STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

May 24, 2024

U.S. Army Corps of Engineers:

Asheville Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, North Carolina 28801

Charlotte Regulatory Field Office
8430 University Executive Park Drive, Suite 615
Charlotte, North Carolina 28262

N.C. Division of Water Resources
Transportation Permitting Branch
1617 Mail Service Center
Raleigh NC 27699-1617

ATTN: Ms. Crystal Amschler
NCDOT Coordinator

Ms. Beth Plummer
NCDOT Coordinator

Mr. Stephen Brumagin
NCDOT Coordinator

Subject: **Application for Section 404 General Permit 50, Section 10 Permit, Section 401 Water Quality Certification, and Buffer Authorization** for the proposed replacement of Bridge No. 91 (B-6051) on US 29/74 (Wilkinson Boulevard) over Catawba River (Lake Wylie) on the border of Gaston and Mecklenburg Counties and improve the intersection (U-6143) of US 74 (Wilkinson Boulevard) and NC 7 (Catawba Street) in Belmont, NC. Divisions 10 & 12. **TIP: B-6051 & U-6143** Debit $767 from WBS No. 48708.1.1 & 48326.1.1

Dear Ladies and Gentleman:

NCDOT proposes to replace Bridge 91 (B-6051) on US 29/74 (Wilkinson Boulevard) over Catawba River (Lake Wylie) on the border of Gaston and Mecklenburg Counties and improve intersection (U-6143) of US 74 (Wilkinson Boulevard) and NC 7 (Catawba Street) in Belmont, NC.

Purpose and Need:

Need:

U-6143 - Currently the intersection of US 74 and NC 7 is operating at Level of Service F for A.M. right turn movements from northbound NC 7 to eastbound US 74 and also for P.M. left turn movements from westbound US 74 to southbound NC 7. During the evening peak hour, traffic currently backs up onto the bridge from the intersection.

B-6051 - Gaston County Bridge No. 91 carries US 74/US 29 over the Catawba River/ Lake Wylie between Gaston and Mecklenburg Counties. U.S. 74 is the emergency route during I-85

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

closures. There are six lanes just east of the bridge and five lanes just west of the bridge while the bridge only carries four lanes creating a bottleneck when I-85 is detoured to U.S. 74. The structure is rated as functionally obsolete with a deck geometry rating of 2 out of 9.

Additionally, there is only 8' of navigational clearance between full pond elevation of Lake Wylie and the low steel of the bridge. Based on coordination with Charlotte Fire Department, emergency response boats require 16' of clearance above full pond elevation. Duke Energy requires 12' of clearance above full pond elevation over the middle third of the bridge.

Purpose:

B-6051/U-6143 – The purpose of this project is to address geometric deficiencies of the bridge and its approaches on US 74, the emergency detour needs of I-85, the navigational clearance requirements over Lake Wylie and to improve the intersection of US 74 and NC 7 to address deficient turning movements.

NEPA DOCUMENT STATUS

A Type III Categorical Exclusion Action Classification Form was completed on May 8, 2023 and is included with this permit application package.

IMPACTS TO WATERS OF THE U.S. and AVOIDANCE, MINIMIZATION, AND MITIGATION

The following tables display the impacts to jurisdictional wetlands, streams, and surface water (Lake Wylie). Site numbers correspond with the permit (hydraulic) drawings included in this application and with the PJD package, dated February 2019, and with the PJD Package for the additional study areas, included with this application. NCDOT received the PJD authorization from the USACE for the initial study area, dated March 25, 2019 (Action ID. SAW No. 2019-00027).

Avoidance and minimization for wetlands and streams include:

1. Steepening of roadway fill slopes within jurisdictional areas.
2. Stormwater was designed to avoid direct discharge into jurisdictional features to the maximum extent practicable.
3. Stormwater design velocities entering jurisdictional features have been mitigated to be non-erosive.
4. Open shoulder sections were maximized to promote sheet flow from the roadway.
5. Diffuse flow provided at outlets that do not have a well-defined outfall.

Site specific measures are included in the following tables.

Wetland Impacts in 03050101

Permit Site / Wetland ID[1]	NC WAM / Hydraulic Classification	HUC	Wetland Size (ac)	Perm. Fill in Wetlands (ac)	Mechanized Clearing (ac)	Temp. Fill in Wetlands (ac)	Impact Description/ Avoidance and Minimization
2 / WA	Bottomland Hardwood Forest Riparian	03050101	0.10	0.016	0.007	--	Minimized impacts to mechanized clearing by utilizing steepened slopes. Utilized reinforced slope to reduce permanent impacts.
3 / WD	Bottomland Hardwood Forest Riparian	03050101	0.55	0.098	0.031	--	Minimized impacts to mechanized clearing by utilizing steepened slopes. Utilized reinforced slope to reduce permanent impacts.
4 / WC	Bottomland Hardwood Forest Riparian	03050101	0.31	0.010	0.018	--	Minimized impacts to mechanized clearing by utilizing steepened slopes. Utilized reinforced slope to reduce permanent impacts.
5 / WB	Bottomland Hardwood Forest Riparian	03050101	0.29	0.071	0.029	0.084	Roadway fill for bridge construction. 2:1 slopes utilized to minimize impacts. Temporary trestle bridges for construction and removal of the existing bridge and temporary workpad.
6 / WE	Bottomland Hardwood Forest Riparian	03050101	0.10	0.003	0.006	--	Roadway fill for roadway construction. 2:1 slopes utilized to minimize impacts.
Totals[2] by Impact Type:				**0.198**	**0.091**	**0.084**	
Total[2] Permanent Wetland Impacts for HUC 03050101:				**0.289**			
Total[2] Requested from DMS in Catawba 03050101:				**0.578 (0.289 @ 2:1)**			

[1] Wetland IDs correspond to B-6051 PJD labeling.
[2] Rounded totals are sum of actual impacts.

Stream Impacts in HUC 03050101

Permit Site No.	Stream Name/ JD ID	Status/Class	HUC	Impact Type	Temporary (ft)	Temporary (acres)	Permanent (ft)	Permanent (acres)	ACOE Mitigation Required	DWR Mitigation Required	Impact Description/ Avoidance and Minimization
1	UT to UT at Belmont Abbey College / SB	Perennial/ WS-IV; CA	03050101	Fill	30	0.003	--	--	--	--	Impact reduced to bank stabilization.
				Bank Stabilization	--	--	42	0.004	--	--	
2	UT at Belmont Abbey College / SC	Perennial/ WS-IV; CA	03050101	Fill	--	--	70	0.023	70	--	Extension of 2 @ 8'X 11' RCBC (35 LF upstream, 35 LF downstream.) Bank Stabilization for the new extension (55 LF upstream, 46 LF downstream). Temporary Bank Stabilization tie in (9 LF upstream, 9 LF downstream).
				Bank Stabilization	18	0.006	101	0.035	--	--	
3	UT to UT at Belmont Abbey College / SD	Perennial/ WS-IV; CA	03050101	Fill	7	< 0.001	109	0.009	109	--	Roadway fill for roadway construction. 2:1 slopes utilized to minimize impacts.
				Bank Stabilization	--	--	--	--	--	--	
7	UT to Catawba River / SA	Intermittent/ WS-IV, B; CA	03050101	Fill	17	0.002	261	0.024	261	--	Fill in stream due to widening the road. Bank stabilization for where the new channel for the 72" bore and jack ties to the existing channel. Bank stabilization is beyond the jurisdictional demarcation point of the stream, therefore there are no associated bank stabilization impact values listed.
				Bank Stabilization	--	--	--	--	--	--	
Total Stream Impacts for HUC 03050101					**72**	**0.011**	**583**	**0.095**	**440**	**--**	
Total Requested from DMS for HUC 03050101:									**880 (440 @ 2:1)**	**--**	

Buffer Impacts in HUC 03050101

Permit Site No.	Stream Name/ JD ID	HUC	Permanent or Temporary	Buffer Mitigation Required?	Zone 1 Impact (sqft)	Zone 2 Impact (sqft)	Impact Description
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	1,735	1,963	Roadway fill for the multi-use path adjacent to Catawba River / Lake Wylie
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	Yes	13,773	4,304	Roadway fill for the bridge construction directly adjacent to Catawba River / Lake Wylie
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	3,826	--	Bridge over Catawba River / Lake Wylie
6	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	Yes	5,962	398	Roadway fill directly adjacent to Catawba River / Lake Wylie
Total Buffer Impacts for HUC 03050101					**25,296**	**6,665**	
[1]Total Buffer Impacts Requiring Mitigation for HUC 03050101					**19,661**	**4,702**	
Total Requested from DMS for HUC 03050101:					**39,322 (19,661 @ 2:1)**	**7,053 (4,702 @ 1.5:1)**	

[1]Reduced due to wetlands in buffer at Permit Site 6.

Surface Water Impacts in HUC 03050101

Permit Site No.	Stream Name/ JD ID	HUC	Permanent or Temporary	Mitigation Required?	Impact (Acres)	Impact Description
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	0.016	Temporary workpad
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	0.075	Bridge
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	0.056	Bridge
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	5.293	Temporary trestle
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	0.003	42” RCP
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	0.007	42” RCP
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	0.434	Roadway fill
5	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	0.314	Temporary workpad
6	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	0.009	Bank stabilization
6	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	0.006	Bank stabilization
6	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Permanent	No	0.002	Roadway fill
6	Catawba River / Lake Wylie Catawba River / Lake Wylie	03050101	Temporary	No	0.012	Roadway fill
Total Surface Water Impacts for HUC 03050101					**6.227**	

MITIGATION SOURCES/SUMMARY

Mitigation for the unavoidable impacts for this project will be provided by the NC Division of Mitigation Services (DMS). Included in this application package is the DMS Mitigation Acceptance Letter. Below is a summary of the mitigation sources for the project. Note that only the amounts noted in the above tables will be debited.

Wetlands			
HUC	**Site Name**	**Mitigation Source**	**Amount Secured (ac)**
03050101	n/a	DMS	0.578
Streams			
HUC	**Site Name**	**Mitigation Source**	**Amount Secured (lf)**
03050101	n/a	DMS	880
Buffers			
HUC	**Site Name**	**Mitigation Source**	**Amount Secured (sqft)**
03050101	n/a	DMS	Zone 1: 39,322 Zone 2: 7,053

FEDERALLY PROTECTED SPECIES

The United States Fish and Wildlife Service (USFWS) lists the following federally protected species under the Endangered Species Act (ESA) as potentially occurring within the study area.

Common Name	Habitat Present	Biological Conclusion	Last Survey
tricolored bat*	Yes	MA-NLAA	Not Required
bog turtle	Yes	Not Required	Not Required
dwarf-flowered heartleaf	Yes	No Effect	3/20/2024
Michaux's sumac	Yes	No Effect	9/25/2023
Schweinitz's sunflower	Yes	No Effect	9/25/2023
smooth coneflower	Yes	No Effect	9/25/2023

IPaC - Information for Planning and Consultation-checked 5/17/2024
MA-NLAA – May Affect-Not Likely to Adversely Affect
*Proposed Endangered

On September 14, 2022, the USFWS announced a proposal to list the tricolored bat (*Perimyotis subflavus* - PESU) as endangered under the Endangered Species Act. A request for informal concurrence/consultation was submitted to the USFWS on February 29, 2024. NCDOT is currently coordinating with the USFWS to assist in their issuance of the informal concurrence/consultation. Construction activities for this project will not take place until NCDOT (in coordination with our lead federal agency) satisfies Endangered Species Act compliance for PESU.

CULTURAL RESOURCES

In order to comply with Section 106 of the National Historic Preservation Act (1966, as amended), FHWA and NCDOT must evaluate the project's impact upon any extant architectural and archaeological resources and determine if additional measures will be necessary to mitigate any adverse effects of the project upon any significant properties and sites.

There are no archaeological resources of concern within the study area.

As indicated in the attached Historic Properties and Landscapes Reports the project will impact two historic resources (Section 106) and two parks which are summarized below.

• **Gaston College** - The western portion of the Gaston College parcel is eligible for the National Register of Historic Places. The impact is limited to the need to include an additional guy wire on a power pole within an existing utility easement. The Historic Preservation Office has determined that there is "No Adverse Effect". Because there is no new right of way needed, there is no 4(f) impact.

• **Bridge No. 91** – The bridge is eligible for the National Register of Historic Places. Because of the navigational aspect of purpose and need, there is no option for avoidance or preservation in place of the existing bridge, therefore, there is an adverse effect. A Section 106 Memorandum of Agreement (MOA) detailing the conditions associated with the Adverse Effect has been completed. A Programmatic 4(f) Bridge Form addressing the adverse effect has also been completed.

• **Kevin Loftin Riverfront Park** - There are minor impacts to the park, partially resulting from the City's request for multi-use paths (MUP) along the road. A portion of the park will also be used for drainage treatment. These impacts were presented during public involvement meetings and there was no opposition to the work. The City of Belmont Parks and Recreation Department concurs that the work will not adversely affect the activities, features or attributes of the park. Federal Highways Administration has made a finding of de minimis impact by the signing of the CE.

• **ISWA Nature Preserve** – There are minor impacts on ISWA Nature Preserve resulting primarily from shifting the entrance and driveway to allow for a turn lane requested by the park staff. The addition of a MUP connecting ISWA Nature Preserve to Gaston County would also result in a minor impact on the park. There are also minor drainage impacts where drainage features are tied back into the drainage ditch in the park. These were presented as part of public involvement and there was no opposition to the work. Mecklenburg County has stated in writing that there are no adverse effects to the activities, features or attributes of the park. Federal Highways Administration has made a finding of de minimis impact by the signing of the CE.

REGULATORY APPROVALS

Please find enclosed Pre-Construction Notification form, Mitigation Acceptance Letter, Stormwater Management Plan (SMP), Permit Drawings and Buffer Drawings, Section 7 request letter, Archaeology

and Historic Architecture & Properties forms, tribal coordination letters, revised preliminary jurisdictional determination request, and Categorical Exclusion.

Application is hereby made for the following regulatory approvals for the above-described activities:

Section 404: USACE Regional General Permit 50.

Section 10: USACE Section 10 Permit.

Section 401 and Buffer Certification: Water Quality Certification and Buffer Authorization from the N.C. Division of Water Resources. In compliance with Section 143 215.3D(e) of the NCAC, we will provide $767.00 to act as payment for processing the Section 401 permit application previously noted in this application (see Subject line).

FERC Conveyance:
A Federal Energy Regulatory Commission Conveyance will be required prior to project construction commencement. This approval will be obtained after the Section 404 Permit, 401 Individual Water Quality Certification, and Catawba Riparian Buffer Authorization are obtained.

A significant component of the FERC Permitting process with Duke Energy will be to comply with their extensive requirements for ensuring waterway safety by way of a "Boater Safety Plan," which will include outreach to designated agencies and organizations. As such, the draft Boater Safety plan as provided in this application package is subject to change during the FERC permitting process, which cannot formally occur until issuance of the 404 and 401 permits. NCDOT will forward a copy of the Boater Safety Plan to satisfy the USACE River Users Safety component once the FERC Permit is acquired.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Bill Barrett at wabarrett@ncdot.gov. A copy of this application and distribution list will also be posted on the NCDOT website at: http://connect.ncdot.gov/resources/Environmental/Pages.

Sincerely,

for Michael Turchy
ECAP Group Leader- NCDOT

ec: NCDOT Permit Application Standard Distribution List

Pre-Construction Notification

Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

December 4, 2023 Ver 4.3

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

https://edocs.deq.nc.gov/WaterResources/DocView.aspx?dbid=0&id=2196924

A. Processing Information

If this is a courtesy copy, please fill in this with the submission date.

Does this project involve maintenance dredging funded by the Shallow Draft Navigation Channel Dredging and Aquatic Weed Fund or involve the distribution or transmission of energy or fuel, including natural gas, diesel, petroleum, or electricity? *

○ Yes ◉ No

Is this project connected with ARPA funding? *

○ Yes ◉ No

County (or Counties) where the project is located: *

Gaston

Mecklenburg

Is this a NCDMS Project *

○ Yes ◉ No

Click Yes, only if NCDMS is the applicant or co-applicant.

DO NOT CHECK YES, UNLESS YOU ARE DMS OR CO-APPLICANT.

Is this project a public transportation project? *

◉ Yes ○ No

This is any publicly funded by municipal,state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project? *

◉ Yes ○ No

(NCDOT only) T.I.P. or state project number:

B-6051 & U-6143

WBS # *

48708.1.1 & 48326.1.1

(for NCDOT use only)

1a. Type(s) of approval sought from the Corps: *

☑ Section 404 Permit (wetlands, streams and waters, Clean Water Act)

☑ Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

Has this PCN previously been submitted? *

○ Yes

◉ No

1b. What type(s) of permit(s) do you wish to seek authorization? *

☐ Nationwide Permit (NWP)

☑ Regional General Permit (RGP)

☐ Standard (IP)

1c. Has the NWP or GP number been verified by the Corps? *

◉ Yes ○ No

Regional General Permit (RGP) Number: 201902350 - Work associated with bridge construction, widening, replacement, and interchanges

RGP Numbers (for multiple RGPS):

List all RGP numbers you are applying for not on the drop down list.

1d. Type(s) of approval sought from the DWR: *

check all that apply

- [x] 401 Water Quality Certification - Regular
- [ ] 401 Water Quality Certification - Express
- [ ] Non-404 Jurisdictional General Permit
- [x] Riparian Buffer Authorization
- [ ] Individual 401 Water Quality Certification

1e. Is this notification solely for the record because written approval is not required?

*

For the record only for DWR 401 Certification: ○ Yes ◉ No

For the record only for Corps Permit: ○ Yes ◉ No

1f. Is this an after-the-fact permit application? *

○ Yes ◉ No

1g. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?

If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

◉ Yes ○ No

Acceptance Letter Attachment

Click the upload button or drag and drop files here to attach document

FILE TYPE MUST BE PDF

1h. Is the project located in any of NC's twenty coastal counties? *

○ Yes ◉ No

1j. Is the project located in a designated trout watershed? *

○ Yes ◉ No

Link to trout information: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx

B. Applicant Information

1a. Who is the Primary Contact? *

Bill Barrett

1b. Primary Contact Email: *

wabarrett@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6103

1d. Who is applying for the permit? *

- [ ] Owner
- [x] Applicant (other than owner)

(Check all that apply)

1e. Is there an Agent/Consultant for this project? *

○ Yes ◉ No

2. Owner Information

2a. Name(s) on recorded deed: *

NCDOT

2b. Deed book and page no.:

2c. Contact Person:

(for Corporations)

2d. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

State / Province / Region

NC

Postal / Zip Code

27699-1598

Country

US

2e. Telephone Number: *

(xxx)xxx-xxxx

(919)707-6103

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

maturchy@ncdot.gov

3. Applicant Information (if different from owner)

3a. Name: *

Bill Barrett

3b. Business Name:

(if applicable)

3c. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

State / Province / Region

NC

Postal / Zip Code

27699-1598

Country

USA

3d. Telephone Number: *

(919)707-6103

(xxx)xxx-xxxx

3e. Fax Number:

(xxx)xxx-xxxx

3f. Email Address: *

wabarrett@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

B-6051 & U-6143

1b. Subdivision name:

(if appropriate)

N/A

1c. Nearest municipality / town: *

Belmont

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

Please collect site coordinates in decimal degrees. Use between 4-6 digits (unless you are using a survey-grade GPS device) after the decimal place as appropriate, based on how the location was determined. (For example, most mobile phones with GPS provide locational precision in decimal degrees to map coordinates to 5 or 6 digits after the decimal place.)

Latitude: *

35.245838

ex: 34.208504

Longitude: *

-81.009334

-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: *

Catawba River/ Lake Wylie

3b. Water Resources Classification of nearest receiving water: *

WS-IV B; CA

Surface Water Lookup

3c. What river basin(s) is your project located in? *

Catawba

3d. Please provide the 12-digit HUC in which the project is located. *

030501011405

River Basin Lookup

4. Project Description and History

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: *

Existing condition: 4-lane suburban transportation facility crossing the Catawba River/ Lake Wylie. General land use around the project site is residential with wooded undeveloped areas.

4b. Have Corps permits or DWR certifications been obtained for this project (including all prior phases) in the past? *

○ Yes ◉ No ○ Unknown

4f. List the total estimated acreage of all existing wetlands on the property:

1.35

4g. List the total estimated linear feet of all existing streams on the property:

(intermittent and perennial)

1,717

4h. Explain the purpose of the proposed project: *

B-6051/U-6143 – The purpose of this project is to address geometric deficiencies of the bridge and its approaches on US 29/US 74, the emergency detour needs of I 85, the navigational clearance requirements over Catawba River/ Lake Wylie and to improve the intersection of US 29/US 74 and NC 7 to address deficient turning movements.

4i. Describe the overall project in detail, including indirect impacts and the type of equipment to be used: *

Two temporary work bridges will be constructed on the North and South side of B-6051 (US 29/US 74 Bridge). The existing bridge will be demolished using long arm excavators with materials staged on the work bridges. The new bridge will then be constructed using pre-fabricated concrete, fabricated at an offsite upland location. The existing 17 span, 1,174 foot bridge will be replaced with a new 11 span, 1,145 foot bridge. The proposed bridge typical section will include six 12 foot lanes, a 4 foot concrete median in the center, 5 foot offsets between the outside travel lanes and concrete barriers separating the travel lanes from 10 foot wide multi use paths on either side of the bridge. The new bridge will be constructed through the use of a temporary work trestle and temporary workpads. An existing double barrel-8'X 11' RCBC will be extended.

Standard road and bridge building equipment such as trucks, bulldozers, and cranes will be used.

5. Jurisdictional Determinations

5a. Have the wetlands or streams been delineated on the property or proposed impact areas? *

◉ Yes ○ No ○ Unknown

Comments:

5b. If the Corps made a jurisdictional determination, what type of determination was made? *

◉ Preliminary ○ Approved ○ Not Verified ○ Unknown ○ N/A

Corps AID Number:

Example: SAW-2017-99999

SAW-2019-00027

5c. If 5a is yes, who delineated the jurisdictional areas?

Name (if known): Hal Bain, Matt Martin, Pete Stafford

Agency/Consultant Company: RK&K

Other:

5d. List the dates of the Corp jurisdiction determination or State determination if a determination was made by the Corps or DWR.

The USACE issued a PJD on 03/25/2019 for the initial study area. Included with this application is a request for a revised PJD for the additional study areas.

6. Future Project Plans

6a. Is this a phased project? *

○ Yes ◉ No

Are any other NWP(s), regional general permit(s), or individual permits(s) used, or intended to be used, to authorize any part of the proposed project or related activity? This includes other separate and distant crossing for linear projects that require Department of the Army authorization but don't require pre-construction notification.

D. Proposed Impacts Inventory

1. Impacts Summary

1a. Where are the impacts associated with your project? (check all that apply):

☑ Wetlands ☑ Streams-tributaries ☑ Buffers
☑ Open Waters ☐ Pond Construction

2. Wetland Impacts

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

"W." will be used in the table below to represent the word "wetland".

2a. Site # * (?)	2a1 Reason * (?)	2b. Impact type * (?)	2c. Type of W. *	2d. W. name *	2e. Forested *	2f. Type of Jurisdicition * (?)	2g. Impact area *
2	Roadway Fill	P	Bottomland Hardwood Forest	WA	Yes	Both	0.016 (acres)
2	Mechanized Clearing	P	Bottomland Hardwood Forest	WA	Yes	Both	0.007 (acres)
3	Roadway Fill	P	Bottomland Hardwood Forest	WD	Yes	Both	0.098 (acres)
3	Mechanized Clearing	P	Bottomland Hardwood Forest	WD	Yes	Both	0.031 (acres)
4	Roadway Fill	P	Bottomland Hardwood Forest	WC	Yes	Both	0.010 (acres)
4	Mechanized Clearing	P	Bottomland Hardwood Forest	WC	Yes	Both	0.018 (acres)
5	Roadway Fill	P	Bottomland Hardwood Forest	WB	Yes	Both	0.071 (acres)
5	Mechanized Clearing	P	Bottomland Hardwood Forest	WB	Yes	Both	0.029 (acres)
5	Temp. Trestle	T	Bottomland Hardwood Forest	WB	Yes	Both	0.069 (acres)
5	Temp. Workpad	T	Bottomland Hardwood Forest	WB	Yes	Both	0.015 (acres)
6	Roadway Fill	P	Bottomland Hardwood Forest	WE	Yes	Both	0.003 (acres)
6	Mechanized Clearing	P	Bottomland Hardwood Forest	WE	Yes	Both	0.006 (acres)

2g. Total Temporary Wetland Impact

0.084

2g. Total Permanent Wetland Impact

0.289

2g. Total Wetland Impact

0.373

2i. Comments:

3. Stream Impacts

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

"S." will be used in the table below to represent the word "stream".

	3a. Reason for impact * (?)	3b.Impact type *	3c. Type of impact *	3d. S. name *	3e. Stream Type * (?)	3f. Type of Jurisdiction *	3g. S. width *	3h. Impact length *
S1	Permit Site 1	Permanent	Bank Stabilization	SB	Perennial	Both	2 Average (feet)	42 (linear feet)
S2	Permit Site 1	Temporary	Fill	SB	Perennial	Both	2 Average (feet)	30 (linear feet)
S3	Permit Site 2	Permanent	Fill	SC	Perennial	Both	20 Average (feet)	70 (linear feet)
S4	Permit Site 2	Permanent	Bank Stabilization	SC	Perennial	Both	20 Average (feet)	101 (linear feet)
S5	Permit Site 2	Temporary	Fill	SC	Perennial	Both	20 Average (feet)	18 (linear feet)
S6	Permit Site 3	Permanent	Fill	SD	Perennial	Both	10 Average (feet)	109 (linear feet)
S7	Permit Site 3	Temporary	Fill	SD	Perennial	Both	10 Average (feet)	7 (linear feet)
S8	Permit Site 7	Permanent	Fill	SA	Intermittent	Both	4 Average (feet)	261 (linear feet)

S9	Permit Site 7	Temporary	Fill	SA	Intermittent	Both	4 Average (feet)	17 (linear feet)

** All Perennial or Intermittent streams must be verified by DWR or delegated local government.

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

583

3i. Total temporary stream impacts:

72

3i. Total stream and ditch impacts:

655

3j. Comments:

See cover letter for detail on avoidance and minimization.

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Site # * (?)	4a1. Impact Reason	4b. Impact type * (?)	4c. Name of waterbody (?)	4d. Activity type *	4e. Waterbody type *	4f. Impact area *
5	Temp. Workpad	T	Catawba River/ Lake Wylie	Causeway	Lake	0.02 (acres)
5	Bridge	P	Catawba River/ Lake Wylie	Bridge	Lake	0.08 (acres)
5	Bridge	T	Catawba River/ Lake Wylie	Bridge	Lake	0.06 (acres)
5	Temp. Trestle	T	Catawba River/ Lake Wylie	Bridge	Lake	5.29 (acres)
5	42" RCP	P	Catawba River/ Lake Wylie	Culverts	Lake	0.01 (acres)
5	42" RCP	T	Catawba River/ Lake Wylie	Culverts	Lake	0.01 (acres)
5	Roadway Fill	P	Catawba River/ Lake Wylie	Fill	Lake	0.43 (acres)
5	Temp. Workpad	T	Catawba River/ Lake Wylie	Causeway	Lake	0.31 (acres)
6	Bank Stabilization	P	Catawba River/ Lake Wylie	Stabilization	Lake	0.01 (acres)
6	Temp Fill	T	Catawba River/ Lake Wylie	Fill	Lake	0.01 (acres)
6	Roadway Fill	P	Catawba River/ Lake Wylie	Fill	Lake	0.01 (acres)
6	Roadway Fill	T	Catawba River/ Lake Wylie	Fill	Lake	0.01 (acres)

4g. Total temporary open water Impacts:

5.71

4g. Total permanent open water impacts:

0.54

4g. Total open water impacts:

6.25

4h. Comments:

Rounded totals are sums of actual impacts. Temporary dual trestle bridges for constructability and removal of existing bridge. Impacts are driven solely by temporary bridge piers; they cover the entire work area to provide flexibility to the contractor for the location and adjustment of work bridges. as needed.

6. Buffer Impacts (for DWR)

If project will impact a protected riparian buffer, then complete the chart below. Individually list all buffer impacts below.

6a. Project is in which protect basin(s)? *

Check all that apply.

- [ ] Neuse
- [x] Catawba
- [ ] Goose Creek
- [ ] Other
- [ ] Tar-Pamlico
- [ ] Randleman
- [ ] Jordan Lake

6b. Impact Type * (?)	6c. Per or Temp * (?)	6d. Stream name *	6e. Buffer mitigation required? *	6f. Zone 1 impact *	6g. Zone 2 impact *
Permit Site 5- MUP	P	Catawba River/ Lake Wylie	No	1,735 (square feet)	1,963 (square feet)
Permit Site 5- Roadway Fill	P	Catawba River/ Lake Wylie	Yes	13,773 (square feet)	4,304 (square feet)
Permit Site 5- Bridge	P	Catawba River/ Lake Wylie	No	3,826 (square feet)	0 (square feet)
Permit Site 6- Roadway Fill	P	Catawba River/ Lake Wylie	Yes	5,962 (square feet)	398 (square feet)

6h. Total buffer impacts:

	Zone 1	Zone 2
Total Temporary impacts:	0.00	0.00

	Zone 1	Zone 2
Total Permanent impacts:	25,296.00	6,665.00

	Zone 1	Zone 2
Total combined buffer impacts:	25,296.00	6,665.00

6i. Comments:

E. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing the project: *

See Cover Letter

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques: *

See Cover Letter

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?

- (•) Yes
- ( ) No

2c. If yes, mitigation is required by (check all that apply):

- [x] DWR
- [x] Corps

2d. If yes, which mitigation option(s) will be used for this project?

- [ ] Mitigation bank
- [x] Payment to in-lieu fee program
- [ ] Permittee Responsible Mitigation

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.

- (•) Yes
- ( ) No

4b. Stream mitigation requested:

(linear feet)

880

4c. If using stream mitigation, what is the stream temperature:

cool

NC Stream Temperature Classification Maps can be found under the Mitigation Concepts tab on the Wilmington District's RIBITS website.

4d. Buffer mitigation requested (DWR only):

(square feet)

46,375

4e. Riparian wetland mitigation requested:

(acres)

0.578

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

0

4h. Comments

Buffer Permit Site 6 required buffer mitigation was reduced by 74sqft due to wetlands in buffer. See Buffer Drawings Impact Summary (Sheet 6 of 6).

6. Buffer mitigation (State Regulated Riparian Buffer Rules) - required by DWR

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation? If yes, you must fill out this entire form - please contact DWR for more information.

◉ Yes ○ No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation calculate the amount of mitigation required in the table below.

	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)	
Zone 1	Roadway Fill	19,661	2	39,322	
Zone 2	Roadway fill	4,702	1.5	7,053	

6f. Total buffer mitigation required

46375

6g. If buffer mitigation is required, is payment to a mitigation bank or NC Division of Mitigation Services proposed?

◉ Yes ○ No

6j. Comments:

F. Stormwater Management and Diffuse Flow Plan (required by DWR)

*** Recent changes to the stormwater rules have required updates to this section .***

1. Diffuse Flow Plan

1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

◉ Yes ○ No

1b. All buffer impacts and high ground impacts require diffuse flow or other form of stormwater treatment. If the project is subject to a state implemented riparian buffer protection program, include a plan that fully documents how diffuse flow will be maintained.

All Stormwater Control Measures (SCM)s must be designed in accordance with the NC Stormwater Design Manual. Associated supplement forms and other documentation shall be provided.

What type of SCM are you providing?

- ☐ Level Spreader
- ☐ Vegetated Conveyance (lower SHWT)
- ☐ Wetland Swale (higher SHWT)
- ☐ Other SCM that removes minimum 30% nitrogen
- ☑ Proposed project will not create concentrated stormwater flow through the buffer

(check all that apply)

For a list of options to meet the diffuse flow requirements, click here.

2. Stormwater Management Plan

2a. Is this a NCDOT project subject to compliance with NCDOT's Individual NPDES permit NCS000250? *

◉ Yes ○ No

Comments:

G. Supplementary Information

1. Environmental Documentation

1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? *

◉ Yes ○ No

1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)? *

(●) Yes ( ) No

1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) *

(●) Yes ( ) No

2. Violations (DWR Requirement)

2a. Is the site in violation of DWR Water Quality Certification Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), or DWR Surface Water or Wetland Standards or Riparian Buffer Rules (15A NCAC 2B .0200)? *

( ) Yes (●) No

3. Cumulative Impacts (DWR Requirement)

3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? *

( ) Yes (●) No

3b. If you answered "no," provide a short narrative description.

Due to the minimal transportation impact resulting from this bridge replacement, this project will not stimulate growth but may influence nearby land use.

4. Sewage Disposal (DWR Requirement)

4a. Is sewage disposal required by DWR for this project? *

( ) Yes ( ) No (●) N/A

5. Endangered Species and Designated Critical Habitat (Corps Requirement)

5a. Will this project occur in or near an area with federally protected species or habitat? *

(●) Yes ( ) No

5b. Have you checked with the USFWS concerning Endangered Species Act impacts? *

(●) Yes ( ) No

5c. If yes, indicate the USFWS Field Office you have contacted.

Asheville

5d. Is another Federal agency involved? *

(●) Yes ( ) No ( ) Unknown

What Federal Agency is involved?

FHWA

5e. Is this a DOT project located within Division's 1-8? *

( ) Yes (●) No

5f. Will you cut any trees in order to conduct the work in waters of the U.S.? *

(●) Yes ( ) No

5g. Does this project involve bridge maintenance or removal? *

(●) Yes ( ) No

5g(1). If yes, have you inspected the bridge for signs of bat use such as staining, guano, bats, etc.? Representative photos of signs of bat use can be found in the NLEB SLOPES, Appendix F, pages 3-7.

(●) Yes ( ) No

Link to the NLEB SLOPES document: http://saw-reg.usace.army.mil/NLEB/1-30-17-signed_NLEB-SLOPES&apps.pdf

If you answered "Yes" to 5g(1), did you discover any signs of bat use? *

( ) Yes (●) No ( ) Unknown

***** If yes, please show the location of the bridge on the permit drawings/project plans.**

5h. Does this project involve the construction/installation of a wind turbine(s)? *

( ) Yes (●) No

5i. Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.? *

(●) Yes ( ) No

5j. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? *

USFWS Information for Planning and Consultation (IPaC) was used for species lists. Field surveys were completed when appropriate as further detailed in the cover letter. Informal Concurrence/Conference request was sent to USFWS on 2/29/24.

6. Essential Fish Habitat (Corps Requirement)

6a. Will this project occur in or near an area designated as an Essential Fish Habitat? *

○ Yes ◉ No

6b. What data sources did you use to determine whether your site would impact an Essential Fish Habitat? *

Review of online mapping sources.

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

Link to the State Historic Preservation Office Historic Properties Map (does not include archaeological data: http://gis.ncdcr.gov/hpoweb/

7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? *

○ Yes ◉ No

7b. What data sources did you use to determine whether your site would impact historic or archeological resources? *

Included Archaeology Form/Letter, Historic Properties and Landscapes Form/Letter, and Tribal Coordination letters

8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: https://msc.fema.gov/portal/search

8a. Will this project occur in a FEMA-designated 100-year floodplain? *

◉ Yes ○ No

8b. If yes, explain how project meets FEMA requirements:

This project meets the FEMA requirements by obtaining State Floodplain Compliance (SFC) approval through the Hydraulics Unit's Highway Floodplain Program.

8c. What source(s) did you use to make the floodplain determination? *

FEMA Floodmaps

Miscellaneous

Comments

Details for question 5i, "Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.?". Yes the project does anticipate using blasting if rock is encountered during the construction process, the project will also use jackhammers and other mechanized equipment to remove the existing bridge.

Please use the space below to attach all required documentation or any additional information you feel is helpful for application review. Documents should be combined into one file when possible, with a Cover Letter, Table of Contents, and a Cover Sheet for each Section preferred.

Click the upload button or drag and drop files here to attach document

B-6051 U-6143 Gaston Mecklenburg County May 24 2024.pdf 34.27MB

File must be PDF or KMZ

Signature

*

☑ By checking the box and signing below, I certify that:

- The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief'; and
- The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

Full Name: *

Erin K. Cheely

Signature *

Erin K. Cheely

Date

5/24/2024

Mitigation

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MARC RECKTENWALD
Director

NORTH CAROLINA
Environmental Quality

February 14, 2024

Mr. Jamie Lancaster, P.E.
Environmental Analysis Unit
North Carolina Department of Transportation
Mail Service Center 1598
Raleigh, North Carolina 27699-1598

Dear Mr. Lancaster:

Subject: Mitigation Acceptance Letter: **TIP B-6051 / U-6143**, Replace Bridge 350091 over the Catawba River on US 29 / US 74, Mecklenburg and Gaston Counties

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the mitigation for the subject project. Based on the information supplied by you on September 29, 2023 and February 13, 2024, the impacts are located in CU 03050101 of the Catawba River basin as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Catawba	03050101	SP	0	0	440.000	0.289	0	0

*Some of the impacts may be proposed to be mitigated at various ratios. See permit application for details. DMS will provide the amount of stream and wetland mitigation included in the environmental permits.

All buffer mitigation requests and approvals are administrated through the Riparian Restoration Buffer Fund. The NCDOT will be responsible to ensure that appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWR's Buffer Authorization Certification, DMS will transfer funds from the NCDOT 2984 Fund into the Riparian Restoration Buffer Fund. Upon completion of transfer payment, NCDOT will have completed its riparian buffer mitigation responsibility for TIP B-6051 / U-6143. Subsequently, DMS will conduct a review of current NCDOT ILF Program mitigation projects in the river basin to determine if available buffer mitigation credits exist. If there are buffer mitigation credits available, then the Riparian Restoration Buffer Fund will purchase the appropriate amount of buffer mitigation credits from NCDOT ILF Program.

Buffer	River Basin	CU	Eco-Region	Buffer Impacts		
				Zone 1	Zone 2	TOTAL
Impacts	Catawba	03050101	SP	19,661.000	4,702.000	24,363.000

DMS commits to implementing sufficient mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from NCDEQ-DMS.

If you have any questions or need additional information, please contact Beth Harmon at 919-707-8420.

Sincerely,

Elizabeth Harmon

Elizabeth A. Harmon
DMS NCDOT ILF Coordinator

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
Mr. Brad Chilton, NCDOT
File: B-6051 / U-6143

Permit Drawings

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 67020.1.1 **TIP/Proj No:** B-6051 / U-6143 **County(ies):** Gaston Mecklenburg

General Project Information

WBS Element:	67020.1.1	**TIP Number:**	B-6051 / U-6143	**Project Type:**	Bridge Replacement	**Date:**	5/20/2024
NCDOT Contact:	Marc Shown			**Contractor / Designer:**	Matthew Cook		
Address:	1000 Birch Ridge Drive Raleigh, NC 27610			**Address:**	8601 Six Forks Road Forum 1, Suite 700 Raleigh, NC 27615		
Phone:	919-707-6751			**Phone:**	919-878-9560		
Email:	mshown@ncdot.gov			**Email:**	mcook@rkk.com		
City/Town:	Belmont			**County(ies):**	Gaston	Mecklenburg	
River Basin(s):	Catawba			**CAMA County?**	No	No	
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.970 linear miles	**Surrounding Land Use:**	Woods, Recreation, Commercial, Residential				
	Proposed Project			**Existing Site**			
Project Built-Upon Area (ac.)	15.3	ac.		8.3	ac.		
Typical Cross Section Description:	A typical cross-section of 126.5' will be used; which will include six 12-foot travel lanes, sidewalks, median, shoulder berm gutter sections, open shoulder sections, and guardrail.			The existing typical cross-section is 85-feet wide with 6 11-foot travel lanes and varying shoulders.			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	31,000	Year: 2045	Existing:	24,000	Year:	2018

General Project Narrative: (Description of Minimization of Water Quality Impacts)

B-6051 is a roadway widening project on US29/US74 from the existing 6 lanes to the proposed 6 lanes with median and sidewalks in Gaston and Mecklenburg counties. The expansion is 0.970 miles long begins on US29/US74 in Belmont to US29/US74 past SR 1600 (Moores Chapel Loop Road). Wetlands and perennial streams are found within the limits of the project area. The jurisdictional streams within the study area have no impairments and do not provide habitat for any threatened or endangered aquatic species.

Design Mitigations for wetlands and streams include:

1. Steepening of roadway fill slopes within jurisdictional areas.
2. Stormwater was designed to avoid direct discharge into jurisdictional features to the maximum extent practicable.
3. Stormwater design velocities entering jurisdictional features have been mitigated to be non-erosive.
4. Open shoulder sections were maximized to promote sheet flow from the roadway.
5. Diffuse flow provided at outlets that do not have a well defined outfall.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element:	67020.1.1	TIP/Proj No.:	B-6051 / U-6143	County(ies):	Gaston Mecklenburg	Page	2	of	2

General Project Information

Waterbody Information

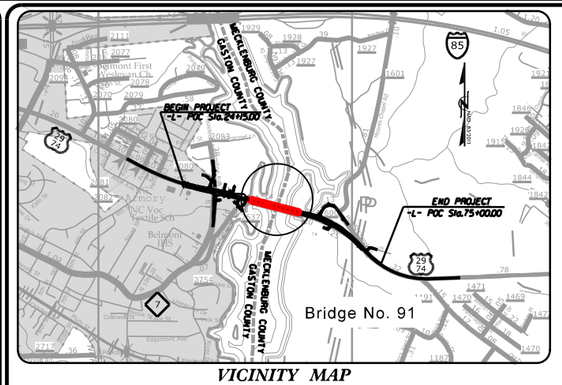
Surface Water Body (1):	Catawba River			**NCDWR Stream Index No.:**	11-(22)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)	Class B			
		Supplemental Classification:					
Other Stream Classification:							
Impairments:	None						
Aquatic T&E Species?	No	Comments:					
NRTR Stream ID:	Catawba River				**Buffer Rules in Effect:**	Catawba	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No		**Dissipator Pads Provided in Buffer?**	No	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)							

Surface Water Body (2):	Abbey Creek			**NCDWR Stream Index No.:**	11-123-(2)		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)				
		Supplemental Classification:	None				
Other Stream Classification:	None						
Impairments:	None						
Aquatic T&E Species?	No	Comments:					
NRTR Stream ID:	SC				**Buffer Rules in Effect:**	N/A	
Project Includes Bridge Spanning Water Body?	No	**Deck Drains Discharge Over Buffer?**	N/A		**Dissipator Pads Provided in Buffer?**	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)			(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)							

TIP PROJECT: B-6051 /U-6143

CONTRACT NO:

$$$$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$DGN$$$$$$$$$$
$$$$$$USERNAME$$$$$$



VICINITY MAP
(NOT TO SCALE)
See Sheet 1A For Index of Sheets
See Sheet 1B For Plan Sheet Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

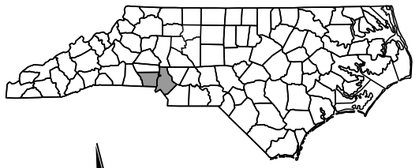
GASTON / MECKLENBURG COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6051 / U-6143	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
48708.1.1		P.E.
48326.1.1		P.E.

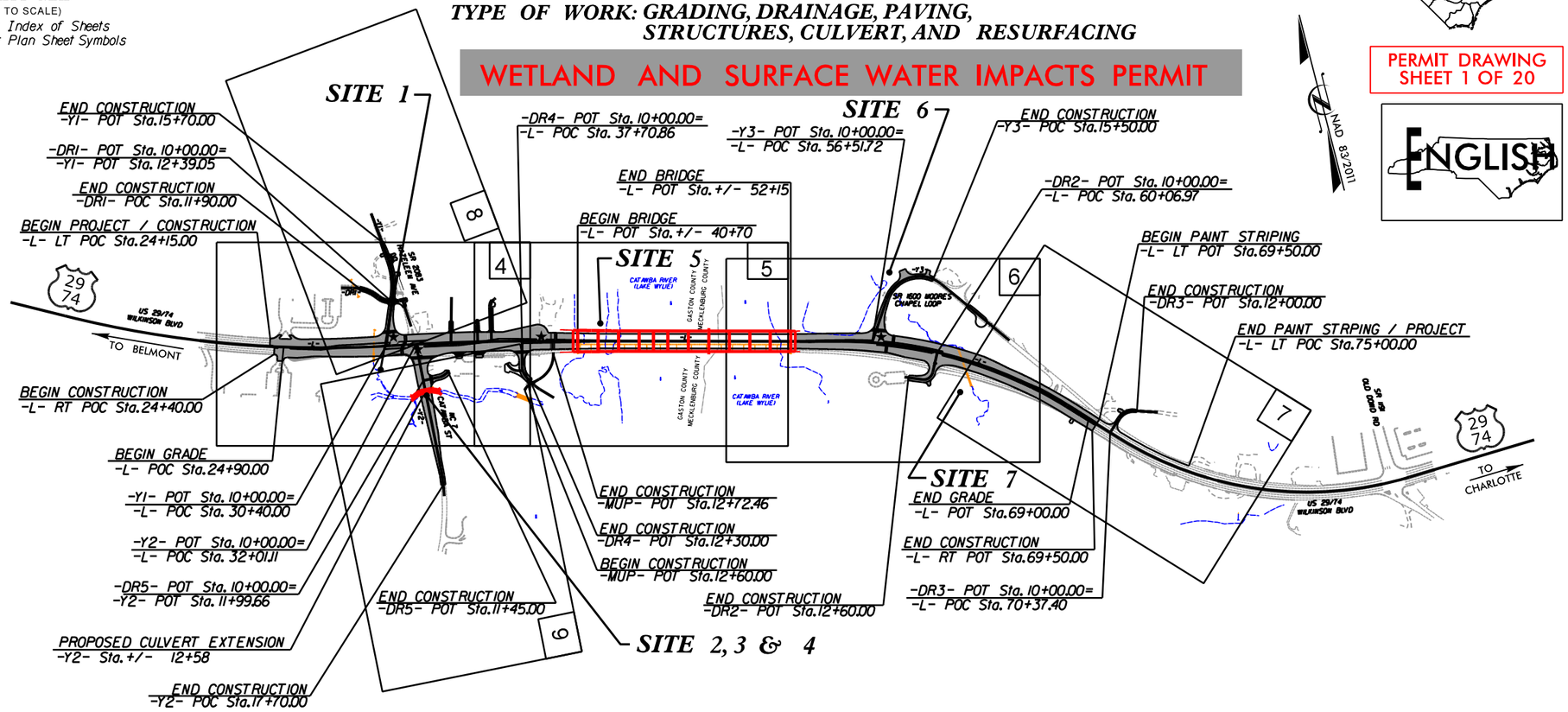
LOCATION: *BRIDGE NO. 91 OVER CATAWBA RIVER ON US 29 /US 74 AND INTERSECTION IMPROVEMENTS ON US 29 /US 74 (WILKINSON BLVD) AND NC 7 (CATAWBA ST)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, STRUCTURES, CULVERT, AND RESURFACING*



WETLAND AND SURFACE WATER IMPACTS PERMIT

PERMIT DRAWING SHEET 1 OF 20



NOTES:
1. THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF BELMONT.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.

★ TRAFFIC SIGNAL

GRAPHIC SCALES

PLANS: 50 0 50 100
PROFILE (HORIZONTAL): 50 0 50 100
PROFILE (VERTICAL): 10 00 10 20

DESIGN DATA

ADT 2024 = 25,476
ADT 2044 = 30,690
DHV = 11%
DIR = 80%
T = 6%*
V = 50 MPH
(* TTST = 2% / DUAL 4%)
FUNC CLASS = MAJOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-6051 /U-6143 = 0.746 mi
LENGTH STRUCTURE TIP PROJECT B-6051 /U-6143 = 0.217 mi
TOTAL LENGTH TIP PROJECT B-6051 /U-6143 = 0.963 mi

PLANS PREPARED BY:
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1 Suite 700
Raleigh, North Carolina 27615-5960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 23, 2023

LETTING DATE:
OCTOBER 17, 2023

Scott D. Blevins, P.E.
PROJECT ENGINEER

Carter Mull, P.E.
PROJECT DESIGN ENGINEER

David Stutts, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE:

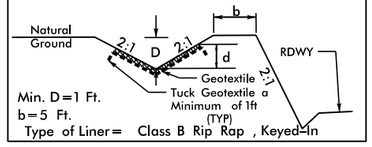
STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	2D-1
R/W SHEET NO.	
	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 2 OF 20

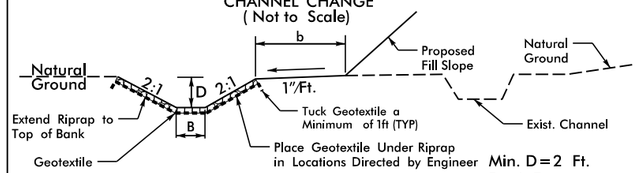
DETAIL A
BERM 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
b=5 Ft.
Type of Liner= Class B Rip Rap , Keyed–In

–L– STA. 36+35 TO STA. 38+00 LT
37 TON RIP RAP, 82 SY GEOTEXTILE

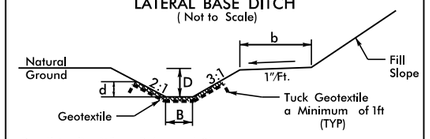
DETAIL B
CHANNEL CHANGE
(Not to Scale)



Min. D=2 Ft.
B=4 Ft.
b=10 Ft.
Type of Liner= Class B Rip Rap, Keyed–In

–Y2– STA. 12+88 TO STA. 13+83 RT
100 TON RIP RAP, 218 SY GEOTEXTILE

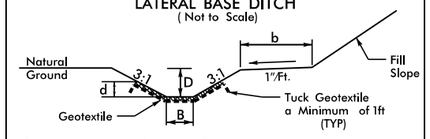
DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=1 Ft.
d=1 Ft.
B=2 Ft.
b=5 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

–MUP– STA. 11+85 TO STA. 12+18 LT
9 TON RIP RAP, 20 SY GEOTEXTILE

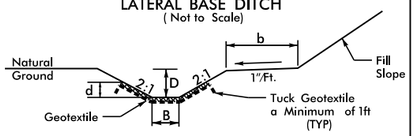
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=1 Ft.
d=1 Ft.
B=4 Ft.
b=5 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

–L– STA. 68+85 TO STA. 69+50 RT
34 TON RIP RAP, 75 SY GEOTEXTILE

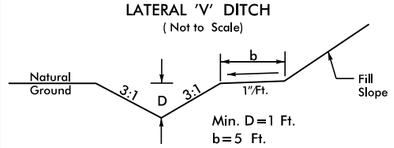
DETAIL E
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
B=4 Ft.
b=5 Ft.
Type of Liner=Class B Rip–Rap, Keyed–In

–L– STA. 38+50 TO STA. 39+15 RT (Min. D=2', d=2')
42 TON RIP RAP, 93 SY GEOTEXTILE
–L– STA. 59+00* TO STA. 68+37 LT (Min. D=1', d=1')
410 TON RIP RAP, 910 SY GEOTEXTILE
*DITCH CONTINUES FOR 30' BEYOND –L– 59+00, TIES W/EXIST. CHAN. OAL=967' (APPROX.)

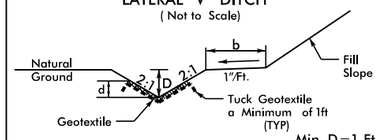
DETAIL F
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
b=5 Ft.

–L– STA. 27+10 LT TO STA. 29+83 LT
–Y1– STA. 11+05* LT TO STA. 11+25 LT
–Y1– STA. 13+25 LT TO STA. 14+00 LT
*DITCH CONTINUES FOR 37.2' BEYOND –Y1– 11+05, CURVES TO TIE AT –L– 29+83.

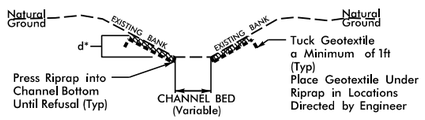
DETAIL G
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
d=1 Ft.
Type of Liner= Cl B Rip–Rap, Keyed–In b=5 Ft.

–L– STA. 38+20 TO STA. 38+50 RT
7 TON RIP RAP, 15 SY GEOTEXTILE

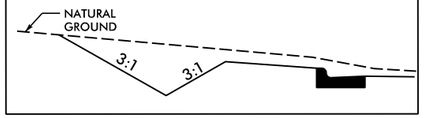
DETAIL H
PIPE OUTLET BANK STABILIZATION
(Not to Scale)



*Rip–Rap to be Installed to 2ft Outside Top of Ditch Slopes on Jurisdictional Streams
Length=40 Ft.
Type of Liner= Class I Rip–Rap, Keyed–In

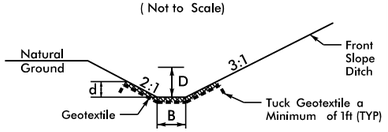
–L– STA. 29+83 RT (d=5')
85 TON RIP RAP, 130 SY GEOTEXTILE
–L– STA. 58+87 LT (d=3.5')
57 TON RIP RAP, 104 SY GEOTEXTILE

DETAIL I
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



–L– STA. 31+50 TO STA. 33+50 LT
–Y1– STA. 11+25 TO STA. 11+75 LT
–Y1– STA. 12+68 TO STA. 13+25 LT

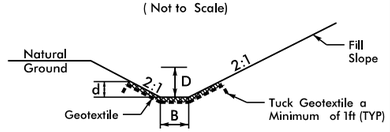
DETAIL J
SPECIAL BASE DITCH
(Not to Scale)



Min. D=1 Ft.
d=1 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In B=2 Ft.

–MUP– STA. 11+00 TO STA. 11+85 LT
28 TON RIP RAP, 63 SY GEOTEXTILE

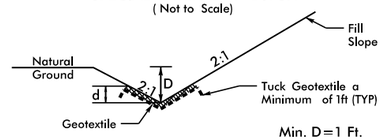
DETAIL K
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1 Ft.
d=1 Ft.
Type of Liner= Class I Rip–Rap, Keyed–In B=2 Ft.

–Y2– STA. 15+00* TO STA. 16+00 LT
*DITCH CONTINUES FOR 25' BEYOND –Y2– 15+00, CURVES TO TIE W/NG. OAL=125' (APPROX.)
42 TON RIP RAP, 90 SY GEOTEXTILE

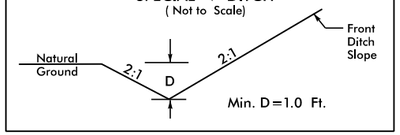
DETAIL L
SPECIAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
Type of Liner= Cl A Rip–Rap, Keyed–In d=1 Ft.

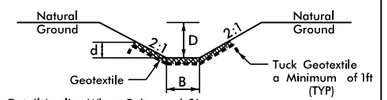
–DR3– STA. 10+61 TO 11+00 LT
8 TON RIP RAP, 19 SY GEOTEXTILE
–DR3– STA. 10+58 TO 11+00 RT
9 TON RIP RAP, 21 SY GEOTEXTILE

DETAIL M
SPECIAL 'V' DITCH
(Not to Scale)



–DR10– STA. 10+40 TO STA. 10+75 LT

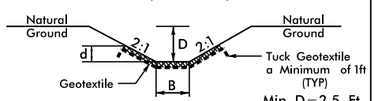
DETAIL N
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=2 Ft.
d=2 Ft.
Type of Liner= Class I Rip–Rap, Keyed–In B=4 Ft.

–L– STA.39+90 RT, L=38', S=3.3%, BEG. ELEV=567.4', END ELEV=566.2'
26 TON RIP RAP, 55 SY GEOTEXTILE
–L– STA. 54+70 RT, L=16', S=3.1%, BEG. ELEV=580.5', END ELEV=580.0'
11 TON RIP RAP, 23 SY GEOTEXTILE
–Y3– STA. 12+75 RT, L=20', S=1.0%, BEG. ELEV=567.8', END ELEV=567.8'
14 TON RIP RAP, 29 SY GEOTEXTILE

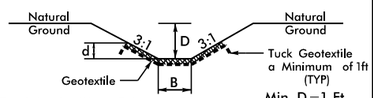
DETAIL O
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=2.5 Ft.
d=2.5 Ft.
B=4 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

–L– STA. 29+78 LT, L=75', S=2.33%
BEG. ELEV=587.75', END ELEV=586.00'
57 TON RIP RAP, 127 SY GEOTEXTILE

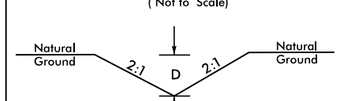
DETAIL P
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=1 Ft.
d=1 Ft.
B=4 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

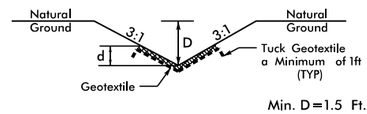
–L– STA. 70+00 LT, L=50', S=6.7%,
BEG. ELEV=630.0', END ELEV=626.7'
26 TON RIP RAP, 57 SY GEOTEXTILE

DETAIL Q
STANDARD 'V' DITCH
(Not to Scale)



–Y1– STA. 13+50 RT, L=93', S=4.32%
BEG. ELEV=599.25', END ELEV=595.25'
–DR11– STA. 10+25 LT, L=69', S=3.63%
BEG. ELEV=593.50', END ELEV=591.00'

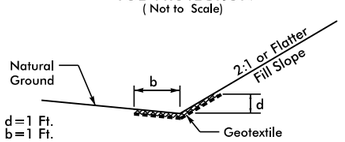
DETAIL R
STANDARD 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Type of Liner= Cl B Rip–Rap, Keyed–In d=1.0 Ft.

–DR11– STA. 11+33 LT, L=31', S=6.41%
BEG. ELEV=588.12', END ELEV=586.12'
10 TON RIP RAP, 22 SY GEOTEXTILE
–DR11– STA. 11+24 RT, L=35', S=9.20%
BEG. ELEV=590.23', END ELEV=586.97'
11 TON RIP RAP, 25 SY GEOTEXTILE

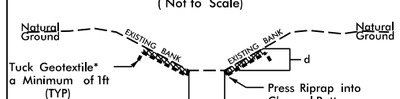
DETAIL S
TOE PROTECTION
(Not to Scale)



d=1 Ft.
b=1 Ft.
Type of Liner= Class B Rip–Rap

–L– STA. 65+50 TO STA. 68+00 RT
103 TON RIP RAP, 229 SY GEOTEXTILE
–Y2– STA. 11+10 TO STA. 12+61 RT
62 TON RIP RAP, 138 SY GEOTEXTILE
–Y2– STA. 13+00 TO STA. 16+50 RT
144 TON RIP RAP, 321 SY GEOTEXTILE

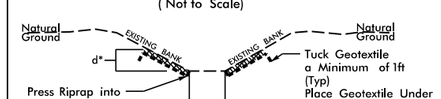
DETAIL T
BANK STABILIZATION ON BANKS ONLY
(Not to Scale)



Length= Varies
d= Varies
Est.= Class B Rip–Rap, Keyed–In
*Place Geotextile Under Riprap in Locations Directed by Engineer

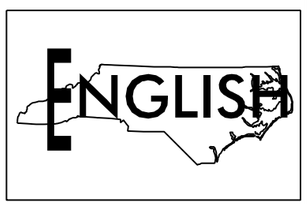
–Y2– STA. 12+60 LT; 3 TON RIP RAP, 7 SY GEOTEXTILE
–Y2– STA. 12+95 LT; 15 TON RIP RAP, 33 SY GEOTEXTILE
–Y2– STA. 12+85 RT; 7 TON RIP RAP, 16 SY GEOTEXTILE

DETAIL U
PIPE OUTLET BANK STABILIZATION
(Not to Scale)



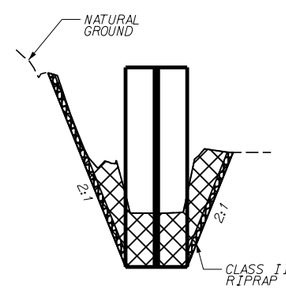
Length=25 Ft.
d=3 Ft.*
*Rip–Rap to be Installed to 2ft Outside Top of Ditch Slopes on Jurisdictional Streams
Type of Liner= Class II Rip–Rap, Keyed–In

–Y3– STA. 12+75 LT
72 TON RIP RAP, 104 SY GEOTEXTILE



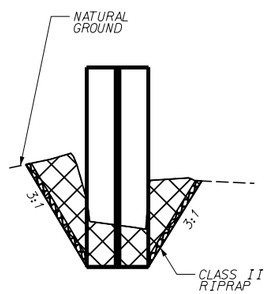
COMBINED QUANTITIES FOR DETAILS V AND W
PERMANENT CHANNEL EXCAVATION
TOTAL CHANNEL EXCAVATION = 83 CY
TOTAL CL II RIP RAP = 40 TONS
TOTAL GEOTEXTILE FAB. = 41 SY

DETAIL V



OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH=17'

DETAIL W



INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH=18'

5/20/2024
K:\Projects\PERMITS_Environmental\Drawings\Wetland_Stream Impacts\B-6051_hyd_pshO2D.dgn
Hydraulics

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	4
R/W SHEET NO.	4A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 3 OF 20

ENGLISH

SCALE 50 0 50 100

FILL IN WETLAND

MECHANIZED CLEARING (GRUBBING)

SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

MATCHLINE –L– STA. 14+00.00
SEE SHEET 8

MATCHLINE –L– STA. 23+00.00
SEE INSET A

MATCHLINE –L– STA. 37+00.00
SEE SHEET 5

NAD 83/NA 2011

STATE EMPLOYEES' CREDIT UNION

DAVID J. WORICK

CLT EXPRESS LIVERY LLC

DONNA W. NEIL & DOLLY W. WILLIAMS

TIEN NGUYEN AND WIFE THUY BUI NGUYEN

ARETE 108, LLC

GASTON COLLEGE

CITY OF BELMONT

BELMONT PROPERTIES
DB 1818 PG 854
PB 7 PG 108

DO NOT DISTURB VAULT OR BACKFLOW PREVENTERS

SITE 1 SB WA SC

SITE 2 SC

SITE 3 SD WD

SITE 4 WC

MATCHLINE –Y2– STA. 14+00.00
SEE SHEET 9

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3980
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

$$$$$$$SYSTIME$$$$$$$
$$$$$$$USERNAME$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$

8/17/99

PERMIT DRAWING
SHEET 4 OF 20

SCALE 50 0 50 100

ENGLISH

FILL IN WETLAND

MECHANIZED CLEARING (GRUBBING)

SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	4
R/W SHEET NO.	4A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCHLINE –Y1– STA. 14+00.00
SEE SHEET 8

MATCHLINE –L– STA. 23+00.00
SEE INSET A

MATCHLINE –L– STA. 37+00.00
SEE SHEET 5

MATCHLINE
–Y2– STA. 14+00.00
SEE SHEET 9

NAD 83/NA 2011

DO NOT DISTURB VAULT OR BACKFLOW PREVENTERS

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TIEN NGUYEN AND WIFE THUY BUI NGUYEN

CLT EXPRESS LIVERY LLC

ARETE TOB, LLC

CITY OF BELMONT

GASTON COLLEGE

SITE 1

SITE 2

SITE 3

SITE 4

SB

SC

WA

WC

SD

WD

US 29/74 WILKINSON BLVD 345' BST

INSET A

STATE EMPLOYEES' CREDIT UNION
DB 4243 PG 91
PB 76 PG 41

BELMONT PROPERTIES
DB 1818 PG 854
PB 7 PG 108

GASTON COLLEGE
DB 4422 PG 2492

BENCH TIE SET IN 24" POPLAR

MATCHLINE –L– STA. 23+00.00
SEE SHEET 4

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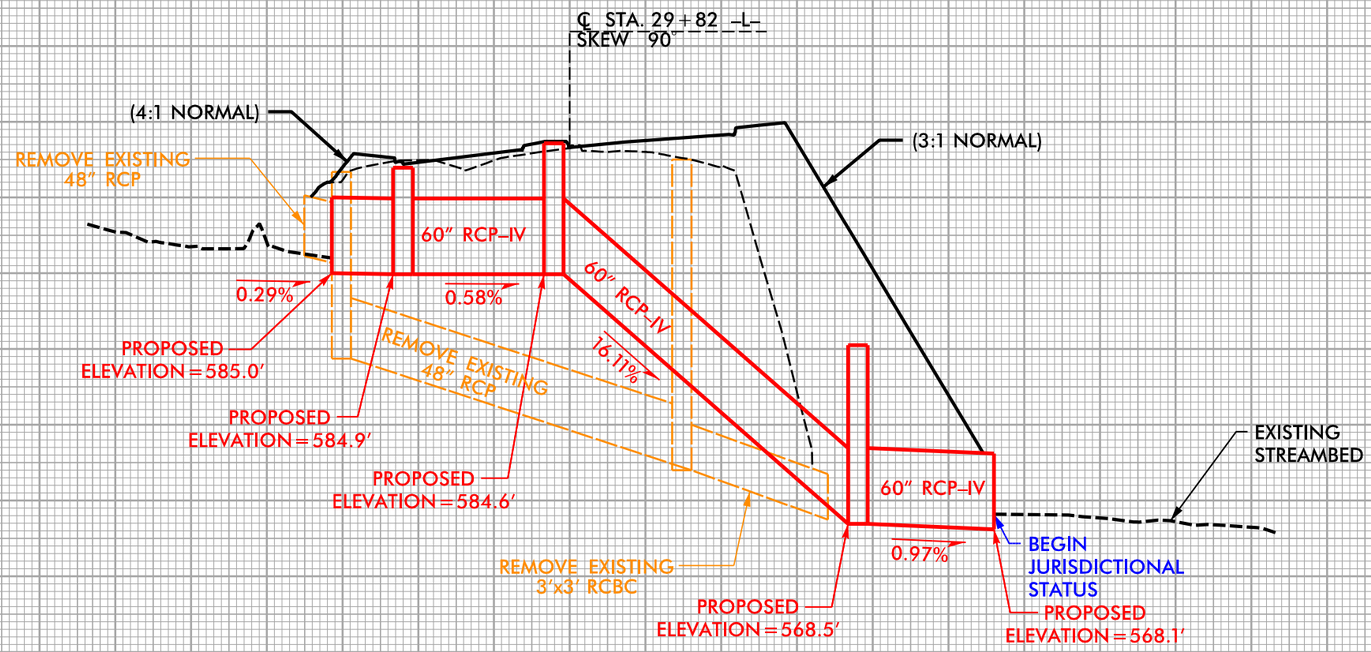
PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 5 OF 20

ENGLISH

SITE 1
–L– STA. 29+82



590
580
570
560

250 200 150 100 50 0 50 100 150 200 250

60" RCP–IV
(buried 1')
(length = 220')

RK&K
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Raleigh, North Carolina 27615-3960
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5/14/99

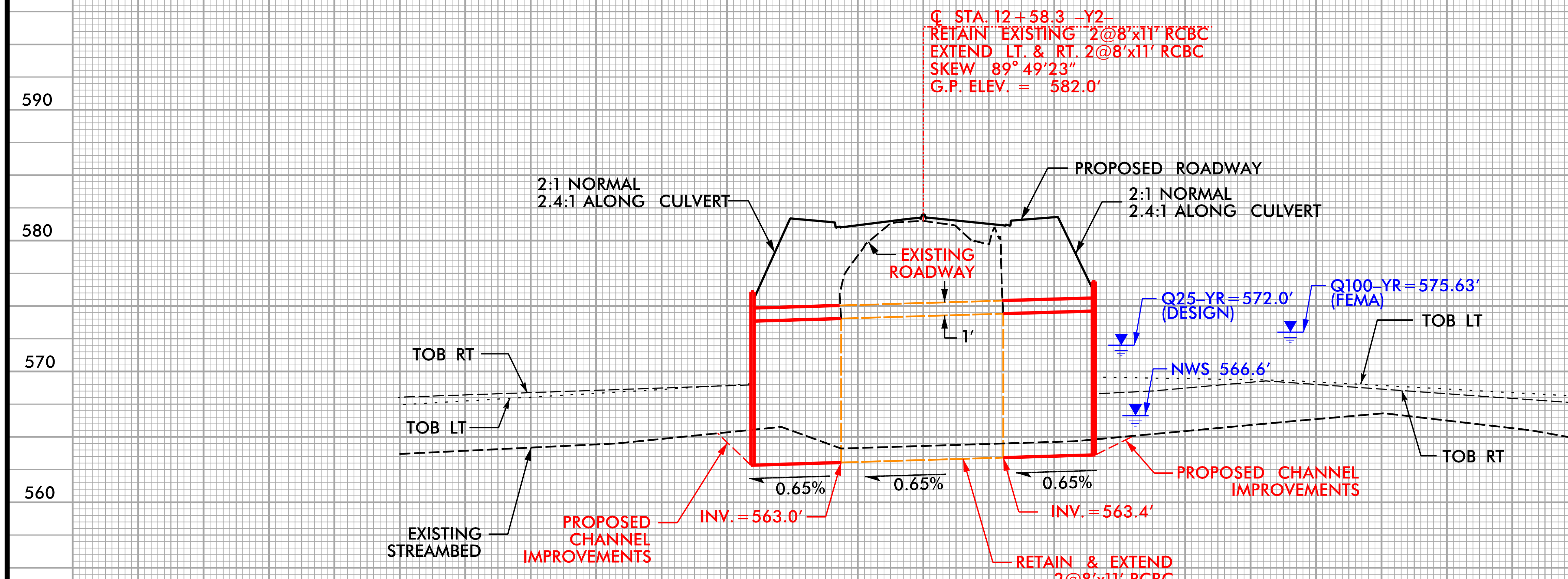
PROJECT REFERENCE NO.	SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 6 OF 20

ENGLISH

SITE 2
–Y2– STA. 12+58.3



RETAIN AND EXTEND 2 @ 8'x11' RCBC LT.&RT. EXTENSIONS

250 200 150 100 50 0 50 100 150 200 250

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$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-6051/U-6143	X-32

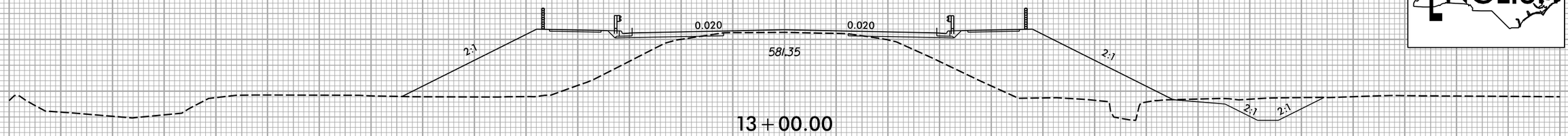
PERMIT DRAWING
SHEET 7 OF 20

ENGLISH

SITE 2

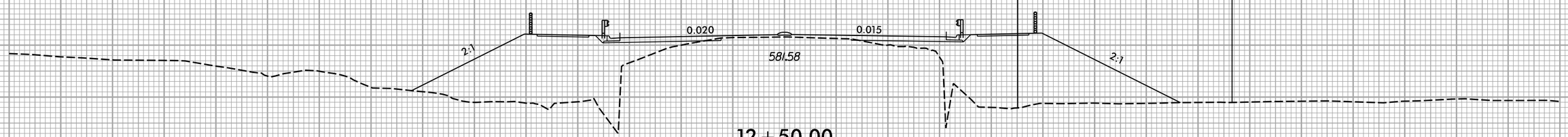
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

600 590 580 570 560



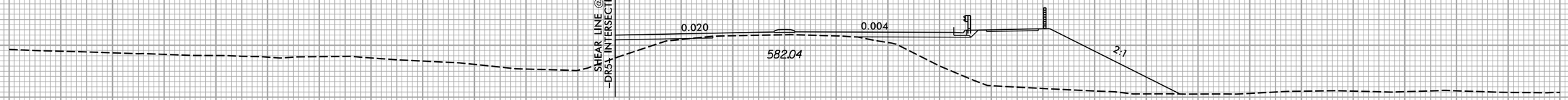
13+00.00

WETLAND

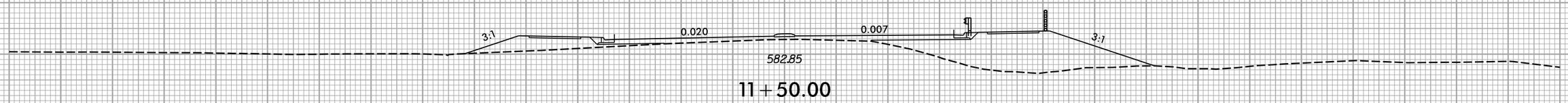


12+50.00

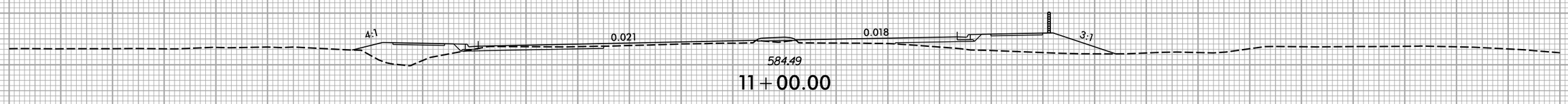
SHEAR LINE @ -DR5A- INTERSECTION



12+00.00



11+50.00



11+00.00

-Y2-

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$$$$$$USER$$$$$$
$$$$$$DGN$$$$$$
$$$$$$DRAWING NAME$$$$$$
$$$$$$FILE NAME$$$$$$
$$$$$$SCALE$$$$$$
$$$$$$PLOT SCALE$$$$$$
$$$$$$PLOT DATE$$$$$$

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-6051/U-6143	X-33

PERMIT DRAWING
SHEET 8 OF 20

ENGLISH

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

600 590 580 570 560

SITE 3

SITE 4

WETLAND

0.020 0.020

583.89

2:1 2:1 2:1 2:1

569.32

15+00.00

WETLAND

WETLAND

0.020 0.020

582.60

2:1 2:1

14+50.00

WETLAND

WETLAND

0.020 0.020

581.79

2:1 2:1

14+00.00

0.020 0.020

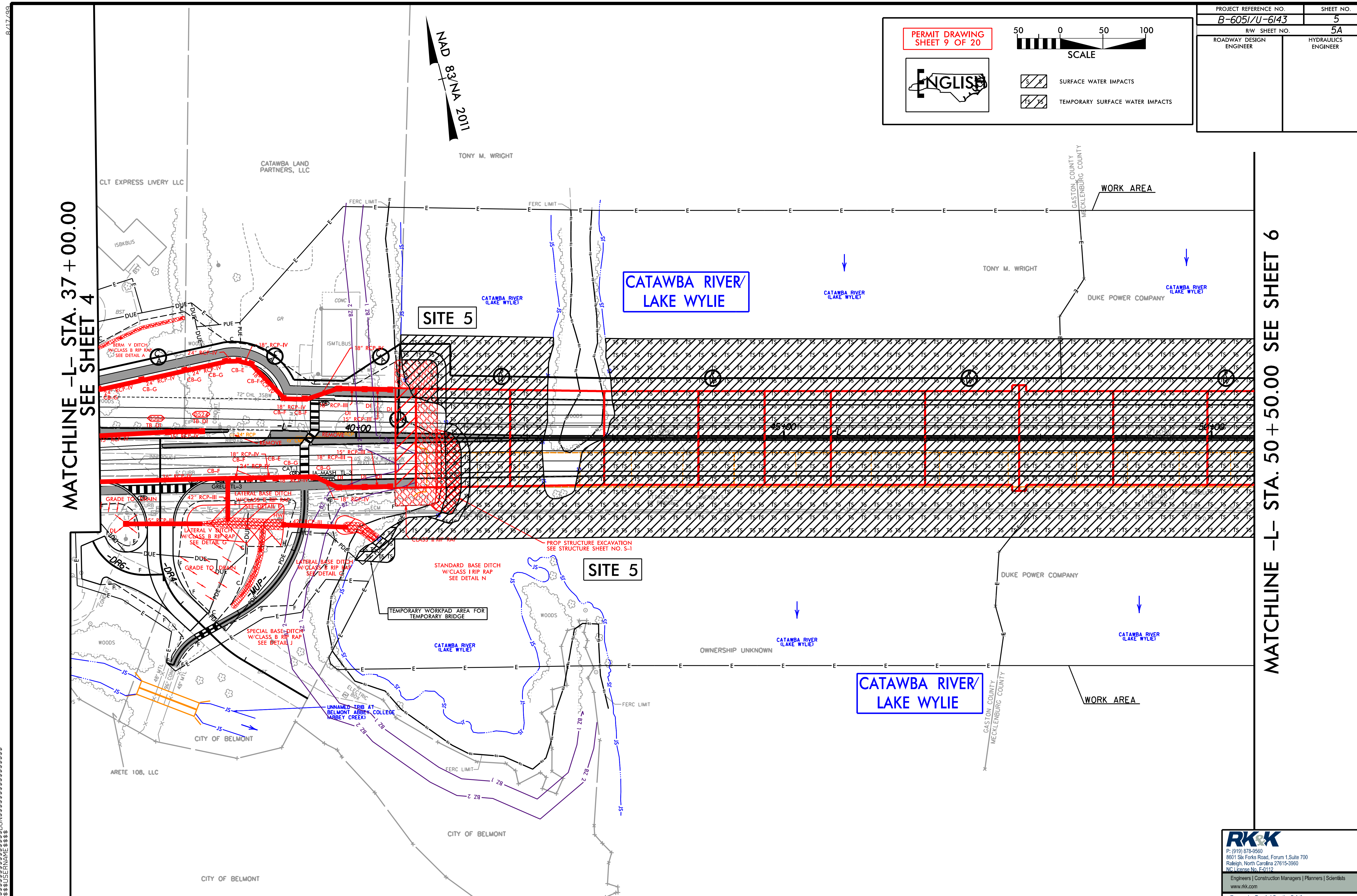
581.38

2:1 2:1 2:1 2:1

13+50.00

-Y2-

$$$$SYSTIME$$$$
$$$$SCALE$$$$
$$$$SCREEN$$$$


PROJECT REFERENCE NO.
B-6051/U-6143
SHEET NO.
5
R/W SHEET NO.
5A
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING SHEET 9 OF 20
50 0 50 100
SCALE
ENGLISH
SURFACE WATER IMPACTS
TEMPORARY SURFACE WATER IMPACTS
NAD 83/NA 2011
MATCHLINE -L- STA. 37+00.00 SEE SHEET 4
MATCHLINE -L- STA. 50+50.00 SEE SHEET 6
CLT EXPRESS LIVERY LLC
CATAWBA LAND PARTNERS, LLC
TONY M. WRIGHT
CATAWBA RIVER/ LAKE WYLIE
CATAWBA RIVER (LAKE WYLIE)
SITE 5
DUKE POWER COMPANY
WORK AREA
GASTON COUNTY
MECKLENBURG COUNTY
FERC LIMIT
BERM V DITCH W/CLASS B RIP RAP SEE DETAIL A
LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL E
LATERAL V DITCH W/CLASS B RIP RAP SEE DETAIL G
LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL G
SPECIAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL J
STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL N
GRADE TO DRAIN
PROP STRUCTURE EXCAVATION SEE STRUCTURE SHEET NO. S-1
CLASS II RIP RAP
TEMPORARY WORKPAD AREA FOR TEMPORARY BRIDGE
UNNAMED TRIB AT BELMONT ABBEY COLLEGE (ABBEY CREEK)
OWNERSHIP UNKNOWN
CITY OF BELMONT
ARETE 108, LLC
WOODS
40+00
45+00
50+00
-L-
-MUP-
-DR4-
-DR6-
RK&K
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PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	5
R/W SHEET NO.	5A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 10 OF 20

ENGLISH

50 0 50 100
SCALE

SURFACE WATER IMPACTS

TEMPORARY SURFACE WATER IMPACTS

NAD 83/NA 2011

MATCHLINE –L– STA. 37+00.00 SEE SHEET 4

MATCHLINE –L– STA. 50+50.00 SEE SHEET 6

CATAWBA LAND PARTNERS, LLC

CLT EXPRESS LIVERY LLC

TONY M. WRIGHT

DUKE POWER COMPANY

GASTON COUNTY
MECKLENBURG COUNTY

WORK AREA

CATAWBA RIVER/
LAKE WYLIE

CATAWBA RIVER
(LAKE WYLIE)

SITE 5

FERC LIMIT

ISBKBUS

ISMTLBUS

PERM. V DITCH W/CLASS B RIP RAP SEE DETAIL A

24" RCP-IV

18" RCP-IV

72" CHL 3SBW

NOT FOUND IN FIELD PLACED PER UTILITY RECORD

REMOVE

42" RCP-III

LATERAL V DITCH W/CLASS B RIP RAP SEE DETAIL G

LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL G

GRADE TO DRAIN

-DR6-

-DR4-

-MUP-

STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL N

PROP STRUCTURE EXCAVATION SEE STRUCTURE SHEET NO. S-1

TEMPORARY WORKPAD AREA FOR TEMPORARY BRIDGE

SPECIAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL J

UNNAMED TRIB AT BELMONT ABBEY COLLEGE (ABBEY CREEK)

WOODS

OWNERSHIP UNKNOWN

CITY OF BELMONT

CRETE 108, LLC

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$$$$USERNAME$$$$ $$$$SYSTIME$$$$ $$$$DGN$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-

BEGIN GRADE
-L- STA. 24+90.00
EL=609.87'

75' BLEND TO EXIST. LT

50' BLEND TO EXIST. RT

PI = 26+00.00
EL = 606.90'
VC = 200'
K = 234
V = 68 MPH

(-)12.7000%

(-)13.5540%

BM#1
N: 551,157
E: 1,397,824
-BL- STA 6+99.00
0/S 84.00' LT
-L- STA 22+23.16
0/S 84.00' RT
ELEV.= 622.25'
BENCH TIE SET
IN 24" POPLAR

BEGIN CONSTRUCTION
-L- RT STA. 24+40.00

BEGIN CONSTRUCTION
-L- LT STA. 24+15.00

PIPE HYDRAULIC DATA
60" RCP Sta. 29+82 -L-

DRAINAGE AREA	= 30	AC
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 86	CFS
DESIGN HW ELEVATION	= 589.96	FT
100 YEAR DISCHARGE	= 99	CFS
100 YEAR HW ELEVATION	= 590.41	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 145	CFS
OVERTOPPING ELEVATION	= 591.60	FT

-Y1- (Hazeleen Ave)

-Y2- (NC 7 Catawba St)

PI = 31+95.00
EL = 585.75'
VC = 410'
K = 126
V = 57 MPH

(+)5.4696%

BEGIN LATERAL V DITCH LT
-L- STA. 27+10
EL=600.91'

END LATERAL V DITCH LT
-L- STA. 29+83
EL=586.00'

60" RCP

(+)2.5359%

SP. BACK OF CURB CUT DITCH CURVES TO PARALLEL -Y1- SEE -Y1- PROFILE

BEGIN SP. BACK OF CURB CUT DITCH LT
-L- STA. 31+50
EL=586.97'

(-)13.5540%

(+)11.6943%

(-)10.3000%

PI=33+25.00 LT.
EL=584.00'

END SP. BACK OF CURB CUT DITCH LT
-L- STA. 33+50
EL=584.22'

(-)10.8640%

PROPOSED GRADE

EXISTING GROUND

BEGIN BERM V DITCH LT
-L- STA. 36+35
EL=591.50'

PI=37+
EL=593.90'

(+)15.1020%

(+)16.0170%

(-)10.8000%

PI=36+50.00 LT.
EL=591.38'

(-)10.3000%

BEGIN LAT. V DITCH RT.
-L- STA. 38+
EL=572.88'

END LAT.V DITCH
BEGIN LAT. BASE
-L- STA. 38+50
EL=572.00'

PERMIT DRAWING
SHEET 11 OF 20

ENGLISH

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00

620 610 600 590 580 570 560 550 540

BM#2
N: 550,426
E: 1,399,273
-BL- STA 22+63.00
0/S 245.00' RT
-L- STA 38+16.20
0/S 282.79' RT
ELEV.= 584.31'
BENCH TIE SET
IN 14" HICKORY

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 79,100	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 573.7	FT
BASE DISCHARGE	= 89,700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 575.5	FT
OVERTOPPING DISCHARGE	= 150,000	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 587.3	FT
DATE OF SURVEY	= 6/2022	
W.S. ELEVATION AT DATE OF SURVEY	= 565.0	FT

SITE 5
-L- STA. 46+42.5

℄ BRIDGE STA. 46+42.5 -L-
PROP. 3@110', 2@77.5', 6@110'
54" GIRDER; 1,145' OAL
SKEW 90°
ELEV. = 592.9'

LOW CHORD OF TRESTLE TO MATCH EXISTING BRIDGE LOW CHORD.

BEGIN BRIDGE
-L- STA. 40+70.00

LP @ 38+90.74

PI = 39+55.00
EL = 583.47'
VC = 200'
K = 119
V = 55 MPH

EXISTING BRIDGE, PIERS AND END BENTS TO BE REMOVED

NG LT

(-)0.3000%

(+)1.3788%

NG RT

END STD. BASE DITCH RT.
-L- STA. 40+25
EL=566.21'

(-)13.3086%

(-)12.9333%

PI=38+90 RT.
EL=570.68'
END LAT. BASE DITCH RT.
-L- STA. 39+15
EL=569.85'

BEGIN STD. BASE DITCH RT.
-L- STA. 39+90
EL=567.37'

MATERIAL TO BE REMOVED (TYP.)

EXCAVATE TO EL. 564.0'

EXISTING GROUND

PI = 47+55.00
EL = 594.50'
VC = 300'
K = 126
V = 56 MPH

HP @ 47+78.50

(+)1.3788%

(-)1.0053%

LOWEST LOW CHORD

PROPOSED GRADE

(-)1.0053%

Q50 = 573.7'

NWS = 565.0'

Q100 = 574.28' (FEMA)

EXCAVATE TO EL. 568.0'

THEORETICAL 100yr SCOUR

FOR -L- PLAN SEE SHTS. 4-6

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38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00

620 610 600 590 580 570 560 550 540

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	6
R/W SHEET NO.	6A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 12 OF 20

ENGLISH

SCALE 50 0 50 100

FILL IN WETLAND
SURFACE WATER IMPACTS
MECHANIZED CLEARING (GRUBBING)
TEMPORARY SURFACE WATER IMPACTS
TEMPORARY FILL IN WETLAND

NAD 83/NA 2011

MATCHLINE -L- STA. 50+50.00 SEE SHEET 5

MATCHLINE -L- STA. 63+00.00 SEE SHEET 7

WE

WB

SA

SITE 5

SITE 6

SITE 7

SEE INSET A

CATAWBA RIVER/
LAKE WYLIE

CATAWBA RIVER
(LAKE WYLIE)

WORK AREA

DUKE POWER COMPANY

MECKLENBURG COUNTY

MECKLENBURG COUNTY
NCDOT RECENT PURCHASE, FORMERLY:
BURNS FAMILY PROPERTIES LLC

ANTHONY R. SIMMONS

NORTH CAROLINA STATE HIGHWAY
AND PUBLIC WORKS COMMISSION

TEMPORARY WORKPAD AREA FOR TEMPORARY BRIDGE

-Y3- STA. 13+20.00 LT
END REINFORCED SIDE SLOPE
1.5:1 (TYP 2:1) W/ROCK PLATING

TOE PROTECTION
W/CLASS B RIP RAP
SEE DETAIL J

PIPE OUTLET
BANK STABILIZATION
W/CLASS II RIP RAP
SEE DETAIL T

MECH. CLEARING
TEMP. IMPACTS
IN SURFACE
WATERS
MECH. CLEARING
FILL IN WETLAND
+59.48 TEMP. IMPACTS
65.87 IN SURFACE
WATERS
IMPACTS IN
SURFACE
WATERS

NO STRUCTURE LOCATED
ASSUMED BURIED, NON-FUNCTIONAL

STANDARD BASE DITCH
W/CLASS I RIP RAP
SEE DETAIL N

PIPE OUTLET
BANK STABILIZATION
W/CLASS I RIP RAP
SEE DETAIL H

CHANNEL DISAPPEARS

END JURISDICTIONAL STATUS

2 TONS CL B RIP RAP
w/7 SY GEOTEXTILE

RETAIN SYSTEM

GRADE TO DRAIN

GRADE TO DRAIN
LATERAL BASE DITCH
W/CLASS B RIP RAP
SEE DETAIL D

CLASS II RIP RAP

STANDARD BASE DITCH
W/CLASS B RIP RAP
SEE DETAIL N

Q10=34.0 CFS
V10=4.3 FPS

+32.58
196.34'
+32.26
223.78'
+36.94
242.93'
+31.86
265.95'

2 TONS CL B RIP RAP
7 SY GEOTEXTILE

REMOVE 25' OF CULVERT
PLUG AND FILL WITH
FLOWABLE FILL

72" RCP III
BURIED 1.0'

REMOVE PIPE AND
CATCH BASIN

INSET A

MECH. CLEARING
TEMP. IMPACTS
IN SURFACE
WATERS
MECH. CLEARING
FILL IN WETLAND
TEMP. IMPACTS
IN SURFACE
WATERS
IMPACTS IN
SURFACE
WATERS
72" RCP IV
BURIED
1.0'

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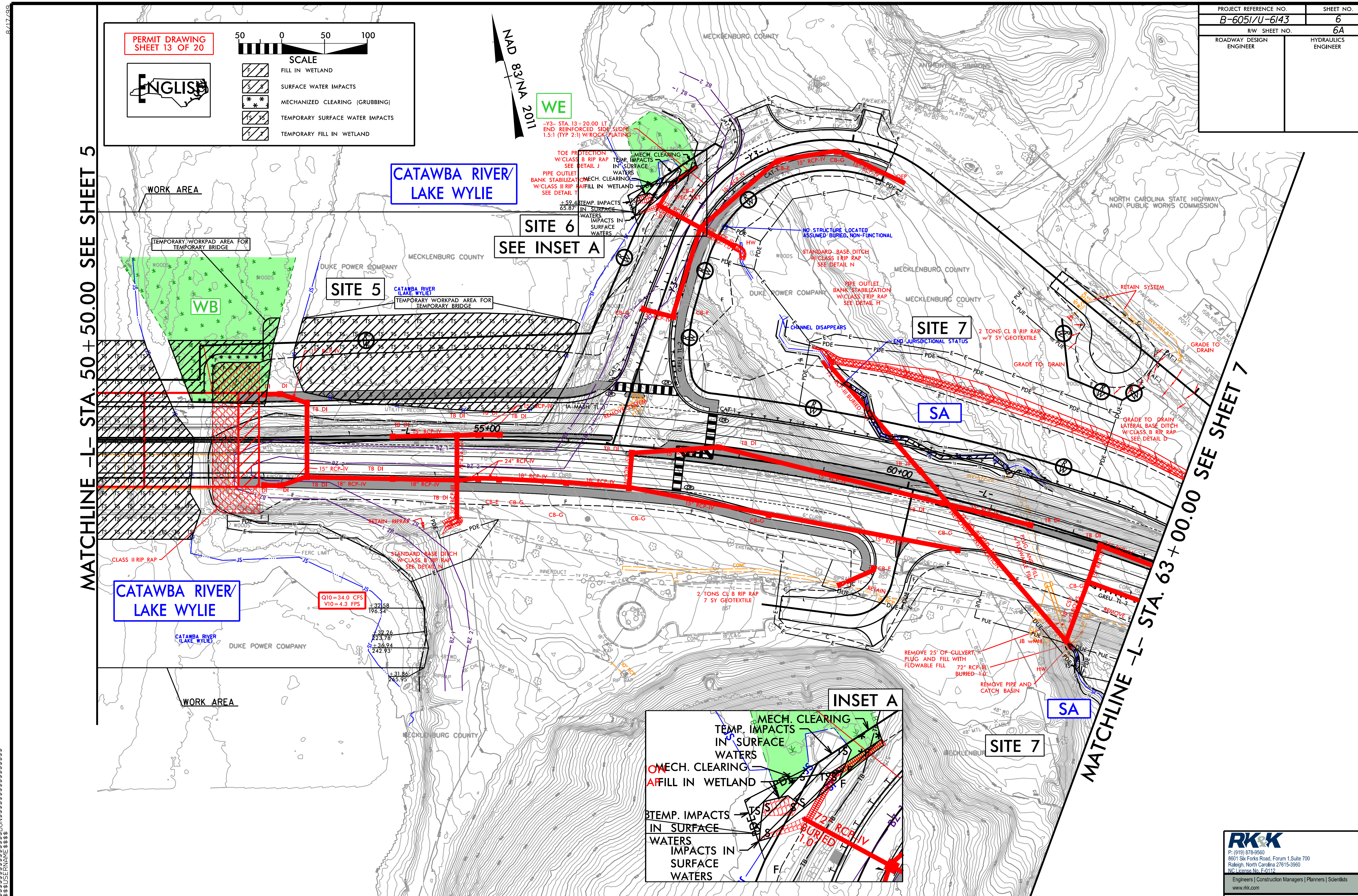
$$$$$$$SYSTIME$$$$$
$$$$$$$DGN$$$$$$$$$$



PROJECT REFERENCE NO.
B-6051/U-6143
SHEET NO.
6
R/W SHEET NO.
6A
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING SHEET 13 OF 20
ENGLISH
SCALE
50 0 50 100
FILL IN WETLAND
SURFACE WATER IMPACTS
MECHANIZED CLEARING (GRUBBING)
TEMPORARY SURFACE WATER IMPACTS
TEMPORARY FILL IN WETLAND
NAD 83/NA 2011
WE
WB
SA
CATAWBA RIVER/ LAKE WYLIE
SITE 5
SITE 6
SITE 7
SEE INSET A
INSET A
MATCHLINE -L- STA. 50+50.00 SEE SHEET 5
MATCHLINE -L- STA. 63+00.00 SEE SHEET 7
WORK AREA
TEMPORARY WORKPAD AREA FOR TEMPORARY BRIDGE
DUKE POWER COMPANY
MECKLENBURG COUNTY
NORTH CAROLINA STATE HIGHWAY AND PUBLIC WORKS COMMISSION
ANTHONY R. SIMMONS
-Y3- STA. 13+20.00 LT END REINFORCED SIDE SLOPE 1.5:1 (TYP 2:1) W/ROCK PLATING
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL J
PIPE OUTLET BANK STABILIZATION W/CLASS II RIP RAP SEE DETAIL T
MECH. CLEARING
TEMP. IMPACTS IN SURFACE WATERS
FILL IN WETLAND
IMPACTS IN SURFACE WATERS
+59.48 65.87'
NO STRUCTURE LOCATED ASSUMED BURIED, NON-FUNCTIONAL
STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL N
PIPE OUTLET BANK STABILIZATION W/CLASS I RIP RAP SEE DETAIL H
CHANNEL DISAPPEARS
END JURISDICTIONAL STATUS
2 TONS CL B RIP RAP w/7 SY GEOTEXTILE
GRADE TO DRAIN
RETAIN SYSTEM
GRADE TO DRAIN LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL D
STANDARD BASE DITCH W/CLASS B RIP RAP SEE DETAIL N
CLASS II RIP RAP
Q10=34.0 CFS V10=4.3 FPS
+32.58 196.54'
+32.26 223.78'
+36.94 242.93'
+31.86 265.95'
REMOVE 25' OF CULVERT, PLUG AND FILL WITH FLOWABLE FILL
72" RCP-III BURIED 1.0'
REMOVE PIPE AND CATCH BASIN
PLUG AND FILL W/FLOWABLE FILL
72" RCP-III BURIED
15" RCP-IV
18" RCP-IV
24" RCP-IV
30" RCP-III
72" RCP-IV BURIED 1.0'
55+00
60+00
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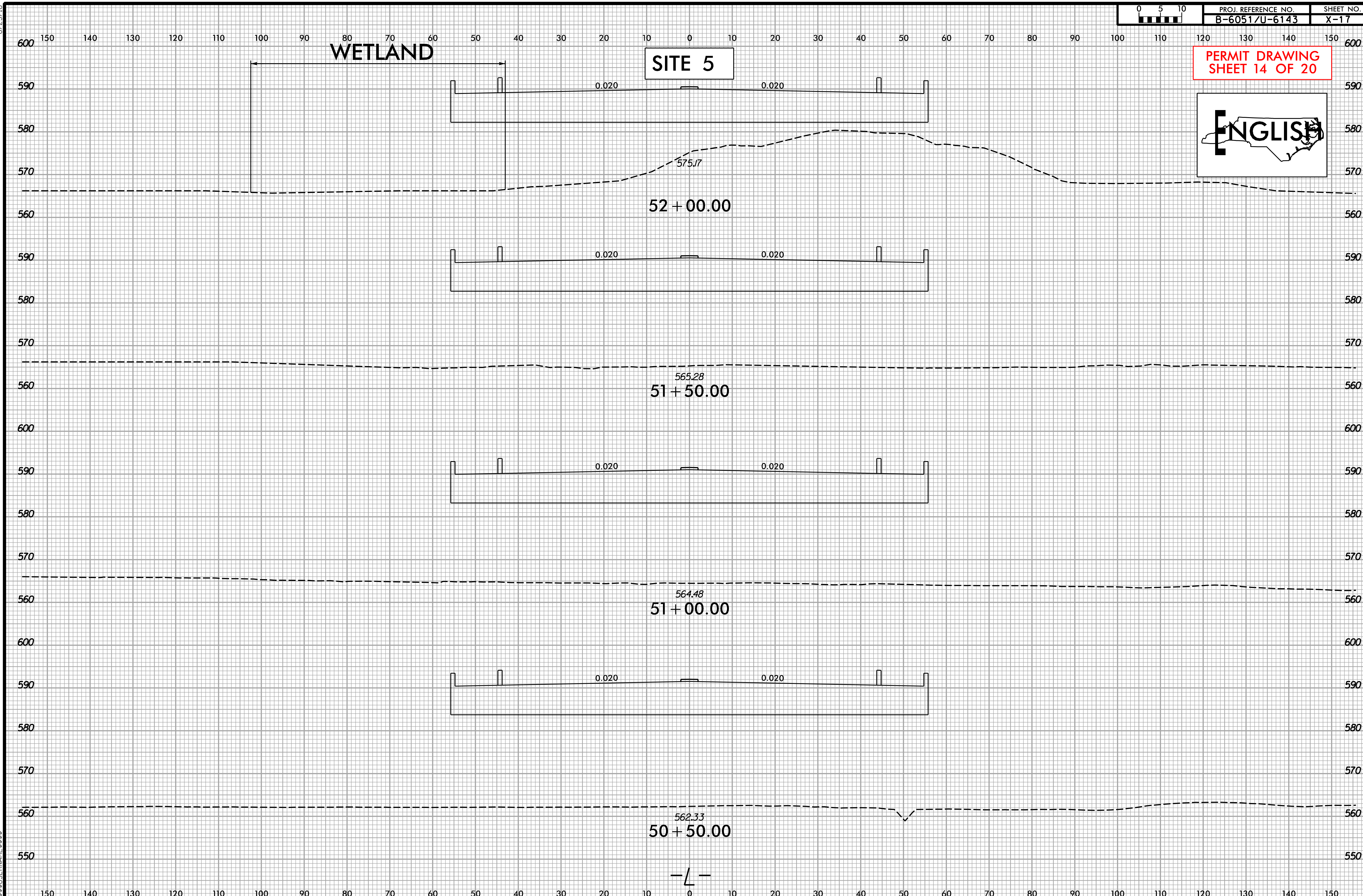
6/23/16



$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$$

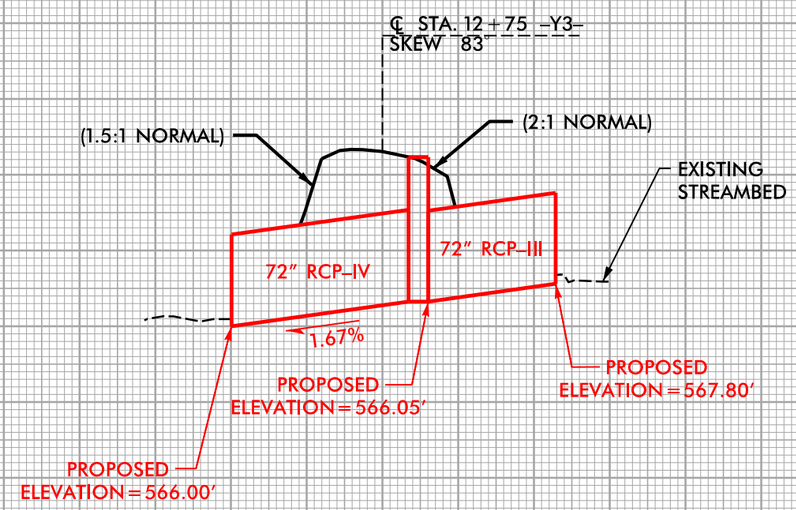
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 6
–Y3– STA. 12+75

PERMIT DRAWING
SHEET 15 OF 20

ENGLISH



72" RCP–III & RCP–IV
(buried 1')
(length = 108')

590
580
570
560

250 200 150 100 50 0 50 100 150 200 250

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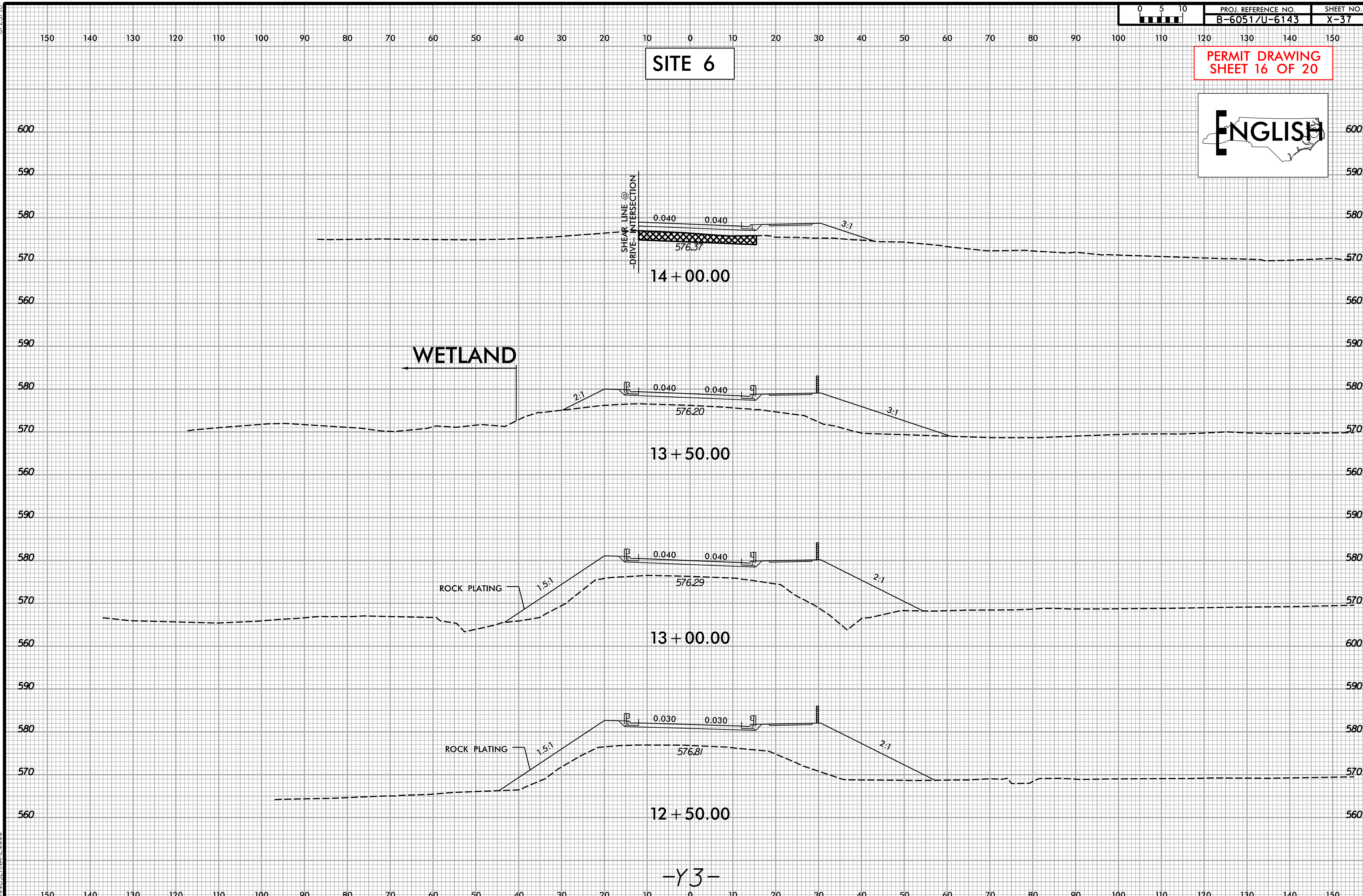
PROJ. REFERENCE NO. B-6051/U-6143 | SHEET NO. X-37

PERMIT DRAWING
SHEET 16 OF 20

SITE 6



6/23/16

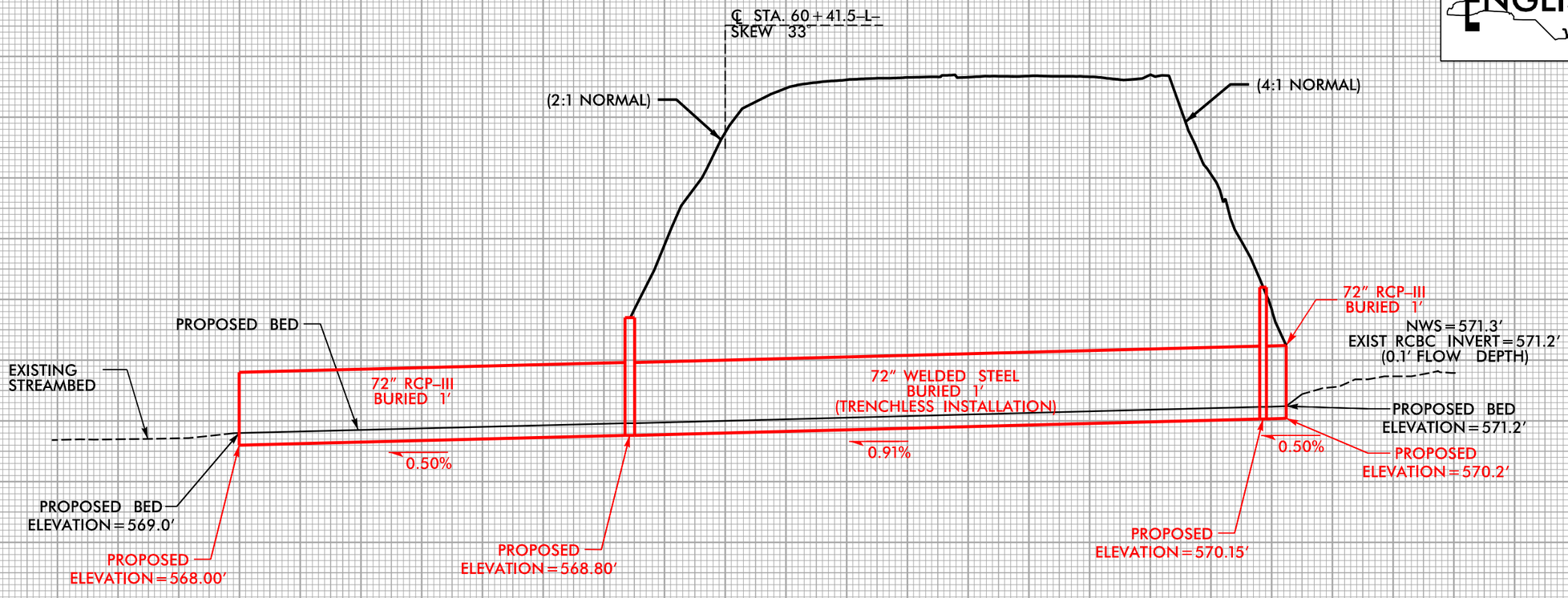
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 7
–L– STA. 60+41.5

PERMIT DRAWING
SHEET 17 OF 20

ENGLISH



72" RCP–III, 72" WELDED STEEL (TRENCHLESS INSTALLATION), & 72" RCP–III
(buried 1')
(length=428')

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	9
R/W SHEET NO.	9A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 18 OF 20

ENGLISH

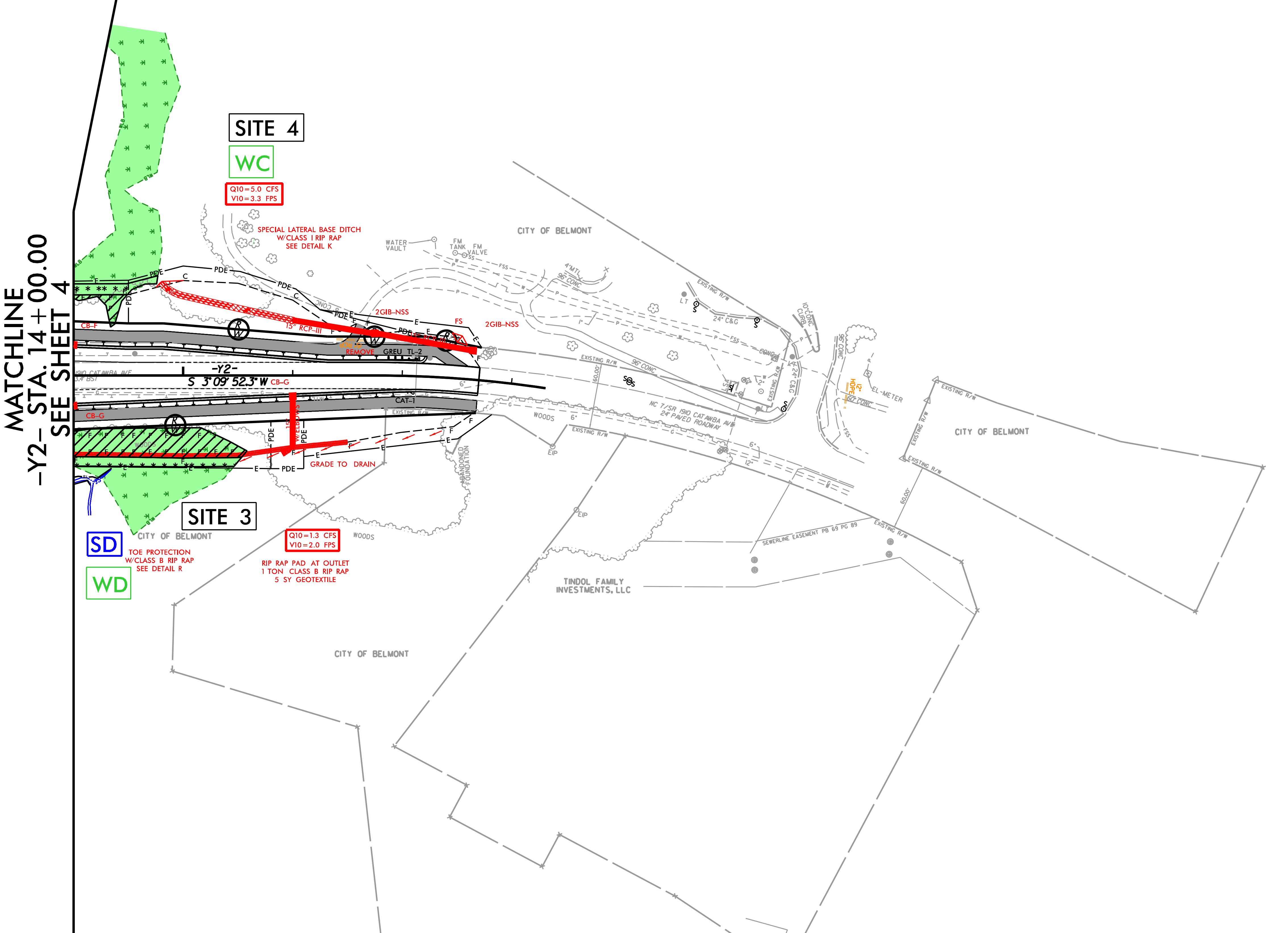
SCALE 50 0 50 100

FILL IN WETLAND

MECHANIZED CLEARING (GRUBBING)

CATAWBA RIVER
(LAKE WYLIE)

NAD 83/NA 2011



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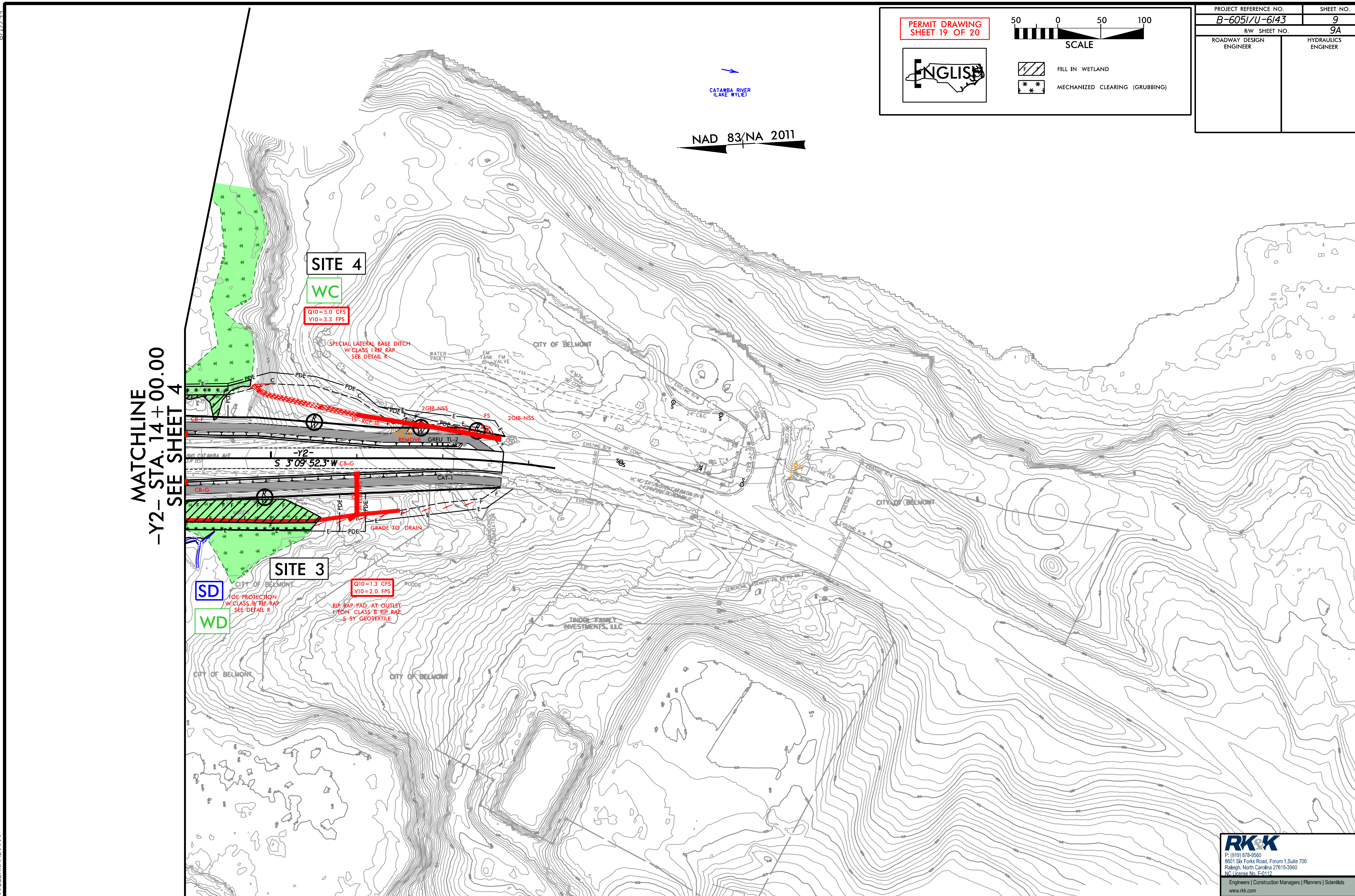
$$$$SYSTIME$$$$
$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



PROJECT REFERENCE NO.
B-6051/U-6143
SHEET NO.
9
R/W SHEET NO.
9A
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PERMIT DRAWING SHEET 19 OF 20
ENGLISH
SCALE
50 0 50 100
FILL IN WETLAND
MECHANIZED CLEARING (GRUBBING)
CATAWBA RIVER (LAKE WYLIE)
NAD 83/NA 2011
MATCHLINE -Y2- STA. 14+00.00 SEE SHEET 4
SITE 4
WC
Q10=5.0 CFS
V10=3.3 FPS
SPECIAL LATERAL BASE DITCH W/CLASS I RIP RAP SEE DETAIL K
CITY OF BELMONT
-Y2-
S 3°09'52.3" W
GREU TL-2
CAT-1
GRADE TO DRAIN
SITE 3
SD
WD
Q10=1.3 CFS
V10=2.0 FPS
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL R
RIP RAP PAD AT OUTLET 1 TON CLASS B RIP RAP 5 SY GEOTEXTILE
TINDOL FAMILY INVESTMENTS, LLC
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From / To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill in Wetlands (ac)	WETLAND IMPACTS: Temp Fill in Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW Impacts (ac)	SURFACE WATER IMPACTS: Temp SW Impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp (ft)	Natural Stream Design (ft)
1	29+97 to 30+09 -L- RT	Bank Stabilization - SB						0.004	0.003	42	30	
2	12+58.3 -Y2- LT	2 @ 8'x11' RCBC - SC						0.023		70		
		Bank Stabilization - SC						0.035	0.006	101	18	
	12+08 to 12+58 -Y2- LT	Roadway Fill - WA	0.016			0.007						
3	12+80 to 14+61 -Y2- LT	Roadway Fill - SD						0.009	< 0.001	109	7	
	13+68 to 15+58 -Y2- LT	Roadway Fill - WD	0.098			0.031						
4	13+87 to 14+62 -Y2- RT	Roadway Fill - WC	0.010			0.018						
5	39+98 to 40+45 -L- RT	Temp. Workpad For Bridge							0.016		13	
	40+52 to 51+71 -L-	Bridge - Catawba River/Lake Wylie						0.075	0.056	148	20	
	51+33 to 52+53 -L-	Bridge - WB	0.071			0.029						
	40+40 to 51+71 -L-	Temp. Trestle[1] - WB		0.069					5.293		19	
	12+28 to 12.71 -MUP-	42" RCP-III - Catawba River /Lake Wylie						0.003	0.007	14	14	
	52+79 to 55+95 -L- LT	Roadway Fill - Catawba River/Lake Wylie						0.434		23		
	52+44 to 56+07 -L- LT	Temp. Workpad For Bridge - WB		0.015					0.314		41	
6	12+59 to 13+38 -Y3- LT	Bank Stabilization - Catawba River/Lake Wylie						0.009	0.006	27	6	
		Roadway Fill/Toe Protection - Catawba River /Lake Wylie - WE	0.003			0.006		0.002	0.012	19	11	
7	59+04 to 62+63 -L-	Roadway Fill - SA						0.024	0.002	261	17	
TOTALS*:			0.198	0.084	0.000	0.091	0.000	0.618	5.713	814	196	0

*Rounded totals are sum of actual impacts

NOTES:

Permanent Pier Stream Impacts - 938 sq.ft.

[1]Temporary dual trestle bridges for constructability and removal of existing bridge. Impacts are driven solely by temporary bridge piers; they cover the entire work area to provide flexibility to the contractor for the location and adjustment of work bridges as needed.

[2]Total Fill in Wetlands due to riprap - 0.37 sq. ft.

Revised 2018 Feb

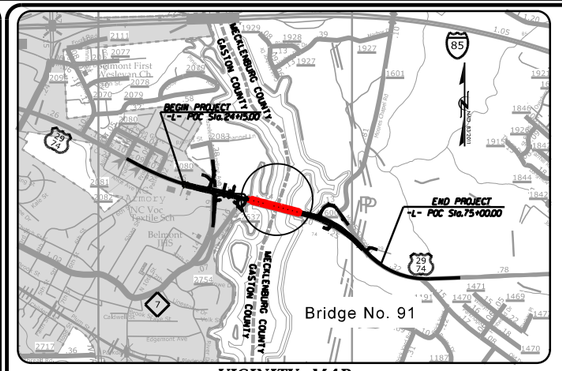
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
5/20/2024
GASTON / MECKLENBURG COUNTY
B-6051 / U-6143

Buffer Drawings

TIP PROJECT: B-6051 /U-6143

CONTRACT NO:

$$$$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$DGN$$$$$$$$$$
$$$$$$USERNAME$$$$$$



VICINITY MAP
(NOT TO SCALE)
See Sheet 1A For Index of Sheets
See Sheet 1B For Plan Sheet Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

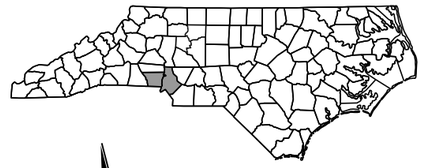
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-6051 / U-6143	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
48708.1.1		P.E.
48326.1.1		P.E.

GASTON / MECKLENBURG COUNTIES

LOCATION: *BRIDGE NO. 91 OVER CATAWBA RIVER ON US 29 /US 74 AND INTERSECTION IMPROVEMENTS ON US 29 /US 74 (WILKINSON BLVD) AND NC 7 (CATAWBA ST)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, STRUCTURES, CULVERT, AND RESURFACING*



BUFFER IMPACTS PERMIT

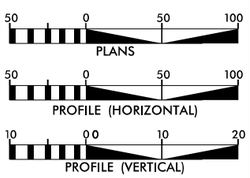
BUFFER DRAWING SHEET 1 OF 6

ENGLISH

NOTES:
1. THIS PROJECT IS PARTIALLY WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF BELMONT.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___.

★ TRAFFIC SIGNAL

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 25,476
ADT 2044 = 30,690
DHV = 11%
DIR = 80%
T = 6%*
V = 50 MPH
(* TTST =2% / DUAL 4%)
FUNC CLASS = MAJOR ARTERIAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-6051 /U-6143 = 0.746 mi
LENGTH STRUCTURE TIP PROJECT B-6051 /U-6143 = 0.217 mi
TOTAL LENGTH TIP PROJECT B-6051 /U-6143 = 0.963 mi

PLANS PREPARED BY:
RK&K
P: (919) 878-9560
8601 Six Forks Road, Forums 1 Suite 700
Raleigh, North Carolina 27615-5360
NC License No. F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 23, 2023

LETTING DATE:
JUNE 18, 2024

Scott D. Blevins, P.E.
PROJECT ENGINEER

Carter Mull, P.E.
PROJECT DESIGN ENGINEER

David Stutts, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE:

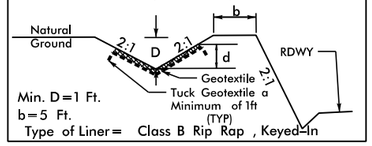
STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	2D-1
R/W SHEET NO.	
	HYDRAULICS ENGINEER

BUFFER DRAWING SHEET 2 OF 6

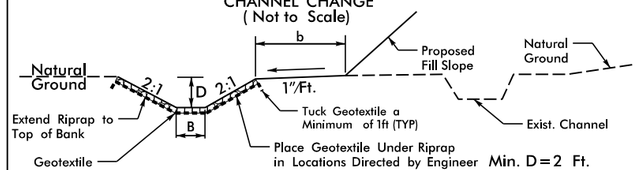
DETAIL A
BERM 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
b=5 Ft.
Type of Liner= Class B Rip Rap , Keyed–In

–L– STA. 36+35 TO STA. 38+00 LT
37 TON RIP RAP, 82 SY GEOTEXTILE

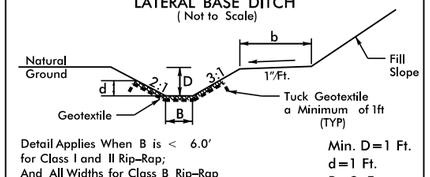
DETAIL B
CHANNEL CHANGE
(Not to Scale)



Min. D=2 Ft.
B=4 Ft.
b=10 Ft.
Type of Liner= Class B Rip Rap, Keyed–In

–Y2– STA. 12+88 TO STA. 13+83 RT
100 TON RIP RAP, 218 SY GEOTEXTILE

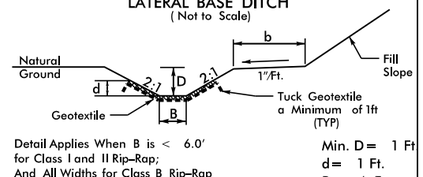
DETAIL C
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=1 Ft.
d=1 Ft.
B=2 Ft.
b=5 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

–MUP– STA. 11+85 TO STA. 12+18 LT
9 TON RIP RAP, 20 SY GEOTEXTILE

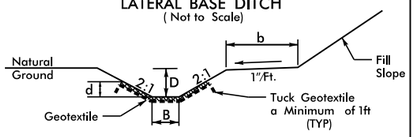
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D= 1 Ft.
d= 1 Ft.
B= 4 Ft.
b= 5 Ft.
Type of Liner= Cl B Rip–Rap, Keyed–In

–L– STA. 59+00* TO STA. 68+34 LT
*DITCH CONTINUES FOR 30' BEYOND –L– 59+00, TIES W/EXIST. CHAN. OAL=964' (APPROX.)
408 TON RIP RAP, 907 SY GEOTEXTILE

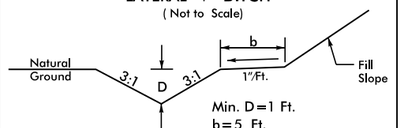
DETAIL E
LATERAL BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=2 Ft.
d=2 Ft.
B=4 Ft.
b=5 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

–L– STA. 38+50 TO STA. 39+15 RT
42 TON RIP RAP, 93 SY GEOTEXTILE

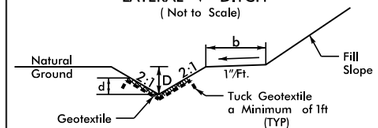
DETAIL F
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
b=5 Ft.

–L– STA. 27+10 LT TO STA. 29+83 LT
–Y1– STA. 11+05* LT TO STA. 11+25 LT
–Y1– STA. 13+25 LT TO STA. 14+00 LT
*DITCH CONTINUES FOR 37.2' BEYOND –Y1– 11+05, CURVES TO TIE AT –L– 29+83.

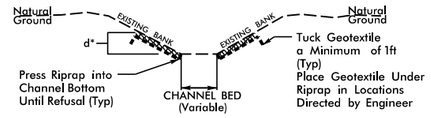
DETAIL G
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
d=1 Ft.
Type of Liner= Cl B Rip–Rap, Keyed–In b=5 Ft.

–L– STA. 38+20 TO STA. 38+50 RT
7 TON RIP RAP, 15 SY GEOTEXTILE

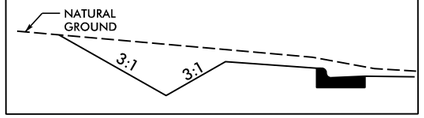
DETAIL H
PIPE OUTLET BANK STABILIZATION
(Not to Scale)



*Rip–Rap to be Installed to 2ft Outside Top of Ditch Slopes on Jurisdictional Streams
Length=20 Ft.
Type of Liner= Class I Rip–Rap, Keyed–In

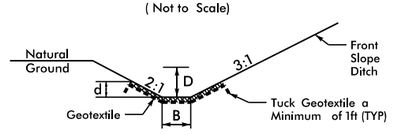
–L– STA. 29+83 RT (d=5ft*)
40 TON RIP RAP, 75 SY GEOTEXTILE
–L– STA. 58+87 LT (d=3.5ft*)
57 TON RIP RAP, 104 SY GEOTEXTILE

DETAIL I
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



–L– STA. 31+50 TO STA. 33+50 LT
–Y1– STA. 11+25 TO STA. 11+75 LT
–Y1– STA. 12+68 TO STA. 13+25 LT

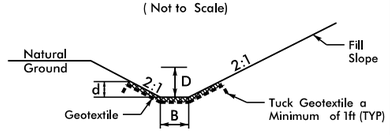
DETAIL J
SPECIAL BASE DITCH
(Not to Scale)



Min. D=1 Ft.
d=1 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In B=2 Ft.

–MUP– STA. 11+00 TO STA. 11+85 LT
28 TON RIP RAP, 63 SY GEOTEXTILE

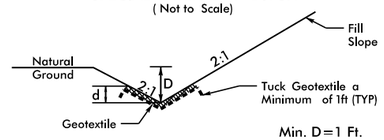
DETAIL K
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=1 Ft.
d=1 Ft.
Type of Liner= Class I Rip–Rap, Keyed–In B=2 Ft.

–Y2– STA. 15+00* TO STA. 16+00 LT
*DITCH CONTINUES FOR 25' BEYOND –Y2– 15+00, CURVES TO TIE W/NG. OAL=125' (APPROX.)
42 TON RIP RAP, 90 SY GEOTEXTILE

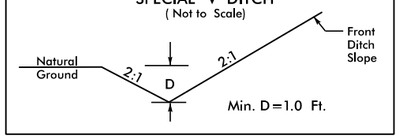
DETAIL L
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1 Ft.
Type of Liner= Cl A Rip–Rap, Keyed–In d=1 Ft.

–DR3– STA. 10+61 TO 11+00 LT
8 TON RIP RAP, 19 SY GEOTEXTILE
–DR3– STA. 10+58 TO 11+00 RT
9 TON RIP RAP, 21 SY GEOTEXTILE

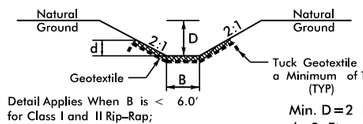
DETAIL M
SPECIAL 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.

–DR10– STA. 10+40 TO STA. 10+75 LT

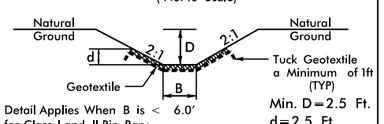
DETAIL N
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=2 Ft.
d=2 Ft.
B=4 Ft.
Type of Liner= Class I Rip–Rap, Keyed–In

–L– STA.39+90 RT, L=38', S=3.3%,
BEG. ELEV=567.4', END ELEV=566.2'
26 TON RIP RAP, 55 SY GEOTEXTILE
–L– STA. 54+70 RT, L=16', S=3.1%,
BEG. ELEV=580.5', END ELEV=580.0'
11 TON RIP RAP, 23 SY GEOTEXTILE
–L– STA. 69+75 LT, L=70', S=5.6%,
BEG. ELEV=628.9', END ELEV=625.0'
48 TON RIP RAP, 101 SY GEOTEXTILE
–Y3– STA. 12+75 RT, L=20', S=1.0%,
BEG. ELEV=567.8', END ELEV=567.8'
14 TON RIP RAP, 29 SY GEOTEXTILE

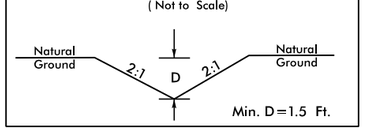
DETAIL O
STANDARD BASE DITCH
(Not to Scale)



Detail Applies When B is < 6.0' for Class I and II Rip–Rap; And All Widths for Class B Rip–Rap
Min. D=2.5 Ft.
d=2.5 Ft.
B=4 Ft.
Type of Liner= Class B Rip–Rap, Keyed–In

–L– STA. 29+78 LT, L=75', S=2.33%
BEG. ELEV=587.75', END ELEV=586.00'
57 TON RIP RAP, 127 SY GEOTEXTILE

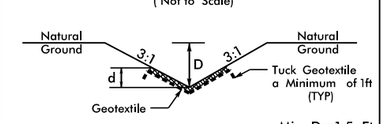
DETAIL P
STANDARD 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.

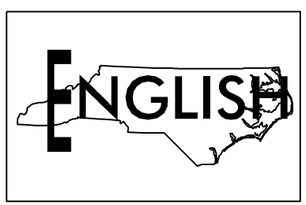
–Y1– STA. 13+50 RT, L=93', S=4.32%
BEG. ELEV=599.25', END ELEV=595.25'
–DR11– STA. 10+25 LT, L=69', S=3.63%
BEG. ELEV=593.50', END ELEV=591.00'

DETAIL Q
STANDARD 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
Type of Liner= Cl B Rip–Rap, Keyed–In d=1.0 Ft.

–DR11– STA. 11+33 LT, L=31', S=6.41%
BEG. ELEV=588.12', END ELEV=586.12'
10 TON RIP RAP, 22 SY GEOTEXTILE
–DR11– STA. 11+24 RT, L=35', S=9.20%
BEG. ELEV=590.23', END ELEV=586.97'
11 TON RIP RAP, 25 SY GEOTEXTILE

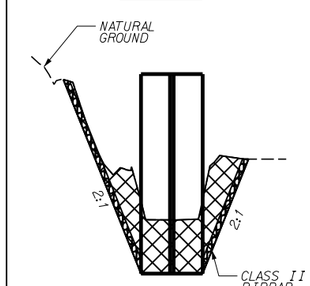


COMBINED QUANTITIES FOR DETAILS U AND V

PERMANENT CHANNEL EXCAVATION

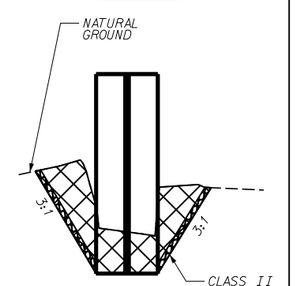
TOTAL CHANNEL EXCAVATION = 83 CY
TOTAL CL II RIP RAP = 40 TONS
TOTAL GEOTEXTILE FAB. = 41 SY

DETAIL U



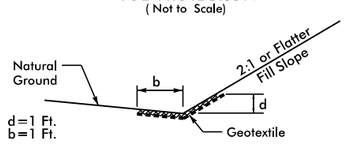
OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH=17'

DETAIL V



INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM (NTS)
LENGTH=18'

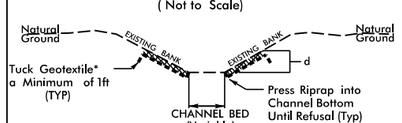
DETAIL R
TOE PROTECTION
(Not to Scale)



d=1 Ft.
b=1 Ft.
Type of Liner= Class B Rip–Rap

–L– STA. 65+50 TO STA. 68+00 RT
103 TON RIP RAP, 229 SY GEOTEXTILE
–Y2– STA. 11+10 TO STA. 12+61 RT
62 TON RIP RAP, 138 SY GEOTEXTILE
–Y2– STA. 13+00 TO STA. 16+50 RT
144 TON RIP RAP, 321 SY GEOTEXTILE

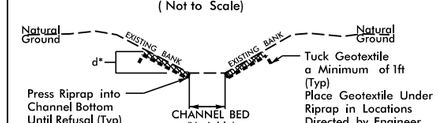
DETAIL S
BANK STABILIZATION ON BANKS ONLY
(Not to Scale)



Length= Varies
d= Varies
Est.= Class B Rip–Rap, Keyed–In
*Place Geotextile Under Riprap in Locations Directed by Engineer

–Y2– STA. 12+60 LT; 3 TON RIP RAP, 7 SY GEOTEXTILE
–Y2– STA. 12+95 LT; 15 TON RIP RAP, 33 SY GEOTEXTILE
–Y2– STA. 12+85 RT; 7 TON RIP RAP, 16 SY GEOTEXTILE

DETAIL T
PIPE OUTLET BANK STABILIZATION
(Not to Scale)



Length=25 Ft.
d=3 Ft.*
*Rip–Rap to be Installed to 2ft Outside Top of Ditch Slopes on Jurisdictional Streams
Type of Liner= Class II Rip–Rap, Keyed–In

–Y3– STA. 12+75 LT
72 TON RIP RAP, 104 SY GEOTEXTILE

K:\R/2024
Hydraulics\PERMITS_Environmental\Drawings\Buffer Impacts\B-6051_hyd_psh02D.dgn
plotted:

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-6051/U-6143	5
RW SHEET NO.	5A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

BUFFER DRAWING
SHEET 3 OF 6

50 0 50 100
SCALE

ENGLISH

ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2

NAD 83/NA 2011

MATCHLINE –L– STA. 37+00.00
SEE SHEET 4

MATCHLINE –L– STA. 50+50.00 SEE SHEET 6

CLT EXPRESS LIVERY LLC
CATAWBA LAND PARTNERS, LLC
TONY M. WRIGHT
DUKE POWER COMPANY
GASTON COUNTY
MECKLENBURG COUNTY
WORK AREA
CATAWBA RIVER/ LAKE WYLIE
CATAWBA RIVER (LAKE WYLIE)
SITE 5
EXISTING R/W USED AS EXISTING TRANSPORTATION FACILITY
PROP STRUCTURE EXCAVATION SEE STRUCTURE SHEET NO. 5-1
CLASS II RIP RAP
STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL N
SPECIAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL J
BERM V DITCH W/CLASS B RIP RAP SEE DETAIL A
LATERAL V DITCH W/CLASS B RIP RAP SEE DETAIL G
LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL E
GRADE TO DRAIN
GRADE TO LOWER
UNNAMED TRIB AT BELMONT ABBEY COLLEGE (ABBEY CREEK)
OWNERSHIP UNKNOWN
CITY OF BELMONT
ARETE 108, LLC
WOODS
FERC LIMIT
ATTACHED TO BRIDGE
INNERDUCT
45+00
50+00
40.00 -L-

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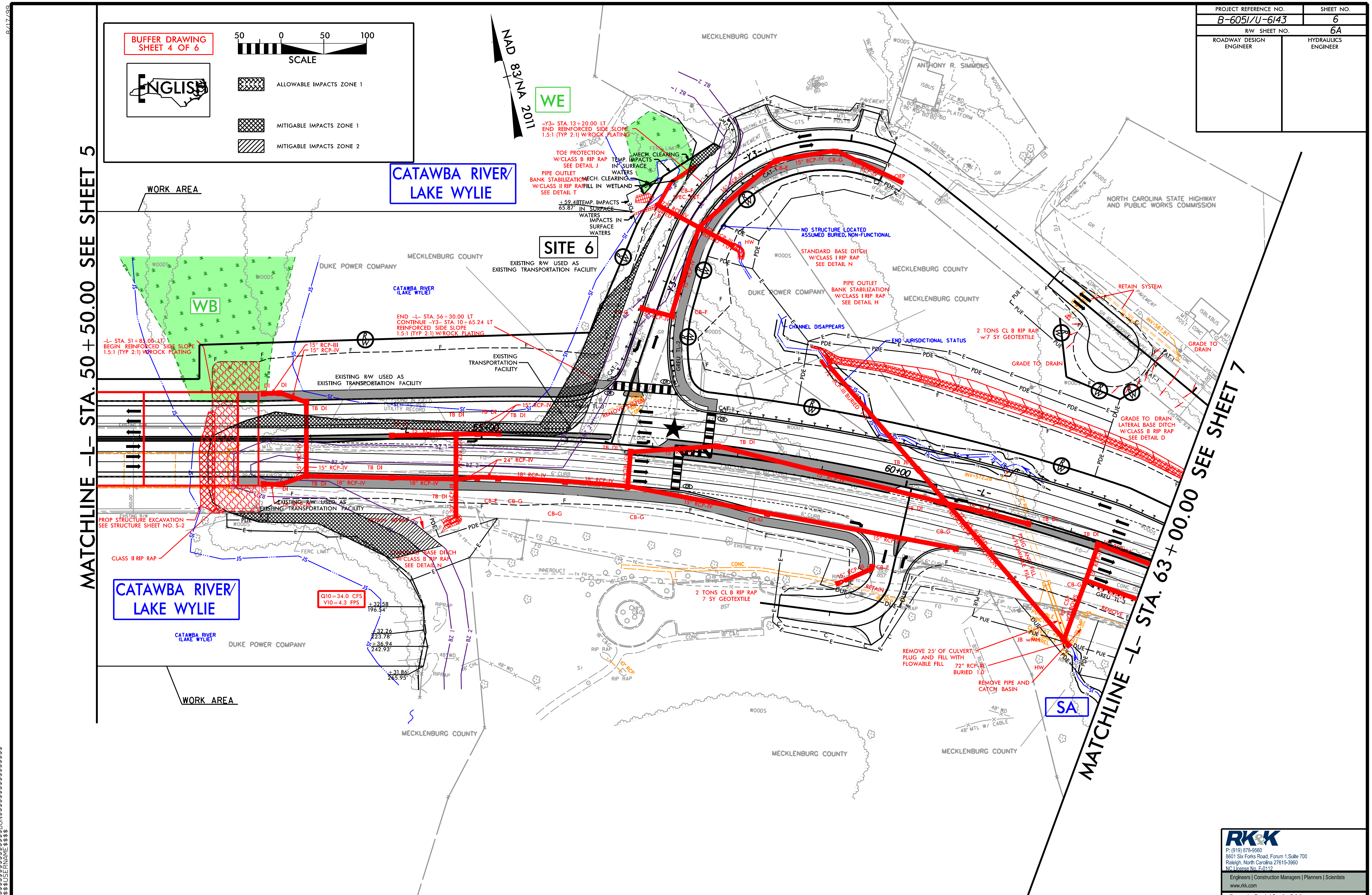
$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$DGN$$$$$$$$$$$$$$$$$$


PROJECT REFERENCE NO.
SHEET NO.
B-6051/U-6143
6
R/W SHEET NO.
6A
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
BUFFER DRAWING SHEET 4 OF 6
ENGLISH
50 0 50 100
SCALE
ALLOWABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
NAD 83/NA 2011
WE
WB
SA
SITE 6
CATAWBA RIVER/ LAKE WYLIE
MATCHLINE -L- STA. 50+50.00 SEE SHEET 5
MATCHLINE -L- STA. 63+00.00 SEE SHEET 7
WORK AREA
MECKLENBURG COUNTY
DUKE POWER COMPANY
ANTHONY R. SIMMONS
NORTH CAROLINA STATE HIGHWAY AND PUBLIC WORKS COMMISSION
CATAWBA RIVER (LAKE WYLIE)
EXISTING R/W USED AS EXISTING TRANSPORTATION FACILITY
EXISTING TRANSPORTATION FACILITY
-L- STA. 51+85.00 LT BEGIN REINFORCED SIDE SLOPE 1.5:1 (TYP 2:1) W/ROCK PLATING
END -L- STA. 56+30.00 LT CONTINUE -Y3- STA. 10+65.24 LT REINFORCED SIDE SLOPE 1.5:1 (TYP 2:1) W/ROCK PLATING
-Y3- STA. 13+20.00 LT END REINFORCED SIDE SLOPE 1.5:1 (TYP 2:1) W/ROCK PLATING
TOE PROTECTION W/CLASS B RIP RAP SEE DETAIL J
PIPE OUTLET BANK STABILIZATION W/CLASS II RIP RAP SEE DETAIL T
MECH. CLEARING
TEMP. IMPACTS IN SURFACE WATERS
FILL IN WETLAND
+59.48 65.87' TEMP. IMPACTS IN SURFACE WATERS
IMPACTS IN SURFACE WATERS
NO STRUCTURE LOCATED ASSUMED BURIED, NON-FUNCTIONAL
STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL N
PIPE OUTLET BANK STABILIZATION W/CLASS I RIP RAP SEE DETAIL H
CHANNEL DISAPPEARS
END JURISDICTIONAL STATUS
2 TONS CL B RIP RAP w/7 SY GEOTEXTILE
GRADE TO DRAIN
RETAIN SYSTEM
GRADE TO DRAIN LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL D
PROP STRUCTURE EXCAVATION SEE STRUCTURE SHEET NO. S-2
CLASS II RIP RAP
STANDARD BASE DITCH W/CLASS B RIP RAP SEE DETAIL N
Q10=34.0 CFS V10=4.3 FPS
+32.58 196.54'
+32.26 223.78'
+36.94 242.93'
+31.86 265.95'
2 TONS CL B RIP RAP 7 SY GEOTEXTILE
REMOVE 25' OF CULVERT, PLUG AND FILL WITH FLOWABLE FILL
72" RCP-III BURIED 1.0'
REMOVE PIPE AND CATCH BASIN
PLUG AND FILL W/FLOWABLE FILL
INV=572.28
INV=587.87'
60+00
RK&K
P: (919) 878-9560
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$$$$$$SYSTIME$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From / To)	Structure Size / Type	IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
5	11+41 to 12+30 -MUP- RT	Roadway Fill - MUP			X	1735	1963	3698					
	39+21 to 40+70 -L-	Roadway Fill - Widening / MUP 42" RCP-III / Std. Base Ditch	X						5523	2755	8278		
	40+70 to 52+15 -L-	1145' Bridge		X		3826	0	3826					
	52+15 to 54+10 -L-	Roadway Fill - Widening	X						8250	1549	9799		
6	10+00 to 13+65 -Y3- LT	Roadway Fill - Widening 72" RCP-IV			X				5962	398	6360		
TOTALS*:						**5561**	**1963**	**7524**	**19735**	**4702**	**24437**	**0**	**0**

NOTES:
Top of Bank for Catawba River (Lake Wylie) revised to Lake Wylie full pond elevation (569.4'). Buffer lines revised accordingly.
Bridge BZ1 impacts due to small areas above TB on peninsula on parcel 13 and at both bridge abutments.
Existing R/W lines for -L-/-Y3- used as boundaries of Existing Transportation Facility for consistency between sites.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
1/12/2024
GASTON / MECKLENBURG COUNTY
B-6051 / U-6143

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)		WETLANDS IN BUFFERS	
			ZONE 1 (ft^2)	ZONE 2 (ft^2)
6	13+00 to 13+31 -Y3-LT		74	0
TOTAL:			**74**	**0**

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
1/12/2024
GASTON / MECKLENBURG COUNTY
B-6051 / U-6143

Revised 2018 Feb

Rev. Jan 2009

Protected Species/ Section 7

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

February 29, 2024

Ms. Janet A. Mizzi
Field Office Supervisor
US Fish and Wildlife Service
160 Zillicoa Street
Asheville, NC 28801

Subject: **Section 7 Concurrence/Conference Request** for the proposed replacement of Bridge No. 91 (B-6051) on US 29/74 (Wilkinson Boulevard) over Catawba River (Lake Wylie) on the border of Gaston and Mecklenburg Counties and improve the intersection (U-6143) of US 74 (Wilkinson Boulevard) and NC 7 (Catawba Street) in Belmont, NC. Division 10 & Division 12.
TIP: B-6051 & U-6143

Reference: B-6051/U-6143 Vicinity Map

Dear Ms. Mizzi:

The purpose of this letter is to request concurrence/conference from the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531 et seq.) (ESA). The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 91 (B-6051) on US 29/74 (Wilkinson Boulevard) over Catawba River (Lake Wylie) and improve the intersection (U-6143) of US 74 (Wilkinson Boulevard) and NC 7 (Catawba Street). Gaston and Mecklenburg Counties.

As of February 23, 2024, the US Fish and Wildlife Service's Information for Planning and Consultation (IPaC) lists the following federally protected species in the project area.

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
Perimyotis subflavus	tricolored bat	Proposed Endangered*	Yes	MANLAA
Clemmys muhlenbergii	bog turtle	T(S/A)	No	Not Required
Hexastylis naniflora	dwarf-flowered heartleaf	Threatened	Yes	No Effect
Rhus michauxii	Michaux's sumac	Endangered	Yes	No Effect
Helianthus schweinitzii	Schweinitz's sunflower	Endangered	Yes	No Effect
Echinacea laevigata	smooth coneflower	Threatened	Yes	No Effect

*Proposed for listing
T(S/A) – Threatened due to similarity of appearance
MANLAA – May Affect-Not Likely to Adversely Affect

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Species Summary - Bats

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 91 (B-6051) on US 29/74 (Wilkinson Boulevard) over Catawba River (Lake Wylie) on the border of Gaston and Mecklenburg Counties and improve the intersection (U-6143) of US 74 (Wilkinson Boulevard) and NC 7 (Catawba Street) See attached vicinity map for a location of the projects.

Foraging and commuting habitat for tricolored bat is present within the project area. The closest element of occurrence for a tricolored bat is 26 miles (EO ID 41433) northwest of the project.

A Biological Conclusion of **May Affect, Not Likely To Adversely Affect** is proposed for tricolored bat based on the presence of suitable foraging and commuting habitat.

- It is anticipated that tree clearing can be performed during the winter months for this project (October 15– April 1).
- There is one existing bridge within the project that will need to be removed. All efforts will be made to conduct demolition of the bridge during the inactive bat season if the project schedule allows. There is one 3'x 3' single barrel culvert that will be removed and replaced which will require work between April 1 – October 15. There is also an 8'x 11' double barrel-reinforced concrete box culvert (RCBC) in that will need to be extended and require work between April 1 – October 15. NCDOT can commit to habitat assessments of these structures prior to demolition of the bridge and necessary culvert work.
- Blasting is not anticipated however if required, it will occur after tree clearing has been completed. Other proposed percussive activities will include, but are not limited to: guardrail installation, soil and fill material compaction, paving, pile driving, drilling, grading, and pavement breaking and removal.
- Temporary lighting for nighttime construction will be used during the April 1 – October 15 timeframe as lane closures are anticipated. There are plans for permanent lighting on the bridge upon completion. Existing roadway lighting on US-74 will likely remain. No additional permanent lighting is currently anticipated for the project.

Pursuant to the ESA Handbook Section 3.5, NCDOT does not request concurrence from the Service for the remaining species, but identifies them below:

Scientific Name	Common Name	Federal Status	Survey Date	Habitat Present	Biological Conclusion
Clemmys muhlenbergii	bog turtle	T(S/A)	N/A	Yes	Not Required
Hexastylis naniflora	dwarf-flowered heartleaf	Threatened	3/23/2022	Yes	No Effect
Rhus michauxii	Michaux's sumac	Endangered	9/25/2023 9/13/2022	Yes	No Effect
Helianthus schweinitzii	Schweinitz's sunflower	Endangered	9/25/2023 9/13/2022	Yes	No Effect
Echinacea laevigata	smooth coneflower	Threatened	9/25/2023 9/13/2022	Yes	No Effect

T(S/A) – Threatened due to similarity of appearance

NCDOT, under the delegation authority provided in 50 CFR § 402.08 by the Federal Highway Administration (FHWA), believes that the requirements of Section 7(a)(2) of the ESA have been satisfied and hereby request your concurrence.

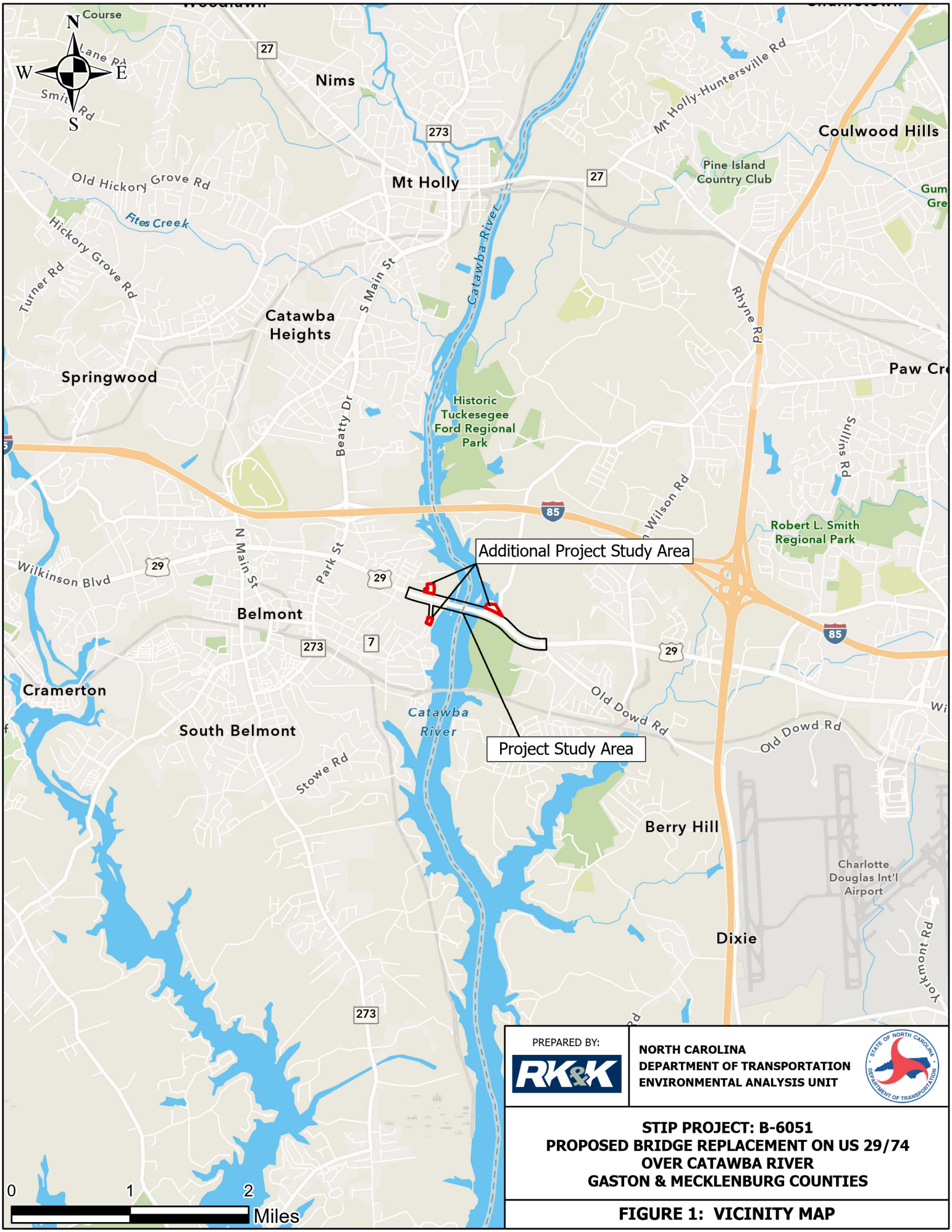
If you have any questions, please contact Erin Cheely at ekcheely@ncdot.gov or 919-707-6108.

Sincerely,

Erin Cheely, ECAP Western Team Lead
Environmental Analysis Unit

Enclosure:
Vicinity Map

ec:
Ms. Holland Youngman, USFWS
Mr. Jeff Wyatt, DEO-Div. 12, NCDOT
Ms. Jacquelyn Bowles, PE, NCDOT SMU
Mr. Tyler Stanton, NCDOT BSG-EAU


N
W
E
S
Course
Lane Rd
Smith Rd
27
Nims
273
Mt Holly
Old Hickory Grove Rd
Fites Creek
Hickory Grove Rd
Turner Rd
Catawba Heights
S Main St
Catawba River
Springwood
Beatty Dr
Historic Tuckesegee Ford Regional Park
Mt Holly-Huntersville Rd
Coulwood Hills
Pine Island Country Club
Rhyne Rd
Sullins Rd
Robert L. Smith Regional Park
Wilson Rd
85
Additional Project Study Area
Wilkinson Blvd
29
N Main St
Park St
Belmont
7
Cramerton
South Belmont
Catawba River
Project Study Area
Old Dowd Rd
Stowe Rd
Berry Hill
Charlotte Douglas Int'l Airport
Dixie
Yorkmont Rd
0
1
2
Miles
PREPARED BY:
RK&K
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
STIP PROJECT: B-6051
PROPOSED BRIDGE REPLACEMENT ON US 29/74
OVER CATAWBA RIVER
GASTON & MECKLENBURG COUNTIES
FIGURE 1: VICINITY MAP

Archaeology

Project Tracking No.:

17-12-0050

NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No:	**Structure 350091 (BR-0020)**	*County:*	**Gaston**
WBS No:	**67020.1.1**	*Document:*	**State MCC**
F.A. No:	**N/A**	*Funding:*	☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **USACE (not specified)**

Project Description: NCDOT's Division 12 proposes to replace Bridge No. 91 on US 29/US 74 (Wilkinson Boulevard) over the Catawba River in Gaston and Mecklenburg counties. Bridge No. 91 was constructed in 1933 and is considered to be functionally obsolete; therefore, it is scheduled to be replaced. Since Preliminary Design Plans have not been developed yet, a Study Area for the project has been generated in order to facilitate environmental planning purposes at this stage. The Study Area will be centered on the bridge measure about 500 feet wide and about 2,000 feet from either end of the bridge along US 29/US 74. Overall, the Study Area will encompass about 60 acres, inclusive of the existing roadway, structure to be replaced, and any modern development.

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

This project was accepted on Friday, January 19, 2018. A map review and site file search was conducted at the Office of State Archaeology (OSA) on Thursday, January 25, 2018. An archaeological survey has never been conducted at this bridge location, although several of the nearby islands within the Catawba River have been surveyed. Only one (1) archaeological site has been recorded within one (1) mile of the project area, that being within a powerline easement southeast of the Study Area. Digital copies of HPO's maps (Belmont Quadrangle) as well as the HPOWEB GIS Service (http://gis.ncdcr.gov/hpoweb/) were last reviewed on Tuesday, January 30, 2018. There is one (1) known historic architectural resource that is eligible for the National Register of Historic Places (i.e. the bridge itself [Sloans Ferry Bridge, a 1933 steel stringer/multi-beam bridge]) located within or adjacent to the Study Area; however, intact archaeological deposits associated with this resource would not be anticipated within the footprint of the proposed project. In addition, topographic maps, historic maps (NCMaps website), USDA soil survey maps, and aerial photographs were utilized and inspected to gauge environmental factors that may have contributed to historic or prehistoric settlement within the project limits, and to assess the level of modern, slope, agricultural, hydrological, and other erosive-type disturbances within and surrounding the Study Area.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

Although this is a State-funded project, a Federal permit is necessary. A permanent/temporary drainage or utility easement will also be necessary; however, the need for additional ROW was not conveyed. The size and shape of the Study Area have been drawn in a way to capture any possible impacts beyond the NCDOT's existing 100-foot ROW along US 29/US 74. At this time, we are in compliance with NC GS

ATTACHMENT 1A
1 OF 4

121-12a, since there are no eligible (i.e. National Register-listed) archaeological resources located within the project's Study Area that would require our attention. Based on the description of the proposed project, activities may take place beyond the NCDOT's existing ROW; however, the exact location cannot be determined at this time. From an environmental perspective, the Study Area falls within a commercial setting along the banks of the Catawba River in the south-central Piedmont physiographic region of North Carolina, and consists of various soil types. On the Gaston County side, the Study Area consists of soils that have been heavily disturbed or have succumbed to varying degrees of erosion (e.g. Urban land [Ur] and Gaston sandy clay loam, 2-8% slopes, eroded [GaB2]). On the Mecklenburg County side, most if not all of the soils are considered to be steeply sloped and eroded as well (e.g. Cecil sandy clay loam, 8-15% slopes, eroded [CeD2] and Pacolet sandy loam, 15-25% slopes [PaE]). Based on the poor soil conditions and the level of commercial development, the preservation of intact archaeological resources would not be anticipated. The Office of State Archaeology (OSA) has reviewed several projects within the vicinity of the Study Area for environmental compliance, including utility upgrades/improvements (ERs 96-9138, 00-9210, 13-2894), residential development (ER 89-0201), transportation improvements (ER 08-2567 [TIP# B-4752]), and a hazardous waste site (ER 10-0924). Stating a low probability for intact and significant archaeological sites to be present, OSA did not require an archaeological survey for any of these projects. More importantly, a cultural resource survey for the Catawba-Wateree Hydroelectric Relicensing Project (Millis 2005 [OSA Biblio# 5430]) included several islands in the vicinity of the Study Area as well as the riverbanks to either side of the Catawba. Although numerous resources were identified and/or revisited, none was located within or adjacent to the Study Area. Within five (5) miles of the Study Area, NCDOT's Archaeology Group has reviewed five (5) transportation-related projects for environmental compliance under the Programmatic Agreement (PA) with the State Historic Preservation Office (NC-HPO), one of which is located within one (1) mile of the Study Area. An archaeological survey was not recommended for most of these projects, based on the presence of heavily modified soils and/or poorly drained or eroded soil conditions. However, an archaeological survey was recommended and conducted for the widening of I-85 (PA 16-01-0004 [TIP# I-5719 and C-5600G]) and for the replacement of Bridge No. 82 on US 29/US 74 over the South Fork of the Catawba River (PA 16-01-0110). Four (4) archaeological sites were documented as a result of the widening project; however, none of the sites was determined eligible for the NRHP. Three of the four sites documented were cemeteries and, thus, are afforded some protection based on the nature of the resource. Nevertheless, given the poor soil conditions and developed nature within the Study Area and the results of previously reviewed and surveyed projects in the vicinity, there is a low probability for significant prehistoric and/or historic archaeological materials to be present. Therefore, it is believed that the current Study Area, as depicted, is unlikely to contain intact and significant archaeological resources. No archaeological survey is required for this project. If design plans change or are made available prior to construction, then additional consultation regarding archaeology will be required. At this time, no further archaeological work is recommended. If archaeological materials are uncovered during project activities, then such resources will be dealt with according to the procedures set forth for "unanticipated discoveries," to include notification of NCDOT's Archaeology Group.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☒ Previous Survey Info ☐ Photos ☐ Correspondence
☐ Photocopy of County Survey Notes Other:

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED

Paul J Mohler

January 30, 2018

NCDOT ARCHAEOLOGIST **Date**

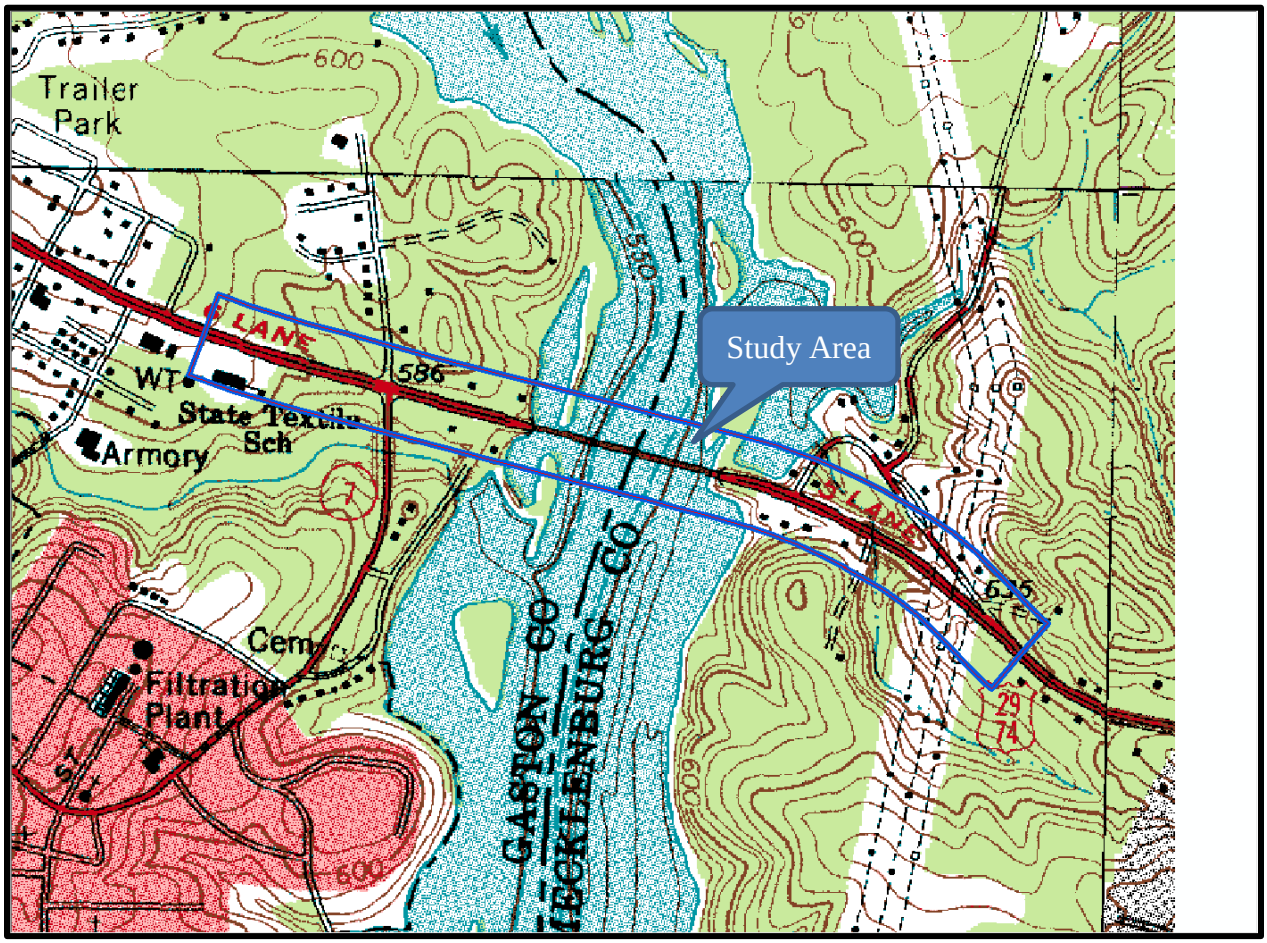
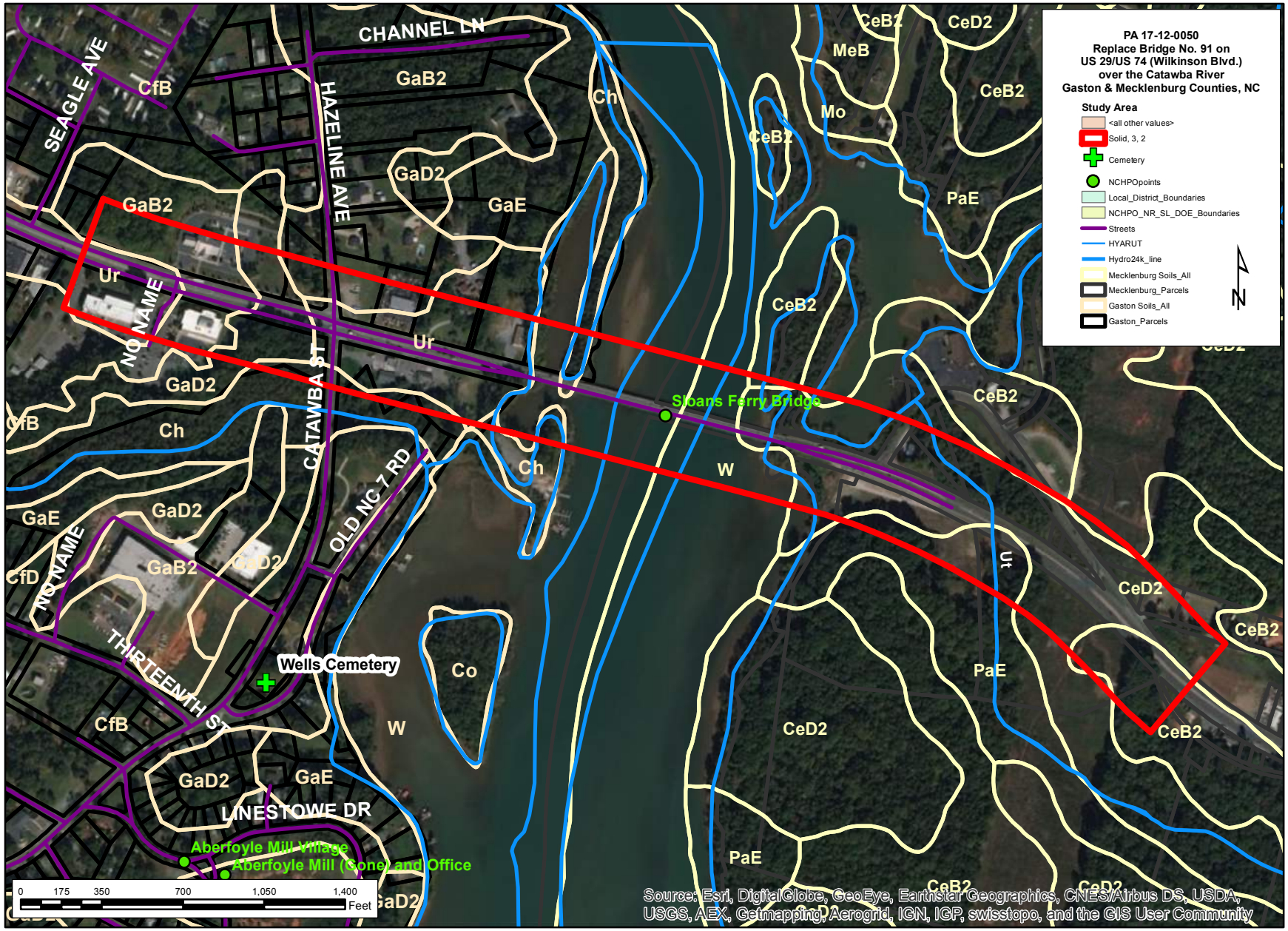


Figure 1: Belmont, NC (USGS 1973).



ATTACHMENT 1A
4 OF 4

Project Tracking No.:

17-12-0050

NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Structure 350091 (BR-0020)

Project No:	**RESUBMITTED**	*County:*	**Gaston**
WBS No:	**67020.1.1**	*Document:*	**State MCC**
F.A. No:	**N/A**	*Funding:*	☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **USACE (not specified)**

Project Description: NCDOT's Division 12 proposes to replace Bridge No. 91 on US 29/US 74 (Wilkinson Boulevard) over the Catawba River in Gaston and Mecklenburg counties. Bridge No. 91 was constructed in 1933 and is considered to be functionally obsolete; therefore, it is scheduled to be replaced. Since Preliminary Design Plans have not been developed yet, a Study Area for the project has been generated in order to facilitate environmental planning purposes at this stage. The Study Area will be centered on the bridge measure about 500 feet wide and about 2,000 feet from either end of the bridge along US 29/US 74. Overall, the Study Area will encompass about 60 acres, inclusive of the existing roadway, structure to be replaced, and any modern development. **The Study Area has since expanded to include an additional 17.7 acres. This PA form only covers the expanded Study Area.**

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

Because of an expansion to the original Study Area, this project was resubmitted and accepted on Tuesday, September 18, 2018. A map review and site file search at the Office of State Archaeology (OSA) was not deemed necessary. An archaeological survey has never been conducted at this bridge location, although several of the nearby islands within the Catawba River have been surveyed. Only one (1) archaeological site has been recorded within one (1) mile of the project area, that being within a powerline easement southeast of the Study Area. Digital copies of HPO's maps (Belmont and Charlotte West Quadrangles) as well as the HPOWEB GIS Service (http://gis.ncdcr.gov/hpoweb/) were last reviewed on Tuesday, September 18, 2018. There are no known historic architectural resources located within or adjacent to the expanded Study Area for which intact archaeological deposits would be anticipated within the footprint of the proposed project. In addition, topographic maps, historic maps (NCMaps website), USDA soil survey maps, and aerial photographs were utilized and inspected to gauge environmental factors that may have contributed to historic or prehistoric settlement within the project limits, and to assess the level of modern, slope, agricultural, hydrological, and other erosive-type disturbances within and surrounding the expanded Study Area.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

This is still a State-funded project for which a Federal permit is necessary. A permanent/temporary drainage or utility easement will also be necessary; however, the need for additional ROW was not conveyed. The size and shape of the expanded Study Area have been drawn in a way to capture any

ATTACHMENT 1B
1 OF 4

possible impacts beyond the NCDOT's existing 100-foot ROW along US 29/US 74. At this time, we are still in compliance with NC GS 121-12a, since there are no eligible (i.e. National Register-listed) archaeological resources located within the project's expanded Study Area that would require our attention. Based on the description of the proposed project, activities may take place beyond the NCDOT's existing ROW; however, the exact location cannot be determined at this time. From an environmental perspective, the expanded Study Area falls within a commercial/residential area along the eastern bank of the Catawba River in the south-central Piedmont physiographic region of North Carolina, and consists of three (3) soil types, all of which are considered to be eroded and severely disturbed by modern development (Cecil sandy clay loam, 8-15% slopes, eroded [CeD2], Cecil sandy clay loam, 2-8% slopes, eroded [CeB2], and Udorthents, loamy [Ul]). Based on the poor soil conditions and the level of development, the preservation of intact archaeological resources would not be anticipated. As before, the Office of State Archaeology (OSA) has reviewed several projects within the vicinity of the expanded Study Area for environmental compliance, including utility upgrades/improvements (ERs 96-9138, 00-9210, 13-2894), residential development (ER 89-0201), transportation improvements (ER 08-2567 [TIP# B-4752]), and a hazardous waste site (ER 10-0924). Stating a low probability for intact and significant archaeological sites to be present, OSA did not require an archaeological survey for any of these projects. More importantly, a cultural resource survey for the Catawba-Wateree Hydroelectric Relicensing Project (Millis 2005 [OSA Biblio# 5430]) included several islands in the vicinity of the expanded Study Area as well as the riverbanks to either side of the Catawba. Although numerous resources were identified and/or revisited, none was located within or adjacent to the expanded Study Area. Within five (5) miles of the Study Area, NCDOT's Archaeology Group has reviewed at least five (5) transportation-related projects for environmental compliance under the Programmatic Agreement (PA) with the State Historic Preservation Office (NC-HPO), one of which is located within one (1) mile of the expanded Study Area. An archaeological survey was not recommended for most of these projects, based on the presence of heavily modified soils and/or poorly drained or eroded soil conditions. However, an archaeological survey was recommended and conducted for the widening of I-85 (PA 16-01-0004 [TIP# I-5719 and C-5600G]) and for the replacement of Bridge No. 82 on US 29/US 74 over the South Fork of the Catawba River (PA 16-01-0110). Four (4) archaeological sites were documented as a result of the widening project; however, none of the sites was determined eligible for the NRHP. Three of the four sites documented were cemeteries and, thus, are afforded some level of protection based on the nature of the resource. Nevertheless, given the poor soil conditions and developed nature within the expanded Study Area and the results of previously reviewed and surveyed projects in the vicinity, there is a low probability for significant prehistoric and/or historic archaeological materials to be present. Therefore, it is believed that the expanded Study Area, as depicted, is unlikely to contain intact and significant archaeological resources. No archaeological survey is required for this project. If design plans change or are made available prior to construction, then additional consultation regarding archaeology will be required. At this time, no further archaeological work is recommended. If archaeological materials are uncovered during project activities, then such resources will be dealt with according to the procedures set forth for "unanticipated discoveries," to include notification of NCDOT's Archaeology Group.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☒ Previous Survey Info ☐ Photos ☐ Correspondence
☐ Photocopy of County Survey Notes Other:

Project Tracking No.:

17-12-0050

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED

Paul J Mohler

September 18, 2018

NCDOT ARCHAEOLOGIST **Date**

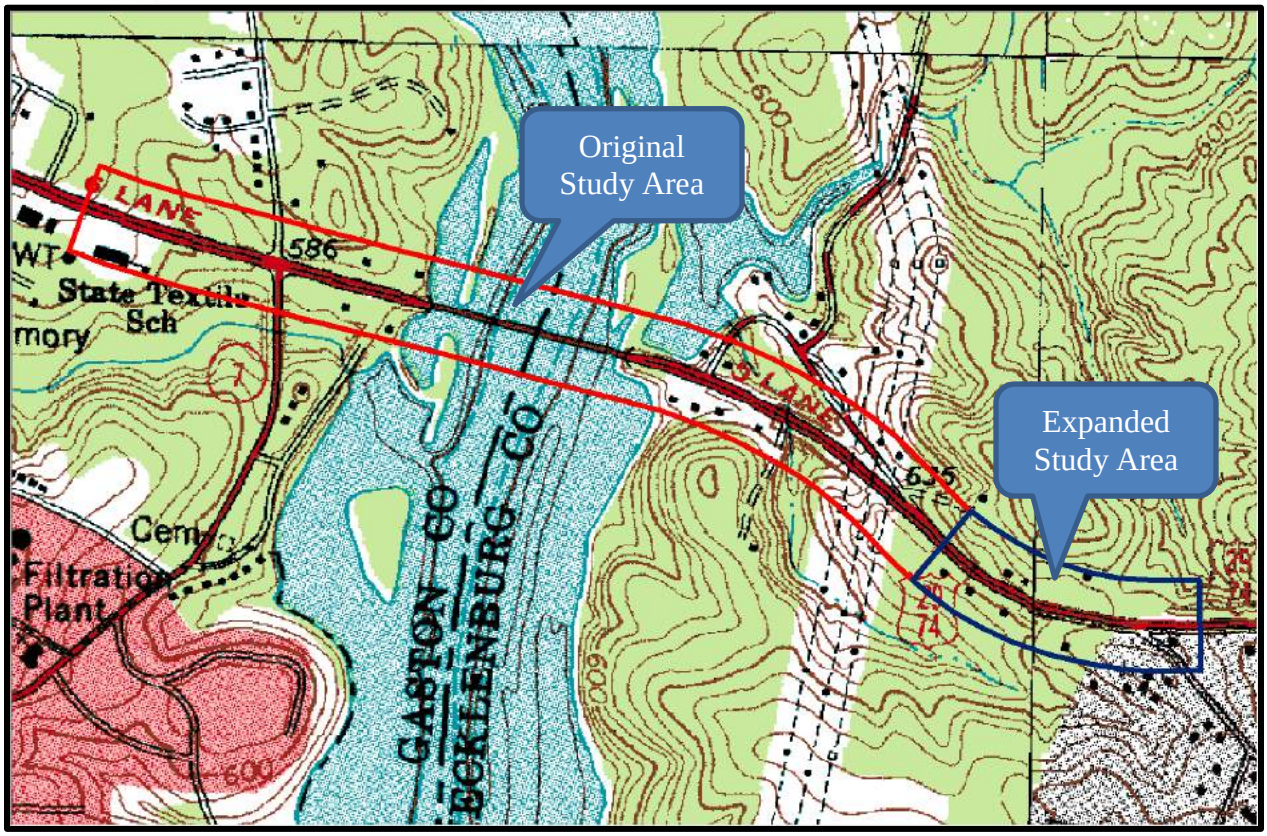
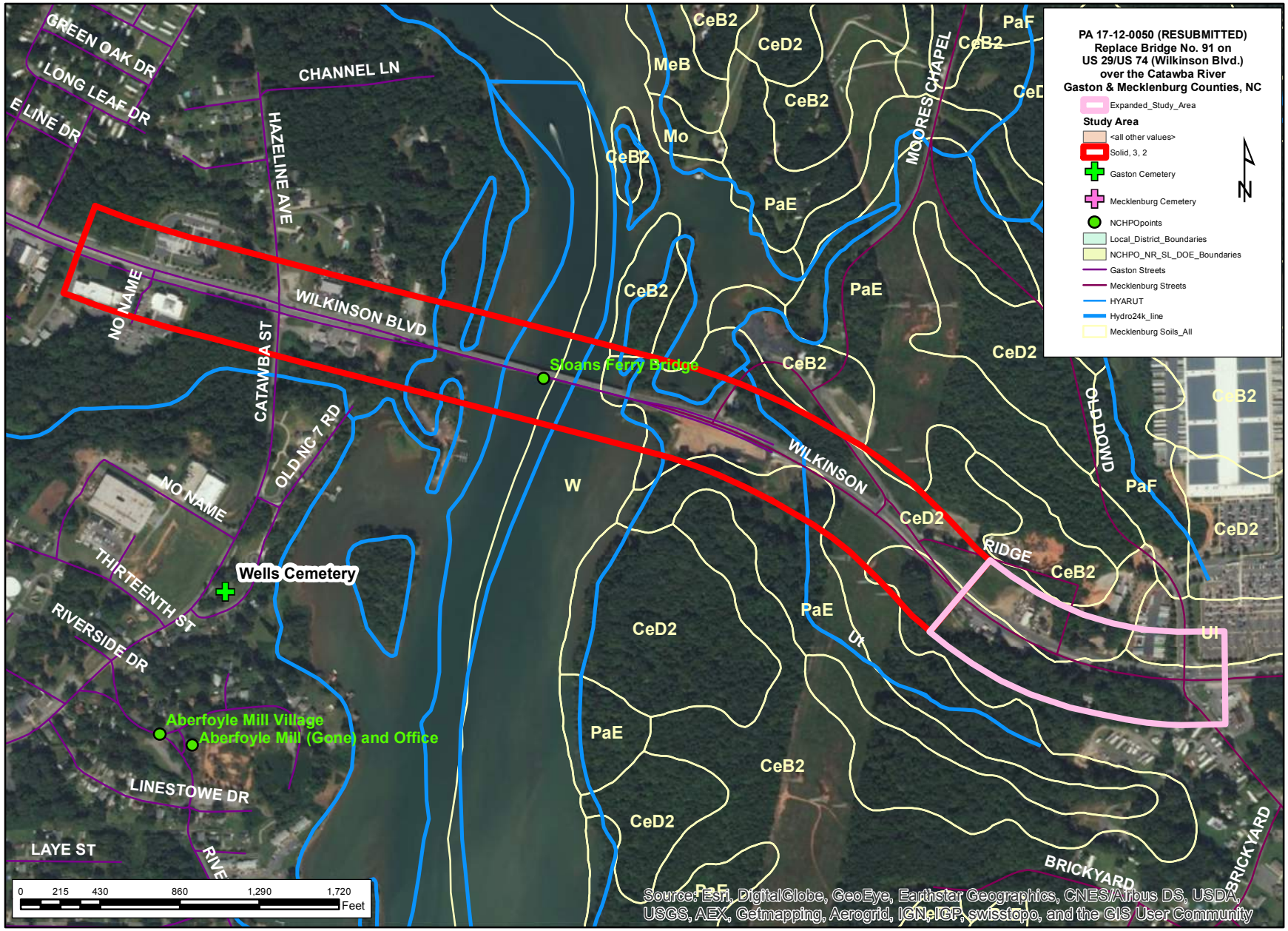


Figure 1: Belmont, NC (USGS 1973) and Charlotte West, NC (USGS 1968 [PR80]).

ATTACHMENT 1B
3 OF 4



ATTACHMENT 1B
4 OF 4

Project Tracking No.

17-12-0050

NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Team.

PROJECT INFORMATION

Project No:	**B-6051 (aka BR-0020)**	*County:*	**Gaston/Mecklenburg**
WBS No:	**48708.1.1**	*Document:*	**State MCC**
Federal Aid No:	**N/A**	*Funding:*	☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **USACE, FERC**

Project Description: NCDOT's Divisions 10 and 12 propose to replace Bridge No. 91 on US 29/US 74 (Wilkinson Boulevard) over the Catawba River in Gaston and Mecklenburg counties. Bridge No. 91 was constructed in 1933 and is considered to be functionally obsolete; therefore, it is scheduled to be replaced. Since Preliminary Design Plans have now been developed, the original Study Area for the project (which has been reviewed twice now) has been expanded once more and submitted for additional environmental review. The Study Area measures about 500 feet wide and about 2,000 feet from the west end of the bridge and roughly 3,650 feet from the east end of the bridge. Overall, the Study Area now encompasses about 91.15 acres, inclusive of the existing roadway, structure to be replaced, Y-line extensions, the Catawba River itself, and any modern development. **Since my last review, the Study Area has been expanded along the Y-lines and now includes an additional 13.75 acres that were not considered as part of any previous environmental review. This PA form only covers the expanded sections of the Study Area.**

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

The resubmittal for this project was accepted for review on Wednesday, October 5, 2022. A review of the databases maintained by the Office of State Archaeology (OSA) was deemed not necessary based on the information compiled during the first two reviews for this project. As stated before, an archaeological survey has never been conducted at this bridge location, although several of the nearby islands within the Catawba River have been surveyed. Only three (3) archaeological sites have been recorded within one (1) mile of the project area, the closest being within a powerline easement southeast of the Study Area. Digital copies of HPO's maps (Belmont and Charlotte West Quadrangles) as well as the HPOWEB GIS Service (http://gis.ncdcr.gov/hpoweb/) were last reviewed on Wednesday, October 5, 2022. There are two (2) known historic architectural resources (North Carolina Vocational Textile School [GS3287] and the Sloans Ferry Bridge [GS3298]) located within or adjacent to the overall Study Area; however, intact archaeological deposits would not be anticipated for such resources within the footprint of the proposed project. In addition, topographic maps, historic maps (NCMaps website), USDA soil survey maps, and aerial photographs were utilized and inspected to gauge environmental factors that may have contributed to historic or precontact settlement within the project limits, and to assess the level of slope as well as modern, agricultural, hydrological, and other erosive-type disturbances within and surrounding the expanded Study Area.

(This project falls within a North Carolina County in which the following federally recognized tribes have expressed an interest: Catawba Indian Nation, Cherokee Nation, Eastern Band of Cherokee Indians, and the United Keetoowah Band of Cherokee Indians. *We recommend that you ensure that this documentation is*

ATTACHMENT 1C
1 OF 4

forwarded to these tribes using the process described in the current NCDOT Tribal Protocol and PA Procedures Manual.)

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

This is still a State-funded project for which a Federal permit is anticipated. As part of the project's resubmittal, permanent/temporary easements will not be necessary; however, additional ROW will be required. The overall Study Area has been drawn in a way to capture any possible ground-disturbing activities beyond NCDOT's existing ROW, including along the Y-line extensions. At this time, we are still in compliance with NC GS 121-12a, since there are no eligible (i.e., National Register-listed) archaeological resources located within the project's expanded sections of the Study Area that would require our attention (i.e., along Hazeline Avenue and Catawba Street in Gaston County, and along Moores Chapel Loop in Mecklenburg County).

From an environmental perspective, the expanded Study Area locations along the Y-lines fall within residential (Gaston side) and commercial (Mecklenburg side) areas along the banks of the Catawba River, additionally located in the south-central Piedmont physiographic region of the state. Within Gaston County, the Y-line extensions consist of four (4) soil types, all of which are considered to be eroded, severely disturbed by modern development, or frequently flooded (Gaston sandy clay loam, 2-8% slopes, eroded [GaB2], Gaston sandy clay loam, 8-15% slopes, eroded [GaD2], Cecil-Urban land complex, 2-8% slopes [CfB], and Chewacla loam, frequently flooded [Ch]). Within Mecklenburg County, the Y-line extension consists of two (2) soil types, both of which are considered to be eroded (Cecil sandy clay loam, 8-15% slopes, eroded [CeD2] and Cecil sandy clay loam, 2-8% slopes, eroded [CeB2]). Based on the poor soil conditions and the level of development, the preservation of intact archaeological resources would not be anticipated within the Y-line extension areas of the Study Area.

As before, the Office of State Archaeology (OSA) has reviewed numerous projects within the vicinity of the overall Study Area for environmental compliance, including utility upgrades/improvements (ERs 92-7435, 96-9138, 00-9210, 13-2894, and 21-0583, and GS 21-2294), residential development (ERs 89-0201, 16-1492, 17-0557, and 20-1700), transportation improvements (ERs 08-2567 [TIP# B-4752], 18-1641, 19-2816, 19-2937 [as well as the Charlotte Outer Loop project]), commercial development (ERs 18-3032, 21-1953, 21-2259, and 22-1552), a new hospital (ER 21-0014), a borrow pit (ER 18-0611), and a hazardous waste site (ER 10-0924). Stating a low probability for intact and significant archaeological resources to be present, OSA did not require an archaeological survey for most of these projects. However, archaeological surveys were recommended and conducted for large-scale projects like the Catawba-Wateree Hydroelectric Relicensing Project (Millis 2005 [OSA Biblio# 5430]), which included several islands and the riverbanks to either side of the Catawba River in the vicinity of the overall Study Area. In addition, one of the proposed corridors for the Charlotte Outer Loop intersects/overlaps with the Mecklenburg portion of the Study Area. Although numerous resources were identified and/or revisited as part of these two large surveys, none was located within or adjacent to the overall Study Area as currently designed.

Within five (5) miles of the overall Study Area, NCDOT's Archaeology Team has reviewed at least thirty (30) transportation-related projects for environmental compliance under the Programmatic Agreement (PA) with the State Historic Preservation Office (NC-HPO), including this very project twice. An archaeological survey was not recommended for most of these projects (28/30), based on the presence of heavily modified soils and/or poorly drained or eroded soil conditions. Archaeological surveys were recommended and conducted for the widening of I-85 (PA 16-01-0004 [TIP# I-5719 and C-5600G]) and for the replacement of Bridge No. 82 on US 29/US 74 over the South Fork of the Catawba River (PA 16-01-0110). Four (4) archaeological sites were documented as a result of the widening project; however, none of the sites was determined eligible for the NRHP. Three of the four sites documented were cemeteries and, thus, are afforded an additional level of protection based on the nature of the resource. No archaeological resources were recorded at all from the survey for the bridge replacement project.

Based on the information above and given the small size of the areas that have been added to the overall Study Area, there is still a low probability for significant prehistoric and/or historic archaeological materials to be present. Therefore, it is believed that the expanded Study Area, as depicted, is unlikely to contain intact and significant archaeological resources. No archaeological survey is required for this project. If design plans change or are made available prior to construction, then additional consultation regarding archaeology will be required. At this time, no further archaeological work is recommended. If archaeological materials are uncovered during project activities, then such resources will be dealt with according to the procedures set forth for "unanticipated discoveries," to include notification of NCDOT's Archaeology Team.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☒ Previous Survey Info ☐ Photos ☐ Correspondence
Other:

FINDING BY NCDOT ARCHAEOLOGIST: *NO ARCHAEOLOGY SURVEY REQUIRED*

Paul J Mohler

NCDOT ARCHAEOLOGIST II

October 5, 2022

Date

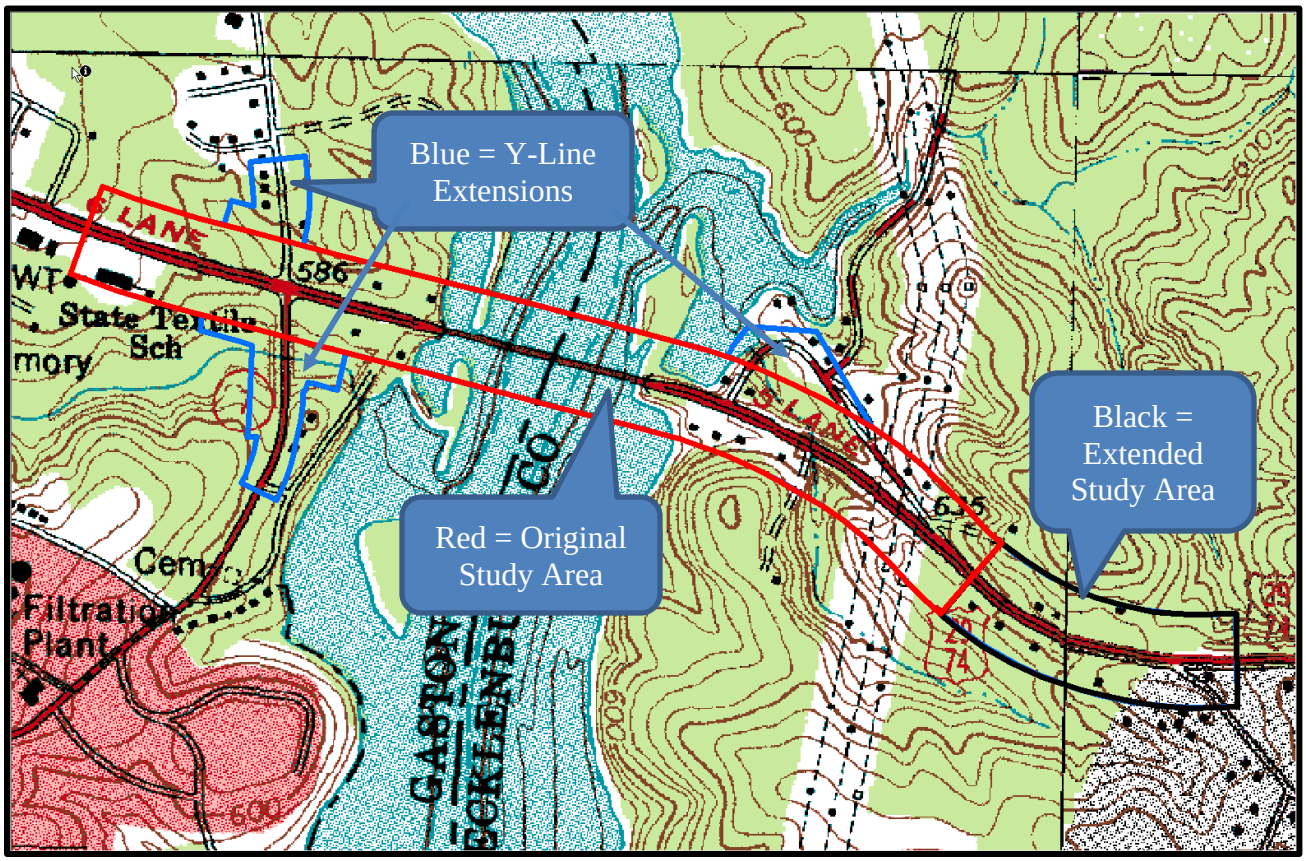
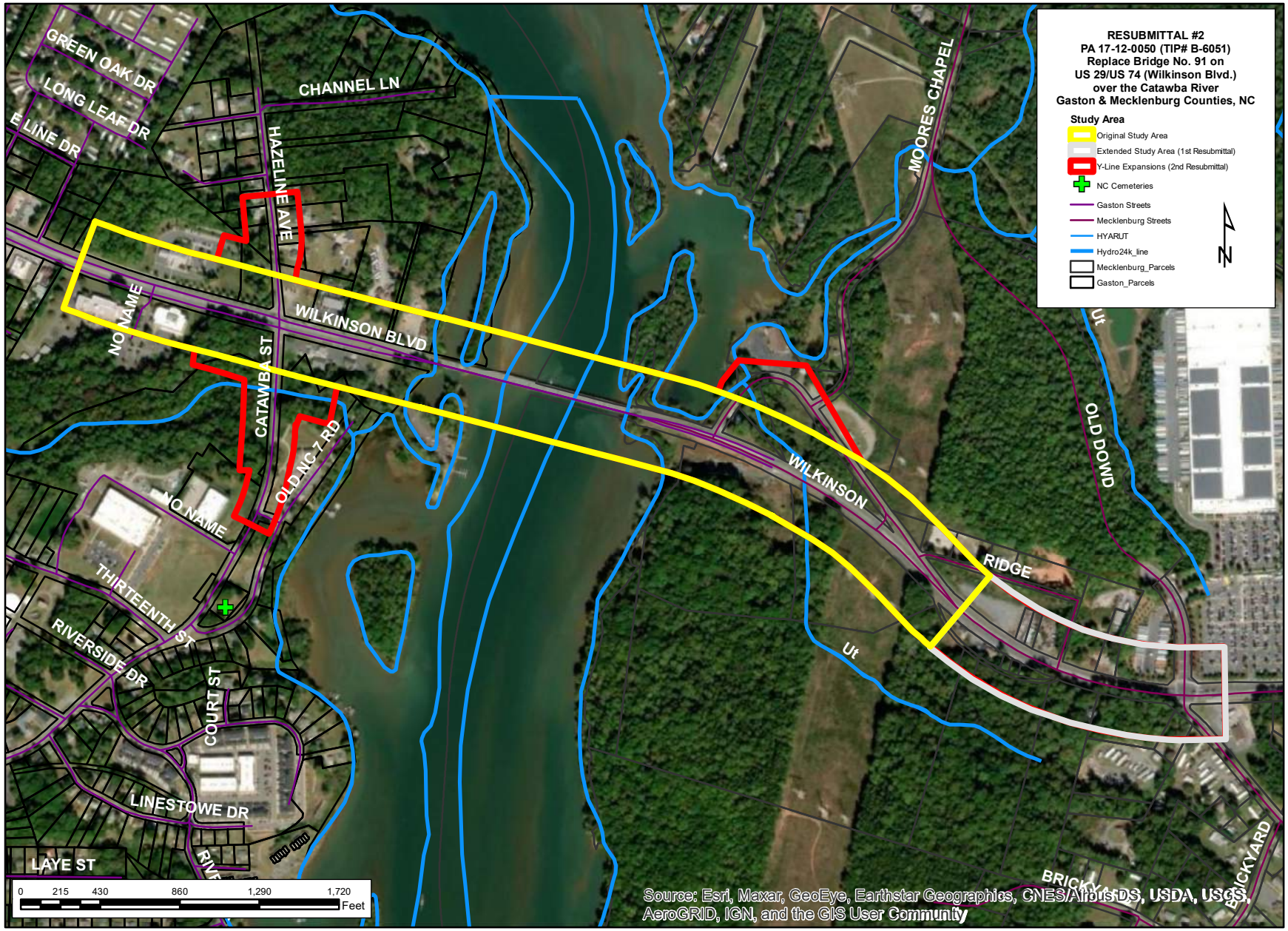


Figure 1: Belmont, NC (USGS 1973) and Charlotte West, NC (USGS 1968 [PR80]).



ATTACHMENT 1A
4 OF 4

Historic Architecture and Landscapes

HISTORIC ARCHITECTURE AND LANDSCAPES ASSESSMENT OF EFFECTS FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	B-6051/U-6143 Formerly BR-0020	***County***:	Gaston/Mecklenburg
WBS No.:		***Document Type***:	
Fed. Aid No:	Not assigned	***Funding***:	☐ State ☒ Federal
Federal Permit(s):	☒ Yes ☐ No	***Permit Type(s)***:	USACE 404 FERC Conveyance of Easement Permit

Project Description:
[B-6051] Replace Bridge 91 over Catawba River (Lake Wylie) on US 74 (Wilkinson Boulevard) between Belmont and Charlotte (Gaston/Cleveland Counties) and
[U-6143] Improvements to the intersection of Catawba Street and US 74 (Wilkinson Boulevard) in Belmont, NC.

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusion
On January 16, 2019 a search of NC HPOWEB GIS Service map revealed that in addition to the National Register-eligible Bridge No. 91, the North Carolina Vocation Textile School is in the Area of Potential Effects for this project. In a letter dated October 8, 2019, HPO concurred in the recommendation that the school is eligible for National Register Listing. An Effects meeting was held on June 28, 2022.

ASSESSMENT OF EFFECTS

Property Name:	North Carolina Vocation Textile School	***Status***:	DE
Survey Site No.:	GS3287	***PIN***:	

Effects
☐ No Effect ☒ No Adverse Effect ☐ Adverse Effect

Explanation of Effects Determination:
The project stops at the existing curb in front of the school. There is an existing PUE that will not change for the project. A guy wire will be placed within the existing PUE.

List of Environmental Commitments:

ATTACHMENT 2
1 OF 2

Property Name:	Bridge No. 91	***Status***:	DE
Survey Site No.:	GS3298	***PIN***:	

Effects

☐ No Effect ☐ No Adverse Effect ☒ Adverse Effect

Explanation of Effects Determination:
The bridge will be removed and replaced.

List of Environmental Commitments:
A Memorandum of Agreement will be developed between FHWA, HPO, and NCDOT. FHWA intends to apply its Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges.

SUPPORT DOCUMENTATION

☐ Map(s) ☐ Previous Survey Info. ☒ Photos ☐ Correspondence ☒ Design Plans

FINDING BY NCDOT AND STATE HISTORIC PRESERVATION OFFICE

Historic Architecture and Landscapes – ASSESSMENT OF EFFECTS

DocuSigned by:
Shelby Reap
8C8B6DCCF4304AA...
06/29/2022

NCDOT Architectural Historian Date

DocuSigned by:
Renee Gledhill-Earley
C26A1556A275464...
07/05/2022

State Historic Preservation Office Representative Date

DocuSigned by:
Seth Wilcher
0967A500F8714F0...
06/29/2022

Federal Agency Representative Date

ATTACHMENT 2
2 OF 2

17-12-0050
Update

HISTORIC ARCHICTECTURE AND LANDSCAPES NO SURVEY REQUIRED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	B-6051/U-6143 Formerly BR-0020	***County***:	Gaston/Mecklenburg
WBS No.:	BP2,R015.1	***Document Type***:	FCE
Fed. Aid No:		***Funding***:	☐ State ☒ Federal
Federal Permit(s):	☒ Yes ☐ No	***Permit Type(s)***:	USACE 404 FERC Conveyance of Easement Permit

Project Description:
[B-6051] Replace Bridge 91 over Catawba River (Lake Wylie) on US 74 (Wilkinson Boulevard) between Belmont and Charlotte (Gaston/Cleveland Counties) and [U-6143] Improvements to the intersection of Catawba Street and US 74 (Wilkinson Boulevard) in Belmont, NC.

SUMMARY OF HISTORIC ARCHICTECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions:
In June of 2022, an Effects form was signed by NCDOT, SHPO, and FHWA. Since that time new study area was added to the project. A review of the additional study area was completed on October 11, 2022. There is one potential historic site, a 1954 Weigh Station located on Mecklenburg County PIN 05323102. Current plans propose to repave Moores Chapel Loop and create a cul-de-sac beyond the parcel on which the Weigh Station sits. No survey is required at this time. If designs change and the project encroaches on the parcel, an Eligibility Evaluation will be required.

Why the available information provides a reliable basis for reasonably predicting that there are no unidentified significant historic architectural or landscape resources in the project area:
Using HPO GIS website and county tax data provides reliable information regarding the structures in the APE. These combined utilities are considered valid for the purposes of determining the likelihood of historic resources being present.

SUPPORT DOCUMENTATION

☒Map(s) ☐Previous Survey Info. ☒Photos ☐Correspondence ☐Design Plans

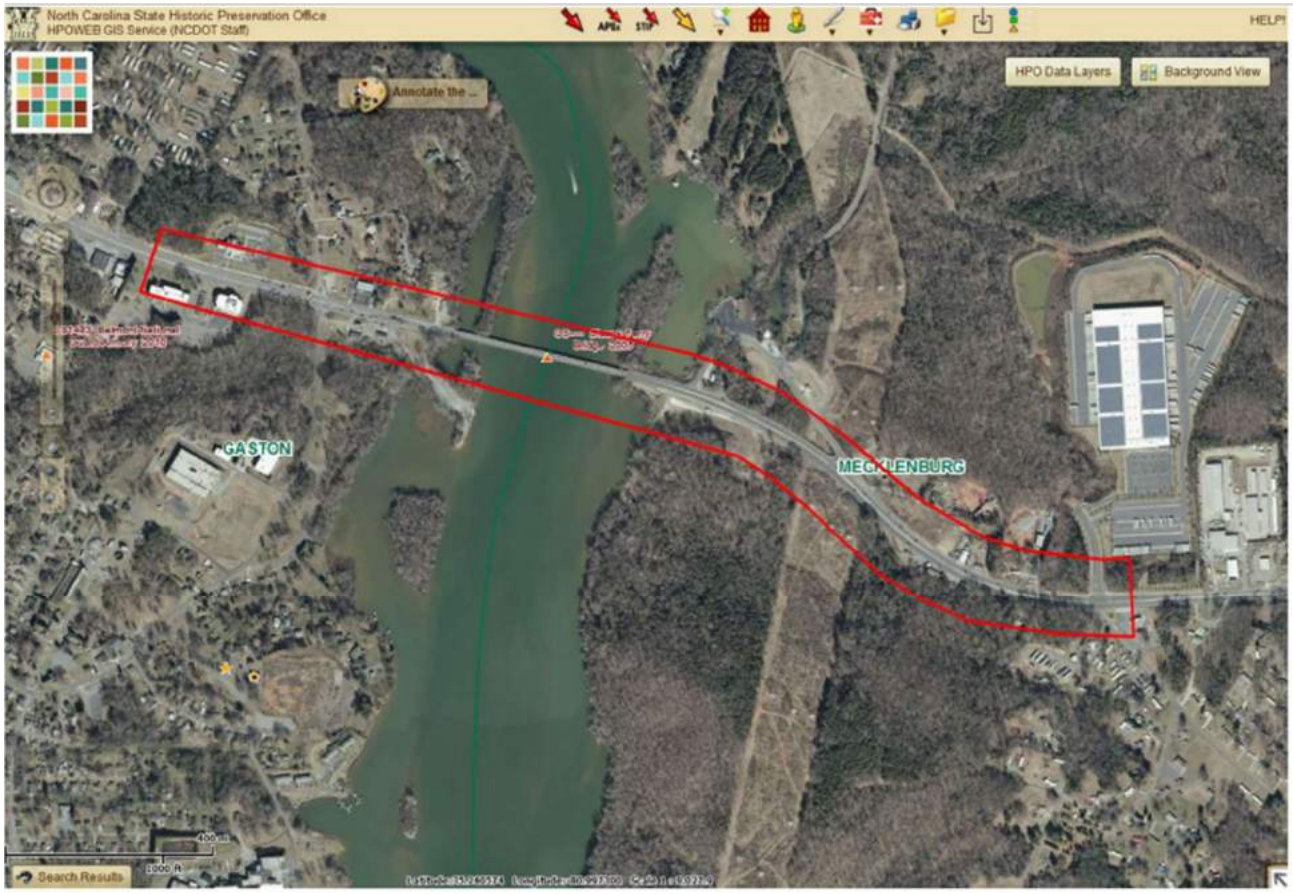
FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes -- NO SURVEY REQUIRED

Shelby Reap — **October 11, 2022**

NCDOT Architectural Historian — Date

ATTACHMENT 3
1 OF 3



Original APE

Additional Study Area

ATTACHMENT 3
2 OF 3

1954 Weigh Station

ATTACHMENT 3
3 OF 3

MEMORANDUM OF AGREEMENT
AMONG THE FEDERAL HIGHWAY ADMINISTRATION,
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
REPLACEMENT OF GASTON COUNTY BRIDGE NO. 91 ON US 74
OVER THE CATAWBA RIVER IN GASTON COUNTY
NORTH CAROLINA
NCDOT TIP B-6051

WHEREAS, the Federal Highway Administration (FHWA) has determined that Transportation Improvement Project B-6051 – the replacement of the structurally deficient, four-lane Gaston County Bridge No. 91 on US 74 over the Catawba River in Gaston County (the Undertaking) – will have an adverse effect upon Bridge No. 91, a steel stringer bridge determined eligible for listing in the National Register of Historic Places (NRHP) (historic property); and

WHEREAS, the FHWA has consulted with the North Carolina State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), as amended by 54 USC §§ 300101, et seq., and its implementing regulations, 36 CFR Part 800; and

WHEREAS, NCDOT has participated in the consultation and has been invited by the FHWA and the SHPO to be a signatory to this MOA; and

WHEREAS, the FHWA has notified the Advisory Council on Historic Preservation (Council) of the adverse effect, and the Council has declined to comment or participate in the consultation,

NOW, THEREFORE, the FHWA, NCDOT, and the North Carolina SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations to take into account the effects of the Undertaking on the historic property.

STIPULATIONS

The FHWA and NCDOT will ensure that the following measures are carried out:

I. Photographic Recordation

Prior to the initiation of construction, NCDOT will record the existing conditions of the Gaston County Bridge No. 91 in accordance with the attached Historic Structures and Landscape Recordation Plan (**Appendix A**). Copies of the documentation will be deposited in the files of the North Carolina Historic Preservation Office (NC HPO) and NCDOT's Historic Architecture Group.

II. Design Replacement Structure

NCDOT will ensure the following elements are incorporated into the design and construction of the new bridge:

A. Church Rail
B. New End Rails will emulate the curve of existing end rails and include replica plaques

III. Unanticipated Discoveries

A. In accordance with 36 CFR 800.13(a), if NCDOT identifies any one or more additional cultural resources during construction and determines them to be eligible for the NRHP, all work shall halt within the limits of the NRHP-eligible resource(s), and the FHWA and North Carolina SHPO will be contacted. If, after consultation with the Signatories additional mitigation is determined necessary, the NCDOT, in consultation with the Signatories, will develop and implement appropriate protection and/or mitigation measures for the resource(s).
B. Inadvertent or accidental discovery of human remains will be handled in accordance with North Carolina General Statute Chapters 65 and 70.

IV. Dispute Resolution

Should any of the Parties to this Agreement object within thirty (30) days to any plans or documentation provided for review pursuant to this MOA, the FHWA shall consult with the objecting Party(ies) to resolve the objection. If the FHWA or the objecting Party(ies) determines that the objection cannot be resolved, the FHWA will forward all documentation relevant to the dispute to the Council. Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

A. Provide the FHWA with recommendations, which the FHWA will take into account in reaching a final decision regarding the dispute; or
B. Notify the FHWA that it will comment pursuant to 36 CFR Section 800.7(c) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the FHWA in accordance with 36 CFR Section 800.7(c)(4), with reference to the subject of the dispute.

Any recommendations or comments provided by the Council will be understood to pertain only to the subject of the dispute; the FHWA's responsibility to carry out all the actions under this Agreement that are not the subject of the dispute will remain unchanged.

V. Amendments

Should any of the Signatories to this MOA believe that its terms cannot be carried out or that an amendment to the terms must be made, the Party(ies) shall immediately consult with the other Party(ies) to develop amendments in accordance with 36 CFR 800.6(c)(7). If an amendment cannot be agreed upon, the dispute resolution process set forth in Stipulation III will be followed.

VI. Termination

Any of the Signatories may terminate this MOA by providing notice to the other Parties, provided that the Parties consult during the period prior to termination to make a good faith effort to seek agreement on amendments or other actions that would avoid termination. Termination of this MOA will require compliance with 36 CFR 800. This MOA may also be terminated by the execution of a subsequent MOA that explicitly terminates or supersedes its terms.

VII. Duration

Unless terminated pursuant to Stipulation III above, this MOA will be in effect until the FHWA, in consultation with the other Signatories, determines that all its terms have satisfactorily been fulfilled or if NCDOT is unable or decides not to construct the Undertaking.

Execution of this MOA by the FHWA, NCDOT, and the North Carolina SHPO, its subsequent filing with the Council, and implementation of its terms is evidence that the FHWA has afforded the Council an opportunity to comment on the Undertaking, and that the FHWA has taken into account the effects of the Undertaking on the historic property.

AGREE:

Federal Highway Administration

By: _____ Date: 1/23/2023
John F. Sullivan III, P.E.
Division Administrator

North Carolina State Historic Preservation Officer

By: _____ Date: 12/19/2022
Dr. Darin J. Waters
State Historic Preservation Officer

North Carolina Department of Transportation

By: DocuSigned by: Jamie Lancaster 50495DB2000A450... Date: 12/22/2022
Jamie J. Lancaster, P.E.
Environment Analysis Unit Head

FILED:

By: _____ Date: _____
[Name]
[Title]
Advisory Council on Historic Preservation

APPENDIX A

Historic Structures and Landscape Recordation Plan for
the Replacement of Gaston County Bridge No. 91
Gaston County
North Carolina
NCDOT TIP B-6051

Photographic Requirements

- Representative pictures of the Gaston County Bridge No. 91, including elevation and oblique views of the bridge and its setting.

Photographic Format

- Color digital images (all views) shot with an SLR digital camera with a minimum resolution of 6 megabyte pixels, at a high quality (preferably RAW) setting, to be saved in TIF format as the archival masters and labeled according to NC HPO standards.
- Drone photographic standards if different from above
- File names for each image should follow the format:
  SS#_ResourceName_DateofPhoto_InitialsofPhotog-FrameNo.tif.
- Printed inventory (photolog) of the images should be provided as a table with the file name and description for each image – including subject, location, date, and photographer information for each image.
- Contact sheets should be printed on premium quality, bright white paper (24lb) or photo paper with a maximum of nine images per sheet. The back of the contact sheet should have the following information written in archival black ink.
  NCDOT TIP#
  NCHPO ER#
  NCDOT Photorecordation for MOA
  Survey Site Number and Name of Property
  Road Name
  Vicinity or Town
  County
  Photographer's Name and Date of Photography
- A labeled map with a key to the shots and photographs should be included in the documentation.
- The individual images, photolog, and map should be saved electronically on a compact disc labeled similar to the contact sheets.

Copies and Curation

- One (1) set of all above mentioned photographic documentation, including the compact disc of labeled images, will be deposited with the North Carolina Office of Archives and History/NC HPO to be made a permanent part of the statewide survey and iconographic collection.
- One (1) set of contact sheets shall be deposited in the files of the NCDOT's Historic Architecture Group.

NORTH CAROLINA DIVISION
FINAL NATIONWIDE SECTION 4(f) EVALUATION AND APPROVAL
FOR FEDERALLY AIDED HIGHWAY PROJECTS
THAT NECESSITATE THE USE OF HISTORIC BRIDGES

F. A. Project	To be determined prior to let
W.B.S. No.	48708.1.1 & 48326.1.1
TIP No.	B-6051 & U-6143

PROJECT DESCRIPTION

B-6051/U-6143 – The purpose of this project is to address geometric deficiencies of the bridge and its approaches on Wilkinson Boulevard, the emergency detour needs of I-85, the navigational clearance requirements over Lake Wylie and to improve the intersection of Wilkinson Boulevard and Catawba Street to address deficient turning movements.

The project proposes to replace Bridge No. 91 carrying Wilkinson Boulevard to build a new bridge with six 12' lanes, a 4' concrete median, 5' offsets between the outside travel lane and a concrete barriers separating the travel lanes from and two 10' wide multi use paths on either side of the bridge. The approaches will connect to the existing six lane geometry on the western terminus (just west of Catawba St.) and to the existing five lane geometry on the eastern terminus (just east of ISWA Nature Preserve entrance). Typical sections illustrating the details of the new bridge, Wilkinson and Catawba Street are included in Figure 2 (Public Meeting Map).

The intersection of Wilkinson Boulevard and Catawba Streets will be modified into an offset reduced conflict intersection design as shown in Figure 2. Two left hand turn lanes will be included for traffic from WB Wilkinson to Catawba and two right hand turn lanes will be included for NB Catawba Street traffic to Wilkinson Boulevard. Work will extend approximately 670' down NC 7.

		Yes	No
1.	Is the bridge to be replaced or rehabilitated with Federal funds?	☑	☐
2.	Does the project require the use of a historic bridge structure which is on or eligible for the National Register of Historic Places?	☑	☐
3.	Is the bridge a National Historic Landmark?	☐	☑
4.	Has agreement been reached among the FHWA, State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) though procedures pursuant to Section 106 of the National Historic Preservation Act?	☑	☐

ATTACHMENT 5
1 OF 4

ALTERNATIVES CONSIDERED AND FOUND NOT TO BE FEASIBLE AND PRUDENT

The following alternatives were evaluated and found not to be feasible and prudent:

	Yes	No
1. Do Nothing Does the "do nothing" alterative:		
a) correct the problem situation that caused the bridge to be considered deficient?	☑	☐
b) pose serious and unacceptable safety hazards?	☑	☐

2. Build a new structure at a different location without affecting the historic integrity of the structure.

(a) The following reasons were reviewed: (Circle, as appropriate)

(i) The present bridge has already been located at the only feasible and prudent site

and/or (ii) Adverse social, environmental, or economic impacts were noted

and/or (iii) Cost and engineering difficulties reach extraordinary magnitude

and/or (iv) The existing bridge cannot be preserved due to the extent of rehabilitation, because no responsible party will maintain and preserve the historic bridge, or the permitting authority requires removal or demolition.

Part of the Purpose and Need of the project is addressing navigational clearance requirements of both the Duke Energy FERC License and of Charlotte Fire Department who operate rescue boats that cannot pass underneath the existing bridge. The existing bridge does not have sufficient navigational clearance to meet either need. The structure must therefore be replaced to meet the purpose of the project.

3. Rehabilitate the historic bridge without affecting the historic integrity of the structure.

(a) The following reasons were reviewed: (circle, as appropriate)

(i) The bridge is so structurally deficient that it cannot be rehabilitated to meet the acceptable load requirements and meet National Register criteria

and/or (ii) The bridge is seriously deficient geometrically and cannot be widened to meet the required capacity and meet National Register criteria

The bridge cannot be rehabilitated or widened without compromising the historic aspects of the bridge. Building a parallel bridge would not meet the navigational clearance issue with the existing bridge as described in Item 2 above.

MINIMIZATION OF HARM

1. The project includes all possible planning to minimize harm.

2. Measures to minimize harm include the following: (circle, as appropriate)

a. For bridges that are to be rehabilitated, the historic integrity of the bridge is preserved to the greatest extent possible, consistent with unavoidable transportation needs, safety, and load requirements.

b. For bridges that are to be rehabilitated to the point that the historic integrity is affected or that are to be removed or demolished, the FHWA ensures that, in accordance with the Historic American Engineering Record (HAER) standards, or other suitable means developed through consultation, fully adequate records are made of the bridge.

c. For bridges that are to be replaced, the existing bridge is made available for an alternative use, provided a responsible party agrees to maintain and preserve the bridge.

d. For bridges that are adversely affected, agreement among the SHPO, ACHP, and FHWA is reached through the Section 106 process of the NHPA on measures to minimize harm and those measures are incorporated into the project.

3. Specific measures to minimize harm are discussed below:

- Photo Recordation of the Bridge and Preservation
- Providing Digital As-Built Plans
- Include Church Rail as part of the new bridge and details simulating the shape of the existing end rail with replica plaques.

Note: Any response in a box requires additional information prior to approval. Consult Nationwide 4(f) evaluation.

COORDINATION

The proposed project has been coordinated with the following (attach correspondence):

a. State Historic Preservation Officer	☑
b. Advisory Council on Historic Preservation	☑
c. Local State and Federal Agencies	☑
d. U.S. Coast Guard for bridges requiring bridge permits	N/A

SUMMARY AND APPROVAL

The project meets all criteria included in the programmatic 4(f) evaluation approved on July 5, 1983.

All required alternatives have been evaluated and the findings made are clearly applicable to this project.

There are no feasible and prudent alternatives to the use of the historic bridge. The project includes all possible planning to minimize harm, and there are assurances that the measures to minimize harm will be incorporated in the project.

All appropriate coordination has been successfully completed.

Approved:

5/3/2023
Date

DocuSigned by:
David Stutts
A4A2999A8BC64F2...

David Stutts, Project Engineer, PEF Program Management
North Carolina Department of Transportation

5/8/2023
Date

DocuSigned by:
Loretta Barren
6BD9E254A36D46A...

for John Sullivan, III, PE, Division Administrator
Division Administrator, FHWA

ATTACHMENT 5
4 OF 4

Tribal Coordination

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

August 21, 2019

Dr. Wenonah Haire
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

Dear Dr. Haire,

The North Carolina Department of Transportation has begun the project development, environmental, and engineering studies for the replacement of Bridge No. 91 on US 29/74 (Wilkinson Blvd) over Catawba River in Gaston and Mecklenburg Counties. The project, known as BR-0020, has become federally funded and is now designated as B-6051. The Federal Highway Administration (FHWA) is the lead federal agency. A finding of no archaeological survey required has been determined for this project and no further studies are required.

The project vicinity map and no archaeological survey required form are attached.

We would appreciate any information you might have that would be helpful in evaluating potential tribal impacts of the project including recommendation of alternates to be studied. Please respond by September 6th, 2019 so that your comments can be used in the development of this project. If you have any questions concerning this project, please contact me at dstutts@ncdot.gov or (919) 707-6442.

Thank you,

DocuSigned by:
David Stutts
A4A2999A8BC64F2...

David Stutts, P.E.
NCDOT Project Engineer – PEF/Program Management

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
STRUCTURES MANAGEMENT UNIT
1581 MAIL SERVICE CENTER
RALEIGH NC 27699

Telephone: (919) 707-6400
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

September 20, 2019

Attention: David Stutts
NC Department of Transportation
1581 Mail Service Center
Raleigh, NC 27699

Re. THPO #	TCNS #	Project Description
2019-193-31		Replacement of Bridge No. 91 on US 29/74 over Catawba River in Gaston & Mecklenburg

Dear Mr. Stutts,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

From:	Maggie Wiener
To:	"elizabeth-toombs@cherokee.org"
Cc:	"loretta.barren@dot.gov"; "Stutts, David S"; Wilkerson, Matt T; John Williams
Subject:	RE: Cherokee Nation Coordination Letter
Date:	Sunday, August 25, 2019 3:04:25 PM
Attachments:	Location Map BR-0020_B-6051.pdf Structure 350091 Resubmitted Gaston No Archaeological Survey Required Form.pdf image001.png image002.png image003.png image004.png image005.png

---

Elizabeth,

Also please find attached the vicinity map and no archaeological survey form required for this project.

Thank you

From: Maggie Wiener
Sent: Sunday, August 25, 2019 2:36 PM
To: 'elizabeth-toombs@cherokee.org' <elizabeth-toombs@cherokee.org>
Cc: 'loretta.barren@dot.gov' <loretta.barren@dot.gov>; 'Stutts, David S' <dstutts@ncdot.gov>; Wilkerson, Matt T <mtwilkerson@ncdot.gov>; John Williams <jwilliams@rkk.com>
Subject: Cherokee Nation Coordination Letter

Hi Elizabeth,

Please find attached the tribal coordination letter for BR-0020/B-6051 bridge replacement in Gaston County. Let us know any comments or questions you may have regarding this project.

Thank you,
Maggie Wiener

MAGGIE WIENER
Environmental Planner

RK&K
900 Ridgefield Drive, Suite 350
Raleigh, NC 27609

919-878-9560 P | 919-653-7472 D | 919-349-6516 C
www.rkk.com

Responsive People | Creative Solutions

From:	Maggie Wiener
To:	"russtown@nc-cherokee.com"
Cc:	"loretta.barren@dot.gov"; "Stutts, David S"; "Wilkerson, Matt T"; John Williams
Subject:	RE: EBCI Coordination Letter
Date:	Sunday, August 25, 2019 3:05:36 PM
Attachments:	Structure 350091 Resubmitted Gaston No Archaeological Survey Required Form.pdf Location Map BR-0020_B-6051.pdf image001.png image002.png image003.png image004.png image005.png

---

Russell,

Also please find attached the vicinity map and no archaeological survey form required for this project.

Thank you

From: Maggie Wiener
Sent: Sunday, August 25, 2019 2:39 PM
To: 'russtown@nc-cherokee.com' <russtown@nc-cherokee.com>
Cc: 'loretta.barren@dot.gov' <loretta.barren@dot.gov>; 'Stutts, David S' <dstutts@ncdot.gov>; Wilkerson, Matt T <mtwilkerson@ncdot.gov>; John Williams <jwilliams@rkk.com>
Subject: EBCI Coordination Letter

Hi Russell,

Please find attached the tribal coordination letter for BR-0020/B-6051 bridge replacement in Gaston County. Let us know any comments or questions you may have regarding this project.

Thank you,
Maggie Wiener

MAGGIE WIENER
Environmental Planner

RK&K
900 Ridgefield Drive, Suite 350
Raleigh, NC 27609

919-878-9560 P | 919-653-7472 D | 919-349-6516 C
www.rkk.com

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From:	Maggie Wiener
To:	"estevens@ukb-nsn.gov"
Cc:	"loretta.barren@dot.gov"; "Stutts, David S"; "mtwilkerson@ncdot.gov"; John Williams
Subject:	United Keetoowah Tribal Coordination
Date:	Monday, August 26, 2019 10:40:05 AM
Attachments:	image001.png image002.png image003.png image004.png image005.png Tribal Coordination Letter_Keetoowah.docx.pdf Location Map BR-0020_B-6051.pdf Structure 350091 Resubmitted Gaston No Archaeological Survey Required Form.pdf

---

Hi Eldine,

Please find attached the tribal coordination letter for BR-0020/B-6051 bridge replacement in Gaston County, as well as the vicinity map and no archaeological survey required form. I apologize that the letter is addressed to Erin Thompson—we just found out to send the letter to you rather than Erin.

Please let us know any comments or questions you may have regarding this project.

Thank you,
Maggie Wiener

MAGGIE WIENER
Environmental Planner

RK&K
900 Ridgefield Drive, Suite 350
Raleigh, NC 27609

919-878-9560 P | 919-653-7472 D | 919-349-6516 C
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Revised PJD Request

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

May 24, 2024

Crystal Amschler
U.S. Army Corps of Engineers
Asheville Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, North Carolina 28801
crystal.c.amschler@usace.army.mil

SUBJECT: Revised Preliminary Jurisdictional Determination request for the proposed replacement of Bridge 91 on US 29/74 (Wilkinson Boulevard) over Catawba River (Lake Wylie) Gaston and Mecklenburg Counties, **STIP B-6051.** WBS Element 48708.1.1

Dear Ms. Amschler,

The enclosed is a Preliminary Jurisdictional Determination (PJD) package referencing the additional project study areas for your review, which includes the following attachments:

- Figure 1 – Vicinity Map
- Figure 2 – Topographic Map
- Figure 3 – NRCS Soil Survey Map
- Figure 4 – Aerial Map
- USACE Wetland Determination Data Forms
- USACE Upland Determination Data Forms
- NCWAM Forms
- Preliminary JD Form
- JD Request Form
- ORM Sheet (separate electronic attachment)

The original study area has an existing U.S. Army Corps of Engineers Action ID SAW-2019-00027. The project has had previous coordination Mr. Eric Alsmeyer of the USACE Raleigh field office.

The GPS equipment utilized to locate features on this project was a Trimble® DA2™ with sub-meter accuracy.

The following tables provide a summary of the stream, wetland, and surface water information for the project study area.

Table 1. Status of streams in the study area

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer
SC	459	Perennial	Yes	No
SD	110	Perennial	Yes	No

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH, NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 250-4224
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

Table 2. Characteristics of wetlands in the study area

Map ID	NCWAM Classification	Forested	NCWAM Rating	Hydrologic Classification	404/401 or 401	Area (ac.) in Study Area
WC	Bottomland Hardwood Forest	Yes	High	Riparian	404/401	0.29
WD	Bottomland Hardwood Forest	Yes	High	Riparian	404/401	0.31
WE	Bottomland Hardwood Forest	Yes	High	Riparian	404/401	0.10
					Total	**0.70**

Table 3. Surface waters in the study area

Surface Water	Map ID of Connection	Area (ac) in Study Area	River Basin Buffer
Catawba River (Lake Wylie)	Catawba River	0.21	Yes

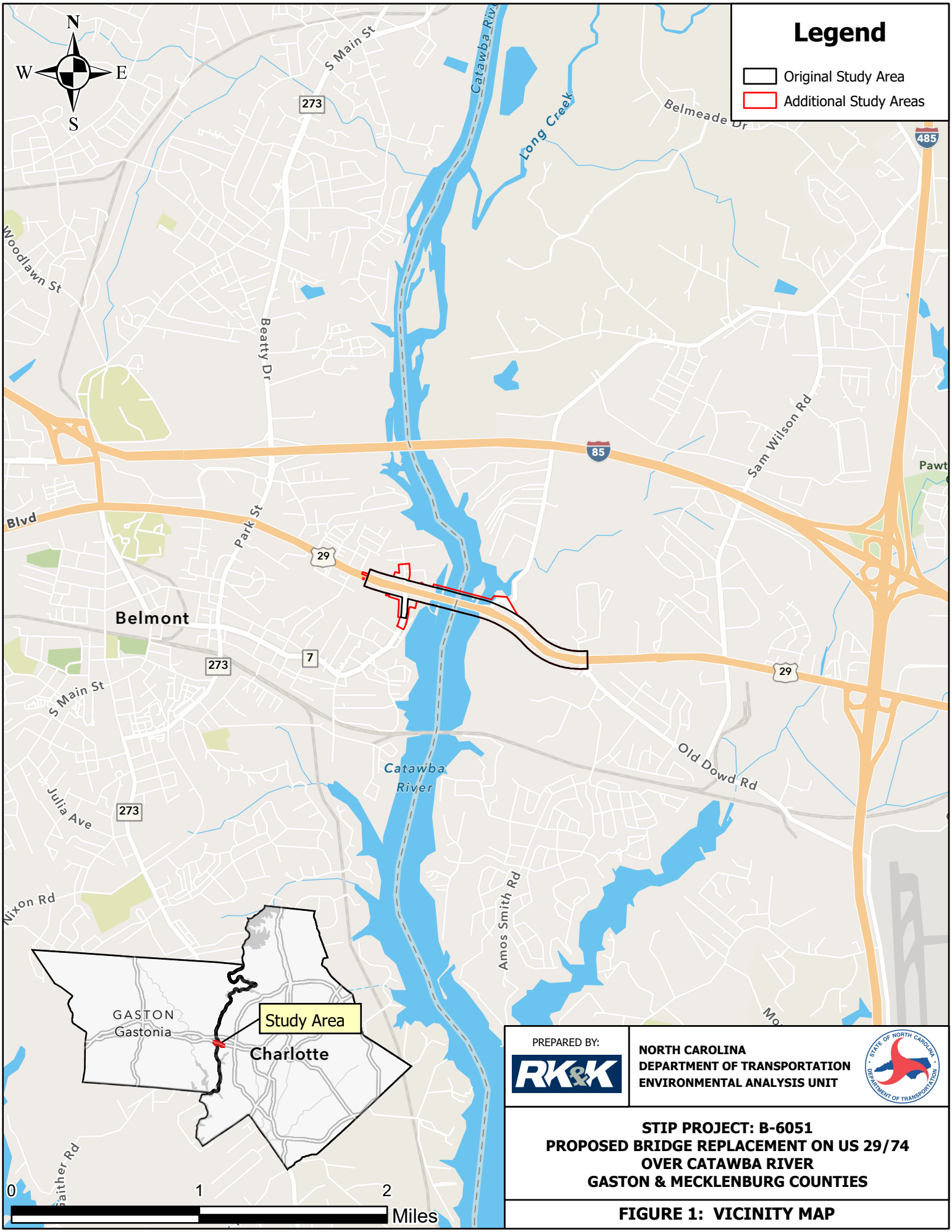
Please contact me at (919) 302-1908 (wabarrett@ncdot.gov) or our consultant, Chris Rivenbark at (919) 878-9560 (crivenbark@rkk.com) if you have any questions or would like additional information.

Sincerely,

William A. Barrett

William A. Barrett, Environmental Program Consultant
ECAP Western Region
NCDOT – Environmental Analysis Unit

cc:
Steve Brumagin, Charlotte Regulatory Field Office, USACE
Beth Plummer, Transportation Permitting Branch, NCDWR


Legend
Original Study Area
Additional Study Areas
N
W
E
S
S Main St
273
Catawba River
Long Creek
Belmeade Dr
485
Woodlawn St
Beatty Dr
85
Sam Wilson Rd
Pawt
Blvd
Park St
29
Belmont
7
273
S Main St
Catawba River
Old Dowd Rd
Julia Ave
273
Nixon Rd
Amos Smith Rd
GASTON
Gastonia
Study Area
Charlotte
0
1
2
Miles
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DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
STIP PROJECT: B-6051
PROPOSED BRIDGE REPLACEMENT ON US 29/74
OVER CATAWBA RIVER
GASTON & MECKLENBURG COUNTIES
FIGURE 1: VICINITY MAP

N
W
E
S

Legend

- Original Study Area
- Additional Study Areas
- Potential Intermittent Stream
- Potential Perennial Stream
- Potential Wetland
- Open Water

Lake Wylie

WILKINSON BLVD

WILKINSON BLVD

29

29

7

7

2083

SB
SC
WA
WD
SD
WD
SC
WC
WB
WE
SA
SA

13TH ST

OLD STATE HWY 7

LINESTOWE DR

RIDGE ST

OLD

- Kimbrell Campus

570 600 610 620 630 640 650 680 690 700 710 590 580

0 400 800 1200 1600 2000 Feet

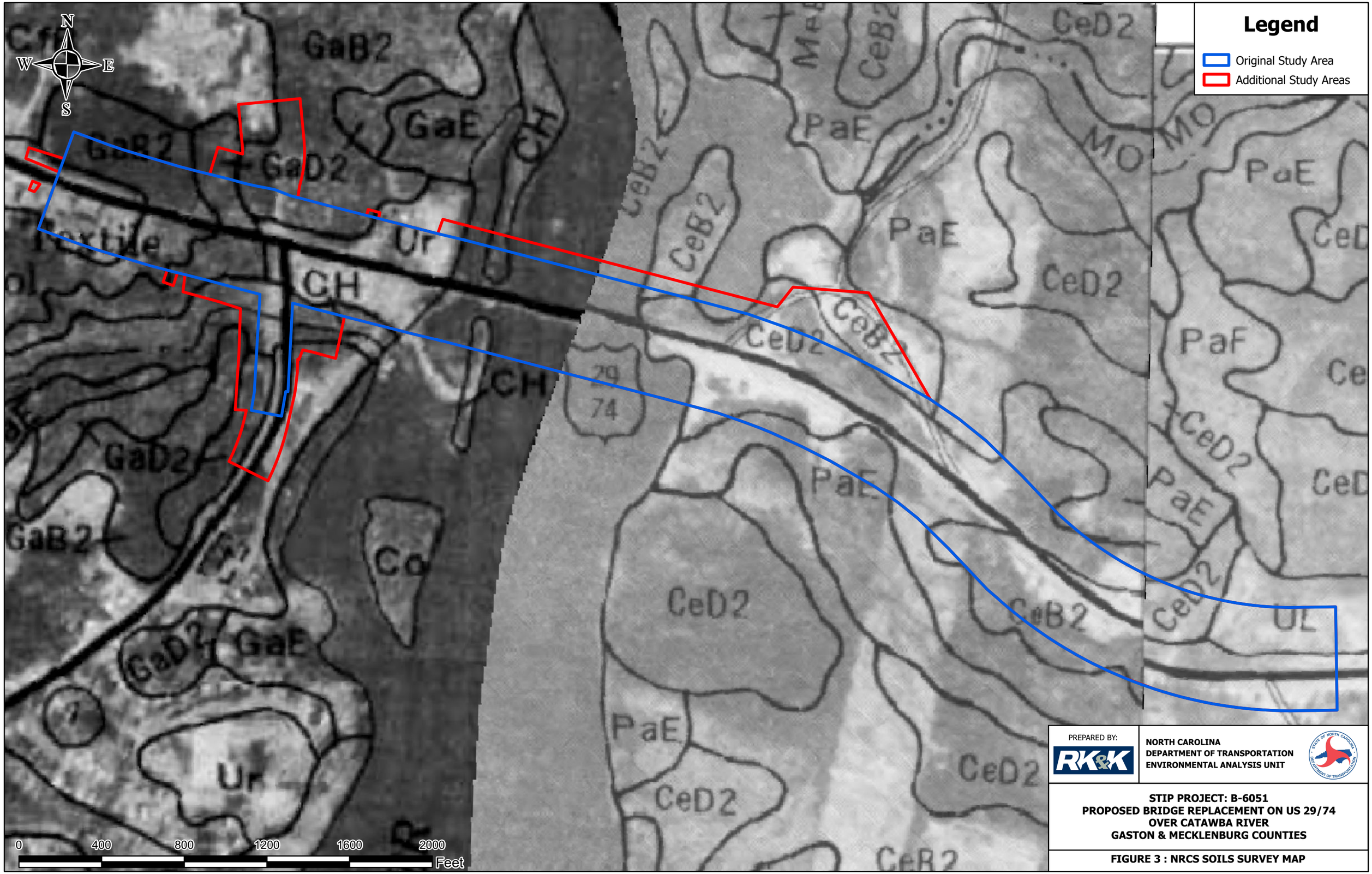
PREPARED BY:

RK&K

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT

STIP PROJECT: B-6051
PROPOSED BRIDGE REPLACEMENT ON US 29/74
OVER CATAWBA RIVER
GASTON & MECKLENBURG COUNTIES

FIGURE 2 : TOPOGRAPHIC MAP



Legend

- Original Study Area
- Additional Study Areas

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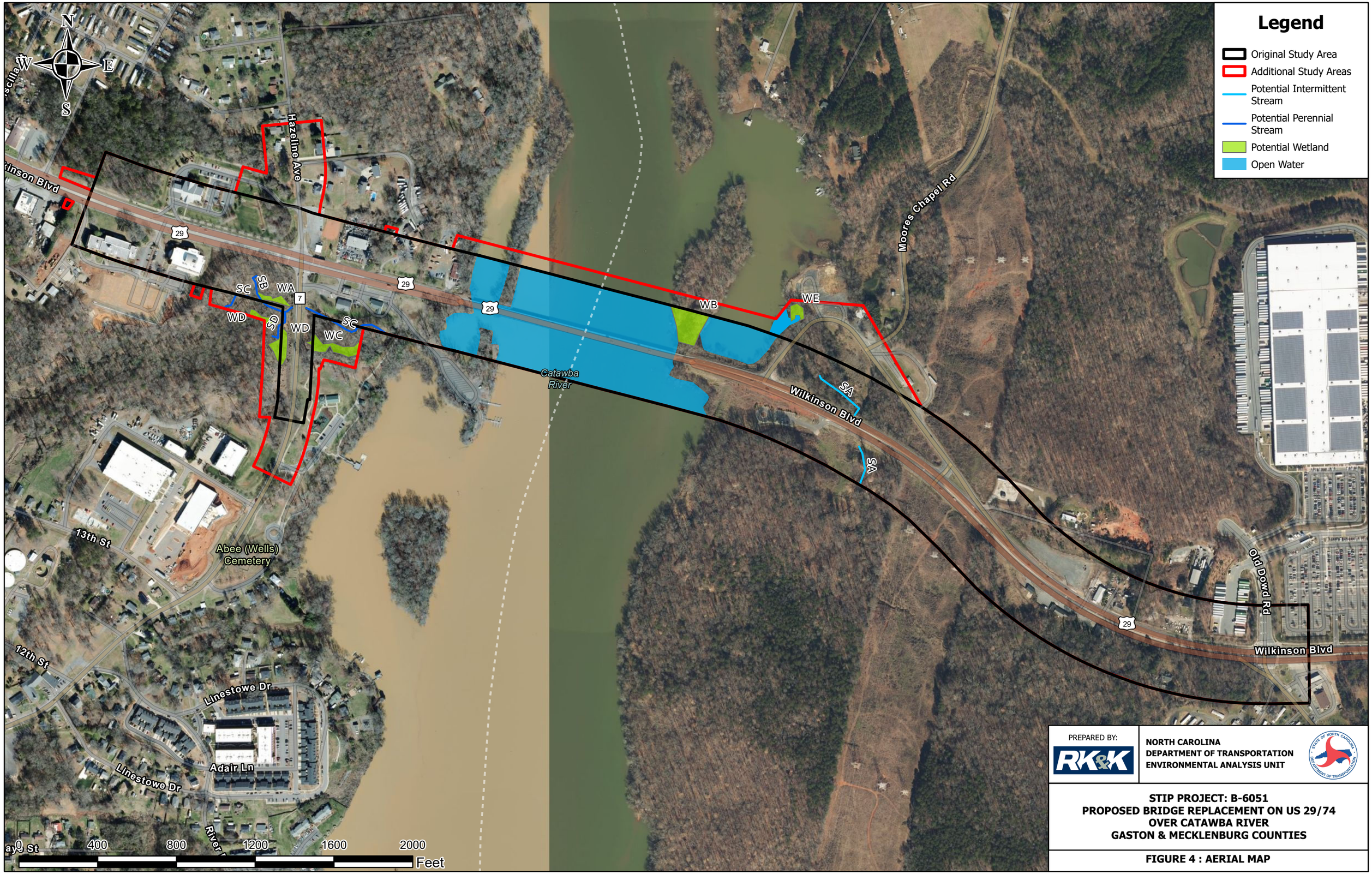
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT

STIP PROJECT: B-6051
PROPOSED BRIDGE REPLACEMENT ON US 29/74
OVER CATAWBA RIVER
GASTON & MECKLENBURG COUNTIES

FIGURE 3 : NRCS SOILS SURVEY MAP



PREPARED BY:

RK&K

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT

STIP PROJECT: B-6051
PROPOSED BRIDGE REPLACEMENT ON US 29/74
OVER CATAWBA RIVER
GASTON & MECKLENBURG COUNTIES

FIGURE 4 : AERIAL MAP

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: B-6051 City/County: Gaston County Sampling Date: 10/27/2020
Applicant/Owner: NCDOT State: NC Sampling Point: WC-WET
Investigator(s): Matt Martin / Hal Bain Section, Township, Range: N/A
Landform (hillside, terrace, etc.): Floodplan Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.2455032 Long: -81.0137603 Datum: NAD83
Soil Map Unit Name: Chewacla loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Wetland hydrology, hydric soil and hydrophytic vegetation are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ True Aquatic Plants (B14)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is Present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WC-WET

Tree Stratum (Plot size: 3000 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus americana*	15	Yes	FACW
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3. *Acer negundo*	15	Yes	FAC
4. *Platanus occidentalis*	5	No	FACW
5.			
6.			
7.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10
Sapling/Shrub Stratum (Plot size: 3000 sq ft)			
1. *Fraxinus pennsylvanica*	10	Yes	FACW
2. *Acer negundo*	10	Yes	FAC
3. *Ulmus americana*	5	No	FACW
4. *Liquidambar styraciflua*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover:	6
Herb Stratum (Plot size: 3000 sq ft)			
1. *Saururus cernuus*	40	Yes	OBL
2. *Dulichium arundinaceum*	20	Yes	OBL
3. *Persicaria sagittata*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14
Woody Vine Stratum (Plot size: 3000 sq ft)			
1. *Toxicodendron radicans*	15	Yes	FAC
2. *Pueraria montana*	5	Yes	UPL
3.			
4.			
5.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	50	x 2 =	100
FAC species	45	x 3 =	135
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	170 (A)		330 (B)

Prevalence Index = B/A = 1.94

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic Vegetation is present.

SOIL

Sampling Point: WC-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/3	100					Loamy/Clayey	
3-6	10YR 4/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
6-18	10YR 4/2	85	10YR 5/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric Soil is present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: B-6051 City/County: Gaston County Sampling Date: 10/27/2020
Applicant/Owner: NCDOT State: NC Sampling Point: WD-WET
Investigator(s): Matt Martin / Hal Bain Section, Township, Range: N/A
Landform (hillside, terrace, etc.): Floodplan Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.2452995 Long: -81.0142873 Datum: NAD83
Soil Map Unit Name: Chewacla loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Wetland hydrology, hydric soil and hydrophytic vegetation are present. This wetland is comprised of two polygons within the floodplain of SD.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is Present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WD-WET

Tree Stratum (Plot size: 3000 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	20	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3. *Ulmus americana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Sapling/Shrub Stratum (Plot size: 3000 sq ft)			
1. *Acer negundo*	10	Yes	FAC
2. *Alnus serrulata*	5	Yes	OBL
3. *Fraxinus pennsylvanica*	5	Yes	FACW
4. *Acer saccharinum*	5	Yes	FACW
5.			
6.			
7.			
8.			
9.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Herb Stratum (Plot size: 3000 sq ft)			
1. *Dulichium arundinaceum*	20	Yes	OBL
2. *Persicaria sagittata*	10	Yes	OBL
3. *Saururus cernuus*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Woody Vine Stratum (Plot size: 3000 sq ft)			
1. *Pueraria montana*	5	Yes	UPL
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	35	x 2 =	70
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	110 (A)		225 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic Vegetation is present.

SOIL

Sampling Point: WD-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/3	100					Loamy/Clayey	
2-6	10YR 4/2	90	10YR 5/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
6-18	10YR 4/2	85	10YR 5/6	15	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

Hydric Soil is present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: B-6051 City/County: Gaston County Sampling Date: 10/27/2020

Applicant/Owner: NCDOT State: NC Sampling Point: WC-UP

Investigator(s): Matt Martin / Hal Bain Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 12

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.2455082 Long: -81.0138421 Datum: NAD83

Soil Map Unit Name: Chewacla loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Wetland hydrology, hydrophytic vegetation, and hydric soil are not present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is not Present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WC-UP

Tree Stratum (Plot size: 3000 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 3000 sq ft)			
1. *Ligustrum sinense*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 =Total Cover		
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 3000 sq ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size: 3000 sq ft)			
1. *Pueraria montana*	35	Yes	UPL
2. *Lonicera japonica*	20	Yes	FACU
3.			
4.			
5.			
	55 =Total Cover		
50% of total cover: 28	20% of total cover: 11		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	35	x 5 =	175
Column Totals:	70 (A)		315 (B)

Prevalence Index = B/A = 4.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic Vegetation is not present.

SOIL

Sampling Point: WC-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 4/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Hydric Soil is not Present

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: B-6051 City/County: Gaston County Sampling Date: 10/27/2020

Applicant/Owner: NCDOT State: NC Sampling Point: WD-UP

Investigator(s): Matt Martin / Hal Bain Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.2452059 Long: -81.0142967 Datum: NAD83

Soil Map Unit Name: Chewacla loam, 0 to 2 percent slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Wetland hydrology, hydrophytic vegetation, and hydric soil are not present at this location.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is not Present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WD-UP

Tree Stratum (Plot size: 3000 sq ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 3000 sq ft)			
1. *Ligustrum sinense*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15 =Total Cover		
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 3000 sq ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size: 3000 sq ft)			
1. *Pueraria montana*	35	Yes	UPL
2. *Lonicera japonica*	20	Yes	FACU
3.			
4.			
5.			
	55 =Total Cover		
50% of total cover: 28	20% of total cover: 11		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	35	x 4 =	140
UPL species	35	x 5 =	175
Column Totals:	70 (A)		315 (B)

Prevalence Index = B/A = 4.50

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic Vegetation is not present.

SOIL

Sampling Point: WD-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	5YR 4/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Hydric Soil is not Present

NC WAM FIELD ASSESSMENT FORM
Accompanies User Manual Version 5.0

USACE AID #		NCDWR#	
Project Name	B-6051	Date of Evaluation	10-27-2020
Applicant/Owner Name	NCDOT, Division 12	Wetland Site Name	WC
Wetland Type	Bottomland Hardwood Forest	Assessor Name/Organization	Martin/Bain- RK&K
Level III Ecoregion	Piedmont	Nearest Named Water Body	Catawba River
River Basin	Catawba	USGS 8-Digit Catalogue Unit	03050101
County	Gaston	NCDWR Region	Mooresville
☐ Yes ☒ No	Precipitation within 48 hrs?	Latitude/Longitude (deci-degrees)	35.2455032, -81.0137603

Evidence of stressors affecting the assessment area (may not be within the assessment area)

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed? ☐ Yes ☒ No

Regulatory Considerations - Were regulatory considerations evaluated? ☒Yes ☐No If Yes, check all that apply to the assessment area.

☐ Anadromous fish
☐ Federally protected species or State endangered or threatened species
☐ NCDWR riparian buffer rule in effect
☐ Abuts a Primary Nursery Area (PNA)
☒ Publicly owned property
☐ N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
☐ Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
☐ Designated NCNHP reference community
☐ Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

What type of natural stream is associated with the wetland, if any? (check all that apply)

☐ Blackwater
☒ Brownwater
☐ Tidal (if tidal, check one of the following boxes) ☐ Lunar ☐ Wind ☐ Both

Is the assessment area on a coastal island? ☐ Yes ☒ No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver? ☐ Yes ☒ No

Does the assessment area experience overbank flooding during normal rainfall conditions? ☒ Yes ☐ No

1. Ground Surface Condition/Vegetation Condition – assessment area condition metric

Check a box in each column. Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence an effect.

GS	VS	
☒A	☒A	Not severely altered
☐B	☐B	Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, less diversity [if appropriate], hydrologic alteration)

2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric

Check a box in each column. Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

Surf	Sub	
☒A	☒A	Water storage capacity and duration are not altered.
☐B	☐B	Water storage capacity or duration are altered, but not substantially (typically, not sufficient to change vegetation).
☐C	☐C	Water storage capacity or duration are substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines).

3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)

Check a box in each column. Select the appropriate storage for the assessment area (AA) and the wetland type (WT).

	AA	WT	
3a.	☐A	☐A	Majority of wetland with depressions able to pond water > 1 deep
	☐B	☐B	Majority of wetland with depressions able to pond water 6 inches to 1 foot deep
	☐C	☐C	Majority of wetland with depressions able to pond water 3 to 6 inches deep
	☒D	☒D	Depressions able to pond water < 3 inches deep

3b. ☐A Evidence that maximum depth of inundation is greater than 2 feet
☐B Evidence that maximum depth of inundation is between 1 and 2 feet
☒C Evidence that maximum depth of inundation is less than 1 foot

4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)

Check a box from each of the three soil property groups below. Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent National Technical Committee for Hydric Soils guidance for regional indicators.

4a.
- ☐A Sandy soil
- ☒B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)
- ☐C Loamy or clayey soils not exhibiting redoximorphic features
- ☐D Loamy or clayey gleyed soil
- ☐E Histosol or histic epipedon

4b.
- ☐A Soil ribbon < 1 inch
- ☒B Soil ribbon ≥ 1 inch

4c.
- ☒A No peat or muck presence
- ☐B A peat or muck presence

5. Discharge into Wetland – opportunity metric

Check a box in each column. Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

Surf	Sub	
☒A	☒A	Little or no evidence of pollutants or discharges entering the assessment area
☐B	☐B	Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area
☐C	☐C	Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor)

6. Land Use – opportunity metric (skip for non-riparian wetlands)

Check all that apply (at least one box in each column). Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

WS	5M	2M	
☒A	☒A	☒A	≥ 10% impervious surfaces
☐B	☐B	☐B	Confined animal operations (or other local, concentrated source of pollutants
☐C	☐C	☐C	≥ 20% coverage of pasture
☐D	☐D	☐D	≥ 20% coverage of agricultural land (regularly plowed land)
☒E	☒E	☒E	≥ 20% coverage of maintained grass/herb
☐F	☐F	☐F	≥ 20% coverage of clear-cut land
☐G	☐G	☐G	Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed or hydrologic alterations that prevent drainage and/or overbank flow from affecting the assessment area.

7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)

7a. Is assessment area within 50 feet of a tributary or other open water?
☒Yes ☐No If Yes, continue to 7b. If No, skip to Metric 8.
Wetland buffer need only be present on one side of the water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.

7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)
- ☐A ≥ 50 feet
- ☐B From 30 to < 50 feet
- ☐C From 15 to < 30 feet
- ☒D From 5 to < 15 feet
- ☐E < 5 feet or buffer bypassed by ditches

7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.
☒≤ 15-feet wide ☐> 15-feet wide ☐ Other open water (no tributary present)

7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?
☒Yes ☐No

7e. Is stream or other open water sheltered or exposed?
☒Sheltered – adjacent open water with width < 2500 feet and no regular boat traffic.
☐Exposed – adjacent open water with width ≥ 2500 feet or regular boat traffic.

8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)

Check a box in each column for riverine wetlands only. Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

WT	WC	
☐A	☒A	≥ 100 feet
☐B	☐B	From 80 to < 100 feet
☐C	☐C	From 50 to < 80 feet
☐D	☐D	From 40 to < 50 feet
☐E	☐E	From 30 to < 40 feet
☐F	☐F	From 15 to < 30 feet
☐G	☐G	From 5 to < 15 feet
☐H	☐H	< 5 feet

9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)

Answer for assessment area dominant landform.

☐A Evidence of short-duration inundation (< 7 consecutive days)
☒B Evidence of saturation, without evidence of inundation
☐C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)

Consider recent deposition only (no plant growth since deposition).

☒A Sediment deposition is not excessive, but at approximately natural levels.
☐B Sediment deposition is excessive, but not overwhelming the wetland.
☐C Sediment deposition is excessive and is overwhelming the wetland.

11. Wetland Size – wetland type/wetland complex condition metric

Check a box in each column. Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)	
☐A	☐A	☐A	≥ 500 acres
☐B	☐B	☐B	From 100 to < 500 acres
☐C	☐C	☐C	From 50 to < 100 acres
☐D	☐D	☐D	From 25 to < 50 acres
☐E	☐E	☐E	From 10 to < 25 acres
☐F	☐F	☐F	From 5 to < 10 acres
☐G	☐G	☐G	From 1 to < 5 acres
☐H	☐H	☐H	From 0.5 to < 1 acre
☒I	☒I	☒I	From 0.1 to < 0.5 acre
☐J	☐J	☐J	From 0.01 to < 0.1 acre
☐K	☐K	☐K	< 0.01 acre or assessment area is clear-cut

12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)

☐A Pocosin is the full extent (≥ 90%) of its natural landscape size.
☐B Pocosin type is < 90% of the full extent of its natural landscape size.

13. Connectivity to Other Natural Areas – landscape condition metric

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
☐A	☐A	≥ 500 acres
☐B	☐B	From 100 to < 500 acres
☐C	☐C	From 50 to < 100 acres
☐D	☐D	From 10 to < 50 acres
☐E	☒E	< 10 acres
☐F	☐F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only**.

☐Yes ☐No Wetland type has a surface hydrology connection to open waters/stream or tidal wetlands.

14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

☐A 0
☒B 1 to 4
☐C 5 to 8

15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)

☒A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
☐B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
☐C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)

☐A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
☐B Vegetation diversity is low or has > 10% to 50% cover of exotics.
☐C Vegetation is dominated by exotic species (> 50 % cover of exotics).

17. Vegetative Structure – assessment area/wetland type condition metric

17a. Is vegetation present?
☒Yes ☐No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.
☐A ≥ 25% coverage of vegetation
☐B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum**. Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	☒A	☒A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	☐B	☐B	Canopy present, but opened more than natural gaps
	☐C	☐C	Canopy sparse or absent
Mid-Story	☐A	☐A	Dense mid-story/sapling layer
	☒B	☒B	Moderate density mid-story/sapling layer
	☐C	☐C	Mid-story/sapling layer sparse or absent
Shrub	☐A	☐A	Dense shrub layer
	☒B	☒B	Moderate density shrub layer
	☐C	☐C	Shrub layer sparse or absent
Herb	☒A	☒A	Dense herb layer
	☐B	☐B	Moderate density herb layer
	☐C	☐C	Herb layer sparse or absent

18. Snags – wetland type condition metric (skip for all marshes)

☒A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).
☐B Not A

19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)

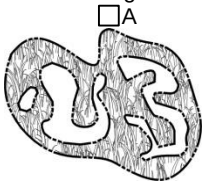
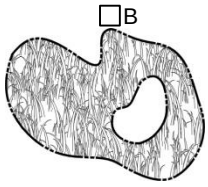
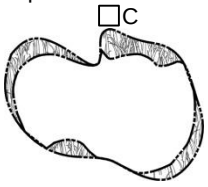
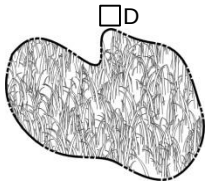
☒A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.
☐B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.
☐C Majority of canopy trees are < 6 inches DBH or no trees.

20. Large Woody Debris – wetland type condition metric (skip for all marshes)

Include both natural debris and man-placed natural debris.
☒A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).
☐B Not A

21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.

☐A 
☐B 
☐C 
☐D 

22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.
☒A Overbank and overland flow are not severely altered in the assessment area.
☐B Overbank flow is severely altered in the assessment area.
☐C Overland flow is severely altered in the assessment area.
☐D Both overbank and overland flow are severely altered in the assessment area.

Notes

NC WAM Wetland Rating Sheet
Accompanies User Manual Version 5.0

Wetland Site Name	WC	Date of Assessment	10-27-2020
Wetland Type	Bottomland Hardwood Forest	Assessor Name/Organization	Martin/Bain- RK&K

Notes on Field Assessment Form (Y/N)	NO
Presence of regulatory considerations (Y/N)	YES
Wetland is intensively managed (Y/N)	NO
Assessment area is located within 50 feet of a natural tributary or other open water (Y/N)	YES
Assessment area is substantially altered by beaver (Y/N)	NO
Assessment area experiences overbank flooding during normal rainfall conditions (Y/N)	YES
Assessment area is on a coastal island (Y/N)	NO

Sub-function Rating Summary

Function	Sub-function	Metrics	Rating
Hydrology	Surface Storage and Retention	Condition	**HIGH**
	Sub-surface Storage and Retention	Condition	**LOW**
Water Quality	Pathogen Change	Condition	**HIGH**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Particulate Change	Condition	**HIGH**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Soluble Change	Condition	**MEDIUM**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Physical Change	Condition	**MEDIUM**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Pollution Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
Habitat	Physical Structure	Condition	**HIGH**
	Landscape Patch Structure	Condition	**LOW**
	Vegetation Composition	Condition	**HIGH**

Function Rating Summary

Function	Metrics	Rating
Hydrology	Condition	**HIGH**
Water Quality	Condition	**HIGH**
	Condition/Opportunity	**HIGH**
	Opportunity Presence (Y/N)	**YES**
Habitat	Condition	**HIGH**

Overall Wetland Rating **HIGH**

NC WAM FIELD ASSESSMENT FORM
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USACE AID #		NCDWR#	
Project Name	B-6051	Date of Evaluation	10-27-2020
Applicant/Owner Name	NCDOT, Division 12	Wetland Site Name	WD
Wetland Type	Bottomland Hardwood Forest	Assessor Name/Organization	Martin/Bain- RK&K
Level III Ecoregion	Piedmont	Nearest Named Water Body	Catawba River
River Basin	Catawba	USGS 8-Digit Catalogue Unit	03050101
County	Gaston	NCDWR Region	Mooresville
☐ Yes ☒ No	Precipitation within 48 hrs?	Latitude/Longitude (deci-degrees)	35.2452995, -81.0142873

Evidence of stressors affecting the assessment area (may not be within the assessment area)

Please circle and/or make note on the last page if evidence of stressors is apparent. Consider departure from reference, if appropriate, in recent past (for instance, within 10 years). Noteworthy stressors include, but are not limited to the following.

- Hydrological modifications (examples: ditches, dams, beaver dams, dikes, berms, ponds, etc.)
- Surface and sub-surface discharges into the wetland (examples: discharges containing obvious pollutants, presence of nearby septic tanks, underground storage tanks (USTs), hog lagoons, etc.)
- Signs of vegetation stress (examples: vegetation mortality, insect damage, disease, storm damage, salt intrusion, etc.)
- Habitat/plant community alteration (examples: mowing, clear-cutting, exotics, etc.)

Is the assessment area intensively managed? ☐ Yes ☒ No

Regulatory Considerations - Were regulatory considerations evaluated? ☒Yes ☐No If Yes, check all that apply to the assessment area.

☐ Anadromous fish
☐ Federally protected species or State endangered or threatened species
☐ NCDWR riparian buffer rule in effect
☐ Abuts a Primary Nursery Area (PNA)
☒ Publicly owned property
☐ N.C. Division of Coastal Management Area of Environmental Concern (AEC) (including buffer)
☐ Abuts a stream with a NCDWQ classification of SA or supplemental classifications of HQW, ORW, or Trout
☐ Designated NCNHP reference community
☐ Abuts a 303(d)-listed stream or a tributary to a 303(d)-listed stream

What type of natural stream is associated with the wetland, if any? (check all that apply)

☐ Blackwater
☒ Brownwater
☐ Tidal (if tidal, check one of the following boxes) ☐ Lunar ☐ Wind ☐ Both

Is the assessment area on a coastal island? ☐ Yes ☒ No

Is the assessment area's surface water storage capacity or duration substantially altered by beaver? ☐ Yes ☒ No

Does the assessment area experience overbank flooding during normal rainfall conditions? ☒ Yes ☐ No

1. Ground Surface Condition/Vegetation Condition – assessment area condition metric

Check a box in each column. Consider alteration to the ground surface (GS) in the assessment area and vegetation structure (VS) in the assessment area. Compare to reference wetland if applicable (see User Manual). If a reference is not applicable, then rate the assessment area based on evidence an effect.

GS	VS	
☒A	☒A	Not severely altered
☐B	☐B	Severely altered over a majority of the assessment area (ground surface alteration examples: vehicle tracks, excessive sedimentation, fire-plow lanes, skidder tracks, bedding, fill, soil compaction, obvious pollutants) (vegetation structure alteration examples: mechanical disturbance, herbicides, salt intrusion [where appropriate], exotic species, grazing, less diversity [if appropriate], hydrologic alteration)

2. Surface and Sub-Surface Storage Capacity and Duration – assessment area condition metric

Check a box in each column. Consider surface storage capacity and duration (Surf) and sub-surface storage capacity and duration (Sub). Consider both increase and decrease in hydrology. A ditch ≤ 1 foot deep is considered to affect surface water only, while a ditch > 1 foot deep is expected to affect both surface and sub-surface water. Consider tidal flooding regime, if applicable.

Surf	Sub	
☒A	☒A	Water storage capacity and duration are not altered.
☐B	☐B	Water storage capacity or duration are altered, but not substantially (typically, not sufficient to change vegetation).
☐C	☐C	Water storage capacity or duration are substantially altered (typically, alteration sufficient to result in vegetation change) (examples: draining, flooding, soil compaction, filling, excessive sedimentation, underground utility lines).

3. Water Storage/Surface Relief – assessment area/wetland type condition metric (skip for all marshes)

Check a box in each column. Select the appropriate storage for the assessment area (AA) and the wetland type (WT).

	AA	WT	
3a.	☐A	☐A	Majority of wetland with depressions able to pond water > 1 deep
	☐B	☐B	Majority of wetland with depressions able to pond water 6 inches to 1 foot deep
	☐C	☐C	Majority of wetland with depressions able to pond water 3 to 6 inches deep
	☒D	☒D	Depressions able to pond water < 3 inches deep

3b. ☐A Evidence that maximum depth of inundation is greater than 2 feet
☐B Evidence that maximum depth of inundation is between 1 and 2 feet
☒C Evidence that maximum depth of inundation is less than 1 foot

4. Soil Texture/Structure – assessment area condition metric (skip for all marshes)

Check a box from each of the three soil property groups below. Dig soil profile in the dominant assessment area landscape feature. Make soil observations within the top 12 inches. Use most recent National Technical Committee for Hydric Soils guidance for regional indicators.

4a.
- ☐A Sandy soil
- ☒B Loamy or clayey soils exhibiting redoximorphic features (concentrations, depletions, or rhizospheres)
- ☐C Loamy or clayey soils not exhibiting redoximorphic features
- ☐D Loamy or clayey gleyed soil
- ☐E Histosol or histic epipedon

4b.
- ☐A Soil ribbon < 1 inch
- ☒B Soil ribbon ≥ 1 inch

4c.
- ☒A No peat or muck presence
- ☐B A peat or muck presence

5. Discharge into Wetland – opportunity metric

Check a box in each column. Consider surface pollutants or discharges (Surf) and sub-surface pollutants or discharges (Sub). Examples of sub-surface discharges include presence of nearby septic tank, underground storage tank (UST), etc.

Surf	Sub	
☒A	☒A	Little or no evidence of pollutants or discharges entering the assessment area
☐B	☐B	Noticeable evidence of pollutants or discharges entering the wetland and stressing, but not overwhelming the treatment capacity of the assessment area
☐C	☐C	Noticeable evidence of pollutants or discharges (pathogen, particulate, or soluble) entering the assessment area and potentially overwhelming the treatment capacity of the wetland (water discoloration, dead vegetation, excessive sedimentation, odor)

6. Land Use – opportunity metric (skip for non-riparian wetlands)

Check all that apply (at least one box in each column). Evaluation involves a GIS effort with field adjustment. Consider sources draining to assessment area within entire upstream watershed (WS), within 5 miles and within the watershed draining to the assessment area (5M), and within 2 miles and within the watershed draining to the assessment area (2M).

WS	5M	2M	
☒A	☒A	☒A	≥ 10% impervious surfaces
☐B	☐B	☐B	Confined animal operations (or other local, concentrated source of pollutants
☐C	☐C	☐C	≥ 20% coverage of pasture
☐D	☐D	☐D	≥ 20% coverage of agricultural land (regularly plowed land)
☒E	☒E	☒E	≥ 20% coverage of maintained grass/herb
☐F	☐F	☐F	≥ 20% coverage of clear-cut land
☐G	☐G	☐G	Little or no opportunity to improve water quality. Lack of opportunity may result from little or no disturbance in the watershed or hydrologic alterations that prevent drainage and/or overbank flow from affecting the assessment area.

7. Wetland Acting as Vegetated Buffer – assessment area/wetland complex condition metric (skip for non-riparian wetlands)

7a. Is assessment area within 50 feet of a tributary or other open water?
☒Yes ☐No If Yes, continue to 7b. If No, skip to Metric 8.
Wetland buffer need only be present on one side of the water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.

7b. How much of the first 50 feet from the bank is wetland? (Wetland buffer need only be present on one side of the .water body. Make buffer judgment based on the average width of wetland. Record a note if a portion of the buffer has been removed or disturbed.)
- ☐A ≥ 50 feet
- ☐B From 30 to < 50 feet
- ☐C From 15 to < 30 feet
- ☒D From 5 to < 15 feet
- ☐E < 5 feet or buffer bypassed by ditches

7c. Tributary width. If the tributary is anastomosed, combine widths of channels/braids for a total width.
☒≤ 15-feet wide ☐> 15-feet wide ☐ Other open water (no tributary present)

7d. Do roots of assessment area vegetation extend into the bank of the tributary/open water?
☒Yes ☐No

7e. Is stream or other open water sheltered or exposed?
☒Sheltered – adjacent open water with width < 2500 feet and no regular boat traffic.
☐Exposed – adjacent open water with width ≥ 2500 feet or regular boat traffic.

8. Wetland Width at the Assessment Area – wetland type/wetland complex condition metric (evaluate WT for all marshes and Estuarine Woody Wetland only; evaluate WC for Bottomland Hardwood Forest, Headwater Forest, and Riverine Swamp Forest only)

Check a box in each column for riverine wetlands only. Select the average width for the wetland type at the assessment area (WT) and the wetland complex at the assessment area (WC). See User Manual for WT and WC boundaries.

WT	WC	
☐A	☒A	≥ 100 feet
☐B	☐B	From 80 to < 100 feet
☐C	☐C	From 50 to < 80 feet
☐D	☐D	From 40 to < 50 feet
☐E	☐E	From 30 to < 40 feet
☐F	☐F	From 15 to < 30 feet
☐G	☐G	From 5 to < 15 feet
☐H	☐H	< 5 feet

9. Inundation Duration – assessment area condition metric (skip for non-riparian wetlands)

Answer for assessment area dominant landform.

☐A Evidence of short-duration inundation (< 7 consecutive days)
☒B Evidence of saturation, without evidence of inundation
☐C Evidence of long-duration inundation or very long-duration inundation (7 to 30 consecutive days or more)

10. Indicators of Deposition – assessment area condition metric (skip for non-riparian wetlands and all marshes)

Consider recent deposition only (no plant growth since deposition).

☒A Sediment deposition is not excessive, but at approximately natural levels.
☐B Sediment deposition is excessive, but not overwhelming the wetland.
☐C Sediment deposition is excessive and is overwhelming the wetland.

11. Wetland Size – wetland type/wetland complex condition metric

Check a box in each column. Involves a GIS effort with field adjustment. This metric evaluates three aspects of the wetland area: the size of the wetland type (WT), the size of the wetland complex (WC), and the size of the forested wetland (FW) (if applicable, see User Manual). See the User Manual for boundaries of these evaluation areas. If assessment area is clear-cut, select "K" for the FW column.

WT	WC	FW (if applicable)	
☐A	☐A	☐A	≥ 500 acres
☐B	☐B	☐B	From 100 to < 500 acres
☐C	☐C	☐C	From 50 to < 100 acres
☐D	☐D	☐D	From 25 to < 50 acres
☐E	☐E	☐E	From 10 to < 25 acres
☐F	☐F	☐F	From 5 to < 10 acres
☐G	☐G	☐G	From 1 to < 5 acres
☐H	☐H	☐H	From 0.5 to < 1 acre
☒I	☒I	☒I	From 0.1 to < 0.5 acre
☐J	☐J	☐J	From 0.01 to < 0.1 acre
☐K	☐K	☐K	< 0.01 acre or assessment area is clear-cut

12. Wetland Intactness – wetland type condition metric (evaluate for Pocosins only)

☐A Pocosin is the full extent (≥ 90%) of its natural landscape size.
☐B Pocosin type is < 90% of the full extent of its natural landscape size.

13. Connectivity to Other Natural Areas – landscape condition metric

13a. **Check appropriate box(es) (a box may be checked in each column).** Involves a GIS effort with field adjustment. This metric evaluates whether the wetland is well connected (Well) and/or loosely connected (Loosely) to the landscape patch, the contiguous naturally vegetated area and open water (if appropriate). Boundaries are formed by four-lane roads, regularly maintained utility line corridors the width of a four-lane road or wider, urban landscapes, maintained fields (pasture and agriculture), or open water > 300 feet wide.

Well	Loosely	
☐A	☐A	≥ 500 acres
☐B	☐B	From 100 to < 500 acres
☐C	☐C	From 50 to < 100 acres
☐D	☐D	From 10 to < 50 acres
☐E	☒E	< 10 acres
☐F	☐F	Wetland type has a poor or no connection to other natural habitats

13b. **Evaluate for marshes only**.

☐Yes ☐No Wetland type has a surface hydrology connection to open waters/stream or tidal wetlands.

14. Edge Effect – wetland type condition metric (skip for all marshes and Estuarine Woody Wetland)

May involve a GIS effort with field adjustment. Estimate distance from wetland type boundary to artificial edges. Artificial edges include non-forested areas ≥ 40 feet wide such as fields, development, roads, regularly maintained utility line corridors, and clear-cuts. Consider the eight main points of the compass. Artificial edge occurs within 150 feet in how many directions? If the assessment area is clear cut, select option "C."

☐A 0
☒B 1 to 4
☐C 5 to 8

15. Vegetative Composition – assessment area condition metric (skip for all marshes and Pine Flat)

☒A Vegetation is close to reference condition in species present and their proportions. Lower strata composed of appropriate species, with exotic plants absent or sparse within the assessment area.
☐B Vegetation is different from reference condition in species diversity or proportions, but still largely composed of native species characteristic of the wetland type. This may include communities of weedy native species that develop after clearcutting or clearing. It also includes communities with exotics present, but not dominant, over a large portion of the expected strata.
☐C Vegetation severely altered from reference in composition, or expected species are unnaturally absent (planted stands of non-characteristic species or at least one stratum inappropriately composed of a single species), or exotic species are dominant in at least one stratum.

16. Vegetative Diversity – assessment area condition metric (evaluate for Non-tidal Freshwater Marsh only)

☐A Vegetation diversity is high and is composed primarily of native species (< 10% cover of exotics).
☐B Vegetation diversity is low or has > 10% to 50% cover of exotics.
☐C Vegetation is dominated by exotic species (> 50 % cover of exotics).

17. Vegetative Structure – assessment area/wetland type condition metric

17a. Is vegetation present?
☒Yes ☐No If Yes, continue to 17b. If No, skip to Metric 18.

17b. Evaluate percent coverage of assessment area vegetation **for all marshes only**. Skip to 17c for non-marsh wetlands.
☐A ≥ 25% coverage of vegetation
☐B < 25% coverage of vegetation

17c. **Check a box in each column for each stratum**. Evaluate this portion of the metric **for non-marsh wetlands**. Consider structure in airspace above the assessment area (AA) and the wetland type (WT) separately.

	AA	WT	
Canopy	☒A	☒A	Canopy closed, or nearly closed, with natural gaps associated with natural processes
	☐B	☐B	Canopy present, but opened more than natural gaps
	☐C	☐C	Canopy sparse or absent
Mid-Story	☐A	☐A	Dense mid-story/sapling layer
	☒B	☒B	Moderate density mid-story/sapling layer
	☐C	☐C	Mid-story/sapling layer sparse or absent
Shrub	☐A	☐A	Dense shrub layer
	☒B	☒B	Moderate density shrub layer
	☐C	☐C	Shrub layer sparse or absent
Herb	☒A	☒A	Dense herb layer
	☐B	☐B	Moderate density herb layer
	☐C	☐C	Herb layer sparse or absent

18. Snags – wetland type condition metric (skip for all marshes)

☒A Large snags (more than one) are visible (> 12 inches DBH, or large relative to species present and landscape stability).
☐B Not A

19. Diameter Class Distribution – wetland type condition metric (skip for all marshes)

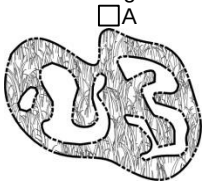
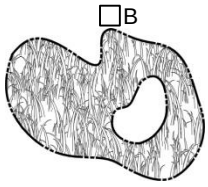
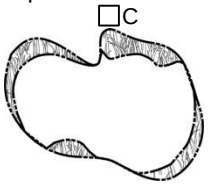
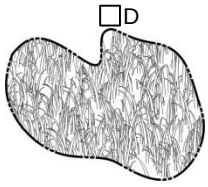
☒A Majority of canopy trees have stems > 6 inches in diameter at breast height (DBH); many large trees (> 12 inches DBH) are present.
☐B Majority of canopy trees have stems between 6 and 12 inches DBH, few are > 12 inch DBH.
☐C Majority of canopy trees are < 6 inches DBH or no trees.

20. Large Woody Debris – wetland type condition metric (skip for all marshes)

Include both natural debris and man-placed natural debris.
☒A Large logs (more than one) are visible (> 12 inches in diameter, or large relative to species present and landscape stability).
☐B Not A

21. Vegetation/Open Water Dispersion – wetland type/open water condition metric (evaluate for Non-Tidal Freshwater Marsh only)

Select the figure that best describes the amount of interspersion between vegetation and open water in the growing season. Patterned areas indicate vegetated areas, while solid white areas indicate open water.

☐A 
☐B 
☐C 
☐D 

22. Hydrologic Connectivity – assessment area condition metric (evaluate for riparian wetlands and Salt/Brackish Marsh only)

Examples of activities that may severely alter hydrologic connectivity include intensive ditching, fill, sedimentation, channelization, diversion, man-made berms, beaver dams, and stream incision. Documentation required if evaluated as B, C, or D.
☒A Overbank and overland flow are not severely altered in the assessment area.
☐B Overbank flow is severely altered in the assessment area.
☐C Overland flow is severely altered in the assessment area.
☐D Both overbank and overland flow are severely altered in the assessment area.

Notes

NC WAM Wetland Rating Sheet
Accompanies User Manual Version 5.0

Wetland Site Name	WD	Date of Assessment	10-27-2020
Wetland Type	Bottomland Hardwood Forest	Assessor Name/Organization	Martin/Bain- RK&K

Notes on Field Assessment Form (Y/N)	NO
Presence of regulatory considerations (Y/N)	YES
Wetland is intensively managed (Y/N)	NO
Assessment area is located within 50 feet of a natural tributary or other open water (Y/N)	YES
Assessment area is substantially altered by beaver (Y/N)	NO
Assessment area experiences overbank flooding during normal rainfall conditions (Y/N)	YES
Assessment area is on a coastal island (Y/N)	NO

Sub-function Rating Summary

Function	Sub-function	Metrics	Rating
Hydrology	Surface Storage and Retention	Condition	**HIGH**
	Sub-surface Storage and Retention	Condition	**LOW**
Water Quality	Pathogen Change	Condition	**HIGH**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Particulate Change	Condition	**HIGH**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Soluble Change	Condition	**MEDIUM**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Physical Change	Condition	**MEDIUM**
		Condition/Opportunity	**HIGH**
		Opportunity Presence (Y/N)	**YES**
	Pollution Change	Condition	NA
		Condition/Opportunity	NA
		Opportunity Presence (Y/N)	NA
Habitat	Physical Structure	Condition	**HIGH**
	Landscape Patch Structure	Condition	**LOW**
	Vegetation Composition	Condition	**HIGH**

Function Rating Summary

Function	Metrics	Rating
Hydrology	Condition	**HIGH**
Water Quality	Condition	**HIGH**
	Condition/Opportunity	**HIGH**
	Opportunity Presence (Y/N)	**YES**
Habitat	Condition	**HIGH**

Overall Wetland Rating **HIGH**

U.S. Army Corps of Engineers (USACE)

REQUEST FOR JURISDICTIONAL DETERMINATION (JD)

For use of this form, see Sec 404 CWA, Sec 10 RHA, Sec 103 MPRSA; the proponent agency is CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires 2024-04-30

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

Principal Purpose The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the review area that are or that may be subject to federal jurisdiction under the regulatory authorities referenced above.

Routine Uses This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice or FOIA request as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in any approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.

Disclosure Submission of requested information is voluntary, however, if the information is not provided there may be some delay in processing your request. Failure to provide this information will not result in an adverse action.
System of Record Notice (SORN): The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website:
http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. To (*District Name*): Wilmington

2. I am requesting a JD on property located at (*Street Address*): US 29/74 (Wilkinson Boulevard) over the Catawba River

City/Township/Parish: Belmont County: Gaston, Mecklenburg State: North Carolina

Acreage of Parcel/Review Area for JD: Approximately 16.8 ac

Section: Township: Range:

Latitude (*decimal degrees*): 35.245750 ° Longitude (*decimal degrees*): -81.009059 °

(*For linear projects, please include the center point of the proposed alignment.*)

3. Please attach a survey/plat map and vicinity map identifying location and review area for the JD.

4. ☐ I currently own this property. ☐ I plan to purchase this property.

☐ I am an agent/consultant acting on behalf of the requester.

☒ Other (*please explain*):

NCDOT public transportation project B-6051

5. Reason for request: (*check as many as applicable*)

- [ ] I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
- [ ] I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- [ ] I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
- [x] I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
- [x] I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
- [ ] A Corps JD is required in order to obtain my local/state authorization.
- [ ] I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
- [ ] I believe that the site may be comprised entirely of dry land.
- [ ] Other:

6. Type of determination being requested:

- [ ] I am requesting an approved JD.
- [x] I am requesting a preliminary JD.
- [ ] I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
- [ ] I am unclear as to which JD I would like to request and require additional information to inform my decision.

7. Typed or Printed Name: Bill Barrett

Daytime Phone No.: 919-302-1908

Company Name: NCDOT

Email Address: wabarrett@ncdot.gov

Address: Environmental Analysis Unit
1598 Mail Service Center
Raleigh, NC 27699-1598

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

Signature:	Date:

U.S. Army Corps of Engineers (USACE)

PRELIMINARY JURISDICTIONAL DETERMINATION (PJD)

For use of this form, see Sec 404 CWA, Sec 10 RHA, Sec 103 MPRSA; the proponent agency is CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires 2024-04-30

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

Principal Purpose The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the review area that may be subject to federal jurisdiction under the regulatory authorities referenced above.

Routine Uses This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice or FOIA request as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in any resulting jurisdictional determination (JD), which may be made available to the public on the District's website and/or on the Headquarters USACE website.

Disclosure Submission of requested information is voluntary; however, if information is not provided, the request for a JD cannot be evaluated nor can a PJD be issued.

The Agency Disclosure Notice (ADN)

The public reporting burden for this collection of information, 0710-0024, is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

SECTION I - BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: 2024-05-18

B. NAME AND ADDRESS OF PERSON REQUESTING PJD:
Bill Barrett
NCDOT-EAU
1598 Mail Service Center
Raleigh, NC 27699-1598

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION AND BACKGROUND INFORMATION:
(*USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES*)

State: North Carolina County/Parish/Borough: Gaston, Mecklenburg City: Belmont

Center coordinates of site (*lat/long in degree decimal format*): Latitude: 35.244724 ° Longitude: -81.00698 °

Universal Transverse Mercator:

Name of nearest waterbody: Catawba River

E. REVIEW PERFORMED FOR SITE EVALUATION (*CHECK ALL THAT APPLY*):

☐ Office (*Desk*) Determination. Date:

☐ Field Determination

Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

	Site Number	Latitude (*decimal degrees*)	Longitude (*decimal degrees*)	Estimated amount of aquatic resource in review area (*acreage and linear feet, if applicable*)	Type of aquatic resource (*i.e., wetland vs. non-wetland waters*)	Geographic authority to which the aquatic resource "may be" subject (*i.e., Section 404 or Section 10/404*)
	See attached list					

	Site Number	Latitude (*decimal degrees*)	Longitude (*decimal degrees*)	Estimated amount of aquatic resource in review area (*acreage and linear feet, if applicable*)	Type of aquatic resource (*i.e., wetland vs. non-wetland waters*)	Geographic authority to which the aquatic resource "may be" subject (*i.e., Section 404 or Section 10/404*)

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD or no JD whatsoever, which do not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the USACE has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD or reliance on no JD whatsoever; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of USACE permit authorization based on a PJD or no JD whatsoever constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the USACE will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

F. SUPPORTING DATA. Data reviewed for PJD (*check all that apply)*

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:

Map: Vicinity, Topographic, NRCS Soil Survey, Aerial

☒ Data sheets prepared/submitted by or on behalf of the PJD requestor.

☐ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report.

Rationale:

☐ Data sheets prepared by the USACE:

☐ Corps navigable waters' study:

☐ U.S. Geological Survey Hydrologic Atlas:

☐ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.

☒ U.S. Geological Survey map(s). Cite scale & quad name:

Belmont, NC 1:24000

☒ USDA Natural Resources Conservation Service Soil Survey.

Citation: _____

☐ National Wetlands Inventory map(s).

Cite Name: _____

☐ State/Local Wetland Inventory map(s):

☐ FEMA/FIRM maps:

☐ 100-year Floodplain Elevation is: _____. (National Geodectic Vertical Datum of 1929)

☒ Photographs: ☒ Aerial (*Name & Date*): _____

or ☐ Other (*Name & Date*): _____

☐ Previous determination(s). File no. and date of response letter:

☐ Other information (*please specify*):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the USACE and should not be relied upon for later jurisdictional determinations.

Name of Regulatory Staff Member Completing PJD	Date	Signature of Regulatory Staff Member Completing PJD
Name of Person Requesting PJD	Date	Signatureof Person Requesting PJD *(REQUIRED, unless obtaining the Signature is Impracticable*

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
SC	NORTH CAROLINA	R3	DEPRESS	Linear	459	FOOT	DELINEATE	35.24598178	-81.01419261	Catawba
SD	NORTH CAROLINA	R3	DEPRESS	Linear	110	FOOT	DELINEATE	35.24570970	-81.01436352	Catawba
WC	NORTH CAROLINA	PFO1	DEPRESS	Area	0.27	ACRE	DELINEATE	35.24550320	-81.01376030	Catawba
WD	NORTH CAROLINA	PFO1	DEPRESS	Area	0.19	ACRE	DELINEATE	35.24529950	-81.01428730	Catawba
WE	NORTH CAROLINA	PFO	DEPRESS	Area	0.1	ACRE	DELINEATE	35.24618230	-81.00546570	Catawba
CATAWBA RIVER	NORTH CAROLINA	R4	RIVERINE	Area	0.21	ACRE	DELINEATE	35.33035700	-81.13520000	Catawba

Draft Boater Safety Plan

US 29/74/WILKINSON BOULEVARD IMPROVEMENTS
STIP PROJECT NO. B-6051

GASTON AND MECKLENBURG COUNTIES

NCDOT DIVISIONS 10 AND 12

RIVER SAFETY PLAN

FOR THE CONSTRUCTION OF GASTON COUNTY NO. BRIDGE 91

OVER THE CATAWBA RIVER (LAKE WYLIE)

The proposed project (B-6051) will replace the existing Bridge No. 91 carrying Wilkinson Boulevard/US 74/US 29 over the Catawba River (Lake Wylie) with a new, wider bridge on the existing alignment. Once completed, the new bridge will increase navigational vertical clearance for boating traffic on Lake Wylie, but there will be temporary impacts during construction activities to recreational boating on Lake Wylie. To ensure the safe passage of river users during the construction and demolition of Bridge No. 91 over the Catawba River (Lake Wylie), NCDOT has developed this River Safety Plan (RSP).

Boater Notifications

Recreational boaters will be notified of construction activities via placards at public access boat ramps on Lake Wylie. At each boat launch, placards shall be displayed at the loading areas informing boaters of the construction impacts to waterway access under the NCDOT Gaston Bridge 91. The placards will clearly communicate what the boater should expect in the vicinity of the subject bridges and appropriate safety precautions to be taken through text and graphics. The placards will be displayed a minimum of two weeks prior to the installation of any floating barricade system and the associated work to be performed on the structure. The placards shall be posted at each of the following locations:

- Kevin Loftin Riverfront Park, 1400 E Catawba St, Belmont, NC 28012 (Coordinates: 35.24461,-81.01345)
- Mt. Holly Boat Landing, 724 Elm Avenue, Mt. Holly, NC 28120 (Coordinates 35.29849, -1.00480)
- Southpoint Boat Ramp, Boat Launch Road, Belmont, NC 28012 (Coordinates 35.15627, -81.01220

Prior to installing placards, the contractor shall coordinate with the boat ramp access owner and the Lake Wylie Marine Commission.

Contractor Requirements

A public access boat ramp is located in the southwest quadrant of the project and owned and operated by the City of Belmont as part of Kevin Loftin Riverfront Park. Because of its convenient public access from Wilkinson Boulevard, recreational boating traffic associated with this public access boat ramp is expected to be moderate to high at various times of the year. The contractor will be required to maintain boating traffic through the construction zone at all times during construction. Boating channels will have to shift multiple times to allow for the different phases of construction and/or demolition.

Construction that impacts the open waterway will occur in a way to preserve a safe, open recreational boating channel through the project construction area.

A system of buoys and marine safety lights will be employed to protect recreational boater traffic from the work area construction activities. At all times, a safe open recreational boating channel will be maintained, and the vertical clearance will not be reduced below those present in the existing conditions. Notification placards describing construction activities as well as a more detailed *Boater Safety Plan* will be placed, in duplicate, at three public boat access ramps mentioned earlier on Lake Wylie.

Navigational Buoys

There are currently channel markers and a no wake buoy up and down stream of the existing bridge placed by North Carolina Wildlife Resources Commission (NCWRC).

The safe boating channel will need to shift several times over the course of the project. Based on coordination with the NCWRC and Lake Wylie Marine Commission the contractor will be responsible for relocating the barricade and buoys throughout construction. Upon completion of construction, all buoys and barricades will be removed by the contractor.

Marine Safety Lights

LED marine safety lights will be placed atop “Slow No Wake” buoys and “Keep Out” buoys and Boat Detour Signs. The lights will be placed a minimum of two feet above the water line to provide a visual barrier both day and night. These marine lights help protect boaters during the early morning and late afternoon/evening hours or when cloud cover reduces visibility for boaters. The lighted buoys will be put into place prior to the commencement of any work on the structure and shifted periodically, as needed to protect boaters from exposure to the construction activities. The contractor will be responsible for maintaining these lights at all times during construction, replacing them as necessary.

CE

Type III Categorical Exclusion Action Classification Form

STIP Project No.	**B-6051 & U-6143**
WBS Element	48708.1.1 & 48326.1.1
Federal Project No.	0029074

A. Project Description:
Replace Bridge 91 over Catawba River (Lake Wylie) on US 29/74 (Wilkinson Boulevard) on the border of Gaston and Mecklenburg Counties (B-6051) and improve intersection (U-6143) of US 74 (Wilkinson Boulevard) and NC 7 (Catawba Street) in Belmont, NC.

B. Description of Need and Purpose:
Needs:

U-6143 – Currently the intersection of US 74 and NC 7 is operating at Level of Service F for A.M. right turn movements from northbound NC 7 to eastbound US 74 and also, for P.M. left turn movements from westbound US 74 to southbound NC 7. During the evening peak hour, traffic currently backs up onto the bridge from the intersection.

B-6051 - Gaston County Bridge No. 91 carries US 74/US 29 over the Catawba River between Gaston and Mecklenburg Counties. US 74 is the emergency route during closures on section of I-85 north of US 74. There are six lanes just east of the bridge and five lanes just west of the bridge while the bridge only carries four lanes creating a bottleneck when I-85 is detoured to US 74. The structure is rated as functionally obsolete with a deck geometry rating of 2 out of 9.

Additionally, there is only 8’ of navigational clearance between full pond elevation and the low steel of the bridge. Based on coordination with Charlotte Fire Department, emergency response boats require 16’ of clearance full pond elevation. Duke Energy requires 12’ of clearance above full pond elevation over the middle third of the bridge.

Purpose:
B-6051/U-6143 – The purpose of this project is to address geometric deficiencies of the bridge and its approaches on US 74, the emergency detour needs of I-85, the navigational clearance requirements over Lake Wylie and to improve the intersection of US 74 and NC 7 to address deficient turning movements.

C. Categorical Exclusion Action Classification:

Type III

D. Proposed Improvements:

Replace Bridge No. 91 carrying US 74 to build a new bridge with six 12’ lanes, a 4’ concrete median, 5’ offsets between the outside travel lanes and concrete barriers separating the travel lanes from 10’ wide multi use paths on either side of the bridge. The approaches will connect to the existing six lane geometry on the western terminus (just west of NC 7) and to the existing five lane geometry on the eastern terminus (just east of ISWA Nature Preserve entrance). Typical sections illustrating the details of the new bridge, Wilkinson Blvd. and NC 7 are included in Figure 2 (Public Meeting Map).

The middle third of the bridge will be 12’ above full pond elevation and 17’ above full pond elevation over the navigational channel.

Four lanes of traffic will be maintained on US 74 during peak hours throughout project construction. The first phase would maintain 4 lanes of traffic on the existing Bridge 91 while constructing approximately half of the new bridge (enough to temporarily allow four lanes of traffic) to the north of Bridge 91. Traffic will then be shifted to the new structure while demolishing the old bridge. The new bridge will then be completed by building the southern half for a total width of 109.5 feet.

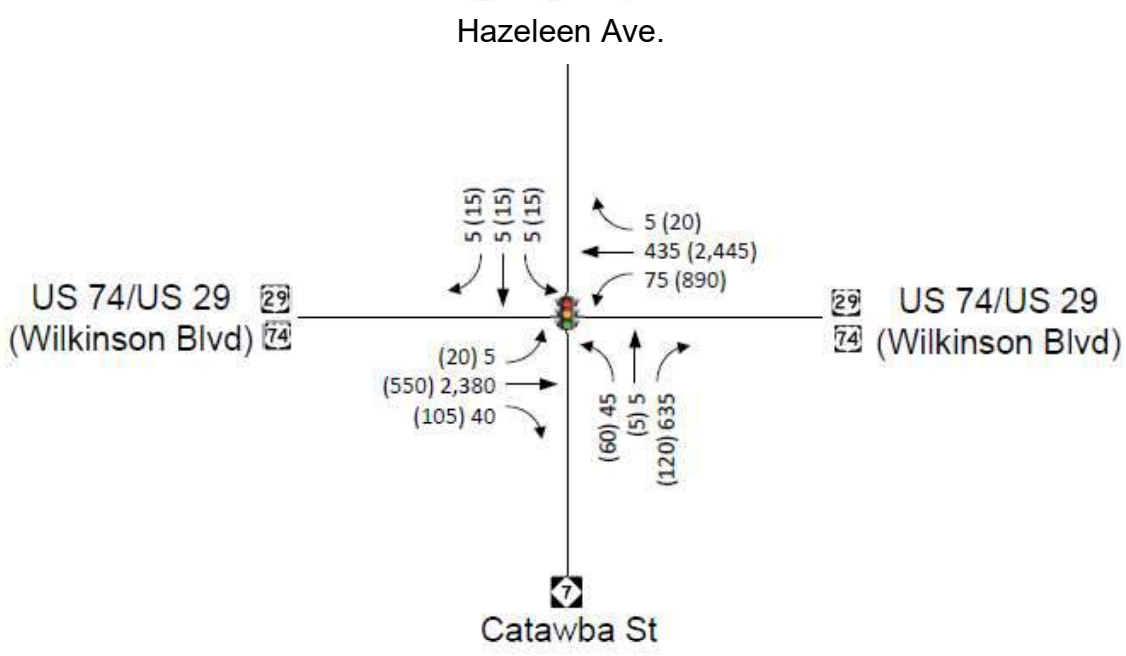
The intersection of US 74 and NC 7 will be modified to an offset reduced conflict intersection design as shown in Figure 2. Two left hand turn lanes will be included for traffic from westbound Wilkinson Blvd. to Catawba St. and two right turn lanes will be included for northbound NC 7 traffic to US 74. Work will extend approximately 670’ along NC 7.

Ten-foot-wide multi use paths (MUP) will be included on both sides of NC 7 and US 74 throughout the project along with appropriate pedestrian crossing facilities as shown in Figure 2. On the bridge, traffic will be separated from the MUP’s by means of solid barrier rails. Hazeleen Avenue carries less than 100 vehicles per day and therefore sidewalks, not MUP’s, will be included on both sides. On the west end of Moores Chapel Loop, an MUP will extend along the east side of the road to the terminus of the work on the road. The west end of Moores Chapel Loop where it intersects with Wilkinson Boulevard will have improved turning radii to meet current standards and will include a crosswalk. The east end of Moores Chapel Loop currently intersects Wilkinson Boulevard at a severe skew. The skew cannot be corrected because it is in a Duke Energy transmission corridor, and Duke does not allow intersection modifications in their corridor. Because the west end will remain open, the east end will be closed and roadway removed from the intersection to the old weigh station.

E. <u>Special Project Information:</u>

Traffic
Currently, US 74 carries 25,000 vehicles per day which is projected at 31,000 for 2045. As noted earlier, the concern with the existing geometry is primarily for the intersection of US 74 and NC 7. Multiple intersection types were considered but only two were carried forward from the initial screening. A conventional intersection and a reduced conflict intersection.

The following 2045 peak hour volumes were analyzed for both intersections:



The **conventional intersection analysis** as follows has two movements failing in the design year: NC 7 Northbound and Hazeleen Southbound.

Intersection	Approach	Lane Group	Synchro Results			
			Delay (s/veh)		LOS	
			AM	PM	AM	PM
US 74/US 29 at NC 7/ Hazeleen Ave (Signalized)	Hazeline Ave, SB	LTR	70.2	86.1	E	F
	US 74/US 29, WB	L	72.1	44.9	E	D
		TR	10.8	16.6	B	B
	NC 7, NB	LT	50.8	85.3	D	F
		R	58.9	17.2	E	B
	US 74/US 29, EB	L	9.6	22.6	A	C
		TR	34.7	40.1	C	D
	Overall		**37.1**	**28.0**	**D**	**C**

The reduced conflict intersection analysis works through the design year with capacity to spare.

Intersection	Approach	Lane Group	Synchro Results			
			Delay (s/veh)		LOS	
			AM	PM	AM	PM
US 74/US 29 at NC 7/ Hazeleen Ave (RCI Central Intersection-Signalized)	NC 7, SB	R	37.9	43.2	D	D
	US 74/US 29, WB	L	34.7	12.3	C	B
		TR	0.7	0.6	A	A
	NC 7, NB	R	57.4	8.5	E	A
	US 74/US 29, EB	L	36.6	38.8	D	D
		TR	27.3	16.5	C	B
	Overall		**34.0**	**13.5**	**C**	**B**
U-Turn West of NC 7/Hazeline Ave at US 74/US 29 (Unsignalized)	US 74/US 29, WB	U	18.4	10.3	C	B
	US 74/US 29, EB	T	0.0	0.0	A	A
U-Turn East of NC 7/Hazeline Ave at US 74/US 29 (Signalized)	US 74/US 29, WB	T	3.1	13.9	A	B
	US 74/US 29, EB	U	33.2	39.2	C	D
	Overall		**5.8**	**14.4**	**A**	**B**

All other intersections with US 74 serve less than 100 vehicles per day and were not considered in traffic analysis.

US 74/ NC 7 Preferred Intersection
The two intersections described in the Traffic Section above were evaluated for multiple factors. The RCI intersection was carried forward as the preferred intersection for the following reasons:

- **Lower Cost** ($0.5 million less for bridge plus reduced footprint/utilities/right of way)
- A **Reduced Footprint** translates to lower impacts on human and natural environment including a smaller footprint on Kevin Loftin Park
- **Better Traffic Performance** through design year (level of service C for RCI compared to level of service D for All Movement)
- Better traffic performance translates to **lower congestion and emissions** (Environmentally Greener) and available capacity for future development that is likely to occur in the City (i.e. around the future Capital Area Transit System (CATS) Light Rail - Silver Line)
- **Capacity to carry higher volumes** beyond the design year
- **Improved safety** with reduced left turns
- Given the focus on pedestrian accommodations throughout this project, based on a national research project (20-points analysis), RCI's vs. All-Movement perform better with **higher safety for pedestrians.**

The City of Belmont expressed strong concerns for the pedestrian aspect of the intersection and in particular, did not like the way pedestrians would be zig-zagged through the median at the center of the intersection strongly preferring the way conventional intersections handle pedestrians. Because of the lack of development around the north leg of the intersection, the Department proposed offsetting

the Hazeleen leg of the intersection to the west 150 feet which resulted in a crosswalk that followed a conventional approach. The City agreed to the approach and the result is illustrated as follows:

Project Costs

	B-6051	U-6143
Construction	52,000,000	2,700,000
Right of Way	5,010,000	624,000
TOTAL	57,010,000	3,324,000

Combined Total Cost - $60,334,000

Local Officials Involvement - Since 2018 NCDOT has coordinated throughout project planning beginning with scoping, working with the aesthetics committee on the bridge design and appearance, working with local government on the inclusion of bicycle and pedestrian facilities throughout the project limits, working with City of Belmont on the design of the improved intersection at US 74 and NC 7, coordinating with Charlotte Area Transit Systems (CATS) on their future light rail plans, coordinating with Mecklenburg County on impacts to the ISWA Nature Preserve and with the City of Belmont on impacts to Kevin Loftin Park.

Public Involvement – In August 2022, over 1000 post cards were sent to residents and landowners inside the project vicinity advertising the project and inviting them to comment on the project from August 12 to 26, 2022. At the same time, a geo-targeting advertisement was also employed inviting recipients to visit the website. One hundred and eight comments were received in that period via e-mails, voice mails and responses on the website. Eleven of the comments received were supportive of the overall project, and one of the comments opposed the project. The majority of commenters had questions or suggestions on topics like bicycle and pedestrian accommodations, CATS Light Rail, maintenance of traffic, aesthetics and others. All public meeting materials including the Public Involvement Summary are posted on ConnectNCDOT: https://connect.ncdot.gov/site/Preconstruction/division/div12/BR-0020%20Gaston%2091/Human%20Environment/Public%20Meeting%20Materials?Web=1

CATS Light Rail - CATS is planning the Silver Line Light Rail which would travel from Charlotte to Gaston County along US 74. At the project location, the Silver Line is planned for the north side of US 74. The project is currently unfunded and preliminary planning and design are very limited but coordination has taken place to share the design for B-6051/U-6143 with CATS. While CATS preferred that NCDOT not include a turnaround on the City of Belmont side, they have confirmed that their horizontal alignment can work with that design. They also preferred that NCDOT relocate the existing east end of Moores Chapel Loop further east, but this is not within the scope of the project. It would need to be done under the scope of their project. NCDOT has coordinated with CATS to ensure the proposed bent spacing on the NCDOT bridge is compatible with the future Silver Line bridge.

Project Square Grooves – This is a proposed private development effort to realign and extend Moores Chapel Road (not Moores Chapel Loop) to connect with Old Dowd Road. If the project is constructed prior the completion of the work for B-6051 on Moores Chapel Loop, Mecklenburg County requested that this end of Moores Chapel Loop be closed and pavement removed to allow two parcels owned by the county separated by the road to be joined. The City of Charlotte opposes closing the road on the basis of connectivity. This issue will be re-considered if the project advances.

Aesthetic Enhancements – The outer bridge rail type is to be Texas Classic Rail. This is mitigation for removing the historic bridge. Beyond that, local government representatives from the City of Belmont, City of Charlotte, Gaston County, Mecklenburg County and the MPO's representing both counties formed an aesthetics committee lead by Gaston-Cleveland-Lincoln Municipal Planning Organization (GCL-MPO) for this project because of their desire to enhance the aesthetics of the bridge. The project commitments list the aesthetics to be included. Figure 3 illustrates a few representative visualizations. NCDOT will be contributing 1% of overall project costs towards aesthetics and local government will pay for the remainder of the enhancements.

F. Project Impact Criteria Checklists:

F3. Type III Actions			
Proposed improvement(s) that fit Type III Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix C) answer questions below.			
		Yes	No
1	Does the project involve potential effects to Threatened or Endangered species listed by the US Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)? Field Screenings completed Spring '22 and Fall '22.	☐	☑
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGEPA)? Field screening complete Spring '22	☐	☑
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement? Post Cards and PI website Aug '22.	☐	☑
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations? No minority or low-income populations are located within the DCIA and the project will enhance, not diminish, connectivity.	☐	☑
5	Does the project involve substantial residential or commercial displacements or right of way acquisition? Two businesses will be relocated but not substantial when compared with many businesses along US 74 in this area.	☐	☑
6	Does the project include a determination under Section 4(f)?	☑	☐
7	Is a project-level analysis for direct, indirect, or cumulative effects required based on the NCDOT community studies screening tool? The project will not alter travel patterns or notably reduce travel time. The project will minimally modify access to properties in the area and will not open areas for development or redevelopment. Due to its minimal transportation impact-causing activities, this project will neither influence nearby land uses nor stimulate growth. (from Short Form CIA, Sept '22)	☐	☑
8	Does the project impact anadromous fish spawning waters? Anadromous fish are present in the Eastern part of NC, not in Gaston Mecklenburg Co.'s area.	☐	☑
9	Does the project impact waters classified as Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply Watershed Critical Areas, 303(d)-listed impaired water bodies, buffer rules, or submerged aquatic vegetation (SAV)?	☑	☐
10	Does the project impact Waters of the United States in any of the designated mountain trout streams? Trout counties are further west than the location of this project.	☐	☑
11	Does the project require a US Army Corps of Engineers (USACE) Individual Section 404 Permit? Based on preliminary coordination with USACE, the project will likely qualify for a GP 50.	☐	☑
12	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	☑	☐
13	Does the project include Section 106 of the National Historic Preservation Act (NHPA) effects determination other than a No Effect, including archaeological remains?	☑	☐
14	Does the project involve GeoEnvironmental Sites of Concerns such as gas stations, dry cleaners, landfills, etc.?	☑	☐

15	Does the project require work encroaching and adversely effecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A? The Detailed Study will require the MOA submittal to have no rise in 100-year water surface elevation for the Revised conditions.	☐	☑
16	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Areas of Environmental Concern (AEC)? Gaston and Mecklenburg Counties are not in the eastern part of the state and therefore not a CAMA counties.	☐	☑
Type III Actions (continued)		Yes	No
17	Does the project require a US Coast Guard (USCG) permit? USCG has indicated in writing that the project does not require a USCG permit or navigational lighting (see Attachment 8)	☐	☑
18	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area? There are no Wild and Scenic Rivers within Gaston or Mecklenburg Counties.	☐	☑
19	Does the project involve Coastal Barrier Resource Act (CBRA) resources? CBRA resources are only found on the coastline of NC.	☐	☑
20	Does the project impact federal lands (e.g. US Forest Service (USFS), US Fish and Wildlife Service (USFWS), etc.) or Tribal (Trust) Lands? Source: GIS Search and Final Survey parcel data, and Tribal Coordination (see Attachment 9). NCDOT reached out to the Catawba Indian Nation, The Cherokee Nation, the Eastern Band of Cherokee Indians and to the United Keetoowah Band of Cherokee Indians. Of the four, only the Catawba replied, and indicated no concerns but to contact them if any resources were discovered during construction.	☐	☑
21	Does the project involve any changes in access control or the modification or construction of an interchange on an interstate? No control of access is proposed with this project.	☐	☑
22	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness? Traffic patterns will be modified with the reduced conflict intersection but the effect will not be adverse. The result will reduce accidents and improve efficiency of traffic at the intersection. Community cohesiveness will potentially be enhanced by the inclusion of bicycle and pedestrian facilities.	☐	☑
23	Will maintenance of traffic cause substantial disruption? Four lanes of traffic will be maintained during peak hours throughout the project which will keep disruption to a minimum.	☐	☑
24	Is the project inconsistent with the STIP, and where applicable, the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP)?	☐	☑
25	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, TVA, Tribal Lands, or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property? The project was screened via GIS, scoping letters and inquiries with local government and is clear of the concerns listed in this item.	☐	☑
26	Does the project involve Federal Emergency Management Act (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)? The project was screened via GIS data and via Final Surveys Parcel Data which did not identify any properties of concern.	☐	☑
27	Is the project considered a Type I under the NCDOT's Noise Policy?	☑	☐

28	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)? The FPPA does not apply to urban areas such as this study area for this project.	☐	☑
29	Is the project in an Air Quality non-attainment or maintenance area for a National Ambient Air Quality Standard (NAAQS)? Both Gaston and Mecklenburg Counties are in Maintenance Areas. See response in Section G.	☑	☐
30	Are there other issues that arose during the project development process that affected the project decision?	☐	☑

G. Additional Documentation as Required from Section F (ONLY for questions marked 'Yes'):

Q 6 & Q 13 – **Section 4(f) and Section 106**

The project will impact two historic resources (Section 106) and two parks. There are no archaeological resources of concern within the Project Study Area (see Attachment 1A, B &C)

- ***Gaston College*** - The western portion of Gaston College parcel (see Figure 2) is eligible for the National Register of Historic Places. The impact is limited to the need to include an additional guy wire on a power pole within an existing utility easement. The Historic Preservation Office has determined that there is "No Adverse Effect" (see Attachment 2). Because there is no new right of way needed, there is no 4(f) impact.
- ***Bridge No. 91*** – The bridge is eligible for the National Register of Historic Places. Because of the navigational aspect of purpose and need, there is no option for avoidance or preservation in place of the existing bridge, therefore, there is an adverse effect (see Attachment 2). Attachment 4 is the Section 106 MOA detailing the conditions associated with the Adverse Effect. The conditions of the MOA are also included in the Project Commitments. A Programmatic 4(f) Bridge Form addressing the adverse effect is the Attachment 5 to this document. Commitments from the Memorandum of Agreement between SHPO, NCDOT and FHWA are included in the project commitments section.
- ***Kevin Loftin Riverfront Park*** - There are minor impacts to the park, partially resulting from the City's request for MUPs along the road. A portion of the park will also be used for drainage treatment. These impacts were presented during public involvement meetings and there was no opposition to the work. The City of Belmont Parks and Recreation Department concurs that the work will not adversely affect the activities, features or attributes of the park (see Attachment 6). Federal Highways Administration has made a finding of de minimis impact by the signing of this document.
- **ISWA Nature Preserve** – There are minor impacts on ISWA Nature Preserve resulting primarily from shifting the entrance and driveway to allow for a turn lane requested by the park staff. The addition of a MUP connecting ISWA Nature Preserve to Gaston County would also result in a minor impact on the park. There are also minor drainage impacts where drainage features are tied back into the drainage ditch in the park. There are also minor drainage impacts where drainage features are tied back into the drainage ditch in the park. These were presented as part of public involvement and there was no opposition to the work. Mecklenburg County has stated in writing (see Attachment 7) that there are no adverse effects to the activities, features or attributes of the park. Federal Highways Administration has made a finding of de minimis impact by the signing of this document.
- **Project Footprint Expansion** – Expansions of the project footprint have been reviewed for archaeology and architectural history (see Attachments 1 and 3) with a determination that no additional survey is needed. Regarding Historic Architecture, there is a weigh station on the north side of Moores Chapel Loop that is outside of the study area but may be eligible. If the study area is expanded, a detailed review of the property will be required.

- Mecklenburg County has recently purchased two parcels on either side of Moores Chapel Loop with plans to convert it to a future park. The park falls under "joint development" provision of 4(f) and is therefore not a 4(f) resource.

Q 9 – **303(d) listed waters /Buffer Rules –** 303(d) listed waters are present in the Catawba River as an impaired water due to Polychlorinated biphenyl (PCB) in fish tissue within the additional study area. Since the issue is not turbidity, no actions are required on the part of NCDOT as it relates to this project.

Catawba River Buffer Rules are applicable for this river. The project commitments address this with the appropriately sized sediment control basin.

Q 12 – **FERC** – Lake Wylie is licensed under a Federal Energy Regulatory Commission (FERC) license. NCDOT is processing a conveyance application with Duke Energy. This will include processing a boater safety plan and affects the design of the bridge to accommodate required navigational clearance.

Based on coordination with Lake Wylie Marine Commission, Duke Energy, Local Emergency Services and the NC Wildlife Resources Commission (who has navigational authority over inland waters) the project will include 17' of clearance over full pond elevation in the navigational channel and 12' of clearance over full pond elevation in the middle third of the bridge.

Q 14 – **GeoEnvironmental** – The GeoEnvironmental Phase I Report identifies two sites of concern that will be affected by the footprint of this project. Both are located on a property at the corner of NC 7 and US 74. One is currently operating as a gas station and the other was formerly a gas station. Once the right of way impact is established, a Phase II GeoEnvironmental Screening will be requested. This is included as a project commitment.

Q 27 – **Noise Type I**

The source of this traffic noise information is the B-6051 Traffic Noise Report, by RK&K, accepted by NCDOT on March 10, 2023.

Traffic Noise Impacts

The maximum number of receptors in each project alternative predicted to become impacted by future traffic noise is shown in the table below. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels as defined in the NCDOT Traffic Noise Policy.

*Predicted Traffic Noise Impacts by Alternative**

Traffic Noise Impacts				
Alternative	Residential (NAC B)	Places of Worship/Schools, Parks, etc. (NAC C & D)	Businesses (NAC E)	Total
Build	2	6	0	8

*Per TNM 2.5 and in accordance with 23 CFR Part 772

Traffic Noise Abatement Measures

Measures for reducing or eliminating the traffic noise impacts, including noise barriers, were considered for all impacted receptors in each alternative. Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb, and reflect highway traffic noise.

Noise Barriers

A noise barrier evaluation was conducted for this project utilizing the Traffic Noise Model (TNM 2.5) software developed by the FHWA. The following table summarizes the results of the evaluation.

Preliminary Noise Barrier Evaluation Results

Alternative / NSA	Noise Barrier Location	Length / Height[1] (feet)	Square Footage	Number of Benefited Receptors	Square Feet per Benefited Receptor / Allowable Square Feet per Benefited Receptor	Preliminarily Feasible and Reasonable ("Likely") for Construction[2]
Build / NSA 1	-Y3- RT / NC 7 (Catawba Street) NB	652 / 9	6,079	2	3,040 / 1,500	NO[3]
Build / NSA 2	-L- LT / US 29/74 WB, East of Hazeleen Avenue	804 / 30	24,132	1	24,132 / 1,500	NO[3,4]

[1]Average wall height. Actual wall height at any given location may be higher or lower.
[2]The likelihood of a barrier's construction is preliminary and subject to change, pending completion of final design and the public involvement process.
[3]Barrier is not reasonable due to the quantity per benefited receptor exceeding the allowable quantity per benefited receptor OR Barrier is not reasonable due to an inability to achieve at least 7-dBA noise reduction for at least one benefited receptor.
[4]Barrier is not feasible due to an inability to achieve a minimum of 5 dB(A) of noise reduction for at least two impacted receptors.

Based on this preliminary study, traffic noise abatement is not recommended, and no noise abatement measures are proposed. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772. No additional noise analysis will be performed for this project unless warranted by a substantial change in the project's design concept or scope.

In accordance with NCDOT Traffic Noise Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the Categorical Exclusion (CE). NCDOT strongly advocates the planning, design and construction of noise-compatible development and encourages its practice among planners, building officials, developers and others.

Q 29 – **Air Quality**

Gaston County *(Prior 1997 & 2008 8-Hour Ozone Maintenance Area):*

The project is in Gaston County, which is within the Charlotte maintenance area for the prior 1997 ozone National Ambient Air Quality Standard (NAAQS) as defined by the EPA. This area was designated moderate nonattainment under the 1997 ozone NAAQS on June 15, 2004 *and due to improved air quality in the region was re-designated maintenance on January 2, 2014. The Charlotte area was designated for the 2008 ozone NAAQS resulting in the 1997 ozone NAAQS*

being revoked on April 6, 2015. On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in South Coast Air Quality Mgmt. District v. EPA ("South Coast II," 882 F.3d 1138) held that transportation conformity applies for the revoked 1997 ozone NAAQS areas. Transportation conformity for plans and TIPs for the 1997 Ozone NAAQS can be demonstrated without a regional emissions analysis pursuant to 40 CFR 93.109(c).

The project is in Gaston County, which is within the Charlotte maintenance area for the 2008 ozone NAAQS as defined by the EPA. The Charlotte area was *designated marginal nonattainment under the 2008 ozone NAAQS on July 20,* 2012 *and due to improved air quality in the region was re-designated maintenance on August 27, 2015. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Gaston County. The Gaston Cleveland Lincoln Metropolitan Planning Organization 2050 Metropolitan Transportation Plan (MTP) and the 2020-2029 Transportation Improvement Program (TIP) conform to the intent of the SIP. The USDOT made a conformity determination on the MTP and the TIP on April 5, 2022. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51and 93. There are no significant changes in the project's design concept or scope, as used in the conformity analyses*.

Mecklenburg County *(Prior 1997 & 2008 8-Hour Ozone Maintenance Area):*

The project is in Mecklenburg County, which is within the Charlotte maintenance area for the prior 1997 ozone National Ambient Air Quality Standard (NAAQS) as defined by the EPA. This area was designated moderate nonattainment under the 1997 ozone NAAQS on June 15, 2004 *and due to improved air quality in the region was re-designated maintenance on January 2, 2014. The Charlotte area was designated for the 2008 ozone NAAQS resulting in the 1997 ozone NAAQS being revoked on April 6, 2015. On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in South Coast Air Quality Mgmt. District v. EPA ("South Coast II," 882 F.3d 1138) held that transportation conformity applies for the revoked 1997 ozone NAAQS areas. Transportation conformity for plans and TIPs for the 1997 Ozone NAAQS can be demonstrated without a regional emissions analysis pursuant to 40 CFR 93.109(c).*

The project is in Mecklenburg County, which is within the Charlotte maintenance area for the 2008 ozone NAAQS as defined by the EPA. The Charlotte area was *designated marginal nonattainment under the 2008 ozone NAAQS on July 20,* 2012 *and due to improved air quality in the region was re-designated maintenance on August 27, 2015. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Mecklenburg County. The Charlotte Regional Transportation Planning Organization 2050 Metropolitan Transportation Plan (MTP) and the 2020-2029 Transportation Improvement Program (TIP) conform to the intent of the SIP. The USDOT made a conformity determination on the MTP and the TIP on April 5, 2022. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51and 93. There are no significant changes in the project's design concept or scope, as used in the conformity analyses*.

H. Project Commitments (attach as Green Sheet to CE Form):

NCDOT PROJECT COMMITMENTS

STIP Project No. **B-6051 & U-6143**
Replace Bridge 91 over the Catawba River and Improve Intersection of US 74 & NC 7
Gaston & Mecklenburg Counties
Federal Aid Project No. 0029074
WBS Element 48708.1.1 & 48326.1.1

Structure Management Unit and Division 12 Construction- Bicycle and Pedestrian Accommodations

MUP's will be included:

- along north side of US 74 beginning at Gaston College terminating at Moores Chapel Road
- along south side of US 74 beginning at Gaston College and terminating at ISWA Nature Preserve.
- along both sides of NC 7
- along east side of Moores Chapel Loop beginning at US 74 and terminating at the end of the proposed roadway work on the road.

Sidewalk will be included:

- along Hazeleen Avenue.

Structure Management Unit- Aesthetics for Bridge

- Based on participation by local government, the rails, caps, and round columns on the new bridge will be stained beige-white and trimmed with a stamped brick pattern and stained three colors.
- The bridge will also include pedestals with conduit and mounting plates. The Structure Management Unit and NCDOT Lighting Group are currently coordinating with Duke Energy regarding the specifications these lights will require for the bridge.
- The bridge will also include 7'x14' scenic overlooks on both sides near the apex of the bridge.

Structures Management Unit / Division 12 – Kevin Loftin Park Sidewalk

The project plans and construction will include a proposed sidewalk extending from and existing sidewalk within Kevin Loftin Park near the boat ramp and connecting to the crosswalk on US 74. The cost of the sidewalk will be reimbursed by the City of Belmont as part of the Municipal Agreement.

Structures Management Unit / Division 12 – Municipal Agreement

A municipal agreement will be required for reimbursement of the aesthetic enhancements proposed for the Local Government Aesthetics Committee. The GCL-MPO representative, Randi Gates will coordinate the percent of cost share between the various representatives to be included in the agreement. The agreement will also cover a requested sidewalk in Kevin Loftin Park to be constructed with B-6051/U-6143.

Structures Management Unit– Plantable Medians on City of Belmont Side of Project

The medians will include curb and gutter perimeters leaving soil in the median in the center which the City of Belmont will use at the completion of the project for plantings and natural area.

Division 10 & 12 Traffic Engineers – Posted Speed Limits

The posted speed limit ordinances through the project limits will be adjusted to 45 mph prior to the Let of this project.

Structures Management Unit- Section 4(f) / Section 106 - Historic Bridge No. 91

- Bridge No. 91 will be photo documented prior to let of the project.
- Historic Bridge Plans will be provided to HPO
- The replacement bridge will:

- include church rail
- include end rails that emulate the curved end rail on the existing bridge including replica plaques

Structures Management Unit / Division 10 and 12 – Weigh Station
The abandoned weigh station on the north side of Moores Chapel Loop is outside the current study area but potentially historic. Division 10 has agreed that the property will not be touched as part of this project including for the purposes of a staging area during construction. If this changes, the property will have to be evaluated and if determined historic, have to go through Section 106 and Section 4(f).

Structures Management Unit - Navigational Clearance on Bridge 91
Based on coordination with Lake Wylie Marine Commission, Duke Energy, Local Emergency Services and the NC Wildlife Resources Commission (which has navigational authority over inland waters) the project will include 17' of clearance over full pond elevation in the navigational channel and 12' of clearance over full pond elevation in the middle third of the bridge.

Structures Management Unit /GeoEnvironmental Section – Phase II Study
The GeoEnvironmental Phase I Report identified two sites of concern that will be affected by the footprint of this project. Both are located on a property at the corner of NC 7 and US 74 One is currently operating as a gas station and the other was formerly a gas station. Once the right of way impact is established, a Phase II GeoEnvironmental Screening will be requested.

Categorical Exclusion Approval:

STIP Project No.	**B-6051 & U-6143**
WBS Element	48708.1.1 & 48326.1.1
Federal Project No.	0029074

Prepared By:

5/3/2023
Date

DocuSigned by:
John Williams
[illegible]
John L. Williams, Project Manager
RK&K

Prepared For: David Stutts, NCDOT Structures Management Unit

Reviewed By:

5/3/2023
Date

DocuSigned by:
[signature]
[illegible]
John Jamison, Unit Head
NCDOT, Environmental Policy Unit

☐ ~~**Approved**~~

☑ **Certified** • If classified as Type III Categorical Exclusion.

5/3/2023
Date

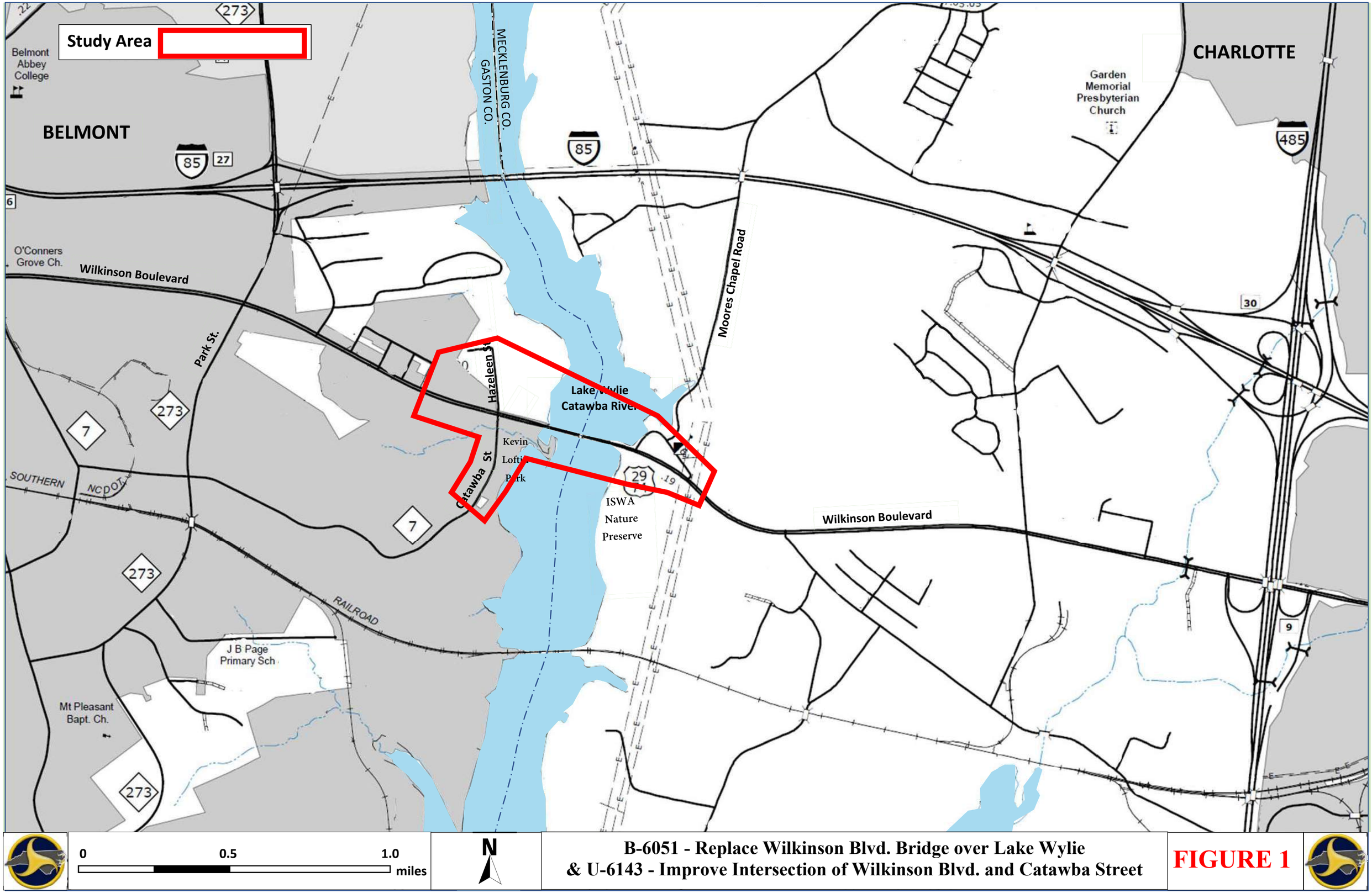
DocuSigned by:
David Stutts
A4A2999ABBC54F2...
David Stutts, Project Engineer, PEF Program Management
North Carolina Department of Transportation

FHWA Approved: For Projects Certified by NCDOT (above), FHWA signature required.

5/8/2023
Date

DocuSigned by:
Loretta Barren
[illegible]
for John F. Sullivan, III, PE, Division Administrator
Federal Highway Administration

Note: Prior to ROW or Construction authorization, a consultation may be required (please see Section VII of the NCDOT-FHWA CE Programmatic Agreement for more details).



B-6051 - Replace Wilkinson Blvd. Bridge over Lake Wylie
& U-6143 - Improve Intersection of Wilkinson Blvd. and Catawba Street

FIGURE 1

DESIGN PUBLIC MEETING MAP

TIP PROJECT B-6051 /U-6143

GASTON /MECKLENBURG COUNTIES

BRIDGE NO. 91 OVER CATAWBA RIVER ON US 29 /US 74 AND INTERSECTION IMPROVEMENTS ON US 29 /US 74 (WILKINSON BLVD.) AND NC 7 (CATAWBA ST.)

AUGUST 2022

FIGURE 2

NAD 83/2011

BEGIN TIP PROJECT B-6051 /U-6143

END TIP PROJECT B-6051 /U-6143

HAZELEEN AVE

MOORES CHAPEL RD

MOORES CHAPEL LOOP

US 29/74 WILKINSON BLVD

CATAWBA ST

STATE EMPLOYEES CREDIT UNION

T&T AUTO REPAIR

SC COACH

ALPHA EMC

TONY'S BAR

DALE'S SUPERETTE

GASTON COLLEGE

KEVIN LOFTIN RIVERFRONT PARK

CATAWBA RIVER / LAKE WYLIE

ISWA NATURE PRESERVE

DUKE POWER COMPANY

MECKLENBURG COUNTY POTENTIAL PARK

MECKLENBURG COUNTY

CITY OF BELMONT

LEGEND

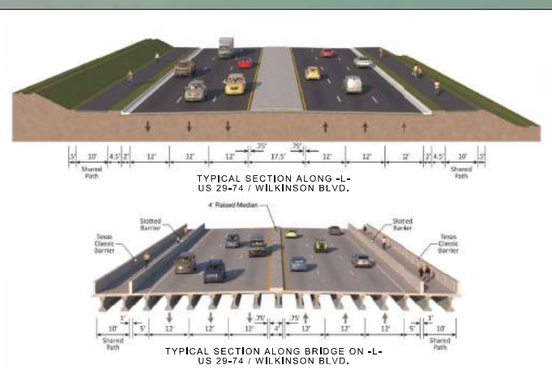
- EXISTING RIGHT OF WAY
- EXISTING UTILITY EASEMENT
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENTS
- PROPOSED ROADWAY
- EXISTING ROADWAY TO BE RESURFACED
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- BUILDINGS
- EXISTING WETLANDS
- PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
- EXISTING STRUCTURE TO BE RETAINED
- PROPOSED SIDEPATH / GREENWAY
- LAKES, RIVER, STREAMS AND PONDS
- EXISTING PROPERTY LINE
- HISTORIC AREA
- PROPOSED SIGNAL

DESIGN DATA
Functional Class. = Major Arterial
Design Speed = 50mph
Max. Superelev. = 0.04

UTILITY INFORMATION:
Utility easements are approximated and subject to change.

SIDEWALK & MULTI-USE PATHS:
The construction of sidewalks and mutli-use paths are contingent upon municipal agreements.

DRIVEWAY NOTE:
Driveways are not shown as maps are based on preliminary plans and are subject to change. Driveway locations will be finalized at a later date.



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

100' 50' 0' 100' 200'
SCALE 1" = 100'

Imagery source: NC OneMap

-Y1- HAZELEEN AVE.

	600 / 800	
-L- US 29-74 / WILKINSON BLVD.	22,600 / 29,000	28,600 / 36,400 US 29-74 / WILKINSON BLVD. -L-
	8,500 / 10,600	

2020 / 2045

-Y2- CATAWBA ST.


View of Pedestrian Overlooks


Driver's View Crossing Bridge


View from Kevin Loftin Riverfront Park


End Bent View


View of Historic Replica Plaques,
Lighting & Multi-Use Path

FIGURE 3

ATTACHMENTS

BELMONT
MANY THREADS, ONE COMMUNITY

To: John Williams
From: Zip Stowe
Date: 12/13/2022

Hello John,

This is Zip Stowe, Recreation Director for the City of Belmont. I reviewed the maps that your company provided for the Wilkinson Bridge & Catawba/Wilkinson intersection replacement on Kevin Loftin Park. The Assistant City Manager, Kevin Krouse, and the Senior Planner, Tiffany Faro, reviewed the maps also, and we all produced the same consensus. The project does not adversely affect the activities, features, or attributes that qualify the sources for protection under section 4 (f).

The features qualifying the resources as 4 (f) include open space, access area, walking trails, etc. The improvements shown on the map to the entrance off Wilkinson to Kevin Loftin Park Boat Access area are very much needed. If more information is needed, please feel free to email me. My email address is zstowe@cityofbelmont.org

Yours Truly,

Zip Stowe

Zip Stowe
Recreation Director
City of Belmont

ATTACHMENT 6
1 OF 1

MECKLENBURG COUNTY
Office of the County Manager

April 26, 2023
David S. Stutts, P.E
Project Engineer-PEF/ Program Management
NCDOT Structures Management Unit
12033-C East Independence Blvd
Matthews, NC 28105

Subject: Section 4(f) *de minimis* determination for NCDOT Project B-6051 - Wilkinson Blvd at Catawba River Bridge Replacement

Dear Mr. Stutts,

This letter is a follow-up to a request from the North Carolina Department of Transportation ("NCDOT") to review and concur with a Section 4(f) *de minimis* impact determination for the proposed Wilkinson Blvd at Catawba River Bridge Replacement B-6051 Project. The project consists of the replacement of Gaston County Bridge No. 91, which carries US 74/US 29 over the Catawba River, between Gaston and Mecklenburg Counties. The project will address geometric deficiencies in the US 74 approaches to the bridge as well as navigational requirements for boating traffic under the bridge.

Within the boundaries of the project is Mecklenburg County owned and operated ISWA Nature Preserve. The features qualifying the nature preserve as a 4(f) resource include publicly accessible open space and walking trails. Mecklenburg County Park and Recreation Department has reviewed the impact to the nature preserve resulting from the bridge replacement. Based on the small amount of County property to be impacted by the project listed below, the County has determined that the project does not adversely affect the activities, features, or attributes that qualify the ISWA Nature Preserve for protection under section 4(f).

B-6051 Right of Way Impacts

Parcel #	Parcel Owner	PIN # / (PARCEL ID)	Total Parcel Area (Acres)	ROW Take (Acres)	Permanent Easement Take (Acres)	Temporary Easement Take (Acres)	ROW Remaining (Acres)
22	MECKLENBURG COUNTY	(11334107)	0.75	0.000	0.032	0.142	0.750
23	MECKLENBURG COUNTY	(11334106)	14.182	0.000	0.192	0.196	14.182
24	MECKLENBURG COUNTY	(11334105)	8.037	0.113	0.343	0.413	7.924

Thank you for allowing Mecklenburg County to weigh-in on project B-6051. If you have any questions related to the comments above, please contact Jacqueline McNeil at 980-314-2511.

Sincerely,

DocuSigned by:
Dena R. Diorio
5D875F12E92042B...

Dena R. Diorio,
County Manager
Mecklenburg County

C: Leslie Johnson, Deputy County Manager
Lee Jones, Park and Recreation Director
Bert Lynn, Capital Planning Director

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (dpb)
Phone: (757) 398-6222
Fax: (757) 398-6334
Email: Mickey.D.Sanders2@uscg.mil
Or CGDFiveBridges@uscg.mil

16590
01 NOV 2018

Mr. David Stutts
Trasnportation Engineer Supervisor
NCDOT Structures Management Unit
1581 Mail Service Center
Raleigh, NC 27699-1581

Dear Mr. Stutts:

Coast Guard review of your proposed project as provided in an email dated October 31, 2018, from Ms. Maggie Weiner with RK&K Engineers, on behalf of the North Carolina Department of Transportation, is complete.

Based on the documentation provided and our research, it is determined that a Coast Guard bridge permit will not be required for the proposed US 29/74 Bridge across Catawba River, at position (35.245750N, -81.008935W), at Gaston County, NC.

In addition, navigational lighting at the aforementioned bridge is not required, as per Title 33 Code of Federal Regulations, Part 118.40 (b).

The fact that a Coast Guard bridge permit is not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project.

If you have any further questions, please contact Mr. Mickey Sanders at the above listed address or telephone number.

Sincerely,

HAL R. PITTS
Bridge Program Manager
By direction

Copy: Ms. Maggie Weiner, RK&K Engineers
CG Sector North Carolina, Waterways Management
U. S. Army Corps of Engineers, Norfolk District

ATTACHMENT 8
1 OF 1