johnston County Water Plant (600 Clear Water Dr, Smithfield, NC 27577)

The signs will be similar to the image below:



- Ring Buoys will be staged on each side of the river shoreline both immediately upstream and downstream of the construction zone for emergency rescue operations. Each ring

buoy will be equipped with a minimum of 100 feet of rescue line and a throw bag, mounted on a 4x4 timber post.

- Buoys and signage will be installed in the river to direct river users through the safe portion of the waterway (see sketch NEUSE-01).
- The buoys and signage will provide a safe perimeter around the proposed construction access causeway on the northern bank of the river to warn against unauthorized access to the causeway and work area by river users.
- Signage will direct river users if the river passage is open or closed. The passage will be open when it is safe to pass under the proposed bridge construction and there are no overhead activities ongoing. The passage will be closed and require canoe portage when active overhead operations such as bridge girder erection or metal stay in place form installation. A portage route will be cleared and signed to allow for safe portage around the active construction. In addition, during these closed times, the Contractor will have monitors and flaggers further directing river users of the proper portage route.
- The Flatiron-Fred Smith JV will communicate when the portage route is required at least forty-five (45) days in advance of any construction activities to NCDOT Division 5 and NCTA staff and any other appropriate representatives that need this information.

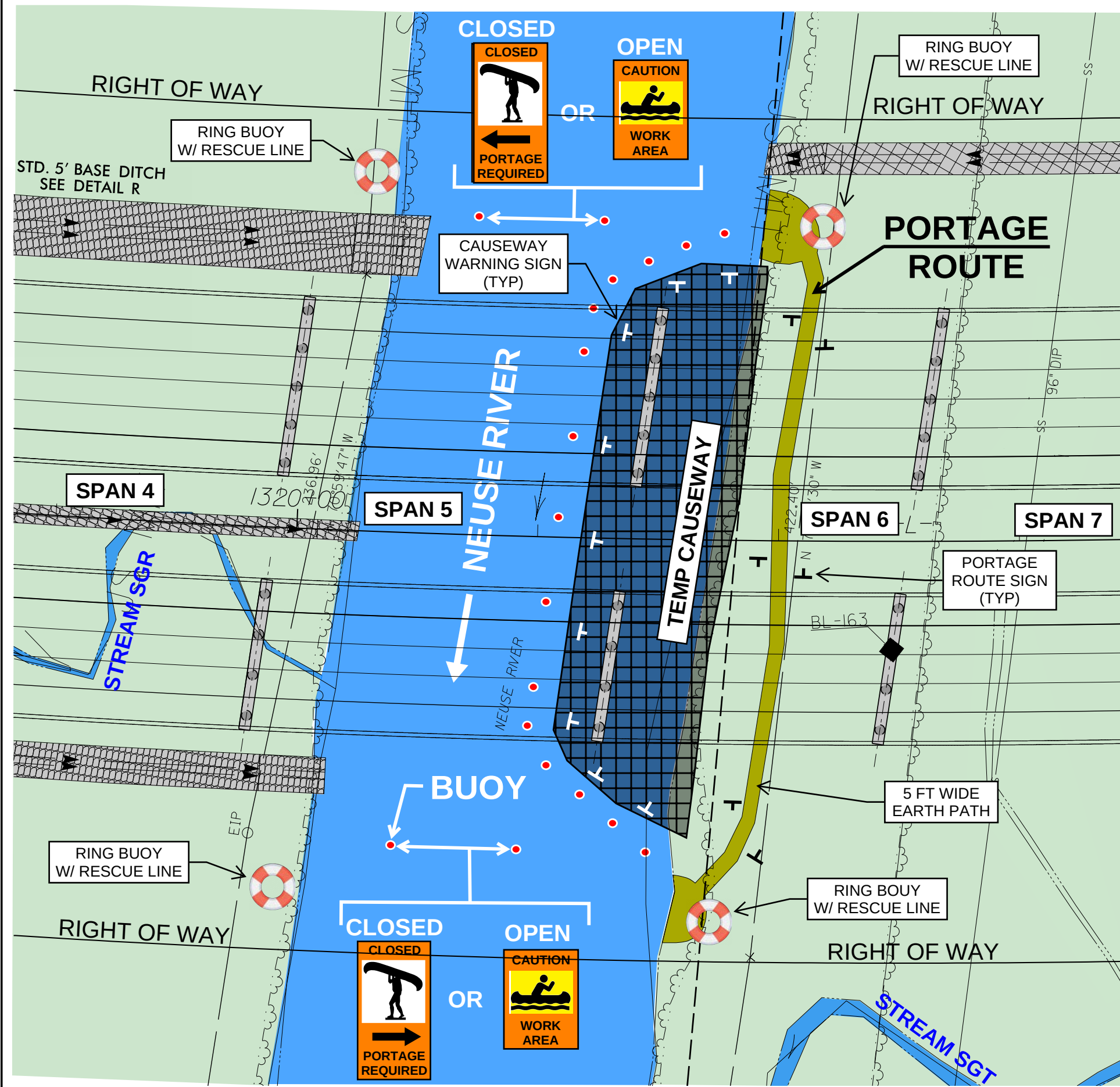
Neuse River Greenway Trail Specific Safety Precautions:

Users of the Neuse River Greenway Trail will be protected from construction operations as follows:

- A temporary trail detour route will be constructed and used to divert trail traffic away from active overhead construction activities (see sketches NEUSE-02 through NEUSE-04).
- Prior to beginning construction, orange safety fence will be placed on both sides of the existing greenway trail to keep greenway users on the trail and away from adjacent construction activities and equipment.
- During the first phase of the bridge construction, trail traffic can be maintained on the existing trail while Bridge Spans 4 through 11 are completed. The temporary greenway trail alignment and permanent greenway alignment revisions will be constructed during this phase of bridge construction.
- Once Span 4 of the bridge is completed, the orange safety fencing will be added to the temporary trail alignment and greenway trail traffic will be switched to the temporary detour route under completed Span 4.

- The Design-Build Team shall inform NCDOT Division 5 and NCTA at least forty-five (45) days in advance of any construction activities that would impact use of the Neuse River Greenway Trail.
- With the greenway traffic relocated, the construction of Bridge Spans 1 through 3 can be completed and the final greenway trail traffic will be shifted back to the permanent alignment.
- The Design-Build Team shall coordinate installation and removal of greenway protective measures with NCDOT Division 5 and NCTA when crossing the trail. No obstructions that impede the use of the trail shall be left in place after crossing the trail.

Details of the proposed user routing for both the Neuse River and the Neuse River Greenway Trail are provided on the following pages.



- PADDLE ACCESS:
1. PRIOR TO CONSTRUCTION OF BRIDGE SPAN 5, PADDLER TRAFFIC WILL BE ROUTED THROUGH THE SOUTHERN SIDE OF THE RIVER USING FLOATING BOUYIS AND CAUTION SIGNAGE AS SHOWN BELOW.
 2. DURING LIFTING OF SPAN 5 BEAMS OR OTHER OVERHEAD OPERATIONS FOR SPAN 5, THE RIVER WILL BE CLOSED TO PADDLERS USING THE "PORTAGE REQUIRED" SIGNAGE. NO CONSTRUCTION ACTIVITY IN SPAN 6 IS ALLOWED WHEN THE PORTAGE ROUTE IS IN USE.
 3. PLACE RING BOUYIS FOR EMERGENCY USE AT EACH PORTAGE LANDING AND ON OPPOSITE SIDE OF RIVER..

CAUTION SIGNAGE:

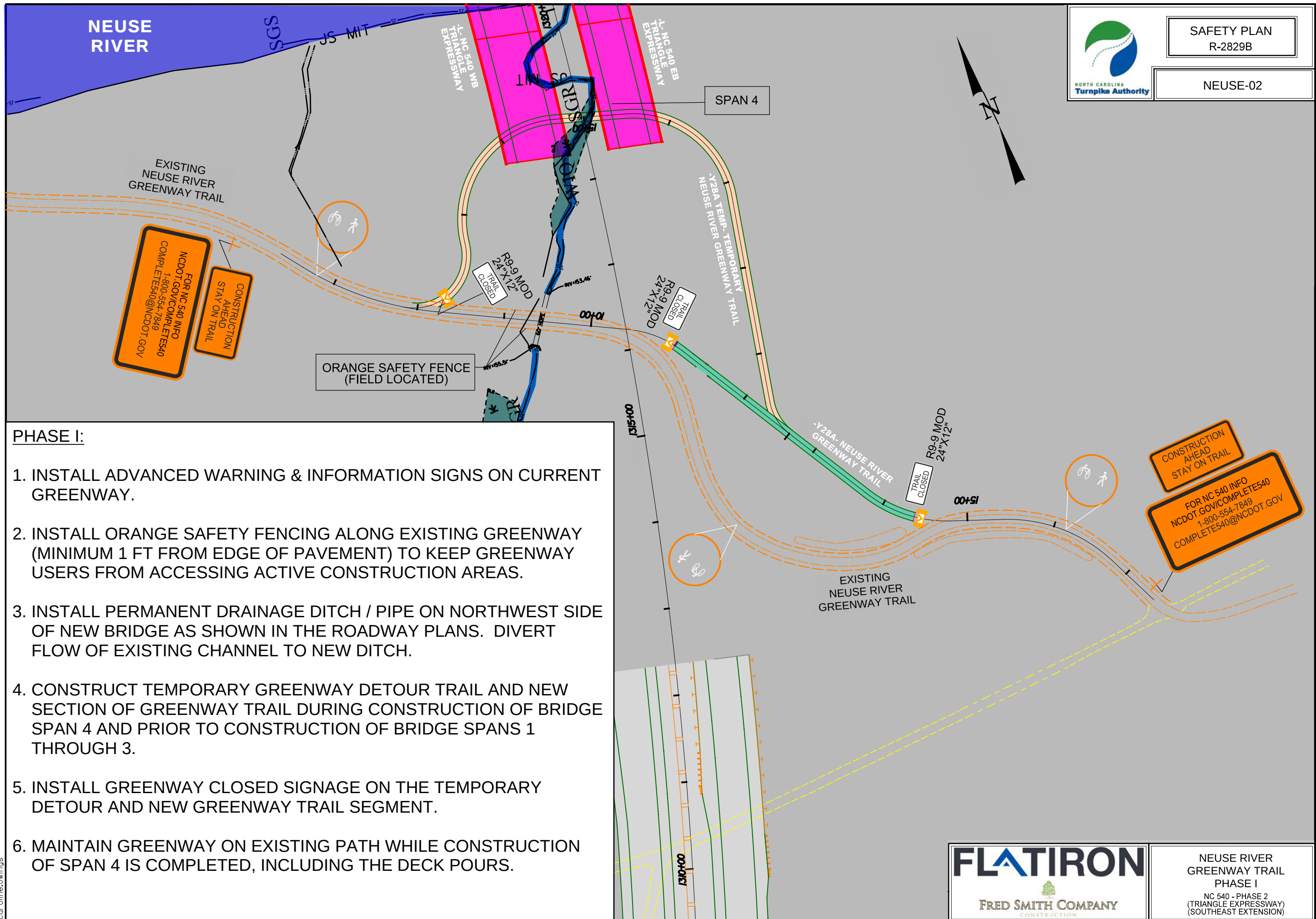
DANGER
KEEP OFF
WORK AREA

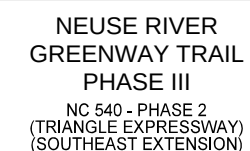
CAUSEWAY WARNING SIGN

PORTAGE ROUTE


PORTAGE ROUTE SIGN

3/28/2024
c:\bms\ice-eng-pw-01\dms59256\NR-2829B TMP 07 AREA 04 PHASE 01.dgn
Caroline Owings



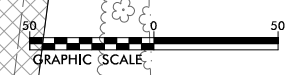




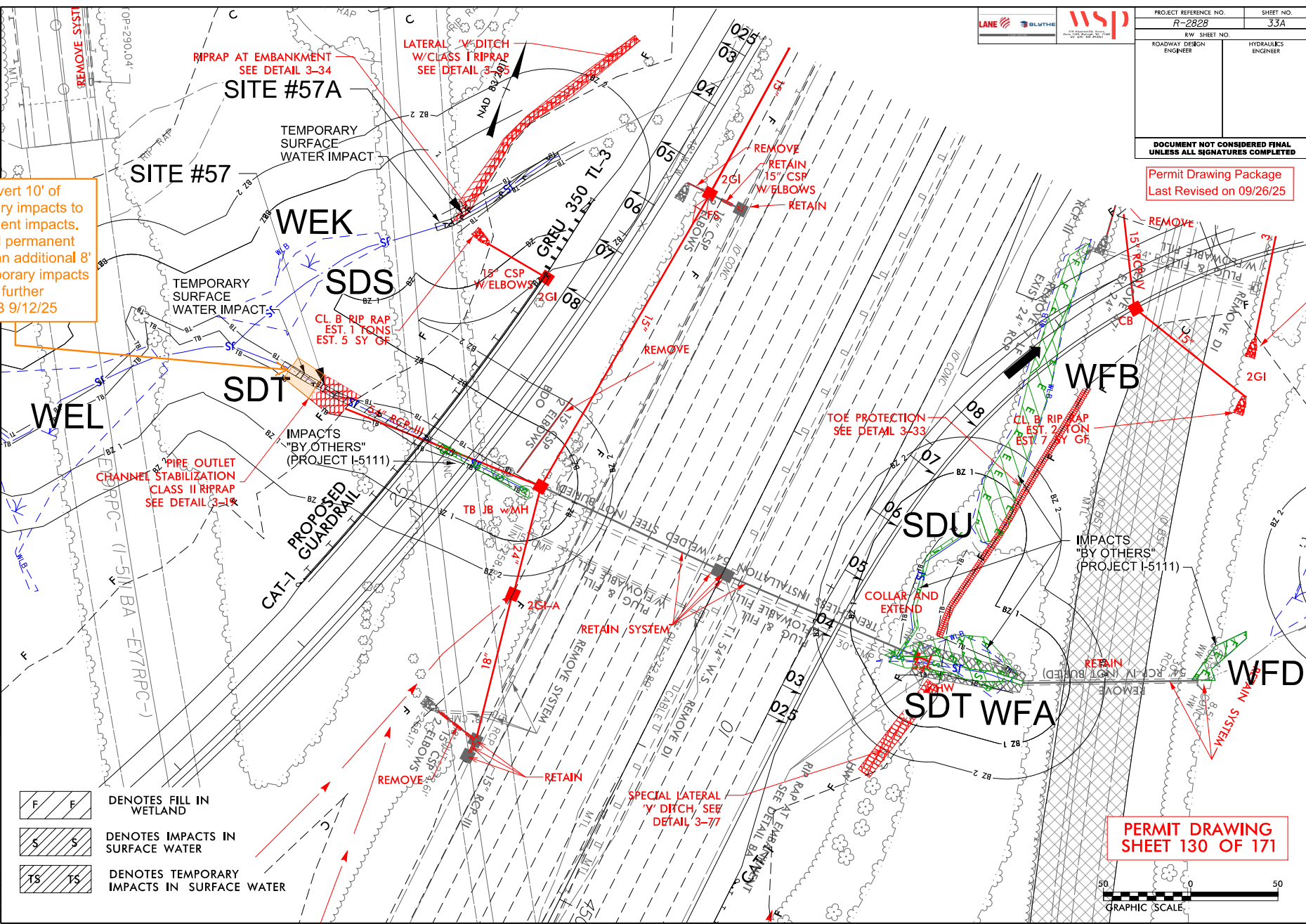
PROJECT REFERENCE NO. <i>R-2828</i>		SHEET NO. <i>33A</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

Permit Drawing Package
Last Revised on 09/26/25

PERMIT DRAWING
SHEET 130 OF 171

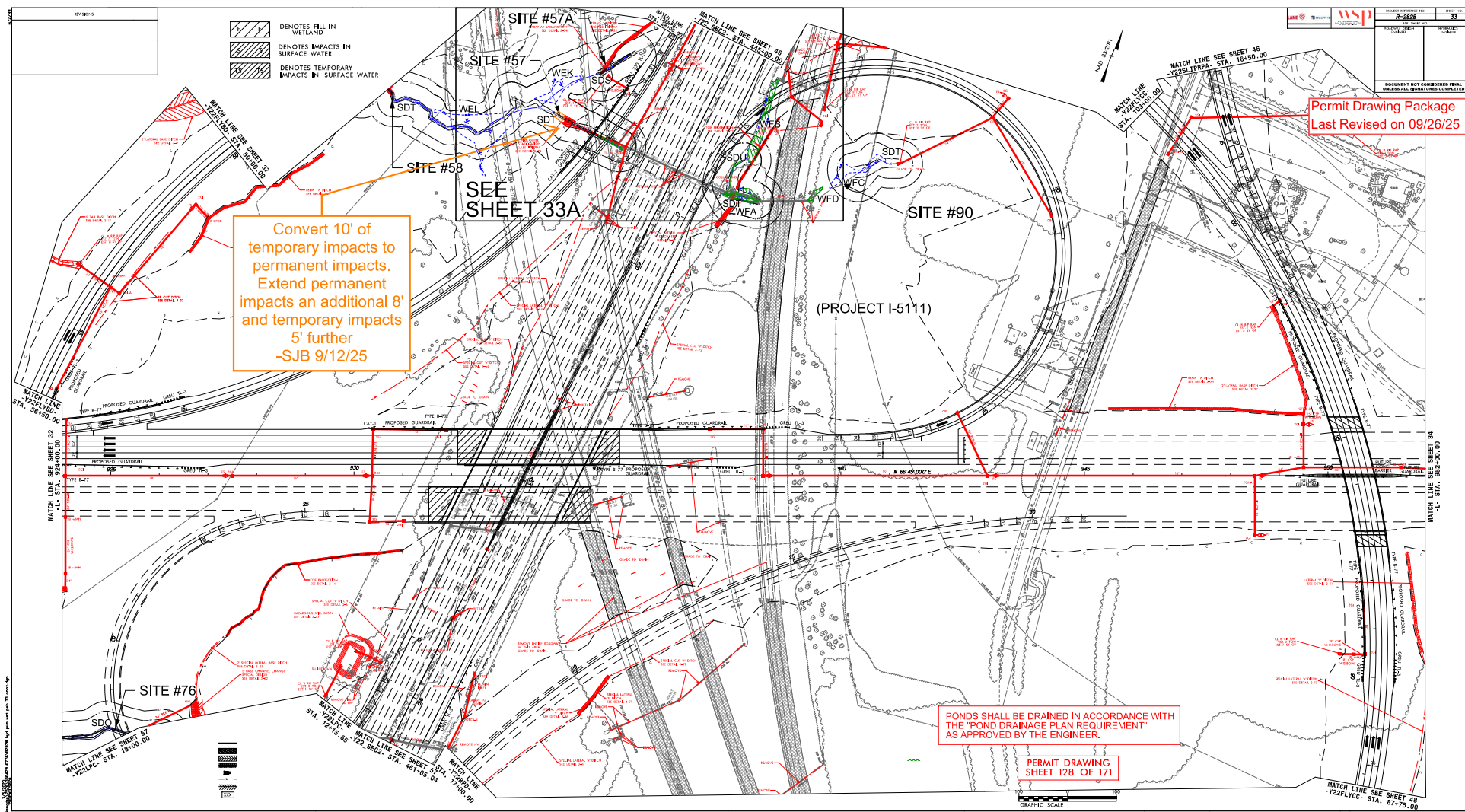


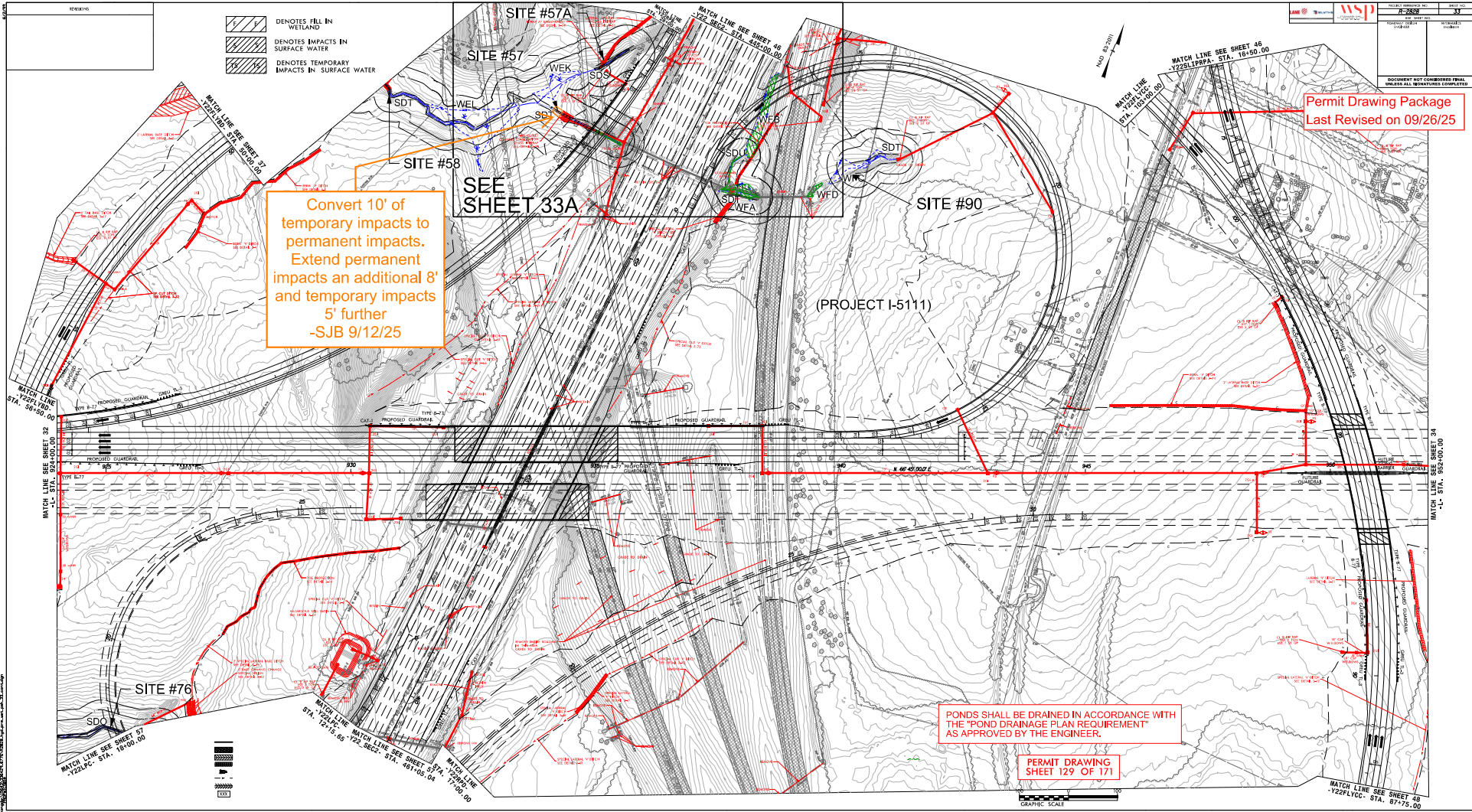
Convert 10' of temporary impacts to permanent impacts. Extend permanent impacts an additional 8' and temporary impacts 5' further -SJB 9/12/25



- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

8/17/2025
3/5/2020
C:\Users\jwking\OneDrive\Working\17526\338429_6777\1752628_hyd.prm_wet.pst_33A_cont.dgn





- /// DENOTES FILL IN WETLAND
- /// DENOTES IMPACTS IN SURFACE WATER
- /// DENOTES TEMPORARY IMPACTS IN SURFACE WATER

Convert 10' of temporary impacts to permanent impacts. Extend permanent impacts an additional 8' and temporary impacts 5' further -SJB 9/12/25

SEE SHEET 33A

PONDS SHALL BE DRAINED IN ACCORDANCE WITH THE "POND DRAINAGE PLAN REQUIREMENT" AS APPROVED BY THE ENGINEER.

PERMIT DRAWING SHEET 129 OF 171

Permit Drawing Package
Last Revised on 09/26/25

PROJECT NO.	129
SHEET NO.	129
TITLE	PERMIT DRAWING SHEET 129 OF 171
DATE	09/26/25
DESIGNED BY	
CHECKED BY	
APPROVED BY	

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Permit Drawing Package
Last Revised on 09/26/25

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)
55	914+00 (RT)-918+50 (LT)	2@ 9'x9' RCBC (SDW)						0.12	< 0.01	834	10	
55	914+00 (RT)-918+50 (LT)	Culvert Stabilization (SDW)						< 0.01		18		
55	914+00 (RT)-918+50 (LT)	Bank Stabilization (SDW)						< 0.01		4		
56	Y22SLIPRPB 38+50 (LT)	Channel Change (SDV)						0.02	< 0.01	518	10	
57	-Y22RPB- 25+42 (LT)	54" RCP (SDT)						0.01	< 0.01	113		
57	-Y22RPB- 25+42 (LT)	Pipe Stabilization (SDT)						< 0.01		40	5	
57A	-Y22RPB- 26+50 (LT)	Channel Change (SDS)						< 0.01	< 0.01	72	10	
58	Y22FLYBD 46+50-47+75	42" RCP (SDT)						0.01	< 0.01	196	20	
58	Y22FLYBD 46+50-47+75	Pipe Stabilization (SDT)						< 0.01		47		
58A	Y22FLYCC 123+00-127+00	54" RCP (SDT)						0.05	< 0.01	485	20	
58A	Y22FLYCC 123+00-127+00	Pipe Stabilization (SDT)						< 0.01		57		
59	Y22FLYCC 119+00 (RT)	15" CSP (SDX)						< 0.01		17	15	
59	Y22FLYCC 119+00 (RT)	Pipe Stabilization (SDX)						< 0.01	< 0.01	75		
59A	Y22FLYCC 119+00 (RT)	Roadway Fill (WEJ)				< 0.01						
70	-Y17- 28+50	24" Pipe Stabilization SCB(1)						< 0.01	< 0.01	20	10	
72	REMOVED	Non-Jurisdictional Pond (PAB)										
73	Y22FLYBD 34+70 (RT)	30" RCP Extension (SDR)						< 0.01	< 0.01	10	10	
73	Y22FLYBD 34+70 (RT)	Pipe Stabilization (SDR)						< 0.01		57		
75	Y22FLYCC 34+00-41+00	Bridge (WEC, SDV)	0.03			0.02	1.56		0.01		254	
76	Y22FLYCC 143+00 (RT)	42" RCP (WEC, SDO)	< 0.01			< 0.01		0.08	< 0.01	1101	10	
77	Y22FLYCC 71+00 (615' LT)	Roadway Fill (WEY)	0.06									
78	REMOVED	60" RCP Pipe Removal (SET)										
79	Y22FLYBD 83+00 (LT)	54" RCP (SET)						0.04	< 0.01	563	20	
79	Y22FLYBD 83+00 (LT)	Pipe Stabilization (SET)						< 0.01		44		
SHEET 5 SUBTOTALS***:			0.09			0.02	1.56	0.36	0.02	4271	394	0

NOTES:

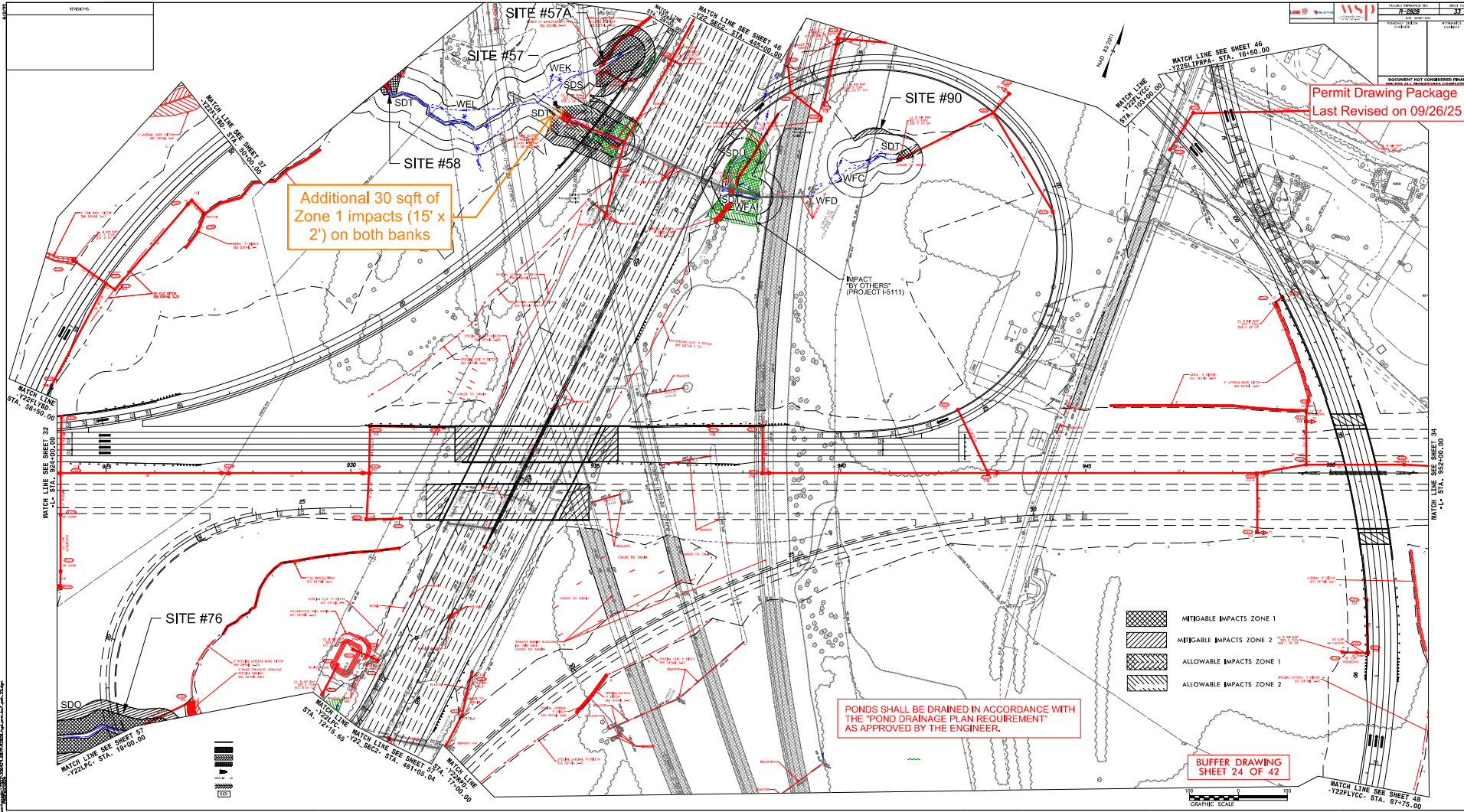
*Represents an isolated wetland impact (also non-riparian)

**Represents any non-riparian wetland impact

***Rounded totals are sum of actual impacts

Site 57: Convert 10' of temporary impacts to permanent impacts. Extend permanent impacts an additional 8' and temporary impacts 5' further
-SJB 9/12/25

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
03/04/2020
WAKE & JOHNSTON
TIP NO.R-2828
WBS NO. 37673.1.TA2



Additional 30 sqft of
Zone 1 impacts (15' x
2') on both banks

Permit Drawing Package
Last Revised on 09/26/25

PONDS SHALL BE DRAINED IN ACCORDANCE WITH
THE "POND DRAINAGE PLAN REQUIREMENT"
AS APPROVED BY THE ENGINEER.

BUFFER DRAWING
SHEET 24 OF 42

GRAPHIC SCALE

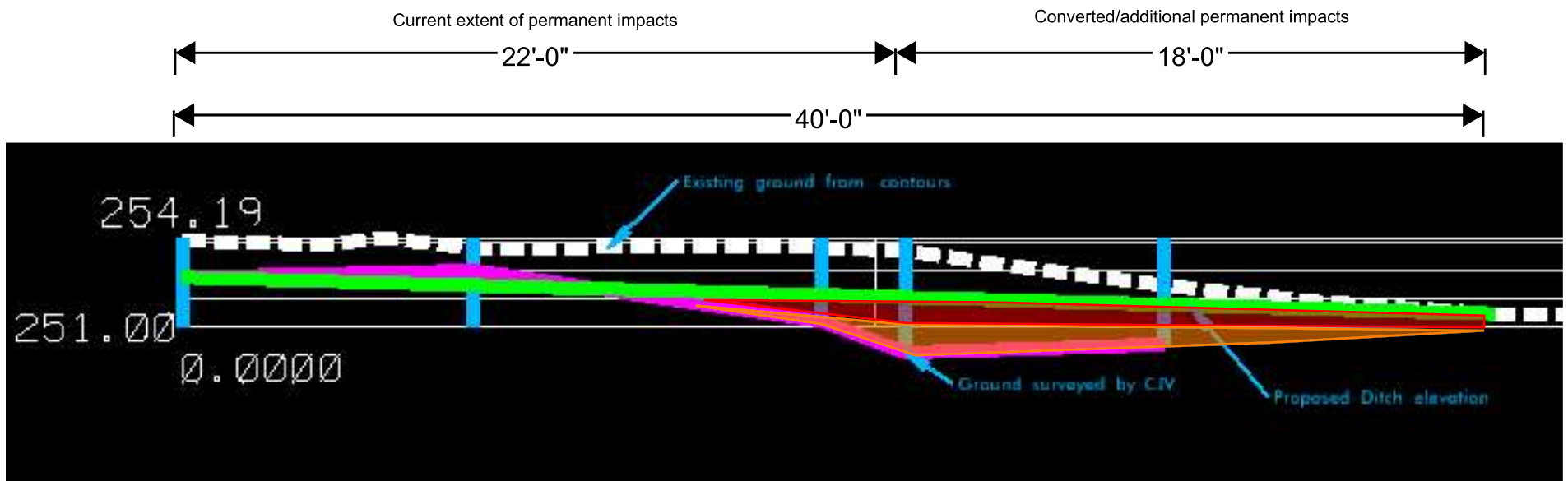
RIPARIAN BUFFER IMPACTS SUMMARY

Permit Drawing Package
Last Revised on 09/26/25

			IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			Site No.	Station (From/To)	Structure Size / Type	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft²)	ZONE 2 (ft²)	TOTAL (ft²)	ZONE 1 (ft²)	ZONE 2 (ft²)
40B	803+66/804+26	Roadfill Ditch (SCY)			x				5079	2317	7396		
41	803+66/804+26	18" CSP (SCY)			x				5095	1729	6824		
41	812+81/827+66	Roadfill Ditch (SCY)			x				79241	46967	126208		
41	831+01/831+19	New Channel Tie In	x						1027	911	1938		
41	828+33/838+25	Bridge (SCY)		x		65438	37217	102655					
46	844+25/844+76	36" RCP			x					270	270		
48	866+00/868+47	Bridge (SDG)		x		16900	13266	30166					
50	875+30/877+40	14'X8' RCBC (SDJ)	x						25494	15386	40880		
51	888+93/889+94	42" RCP (SDK)	x			6023	5029	11052					
52	894+45/895+98	60" RCP (SDL)	x						36709	21474	58183		
53	900+35/907+05	42" RCP (SDM)	x						59490	36433	95923		
55	914+63/919+22	2@ 9'x9' RCBC (SDW)	x						50950	33292	84242		
56	913+58/917+59	Roadway Fill (SDV)	x						31949	22268	54217		
57	Y22RPB 24+86/26+00	54" RCP Pipe Extension (SDT)	x			6876	4456	11332					
57A	Y22RPB 25+94/27+66	Roadway Fill (SDS)			x				6090	4471	10561		
58	Y22FLYBD 48+12/46+10	42" pipe (SDT)	x						14654	8100	22754		
58A	Y22FLYCC 127+31/122+31	54" pipe (SDT)	x						32839	21340	54179		
59A	Y22FLYCC 116+13/117+87	Roadfill (SDQ)			x				3201	4149	7350		
70	Y17A 11+15/11+61	24" CSP (SCB1)	x						1931	589	2520		
72	Y21C 10+70/11+70	Roadfill			x				829	1377	2206		
73	Y22FLYBD 35+23/34+64	Roadfill	x			2357	1339	3696					
74	Y22FLYCC 33+58/34+58	Roadfill (SDV)			x				1566	2406	3972		
75	Y22FLYCC 36+14/38+48	Bridge		x		13991	9505	23496					
76	919+00/929+36	Roadfill (SDO)	x						64308	45001	109309		
TOTALS*:						111585	70812	182397	420452	268480	688932	0	0

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
02/24/2020
WAKE & JOHNSTON
TIP NO. R-2828
WBS NO. 37673.1.TA2
SHEET 38 OF 42



Orange Area - Fill in plunge pool with good fill dirt or compacted stone to establish floor elevation.

Red Area - Geotextile with Class II rip rap extended out to 40' from pipe. Class II rip rap will be countersunk 35' to 40' from pipe to tie to existing stream bed elevation.