



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

J. ERIC BOYETTE  
SECRETARY

March 23, 2021

MEMORANDUM TO: Mr. Joey Hopkins, P.E.  
Division 5 Engineer

FROM: Rodger Rochelle, 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:  
*Rodger Rochelle*  
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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. ***Changes are based on the February 26, 2021 letter requesting modification of the permit to authorize impact changes due to an erosion issue, construction method design revisions, and construction access, for Permit Sites 32, 48, 49, and 91, within Section 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., State Construction Engineer  
Mr. Corey McLamb, P.E., Division 4  
Mr. Dennis Jernigan, P.E., NCTA  
Dr. Majed Al-Ghandour, P.E., Programming and TIP  
Mr. Todd Lapham, Utilities Unit  
Mr. Stephen Morgan, P.E., Hydraulics Unit  
Mr. Brian Hanks, P.E., Structures Management Unit  
Mr. Mark Staley, Roadside Environmental  
Mr. Derrick Weaver, P.E., Environmental Policy Unit  
Ms. Beth Harmon, NCDMS

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
TURNPIKE AUTHORITY  
1578 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1578

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

Website: [ncdot.gov](http://ncdot.gov)

Location:  
1 SOUTH WILMINGTON STREET  
RALEIGH, NC 27601

# PROJECT COMMITMENTS

## Complete 540 – Triangle Expressway Southeast Extension Wake and Johnston Counties, North Carolina

STIP Project Nos. R-2721, R-2828, and R-2829  
State Project Nos. 6.401078, 6.401079, and 6.401080  
Federal Aid Project Nos. STP-0540(19), STP-0540(20), and STP-0540(21)  
WBS Nos. 37673.1.TA1, 35516.1.TA1, and 35517.1.TA1

### COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

| Item | Responsible Party                 | Resource                           | Project Commitment                                                                                                                                                                                                                      | Project Stage / Status        | Applicable STIP Project    |
|------|-----------------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------|
| 1    | Environmental Analysis Unit, NCTA | Historic Architectural Resources   | NCDOT will coordinate with the NC State Historic Preservation Office and the property owner(s) relative to potential retaining wall design to eliminate the need for permanent easement or right-of-way from the Panther Branch School. | Completed                     | R-2828                     |
| 2    | Environmental Analysis Unit, NCTA | Archaeological Resources           | NCDOT will conduct an archaeological survey of the Preferred Alternative and will coordinate the results with the NC State Historic Preservation Office and the NC Office of State Archaeology.                                         | Completed                     | R-2721, R-2828, and R-2829 |
| 3    | Environmental Analysis Unit, NCTA | Archaeological Resources           | NCDOT will establish a Memorandum of Agreement with the NC State Historic Preservation Office in order to take into account the project's effect on archaeological resources.                                                           | Completed                     | R-2828                     |
| 4    | Environmental Analysis Unit, NCTA | Archaeological Resources           | NCDOT will coordinate with the NC Office of State Archaeology relative to data recovery of materials in the one site determined eligible for the National Register of Historic Places based on the information contained at the site.   | Final Design and Construction | R-2828                     |
| 5    | NCTA                              | Community Resources & Section 4(f) | NCDOT will coordinate with the Town of Cary relative to a potential Section 4(f) de minimis use finding for the Middle Creek School Park.                                                                                               | Completed                     | R-2721                     |
| 6    | NCTA                              | Community Resources & Section 4(f) | NCDOT will coordinate with the City of Raleigh relative to a potential Section 4(f) de minimis use finding for the Neuse River Trail.                                                                                                   | Completed                     | R-2829                     |
| 7    | Division 5, NCTA                  | Recreation Facility                | During construction, NCDOT will accommodate trail users along the Neuse River Trail through the project construction zone.                                                                                                              | Final Design and Construction | R-2829                     |
| 8    | Environmental Analysis Unit, NCTA | Noise                              | NCDOT will prepare Design Noise Reports for the Selected Alternative during final design. All feasible and reasonable noise abatement measures will be constructed.                                                                     | Final Design and Construction | R-2721, R-2828, and R-2829 |

| Item | Responsible Party                             | Resource                              | Project Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Project Stage / Status         | Applicable STIP Project     |
|------|-----------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------|
| 9    | Hydraulics Unit, NCTA                         | Stormwater Management                 | NCDOT will utilize Design Standards in Sensitive Watersheds in the Swift Creek and <del>in the Lower</del> Middle Creek watersheds.                                                                                                                                                                                                                                                                                                                                                                                            | Construction and *Final Design | R-2721, R-2828, and R-2829* |
| 10   | Environmental Analysis Unit, NCTA             | Migratory Birds                       | NCDOT will comply with requirements set forth in the Migratory Bird Treaty Act (MBTA) of 1918. <i>On December 22, 2017, after further analysis of the text, history, and purpose of the MBTA, the US Department of Interior issued Opinion M-37050. Opinion M-37050 permanently withdraws and replaces Opinion M-37041. Opinion 37050 concludes that the MBTA applies to only affirmative actions that have as their purpose to reduce migratory birds by taking or killing of migratory birds, their eggs, or their nest.</i> | Construction                   | R-2721, R-2828, and R-2829  |
| 11   | Hydraulics Unit, NCTA                         | Major Drainage Structures             | NCDOT will perform a more detailed hydrologic and hydraulic analysis for each major drainage crossing for the Selected Alternative.                                                                                                                                                                                                                                                                                                                                                                                            | Final Design                   | R-2721, R-2828, and R-2829  |
| 12   | Utilities Unit, NCTA                          | Utilities                             | NCDOT will coordinate with the appropriate utility owners during design of the Selected Alternative for all utility conflicts, including means to avoid or minimize impacts to utilities.                                                                                                                                                                                                                                                                                                                                      | Final Design                   | R-2721, R-2828, and R-2829  |
| 13   | Environmental Analysis Unit, NCTA             | Indirect Effects & Cumulative Impacts | NCDOT will prepare a quantitative assessment for indirect and cumulative effects and impacts for the Selected Alternative.                                                                                                                                                                                                                                                                                                                                                                                                     | Completed                      | R-2721, R-2828, and R-2829  |
| 14   | Environmental Analysis Unit, NCTA             | Protected Species                     | NCDOT will carry out all activities for which it has been assigned responsibility in the <a href="#">Biological Assessment of Potential Impacts to Federally Listed Species</a> (December 2017) and the <a href="#">USFWS Biological Opinion</a> (April 2018) and as amended.                                                                                                                                                                                                                                                  | Construction and *Final Design | R-2721, R-2828, and R-2829* |
| 15   | Environmental Analysis Unit, NCTA             | Protected Species                     | NCDOT will carry out all activities for which it has been assigned responsibility in the <a href="#">Biological Assessment for Atlantic Sturgeon Critical Habitat</a> (December 2017) and the <a href="#">NMFS concurrence letter</a> (May 2018).                                                                                                                                                                                                                                                                              | Final Design and Construction  | R-2829                      |
| 16   | Environmental Analysis Unit, Division 5, NCTA | Protected Species                     | FHWA and NCDOT will update the 2017 Biological Assessment and coordinate with USFWS in accordance with ESA Section 7 for the Neuse River Waterdog, Carolina Madtom, Atlantic Pigtoe, and Atlantic Pigtoe Critical Habitats.                                                                                                                                                                                                                                                                                                    | Completed                      | R-2721, R-2828, and R-2829  |
| 17   | Environmental Analysis Unit, Division 5, NCTA | Protected Species                     | NCDOT will carry out all activities for which it has been assigned responsibility in the Revised Biological Assessment of Potential Impacts to Federally Listed Species (July 2019) and the USFWS Revised Biological/Conference Opinion (October 2019).                                                                                                                                                                                                                                                                        | Construction and *Final Design | R-2721, R-2828, and R-2829* |

## COMMITMENTS FROM PERMITTING

| Item | Responsible Party                             | Commitment Source                                                              | Project Commitment                                                                                                                                                                                                                                                                                                                                                                                                              | Project Stage / Status         | Applicable STIP Project     |
|------|-----------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------|
| 18   | Division 5, NCTA                              | Recreation Facility                                                            | During construction, NCDOT will accommodate trail users along the Woodcreek Trail through the project construction zone.                                                                                                                                                                                                                                                                                                        | Construction                   | R-2721A                     |
| 19   | Division 5, NCTA                              | 404 Permit Condition 2                                                         | NCDOT will protect the Atlantic Sturgeon by not blocking greater than 50% of the Neuse River below the ordinary high-water mark with temporary causeways or work bridges. All causeways and work bridges will be removed at the end of the project.                                                                                                                                                                             | Construction                   | R-2829                      |
| 20   | Environmental Analysis Unit, Division 5, NCTA | 404 Permit Condition 3                                                         | NCDOT will comply with the attached USFWS Biological Opinion-Revised (USFWS BO), dated October 15, 2019.                                                                                                                                                                                                                                                                                                                        | Construction and *Final Design | R-2721, R-2828, and R-2829* |
| 21   | Division 5, NCTA                              | 404 Permit Condition 3 (Attachment: USFWS Biological Opinion (BO) Section 2.4) | NCDOT will invite representatives of the USFWS NCWRC, and other agency personnel to preconstruction meetings prior to incurring impacts in jurisdictional features, as well as to preconstruction meetings associated with installation of structures within 0.25 mile of the Swift Creek crossing.                                                                                                                             | Construction                   | R-2828                      |
| 22   | Division 5, NCTA                              | 404 Permit Condition 3 (Attachment: USFWS BO Section 2.4)                      | NCDOT will not allow any part of the bridging structure for Swift Creek to be within 10 feet of the top of bank on either side of the channel. No permanent structures or temporary structures will be placed in Swift Creek. All permanent and temporary structures will be installed and designed to maintain stability of the stream banks of Swift Creek.                                                                   | Construction                   | R-2828                      |
| 23   | Roadside Environmental Unit, Division 5, NCTA | 404 Permit Condition 3 (Attachment: USFWS BO Section 2.4)                      | NCDOT will require construction of two permanent hazardous spill basins (HSBs) at the crossing of Swift Creek. Road runoff from approximately 1.3 miles of road facility will be directed to the HSBs prior to discharge into Swift Creek or Swift Creek tributaries. The HSBs will be designed to contain a spill from a typical tanker truck. NCDOT will implement their standard protocols for upkeep and use of these HSBs. | Construction                   | R-2828                      |



| Item | Responsible Party                             | Commitment Source                                                      | Project Commitment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project Stage / Status        | Applicable STIP Project    |
|------|-----------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------|
| 24   | Environmental Analysis Unit, Division 5, NCTA | 404 Permit Condition 3 (Attachment: USFWS BO Sections: 2.4, 8.2 & 8.3) | NCDOT will conduct a preconstruction survey (just prior to construction) at the Swift Creek crossing and remove mussels from a defined salvage area and relocate them to appropriate habitat within Swift Creek outside of the salvage area (relocation site) or if deemed appropriate, after coordination with the USFWS and NCWRC, Dwarf Wedgemussel and Yellow Lance individuals may be taken into captivity to use as brood stock for propagation efforts. The preconstruction survey will be incorporated into a Mussel Relocation Plan, which will identify the salvage area and relocation site, and be developed in coordination with USFWS/NCWRC. | Construction                  | R-2828                     |
| 25   | Environmental Analysis Unit, Division 5, NCTA | 404 Permit Condition 3 (Attachment: USFWS BO Sections: 2.4, 8.2 & 8.3) | NCDOT will provide funding to Wake County and NCWRC, after receiving the Section 404 Permit, to be utilized for the retrofit and upgrade of the existing research facility in the A.E. Finley Center, at the Historic Yates Mill County Park for the purpose of research and propagation of aquatic species.                                                                                                                                                                                                                                                                                                                                               | Final Design                  | R-2721, R-2828, and R-2829 |
| 26   | Division 5, NCTA                              | 404 Permit Condition 3 (Attachment: USFWS BO Section 8.4)              | NCDOT will monitor the Action area for evidence of sediment loss. The USFWS will be contacted if project related sedimentation is occurring beyond 400 meters from the Action area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Construction                  | R-2828                     |
| 27   | Environmental Analysis Unit, Division 5, NCTA | 404 Permit Condition 17                                                | NCDOT will implement the Memorandum of Agreement (MOA) between the USACE and SHPO dated March 11, 2018 and adhere to the specific Stipulations provided in the MOA attachment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Final Design and Construction | R-2721, R-2828, and R-2829 |
| 28   | Roadside Environmental Unit, Division 5, NCTA | 404 Permit Condition 23                                                | NCDOT will segregate topsoil (6-12") in wetland areas where pipelines will be installed via trenching. The topsoil will be used to backfill the trench.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Construction                  | R-2828                     |
| 29   | Environmental Analysis Unit, Division 5, NCTA | 404 Permit Condition 27                                                | NCDOT will only complete construction activities on TIPs R-2721A and B under the Section 404 Permit dated October 24, 2019 and R-2828 dated February 3, 2020. No work will commence for TIP R-2829 without further USACE coordination.                                                                                                                                                                                                                                                                                                                                                                                                                     | Construction                  | R-2721, R-2828, and R-2829 |
| 30   | Division 5, NCTA                              | National Marine Fisheries Service Consultation (Page 3)                | NCDOT will stop in-water construction activities if a sturgeon is spotted within 50 feet of operations. (See Attached NMFS Consultation)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Construction                  | R-2829                     |
| 31   | Division 5, NCTA                              | National Marine Fisheries Service Consultation (Page 3)                | NCDOT will observe an in-water work moratorium of February 15-October 31. This includes installation/removal of causeways and temporary bridges. This will cover the WRC moratorium of February 15-September 30.                                                                                                                                                                                                                                                                                                                                                                                                                                           | Construction                  | R-2829                     |

| <b>Item</b> | <b>Responsible Party</b> | <b>Commitment Source</b>                                      | <b>Project Commitment</b>                                                                                          | <b>Project Stage / Status</b> | <b>Applicable STIP Project</b> |
|-------------|--------------------------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------|
| 32          | Division 5, NCTA         | National Marine Fisheries Service Consultation (Page 4)       | NCDOT will not blast within 50 feet of the Neuse River.                                                            | Construction                  | R-2829                         |
| 33          | Division 5, NCTA         | National Marine Fisheries Service Consultation (Page 4)       | NCDOT will adhere to shoreline stabilization Project Design Criteria (PDCs) when installing new bridges and piers. | Construction                  | R-2829                         |
| 34          | Division 5, NCTA         | National Marine Fisheries Service Consultation (Attachment 1) | NCDOT will follow the PDCs outlined in Attachment 1 of the NMFS Consultation                                       | Construction                  | R-2829                         |



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

March 19, 2021

Regulatory Division

Action ID No. SAW-2009-02240; Complete 540; TIP R-2828

Mr. Rodger Rochelle, PE  
Chief Engineer, North Carolina Turnpike Authority  
North Carolina Department of Transportation (NCDOT)  
1578 Mail Service Center  
Raleigh, North Carolina 27699-1578

Dear Mr. Rochelle:

Reference the Department of the Army permit issued to the North Carolina Department of Transportation (NCDOT) on October 24, 2019, and subsequently modified on February 4, 2020, April 29, 2020, and January 7, 2021, 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 (I-87) in Knightdale, Wake and Johnston Counties. Sections included within this permit are R-2721, R-2828, and R-2829. At this time, only STIPs R-2721A&B and R-2828 are authorized for construction; STIP R-2829 has not yet been through final design, has not completely minimized impacts to waters and wetlands, nor has a final compensatory mitigation plan.

Also, please reference your February 26, 2021 letter, requesting modification of the permit to authorize impact changes due to an erosion issue, construction method design revisions, and construction access, for Permit Sites 32, 48, 49, and 91, within Section R-2828, as indicated in Revised Table 4, below (Temp. Wetlands impacts include non-404 hand clearing).

Revised Table 4. R-2828 Jurisdictional Resources Impacts

| Impact Type                      | Riparian Wetlands Temp./ Perm. (ac) | Non-Riparian Wetlands Perm. (ac) | Isolated Wetlands (ac) | Ponds (ac) | Isolated Ponds (ac) | Streams (lf) |       |                  | Riparian Buffer (sq ft) Zone 1/2 |
|----------------------------------|-------------------------------------|----------------------------------|------------------------|------------|---------------------|--------------|-------|------------------|----------------------------------|
|                                  |                                     |                                  |                        |            |                     | Perm.        | Temp. | Structure* Stab. |                                  |
| Neuse River Basin (HUC 03020201) | 4.80 / 19.49                        | 0.07                             | 0.25                   | 8.32       | n/a                 | 16,842       | 1,702 | 2,065            | 1,182,975 / 719,806              |

\*Structure stabilization is pipe, culvert, and bank stabilization.

The Corps has completed the evaluation of your request and has determined that it is appropriate and reasonable, and no public notice is required for this modification. Therefore, the permit is modified as requested and as shown on the enclosed revised Permit Drawings, Sheets 1, 74, 75, 105, 106, 107, 111, 112, 132, 133, 168, 169, and 171 of 171, labeled "Permit Drawing Package Last Revised on 02/16/21."

The modified design for R-2828 will have no additional permanent loss impacts than were previously permitted, so no additional compensatory mitigation will be required.

Note: The drawings listed above are now part of the permit drawing packages referenced in Special Condition 1 of the permit. All conditions of the permit, including the permit expiration date of December 31, 2024, remain applicable.

Should you have any questions, contact Mr. Eric Alsmeyer, via email at [Eric.C.Alsmeyer@usace.army.mil](mailto:Eric.C.Alsmeyer@usace.army.mil) or by telephone at (919) 554-4884, extension 23.

FOR THE COMMANDER

 Date: 2021.03.19  
15:05:00 -04'00'

Monte Matthews  
Lead Project Manager  
Wilmington District

Enclosures

Electronic Copy Furnished with Enclosures:

Ms. Amy Chapman, NC Div. of Water Resources  
[amy.chapman@ncdenr.gov](mailto:amy.chapman@ncdenr.gov)

**ROY COOPER**

*Governor*

**DIONNE DELLI-GATTI**

*Secretary*

**S. DANIEL SMITH**

*Director*



**NORTH CAROLINA**  
*Environmental Quality*

March 9, 2021

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

Subject: MODIFICATION of 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act, NEUSE BUFFER RULES, and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS for Proposed construction of the Triangle Expressway Southeast Extension (NC 540) in Wake & Johnston Counties, Federal Aid Project No. STP-0540(19-21), State Project No. 37673.1.TA2, TIP Nos, R-2721, R-2828, & R-2829.  
NCDWR Project No. 20181249 version 6

Dear Mr. Harris:

Attached hereto is a copy of the Modification to Certification No. 4179 issued to The North Carolina Department of Transportation (NCDOT) originally dated February 15, 2019, modified January 30, 2020, April 20, 2020, June 1, 2020, December 29, 2020, and March 9, 2021.

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

Sincerely,

DocuSigned by:

*Amy Chapman*

9C9886312DCD474...

S. Daniel Smith, Director  
Division of Water Resources

**Attachments**

Electronic copy only distribution:

Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office  
Heather Montague, Division 5 Environmental Officer  
Deanna Riffey, NC Department of Transportation  
File Copy



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



**MODIFICATION of 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act, NEUSE BUFFER RULES, and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000 with ADDITIONAL CONDITIONS**

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500 and 15A NCAC 2B.0233 and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000. This certification version authorizes the NCDOT to impact 55.34 acres of wetlands, 40133 linear feet of jurisdictional streams and 43193050 square feet of protected riparian buffers in Wake & Johnston Counties. The project shall be constructed pursuant to the permit modification request received March 1, 2021.

**The additional authorized impacts are as described below:**

**Section R-2828 Additional Stream Impacts**

| <b>R-2828 Site</b>      | <b>Riprap Stabilization to Stream (linear ft)</b> | <b>Temporary Fill in Stream (linear ft)</b> |
|-------------------------|---------------------------------------------------|---------------------------------------------|
| <b>32</b>               | <b>22</b>                                         | <b>-</b>                                    |
| <b>91</b>               | <b>-</b>                                          | <b>66</b>                                   |
| <b>Total Additional</b> | <b>22</b>                                         | <b>66</b>                                   |

**Section R-2828 Additional Wetland Impacts**

| <b>R-2828 Site</b>      | <b>Hand Clearing in Wetland (ac)</b> |
|-------------------------|--------------------------------------|
| <b>48</b>               | <b>0.014</b>                         |
| <b>49</b>               | <b>0.060</b>                         |
| <b>Total Additional</b> | <b>0.074</b>                         |

**Section R-2828 Additional Neuse Riparian Buffer Impacts**

| <b>R-2828 Site</b>      | <b>Additional Zone 1 Impacts (sq ft)</b> | <b>Additional Zone 2 Impacts (sq ft)</b> |
|-------------------------|------------------------------------------|------------------------------------------|
| <b>48</b>               | <b>2160</b>                              | <b>1168</b>                              |
| <b>91</b>               | <b>4000</b>                              | <b>2577</b>                              |
| <b>Total Additional</b> | <b>6160</b>                              | <b>3745</b>                              |

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear and Neuse River Basins 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 dated March 1, 2021. 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). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0233. 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.





**Conditions of Certification:**

1. All conditions in the 401 Water Quality Certifications for this project, originally dated February 15, 2019, and most recently revised December 29, still apply.

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 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-provided 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 the 1st Day of March 2021

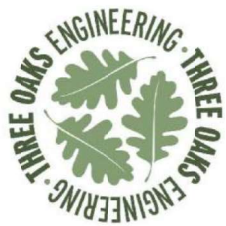
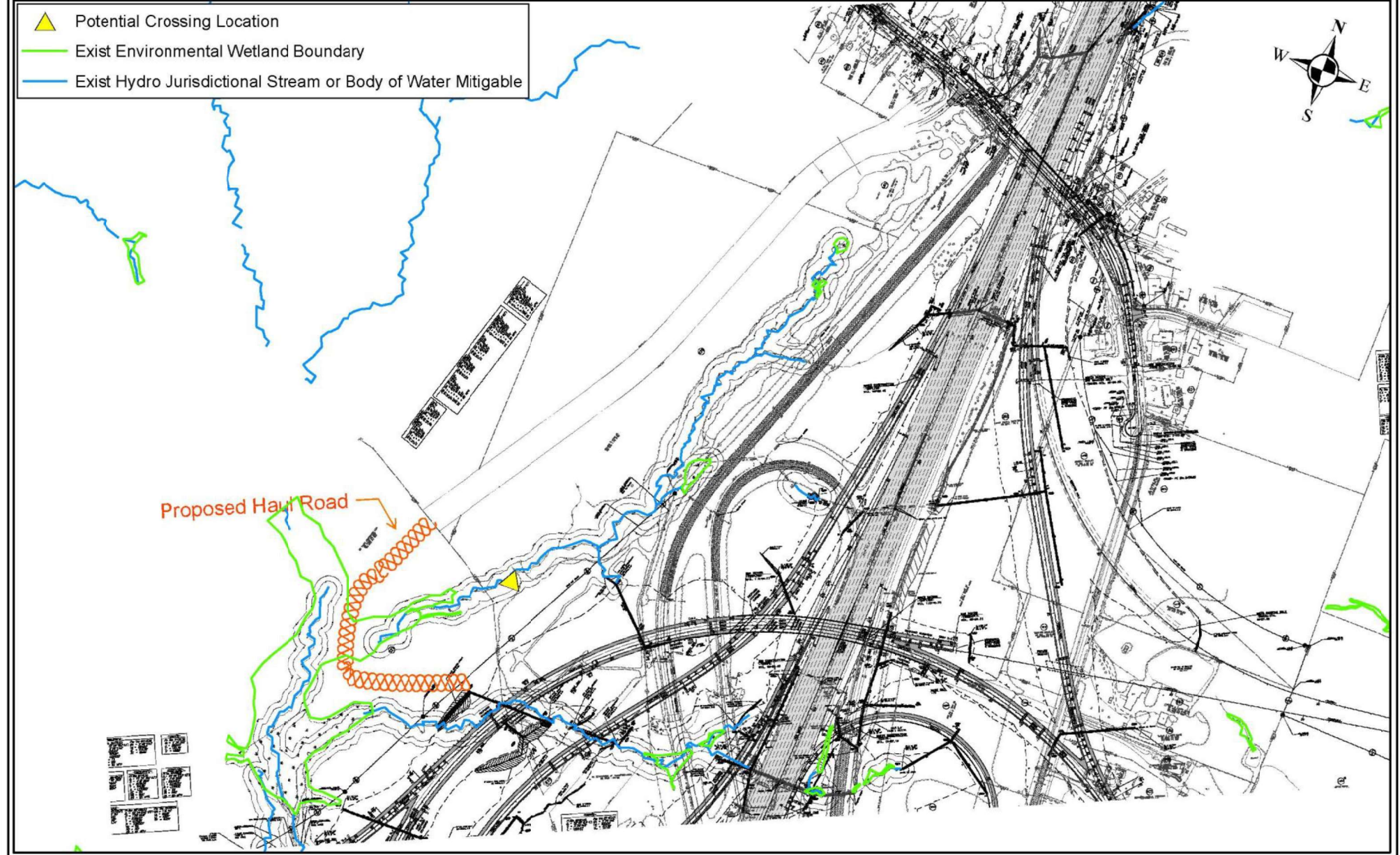
DIVISION OF WATER RESOURCES

DocuSigned by:  
*Amy Chapman*  
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S. Daniel Smith, Director

WQC No. 4179



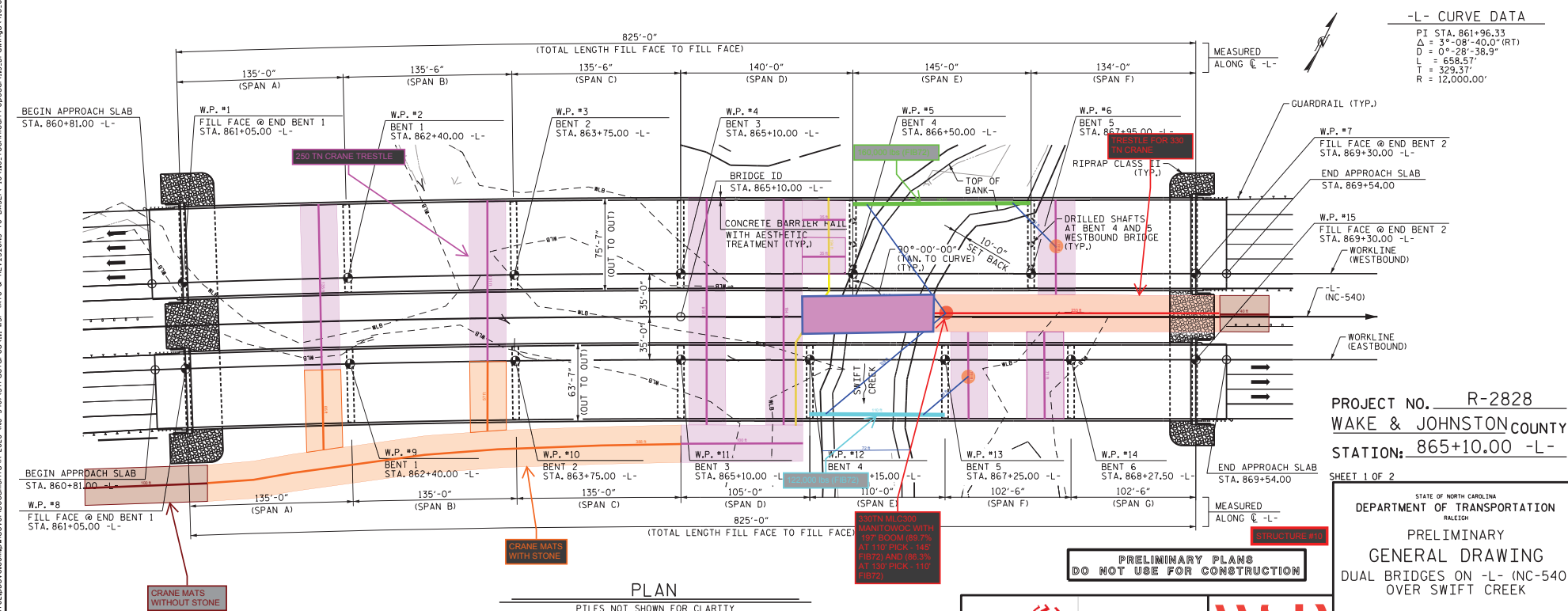
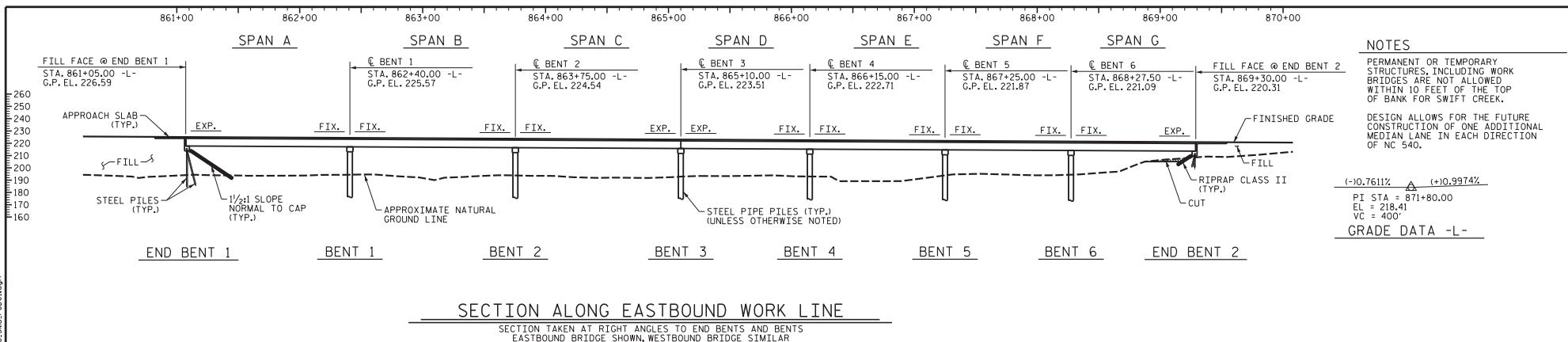


Wake &amp; Johnston Counties, North Carolina

|                   |                    |
|-------------------|--------------------|
| Drawn By:<br>NMSO | Checked By:<br>MGW |
|-------------------|--------------------|

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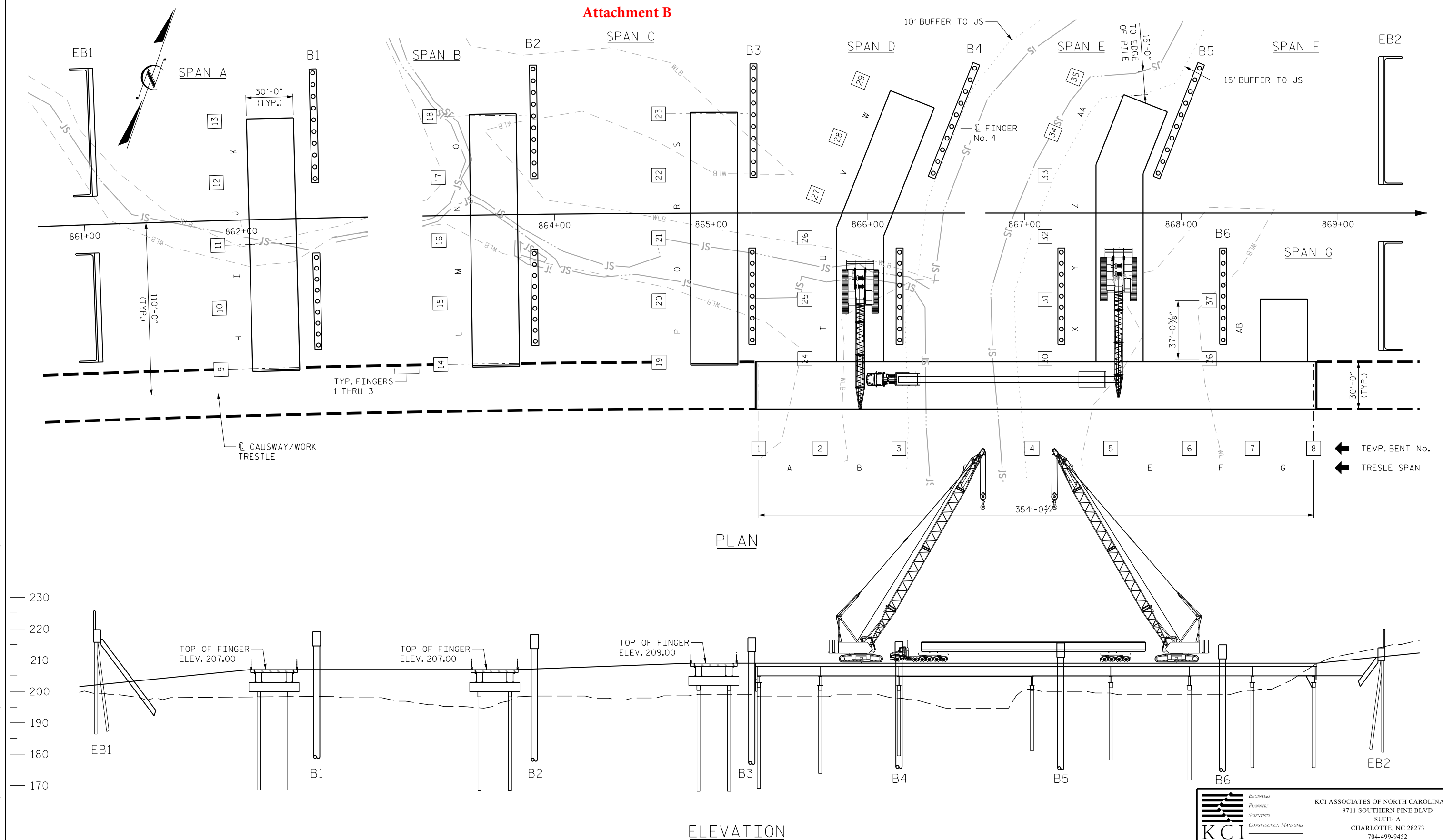
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

PROJECT NO. R-2828  
WAKE & JOHNSTON COUNTY  
STATION: 865+10.00 -L-  
SHEET 1 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
PRELIMINARY  
GENERAL DRAWING  
DUAL BRIDGES ON -L- (NC-540  
OVER SWIFT CREEK

| REVISIONS |     |       |     |     |       | SHEET NO.    |
|-----------|-----|-------|-----|-----|-------|--------------|
| NO.       | BY: | DATE: | NO. | BY: | DATE: | S10-1        |
| 1         |     |       | 3   |     |       | TOTAL SHEETS |
| 2         |     |       | 4   |     |       | XX           |

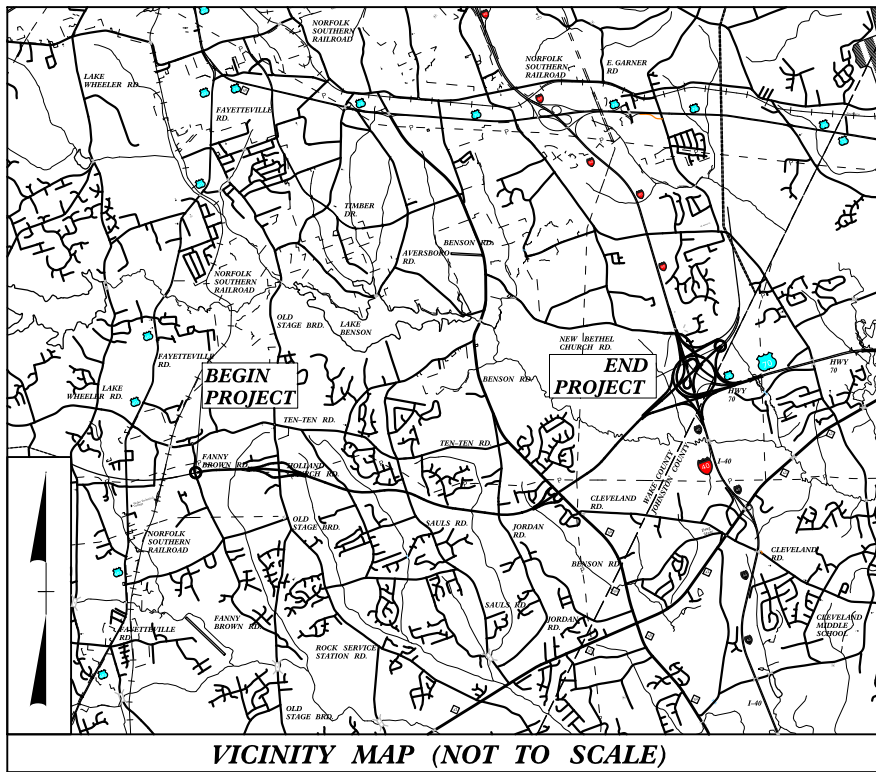
## Attachment B



|                                                                                                                                             |                                                                                                                     |                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
|                                                        | <i>ENGINEERS</i><br><i>PLANNERS</i><br><i>SCIENTISTS</i><br><hr style="width: 100%;"/> <i>CONSTRUCTION MANAGERS</i> | <b>KCI ASSOCIATES OF NORTH CAROLINA, P.A.</b><br>9711 SOUTHERN PINE BLVD<br>SUITE A<br>CHARLOTTE, NC 28273<br>704-499-9452 |
| <h2 style="margin: 0;">WORK TRESTLE</h2> <p style="margin: 10px 0 0 0;">STRUCTURE 10: DUAL BRIDGES ON -L- (NC-540)<br/>OVER SWIFT CREEK</p> |                                                                                                                     |                                                                                                                            |
| WAKE AND JOHNSTON CO., NC<br>NCDOT PROJECT NO. R-2828                                                                                       |                                                                                                                     | KCI JOB #911906280<br>JOB REF. #C19-69,07                                                                                  |
| DES. BY :<br>JMV                                                                                                                            | CKD. BY :<br>AMC                                                                                                    | DATE :<br>10/20                                                                                                            |
| SCALE :<br>NONE                                                                                                                             |                                                                                                                     | SHEET NO. :<br>1 OF 11                                                                                                     |

TIP PROJECT: R-2828

CONTRACT: C204197



VICINITY MAP (NOT TO SCALE)

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

WAKE & JOHNSTON COUNTY

LOCATION: TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION FROM  
EAST OF US 401 TO EAST OF I-40

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE  
OF WORK CONTAINED IN THE REQUEST FOR  
PROPOSALS

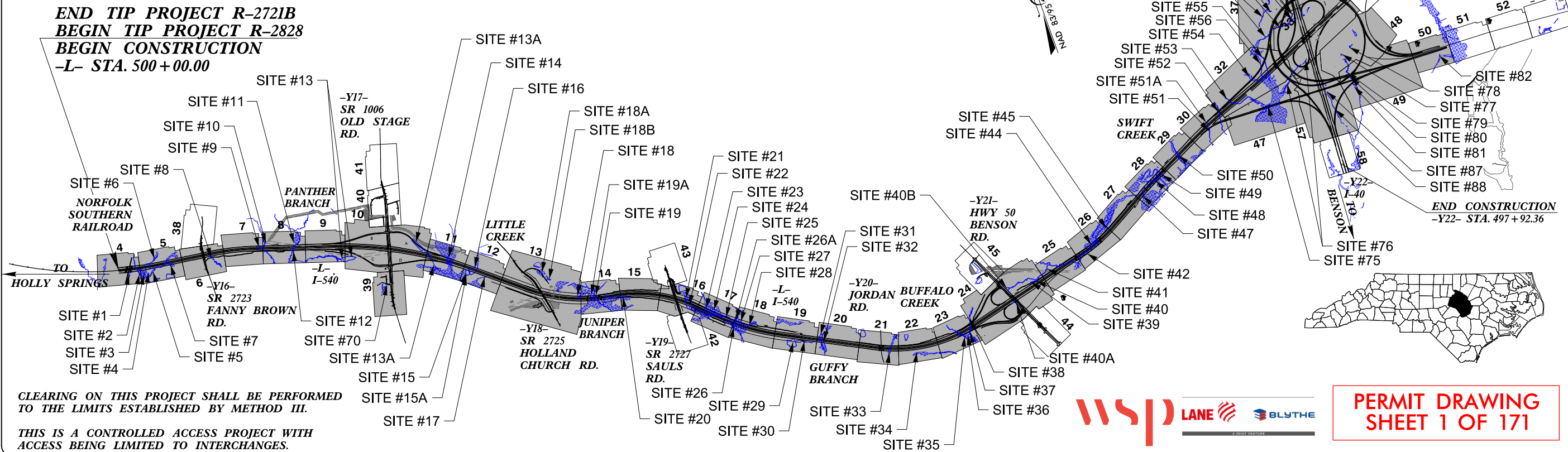
WETLAND AND SURFACE WATER IMPACTS PERMIT

PACKAGE R-2828  
DATE: FEBRUARY 16, 2021

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.    | TOTAL SHEETS |
|-----------------|-----------------------------|--------------|--------------|
| N.C.            | R-2828                      | 1            |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION  |              |
| 35516.3.GV1     | NHP-0540(043)               | DESIGN-BUILD |              |
| 35516.2.3       | NHP-0540(043)               | R/W          |              |
| 35516.2.TA1     | NHP-0540(043)               | R/W          |              |
|                 |                             |              |              |
|                 |                             |              |              |
|                 |                             |              |              |

Permit Drawing Package  
Last Revised on 02/16/21

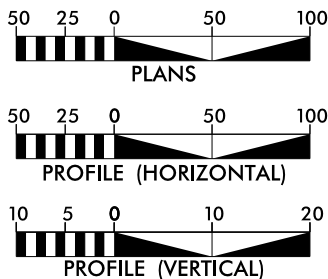
END TIP PROJECT R-2828  
END CONSTRUCTION  
-L- STA. 968 + 50.00



CLEARING ON THIS PROJECT SHALL BE PERFORMED  
TO THE LIMITS ESTABLISHED BY METHOD III.

THIS IS A CONTROLLED ACCESS PROJECT WITH  
ACCESS BEING LIMITED TO INTERCHANGES.

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = NA  
ADT 2040 = 53,400  
DHV = 12 %  
D = 65 %  
T = 11 % \*  
V = 75 MPH  
\*(TTST 4 + DUAL 7)

FUNCTIONAL CLASS:  
FREEWAY

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-2828 = 8.055 Miles  
LENGTH OF STRUCTURE PROJECT R-2828 = 0.562 Miles  
TOTAL LENGTH OF TIP PROJECT R-2828 = 8.617 Miles

NCDOT CONTACT:

DESIGN BUILD PROJECT ENGINEER  
TRANSPORTATION PROGRAM MANAGEMENT UNIT

Prepared In the Office of



WSP USA  
434 FAYETTEVILLE STREET  
SUITE 500  
RALEIGH, NC 27601  
TEL: 1-919-836-4040  
FAX: 1-919-836-0099  
LICENSE NO. E-0165

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
SEPT. 09, 2019

LETTING DATE:  
DEC. 11, 2019

DANIEL BRIDGES, PE  
PROJECT ENGINEER

RONYELL THIGPEN, PE  
PROJECT DESIGN ENGINEER

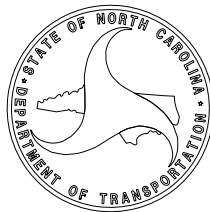
HYDRAULICS ENGINEER

SIGNATURE: P.E.

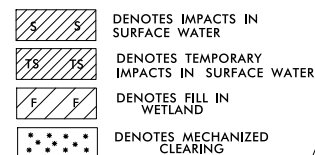
ROADWAY DESIGN  
ENGINEER

SIGNATURE: P.E.

PERMIT DRAWING  
SHEET 1 OF 171







## INSET A

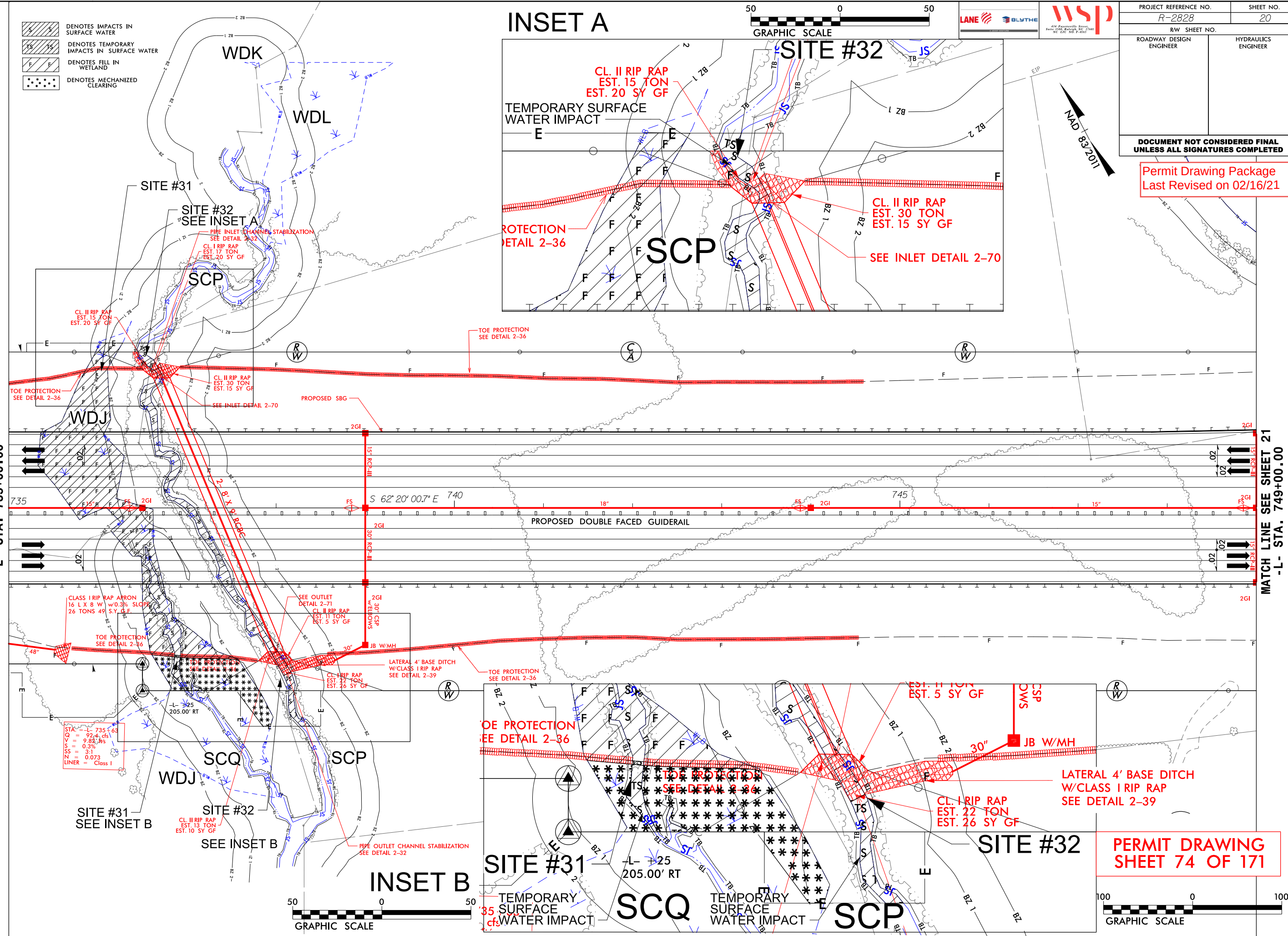


|  |                                                                                 |                        |
|--|---------------------------------------------------------------------------------|------------------------|
|  | PROJECT REFERENCE NO.                                                           | SHEET NO.              |
|  | <i>R-2828</i>                                                                   | <i>20</i>              |
|  | R/W SHEET NO.                                                                   |                        |
|  | ROADWAY DESIGN<br>ENGINEER                                                      | HYDRAULICS<br>ENGINEER |
|  | <p><b>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</b></p> |                        |

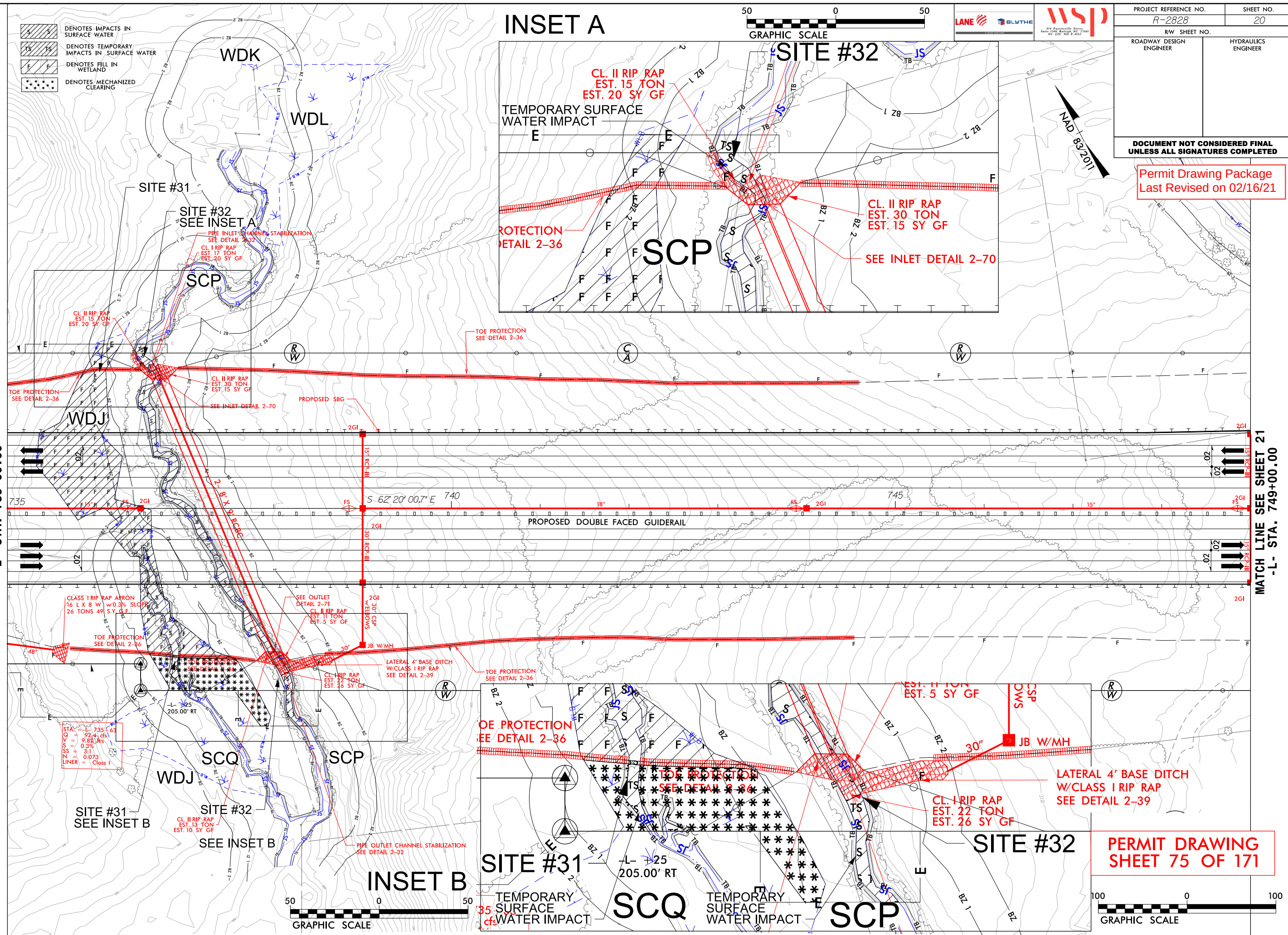
Permit Drawing Package  
Last Revised on 02/16/21

MATCH LINE SEE SHEET 19  
-L- STA. 735+00.00

**MATCH LINE SEE SHEET 21**  
**-L- STA. 749+00.00**

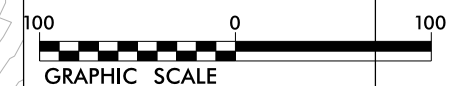
PERMIT DRAWING  
SHEET 74 OF 171





Permit Drawing Package  
Last Revised on 02/16/21

PERMIT DRAWING  
SHEET 75 OF 171





Permit Drawing Package  
Last Revised on 02/16/21



Permit Drawing Package  
Last Revised on 02/16/212/15/2021  
c:\projectwise\wsp--victoria.kohlwey\d0348956\R2828\_hyd\_prm\_wet\_psh\_28--cont.dgn  
15V67/748























WETLAND AND SURACE WATER IMPACTS SUMMARY

|                       |                           |                             | WETLAND IMPACTS                 |                             |                             |                                      |                                | SURFACE WATER IMPACTS     |                       |                                         |                                     |                            |
|-----------------------|---------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|-----------------------------------------|-------------------------------------|----------------------------|
| Site No.              | Station (From/To)         | Structure Size / Type       | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 26A                   | 707+50                    | Roadway Fill (SCM)          |                                 |                             |                             |                                      |                                | 0.01                      | < 0.01                | 266                                     | 35                                  |                            |
| 26A                   | 707+50                    | Culvert Stabilization (SCM) |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 65                                      |                                     |                            |
| 27                    | 705+75 - 714+00           | Roadway Fill (WDH)          | 2.44                            |                             | 0.03                        | 0.24                                 |                                |                           |                       |                                         |                                     |                            |
| 28                    | 711+00 - 714+00 (LT)      | Roadway Fill (SCN)          |                                 |                             |                             |                                      |                                | 0.01                      | < 0.01                | 156                                     | 10                                  |                            |
| 29                    | 726+50 - 728+00 (RT)      | Drain Pond (PY)             |                                 |                             |                             |                                      |                                | 1.40                      |                       |                                         |                                     |                            |
| 30                    | 728+00 - 734+50 (RT)      | Channel Change (SCQ)        |                                 |                             |                             |                                      |                                | 0.06                      |                       | 673                                     |                                     |                            |
| 31                    | 736+00                    | Roadway Fill (WDJ, SCQ)     | 0.38                            |                             |                             | 0.09                                 |                                | 0.03                      | < 0.01                | 130                                     | 58                                  |                            |
| 32                    | 736+70 (LT) - 738+00 (RT) | 2 @ 8'x9' RCBC (SCP)        |                                 |                             |                             |                                      |                                | 0.07                      | 0.02                  | 379                                     | 92                                  |                            |
| 32                    | 736+70 (LT) - 738+00 (RT) | Culvert Stabilization (SCP) |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 44                                      |                                     |                            |
| 32                    | 736+70 (LT) - 738+00 (RT) | Bank Stabilization (SCP)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 29                                      |                                     |                            |
| 33                    | 759+00 (RT) - 759+82 (LT) | Roadway Fill (WDM)          | 0.39                            |                             |                             | 0.03                                 |                                |                           |                       |                                         |                                     |                            |
| 34                    | 767+65 (RT)               | Roadway Fill (WDN)          |                                 |                             |                             | < 0.01                               |                                |                           |                       |                                         |                                     |                            |
| 35                    | 782+00 (LT)               | 9'x8' RCBC (SCT)            |                                 |                             |                             |                                      |                                | 0.05                      | < 0.01                | 441                                     | 37                                  |                            |
| 35                    | 782+00 (LT)               | Culvert Stabilization (SCT) |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 47                                      |                                     |                            |
| 35                    | 782+00 (LT)               | Bank Stabilization (SCT)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 18                                      |                                     |                            |
| 36                    | 782+00 - 787+20           | Roadway Fill (WDO)          | 0.71                            |                             | < 0.01                      | 0.06                                 |                                |                           |                       |                                         |                                     |                            |
| 37                    | 785+90 (RT) - 787+70 (LT) | 48" RCP (SCV)               |                                 |                             |                             |                                      |                                | 0.03                      | < 0.01                | 394                                     | 20                                  |                            |
| 37                    | 785+90 (RT) - 787+70 (LT) | Pipe Stabilization (SCV)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 37                                      |                                     |                            |
| 38                    | 788+00 (LT)               | Roadway Fill (WDP)          |                                 |                             |                             | < 0.01                               |                                |                           |                       |                                         |                                     |                            |
| 39                    | 812+00 - 813+00 (LT)      | Roadway Fill (WDS)          | 0.08                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| 40                    | 812+90 - 813+37 (LT)      | Channel Change (SDB)        |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 54                                      |                                     |                            |
| 40                    | 813+50 (LT)               | Channel Change (SDC)        |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 93                                      |                                     |                            |
| 40A*                  | -Y21- 40+00 (LT)          | Roadway Fill (WDR)          | 0.09                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| 40B                   | -Y21- 44+40 (RT)          | Roadway Fill (SCZ)          |                                 |                             |                             |                                      |                                | < 0.01                    | < 0.01                | 52                                      | 13                                  |                            |
| SHEET 3 SUBTOTALS***: |                           |                             | 4.09                            |                             | 0.03                        | 0.43                                 |                                | 1.70                      | 0.03                  | 2878                                    | 265                                 | 0                          |

NOTES:

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

\*\*Represents any non-riparian wetland impact

\*\*\*Rounded totals are sum of actual impacts

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

| WETLAND AND SURACE WATER IMPACTS SUMMARY |                           |                             |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|------------------------------------------|---------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|-----------------------------------------|-------------------------------------|----------------------------|
|                                          |                           |                             | WETLAND IMPACTS                 |                             |                             |                                      |                                | SURFACE WATER IMPACTS     |                       |                                         |                                     |                            |
| Site No.                                 | Station (From/To)         | Structure Size / Type       | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 41                                       | 813+50 (LT) - 829+50 (RT) | Channel Change (SCY)        |                                 |                             |                             |                                      |                                | 0.21                      | 0.05                  | 1453                                    | 187                                 |                            |
| 41                                       | -Y21- 44+50 (RT)          | 18" CSP (SCY)               |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 58                                      |                                     |                            |
| 41                                       | -Y21- 44+50 (RT)          | Pipe Stabilization (SCY)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 21                                      |                                     |                            |
| 41                                       | 829+50 (LT) - 834+00 (RT) | Bank Stabilization (SCY)    |                                 |                             |                             |                                      |                                | 0.08                      |                       | 283                                     |                                     |                            |
| 42                                       | BRIDGE 832+50 (RT)        | Work Trestle (WDU)          |                                 |                             |                             |                                      | 0.02                           |                           |                       |                                         |                                     |                            |
| 44                                       | BRIDGE                    | Bridge                      | 0.02                            |                             |                             |                                      | 0.55                           |                           | 0.05                  |                                         | 238                                 |                            |
| 44                                       | BRIDGE                    | Bank Stabilization          |                                 |                             |                             |                                      |                                | 0.01                      |                       | 44                                      |                                     |                            |
| 45                                       | 841+78 - 843+00 (LT)      | Roadway Fill (WDV)          | 0.05                            |                             |                             | 0.03                                 |                                |                           |                       |                                         |                                     |                            |
| 47                                       | 856+50 - 861+50           | Roadway Fill (WDV)          | 0.37                            |                             |                             | 0.05                                 |                                |                           |                       |                                         |                                     |                            |
| 48                                       | 861+40 - 866+30           | Work Trestle (WDV)          | 0.02                            |                             |                             | < 0.01                               | 0.65                           |                           |                       |                                         |                                     |                            |
| 49                                       | 867+50 - 868+50           | Work Trestle (WDY)          | < 0.01                          |                             |                             |                                      | 0.17                           |                           |                       |                                         |                                     |                            |
| 50                                       | 876+00                    | 14'X8' RCBC (SDJ)           |                                 |                             |                             |                                      |                                | 0.03                      | < 0.01                | 318                                     | 46                                  |                            |
| 50                                       | 876+00                    | Culvert Stabilization (SDJ) |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 42                                      |                                     |                            |
| 50                                       | 876+00                    | Bank Stabilization (SDJ)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 48                                      |                                     |                            |
| 50A                                      | 875+50 - 877+00           | Roadway Fill (WDZ)          | 0.56                            |                             |                             | 0.09                                 |                                |                           |                       |                                         |                                     |                            |
| 51                                       | 890+00                    | 42" RCP (SDK)               |                                 |                             |                             |                                      |                                | < 0.01                    | < 0.01                | 32                                      | 10                                  |                            |
| 51                                       | 890+00                    | Pipe Stabilization (SDK)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 21                                      |                                     |                            |
| 51A                                      | 890+00                    | Roadway Fill (WEA)          | 0.29                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| 52                                       | 895+00                    | 60" RCP (SDL)               |                                 |                             |                             |                                      |                                | 0.05                      | < 0.01                | 588                                     | 20                                  |                            |
| 52                                       | 895+00                    | Pipe Stabilization (SDL)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 39                                      |                                     |                            |
| 53                                       | 900+50 (LT) - 906+50 (RT) | 42" RCP (SDM)               |                                 |                             |                             |                                      |                                | 0.05                      | < 0.01                | 948                                     | 20                                  |                            |
| 53                                       | 900+50 (LT) - 906+50 (RT) | Pipe Stabilization (SDM)    |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 47                                      |                                     |                            |
| 54                                       | 911+00 (LT) - 913+75 (RT) | Roadway Fill (WEC)          | 1.88                            |                             |                             | 0.10                                 |                                |                           |                       |                                         |                                     |                            |
|                                          |                           |                             |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| SHEET 4 SUBTOTALS***:                    |                           |                             | 3.19                            |                             |                             | 0.27                                 | 1.40                           | 0.45                      | 0.10                  | 3942                                    | 521                                 | 0                          |

NOTES:  
\*Represents an isolated wetland impact (also non-riparian)  
\*\*Represents any non-riparian wetland impact  
\*\*\*Rounded totals are sum of actual impacts

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

SHEET169OF171



| WETLAND AND SURACE WATER IMPACTS SUMMARY |                                |                              |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            | Permit Drawing Package<br>Last Revised on 02/16/21 |
|------------------------------------------|--------------------------------|------------------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|-----------------------------------------|-------------------------------------|----------------------------|----------------------------------------------------|
|                                          |                                |                              | WETLAND IMPACTS                 |                             |                             |                                      |                                | SURFACE WATER IMPACTS     |                       |                                         |                                     |                            |                                                    |
| Site No.                                 | Station (From/To)              | Structure Size / Type        | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |                                                    |
| 80                                       | -Y22FLYBD- 83+50 (RT)          | Roadway Fill (WEV)           | 0.03                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |                                                    |
| 81                                       | -Y22RPDE- 29+50 (RT)           | Roadway Fill (WEU)           | 0.04                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |                                                    |
| 82                                       | -Y22FLYBD- 113+30 (RT)         | HSB Outlet SEH, (WFN(2))     |                                 |                             |                             | 0.05                                 |                                |                           | < 0.01                |                                         | 10                                  |                            |                                                    |
| 82                                       | -Y22FLYBD- 113+30 (RT)         | 12" Pipe Stabil. (SEH)       |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 15                                      |                                     |                            |                                                    |
| 82A                                      | -Y22SEC2- 382+00 - 386+00 (LT) | Channel Change (SEM)         |                                 |                             |                             |                                      |                                | 0.04                      | < 0.01                | 422                                     | 20                                  |                            |                                                    |
| 83                                       | -Y22SEC2- 396+50 (LT)          | Channel Change (SEK, WFF)    |                                 |                             |                             | < 0.01                               |                                | < 0.01                    | < 0.01                | 28                                      | 13                                  |                            |                                                    |
| 84                                       | -Y22SEC2- 405+00 (LT)          | 60" CMP & 72" WSP (SEL)      |                                 |                             |                             |                                      |                                |                           | < 0.01                |                                         | 10                                  |                            |                                                    |
| 84                                       | -Y22SEC2- 405+00 (LT)          | Pipe Stabilizatoin (SEL)     |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 37                                      |                                     |                            |                                                    |
| 85                                       | -Y22SEC2- 416+00 (LT)          | 30" RCP Pipe Extension (SEV) |                                 |                             |                             |                                      |                                | < 0.01                    | < 0.01                | 59                                      | 10                                  |                            |                                                    |
| 85                                       | -Y22SEC2- 416+00 (LT)          | Pipe Stabilizatoin (SEV)     |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 19                                      |                                     |                            |                                                    |
| 87                                       | -Y22SEC2- 474+20 (LT)          | 42" Pipe (SES)               |                                 |                             |                             |                                      |                                |                           | < 0.01                |                                         | 10                                  |                            |                                                    |
| 87                                       | -Y22SEC2- 474+20 (LT)          | Pipe Stabilization (SES)     |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 10                                      |                                     |                            |                                                    |
| 88                                       | -Y22SEC2 (LT) - 80+00 (LT)     | 48" RCP (SES)                |                                 |                             |                             |                                      |                                | 0.02                      | < 0.01                | 244                                     | 20                                  |                            |                                                    |
| 88                                       | -Y22SEC2 (LT) - 80+00 (LT)     | Pipe Stabilizatoin (SES)     |                                 |                             |                             |                                      |                                | < 0.01                    |                       | 30                                      |                                     |                            |                                                    |
| 91                                       | Y22FLYCC 121+30/121+90 (RT)    | Haul Road (SDQ)              |                                 |                             |                             |                                      |                                |                           | 0.01                  |                                         | 66                                  |                            |                                                    |
|                                          |                                |                              |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |                                                    |
|                                          |                                |                              |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |                                                    |
|                                          |                                |                              |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |                                                    |
|                                          | SHEET 1 SUBTOTALS              |                              | 2.36                            | < 0.01                      | 0.08                        | 0.16                                 |                                | 3.88                      | 0.01                  | 2538                                    | 103                                 |                            |                                                    |
|                                          | SHEET 2 SUBTOTALS              |                              | 6.82                            |                             | 0.39                        | 0.86                                 | 0.85                           | 3.40                      | < 0.01                | 1834                                    | 57                                  |                            |                                                    |
|                                          | SHEET 3 SUBTOTALS              |                              | 4.09                            |                             | 0.03                        | 0.43                                 |                                | 1.70                      | 0.03                  | 2878                                    | 265                                 |                            |                                                    |
|                                          | SHEET 4 SUBTOTALS              |                              | 3.19                            |                             |                             | 0.27                                 | 1.40                           | 0.45                      | 0.10                  | 3942                                    | 521                                 |                            |                                                    |
|                                          | SHEET 5 SUBTOTALS              |                              | 0.09                            |                             |                             | 0.03                                 | 1.56                           | 0.36                      | 0.02                  | 4253                                    | 399                                 |                            |                                                    |
|                                          |                                |                              |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |                                                    |
| TOTALS***:                               |                                |                              | 16.62                           | < 0.01                      | 0.50                        | 1.79                                 | 3.81                           | 9.88                      | 0.20                  | 16309                                   | 1504                                | 0                          |                                                    |

NOTES:

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

\*\*Represents any non-riparian wetland impact

\*\*\*Rounded totals are sum of actual impacts

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

03/04/2020

WAKE & JOHNSTON

TIP NO.R-2828

WBS NO. 37673.1.TA2

SHEET171OF171