

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, electric generation projects located at an existing or former electric generating facility, or involve the distribution or transmission of energy or fuel, including natural gas, diesel, petroleum, or electricity? *

Yes No

Is this application for a project associated with emergency response/repairs from Hurricane Helene impacts to your project or property?

Yes No

Is this project connected with ARPA funding or S.L. 2023-134 (earmark)? *

ARPA S.L. 2023-134 (earmark) No

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

Forsyth

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:

BR-0168

WBS # *

67168.1.1

(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

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

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? *

Robert Crowther

1c. Primary Contact Phone: *

(xxx)xxx-xxxx
(919)707-6112

1b. Primary Contact Email: *

recrowther@ncdot.gov

1d. Who is applying for the permit? *

- Owner
(Check all that apply)
- Applicant (other than owner)

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)707-6108

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

ekcheely@ncdot.gov

3. Applicant Information (if different from owner)

3a. Name: *

Robert Crowther

3b. Business Name:

(if applicable)

3c. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699-1598

State / Province / Region

NC

Country

US

3d. Telephone Number: *

(919)707-6112

(xxx)xxx-xxxx

3e. Fax Number:

(xxx)xxx-xxxx

3f. Email Address: *

recrowther@ncdot.gov

C. Project Information and Prior Project History



1. Project Information



1a. Name of project: *

BR-0168 - Bridge 289 on SR 4000 over US 52

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Winston-Salem

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

Postal / Zip Code

State / Province / Region

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: *

36.18166

ex: 34.208504

Longitude: *

-80.275448

-77.796371

3. Surface Waters

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

Mill Creek

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

C

[Surface Water Lookup](#)

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

Yadkin-PeeDee

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

030401011301

[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: *

The project is located within a highly urbanized portion of the City of Winston-Salem. Primarily commercial use exists in the immediate vicinity of the project, there are a few scattered residents. Vegetative cover is located along roadsides, along creeks and interspersed between development. The area is greater than 25% impervious surface.

Within the project study area, there is primarily commercial development with lots of impervious surfaces, including US Route 52, a four lane expressway. A small sliver of Dry-Mesic Oak-Hickory Forest, and abutting Piedmont bottomland Forest, is present behind development off of University Parkway. Several stream and wetland features are present within the study area.

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:

0.54

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

(intermittent and perennial)

1,898

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

The purpose of this project is to replace a structurally deficient and functionally obsolete bridge. The existing bridge was built in 1962. NCDOT Structures Management Unit bridge inspection records indicate Bridge No. 330289 has a Sufficiency Rating of 44.85. The bridge has been found to be both structurally and functionally obsolete.

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

The North Carolina Department of Transportation (NCDOT) proposes to replace Forsyth County Bridge 330289 on SR 4000 (University Parkway) over US 52. The typical section of the new bridge will consist of two 12-foot thru lanes in each direction; a 5-foot median; a 12-foot center turn lane; a five-foot shoulder on either side of the bridge; a 2-foot gutter between the shoulder and sidewalk on each side of the bridge; and a 5-and a half foot sidewalk on each side to accommodate pedestrians. The proposed replacement structure will be a two-span bridge approximately 264 feet long. The project is scheduled for right of way in fiscal year 2025 and construction in fiscal year 2026. Construction will be staged starting from the west to maintain traffic.

The proposed project is a replacement of an existing structure and is not anticipated to increase traffic volumes or additional development in the vicinity.

Standard road and bridge building equipment such as trucks, dozers, 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-2024-01681

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

Name (if known): Byron Levan, Mark Guerard

Agency/Consultant Company: Three Oaks Engineering

Other:

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

SAW-2024-01681 issued on 10/07/2024 following field verification on 09/25/2024.

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 Jurisdiction* (?)	2g. Impact area* (acres)
2	Mechanized Clearing	P	Headwater Forest	WA	No	Corps	0.014 (acres)
5	Permanent Fill - Toe Protection	P	Headwater Forest	WB	Yes	Corps	0.011 (acres)
5	Mechanized Clearing	P	Headwater Forest	WB	Yes	Corps	0.005 (acres)

2g. Total Temporary Wetland Impact

0.000

2g. Total Permanent Wetland Impact

0.030

2g. Total Wetland Impact

0.030

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* (Average (feet))	3h. Impact length* (linear feet)
S1	Site 1A - 48" Pipe Inlet	Permanent	Rip Rap Fill	SA (UT to Mill Creek)	Perennial	Both	4 Average (feet)	20 (linear feet)
S2	Site 1A - Construction Access	Temporary	Other	SA (UT to Mill Creek)	Perennial	Both	4 Average (feet)	10 (linear feet)
S3	Site 1B - 48" Pipe Outlet	Permanent	Rip Rap Fill	Mill Creek	Perennial	Both	20 Average (feet)	44 (linear feet)
S4	Site 1B - Construction Access	Temporary	Other	Mill Creek	Perennial	Both	20 Average (feet)	48 (linear feet)
S5	Site 2 - Construction Access	Temporary	Other	SA (UT to Mill Creek)	Perennial	Both	4 Average (feet)	10 (linear feet)
S6	Site 3 - Culvert Construction	Permanent	Culvert	SA (UT to Mill Creek)	Perennial	Both	7 Average (feet)	83 (linear feet)
S7	Site 3 - Construction Access	Temporary	Other	SA (UT to Mill Creek)	Perennial	Both	4 Average (feet)	20 (linear feet)
S8	Site 4 - Culvert Construction	Permanent	Culvert	SA (UT to Mill Creek)	Perennial	Both	3 Average (feet)	26 (linear feet)
S9	Site 4 - Construction Access	Temporary	Other	SA (UT to Mill Creek)	Perennial	Both	2 Average (feet)	20 (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:

173

3i. Total temporary stream impacts:

108

3i. Total stream and ditch impacts:

281

3j. Comments:

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*
6	Fill in Pond	P	BA	Fill	Other	0.09 (acres)

4g. Total temporary open water impacts:

0.00

4g. Total permanent open water impacts:

0.09

4g. Total open water impacts:

0.09

4h. Comments:

Pond BA is a deep depression with a fully clogged cross pipe and contains standing water. The existing pipe was severely clogged with trash and soil and will not be easily accessible for maintenance once the project is completed. Due to the high maintenance needs of the area, a decision was made to fill the existing area and promote vegetated conveyance to the maximum extent before systemizing overland flow.

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: *

The proposed new bridge would be constructed in place of the existing structure, with a widening extending westward, and minimizes roadway realignment. The improvements will include the installation of a surface drainage network. Riprap pads will be installed at pipe outlets across the project to reduce flow velocities and erosivity. Grass swales were analyzed, but due to the steep grade, the proposed ditches did not meet swale criteria. Where feasible, grass shoulders were maintained along with the existing vegetated ditches.

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

Best management practices and sedimentation and erosion control measures will be used during construction of the proposed project.

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):

DWR Corps

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

Mitigation bank Payment to in-lieu fee program Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank:

RES Yadkin 01 Umbrella Mitigation Bank / RS Brushy Mountain Mitigation Bank

3b. Credits Purchased/Requested (attach receipt and letter)

Type:	Quantity:
Stream	346
Riparian wetland	0.06

3c. Comments

Mitigation info also included in PCN attachment

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

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

For a list of options to meet the diffuse flow requirements, click [here](#).

If no, explain why:

The proposed project is located within the Yadkin-Pee Dee River Basin, which does not have applicable riparian buffer rules.

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.

The proposed project is a replacement of an existing structure and is not anticipated to increase traffic volumes or create additional development in the vicinity.

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).
<https://ipac.ecosphere.fws.gov/>

Notification of NCDOT's intent to utilize the PBO for tricolored bat was received and accepted by USFWS on 8/18/2025.

See attached protected species survey information for additional details.

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? *

National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) online mapper.
<https://www.habitat.noaa.gov/apps/efhmapper/>

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/hpweb/>)

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? *

Please see attached historic property and archeological documentation. Tribal coordination is also attached.

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

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

North Carolina Flood Risk Information System (FEMA Mapping).
<https://fris.nc.gov/map>

Miscellaneous



Comments

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](#)

BR-0168 2025-09-18 Application Package.pdf

26.04MB

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*

A handwritten signature in black ink that reads "Erin K. Cheely". The signature is written in a cursive style and is contained within a light gray rectangular box.

Date

9/18/2025

Permit Drawings



North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS



(Version 3.02; Released April 23, 2024)

WBS Element: 50603.1.1 **TIP/Proj No:** BR-0168 **County(ies):** Forsyth **Page** 1 **of** 3

General Project Information

WBS Element:	50603.1.1	TIP Number:	BR-0168	Project Type:	Bridge Replacement	Date:	3/17/2025
NCDOT Contact:	Matthew York		Contractor / Designer:		Brenna Copeland		
	Address:	NCDOT Hydraulics Unit 1590 Mail Service Center Raleigh, NC 27699-1590		Address:	NCDOT Hydraulics Unit 1590 Mail Service Center Raleigh, NC 27699-1590		
	Phone:	919-707-6765		Phone:	919-707-6716		
	Email:	mjyork@ncdot.gov		Email:	brcopeland@ncdot.gov		
City/Town:	Winston-Salem			County(ies):	Forsyth		
River Basin(s):	Yadkin-Pee Dee			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.365 miles	Surrounding Land Use:	Urban					
	Proposed Project		Existing Site					
Project Built-Upon Area (ac.)	5.1	ac.	4.5	ac.				
Typical Cross Section Description:	On Bridge: Four 12' lanes with 17' center turn lane, 5' bike lanes on both sides, 2' "gutters" on both sides, and 5'-6" sidewalks on both sides. Total width 90' On Approaches: Four 12' lanes with 17' center turn lane, 5' bike lanes on both sides, 2' gutter pan on both sides, and 10' berms on both sides (14' with guardrail). Total width 99'		Four lane undivided with center turn lane with width of 66 ft plus 2 ft wide left shoulder and 4 ft wide right shoulder					
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	31550	Year:	2046	Existing:	32800	Year:	2026

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

This project replaces an existing grade separation interchange bridge (#330289) on University Parkway (SR 4000) with a bridge that will be wider to accommodate alternate modes of transportation and will be higher to provide the required minimum clearance for traffic on US 52. The overall increase in project built-upon area is 0.6 acres.

The project has wetlands in two areas. One small area will be a total take due to the roadway fill and mechanized clearing. Another wetland area will be retained with minor mechanized clearing to plug and fill an existing stormwater pipe. An energy dissipator basin was utilized at the pipe outlet of the jurisdictional stream to replace the existing energy dissipator.

The SELDM Catalog was used for the stream and a BMP from the BMP toolbox was recommended to treat stormwater runoff at this stream. The BMP decision support matrix showed that an infiltration basin provided the highest removal efficiency for nutrients and suspended solids and was considered as a potential treatment option. However, the gore area where the basin would go was an existing maintenance issue. The existing area was a deep depression with a fully clogged cross pipe and contained standing water. The existing pipe was severely clogged with trash and soil and will not be easily accessible for maintenance once the project is completed. Due to the high maintenance needs of the area, a decision was made to fill the existing area and promote vegetated conveyance to the maximum extent before systemizing overland flow. Grass swales were analyzed, but due to the steep grade, the proposed ditches did not meet swale criteria. Where feasible, grass shoulders were maintained along with the existing vegetated ditches.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 3.02; Released April 23, 2024)

WBS Element: 50603.1.1

TIP/Proj No.: BR-0168

County(ies): Forsyth

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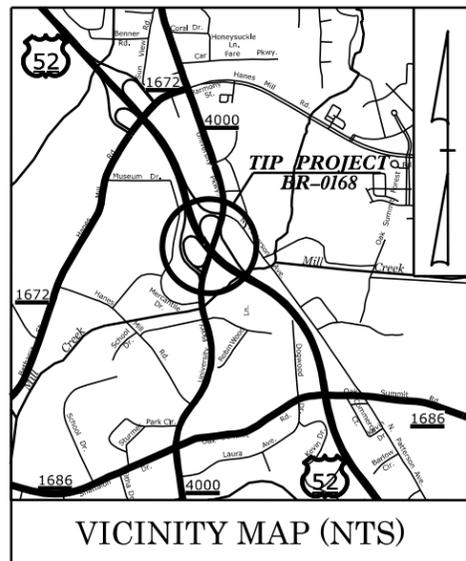
General Project Information

Waterbody Information

Surface Water Body (1):		Mill Creek		NCDWR Stream Index No.:		12-94-7	
NCDWR Surface Water Classification for Water Body			Primary Classification:		Class C		
			Supplemental Classification:		None		
Other Stream Classification:		None					
Impairments:		None					
Aquatic T&E Species?		No		Comments:			
NRTR Stream ID:		Mill Creek		Buffer Rules in Effect:		N/A	
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over 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)							
Surface Water Body (2):				NCDWR Stream Index No.:			
NCDWR Surface Water Classification for Water Body			Primary Classification:				
			Supplemental Classification:				
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?				Comments:			
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?			
Deck Drains Discharge Over Water Body?				(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 (3):				NCDWR Stream Index No.:			
NCDWR Surface Water Classification for Water Body			Primary Classification:				
			Supplemental Classification:				
Other Stream Classification:							
Impairments:							
Aquatic T&E Species?				Comments:			
NRTR Stream ID:				Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?			
Deck Drains Discharge Over Water Body?				(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)							

CONTRACT: TIP PROJECT: BR-0168

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PERMIT DRAWING
SHEET 1 OF 16

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0168	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
67168.1.1		P.E.	
67168.2.1		ROW	
67168.2.2		UTILITIES	

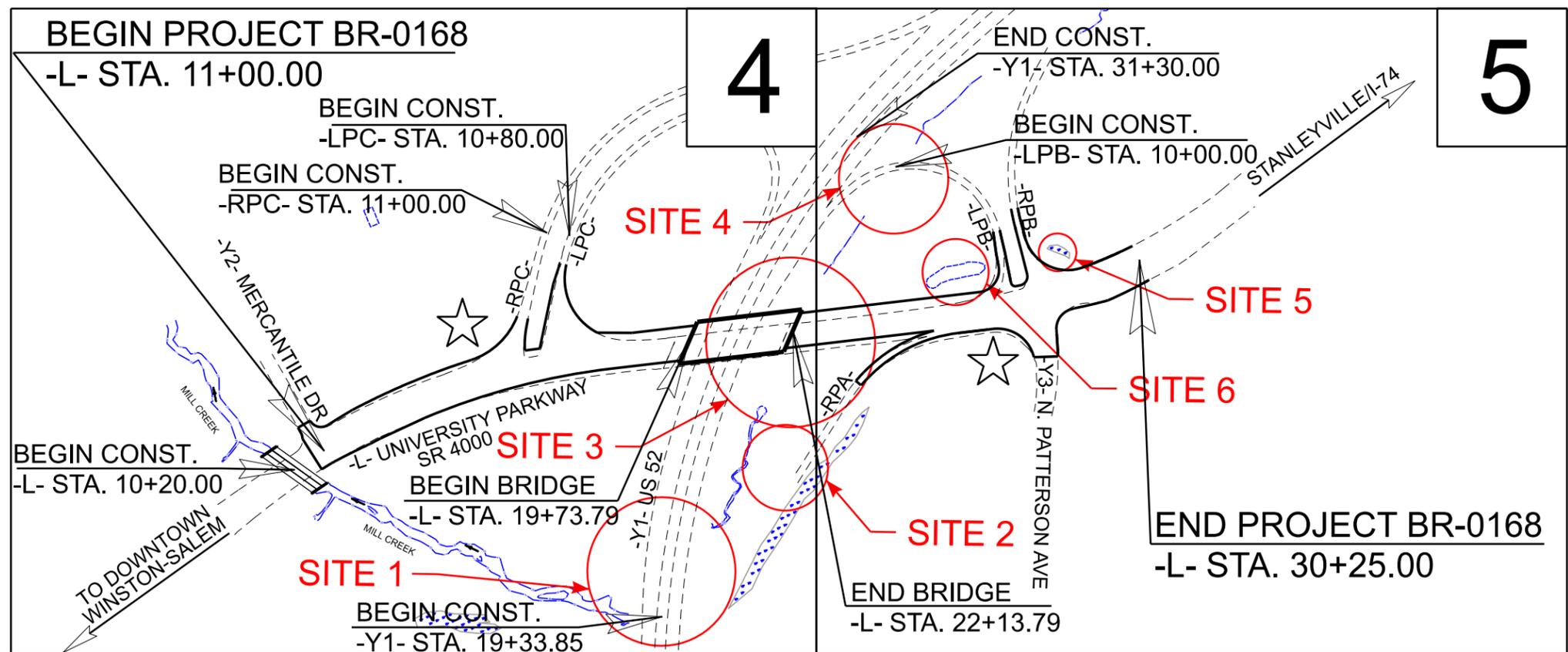
FORSYTH COUNTY

LOCATION: *REPLACE BRIDGE 330289 ON SR 4000 (UNIVERSITY PARKWAY) OVER US 52*

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, SIGNALS, AND STRUCTURE*



WETLAND AND SURFACE WATER IMPACTS PERMIT

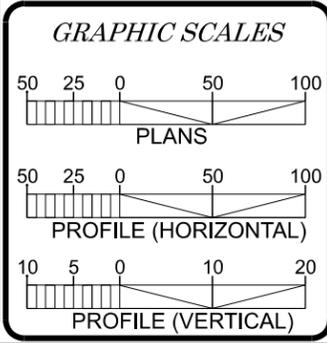


★ REVISED SIGNAL

THIS PROJECT HAS FULL CONTROLLED ACCESS THROUGH THE INTERCHANGE.
THIS PROJECT IS WITHIN MUNICIPAL BOUNDARIES OF WINSTON-SALEM.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT: TIP PROJECT: BR-0168



DESIGN DATA

ADT 2026 =	32800
ADT 2046 =	31550
K =	9 %
D =	65 %
T =	4 % *
V =	50 MPH
* TTST = 1% DUAL 3%	
FUNC CLASS =	
PRINCIPAL ARTERIAL	
REGIONAL TIER	

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT BR-0168	= 0.320 MILES
LENGTH OF STRUCTURE TIP PROJECT BR-0168	= 0.045 MILES
TOTAL LENGTH OF TIP PROJECT BR-0168	= 0.365 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

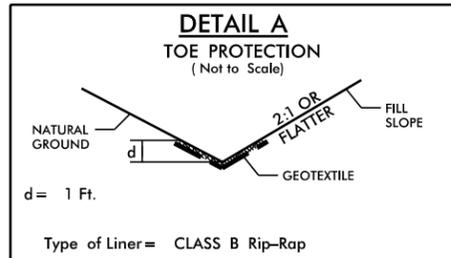
2024 STANDARD SPECIFICATIONS RIGHT OF WAY DATE: NOVEMBER 22, 2024 LETTING DATE: MAY 19, 2026	JOEL P. PERLIN <i>PROJECT MANAGER</i> DAVID J. CLODGO, PE <i>PROJECT ENGINEER</i> PIOTR J. STOJDA <i>PROJECT TEAM LEAD</i>
--	---

HYDRAULICS ENGINEER

SIGNATURE: P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

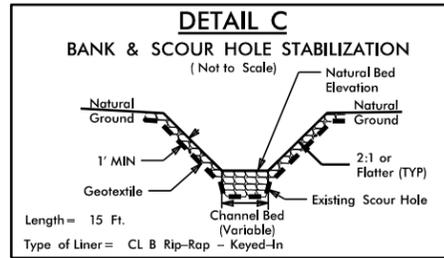




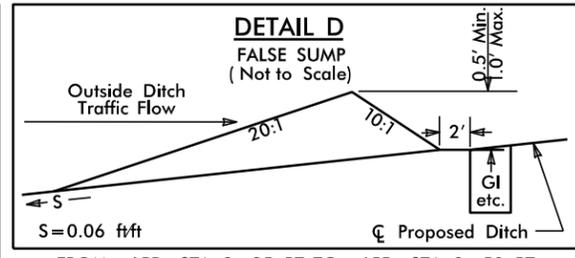
FROM -LPCA- STA. 10+40 LT TO -L- STA. 19+00 LT
EST. 100 TONS CLASS B RIP RAP
EST. 222 SY GEOTEXTILE

FROM -RPC- STA. 13+00 RT TO -RPC- STA. 13+60 RT
EST. 38.5 TONS CLASS B RIP RAP
EST. 86 SY GEOTEXTILE

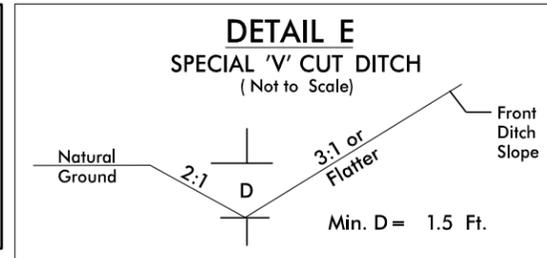
FROM -RPB- STA. 14+00 LT TO -RPB- STA. 14+45 LT
EST. 40 TONS CLASS B RIP RAP
EST. 90 SY GEOTEXTILE



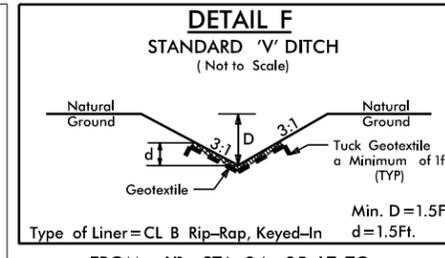
FROM -Y1- STA. 21+65 RT TO
-Y1- STA. 21+80 RT
EST. 100 TONS CLASS B RIP RAP
EST. 225 SY GEOTEXTILE



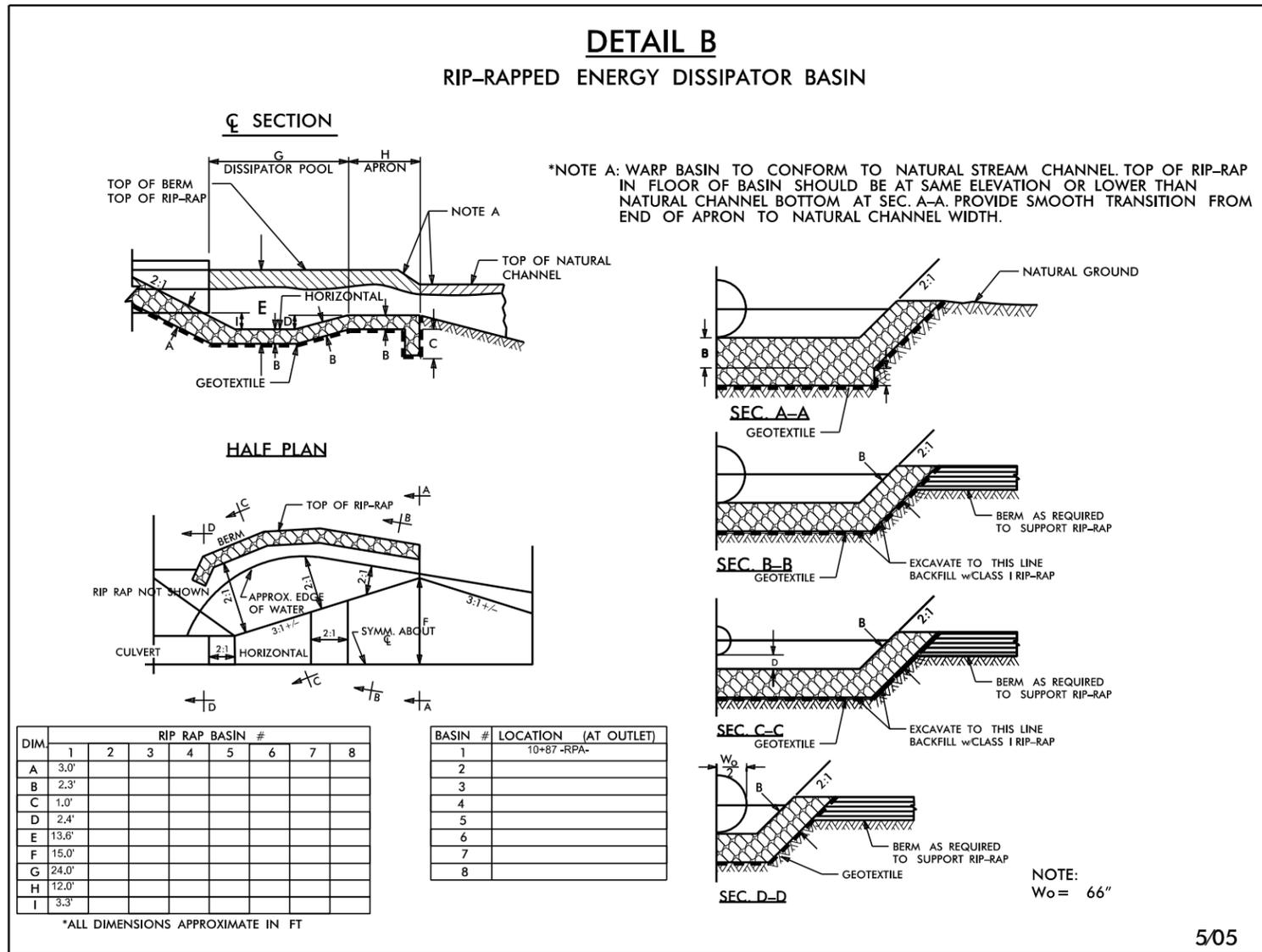
FROM -LPB- STA. 9+35 RT TO -LPB- STA. 9+50 RT



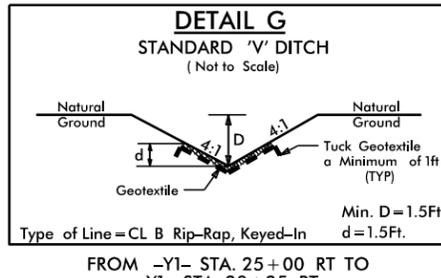
FROM -RPB- STA. 13+50 LT TO
-RPB- STA. 14+10 LT



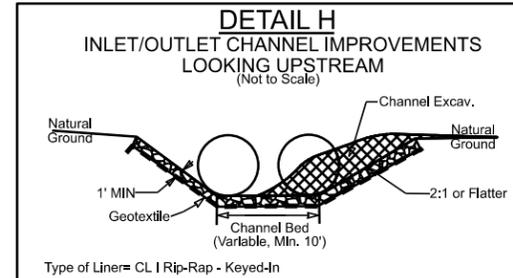
FROM -Y1- STA. 24+25 LT TO
-Y1- STA. 26+50 LT
EST. 102 TONS CLASS B RIP RAP
EST. 225 SY GEOTEXTILE



FROM -RPA- STA. 10+50 LT TO -RPA- STA. 10+90 LT

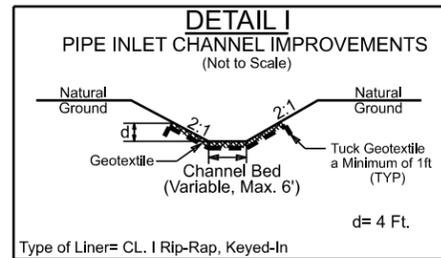


FROM -Y1- STA. 25+00 RT TO
-Y1- STA. 28+25 RT
EST. 195 TONS CLASS B RIP RAP
EST. 434 SY GEOTEXTILE

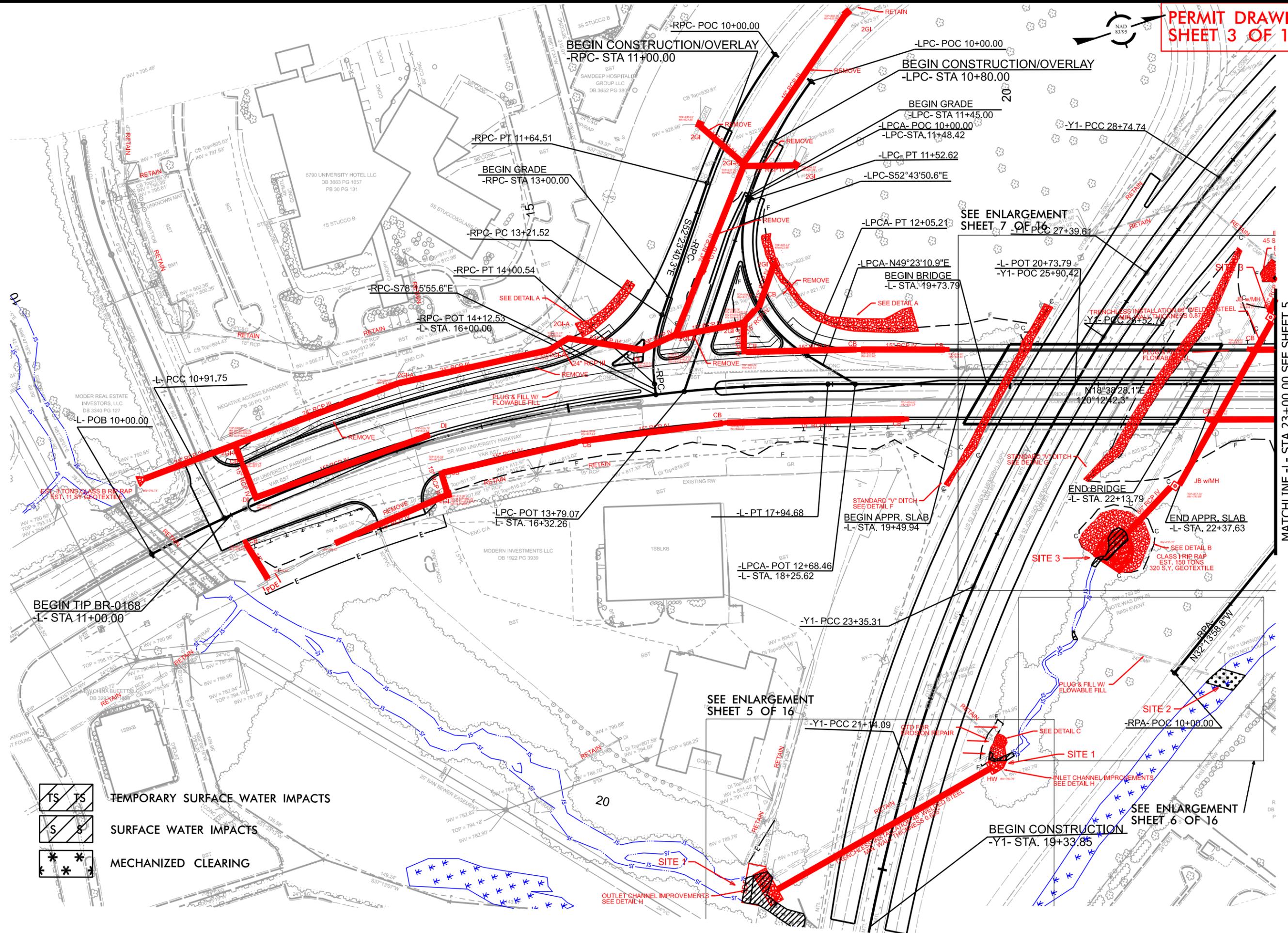


-Y1- STA. 21+55 OFFSET 82' RT
EST. 25 TONS CLASS I RIP RAP
EST. 52 SY GEOTEXTILE
EST. 24 CY EXCAVATION

-Y1- STA. 19+50 OFFSET 107' LT
EST. 34 TONS CLASS I RIP RAP
EST. 72 SY GEOTEXTILE
EST. 13 CY EXCAVATION



-Y1- STA. 28+40 OFFSET 115' RT
EST. 15 TONS CLASS I RIP RAP
EST. 25 SY GEOTEXTILE
EST. 20 CY EXCAVATION



-  TEMPORARY SURFACE WATER IMPACTS
-  SURFACE WATER IMPACTS
-  MECHANIZED CLEARING

MATCHLINE -L- STA 23+00.00 SEE SHEET 5

REVISIONS



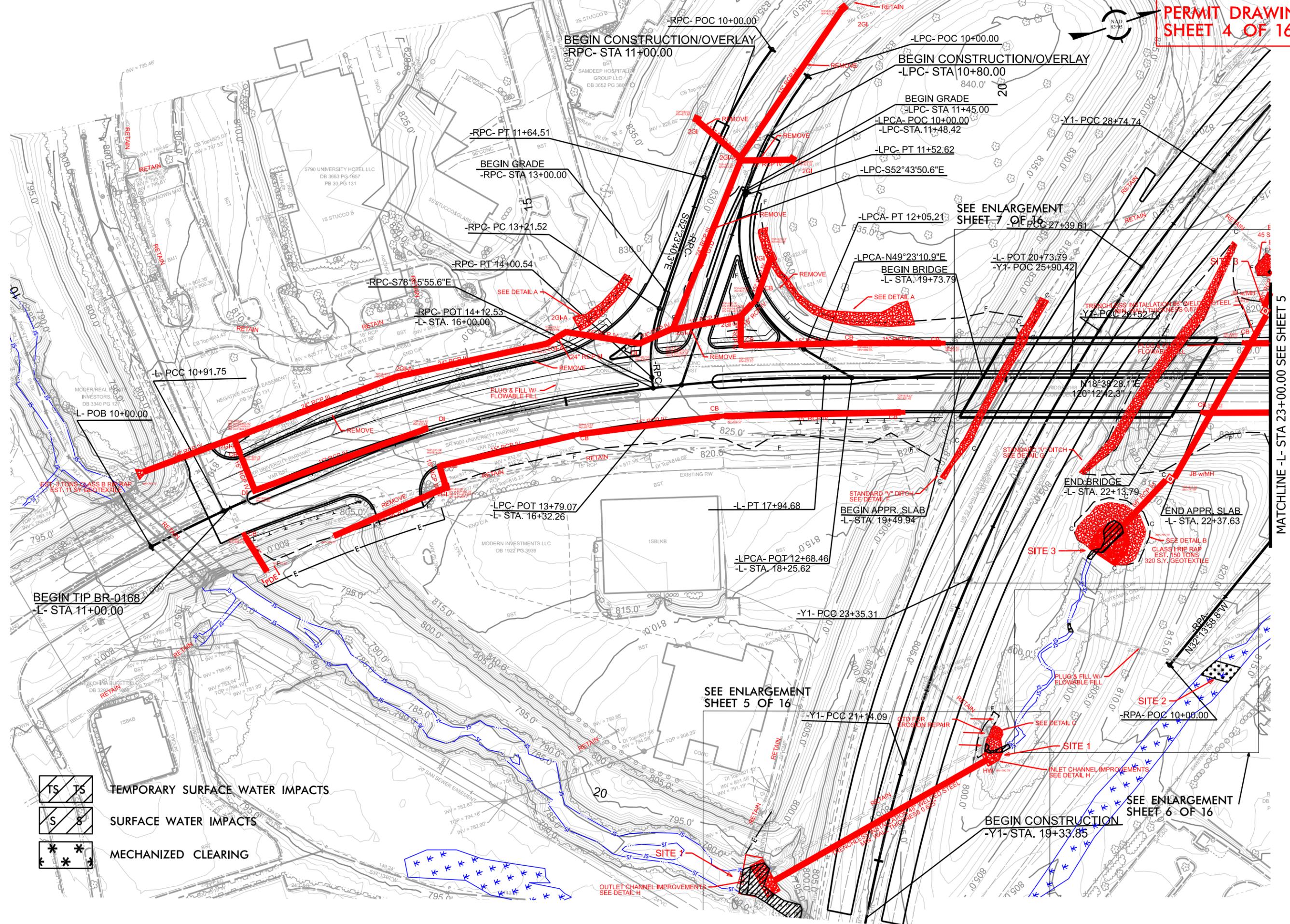
SEE ENLARGEMENT
SHEET 7 OF 16

SEE ENLARGEMENT
SHEET 5 OF 16

SEE ENLARGEMENT
SHEET 6 OF 16

20

20



PERMIT DRAWING
SHEET 5 OF 16

BR-0168

SITE 1

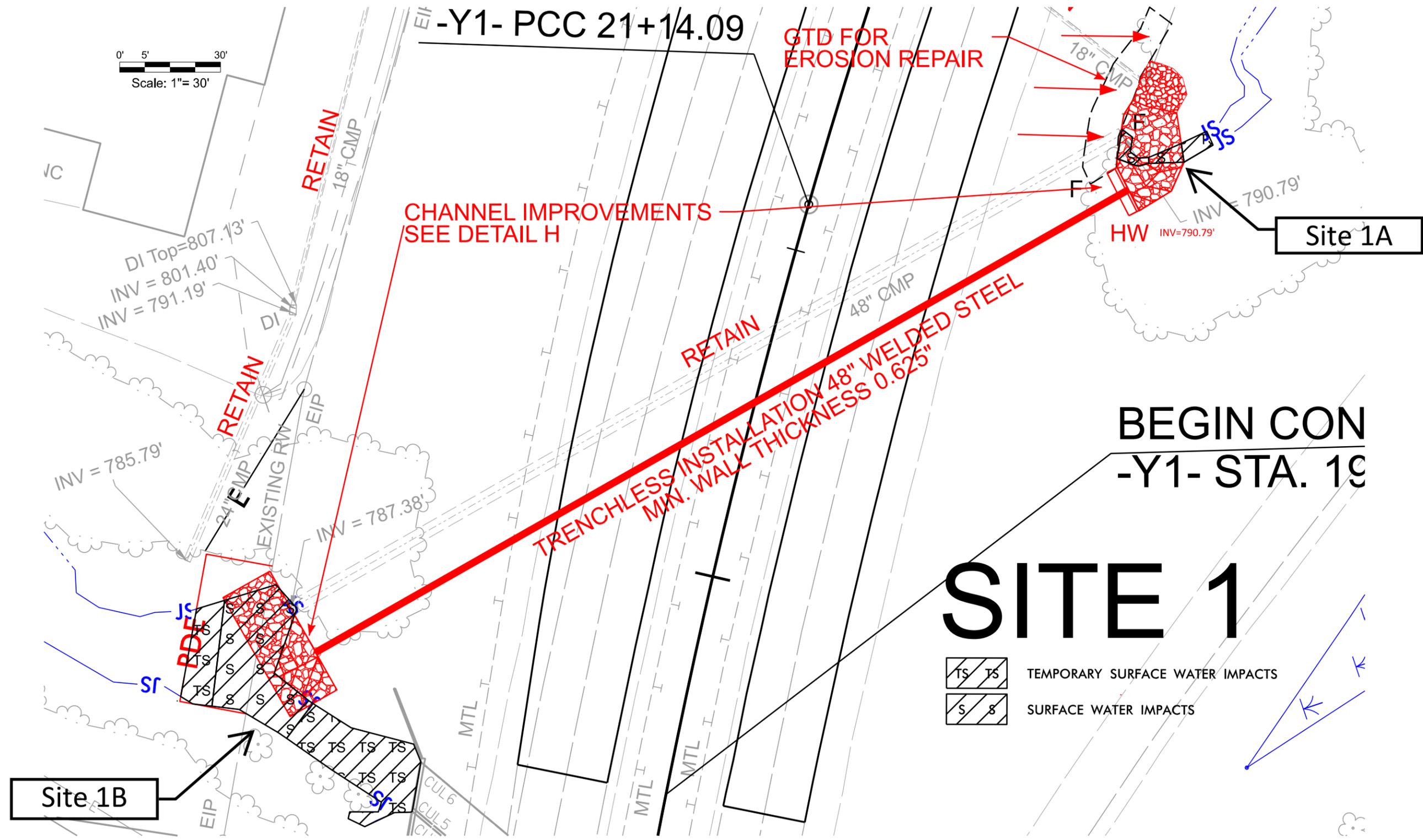
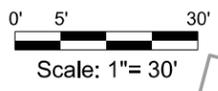
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FOBSYTH COUNTY



ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



SITE 1

- TEMPORARY SURFACE WATER IMPACTS
- SURFACE WATER IMPACTS

REVISIONS

Site 1B

Site 1A

BEGIN CON
-Y1- STA. 19

**PERMIT DRAWING
SHEET 6 OF 16**

BR-0168
SITE 2

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FOBSYTH COUNTY

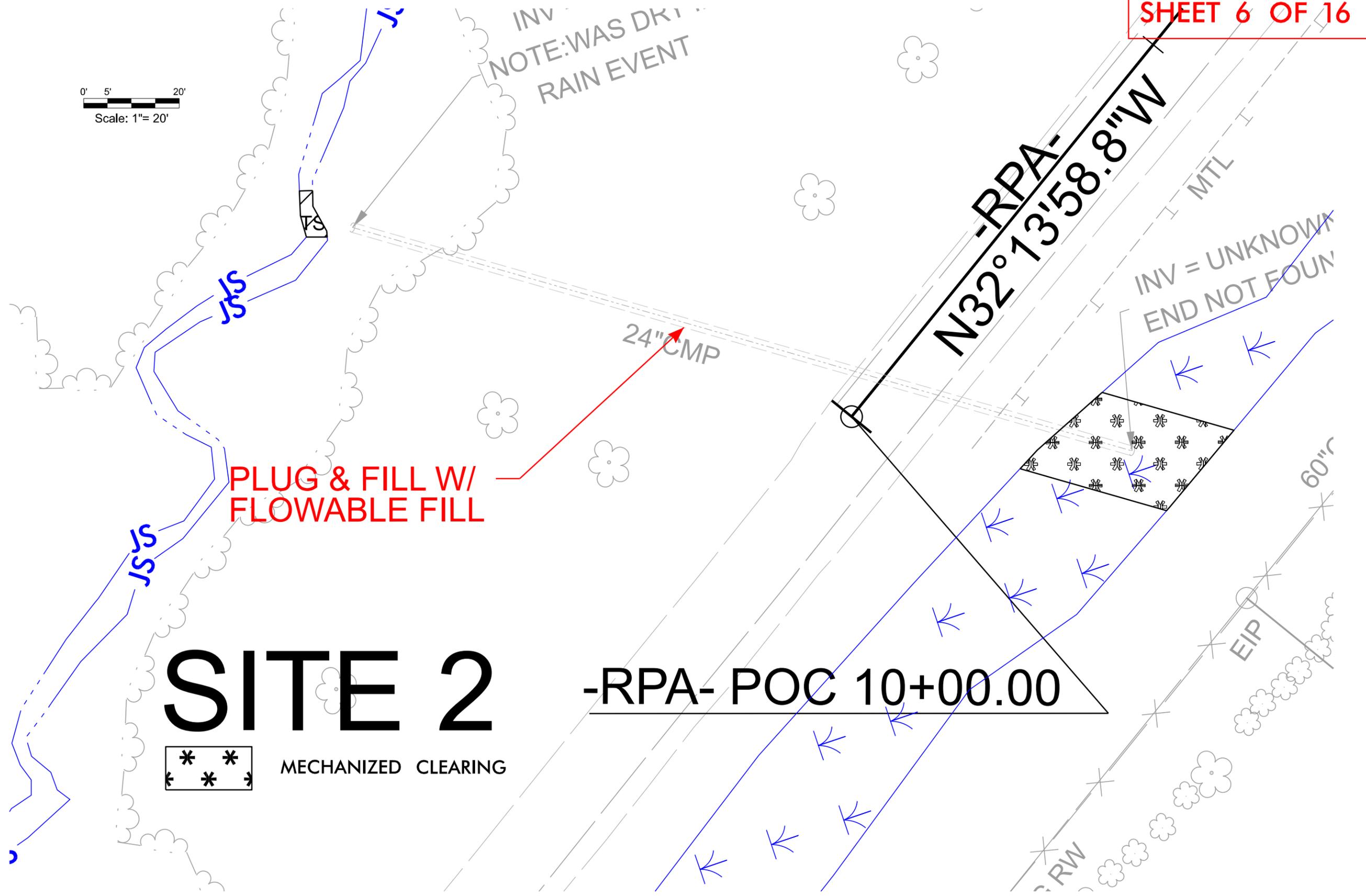
ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

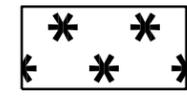
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



INV
NOTE: WAS DK
RAIN EVENT



SITE 2

 MECHANIZED CLEARING

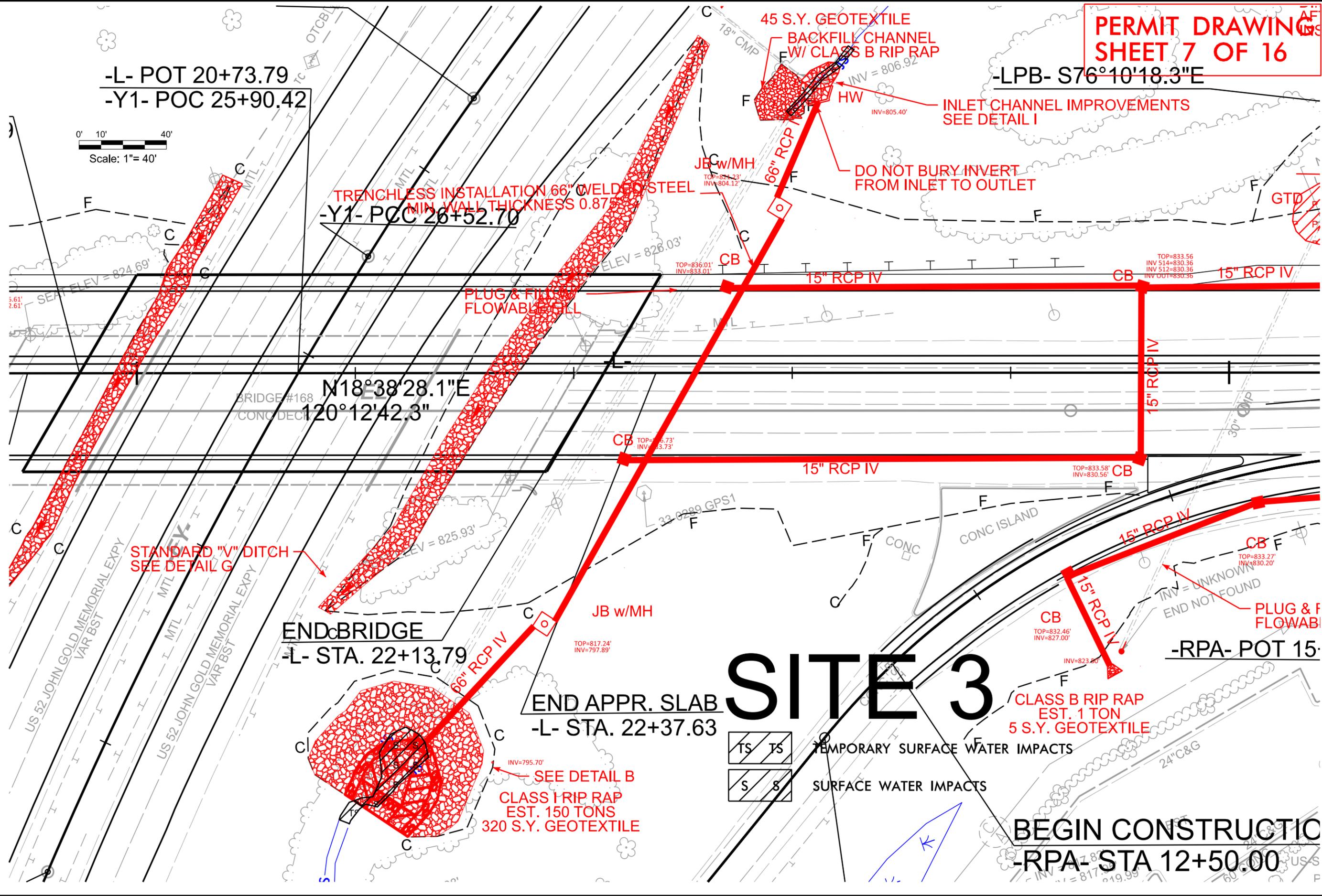
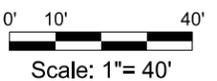
-RPA- POC 10+00.00

REVISIONS

PERMIT DRAWING
SHEET 7 OF 16

-L- POT 20+73.79
-Y1- POC 25+90.42

-LPB- S76°10'18.3"E



TRENCHLESS INSTALLATION 66" WELDED STEEL
MIN. WALL THICKNESS 0.875"

45 S.Y. GEOTEXTILE
BACKFILL CHANNEL
W/ CLASS B RIP RAP

INLET CHANNEL IMPROVEMENTS
SEE DETAIL I

DO NOT BURY INVERT
FROM INLET TO OUTLET

PLUG & FILL
FLOWABLE FILL

STANDARD "V" DITCH
SEE DETAIL G

END BRIDGE
-L- STA. 22+13.79

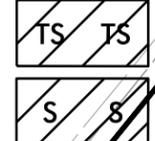
END APPR. SLAB
-L- STA. 22+37.63

SITE 3

CLASS B RIP RAP
EST. 1 TON
5 S.Y. GEOTEXTILE

-RPA- POT 15

BEGIN CONSTRUCTIVE
-RPA- STA 12+50.00



REVISIONS

PERMIT DRAWING SHEET 8 OF 16

BR-0168

Site 3

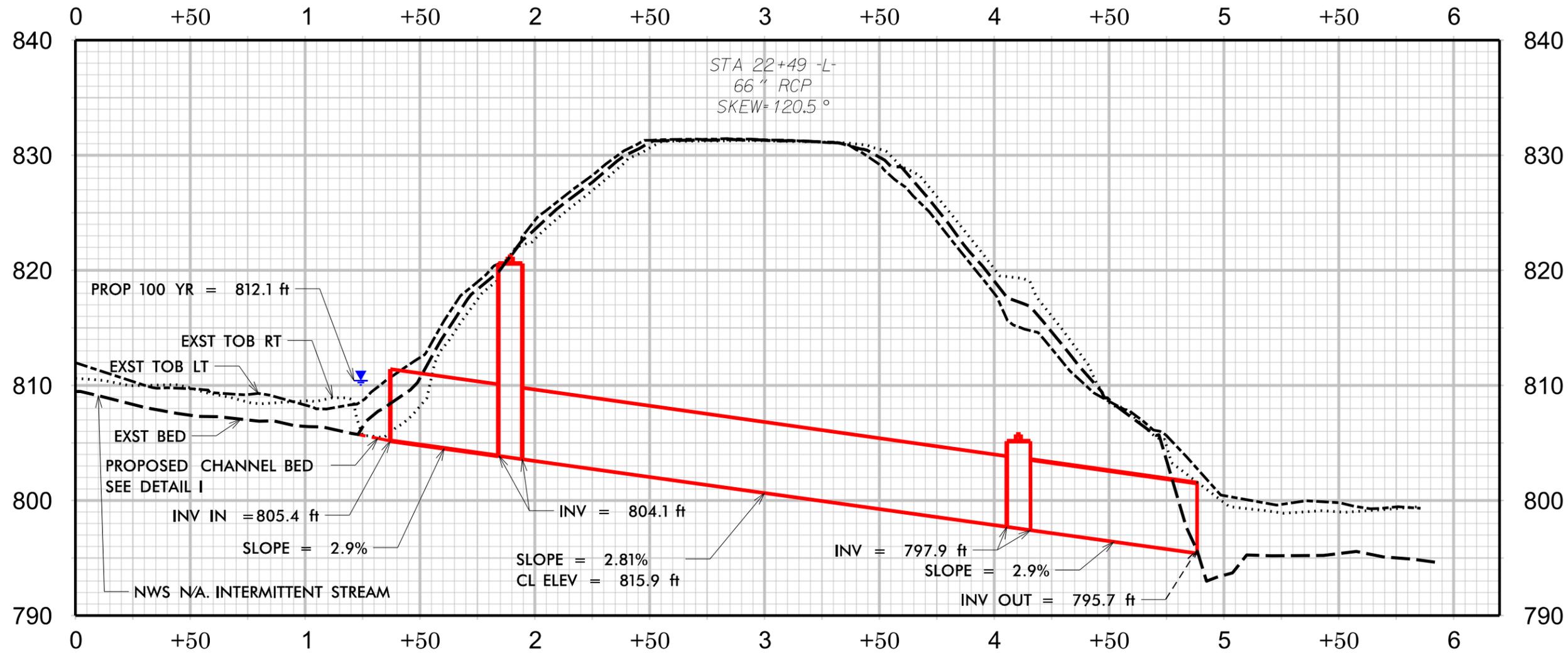
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FOBSYTH COUNTY



ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



REVISIONS

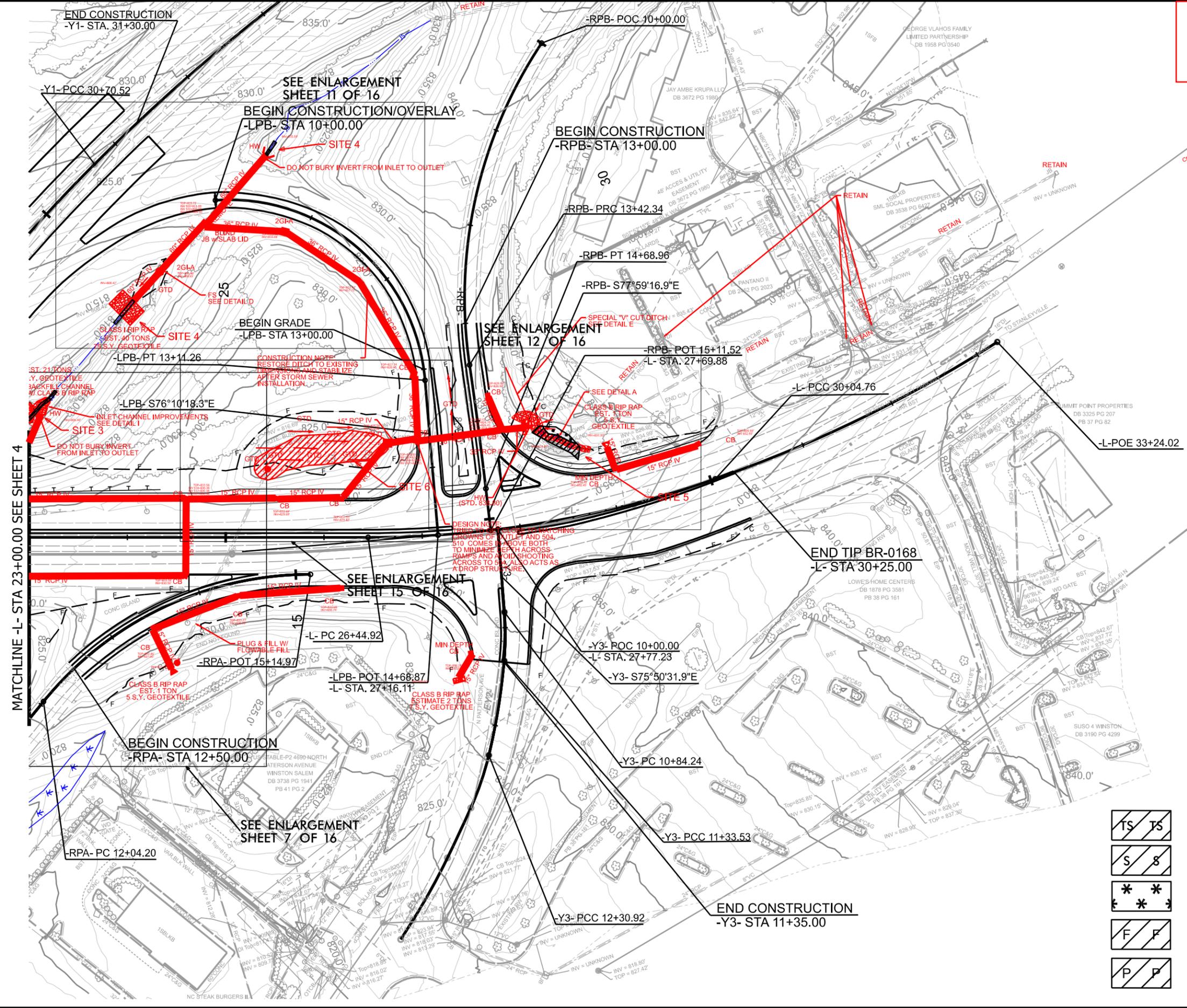
PERMIT DRAWING SHEET 10 OF 16

BR-0168
1005
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FORSTH COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETE



MATCHLINE -L- STA 23+00.00 SEE SHEET 4

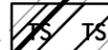
-  TEMPORARY SURFACE WATER IMPACTS
-  SURFACE WATER IMPACTS
-  MECHANIZED CLEARING
-  FILL IN WETLAND
-  SURFACE WATER IMPACTS (POND)

REVISIONS



REVISIONS

SITE 4

 TEMPORARY SURFACE WATER IMPACTS
 SURFACE WATER IMPACTS

BEGIN CONSTRUCTION/OVER -LPB- STA 10+00.00

HW
 INV=815.59'
 DO NOT BURY INVERT
 FROM INLET TO OUTLET

TOP=815.77
 INV 503=811.00
 INV 502=809.00
 INV OUT=809.00

60" RCP IV
 42" CMP
 REMOVE

36" RCP IV
 2GI-A
 BLIND
 JB w/SLAB LID
 TOP=822.14'
 INV=816.38'

2GI-A
 TOP=816.40'
 INV=808.65'

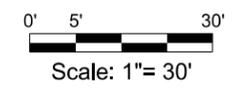
FS
 25
 SEE DETAIL D

2GI-A
 TOP=823.47'
 INV=817.72'

INV=808.42'
 60" RCP IV
 INV = 808.42'

CLASS I RIP RAP
 EST. 40 TONS
 75 S.Y. GEOTEXTILE

BEGIN GRADE
 -LPB- STA 13+00.00



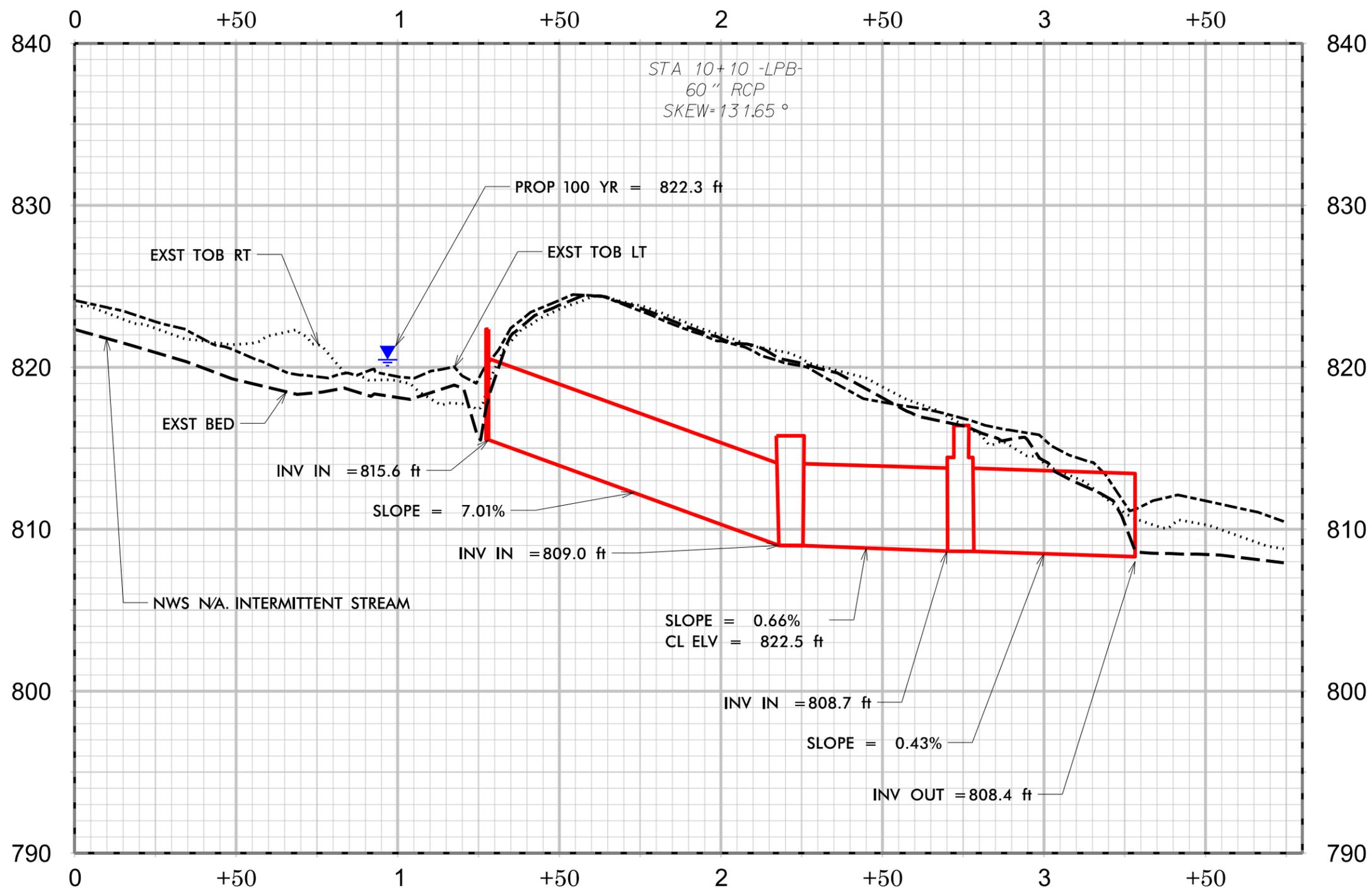
PERMIT DRAWING SHEET 12 OF 16

BR-0168
SITE 4
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FORSYTH COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN ENGINEER

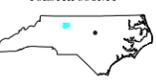
HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



REVISIONS

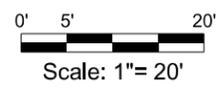
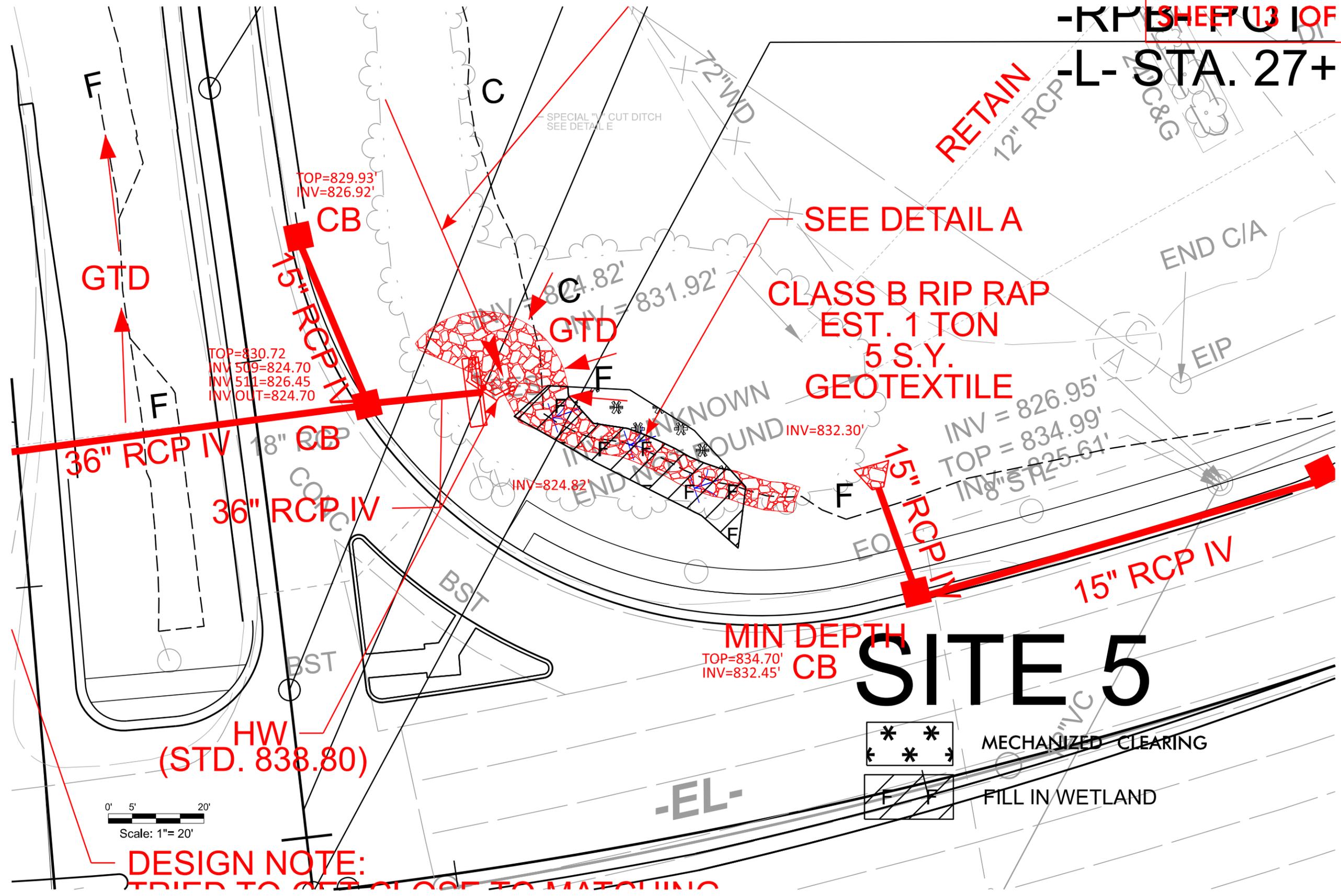
BR-0168
SITE 5
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FOBSYTH COUNTY



ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

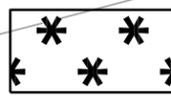
HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN NOTE:
TRIED TO GET CLOSE TO MATCHING

SITE 5

 MECHANIZED CLEARING

 FILL IN WETLAND

PERMIT DRAWING SHEET 14 OF 16

BR-0168

Site 5

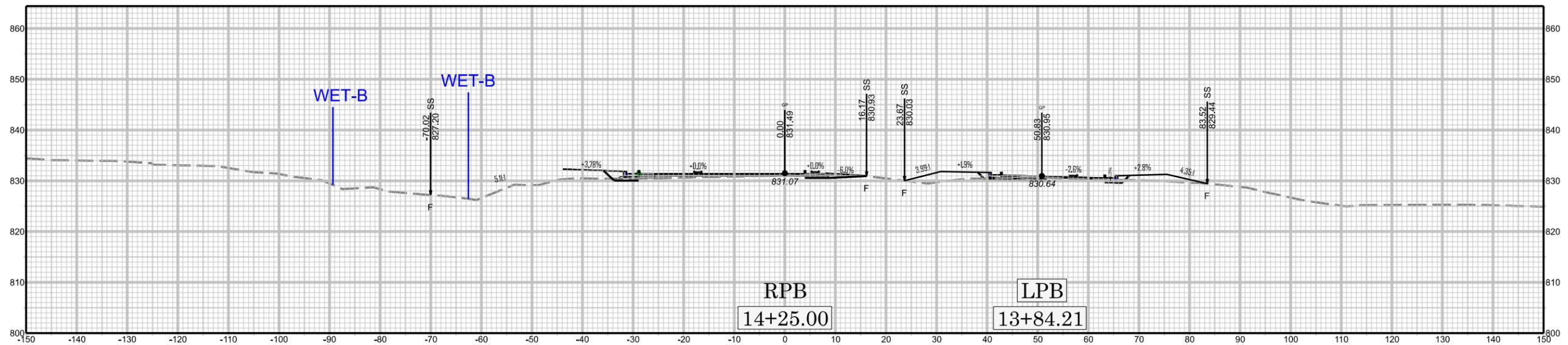
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FORSYTH COUNTY



ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



REVISIONS

SITE 6

SURFACE WATER IMPACTS (POND)

18.3" E
VENTS

RESTORE DITCH TO EXISTING
DIMENSIONS AND STABILIZE
AFTER STORM SEWER
INSTALLATION

PERMIT DRAWING
SHEET 15 OF 16

BR-0168

SITE 6

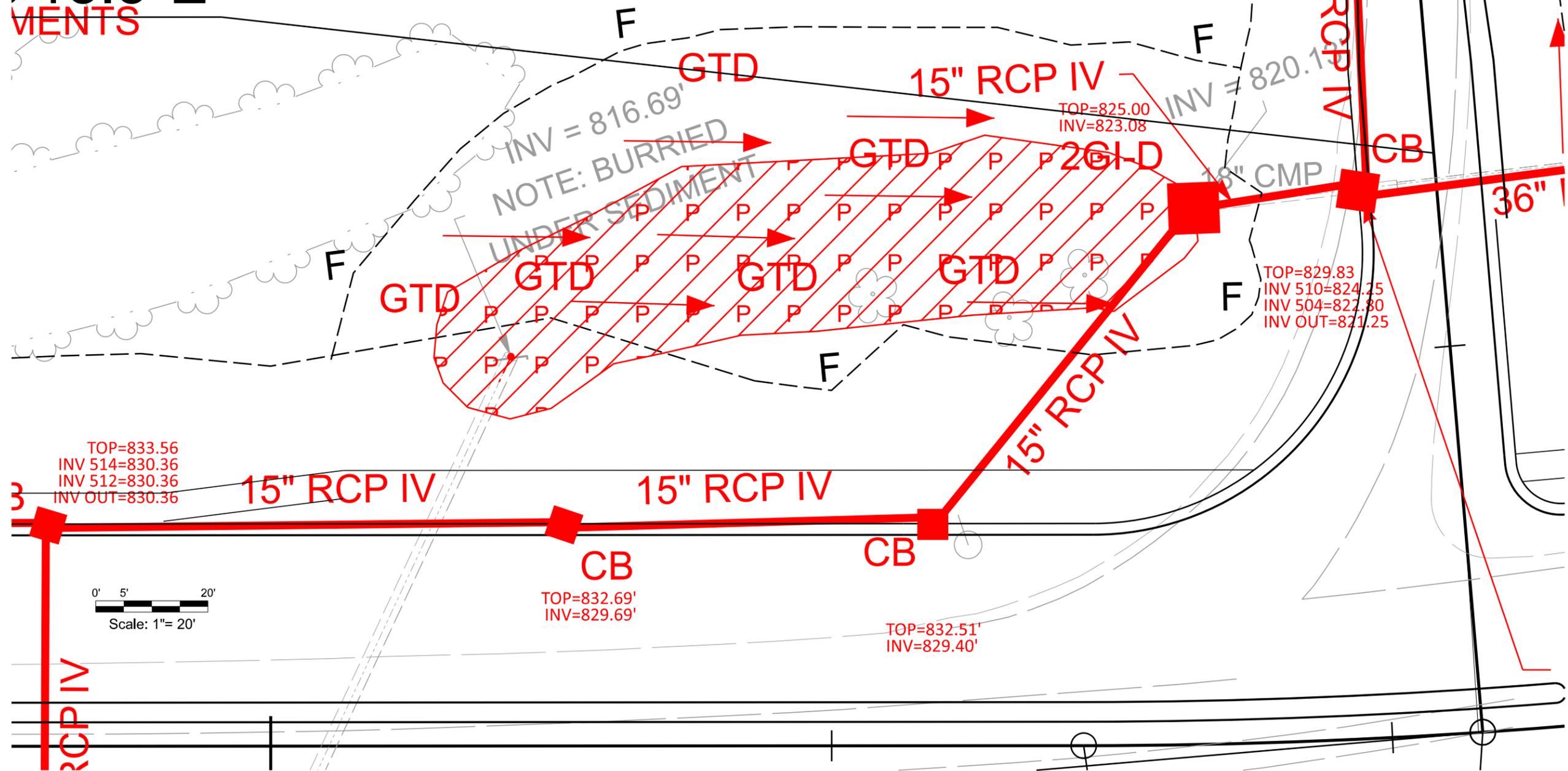
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FOBSYTH COUNTY



ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



REVISIONS

WETLAND AND SURFACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1A	-Y1- 21+54 to 21+65	48" Welded Steel Pipe Inlet						< 0.01	< 0.01	20	10	
1B	-Y1- 19+08 to 19+70	48" Welded Steel Pipe Outlet						0.02	0.02	44	48	
2	-RPA- 10+31	Plug & Fill 24" CMP				0.01			< 0.01		10	
3	-Y1- 24+14 to 28+55	66" RCP, Energy Dissipator Basin						0.01	< 0.01	83	20	
4	-Y1- 29+63 to 32+24	60" RCP						< 0.01	< 0.01	26	20	
5	-L- 28+28 to 28+76	Rip Rap Toe Protection	0.01			< 0.01						
6	-L- 25+29 to 26+67	Fill in Pond						0.09				
TOTALS*:			0.01			0.02		0.12	0.03	173	108	0

*Rounded totals are sum of actual impacts

NOTES:

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 7/24/2025
 Forsyth
 BR-0168
 WBS # 67168.1.1
 SHEET 15 OF 15

Mitigation

Brushy Mountain and Scout Mitigation Sites

The Brushy Mountain Mitigation Site is part of the Restoration System Yadkin 01 Umbrella Mitigation Bank. The 16-acre site is in the Yadkin River Basin, Hydrologic Unit Code (03040101) on Macemore Road, three miles south of Elkin, in Yadkin County, North Carolina.

NCDOT has acquired 2.34 acres of wetland credit at the Brushy Mountain Mitigation Site to offset the impacts associated with projects within Yadkin 03040101. Restoration Systems will be debiting the Brushy Mountain mitigation site 0.06 acres to cover the 0.03 acres of impacts associated with BR-0168. The debit is highlighted below.

F_TIPDebits							
PO Number	TIP	Debit Amount	Debit Type	Debit Sub Type	Permit Date	Notes	Links
7700002604	BR-0168	0.06	Wetlands			0.03 ac imp @ 2:1	

The Scout Mitigation Site is part of the RES Yadkin 01 Umbrella Mitigation Bank. The 14-acre site presents 3,144 linear feet of stream restoration and enhancement generating 2,918 warm stream mitigation units after non-standard width buffer adjustments along Hauser Creek and two unnamed tributaries in the Upper Yadkin River Basin, Hydrologic Unit Code (03040101) and is located approximately eight miles west of Clemmons and five miles northwest of Bermuda Run, in Davie County North Carolina.

NCDOT has acquired 2053 linear feet of stream credit from the Scout Mitigation site to offset stream impacts within Yadkin 03040101. RES will be debiting the Scout Mitigation site 346 linear feet to offset 173 linear feet of impacts associated with BR-0168. The mitigation is highlighted below

F_TIPDebits							
PO Number	TIP	Debit Amount	Debit Type	Debit Sub Type	Permit Date	Notes	Links
7700002059	U-5824	674.00	Stream	Warm	2023	90lf @ 1:1 and 292lf at 2:1	
7700002059	BP9.C002	42.00	Stream	Warm	2024	21lf impacts @ 2:1	
7700002059	BP9.R007	244.00	Stream	Warm		20 ft @ 1:1 112ft @ 2:1	
7700002059	BR-0168	346.00	Stream	Warm		173 ln ft impacts @ 2:1	



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

Subject: Mitigation Acceptance Letter: BR-0168

Dear Mr. Lancaster:

The purpose of this letter is to notify you that Restoration Systems, LLC (RS) will provide the mitigation for the subject project. Based on the information received from you on August 6, 2025, the impacts are located in HUC 03040101 of the Yadkin River basin in the Southern Outer Piedmont (SOP) Eco-Region, and are as follows:

Yadkin 03040101 SOP	Wetland		
	Riparian	Non- Riparian	Coastal
Impacts feet/acres)	0.03	0	0
Credits	0.06	0	0

RS commits to implementing sufficient compensatory mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies in accordance with the Brushy Mountain Mitigation Bank Instrument dated January 23, 2019. 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 RS.

If you have any questions or need additional information, please contact Caitlan Hooker at 843.261.3049.

Caitlan B. Hooker
Restoration Systems, LLC



3600 Glenwood Avenue, Suite 100
Raleigh, NC 27612

Corporate Headquarters
6575 West Loop South, Suite 300
Bellaire, TX 77401
Main: 713.520.5400

August 6, 2025

Mr. Robert E. Crowther V
NCDOT Environmental Program Consultant
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

Subject: Mitigation Acceptance Letter – BR-0168

Dear Mr. Crowther:

The Scout Mitigation Site is part of the RES Yadkin 01 Umbrella Mitigation Bank. The 14-acre site presents 3,144 linear feet of stream restoration and enhancement generating 2,918 warm stream mitigation units after non-standard width buffer adjustments along Hauser Creek and two unnamed tributaries in the Upper Yadkin River Basin, Hydrologic Unit Code (03040101) and is located approximately eight miles west of Clemmons and five miles northwest of Bermuda Run, in Davie County North Carolina.

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F_TIPDebits							
PO Number	TIP	Debit Amount	Debit Type	Debit Sub Type	Permit Date	Notes	Links
7700002059	U-5824	674.00	Stream	Warm	2023	90lf @ 1:1 and 292lf at 2:1	
7700002059	BP9.C002	42.00	Stream	Warm	2024	21lf impacts @ 2:1	
7700002059	BP9.R007	244.00	Stream	Warm		20 ft @ 1:1 112ft @ 2:1	
7700002059	BR-0168	346.00	Stream	Warm		173 ln ft impacts @ 2:1	

Bank Sponsor: Environmental Banc & Exchange, LLC
UMBI Name: RES Yadkin01 Umbrella Mitigation Bank
Site Name: Scout

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 RES.

If you have any questions or need additional information, please contact me at astaley@res.us or 919-209-1055.

Sincerely,

Amy Staley
Credit Sales Manager
RES | res.us

Protected Species/ Section 7



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street Suite B
Asheville, North Carolina 28801

August 22, 2025

Subject: Review Response for Transportation Project(s) Covered by the Western North Carolina Bat Programmatic Biological Opinion

Greetings:

The U.S. Fish and Wildlife Service, Asheville Ecological Services Field Office, has reviewed the project(s) submitted on August 14, 2025, for coverage under the Western North Carolina (WNC) Bat Programmatic Biological Opinion (PBO), issued April 1, 2025. Based on the submitted materials and any supplemental information provided, we confirm the project(s) meet the criteria for coverage under this PBO in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531–1543) (ESA), thus concluding formal consultation for the project(s).

This correspondence conveys our review for listed/proposed bats covered by the WNC Bat PBO only. The lead federal agency (Federal Highway Administration (FHWA) or North Carolina Department of Transportation as their designee, or U.S. Army Corps of Engineers) remains responsible for ensuring that any other listed or proposed species and/or designated critical habitat that occurs within the project action area are addressed in accordance with section 7 of the ESA. For other listed species potentially occurring in the action area, if suitable habitat is absent from the action area, “No Effect” determinations are appropriate. For plants, in instances where suitable habitat is present and botanical surveys conducted during the optimal survey window and within the past one or two years (depending on the species) have negative results, we would concur with a biological determination of “may affect, not likely to adversely affect” (NLAA).

Review and concurrence under the WNC Bat PBO are considered complete for the following project(s):

Project Title	NCDOT STIP/ID #	USFWS Log #
Replace Bridge 580108 on SR 1560 over North Fork Catawba River in McDowell County	BP13.R048	25-271
NC 8/89 Slide Repair Just North of Danbury in Stokes County	18209.1085011	25-272
Replace Bridge 330289 on SR 4000 (University Parkway) over US 52 in Forsyth County	BR-0168	23-151
Ashe County Bridge 040156 Replacement on SR 1169	BP11.R046	23-225
Replace Bridge 740129 over Vaughn Creek on SR 1502 (New Market Road) in Polk County	BP14.R043	25-273

Replace Bridge 740203 over UT to North Pacolet River on SR 1124 (Baker Drive) in Polk County	BP14.R043	25-274
Replace Bridge 740217 over UT to North Pacolet River on SR 1167 (Judge Road) in Polk County	BP14.R043	25-275

We appreciate the opportunity for review and comment.

Sincerely,

U.S. Fish and Wildlife Service, Asheville Field Office

Federally Protected Bat Habitat Assessment

For

**Replace Bridge No. 330289 on SR 4000 (University Parkway) over US 52
Forsyth County, North Carolina, TIP No. BR-0168
WBS Element No. 67168.1.1**

Prepared for:



NCDOT

**The North Carolina Department of Transportation
Biological Surveys Group
1598 Mail Service Center
Raleigh, NC 27699-1598
(919) 707-6000**

Prepared by:



HDR

**555 Fayetteville Street
Raleigh, NC 27601
(919) 232-6600**

August 2025

The North Carolina Department of Transportation (NCDOT, Division 9) proposes to replace Bridge No. 330289 on SR 4000 (University Parkway) over US 52 in Forsyth County, North Carolina, TIP No. BR-0168, WBS No. 67168.1.1. HDR was contracted to perform inspections for federally protected bat species for the proposed project.

The Tricolored Bat (*Perimyotis subflavus*) (Proposed Endangered) is listed by the United States Fish and Wildlife Service (USFWS) as potentially occurring in the project footprint (<https://ipac.ecosphere.fws.gov>, see attached).

SURVEY METHODS

The bat habitat assessment followed the guidance set forth in NCDOT’s Standard Operating Procedures (SOP) Preliminary Bat Habitat Assessments (Structures, Caves & Mines) (2025). State and federal guidelines for decontamination were followed. Spatial data containing records for active and inactive mine locations were obtained from the U.S. Geological Survey Mineral Resources On-Line Spatial Data website (USGS 2025) to check for mine locations within a half-mile of the project.

SURVEY FINDINGS

On July 21, 2025, HDR biologists (Sara Easterly and Raegan Robinson) assessed the BR-0168 project study area for potential bat habitat. Bat habitat assessment forms were completed and are attached. Bridge 330289 has a concrete deck, concrete and metal guard rails, and concrete end walls. Crevices suitable for roosting were present. Deck drains were not present. No evidence of bats using the bridge was found. No other bridges were present in the project study area.

There were five culverts large enough to meet the NCDOT criteria for requiring inspections (at least 3 ft in diameter and 60 ft long). Culverts 001, 002, and 003 were metal pipes approximately four feet in diameter (**001**: 36.183317, -80.276485; **002**: 36.182777, -80.276228; and **003**: 36.181912, -80.275601). All three culverts transported an unnamed tributary (Stream “SA” in the January 2023 NRTR) to Mill Creek. Culvert 330287 (36.180229, -80.273162) and culvert 330332 (36.178541, -80.275637) were both triple barrel concrete box culverts. Culvert 330287 was approximately 15 feet high and 12 feet wide. Culvert 330332 was approximately 14 feet high and 12 feet wide. No evidence of bats was found in any of the structures that were inspected. No abandoned buildings were observed in the study area. See Figure 1 for culvert and bridge locations.

No caves were observed within the project footprint. According to the USGS mines database, one mine (Vulcan Materials) was located within a half-mile southeast of the project study area (USGS 2025).

Tricolored Bat (*Perimyotis subflavus*)

Tricolored Bats are generally associated with forested landscapes. In summer, they will roost in tree foliage, or sometimes in buildings. They are also known to roost in culverts. The nearest NHP (2025) record is 14 miles northeast of the project study area in Madison County, observed in 2017 (EO ID 36148).

Roosting habitat is present at Bridge 330289 in the form of expansion joints. The triple barrel box culverts (330287 and 330332) had rough surfaces suitable for roosting. There were suitable roosting surfaces found in the three metal pipes (001, 002, and 003).

There is alternative habitat available in the project vicinity. Continuous forested habitat is present for roosting, foraging, and commuting. Mill Creek could provide suitable foraging and commuting habitat for PESU and other bat species.

There is likely no suitable winter habitat in the project vicinity due to the lack of caves in the area. See table below for additional information on the presence/probable absence of habitat suitability.

Presence (✓) or Probable Absence (X) of various Habitat Types for Bat Species present in BR-0168 Project Area

Species	Summer Roosting	Winter Roosting	Foraging Habitat	Commuting Habitat
PESU	✓	X	✓	✓

REFERENCES

- LeGrand, H., L. Gatens, E. Corey, and T. Howard. 2022. Mammals of North Carolina: their Distribution and Abundance. Raleigh (NC): North Carolina Biodiversity Project and North Carolina State Parks. <https://auth1.dpr.ncparks.gov/mammals/accounts.php>. (Accessed August 5, 2025).
- North Carolina Department of Transportation (NCDOT) 2025. Standard Operating Procedures (SOP) Preliminary Bat Habitat Assessments (Structures, Caves & Mines). <https://connect.ncdot.gov/resources/Environmental/EAU/BSG/Documents/Bats/NCDOT%20SOP%202025%20Prelim%20Bat%20Habitat%20Assessment%20Struc%20Cave%20Mine.pdf> (Accessed August 5, 2025).
- North Carolina Natural Heritage Program (NCNHP). North Carolina Natural Heritage Data Explorer (web application; <https://ncnhde.natureserve.org/> July 2025 Quarterly Dataset (Accessed August 5, 2025).
- United States Fish and Wildlife Service (USFWS). 2025. Information for Planning and Consulting (IPac). <https://ipac.ecosphere.fws.gov/> (Accessed August 5, 2025).
- U.S. Geological Survey (USGS), Mineral Resources On-Line Spatial Data Website. 2025. <http://mrddata.usgs.gov/mrds/find-mrds.php> (Accessed July 18, 2025).

Qualifications

Principal

Investigator: Sara Easterly

Education: M.S. Environmental Health Science, East Tennessee State University, 1995
B.A. Biology, Carson Newman College, 1986

Experience: Senior Environmental Scientist, HDR, 2012-Present
Environmental Specialist, NCDOT, 2006-2012
Environmental, Health & Safety Specialist, ARCADIS, 2000-2006
Environmental Specialist, TH&P, 1995-2000

Investigator: Raegan Robinson

Education: B.S. Zoology, NCSU, 2024

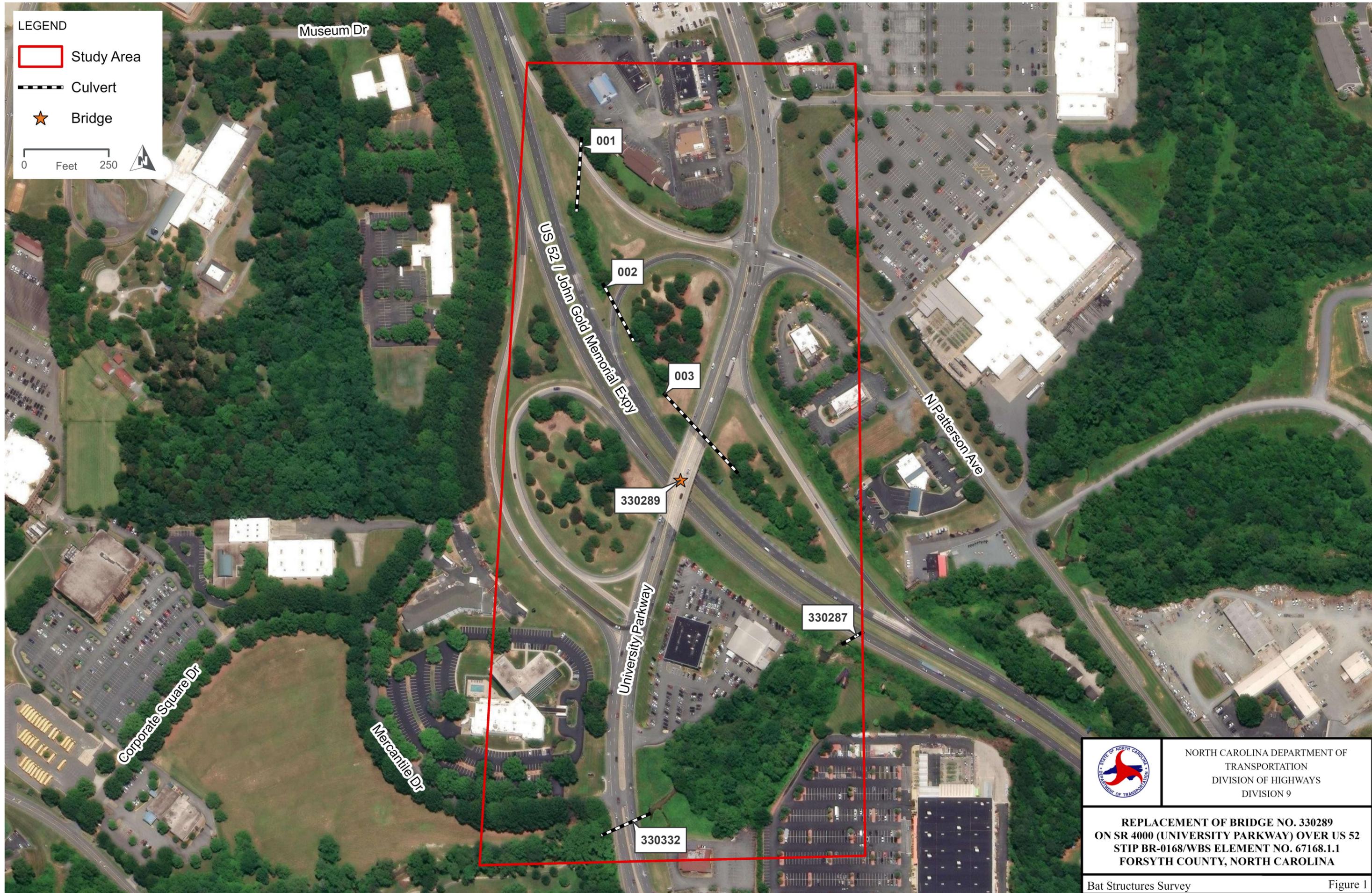
Experience: Environmental Scientist, HDR, 2024-Present
Environmental Intern, HDR, 2022-2024

Figure 1

LEGEND

- Study Area
- Culvert
- ★ Bridge

0 Feet 250



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS DIVISION 9</p>
<p>REPLACEMENT OF BRIDGE NO. 330289 ON SR 4000 (UNIVERSITY PARKWAY) OVER US 52 STIP BR-0168/WBS ELEMENT NO. 67168.1.1 FORSYTH COUNTY, NORTH CAROLINA</p>	
<p>Bat Structures Survey</p>	<p>Figure 1</p>

IPaC Official Species List and NHP Report



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street, Suite B
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330

In Reply Refer To:
Project Code: 2025-0131411
Project Name: BR-0168

08/05/2025 15:31:54 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, as well as proposed and designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The enclosed species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please note that new species information can change your official species list. Under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends you visit the ECOS-IPaC website regularly during project planning and implementation to ensure your species list is accurate or obtain an updated species list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment (BA) or biological evaluation (BE) should be completed for your project. A BA is required for major construction activities (or other undertakings having similar physical impacts) considered to be Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c))(NEPA). For projects other than major construction activities, the Service suggests that a BE be prepared to determine effects of the action and whether those effects may affect listed species and/or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it is reasonably certain to occur and would not occur "but for" the proposed action.

Recommended contents of a BA/BE are described at 50 CFR 402.12. More information and resources about project review and preparing a BA/BE can be found at the following web link: <https://www.fws.gov/office/asheville-ecological-services/asheville-field-office-online-review-process-overview>.

If a Federal agency determines listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. The Service is not required to concur with "no effect" determinations from Federal action agencies. If consultation is required, the Service recommends that candidate species, proposed species, proposed critical habitat, and at-risk species be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or licensed applicants, can be found in the "Endangered Species Consultation Handbook" at the following web link: <https://www.fws.gov/media/endangered-species-consultation-handbook>.

Conservation measures (CMs) are actions included in the project description that the action agency or the applicant commits to implementing to avoid or minimize impacts to federally threatened or endangered species from their actions. CMs are a part of the proposed action and their implementation is required under the terms of a section 7 consultation. Ultimately, the lead federal action agency (project funder, permitter, or implementer) commits to CMs, however, implementation may be passed to the applicant via permit conditions. CMs demonstrate the action agency's commitment to imperiled species conservation and have the potential to expedite project review under the Act by eliminating or decreasing adverse impacts that would otherwise result from project implementation. Potential CMs can be found at the following web link: https://www.fws.gov/sites/default/files/documents/2025-03/2025-02-sample-conservation-measures-asheville_field_office.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Act, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). More information about MBTA and BGEPA can be found at the following web link: <https://www.fws.gov/program/migratory-birds>.

We appreciate your consideration of Federally listed species. The Service encourages Federal agencies to include conservation of threatened and endangered species in their project planning to further the purposes of the Act. Please contact our staff at 828-258-3939, if you have any questions. In future correspondence concerning this project, please reference the Project Code which can be found in the header of this letter.

Attachment(s):

- Official Species List
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Asheville Ecological Services Field Office

160 Zillicoa Street, Suite B

Asheville, NC 28801-1082

(828) 258-3939

PROJECT SUMMARY

Project Code: 2025-0131411
Project Name: BR-0168
Project Type: Road/Hwy - Maintenance/Modification
Project Description: Replace Bridge No. 330289 on SR 4000 (University Parkway) over US 52

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@36.17994745,-80.27554259509773,14z>



Counties: Forsyth County, North Carolina

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

REPTILES

NAME	STATUS
Bog Turtle <i>Glyptemys muhlenbergii</i> Population: U.S.A. (GA, NC, SC, TN, VA) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962	Similarity of Appearance (Threatened)

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3849	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

1. The [Bald and Golden Eagle Protection Act](#) of 1940.

2. The [Migratory Birds Treaty Act](#) of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper

Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

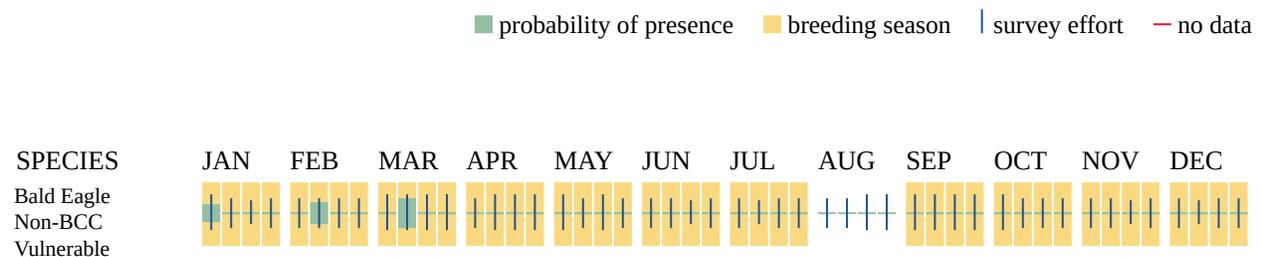
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Cerulean Warbler <i>Setophaga cerulea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2974	Breeds Apr 28 to Jul 20
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will <i>Antrostomus vociferus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8329	Breeds Jun 1 to Aug 20
Kentucky Warbler <i>Geothlypis formosa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Setophaga discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31

NAME	BREEDING SEASON
Prothonotary Warbler <i>Protonotaria citrea</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

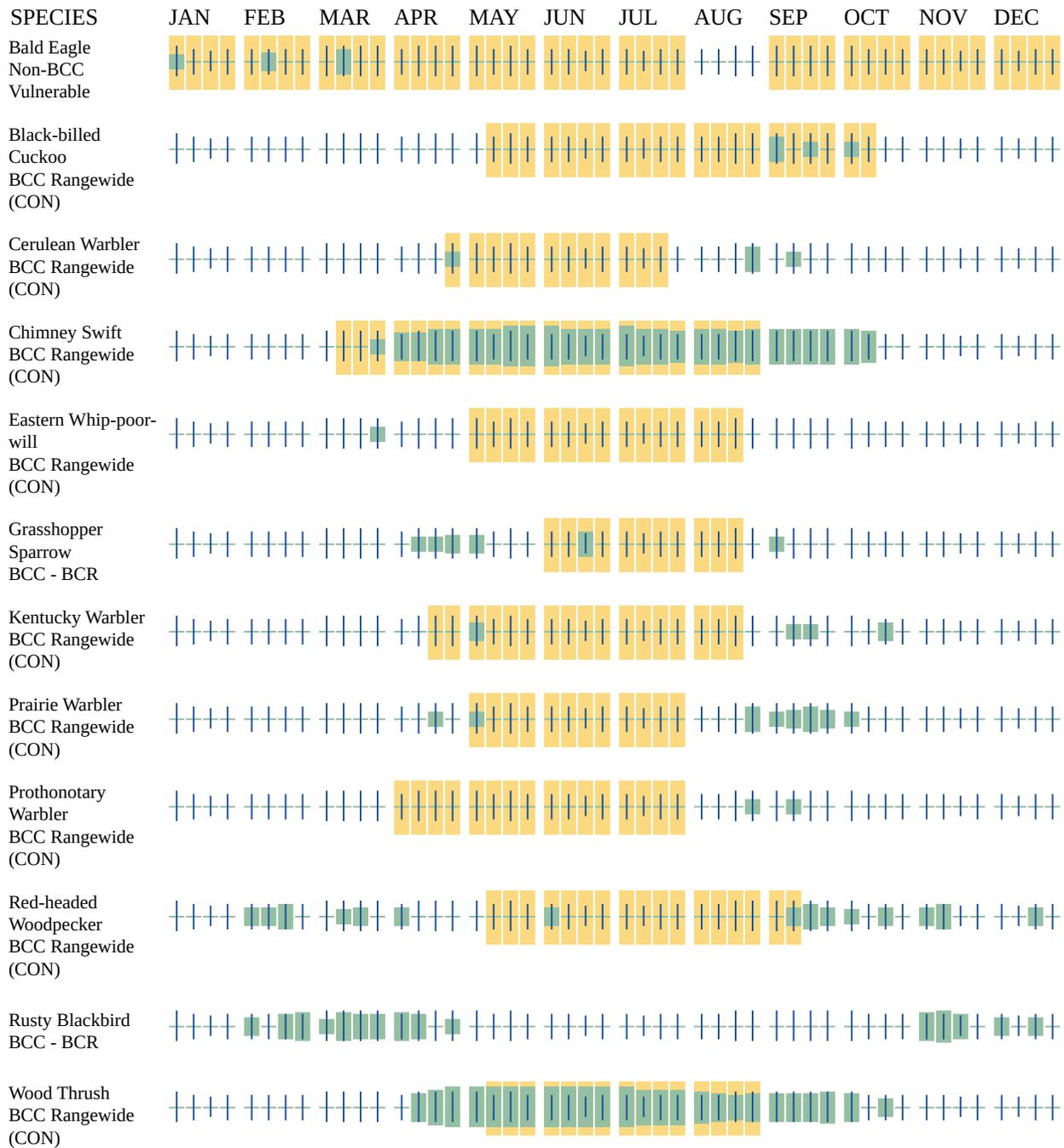
Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort — no data



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds

- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1Ax

IPAC USER CONTACT INFORMATION

Agency: North Carolina Department of Transportation

Name: Sara Easterly

Address: 555 Fayetteville Street, Suite 9

City: Raleigh

State: NC

Zip: 27601

Email: saraeasterly@nc.rr.com

Phone: 9192326664



Josh Stein, Governor

Pamela B. Cashwell
Secretary

Misty Franklin
Deputy Director for Natural Heritage

NCNHDE-31544

August 11, 2025

Jessica Tisdale
HDR
555 Fayetteville Street
Raleigh, NC 27601
RE: BR-0168

Dear Jessica Tisdale:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here:

https://www.fws.gov/our-facilities?type=%5B%22Conservation%20Office%22%5D&state_name=%5B%22North%20Carolina%22%5D

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also note that if a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or a NC Land and Water Fund (NCLWF) Project or Conservation Agreement are documented near the project area, NCNHP or NCLWF staff may provide additional correspondence.

If you have questions regarding the information provided in this letter or need additional assistance, please contact the NCNHP at natural.heritage@dncr.nc.gov.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
BR-0168
August 11, 2025
NCNHDE-31544

No Element Occurrences are Documented Within a One-mile Radius of the Project Area

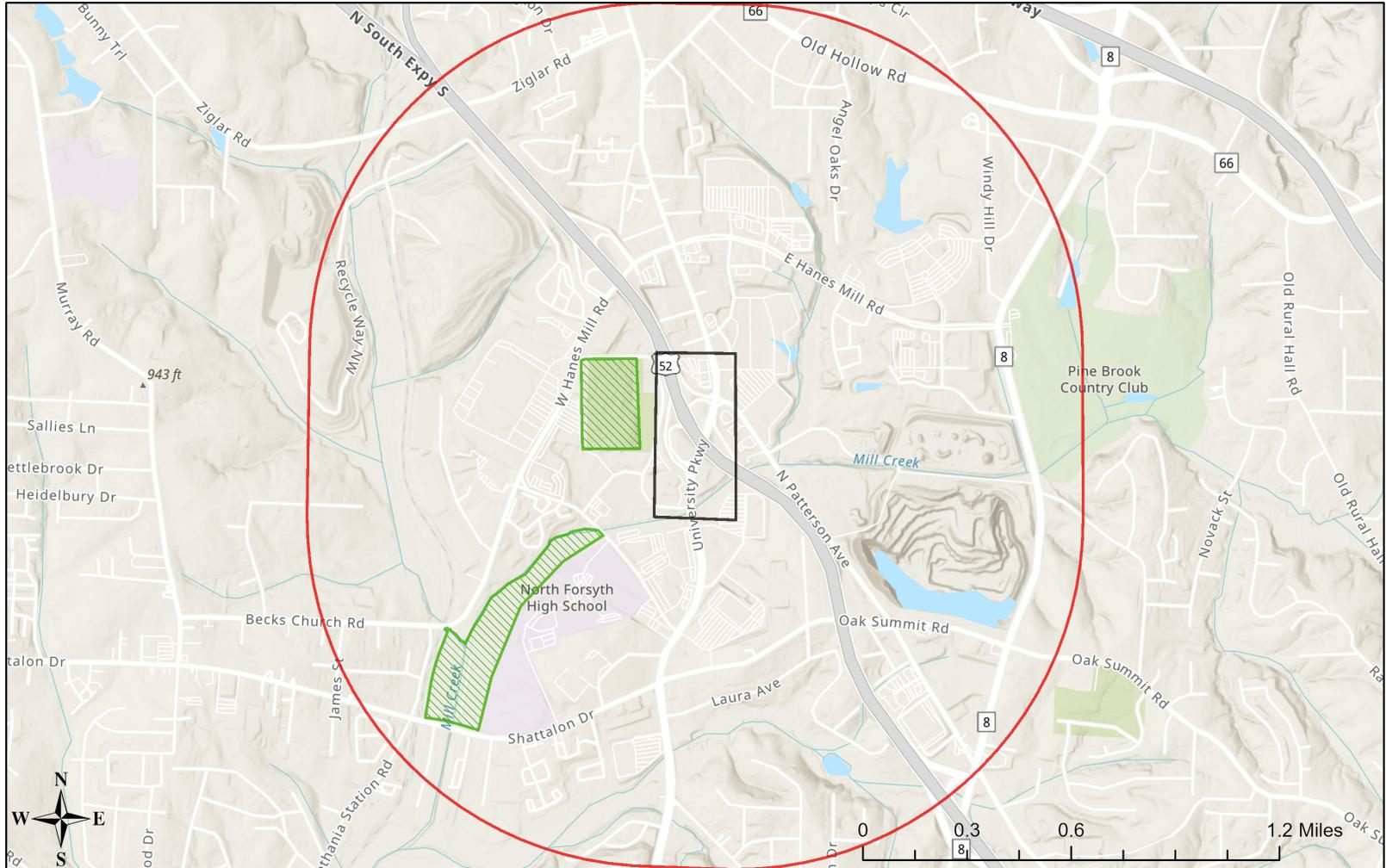
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
City of Winston-Salem Open Space - Sara Lee Soccer	City of Winston-Salem	Local Government
Forsyth County Open Space - Nature Science Center	Forsyth County	Local Government

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on August 11, 2025; source: NCNHP, Summer (July) 2025. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-31544: BR-0168



August 11, 2025

-  Managed Area (MAREA)
-  Buffered Project Boundary
-  Project Boundary

Esri, NASA, NGA, USGS, FEMA
State of North Carolina DOT, Esri, TomTom, Garmin, SafeGraph,
GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau,
USDA, USFWS

Data Sheets



Bat Habitat Assessment Form NCDOT Bridges

Observers: S Easterly, R Robinson	TIP or DOT Project Number: BR-0168
Date: July 21, 2025	Road Name Above Culvert: SR4000
County: FORSYTH	Bridge Number (or Lat/Long): 330289
Waterbody/Road/Rail: US52	

% Surrounding Habitat within 1 Mile of Project Footprint (approximately):		Critical Habitat / Mines			
Forested:	9%	Bridge located within Indiana Bat Critical Habitat?		No	
Wetland/Open Water:	1%	Mines ≤ 0.5 mi?		No	Mines in Project Footprint?
Urban/Commercial:	40%	Caves ≤ 0.5 mi?		No	Caves in Project Footprint?
Suburban/Residential:	40%				
Agricultural:	0%				
Herbaceous/Shrub/Grassland/Barren:	10%				

If 'yes' to any of the above, provide photos, description, and location in Photo Appendix.

Any trees >3" DBH within project footprint?	No
Any shaggy trees or snags >5" DBH?	
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	

If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.

Major Water Source in Project Footprint:	No
Suitable drinking habitat in the form of non-stagnant, smooth or slack water?	No

Bat Evidence/Activity

Artificial Lighting: Yes	Guard Rails: Concrete	Deck Type(s): Concrete
Beam Type(s): Concrete	End/Back Wall Type(s): Concrete	Creosote Evidence: No
Suitable roosting crevices present (½ – 1 ¼" wide): Yes	Deck Drain(s): No	
Max height of bridge deck above ground (ft): 20	Night roost habitat protected: Yes	
Bridge Alignment: NE/SW	Hours of sun exposure to bridge: > 3	
Human disturbance under bridge: High		
Notes:		

Evidence of bats using bridge?	No	Type of Evidence:	
Emergence Count Performed?	No	Evidence of bats using bird nests, if present?	No
Roost Type:		Roost Material:	
Bat Species Present:			
Notes:			

[If the MYSO or MYSE species is detected outside of expected county range, tree information will appear in the following section]

Temperature at Start of Count: ° F		Time of Sunset:	
Time of Emergence Count:	Start:	End:	
Count of Bats Leaving Structure:		Genus/Species Known?	
Describe Where Bats Exited Structure:		Notes:	

Provide a Diagram of the Structure, where Observers were Placed for the Emergence Count, and Location of any Points of Ingress/Egress for Bats. Please Include North Arrow.

Any trees >3" DBH within project footprint?	No
Any shaggy trees or snags >5" DBH?	No
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	
If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.	

PHOTO APPENDIX

Bridge Photos



Photo Caption: Looking southwest

Bridge Photos



Photo Caption: Under bridge looking northeast

Bridge Photos



Photo Caption: Looking northeast

Bridge Photos



Photo Caption: Under bridge looking southwest



Bat Habitat Assessment Form NCDOT Culverts

Observers: S Easterly R Robinson		County: Forsyth
Date: July 21, 2025	TIP: BR-0168	Road Name Above Culvert: Hwy 52 on Ramp
Culvert Number: 001		Lat/Long: 36.18331765823273, -80.27648509824482
Name of the Feature Culvert is Carrying (Stream): UT Mill Creek		

% Surrounding Habitat within 1 Mile of Project Footprint (approximately):		Critical Habitat / Mines	
Forested:	9%	Culvert located within Indiana Bat Critical Habitat?	No
Wetland/Open Water:	1%		
Urban/Commercial:	40%	Mines in Vicinity? (0.5 mile)	Yes
Suburban/Residential:	40%		
Agricultural:	0%	Caves in Vicinity? (0.5 mile)	No
Herbaceous/Shrub/Grassland/Barren:	10%		

If 'yes' to any of the above, provide photos, description, and location in Photo Appendix.

Any trees >3" DBH within project footprint?	yes
Any shaggy trees or snags >5" DBH?	no
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	

If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.

Major Water Source in Project Footprint:	Stream/Creek
Suitable drinking habitat in the form of non-stagnant, smooth or slack water?	yes

Bat Evidence/Activity

Guard Rails?	None	Culvert Material:	Metal
Culvert Dimensions	Height 4 ft	Width 4 ft	Length 110 ft
Number of Barrels:	1	Observed Narrowest Opening Height:	4
Culvert Type:	Pipe	Depth of Water in Culvert (if applicable):	1
Openings Protected from High Winds?	yes	Crevices Present?	no
Rough Surfaces, Imperfections, Bird Nests?	no	Human Disturbance	None

Notes:

Emergence Count Performed? no

Evidence of bats using culvert?		no
Evidence of bats using bird nests, if present?	no	Type of Evidence:
Roost Type:		Roost Material:
Bat Species Present:		
Notes:		

[If the MYSO or MYSE species is detected outside of expected county range, tree information will appear in the following section]

Any trees >3" DBH within project footprint?	
Any shaggy trees or snags >5" DBH?	
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	
If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.	

PHOTO APPENDIX

Culvert Photos



Photo Caption: Outlet

Culvert Photos



Photo Caption: Inlet



Bat Habitat Assessment Form NCDOT Culverts

Observers: S Easterly R Robinson		County: Forsyth
Date: July 21, 2025	TIP: BR-0168	Road Name Above Culvert: Hwy 52 Exit 115B Ramp
Culvert Number: 002		Lat/Long: 36.182777905296575, -80.27622885504063
Name of the Feature Culvert is Carrying (Stream): UT Mill Creek		

% Surrounding Habitat within 1 Mile of Project Footprint (approximately):		Critical Habitat / Mines	
Forested:	9%	Culvert located within Indiana Bat Critical Habitat?	No
Wetland/Open Water:	1%		
Urban/Commercial:	40%	Mines in Vicinity? (0.5 mile)	Yes
Suburban/Residential:	40%		
Agricultural:	0%	Caves in Vicinity? (0.5 mile)	No
Herbaceous/Shrub/Grassland/Barren:	10%		

If 'yes' to any of the above, provide photos, description, and location in Photo Appendix.

Any trees >3" DBH within project footprint?	yes
Any shaggy trees or snags >5" DBH?	no
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	

If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.

Major Water Source in Project Footprint:	Stream/Creek
Suitable drinking habitat in the form of non-stagnant, smooth or slack water?	yes

Bat Evidence/Activity

Guard Rails?	None	Culvert Material:	Metal
Culvert Dimensions	Height 4 ft	Width 4 ft	Length 75 ft
Number of Barrels:	1	Observed Narrowest Opening Height:	4
Culvert Type:	Pipe	Depth of Water in Culvert (if applicable):	0.08
Openings Protected from High Winds?	yes	Crevices Present?	yes
Rough Surfaces, Imperfections, Bird Nests?	no	Human Disturbance	None

Notes:

Emergence Count Performed? no

Evidence of bats using culvert?		no
Evidence of bats using bird nests, if present?	no	Type of Evidence:
Roost Type:		Roost Material:
Bat Species Present:		
Notes:		

[If the MYSO or MYSE species is detected outside of expected county range, tree information will appear in the following section]

Any trees >3" DBH within project footprint?	
Any shaggy trees or snags >5" DBH?	
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	
If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.	

PHOTO APPENDIX

Culvert Photos



Photo Caption: Inlet

Culvert Photos



Photo Caption: Outlet



Bat Habitat Assessment Form NCDOT Culverts

Observers: S Easterly R Robinson		County: Forsyth
Date: July 21, 2025	TIP: BR-0168	Road Name Above Culvert: University Pkwy
Culvert Number: 003		Lat/Long: 36.18191283809049, -80.2756015296415
Name of the Feature Culvert is Carrying (Stream): UT Mill Creek		

% Surrounding Habitat within 1 Mile of Project Footprint (approximately):		Critical Habitat / Mines	
Forested:	9%	Culvert located within Indiana Bat Critical Habitat?	No
Wetland/Open Water:	1%		
Urban/Commercial:	40%	Mines in Vicinity? (0.5 mile)	Yes
Suburban/Residential:	40%		
Agricultural:	0%	Caves in Vicinity? (0.5 mile)	No
Herbaceous/Shrub/Grassland/Barren:	10%		

If 'yes' to any of the above, provide photos, description, and location in Photo Appendix.

Any trees >3" DBH within project footprint?	no
Any shaggy trees or snags >5" DBH?	no
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	

If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.

Major Water Source in Project Footprint:	Stream/Creek
Suitable drinking habitat in the form of non-stagnant, smooth or slack water?	yes

Bat Evidence/Activity

Guard Rails?	None	Culvert Material:	Metal
Culvert Dimensions	Height 4 ft	Width 4 ft	Length 75 ft
Number of Barrels:	1	Observed Narrowest Opening Height:	3.5
Culvert Type:	Pipe	Depth of Water in Culvert (if applicable):	0.5
Openings Protected from High Winds?	yes	Crevices Present?	no
Rough Surfaces, Imperfections, Bird Nests?	no	Human Disturbance	None

Notes:

Emergence Count Performed? no

Evidence of bats using culvert?		no
Evidence of bats using bird nests, if present?	no	Type of Evidence:
Roost Type:		Roost Material:
Bat Species Present:		
Notes:		

[If the MYSO or MYSE species is detected outside of expected county range, tree information will appear in the following section]

Any trees >3" DBH within project footprint?	
Any shaggy trees or snags >5" DBH?	
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	
If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.	

PHOTO APPENDIX

Culvert Photos



Photo Caption: Inlet

Culvert Photos



Photo Caption: Outlet



Bat Habitat Assessment Form NCDOT Culverts

Observers: S Easterly R Robinson		County: Forsyth
Date: July 21, 2025	TIP: BR-0168	Road Name Above Culvert: Hwy 52
Culvert Number: 330287		Lat/Long: 36.180229727671225, -80.27316279673721
Name of the Feature Culvert is Carrying (Stream): Mill Creek		

% Surrounding Habitat within 1 Mile of Project Footprint (approximately):	Critical Habitat / Mines	
Forested:	9%	Culvert located within Indiana Bat Critical Habitat?
Wetland/Open Water:	1%	
Urban/Commercial:	40%	Mines in Vicinity? (0.5 mile)
Suburban/Residential:	40%	
Agricultural:	0%	Caves in Vicinity? (0.5 mile)
Herbaceous/Shrub/Grassland/Barren:	10%	

If 'yes' to any of the above, provide photos, description, and location in Photo Appendix.

Any trees >3" DBH within project footprint?	yes
Any shaggy trees or snags >5" DBH?	no
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	

If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.

Major Water Source in Project Footprint:	Stream/Creek
Suitable drinking habitat in the form of non-stagnant, smooth or slack water?	yes

Bat Evidence/Activity

Guard Rails?	None	Culvert Material:	Concrete
Culvert Dimensions	Height 15 ft	Width 12 ft	Length 210 ft
Number of Barrels:	3	Observed Narrowest Opening Height:	8
Culvert Type:	Box	Depth of Water in Culvert (if applicable):	2
Openings Protected from High Winds?	yes	Crevices Present?	yes
Rough Surfaces, Imperfections, Bird Nests?	yes	Human Disturbance	None

Notes: Southeast barrel silted up with approximately 7 feet of silt

Emergence Count Performed? no

Evidence of bats using culvert?		no
Evidence of bats using bird nests, if present?	no	Type of Evidence:
Roost Type:		Roost Material:
Bat Species Present:		

Notes:

[If the MYSO or MYSE species is detected outside of expected county range, tree information will appear in the following section]

Any trees >3" DBH within project footprint?	
Any shaggy trees or snags >5" DBH?	
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	
If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.	

PHOTO APPENDIX

Culvert Photos



Photo Caption: Inlet

Culvert Photos



Photo Caption: Outlet



Bat Habitat Assessment Form NCDOT Culverts

Observers: S Easterly R Robinson		County: Forsyth
Date: July 21, 2025	TIP: BR-0168	Road Name Above Culvert: Hey 52
Culvert Number: 330332		Lat/Long: 36.17854109973648, -80.2756379666909
Name of the Feature Culvert is Carrying (Stream): Mill Creek		

% Surrounding Habitat within 1 Mile of Project Footprint (approximately):	Critical Habitat / Mines	
Forested:	9%	Culvert located within Indiana Bat Critical Habitat?
Wetland/Open Water:	1%	
Urban/Commercial:	40%	Mines in Vicinity? (0.5 mile)
Suburban/Residential:	40%	
Agricultural:	0%	Caves in Vicinity? (0.5 mile)
Herbaceous/Shrub/Grassland/Barren:	10%	

If 'yes' to any of the above, provide photos, description, and location in Photo Appendix.

Any trees >3" DBH within project footprint?	no
Any shaggy trees or snags >5" DBH?	no
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	

If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.

Major Water Source in Project Footprint:	Stream/Creek
Suitable drinking habitat in the form of non-stagnant, smooth or slack water?	yes

Bat Evidence/Activity

Guard Rails?	None	Culvert Material:	Concrete
Culvert Dimensions	Height 14 ft	Width 12 ft	Length 140 ft
Number of Barrels:	3	Observed Narrowest Opening Height:	11
Culvert Type:	Box	Depth of Water in Culvert (if applicable):	3
Openings Protected from High Winds?	yes	Crevices Present?	yes
Rough Surfaces, Imperfections, Bird Nests?	yes	Human Disturbance	None

Notes:

Emergence Count Performed? no

Evidence of bats using culvert?		no
Evidence of bats using bird nests, if present?	no	Type of Evidence:
Roost Type:		Roost Material:
Bat Species Present:		

Notes:

[If the MYSO or MYSE species is detected outside of expected county range, tree information will appear in the following section]

Any trees >3" DBH within project footprint?	
Any shaggy trees or snags >5" DBH?	
If yes to shag/snag, how much sunlight do they receive during the day?	
If yes to shag/snag, list species of habitat trees >5" DBH:	
If snags >5" DBH are present in sunlit areas and if large hollow trees are present, provide photos and location in Photo Appendix.	

PHOTO APPENDIX

Culvert Photos



Photo Caption: Inlet

Culvert Photos



Photo Caption: Outlet

Post-NRTR Protected Species Survey Form

Project	
TIP/Project ID	BR-0168

Species		
<input type="checkbox"/> American chaffseed [May-Aug]	<input type="checkbox"/> Canby's dropwort [Jul-Sep]	<input type="checkbox"/> Cooley's meadowrue [Jun-Jul]
<input type="checkbox"/> Dwarf flowered heartleaf [Mar-May]	<input type="checkbox"/> Golden sedge [Apr-Jun]	<input type="checkbox"/> Green pitcher plant [Apr-Oct]
<input type="checkbox"/> Harperella [Jul-Sep]	<input type="checkbox"/> Mtn Sweet Pitcher Plant [May-Jun]	<input type="checkbox"/> Michaux's sumac [May-Oct]
<input type="checkbox"/> Pondberry [Feb-Mar/Sep-Oct]	<input type="checkbox"/> Rough-leaved loosestrife [May-Sep]	<input checked="" type="checkbox"/> Schweinitz's sunflower [Sep-Oct]
<input type="checkbox"/> Seabeach amaranth [Jul-Oct]	<input type="checkbox"/> Sensitive joint-vetch [Jul-Oct]	<input type="checkbox"/> Small-anthered bittercress [Apr-May]
<input type="checkbox"/> Small whorled pogonia [May-Jun]	<input type="checkbox"/> Smooth coneflower [May-Oct]	<input type="checkbox"/> Swamp pink [Apr-May]
<input type="checkbox"/> Virginia spiraea [May-Jul]	<input type="checkbox"/> White irisette [May-Jul]	
<input type="checkbox"/> Other:		

Survey Date Time Information	
Date(s) of Survey	8/22/2023
Survey Duration	2 hours
Surveyors	Byron Levan, Mark Guerard
Habitat Present	Yes
Remarks	<p style="color: blue;">Habitat present in the form of roadside and utility rights-of-way and forest edges. Surveys did not identify any Schweinitz's sunflower. A review of the January 2024 NCNHP Dataset identified no known Schweinitz's sunflower occurrences within a mile of the PSA. Due to lack of individuals and occurrences, a Biological Conclusion of No Effect has been rendered for this species.</p>

Included graphic/drawing of survey limits and habitat.

Reference Population(s) Visited <i>(optional/encouraged)</i>	
Locations/ Date	
In-flower	
Remarks	

Archaeology



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: **BR-0168** County: **Forsyth**
 WBS No: **67168.1.1** Document: **Federal CE**
 Federal Aid No: **N/A** Funding: State Federal

Federal Permit Required? Yes No Permit Type: **USACE?**

Project Description: NCDOT's Division 9 proposes to replace Bridge No. 289 on University Parkway (SR 4000) over US 52 in Forsyth County. Bridge No. 289 was built in 1962 and is considered to be structurally deficient; therefore, it has been selected for replacement. The existing cross-section consists of a 4-lane structure whereas the proposed cross-section is to also consist of a 4-lane structure. Although no easements will be required, the need for additional ROW was not conveyed as part of the request. Although Project Length is listed as 1.00 mile (5,280 feet), the Study Area measures approximately 0.35 mile (1,848 feet) along University Parkway and roughly 0.26 mile (1,373 feet) along US 52. Since Preliminary Design Plans have not been developed, an Area of Interest was submitted in order to facilitate the environmental review at this stage. Presumably, this Area of Interest is based on the extent of any potential ground-disturbing activities and encompasses about 44.12 acres, inclusive of the existing structure and roadways and any modern development.

SUMMARY OF CULTURAL RESOURCES REVIEW

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

This project was accepted for review on Thursday, December 15, 2022. A review of the databases maintained by the Office of State Archaeology (OSA) was received on Monday, December 19, 2022. No archaeological surveys have been conducted at this particular bridge location; however, twelve (12) archaeological sites have been recorded within one (1) mile of the proposed project, most of which occur within upland settings overlooking Grassy Creek (see OSA Bib #1392 [Abbott 1983] and #4491 [Campo and Trinkley 1999]). Digital copies of HPO's maps (Rural Hall Quadrangle [**Figure 1**] as well as the HPOWEB GIS Service (<http://gis.ncdcr.gov/hpweb/>) were last reviewed on Tuesday, December 20, 2022. There are no known historic architectural resources located adjacent to or within the Area of Interest. Therefore, intact and significant archaeological deposits that may be associated with such resources are not 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 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 Area of Interest.

(This project falls within a North Carolina County in which the following federally recognized tribes have expressed an interest: 1) Catawba Indian Nation. We recommend that you ensure that this documentation is 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 a state-funded project for which a federal permit may be anticipated. As part of the project's submittal, permanent/temporary easements will not be necessary; the need for additional ROW, however, was not conveyed as part of the request. Presumably, the Area of Interest has been drawn in a way to capture any possible ground-disturbing activities associated with the project beyond NCDOT's existing ROW. If there were no Federal nexus for this project, please know that we would be in compliance with NC GS 121-12a, because there are no eligible (i.e., National Register-listed) archaeological resources located within the Area of Interest that would require our attention.

From an environmental perspective, the Area of Interest falls within an urban transportation setting bordered by commercial development. Located within the Piedmont physiographic region of north-central North Carolina, the Area of Interest is composed of seven (7) soil types, all of which have been greatly disturbed by the highway corridor and the commercial development/hotel industry along both sides of US 52 and would not be considered ideal for stratigraphically intact archaeological resources to be present.

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CoA	Codorus loam, 0 to 2 percent slopes, frequently flooded	1.2	2.70%
RaB	Rasalo fine sandy loam, 2 to 6 percent slopes	0.6	1.30%
TmB	Tomlin loam, 2 to 6 percent slopes	4.6	10.50%
TmC	Tomlin loam, 6 to 10 percent slopes	0.6	1.40%
ToC2	Tomlin clay loam, 6 to 10 percent slopes, moderately eroded	2.9	6.60%
ToD2	Tomlin clay loam, 10 to 15 percent slopes, moderately eroded	7.3	16.60%
Ud	Udorthents, loamy	26.8	60.70%
W	Water	0.2	0.30%
Totals for Area of Interest =		44.1	100.00%

In the vicinity, the Office of State Archaeology (OSA) has reviewed various projects for environmental compliance, including cell towers (CTs 01-0427, 04-1452, 17-0470, 17-1730, and 22-1495), commercial development (ERs 00-8791, 01-8160, 03-1373, and 08-1551), industrial expansions (ERs 85-7020, 95-8889, 99-7646, and 05-0053), transportations improvements (CH 99-0059; ERs 87-8380, 93-7146, and 22-1004; and GSs 91-0091 and 96-0020), and utility upgrades (ERs 83-7761, 95-0232, 97-8098, and 17-0129). For most of these projects, OSA did not recommend an archaeological survey, stating a low probability for intact archaeological resources to be present; however, intensive surveys were called for and conducted for large-scale sewer replacement and landfill expansion projects as well as a bridge replacement, primarily based on their proximity to the Bethabara Historic District and previously recorded Native American sites within undisturbed upland settings overlooking Grassy Creek. As a result of those surveys, additional components of the historic Town of Bethabara were documented (see OSA Bib# 7769, 8043, and 8219) and 24 archaeological sites were recorded (see OSA Bib# 1392 and 4491). Of the 24 archaeological sites, only 1 held any research potential (31FY440) whereas all components that could be associated with the 18th-century Town of Bethabara were seen as contributing elements to the town's historic significance. Although some of these sites/locations fall within a one-mile buffer around the currently proposed project, they are all located well beyond the limits of the project's Area of Interest.

Within five (5) miles of the proposed project, NCDOT's Archaeology Team has reviewed at least sixteen (16) transportation-related projects for environmental compliance under the Programmatic Agreement (PA) with the State Historic Preservation Office (NC-HPO). No archaeological surveys were recommended for most of these projects (13/16), citing various reasons (e.g., heavily disturbed, eroded,

and/or poorly drained contexts and/or the restrictive/constrained nature of each APE [i.e., contained within existing ROW]). Archaeological surveys, however, were recommended and conducted for a bridge replacement over Muddy Creek (TIP# B-5771 [PA 16-06-0033]) and the Forum Parkway Connector project (TIP# U-5899 [PA 17-02-0010]), based on the presence of previously recorded historic resources in and adjacent to each project's Study Area. As a result of those surveys, one (1) archaeological site was documented, that being a light density of historic artifacts (31FY1219), associated with the Fountain Flynt House (FY0587), recommended not eligible for the NRHP. The intersection improvement project at NC 8 and Oak Summit Road (SR 1686) (TIP# HL-0059 [PA 22-11-0016]) is relatively new so the archaeological survey has not been conducted yet; that survey was recommended based on the presence of undisturbed wooded terrain/favorable landform as well as a known cemetery within and adjacent to the project's APE.

From an historic transportation perspective, the Area of Interest encompasses what essentially is an interchange where US 52 and University Parkway intersect. Historic aerials suggest that this interchange was constructed sometime between 1955 and 1971 (**Figures 2 and 3**) whereas historic maps suggest a construction date sometime between 1953 and 1962 (**Figures 4 and 5**). Both timeframes correlate with when Bridge No. 289 is recorded as having been built (i.e., 1962) and when this intersection area was completely reconfigured as an interchange. In the 1930s, what was labelled as US 52 followed what is now known as University Parkway, merging with what is now Patterson Avenue on the north side of the Area of Interest (**Figure 6**). Prior to this time though, there was no semblance of any roadways in this area. Construction in the early 1960s of a new US 52 corridor placed this interchange within what was an open agricultural field at the time (**Figure 7**), around which additional development then followed, further indicating a significant degree of urban disturbances throughout and surrounding the Area of Interest.

Based on the information above, there is a very low probability for significant prehistoric and/or historic archaeological materials to be present. Therefore, it is believed that the Area of Interest, 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 may 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

December 21, 2022

Date

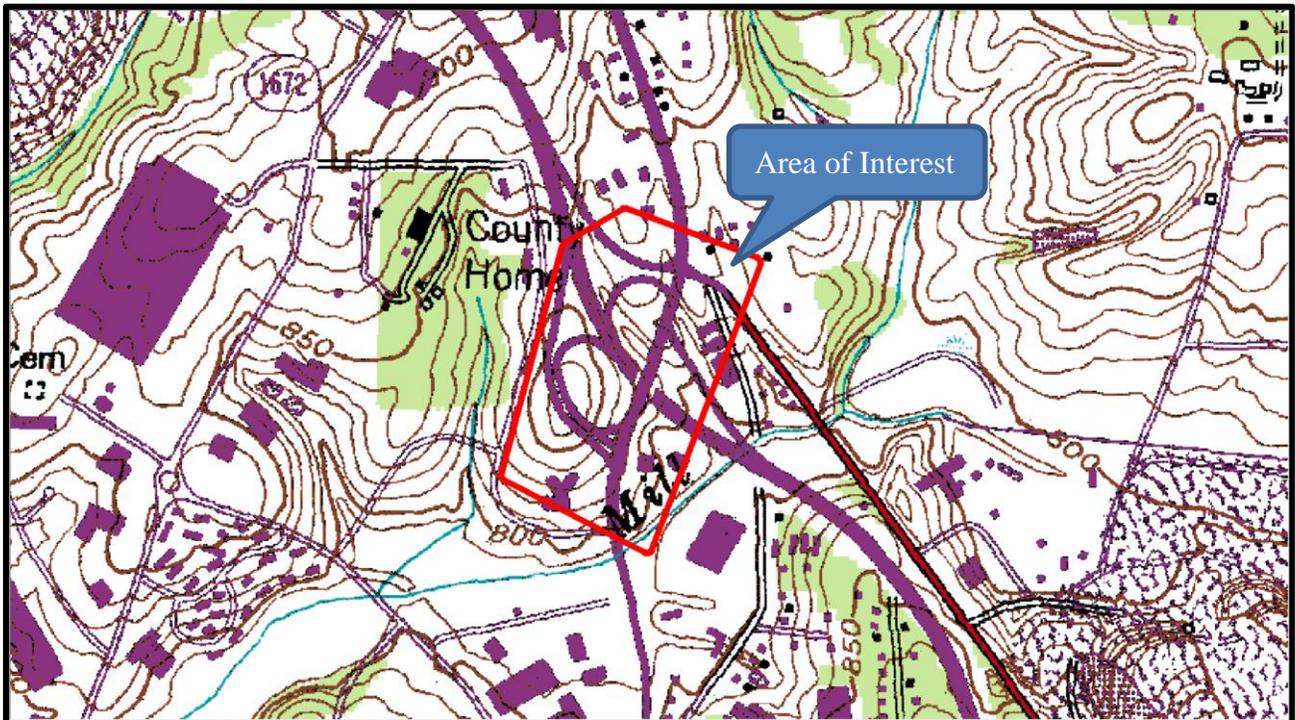


Figure 1: Rural Hall, NC (USGS 1993).



Figure 2: 1955 Aerial of the Project Area (available online: <https://www.historicaerials.com/viewer>, last accessed 21 Dec 2022).



Figure 3: 1971 Aerial of the Project Area (available online: <https://www.historicaerials.com/viewer>, last accessed 21 Dec 2022).

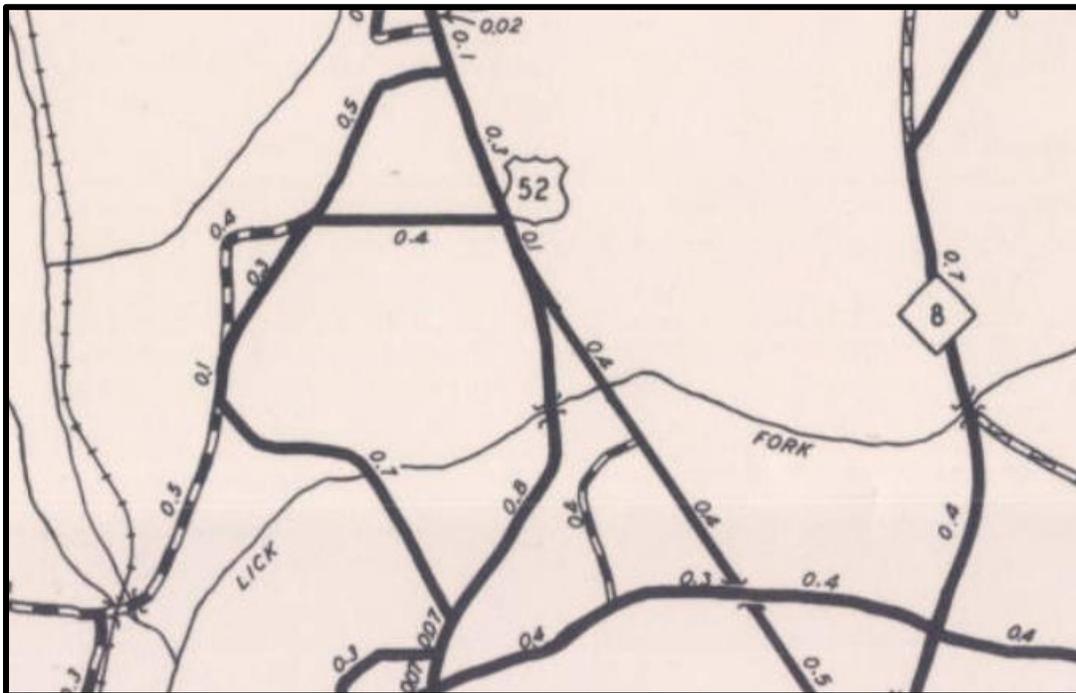


Figure 4: Forsyth County (State Highway and Public Works Commission 1953, available online: <https://dc.lib.unc.edu/cdm/compoundobject/collection/ncmaps/id/7765/rec/35>, last accessed 21 Dec 2022).

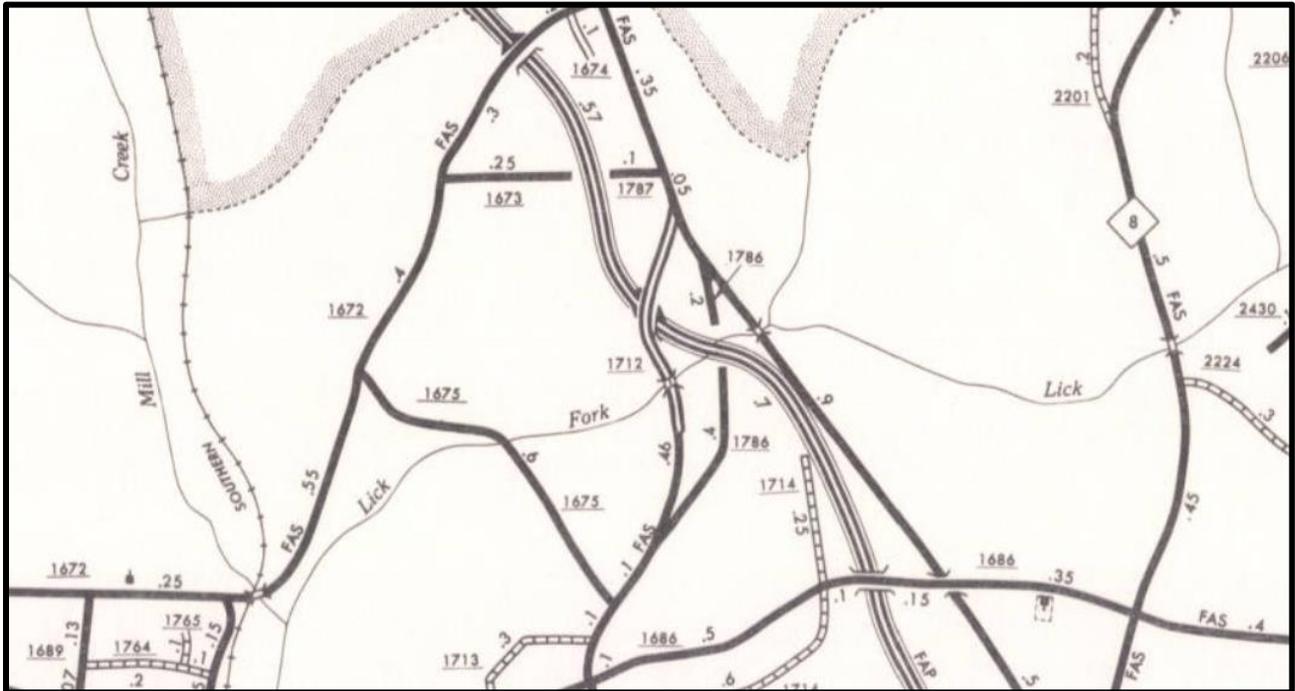


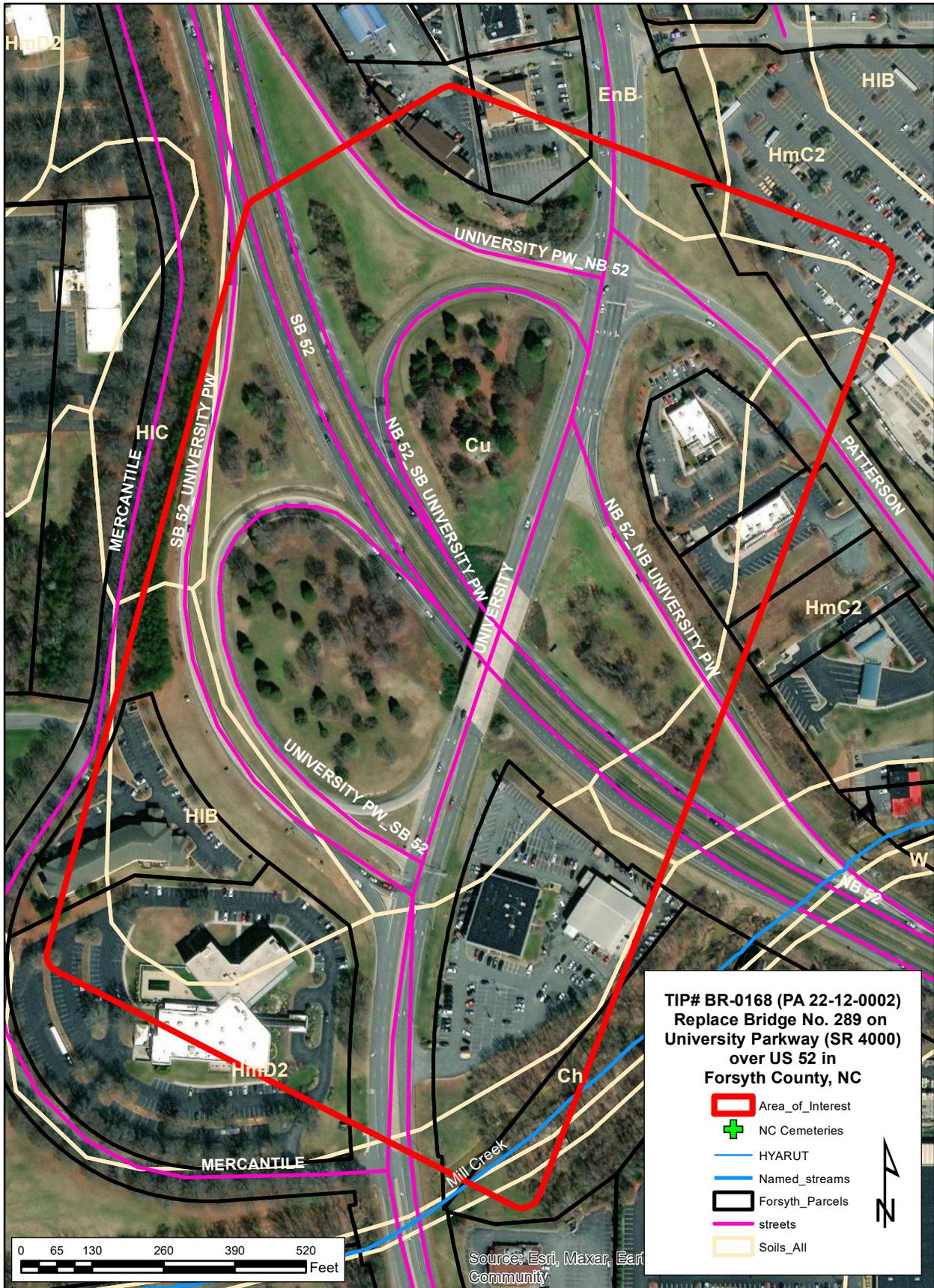
Figure 5: Highway Maintenance Map of Forsyth County, North Carolina (Project Area is depicted as being “Under Construction,” North Carolina State Highway Commission 1962, available online: <https://dc.lib.unc.edu/cdm/compoundobject/collection/ncmaps/id/6578/rec/38>, last accessed 21 Dec 2022).



Figure 6: Forsyth County, North Carolina (State Highway and Public Works Commission 1938, available online: <https://dc.lib.unc.edu/cdm/singleitem/collection/ncmaps/id/485/rec/28>, last accessed 21 Dec 2022).



Figure 7: Historic Aerial dated 10 Oct 1940 (Slide CSD-14B-49 from Forsyth County, NC, Aerial Photographs, from USDA Aerial Photographs, Series 1, State Archives of North Carolina, available online: <https://www.flickr.com/photos/north-carolina-state-archives/34772815211/in/album-72157682091972541/>, last accessed 21 Dec 2022.



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Historic Architecture and Landscapes

22-12-0002



HISTORIC ARCHITECTURE 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:	BR-0168	County:	Forsyth
WBS No.:	67168.1.1	Document Type:	FCE
Fed. Aid No:		Funding:	<input checked="" type="checkbox"/> State <input type="checkbox"/> Federal
Federal Permit(s):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit Type(s):	USACE
<u>Project Description:</u> Replace Bridge No 289 on SR 4000 (University Pkwy) over US 52.			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

<p><u>Description of review activities, results, and conclusions:</u> Review of HPOGIS web service was undertaken on December 13, 2022. Based on this review, there are no existing NR, DE, LL, SL, or SS properties in the Area of Potential Effects (APE). There are no properties over 50 years of age in the APE except Forsyth County Bridge 289, built in 1962. The bridge does not exemplify any distinctive engineering or aesthetic type and is not eligible for the National Register of Historic Places. No Survey is required at this time.</p> <p><u>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:</u> HPOGIS and County Tax Data provide reliable information regarding structures in the APE. These combined utilities are considered valid for purposes of determining the likelihood of historic resources being present.</p>
--

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

December 13, 2022

NCDOT Architectural Historian

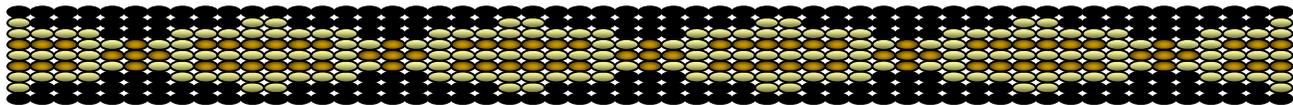
Date



Tribal Coordination

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

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



June 30, 2023

Attention: Jennifer Hernandez
NC Department of Transportation
1595 Mail Service Center
Raleigh, NC 27699

Re. THPO #	TCNS #	Project Description
2023-193-179		Replace bridge No. 289 on SR 4000 over US 52 Forsyth Co as project BR-0168

Dear Ms. Hernandez,

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 803-328-7369, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Wenonah G. Haire
Tribal Historic Preservation Officer

NEPA/SEPA Document

Type I or II Categorical Exclusion Action Classification Form

STIP Project No. BR-0168
WBS Element 67168.1.1
Federal Project No. _____

A. Project Description:

The North Carolina Department of Transportation (NCDOT) proposes to replace Forsyth County Bridge 330289 on SR 4000 (University Parkway) over US 52 (Figures 1 and 2, attached). The typical section of the new bridge will consist of two 12-foot thru lanes in each direction; a 5-foot median; a 12-foot center turn lane; a five-foot shoulder on either side of the bridge; a 2-foot gutter between the shoulder and sidewalk on each side of the bridge; and a 5-and a half foot sidewalk on each side to accommodate pedestrians.

The proposed replacement structure will be a two-span bridge approximately 264 feet long. The project is scheduled for right of way in fiscal year 2025 and construction in fiscal year 2026. Construction will be staged starting from the west to maintain traffic.

B. Description of Need and Purpose:

The purpose of this project is to replace a structurally deficient and functionally obsolete bridge. The existing bridge was built in 1962. NCDOT Structures Management Unit bridge inspection records indicate Bridge No. 330289 has a Sufficiency Rating of 44.85. The bridge has been found to be both structurally and functionally obsolete.

C. Categorical Exclusion Action Classification:

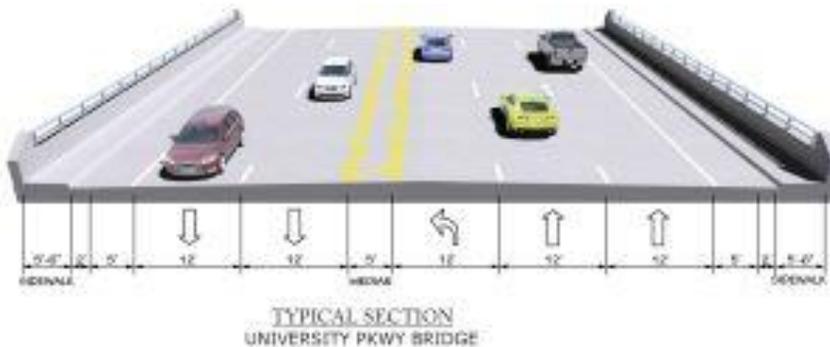
Type I(A) - Ground Disturbing Action

D. Proposed Improvements:

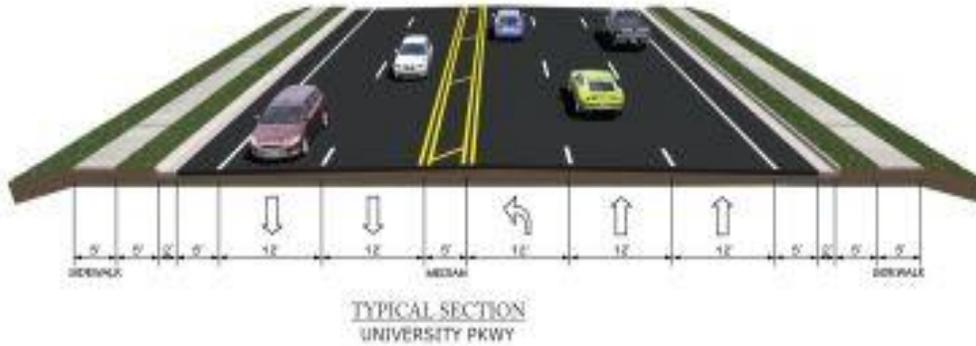
- 3. Construction of bicycle and pedestrian lanes, paths, and facilities.
- 28. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings, if the actions meet the constraints in 23 CFR 771.117(e)(1-6).

E. Special Project Information:

Proposed Bridge Typical Section



Proposed Roadway Typical Section



Alternative Evaluation

Replace Bridge No. 330289 In-Place with a New Bridge Using an On-site Detour and Staged Construction to the East (Recommended) – The existing bridge will be replaced with a new bridge in its existing location. The new bridge will be stage-constructed to the east, and the existing bridge will be removed in phases, providing an on-site detour during the construction period.

No Build – The no build alternative would result in eventually closing the road, which is unacceptable given the volume of traffic served by University Parkway.

Rehabilitation – The bridge was constructed in 1962 and is reaching the end of its useful life. Rehabilitation is not recommended since it would only provide a temporary solution to the structural deficiency of the bridge.

Offsite Detour - An off-site detour was eliminated from consideration due to the length of the closest available off-site detour and high traffic volumes on Hanes Mill Road. It would also be the most disruptive alternative to local businesses and public transit.

Replace Bridge No. 330289 In-Place with a New Bridge Using an On-site Detour and Staged Construction to the West – The existing bridge would be replaced with a new bridge in its existing location. The new bridge would be stage-constructed to the west, and the existing bridge would be removed in phases, providing an on-site detour during the construction period. This alternative was eliminated because it would impact the Modern Nissan of Winston-Salem dealership and incur a greater right of way cost.

Costs & Schedule

Current cost estimates, based on the preliminary design:

Right-of-Way	\$ 336,000
<u>Construction</u>	<u>\$ 5.6 million</u>
Total Cost	\$ 5.9 million

Current project schedule:

Right-of-Way Acquisition	Winter 2024-25
Construction	Winter 2026-27

Natural Resources

The Final NRTR was completed in April 2023. As of May 8, 2024, IPaC lists bog turtle, and Schweinitz's sunflower within the project area. Tricolored bat is also listed as proposed endangered. NCDOT's review to date has concluded with no effect findings for relevant species. The most recent surveys for Schweinitz's sunflower were performed on 8/22/2023. NCDOT will resurvey as needed and address bat species as part of the permitting and final design process.

Cultural Resources

In December 2022, NCDOT’s cultural resources staff reviewed the project and found no archaeological, nor historic resources surveys were required. Additionally, NCDOT received a response from the Catawba Indian Nation on June 30, 2023, stating “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.”

Public Involvement

A project newsletter was sent to 142 local businesses and landowners on February 3, 2024. Additionally, a public outreach project website was created in February 2024. It can be found at the following location: [BR-0168: University Parkway over U.S. 52 - PublicInput](#). NCDOT received minimal public response; none of the outreach warranted follow-up or design changes.

F. Project Impact Criteria Checklists:

F2. Ground Disturbing Actions – Type I (Appendix A) & Type II (Appendix B)				
<p>Proposed improvement(s) that fit Type I Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix A) including 2, 3, 6, 7, 9, 12, 18, 21, 22 (ground disturbing), 23, 24, 25, 26, 27, 28, &/or 30; &/or Type II Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix B) answer the project impact threshold questions (below) and questions 8 – 31.</p> <ul style="list-style-type: none"> <i>If any question 1-7 is checked “Yes” then NCDOT certification for FHWA approval is required.</i> <i>If any question 1-31 is checked “Yes” then additional information will be required for those questions in Section G.</i> 				
PROJECT IMPACT THRESHOLDS (FHWA signature required if any of the questions 1-7 are marked “Yes”.)			Yes	No
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGEPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Does the project cause disproportionately high and adverse impacts relative to low-income and/or minority populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
5	Does the project involve a residential or commercial displacement, or a substantial amount of right of way acquisition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Does the project require an Individual Section 4(f) approval?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

If any question 8-31 is checked "Yes" then additional information will be required for those questions in Section G.

<u>Other Considerations</u>		Yes	No
8	Is an Endangered Species Act (ESA) determination unresolved or is the project covered by a Programmatic Agreement under Section 7?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Is the project located in anadromous fish spawning waters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (HQW), Water Supply Watershed Critical Areas, 303(d) listed impaired water bodies, buffer rules, or Submerged Aquatic Vegetation (SAV)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11	Does the project impact Waters of the United States in any of the designated mountain trout streams?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Does the project include a Section 106 of the National Historic Preservation Act (NHPA) effects determination other than a No Effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15	Does the project involve GeoEnvironmental Sites of Concerns such as gas stations, dry cleaners, landfills, etc.?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
16	Does the project require work encroaching and adversely affecting 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project require a U.S. Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project involve any changes in access control or the modification or construction of an interchange on an interstate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Is the project inconsistent with the STIP, and where applicable, the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
26	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, Tennessee Valley Authority (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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28	Does the project include a <i>de minimis</i> or programmatic Section 4(f)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

29	Is the project considered a Type I under the NCDOT Noise Policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31	Are there other issues that arose during the project development process that affected the project decision?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

G. Additional Documentation as Required from Section F (ONLY for questions marked 'Yes'):

15. One site of concern (Modern Nissan of Winston-Salem) was identified within the project study area. Low monetary and scheduling impacts are anticipated. Sites of concern should be reviewed by the NCDOT GeoEnvironmental Section once the final right of way plans are complete to determine if Phase II investigations and right of way recommendations are necessary prior to right of way being acquired. The site is located on the east side of University Parkway approximately 500 feet north of Mercantile Drive.

31. The let date for this project was coordinated with NCDOT's construction of U-2729. Additionally, this project will need to accommodate future improvements that are proposed as part of the US 52 upgrade to interstate standards. (TIP U-2826)

H. Project Commitments (attach as Green Sheet to CE Form):

NCDOT PROJECT COMMITMENTS

STIP Project No. **BR-0168**

Short Project Description

County

Federal Aid Project No. Federal Aid Number

WBS Element 67168.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division Office - Forsyth County Emergency Services

NCDOT shall coordinate with Forsyth County Emergency Services to provide advanced notice of construction activity that may impact emergency response.

Division Office - Winston-Salem / Forsyth County Schools Transportation

NCDOT shall provide advanced notice of construction activity that may impact school transportation.

Division Office - Winston-Salem Transit Authority (WSTA)

NCDOT shall coordinate with WSTA to provide advanced notice of construction activity that may impact transit operations.

COMMITMENTS FROM PERMITTING

No commitments developed during project permitting.

*******END OF PROJECT COMMITMENTS*******

I. Categorical Exclusion Approval:

STIP Project No. BR-0168
WBS Element 67168.1.1
Federal Project No. Federal Aid Number

Prepared By:

DocuSigned by:
Hannah Headrick
Date Hannah Headrick, Environmental Policy Consultant
NCDOT Environmental Policy Unit

Prepared For: Joel Perlin, NCDOT Project Manager

Reviewed By:
05/21/2024
DocuSigned by:
Marissa Rodman Cox
Date Marissa Cox, Western Regional Lead
NCDOT Environmental Policy Unit

- Approved**
- If NO grey boxes are checked in Section F (pages 2 and 3), NCDOT approves the Type I or Type II Categorical Exclusion.
- Certified**
- If ANY grey boxes are checked in Section F (pages 2 and 3), NCDOT certifies the Type I or Type II Categorical Exclusion for FHWA approval.
 - If classified as Type III Categorical Exclusion.

05/21/2024
Date DocuSigned by:
John Jamison
John Jamison, PWS, CPM, Environmental Policy Unit Manager
North Carolina Department of Transportation

FHWA Approved: For Projects Certified by NCDOT (above), FHWA signature required.

Date N/A
for Yolonda K. Jordan, 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).

Figure 1

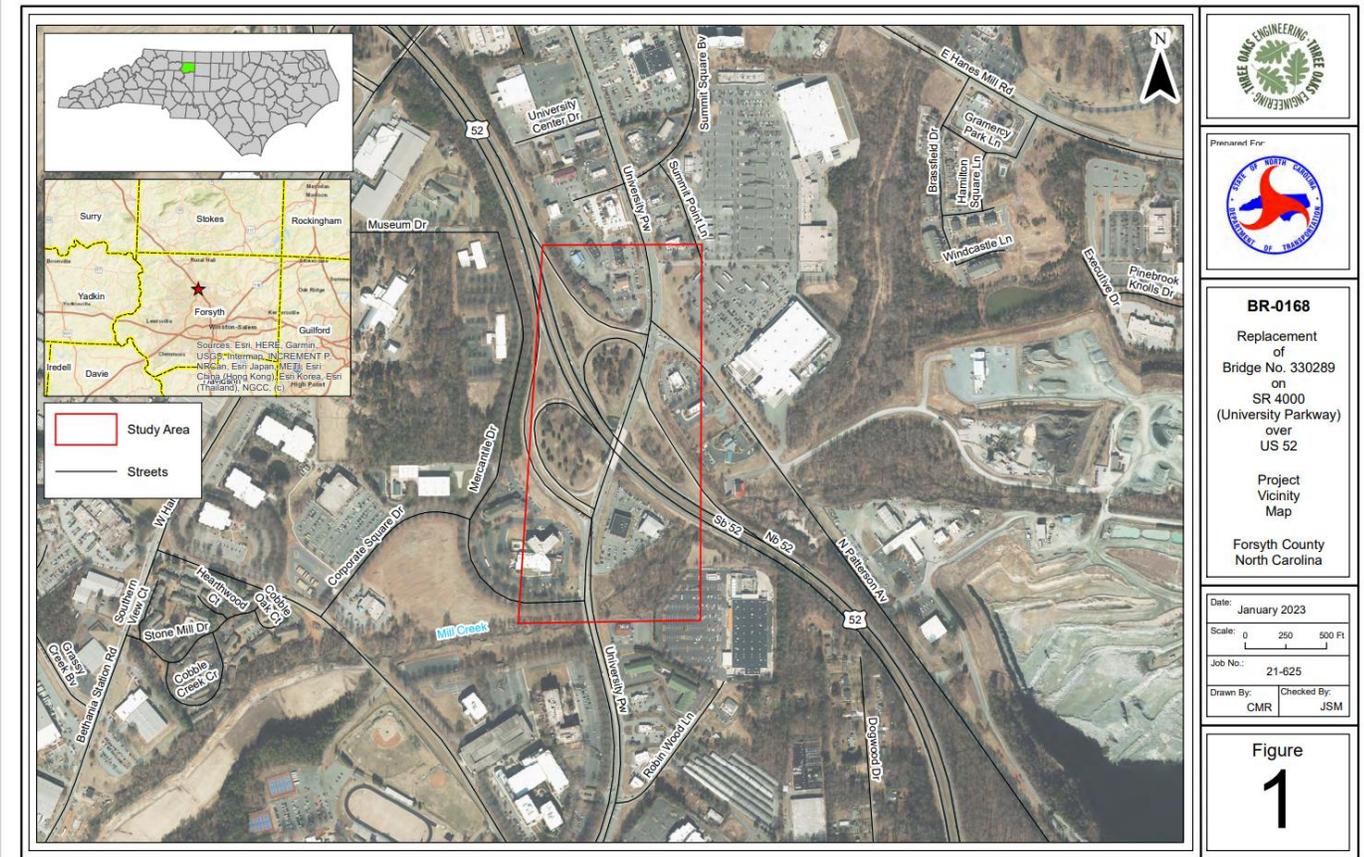


Figure 2

