



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

June 6, 2022

U. S. Army Corps of Engineers
Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. Eric Alsmeyer
NCDOT Coordinator

Subject: **Application for Section 404 Regional General Permit 50 and 401 Water Quality Certification** for the proposed Replacement of Bridge 22 (NC 24/27 eastbound lane) over Rocky River, Cabarrus County, Division 10. TIP B-5810. Debit \$570 from WBS 45764.1.1

Dear Mr. Alsmeyer:

The North Carolina Department of Transportation (NCDOT) proposes to replace the existing 10-span Bridge 22 (NC 24/27 eastbound lane bridge) over Rocky River in Cabarrus County with a 6-span bridge on the existing alignment. The westbound bridge (which is not being replaced) will be utilized as an onsite detour during construction.

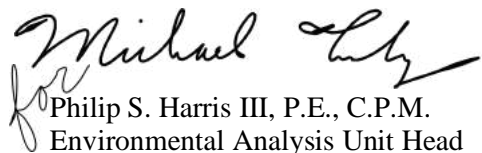
This action will result in 61 lf of permanent impacts to streams from a parallel channel relocation, 81 lf of permanent impacts from bank stabilization and 0.12 ac of temporary fill in streams for construction causeways. Mitigation for the permanent stream impacts from the channel relocation will be provided by the North Carolina Division of Mitigation Services.

Please see enclosed copies of the Pre-Construction Notification (PCN), Stormwater Management Plan, NCDMS Acceptance Letter, Permit Drawings, 2018 Minimum Criteria Determination Checklist (MCDL), Historic Properties and Archaeology documentation, and tribal coordination correspondence.

The USACE is the Lead Federal Agency for this project.

A copy of this permit application and its distribution list will be posted on the NCDOT Website at: <https://xfer.services.ncdot.gov/pdea/PermApps/>. If you have any questions or need additional information, please contact Jeff Hemphill at (919) 707-6126.

Sincerely,


for Philip S. Harris III, P.E., C.P.M.
Environmental Analysis Unit Head

ec: NCDOT Permit Application Standard Distribution List

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

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

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610



Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits
(along with corresponding Water Quality Certifications)

April 13, 2022 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/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf>

A. Processing Information

Pre-Filing Meeting Date Request was submitted on: *

4/22/2022

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

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

Cabarrus

Is this a NCDMS Project? *

☐ Yes ☒ No

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

Is this project a public transportation project? *

☒ Yes ☐ No

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

Is this a NCDOT Project? *

☒ Yes ☐ No

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

B-5810

WBS # *

45764.1.1

(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-401 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? *

NCDOT

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)219-8581

1b. Primary Contact Email: *

jhemphill@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: *

n/a

2b. Deed book and page no.:

2c. Contact Person:

(for Corporations)

2d. Address *

Street Address

n/a

Address Line 2

City

n/a

Postal / Zip Code

n/a

State / Province / Region

n/a

Country

n/a

2e. Telephone Number: *

(xxx)xxx-xxxx

(919)707-7050

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

pharris@ncdot.gov

3. Applicant Information (if different from owner)

3a. Name: *

NCDOT

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)219-8581

(xxx)xxx-xxxx

3e. Fax Number:

(xxx)xxx-xxxx

3f. Email Address: *

jhemphill@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

B-5810

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Midland

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: *

35.25140

ex: 34.208504

Longitude: *

-80.47245

-77.796371

3. Surface Waters

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

Rocky River

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. *

030401050307

[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: *

NCDOT proposes to replace Bridge 22 (NC 24/27 eastbound bridge) over Rocky River. The bridge will be replaced in place using the westbound bridge as the detour. Land use is primarily cultivated land and forested land with scattered residential.

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

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

(intermittent and perennial)
167

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

Bridge 22 is structurally deficient and functionally obsolete.

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

The existing 525', 10-span bridge over Rocky River will be replaced with a 6-span bridge of approximately the same length. Class-II rip rap abutment protection on both banks of the stream is proposed to prevent future erosion and stream migration. 6" circular slot deck drains at 5' and 10' centers are used to meet safety spread criteria but the drains will not discharge directly into Rocky River. 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

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

Name (if known):

Agency/Consultant Company:

Other:

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

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	Roadway Fill	Permanent	Fill	SA Tributary to Rocky River	Perennial	Both	4	61
S2	Stabilization	Permanent	Bank Stabilization	Rocky River	Perennial	Both	75	81
S3	Temporary Construction	Temporary	Workpad/Causeway	Rocky River	Perennial	Both	75	15

** 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:

142

3i. Total temporary stream impacts:

15

3i. Total stream and ditch impacts:

157

3j. Comments:

E. Impact Justification and Mitigation



1. Avoidance and Minimization

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

This section of Rocky River carries a high amount of "drift" (trees/debris, etc). The number of bents has been reduced and the bent that will be located in the river will match the location of the upstream bent to reduce material accumulating at the bent and destabilizing the banks. Impervious dikes and stilling basins are proposed to prevent the sediment inflow directly into the stream during the construction phase. Deck drains are required due to the length of the structure, but will not directly discharge to Rocky River.

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

Best Management Practices will be adhered to.

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

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

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

☒ Yes ☐ No

4b. Stream mitigation requested:

(linear feet)

61

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

warm

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

4d. Buffer mitigation requested (DWR only):

(square feet)

4e. Riparian wetland mitigation requested:

(acres)

4f. Non-riparian wetland mitigation requested:

(acres)

4g. Coastal (tidal) wetland mitigation requested:

(acres)

4h. Comments

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



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

1. Diffuse Flow Plan

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

☐ Yes ☒ No

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

If no, explain why:

2. Stormwater Management Plan

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

☒ Yes ☐ No

Comments:

G. Supplementary Information



1. Environmental Documentation

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

2. Violations (DWR Requirement)

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

☐ Yes ☒ No

3. Cumulative Impacts (DWR Requirement)

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

☐ Yes ☒ No

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

Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.

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

5d. Is another Federal agency involved? *

☐ Yes ☒ No ☐ Unknown

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? *

IPAC (USFWS) : Northern long-eared bat (NLEB) – A bat survey in 2021 found roosting habitat on the bridge but no evidence of bat use. Based on the lack of evidence of bats using the bridge and no known roost trees within 150 feet of the project area, a Biological Conclusion of May Affect, Not Likely to Adversely Affect was reached. Approximately 0.17 acre of trees will be removed in the project footprint for construction purposes. Please see attached memo.
Schweinitz's sunflower - A survey for Schweinitz's sunflower was conducted on October 11, 2021 in which no specimens were found. The Biological Conclusion for Schweinitz's sunflower is No Effect.
Carolina heelsplitter - A 2019 mussel survey found degraded habitat and no mussels. The Biological Conclusion for Carolina heelsplitter is No Effect. In addition, pursuant to guidance from the USFWS on 3/24/2021, unless the project drains to Six Mile, Waxhaw, and Goose Creeks, the biological conclusion is No Effect.

6. Essential Fish Habitat (Corps Requirement)

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

☐ Yes ☒ No

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

Review of on-line mapping sources

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

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

Archaeology and Historical Architecture Memos (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:

Project was determined by NCDOT to meet the requirements for a MOA Type 1.

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

FEMA Floodmap

Miscellaneous

Comments

Approximately 0.17 acre of trees will be removed in the project footprint for construction purposes.
Please find attached Catawba Nation response letter.

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

[Click the upload button or drag and drop files here to attach document](#)

B-5810 Cabarrus June 2022.pdf

6.93MB

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: *

Michael Turchy

Signature*

Michael Tushy

Date

6/5/2022

ROY COOPER

Governor

ELIZABETH S. BISER

Secretary

MARC RECKTENWALD

Director



NORTH CAROLINA
Environmental Quality

February 22, 2022

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

Dear Mr. Harris:

Subject: Mitigation Acceptance Letter:

B-5810, Replace Bridge 22 over the Rocky River on NC 24 and NC 27, Cabarrus County

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on February 16, 2022, the impacts are located in CU 03040105 of the Yadkin River basin in the Southern Piedmont (SP) Eco-Region, and are as follows:

Stream and Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Yadkin	03040105	SP	0	0	61.000	0	0	0

*Some of the stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

The impacts and associated mitigation needs were under projected by the NCDOT in the 2022 impact data. NCDEQ-DMS will commit to implement sufficient compensatory mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from NCDEQ-DMS.

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

Sincerely,

Elizabeth Harmon

for James B. Stanfill
DMS Asset Management Supervisor

cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NCDWR
File: B-5810



North Carolina Department of Environmental Quality | Division of Mitigation Services
217 West Jones Street | 1652 Mail Service Center | Raleigh, North Carolina 27699-1652
919.707.8976



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

WBS Element: 45764.1.1 TIP No.: B-5810 County(ies): Cabarrus Page 1 of 1

General Project Information

WBS Element:	45764.1.1	TIP Number:	B-5810	Project Type:	Bridge Replacement	Date:	1/21/2019
NCDOT Contact:	Marc Shown	Contractor / Designer:	STV Engineers, Inc. / Shirshant Sharma				
Address:	1020 Birch Ridge Drive Raleigh, NC 27610			Address:	900 West Trade Street, Ste. 715 Charlotte, NC 28202		
	Phone: (919) 707-6751				Phone: (704) 816-2556		
	Email: mshown@ncdot.gov				Email: Shirshant.Sharma@stvinc.com		
City/Town:	Locust, NC			County(ies):	Cabarrus		
River Basin(s):	Yadkin-Pee Dee			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	0.22	Surrounding Land Use:	Wooded
	Proposed Project		Existing Site
Project Built-Up Area (ac.)	1.0 ac.	0.8 ac.	
Typical Cross Section Description:	Bridge : Two 12' lanes, 8' to the right and 5' to the left paved shoulders Approach: Two 12' lanes, variable paved shoulders		Bridge: Two 12' lanes, 3.2' to the right and 3.5' to the left shoulders Approach: Two 12' lanes, variable shoulders

Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	13300	Year:	2040	Existing:	10000	Year:	2016
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General Project Narrative:
(Description of Minimization of Water Quality Impacts)

The existing 525', 10 span bridge over Rocky River on NC 24 & NC 27 EBL is being replaced with 6 span bridge with a span arrangement of 4@95' and 2@70' (54" Girder). The bridge will have 1.5:1 sloping abutments. The bridge will have a normal crown slope at 2% with 12' travel lanes with 8' to the right and 5' to the left shoulders, 37' clear width and 40'-3" OTO width. The existing bridge structure will be removed. Overall drainage patterns will be maintained. There are roadside ditches that flow towards the bridge on both sides of the structure which will be maintained in the proposed condition. On either side of begin and end bridge two (four in total) traffic bearing grated drop inlet with double frame and grates (2GI) will be placed on either side of the road to pick up the stormwater from the bridge. Class-II rip rap abutment protection on both banks of the stream is also proposed to prevent future erosion and stream migration. 6" circular slot deck drains at 5' and 10' centers are used to meet spread criteria but the drains will not discharge directly above water. Impervious dikes and stilling basin are proposed to prevent the sediment inflow directly into the stream during the construction phase.

Waterbody Information

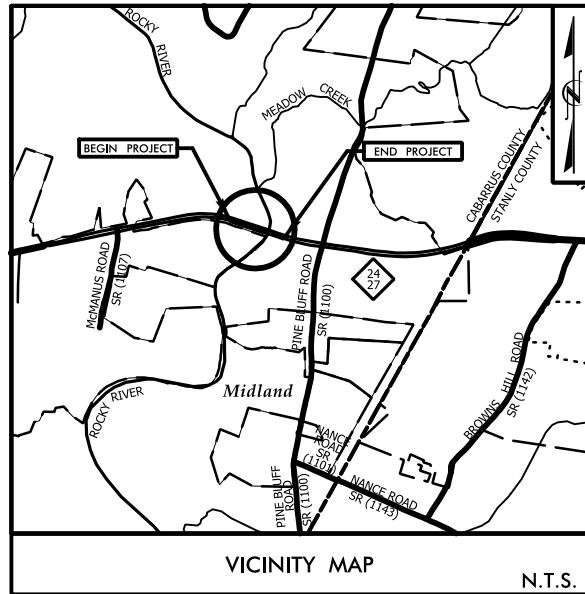
Surface Water Body (1):	Rocky River		NCDWR Stream Index No.:	13-17		
NCDWR Surface Water Classification for Water Body	Primary Classification:	Class C				
	Supplemental Classification:	None				
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:				Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	Yes	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

12/17/2021
r:\hydraulics\permits_environmental\drawings\prm_sht\B5810_hyd_prm_psh01.tsh.dgn
Waldrop

CONTRACT:

TIP PROJECT: B-5810

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
CABARRUS COUNTY

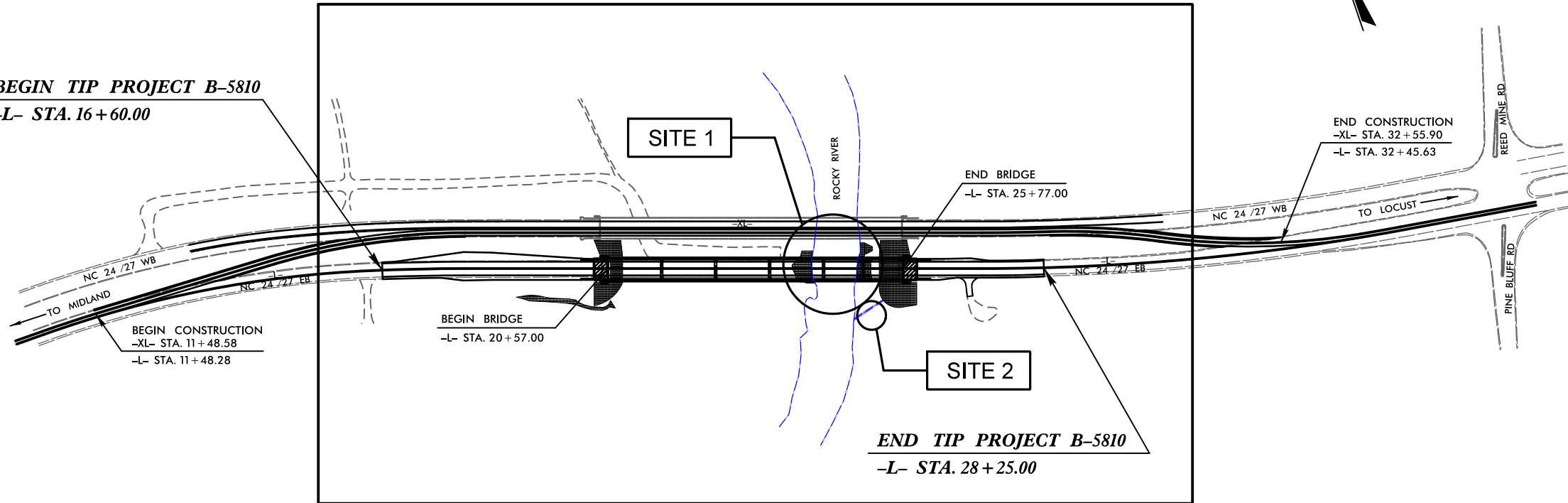
LOCATION: BRIDGE #022 OVER ROCKY RIVER ON (EASTBOUND NC 24/27)
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

SURFACE WATER IMPACTS PERMIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5810	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45764.1.1		P.E.	
45764.2.1		ROW & UTILITIES	



BEGIN TIP PROJECT B-5810
-L- STA. 16 + 60.00



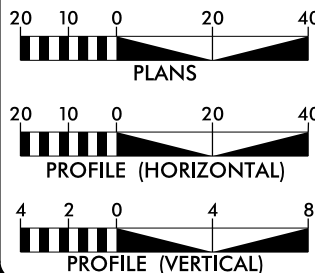
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED
TO THE LIMITS ESTABLISHED BY METHOD II.

Permit Drawing
Sheet 1 of 11



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2016 = 10,000
ADT 2040 = 13,300
K = 9 %
D = 6.5 %
T = 14 %*
V = 60 MPH
FUNC. CLASSIFICATION:
MINOR ARTERIAL
* (TTST 6% + DUALS 8%)

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-5810 = 0.123 MILES
LENGTH OF STRUCTURE TIP PROJECT B-5810 = 0.098 MILES
TOTAL LENGTH OF TIP PROJECT B-5810 = 0.221 MILES

NCDOT CONTACT: KEITH PASCHAL, PE
Structure Management Unit

PLANS PREPARED FOR THE NCDOT BY:

STV 100 Years
STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 15, 2019

LETTING DATE:
APRIL 19, 2022

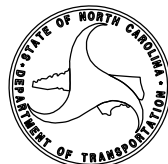
NIKKI T. HONEYCUTT, PE
PROJECT ENGINEER

MAAMOON K. ABDELAZIZ
PROJECT DESIGNER

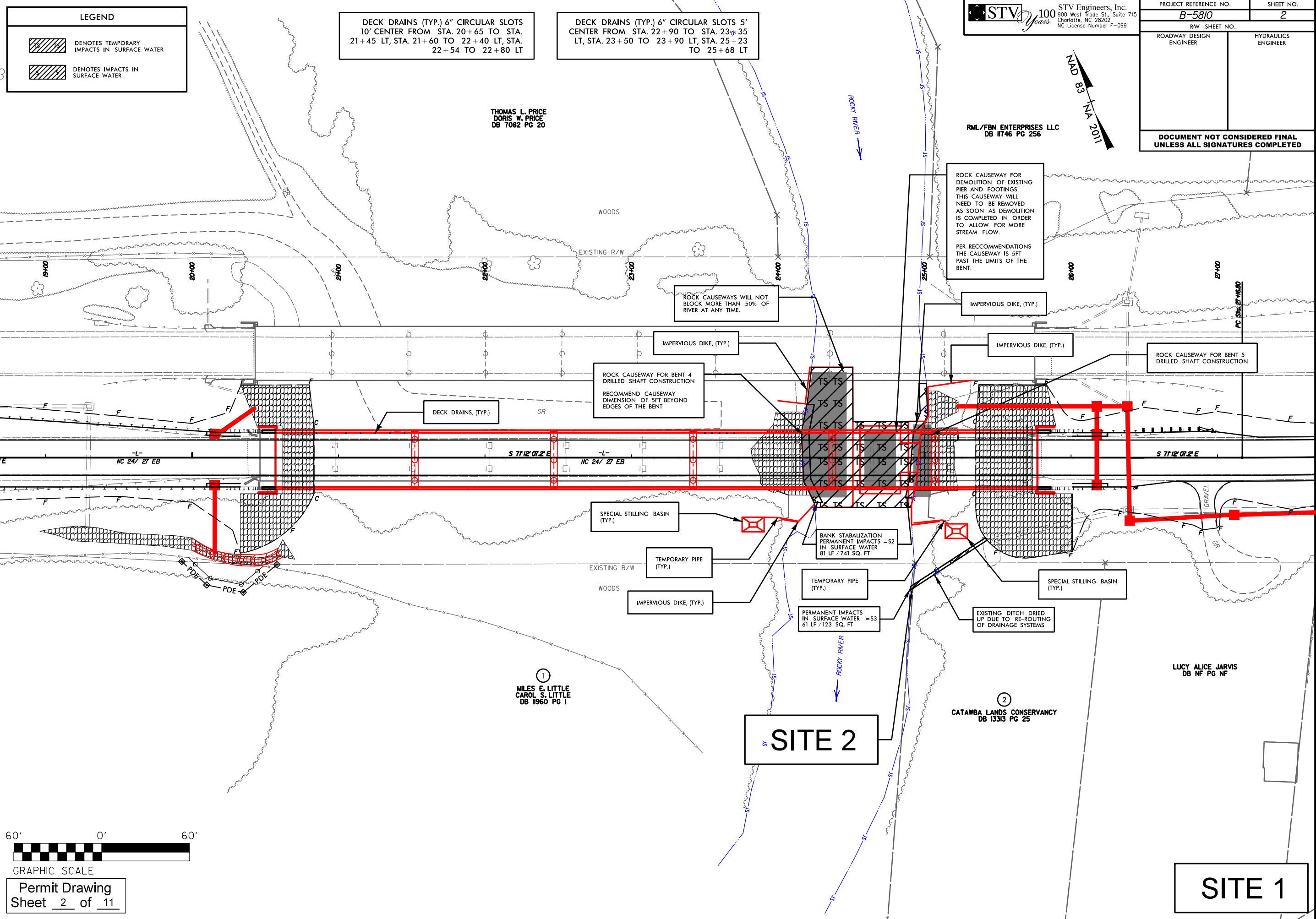
HYDRAULICS
ENGINEER

SIGNATURE: _____ P.E.
ROADWAY
DESIGN
ENGINEER

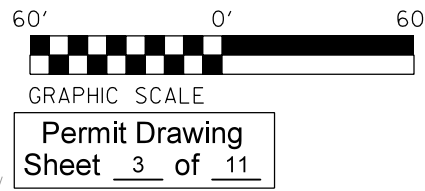
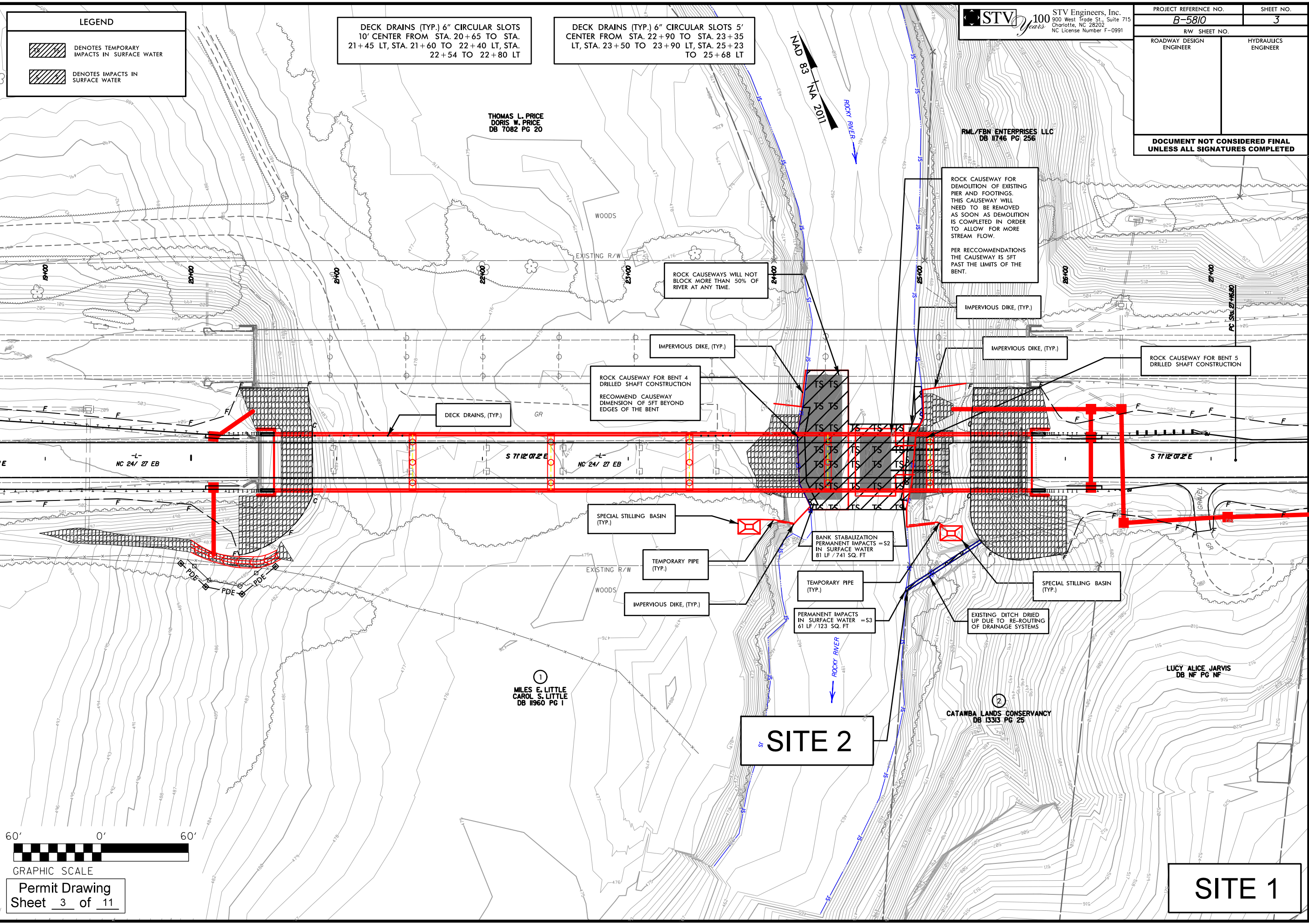
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Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.
B-5810

RW SHEET NO.
3

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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UNLESS ALL SIGNATURES COMPLETED

SITE 1

5/14/99

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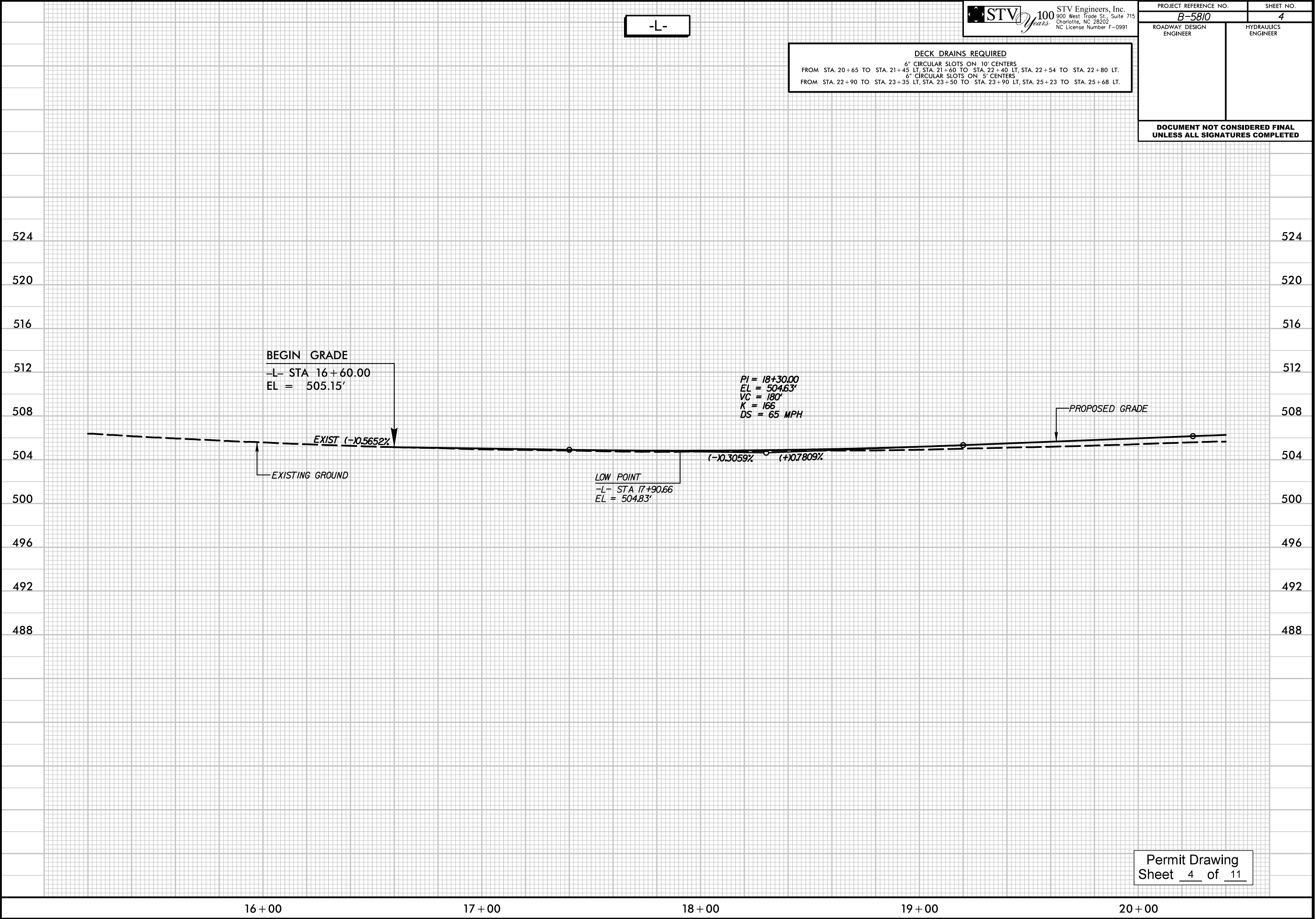
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100 years

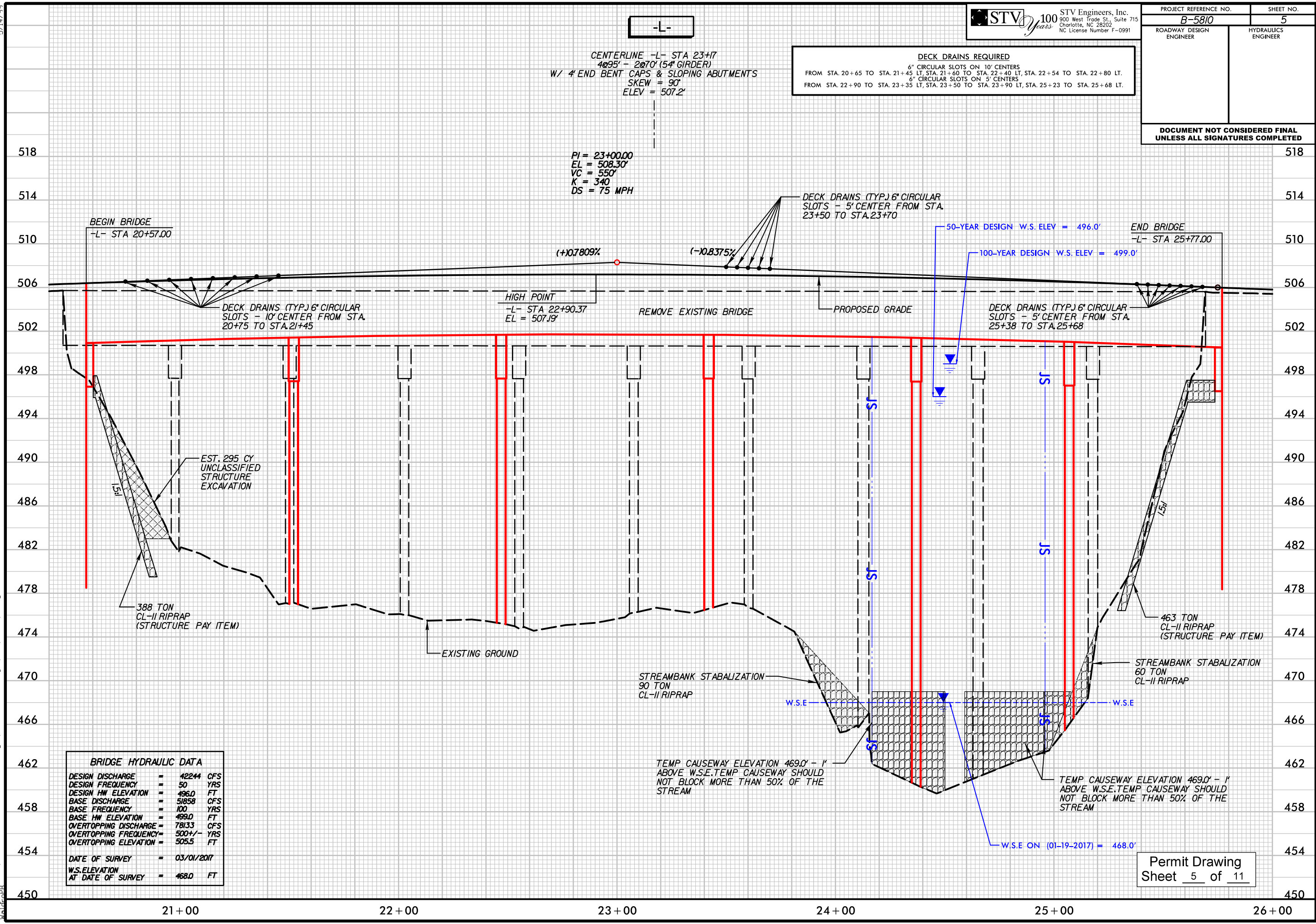
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Charlotte, NC 28202
NC License Number F-0991

DECK DRAINS REQUIRED
6" CIRCULAR SLOTS ON 10' CENTERS
FROM STA. 20+65 TO STA. 21+45 LT. STA. 21+60 TO STA. 22+40 LT. STA. 22+54 TO STA. 22+80 LT.
6" CIRCULAR SLOTS ON 5' CENTERS
FROM STA. 22+90 TO STA. 23+35 LT. STA. 23+50 TO STA. 23+90 LT. STA. 25+23 TO STA. 25+68 LT.

PROJECT REFERENCE NO.		SHEET NO.
B-5810		4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

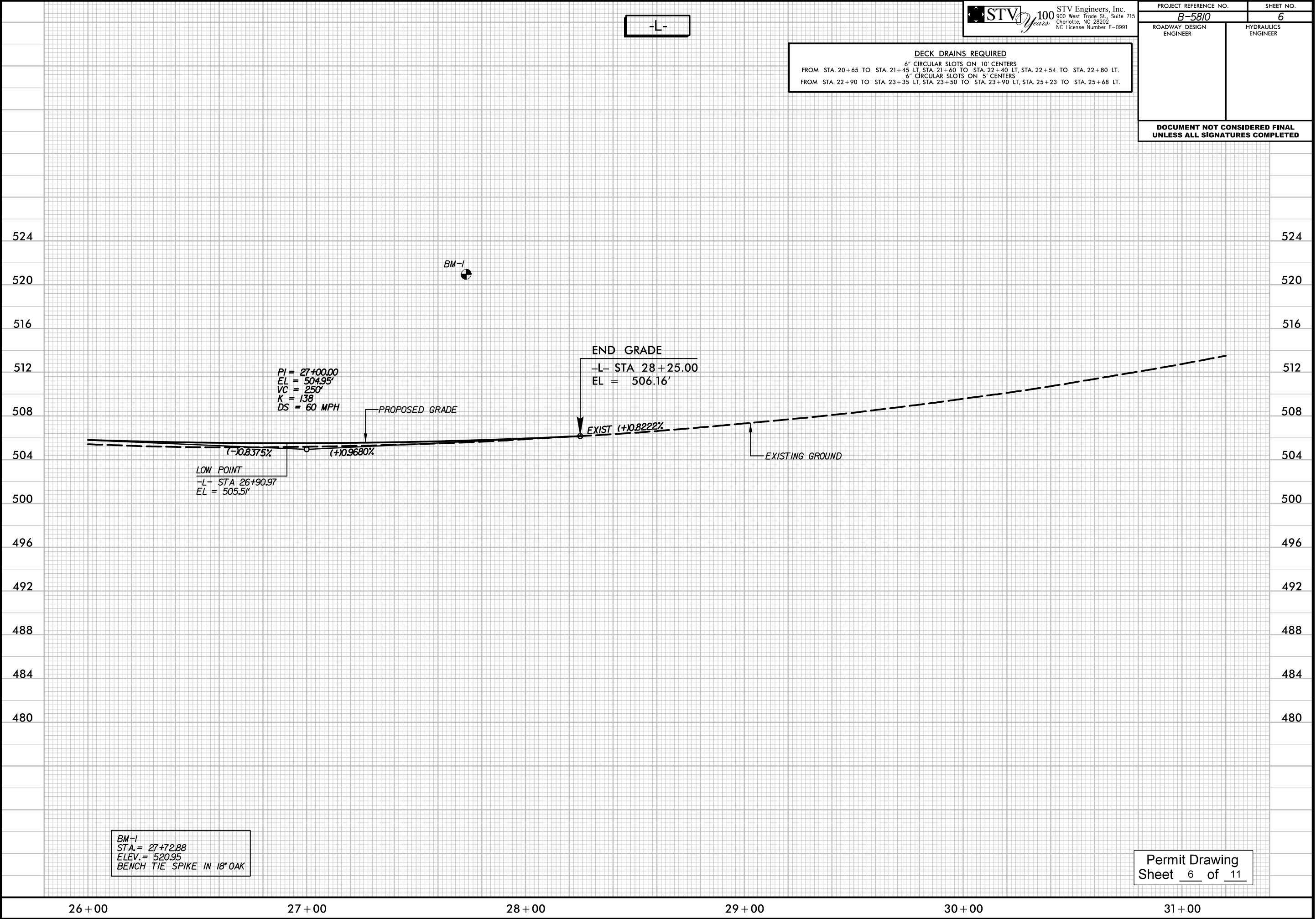


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8/17/99

NOTE:

1. AT NO TIME WILL THE CONTRACTOR BE PERMITTED TO BLOCK MORE THAN HALF OF THE CHANNEL AT ANY ONE TIME.
2. CONTRACTOR SHALL DEWATER AND PLACE GEOTEXTILE PRIOR TO CONSTRUCTING CAUSEWAYS.



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NC License Number F-0991

PROJECT REFERENCE NO.

B-5810

SHEET NO.

7

RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS
ENGINEER

DOCUMENT NOT CONSIDERED FINAL
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ROCK CAUSEWAY FOR
DEMOLITION OF EXISTING
PIER AND FOOTINGS.
THIS CAUSEWAY WILL
NEED TO BE REMOVED
AS SOON AS DEMOLITION
IS COMPLETED IN ORDER
TO ALLOW FOR MORE
STREAM FLOW.

PER RECOMMENDATIONS
THE CAUSEWAY IS 5FT
PAST THE LIMITS OF THE
BENT.

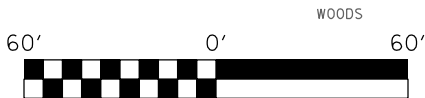
IMPERVIOUS DIKE, (TYP.)
& DEWATERING

TEMPORARY IMPACTS
IN SURFACE WATER =S1
46 LF /1527 SQ. FT

NC 24/ 27 EB

EXISTING R/W

①
MILES E. LITTLE
CAROL S. LITTLE
DB 11960 PG 1



GRAPHIC SCALE

Permit Drawing
Sheet 7 of 11

②
CATAWBA LANDS CONSERVANCY
DB 13313 PG 25

DEMOLITION STAGE 1

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8/17/99

NOTE:

1. AT NO TIME WILL THE CONTRACTOR BE PERMITTED TO BLOCK MORE THAN HALF OF THE CHANNEL AT ANY ONE TIME.
2. CONTRACTOR SHALL DEWATER AND PLACE GEOTEXTILE PRIOR TO CONSTRUCTING CAUSEWAYS.

STV 100 Years

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Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.	
B-5810		8	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

ROCK CAUSEWAY FOR BENT 5
DRILLED SHAFT CONSTRUCTION
RECOMMEND CAUSEWAY
DIMENSION OF 5FT BEYOND
EDGES OF THE BENT

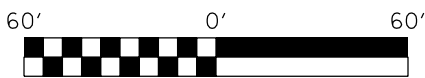
TEMPORARY IMPACTS
IN SURFACE WATER = S2
59 LF / 376 SQ. FT

IMPERVIOUS DIKE, (TYP.)
& DEWATERING

IMPERVIOUS DIKE, (TYP.)

SPECIAL STILLING BASIN
(TYP.)

TEMPORARY PIPE
(TYP.)



GRAPHIC SCALE

Permit Drawing
Sheet 8 of 11

①
MILES E. LITTLE
CAROL S. LITTLE
DB 11960 PG 1

②
CATAWBA LANDS CONSERVANCY
DB 13313 PG 25

CONSTRUCTION CAUSEWAY STAGE 2

8/17/99

NOTE:

1. AT NO TIME WILL THE CONTRACTOR BE PERMITTED TO BLOCK MORE THAN HALF OF THE CHANNEL AT ANY ONE TIME.
2. CONTRACTOR SHALL DEWATER AND PLACE GEOTEXTILE PRIOR TO CONSTRUCTING CAUSEWAYS.



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Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.		SHEET NO.
B-5810		9
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

IMPERVIOUS DIKE, (TYP.)
& DEWATERING

ROCK CAUSEWAY FOR BENT 4
DRILLED SHAFT CONSTRUCTION

RECOMMEND CAUSEWAY
DIMENSION OF 5FT BEYOND
EDGES OF THE BENT

TEMPORARY IMPACTS
IN SURFACE WATER =S3
62 LF / 2012 SQ. FT

NC 24 / 27 EB

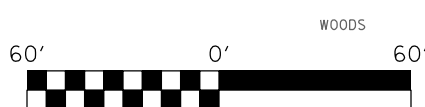
TEMPORARY PIPE
(TYP.)

IMPERVIOUS DIKE, (TYP.)
& DEWATERING

SPECIAL STILLING BASIN
(TYP.)

EXISTING R/W

①
MILES E. LITTLE
CAROL S. LITTLE
DB 11960 PG 1



GRAPHIC SCALE
Permit Drawing
Sheet 9 of 11

ROCKY RIVER

②
CATAWBA LANDS CONSERVANCY
DB 13313 PG 25

CONSTRUCTION CAUSEWAY STAGE 3

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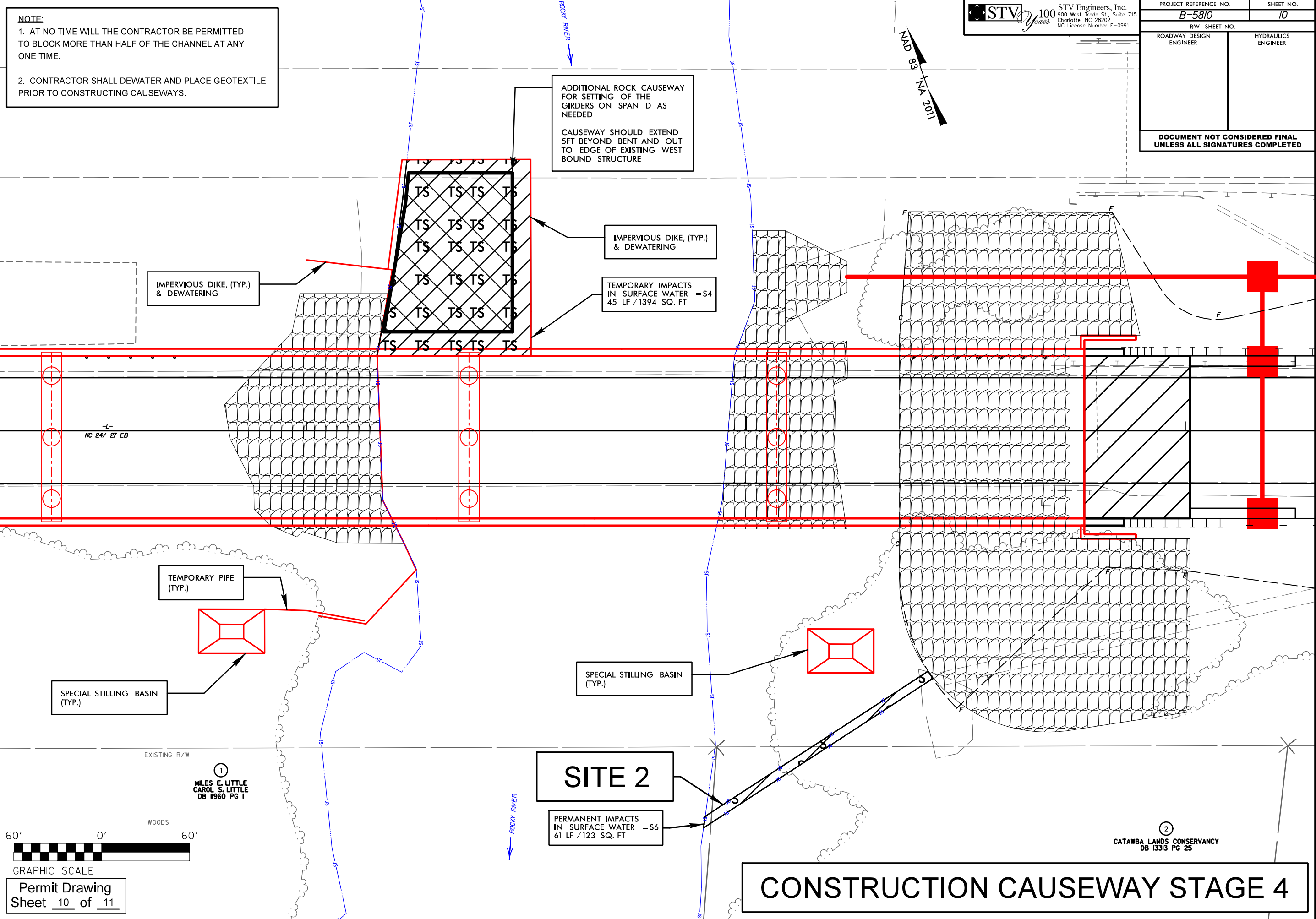
NOTE:
1. AT NO TIME WILL THE CONTRACTOR BE PERMITTED TO BLOCK MORE THAN HALF OF THE CHANNEL AT ANY ONE TIME.
2. CONTRACTOR SHALL DEWATER AND PLACE GEOTEXTILE PRIOR TO CONSTRUCTING CAUSEWAYS.




STV100 years

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PROJECT REFERENCE NO. <i>B-5810</i>		SHEET NO. <i>10</i>
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
</		



60' 0' 60'



GRAPHIC SCALE

Permit Drawing
Sheet 10 of 11

①
MILES E. LITTLE
CAROL S. LITTLE
DB 11960 PG 1

SITE 2

PERMANENT IMPACTS
IN SURFACE WATER = \$6
61 LF / 123 SQ. FT

②
CATAWBA LANDS CONSERVANCY
DB 13313 PG 25

CONSTRUCTION CAUSEWAY STAGE 4

WETLAND PERMIT IMPACT 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)
1	20+57.00 / 25+77.00	4 @ 95', 2 @ 70' (54" GIRDER) - OAL = 520', W/CAUSEWAYS							0.12		15	
		BANK STABILIZATION						0.02		81		
2	24+90.36 / 25+42.53	FILL IMPACT						<0.01		61		
TOTALS:								0.02	0.12	142	15	

NOTES:

¹TEMP. IMPACTS LENGTH TOTAL = 96 FT. (81 FT. COVERED UNDER PERMANENT IMPACTS)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRIDGE #022 OVER ROCKY RIVER
ON (EASTBOUND NC 24/27)
CABARRUS COUNTY
B-5810
SHEET 11 of 11
12/19/2021

MINIMUM CRITERIA DETERMINATION CHECKLIST

TIP Project No.: B-5810

State Project No.: 45764.1.1

Project Location: Bridge No. 22 over Rocky River on NC 24 & NC 27 eastbound lane in the Town of Midland, Cabarrus County.

Project Description: The North Carolina Department of Transportation (NCDOT) plans to replace Bridge No. 22 on NC 24/NC 27 over Rocky River (refer to Figure 1). The existing bridge carries eastbound NC 24/NC 27 traffic, has two 12-foot lanes, is approximately 525 feet long, and consists of a reinforced concrete deck girder superstructure. The bridge was built in 1923 and reconstructed in 1957. This state funded project is scheduled for right of way acquisition in August 2019 and let in August 2020. The project would replace the bridge in place using a cross-over detour, with a total project length of approximately 1,100 feet. All proposed improvements will be contained within the existing right-of-way (refer to Appendix A).

Purpose and Need: NCDOT Bridge Management Unit records indicate Bridge No. 22 has a sufficiency rating of 57.7 out of a possible 100 for a new structure. The bridge is considered functionally obsolete due to superstructure condition appraisal of 5 out of 9 and a substructure condition appraisal of 5 out of 9 according to Federal Highway Administration (FHWA) standards, and is approaching the end of its useful life. The bridge also meets the criteria for functionally obsolete due to a deck geometry appraisal of 3 out of 9.

Anticipated Permit or Consultation Requirements: The proposed project has been designated as a Minimum Criteria Determination Checklist for the purposes of State Environmental Policy Act (SEPA) documentation. It is anticipated that a Nationwide or Regional General Permit along with its corresponding Water Quality Certification (WQC), will be applicable for this project. A Nationwide Permit (NWP) 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The U.S. Army Corps of Engineers (USACE) holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required, then a Section 401 WQC from the North Carolina Division of Water Resources (NCDWR) will be needed. Rocky River, which is part of the Yadkin-PeeDee River basin, crosses under Bridge No. 22 and is listed on the North Carolina 2016 Final 303(d) list of impaired waters.

Special Project Information:

Environmental Commitments: Greensheet commitments are located at the end of the checklist.

Estimated Costs (Pending): The estimated costs, FY 2018, are as follows:

Utility	\$	19,600	(NCDOT)
R/W	\$	0	(NCDOT)
Const.	\$	5,100,000	(STV Engineers Inc.)
Total	\$	5,119,600	

Estimated Traffic: A traffic forecast was conducted on September 13, 2016, and a capacity analysis and construction phasing analysis was completed in January 2018.

Current 2016 10,000 vpd
 Year 2040 13,300 vpd
 TTST 6%
 Dual 8%

Accidents: A crash analysis was completed on February 14, 2017, by NCDOT on this section of NC 24/NC 27 from 500 feet west of Bridge No. 22 to 500 feet east of the bridge. The crash analysis was performed using NCDOT's TEAAS system with a study period of five years, from January 1, 2012, to December 31, 2016. Nine crashes occurred within the vicinity of the project. The crash analysis found the Total Crash Rate for crashes per 100 million vehicle miles for the two lanes on Bridge No.22 to be 100.27 which is more than the comparable state average of 51.09 for a four lane divided road with partial access control.

Design Exceptions: There are no anticipated design exceptions for this project.

Pedestrian and Bicycle Accommodations: There are no existing pedestrian or bicycle facilities along NC 24 and NC 27.

The Carolina Thread Trail Master Plan for Cabarrus County indicates that the Rocky River Greenway is planned to cross under the bridge. The NC Division of Bicycle and Pedestrian Transportation recommends working with Cabarrus County to ensure that adequate space is reserved under the proposed bridge for the proposed Greenway. This requested accommodation is included in the project design.

Discussion with the Carolina Thread Trail Community Coordinator occurred on May 16, 2018. He stated the proposed greenway is planned to be a natural surface trail that runs under the bridge. The Cabarrus County Active Living and Parks Department Director confirmed on June 14, 2018, that there is no current funding for this proposed greenway. On July 6, 2018, Cabarrus County confirmed that none of the parcels surrounding Bridge No. 22 are owned by the County Parks and Recreation Department, or have easements on them.

In addition, the Rocky River Blueway, an active canoe/kayak paddling trail that is part of the Carolina Thread Trail, crosses under the bridge. There are no take-outs within the project study area.

Alternatives Discussion:

No Build – The no build alternative would not replace a deficient bridge, and thus is not a viable option.

Rehabilitation – Rehabilitation would only provide a temporary solution to the structural deficiency of the bridge.

Onsite Detour (Preferred Alternative) – Due to concerns regarding the number of school buses using the bridge, the project proposes an onsite crossover detour on the existing westbound NC 24/NC 27 bridge (Refer to Appendix A).

New Alignment – Given that the alignment for eastbound NC 24/NC 27 is acceptable, a new alignment was considered infeasible.

Offsite Detour – An approximate eight mile offsite detour was evaluated but was not acceptable due to concerns regarding the number of school buses using the bridge.

Agency Comments: Start of Study letters were sent to the Cabarrus County Planning Department, Cabarrus-Rowan MPO, NC Department of Parks and Recreation, NCDENR, NC Division of Bicycle and Pedestrian Transportation, and the US Army Corps of Engineers in December of 2015.

Input forms were sent to the Town of Midland Fire and Rescue Fire Chief, Town of Midland Planner, and the Cabarrus County Schools Transportation Technical Planner in April and May of 2016. Comments were received back from the Midland Planner and Cabarrus County Schools Transportation Technical Planner in April and May of 2016. The Cabarrus County School Transportation Technical Planner expressed concern regarding the potential impact of this project on school transportation services.

Floodplain: Rocky River, which crosses under Bridge No. 22, is located in a FEMA Zone AE Floodplain. The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR). This is noted in the project commitments.

Bald Eagle and Golden Eagle Protection Act: A desktop-GIS assessment of the project study area, as well as the area within a 1.13-mile radius (1.0 mile plus 660 feet) of the project limits, was performed on March 18, 2016, using 2010 color aerial photography. Water bodies large enough or sufficiently open to be considered potential feeding sources were identified. A survey of the study area and the area within 660 feet of the project limits will be conducted. Additionally, a review of the July 2016 North Carolina National Heritage Program (NCNHP) database on August 12, 2016, indicates no known

occurrences within 1.0 mile of the study area. Due to the presence of habitat, NCDOT will conduct surveys of the study area within 660 feet of the project limits for Bald Eagle. This is has been included in the project commitments.

Public Involvement: A landowner notification letter was sent on February 16, 2016, to all property owners affected directly by this project to inform them of representatives being present on their property. The letter indicated the following, "Please note that if the U.S. Army Corps of Engineers has already issued a Jurisdictional Determination on your property confirming the presence of streams and/or wetlands, or if you have general questions or comments about the project, contact the NCDOT Planning Engineer Jonathan Carr by phone (919) 707-6014, or via email at jecarr@ncdot.gov." No comments have been received to date.

PART A: MINIMUM CRITERIA

- | | YES | NO |
|--|-------------------------------------|--------------------------|
| 1. Is the proposed project listed as a type and class of activity allowed under the Minimum Criteria Rule in which environmental documentation is <u>not</u> required? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

If the answer to number 1 is "no", then the project does not qualify as a minimum criteria project. A state environmental assessment is required.

If yes, under which category? Category #9
(Reconstruction of existing crossroad or railroad separations and existing stream crossings, including, but not limited to, pipes, culverts, and bridges)

If either category #8, #12(i) or #15 is used complete Part D of this checklist.

PART B: MINIMUM CRITERIA EXCEPTIONS

- | | YES | NO |
|--|--------------------------|-------------------------------------|
| 2. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Is the proposed activity of such an unusual nature or does the proposed activity have such widespread implications, that an uncommon concern for its environmental effects has been expressed to the Department? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- | | | |
|--|--------------------------|-------------------------------------|
| 6. Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or ground water impacts? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits or shellfish, finfish, wildlife, or their natural habitats? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

- | | YES | NO |
|--|-------------------------------------|-------------------------------------|
| 9. Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Does the action require the placement of temporary or permanent fill in waters of the United States? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Is the proposed action located in an Area of Environmental Concern, as defined in the coastal Area Management Act? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13. Does the project require stream relocation or channel changes? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Cultural Resources

- | | | |
|---|--------------------------|-------------------------------------|
| 14. Will the project have an "effect" on a property or site listed on the National Register of Historic Places? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Response to Question 9:

Habitat for the Carolina Heelsplitter (*Lasmigona decorata*) and the Atlantic Pigtoe (*Fusconaia masoni*) exists within the project study area. A review of North Carolina Natural Heritage Program (NCNHP) records, last accessed April 18, 2018, indicated there is not an element occurrence (EO) for the Carolina Heelsplitter within a five mile buffer of the project bridge. The nearest occurrence for the species is located in Goose Creek in Union County, approximately 6.5 stream miles downstream from the survey location. This occurrence (EO ID 21454) was first observed on August 26, 1987, and last observed on September 29, 2015. Although not listed by U.S. Fish and Wildlife Service (USFWS) for Cabarrus County where the proposed project is located, the Atlantic Pigtoe (*Fusconaia masoni*), is also known from Goose Creek in Union County. The occurrence for the Atlantic Pigtoe (EO ID 22087) was first observed on July 5, 1994, and last observed on March 25, 1998. This species is currently being evaluated by USFWS and could be listed


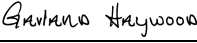
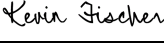
as a protected species under the Endangered Species Act (ESA). On September 22, 2016, a mussel survey was conducted for these species. A total of 4.5 person-hours of survey time were spent in the reach, with no freshwater mussel species observed. The survey did document one species of freshwater clam, the Asian Clam (*Corbicula fluminea*), which was abundant. The results indicate no native freshwater mussel fauna in the survey reach. The nearest element occurrence for Carolina Heelsplitter is located approximately 6.5 stream miles downstream from the survey location, but in Goose Creek in Union County. Based on the degraded habitat, distance to known Carolina Heelsplitter records, the National Pollutant Discharge Elimination System (NPDES) discharges potentially acting as a barrier, and these survey results, completion of this project will not affect the species. Therefore, a biological conclusion of “**No Effect**” was reached for both the Carolina Heelsplitter and the Atlantic Pigtoe.

Suitable habitat for Schweinitz's sunflower (*Helianthus schweinitzii*) is present in the study area along roadside shoulders. A review of the July 2016 NCNHP database on August 12, 2016, indicates no known occurrences within 1.0 mile of the study area. A survey of the study area was conducted on August 23, 2016, during the flowering survey window. No plants or stems were found during the survey.

The Natural Resources Technical Report (NRTR) also disclosed an unresolved Biological Conclusion for the Northern long eared bat (NLEB). Since this project is state funded, the USACE will act as the lead federal agency for issues related to the NLEB. The USACE has developed a Standard Local Operations Procedure for Endangered Species (SLOPES) to address NLEB when they are the lead agency, which NCDOT will follow for this project. This procedure applies to projects in NCDOT Divisions 9-14. The requirements of the SLOPES for the NLEB will be completed prior to Let and will be submitted to the USACE. A Biological Conclusion is not required.

Response to Question 10:

Replace existing nine-span bridge with six-span bridge on the same alignment will require a Nationwide Permit #3 – Maintenance. All measures will be taken to avoid regulated permanent fill impacts. A new bridge pier will be replacing an existing bridge pier within the Rocky River jurisdictional limits (JS-line). Temporary impacts will result from demolition of the existing bridge and bridge piers, and construction of the new bridge and piers that will require dewatering portions of the Rocky River in order to work in dry conditions.

Reviewed by:	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;"> <small>DocuSigned by:</small>  <small>E97A4283A92246A</small> </div>	Date:	11/7/2018
	Elizabeth Scott, EI, STV Engineers Inc.		
	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;"> <small>DocuSigned by:</small>  <small>568D887B80E449A</small> </div>	Date:	11/8/2018
Garland Haywood, PE, NCDOT Division Bridge Program Manager			
	<div style="border: 1px solid black; border-radius: 50%; padding: 2px; display: inline-block;"> <small>DocuSigned by:</small>  <small>ED18A43D98E449A</small> </div>	Date:	11/26/2018
Kevin Fischer, PE, NCDOT Structures Management Unit			

PROJECT COMMITMENTS
Bridge No. 22 over Rocky River on NC 24 & NC 27 EBL
in Cabarrus County
WBS No. 45764.1.1
STIP B-5810

Structures Management Unit, Project Manager
FEMA Coordination

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

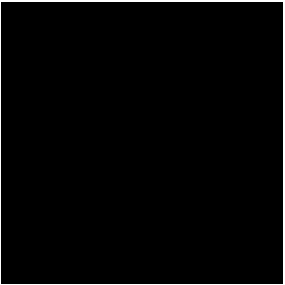
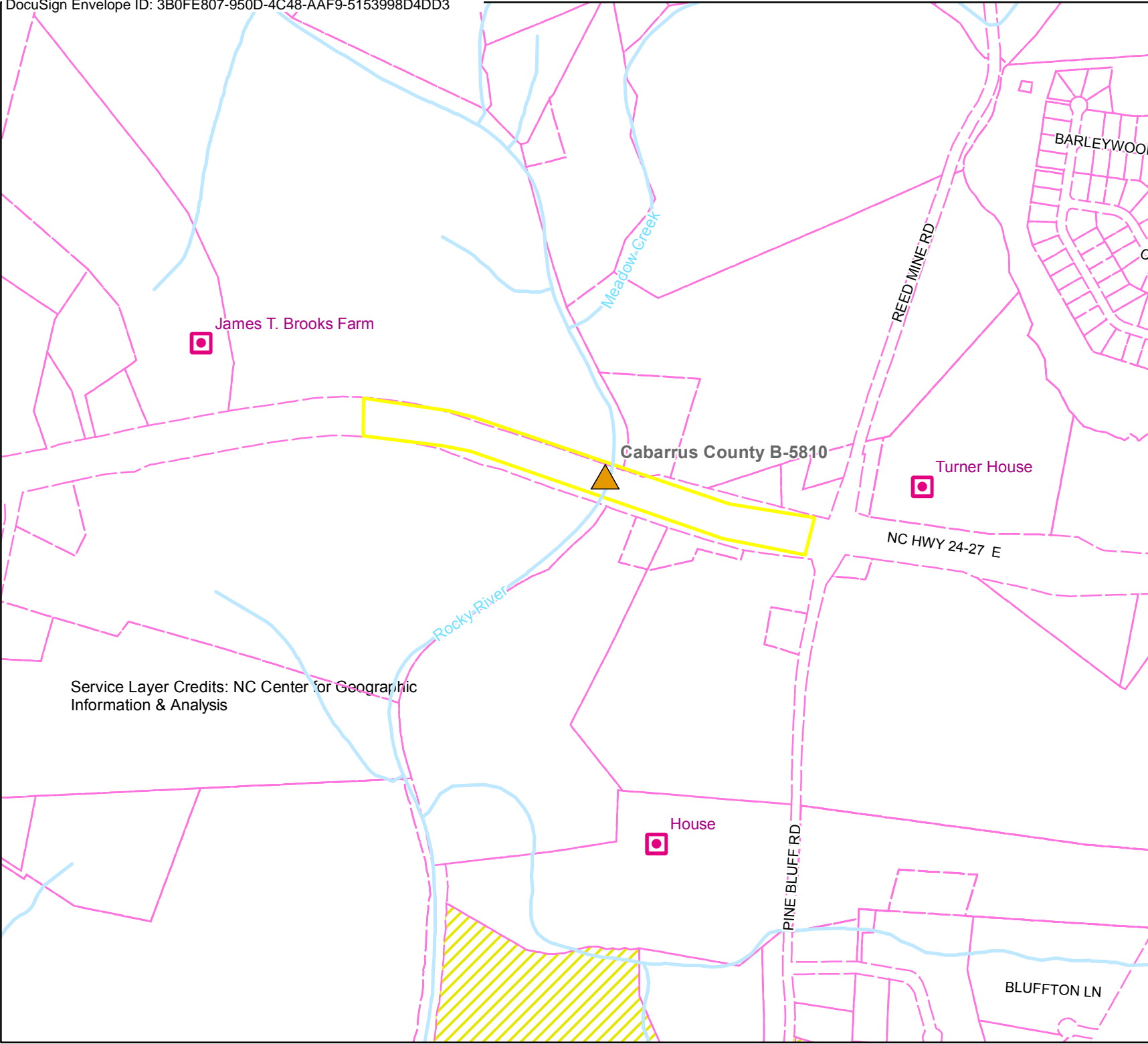
This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Division Ten, Division Bridge Program Manager
Northern-Long Eared Bat (NLEB)

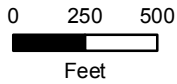
The USACE has developed a Standard Local Operations Procedure for Endangered Species (SLOPES) to address NLEB when they are the lead agency, which NCDOT will follow for this project. This procedure applies to projects in NCDOT Divisions 9-14. The requirements of the SLOPES for the NLEB will be completed prior to Let and will be submitted to the USACE. A Biological Conclusion is not required.

Division Ten, Division Bridge Program Manager, NCDOT Environmental Analysis Unit (EAU) – Bald Eagle Surveys

Due to the presence of habitat within the study area, the EAU will conduct surveys of the study area within 660 feet of the project limits for the Bald Eagle. These surveys will be conducted prior to project construction.



**FIGURE 1-
LOCATION MAP**



LEGEND

- Bridge Location
- Project Study Area
- Parcel
- VAD Parcel
- Historic Site
- Stream



Source: USDA Geospatial Gateway; NCOneMap; USFWS

TIP Project B-5810

**Bridge Replacement
Bridge No. 22
over Rocky River
on NC24/NC27 EB Lane
Cabarrus County**

October 2018

Service Layer Credits: NC Center for Geographic Information & Analysis

Appendix A

8/17/99

STV

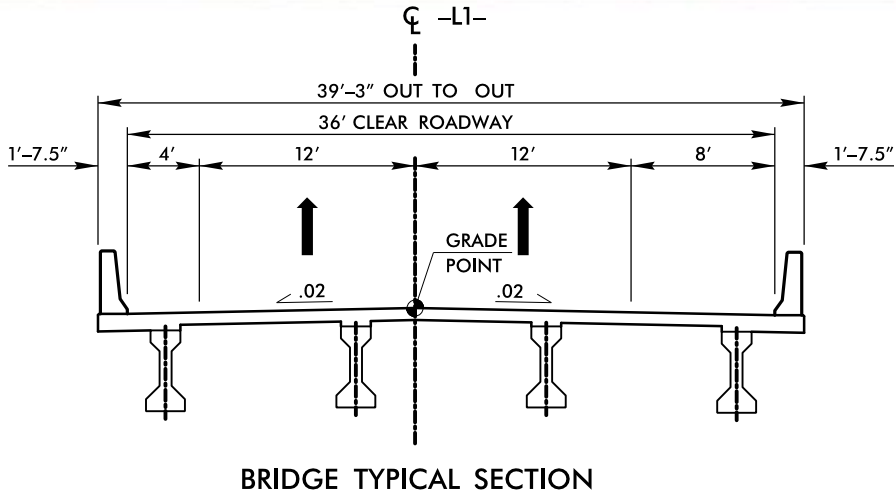
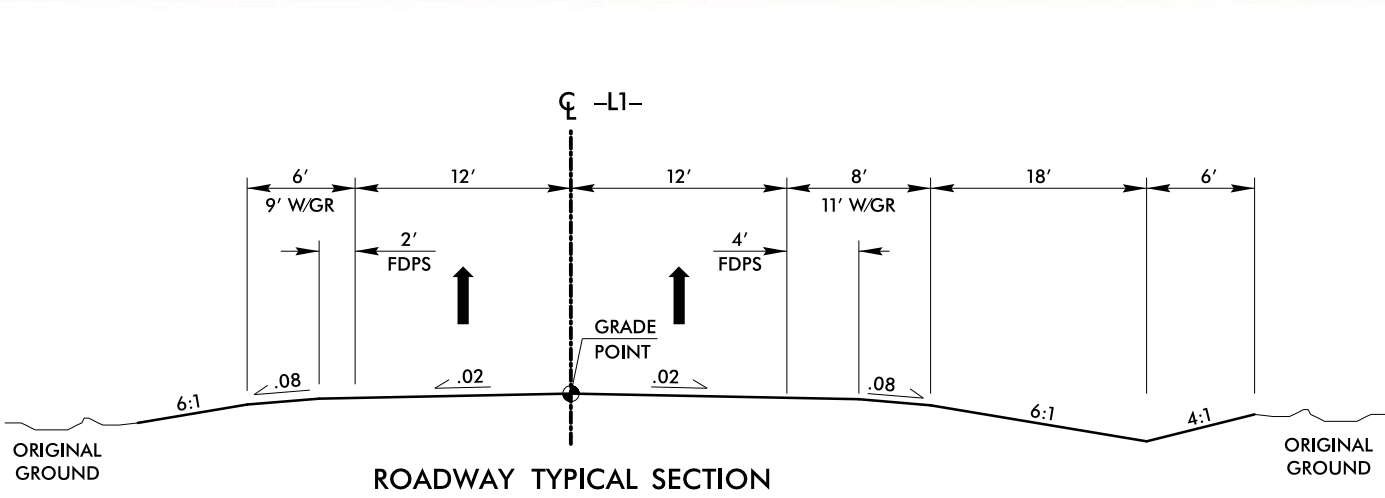
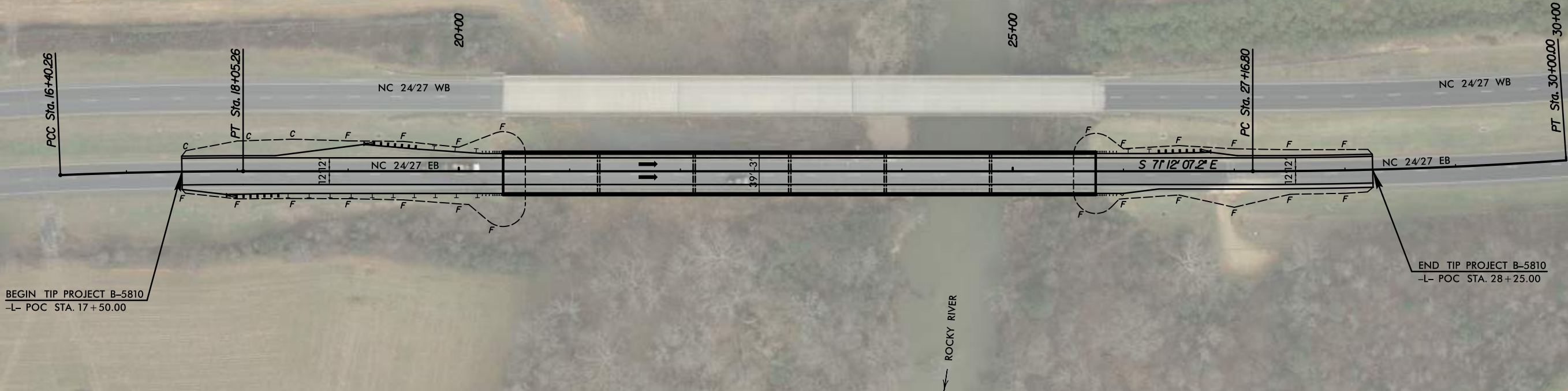
100 Years

STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.	SHEET NO.
B-5810	1
RW SHEET NO.	
CONCEPT DATED	
9/27/2018	
CONCEPT PLANS SUBJECT TO CHANGE WITHOUT NOTICE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
<div>50250100</div>	

CABARRUS COUNTY
B-5810 BRIDGE #022
PREFERRED CONCEPT
REPLACE IN PLACE
WITH CROSSOVER DETOUR

-L-		
PI Sta 13+47.38	PI Sta 17+22.77	PI Sta 30+88.66
$\Delta = 17^{\circ}15'16.9"$ (RT)	$\Delta = 2^{\circ}25'04.3"$ (RT)	$\Delta = 10^{\circ}27'58.7"$ (LT)
$D = 2^{\circ}55'23.7"$	$D = 1^{\circ}27'55.3"$	$D = 1^{\circ}24'40.4"$
$L = 590.26'$	$L = 165.00'$	$L = 741.65'$
$T = 297.38'$	$T = 82.51'$	$T = 371.86'$
$R = 1,960.00'$	$R = 3,910.00'$	$R = 4,060.00'$



DESIGN DATA	
DESIGN STANDARDS	= REGIONAL
DESIGN SPEED	= 60 MPH
ADT 2016	= 10,000
ADT 2040	= 13,300
T	= 8%
MIN. RADIUS	= 1330'
MAX. GRADE	= 5%
FUNC. CLASS	= MINOR ARTERIAL
TERRAIN	= ROLLING
DESIGN EXCEPTION	= NONE

BRIDGE LENGTH	= 535'
BRIDGE SKEW	= 90°
BRIDGE TYPE	= GIRDER BRIDGE

9/27/2018
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madelon

STV

100 Years

STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

PROJECT REFERENCE NO.

B-5810

SHEET NO.

2

R/W SHEET NO.

CONCEPT DATED

9/27/2018

CONCEPT PLANS

SUBJECT TO CHANGE WITHOUT NOTICE

DOCUMENT NOT CONSIDERED FINAL

UNLESS ALL SIGNATURES COMPLETED

PREFERRED CONCEPT

Vertical Curve Data:

Station	Grade (%)	PI (Station)	EL (Feet)	VC (Feet)	K	DS (MPH)
17+50.00	-0.3111%	18+40.00	504.52'	180'	159	65
23+00.00	+0.8217%	23+00.00	508.30'	550'	337	75
27+00.00	-0.8125%	27+00.00	505.05'	250'	147	60

Key Points:

- BEGIN GRADE:** STA. 17+50.00, ELEV = 504.80'
- PROPOSED GRADE:** STA. 18+40.00, ELEV = 504.52'
- EXISTING GROUND:** STA. 28+25.00, ELEV = 506.16'
- END GRADE:** STA. 28+25.00, ELEV = 506.16'

Grades:

- 17+50.00 to 18+40.00: -0.3111%
- 18+40.00 to 23+00.00: +0.8217%
- 23+00.00 to 27+00.00: -0.8125%
- 27+00.00 to 28+25.00: +0.8880%

Vertical Scale: 5/28/99c

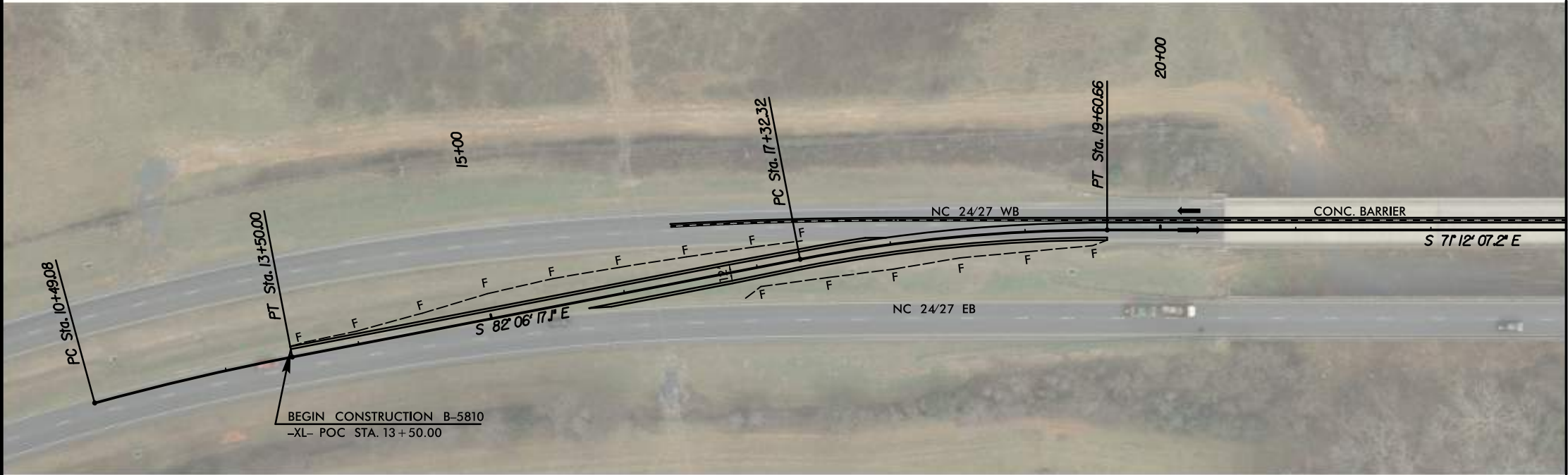
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8/17/99

CABARRUS COUNTY
B-5810 BRIDGE #022
PREFERRED CONCEPT
CROSSOVER DETOUR

STV 100 Years STV Engineers, Inc.
900 West Trade St., Suite 715
Charlotte, NC 28202
NC License Number F-0991

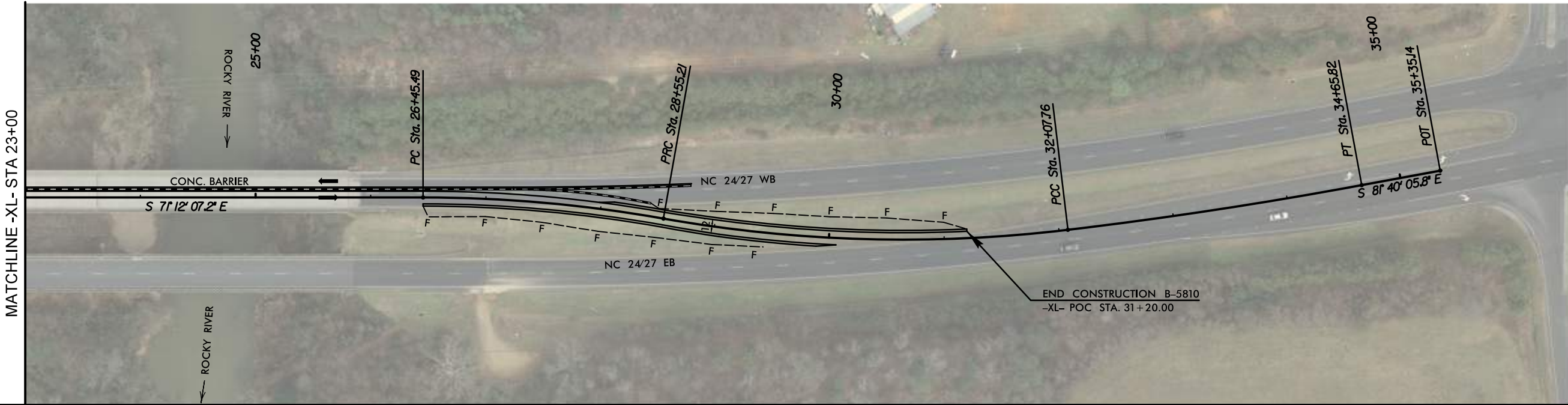
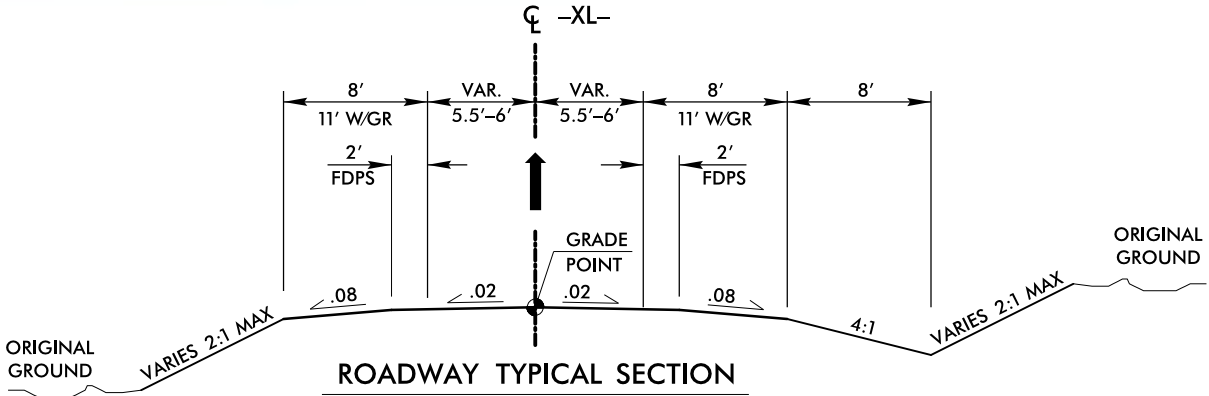
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B-5810	3
RW SHEET NO.	
CONCEPT DATED	
9/27/2018	
CONCEPT PLANS SUBJECT TO CHANGE WITHOUT NOTICE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
50 25 0 50 100	



DESIGN DATA		
DESIGN STANDARDS	=	REGIONAL
DESIGN SPEED	=	55 MPH
ADT 2016	=	10,000
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TERRAIN	=	ROLLING
DESIGN EXCEPTION	=	NONE

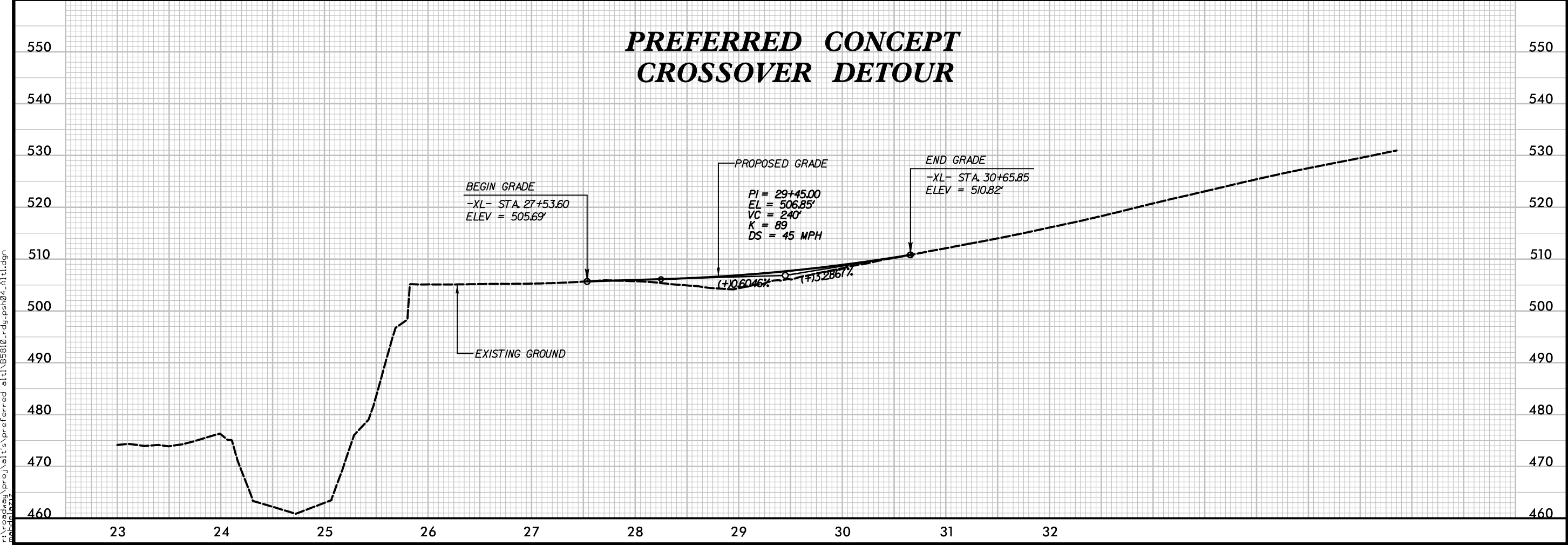
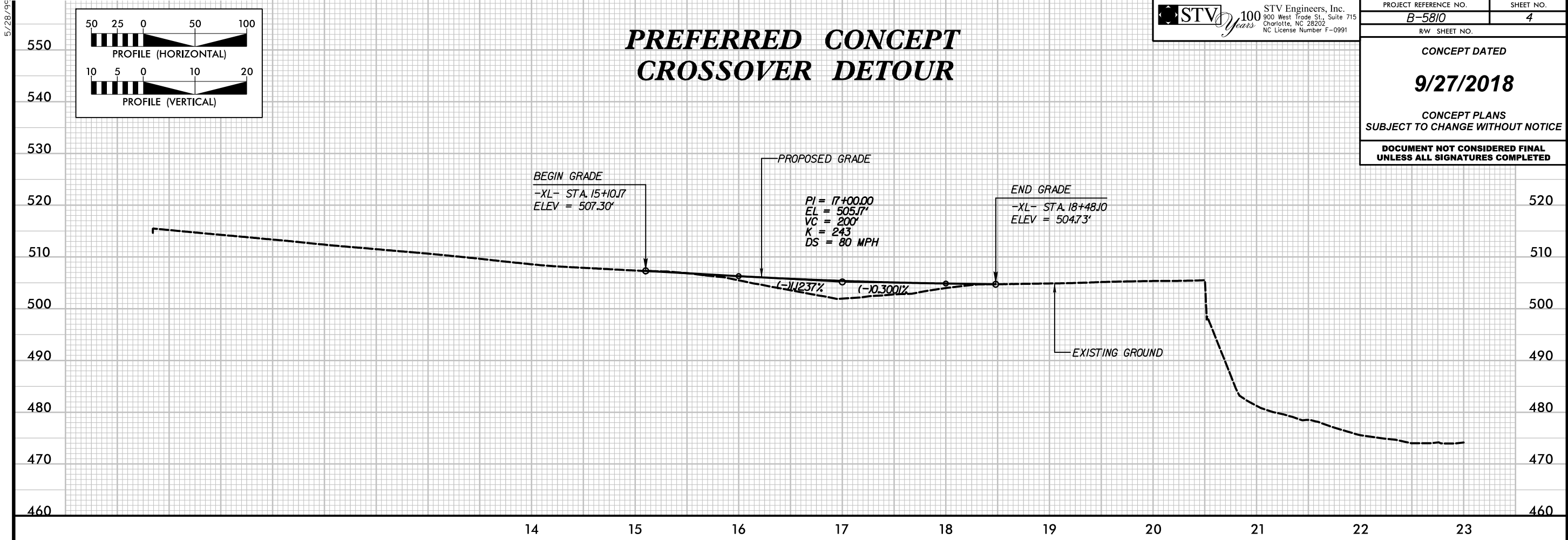
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PI Sta 11+99.84	PI Sta 18+46.84
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D = 2' 54' 51.6"	D = 4' 46' 28.7"
L = 300.92'	L = 228.35'
T = 150.75'	T = 114.52'
R = 1,966.00'	R = 1,200.00'

-XL-		
PI Sta 27+50.62	PI Sta 30+32.76	PI Sta 33+36.83
$\Delta = 10^{\circ} 00' 49.4^{\circ}$ (RT)	$\Delta = 16^{\circ} 49' 57.8^{\circ}$ (LT)	$\Delta = 3^{\circ} 38' 50.2^{\circ}$ (LT)
D = 4' 46' 28.7"	D = 4' 46' 28.7"	D = 1' 24' 47.9"
L = 209.73'	L = 352.54'	L = 258.07'
T = 105.13'	T = 177.55'	T = 129.08'
R = 1,200.00'	R = 1,200.00'	R = 4,054.00'



9/27/2018
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mabdelal

PROJECT REFERENCE NO.	SHEET NO.
B-5810	4
R/W SHEET NO.	
CONCEPT DATED	
9/27/2018	
CONCEPT PLANS SUBJECT TO CHANGE WITHOUT NOTICE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



North Carolina Department of Transportation
Preliminary Estimate

TIP No. **B-5810****Func**County: **Cabarrus**

Route

From

Typical Section

CONSTR. COST
\$5,100,000

Prepared By: G. McCauley

Date 9/27/2018

Requested By:

Date

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing and Grubbing	1.0	Acre	\$ 20,000.00	\$ 20,000.00
			Earthwork	1,100	CY	\$ 30.00	\$ 33,000.00
			Drainage Existing Location	0.20	Miles	\$ 20,000.00	\$ 4,000.00
			Fine Grading	1,410	SY	\$ 10.00	\$ 14,100.00
			New Pavement	1,410	SY	\$ 75.00	\$ 105,750.00
			Pavement Resurfacing	1,740	SY	\$ 20.00	\$ 34,800.00
			Erosion Control	2.5	Acres	\$ 50,000.00	\$ 125,000.00
			Traffic Control	1.0	LS	\$ 200,000.00	\$ 200,000.00
			Thermo and Markers	0.4	Miles	\$ 50,000.00	\$ 20,000.00
			Structures				
			ML / Creek 39-3"W x 535'L	21,026.00	SF	\$ 150.00	\$ 3,153,900.00
			Utility Construction				
			Relocate Existing Water Line		LF		\$ -
			Relocate Existing Sewer Line		LF		\$ -
			Misc. & Mob (15% Strs&Util)				\$ 473,085.00
			Misc. & Mob (45% Functional)				\$ 250,492.50

Lgth 0.20 Miles

Contract Cost	\$ 4,434,127.50
E. & C. 15%	\$ 665,119.13
Construction Cost	\$ 5,099,246.63

16-01-0075



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:	B-5810	County:	Cabarrus
WBS No.:	45764.1.1	Document Type:	
Fed. Aid No:		Funding:	X State Federal
Federal Permit(s):	X Yes No	Permit Type(s):	NWP
Project Description: Replace Bridge Number 22 on NC 24 and NC 27 east-bound lane over Rocky River (no off-site detour planned).			

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions: HPOWeb reviewed on 16 February 2016 and yielded no NR, SL, LD, DE, or SS properties in the Area of Potential Effects (APE). Cabarrus County current GIS mapping, aerial photography, and tax information indicated an APE of mostly cultivated fields and woodland with several residential and agricultural resources (viewed 16 February 2016). Five houses built during between the mid-1940s and early 1960s, all altered in the 1970s and 1980s, stand 450 feet and more east and west of the existing bridge and 100 feet and more from the NC 24 and NC 27 centerlines. Bridge No. 22, built in 1923, is not eligible for the National Register according to the NCDOT Historic Bridge Survey as it is not representative of any distinctive engineering or aesthetic type. Google Maps "Street View" confirmed the absence of critical historic structures and landscapes in the APE (viewed 16 February 2016).

No architectural survey is required for the project as currently defined.

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: APE extends 1000 feet from either end of the existing bridge (E-W) and 200 feet to either side of the NC 24 and NC 27 centerlines (N-S) to encompass proposed construction activities. The comprehensive county architectural survey (1981) and later investigations recorded no properties in the APE (Peter R. Kaplan, *The Historic Architecture of Cabarrus County, North Carolina* (Concord, NC): Historic Cabarrus, 1981; 2004)). County GIS/tax materials and other visuals clearly illustrate the absence of significant architectural resources. No National Register-listed properties are located within the APE.

Should the design of the project change, please notify NCDOT Historic Architecture as additional review may be necessary.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

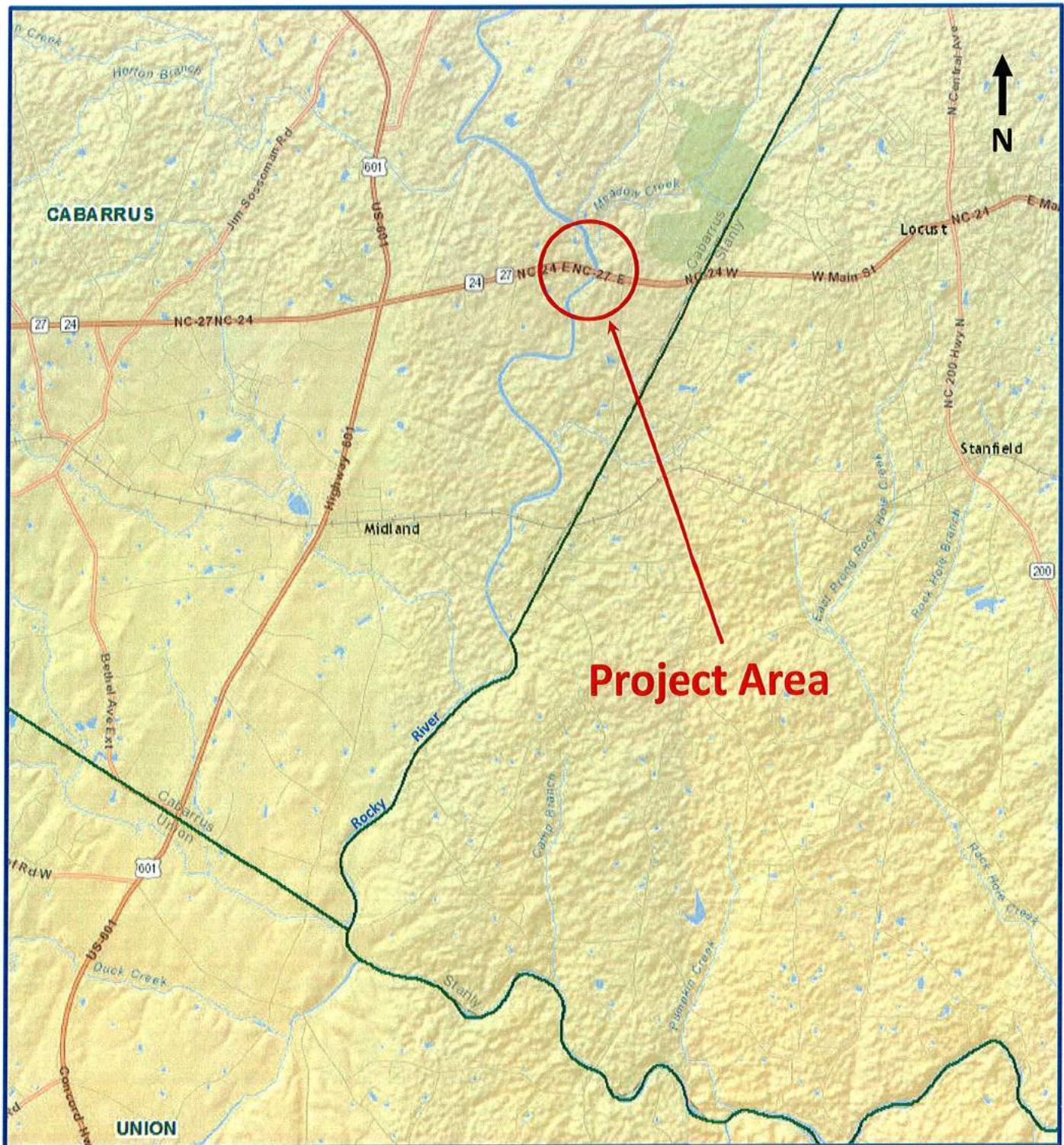
Historic Architecture and Landscapes -- NO SURVEY REQUIRED

Vanessa C. Patrick

17 February 2016

NCDOT Architectural Historian

Date



B-5810

Bridge No. 22 Replacement

Cabarrus County

WBS No. 45764.1.1

Base map: HPOWeb, nts

NCDOT – Historic Architecture

February 2016

Tracking No. 16-01-0075

16-01-00075



NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

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



PROJECT INFORMATION

Project No: **B-5810** County: **Cabarrus**
 WBS No: **45764.1.1** Document: **M C C**
 F.A. No: Funding: ☒ State ☐ Federal

Federal Permit Required? ☒ Yes ☐ No Permit Type: **usage**

Project Description: NCDOT proposes to replace Bridge No. 22 on eastbound NC 24/27 over the Rocky River in southern Cabarrus County, TIP B-5810. Conceptual design plans involve replace in place alignment of the existing bridge, which was reportedly built in 1923. A temporary detour bridge is proposed to be constructed immediately south of Bridge No. 22. The project length, including the detour, is about 1800 feet (0.34 miles) with a construction width expanding to the south a maximum of about 80 feet beyond the existing southern ROW for the detour bridge construction and fill, tapering back to the existing ROW in either direction. For purposes of this archaeological review, the Area of Potential Effects (APE) is about 1800 feet (0.34 miles) in length and 125 feet wide.

This is a state funded and federally permitted undertaking and therefore falls under Section 106 of the National Historic Preservation Act for archaeological review.

SUMMARY OF CULTURAL RESOURCES REVIEW

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

The bridge to be replaced is located along the multi-lane, divided NC 24/27 corridor in a rural, agricultural setting in Cabarrus County. USGS mapping (Locust) and aerial photography was studied (see Figures 1 and 2). Google and Bing street view tools were used and confirm the agricultural and forested approaches to the bridge. The area of greatest impact at the bridge is listed as having sloped and stoney Badin channery silt loam (BaD), frequently flooded Chewacla sandy loam (ChA), or an eroded Tarrus silty clay loam (TrB2). None of these soils, rocky and sloped, wet or eroded, are especially attractive or suggest a high probability for archeological sites.

Aerial photography clearly showed that the southwestern quadrant of the APE has been mechanically cleared of vegetation on the floodplain before September 2017. While the landform which is sometime flooded is not especially likely to contain archaeological sites, the absolute removal of vegetation and grading, and subsequent erosion, is often very damaging to archaeological sites that might otherwise be present, greatly affecting the site's integrity.

Further, aerial photography shows that NC 24/27 had only the existing bridge crossing here up until the mid nineties. By 1998, a new westbound NC 24/27 bridge was constructed to the north and with that came the demolition of a structure/building just past the launch of the 1920s bridge on the southeastern quadrant. The drive and turn around present there is still visible. Note, this structure does not show up on the 1910 soils map of the county.

According to USGS mapping and GIS resources (data layer created by NCDOT archaeologist Paul J. Mohler), no cemetery is present at the APE.

Historic maps were examined to determine if any late historic structures, roads or other notations were present to help establish the a context of the recent past, especially farms, industry, land and transportation features which might offer hints to the presence of archaeological sites. The 1910 Soils Map of Cabarrus

"No ARCHAEOLOGY SURVEY REQUIRED" form for the Amended Minor Transportation Projects as Qualified in the 2015 Programmatic Agreement.

16-01-00075

County (MC.016.1910a) depicts the highway road in roughly the same alignment and crossing, though it turns northeast after crossing the Rocky River. A structure is noted there on the other, northern side of the highway, and may possibly still exist northeast of the APE. The existing bridge is reportedly constructed in 1923 and would have replaced an earlier crossing. By the 1930s, the 1938 county highway map (MC.016.1938n) shows a light industrial site where the structure had been noted before and probably another farm house closer to SR 1100. By the time the 1950 USGS map of Locust was produced, a building is marked as noted above, the one that appears to have been removed around the time of the westbound NC 24/27 bridge. This later structure, while inside or at the margin of the APE, appears to have been demolished and is unlikely to have produced significant archaeological remains.

The Office of State Archaeology was visited to review archaeological mapping and to reference any known archaeological surveys and sites. An environmental review of the NC 24/27 highway was conducted in the 1990s (CH-90-E-4220-0479 / R-615 and R-2104). Some archaeological sites are present in the immediate vicinity, notably 31Ca15 and 31Ca220, though neither will be affected by the current project as both were recorded on the opposite side of the highway to the north. Site 31Ca15 was recorded by B. Keel in the 1960s and is a small lithic scatter on the heavily eroded western bank of the river. It lacked temporal artifacts and considered to hold limited research potential. Site 31Ca220 is associated with a depression era gold mining operation office and short lived ore processing location. A. Novick determined it was not eligible for the National Register of Historic Places.

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

The temporary detour bridge adjacent to the existing facility will have some new ground disturbances, much of it fill with some area of cuts on the eastern approach. Previous archaeological surveys identified or revisited archaeological sites present on the northern (opposite) side of NC 24/27 and determined that they were not eligible for the NRHP. If they were not already completely removed by the 1990s construction of the new westbound bridge, these will be avoided. The context doesn't indicate a high probability for archaeological sites within the APE. It is unlikely that significant, intact archaeological remains would be present and impacted by the project. For archaeological review, this federally permitted undertaking should be considered compliant with Section 106.

SUPPORT DOCUMENTATION

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

FINDING BY NCDOT ARCHAEOLOGIST

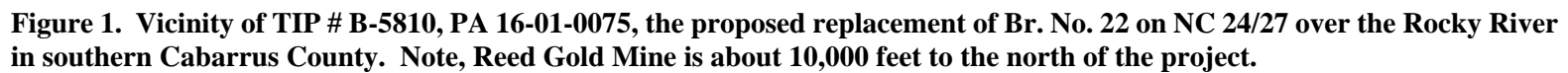
NO ARCHAEOLOGY SURVEY REQUIRED



NCDOT ARCHAEOLOGIST

7/30/2018

Date



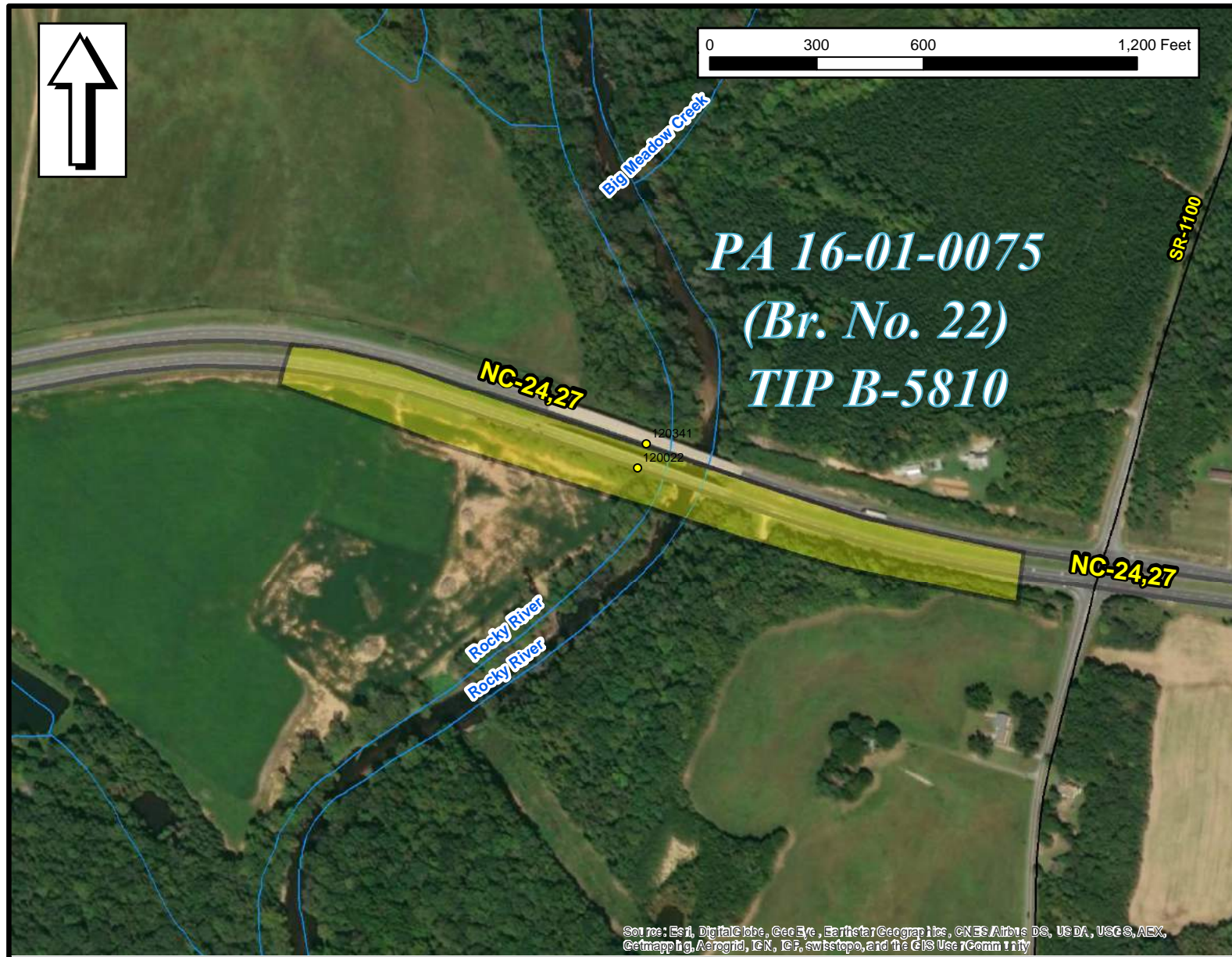
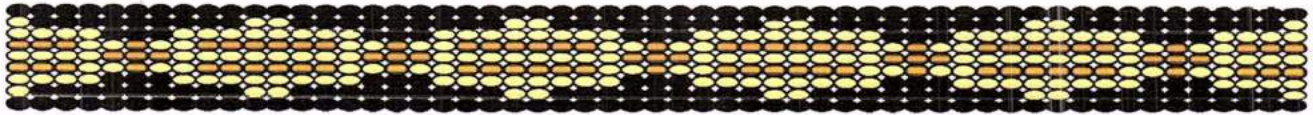


Figure 2. Aerial map of TIP # B-5810, PA 16-01-0075, the proposed replacement of Br. No. 222 on NC 24/27 over the Rocky River in southern Cabarrus County. The approximate APE is shown in yellow for the new bridge and temporary on-site detour.

"No ARCHAEOLOGY SURVEY REQUIRED" form for the Amended Minor Transportation Projects as Qualified in the 2015 Programmatic Agreement.

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

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



January 16, 2020

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

Re. THPO #	Project #	Project Description
2020-193-120	B-5810	Replacement of Bridge No. 22 on NC 24/NC 27 over Rocky River in Cabarrus County

Dear Mr. Stutts,

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

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

Sincerely,

Wenonah G. Haire
Tribal Historic Preservation Officer

Freshwater Mussel Survey Report

Replacement of Bridge No. 22 on NC 24 & NC 27
Over the Rocky River
Cabarrus County, North Carolina
STIP # B-5810
WBS Element # 45764.1.1

Prepared For:



NC Department of Transportation
Raleigh, North Carolina

Contact Person:

Jared Gray
Biological Surveys Group
North Carolina Department of Transportation
jgray@ncdot.gov
1598 Mail Service Center
Raleigh NC 27699-1598

May 18, 2018

Prepared by:



900 Ridgefield Drive, Suite 350
Raleigh, NC 27609

Contact Person:

Neil Medlin
Project Manager
nmedlin@rkk.com
919-878-9560

Table of Contents

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2.2	303(d) Classification	1
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3.1.2	Distribution and Habitat Requirements	2
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Appendix A. Figures:

Figure 1: Project Vicinity & Survey Location

Figure 2: NCNHP Element Occurrences

Figure 3: NPDES Dischargers and 303(d) Listed Streams

1.0 Introduction

The North Carolina Department of Transportation (NCDOT) proposes the replacement of Bridge No. 22 on NC 24 & NC 27 over the Rocky River in Cabarrus County (Appendix A, Figure 1). The Rocky River is in the Yadkin-Pee Dee River Basin. The Carolina Heelsplitter (*Lasmigona decorata*) is listed for Cabarrus County by U.S. Fish and Wildlife Service (USFWS) as a protected species under the Endangered Species Act (ESA). However, the listing is considered historic for the county.

A review of NC Natural Heritage Program (NCNHP) records, last accessed April 18, 2018, indicated there is not an element occurrence (EO) for the Carolina Heelsplitter within a 5-mile buffer of the project bridge (Figure 2). The nearest occurrence for the species is located in Goose Creek in Union County, approximately 6.5 stream miles downstream from the survey location. This occurrence (EO ID 21454) was first observed on August 26, 1987 and last observed on September 29, 2015. Although not listed by USFWS for Cabarrus County where the proposed project is located, the Atlantic Pigtoe (*Fusconaia masoni*), is also known from Goose Creek in Union County. The occurrence for the Atlantic Pigtoe (EO ID 22087) was first observed on July 5, 1994 and last observed on March 25, 1998. This species is currently being evaluated by USFWS and could be listed as a protected species under the ESA.

As part of the federal permitting process that requires an evaluation of potential project related impacts to federally protected species, Rummel, Klepper, and Kahl (RK&K) was contracted by NCDOT to conduct the freshwater mussel survey targeting the Carolina Heelsplitter.

2.0 Waters Affected

The Rocky River is located in the Yadkin-Pee Dee River Basin (HUC# 03040105). From the survey location, the Rocky River flows approximately 47 stream miles to the Pee Dee River.

2.1 NPDES Dischargers

There are multiple permitted NPDES dischargers within the 5-mile buffer of the project. The closest is the Muddy Creek Waste Water Treatment Plant (NPDES Permit # NC0081621), approximately 4.4 miles downstream from the study area (Figure 3). This minor facility discharges directly to the Rocky River. Another minor facility, Corning's Fiber Optic Facility, also discharges to the Rocky River but is approximately five stream miles below the project bridge.

2.2 303(d) Classification

Rocky River is on the North Carolina Department of Environmental Quality (NCDEQ) - Division of Water Resources 2016 303(d) list of impaired streams (Figure 3). It is impaired based on high turbidity levels.

3.0 Target Federally Protected Species Description

3.1 Carolina Heelsplitter (*Lasmigona decorata*)

3.1.1 Characteristics

The Carolina Heelsplitter was first described in 1852. This species has an ovate, trapezoid-shaped shell. The outer surface of the shell varies from greenish brown to dark brown in color, and shells from younger specimens have faint greenish brown or black rays. The nacre (inside surface) is often pearly white to bluish white, grading to orange in the deepest part of the shell. However, in older specimens the entire nacre may be a mottled pale orange. The shell of the largest known specimen of the species measures 4.6 inches (11.684 centimeters) in length.

3.1.2 Distribution and Habitat Requirements

It was historically known from several locations within the Catawba and Pee Dee River systems in North Carolina and the Pee Dee and Savannah River systems, and possibly the Saluda River system in South Carolina. In North Carolina, the species is now known only from a handful of streams in the Pee Dee and Catawba River systems. Today, only ten populations are known to survive. The species exists in very low abundances, usually within six feet of shorelines, throughout its known range.

The general habitat requirements for the Carolina Heelsplitter are shaded areas in large rivers to small streams, often burrowed into clay banks between the root systems of trees, or in runs along steep banks with moderate current. The more recent habitat where the Carolina Heelsplitter has been found is in sections of streams containing bedrock with perpendicular crevices filled with sand and gravel, and with wide riparian buffers.

3.2 Atlantic Pigtoe (*Fusconaia masoni*)

3.2.1 Characteristics

The Atlantic Pigtoe was described by Conrad in 1834 from the Savannah River in Georgia. This species has a medium, sub-rhomboid shaped shell that rarely exceeds 60 mm in length. Individuals of this mussel from headwater streams tend to be more elongate than those found in larger streams. The posterior ridge is angular and very distinct. Its valves are usually compressed, but the umbos extend well above the dorsal margin. The periostracum generally is yellowish brown or greenish brown with a parchment-like texture. The nacre is somewhat shiny and can be white, salmon, orange or iridescent blue. There are two pseudocardinal and two lateral teeth in the left valve and one of each in the right valve. The anterior pseudocardinal tooth in the right valve is vestigial.

3.2.2 Distribution and Habitat Requirements

This freshwater mussel is a southern Atlantic slope species that is found from the Ogeechee River Basin in Georgia north to the James River Basin in Virginia. Historically, this species

occurred in every Atlantic drainage in North Carolina except the Cooper-Santee and Waccamaw River basins. The Atlantic Pigtoe has declined across its range. It appears that this mussel has recently been extirpated from the Deep River in Moore County, the Cape Fear River in Harnett County and Cumberland County, as well as the Black River in Sampson County, Bladen County, and Pender County.

The Atlantic Pigtoe inhabits mostly medium to large streams. It prefers clean, swift waters with stable gravel, or sand and gravel substrate. This species often is found at the downstream edge of riffle areas. The Atlantic Pigtoe is a tachytictic breeder. Gravid females of the freshwater mussel have been found from late June through early July. Identified fish hosts for this species include the Bluegill and Shield Darter.

4.0 Survey Efforts

A mussel survey was conducted in association with this project by RK&K personnel Neil Medlin (Permit # 16-ES00030), Hal Bain, and John Merritt on September 22, 2016.

4.1 Stream Conditions at Time of Survey: Rocky River

The channel exhibited run and pool flow and averaged 40 meters wide with banks four meters high showing some erosion and undercutting. The maximum depth was 1.8 meters with an average depth of 0.6 meter. The substrate was generally unstable and dominated by a large amount of silt and sand throughout the surveyed reach, with bedrock, bolder, coble and gravel present. Sand bars were rare at this location. The banks consisted of clay, silt, and root mats. No beaver activity was observed. A slight effluent smell was noted at time of the survey. A moderately-wide forested buffer is present along the eastern side of the river throughout the entire survey reach with only a narrow buffer and adjacent agriculture along the western river shore.

4.2 Methodology

The mussel survey was conducted from approximately 400 meters downstream of the bridge crossing to approximately 100 meters upstream of the crossing for a total distance of approximately 500 meters. Areas of appropriate habitat were searched, concentrating on the stable habitats preferred by the target species. Visual surveys were conducted using glass bottom view buckets (bathyscopes) along with tactile methods that were employed where appropriate. All freshwater bivalves were recorded and returned to the substrate. Timed survey efforts provided Catch Per Unit Effort (CPUE) data for each species.

5.0 Results

A total of 4.5 person-hours of survey time were spent in the reach, with no freshwater mussel species observed. The survey did document one species of freshwater clam, the Asian Clam (*Corbicula fluminea*), which was abundant.

6.0 Discussion/Conclusions

The results indicate no native freshwater mussel fauna in the survey reach. The nearest element occurrence for Carolina Heelsplitter is located approximately 6.5 stream miles downstream from the survey location, but in Goose Creek in Union County. Based on the degraded habitat, distance to known Carolina Heelsplitter records, the NPDES discharges potentially acting as a barrier, and these survey results, completion of this project will not affect the species.

Biological Conclusion for Carolina Heelsplitter: No Effect

Based on the same rationale used above for the Carolina Heelsplitter, if the Atlantic Pigtoe were to be listed as a protected species under the ESA, the conclusion for the species is indicated below.

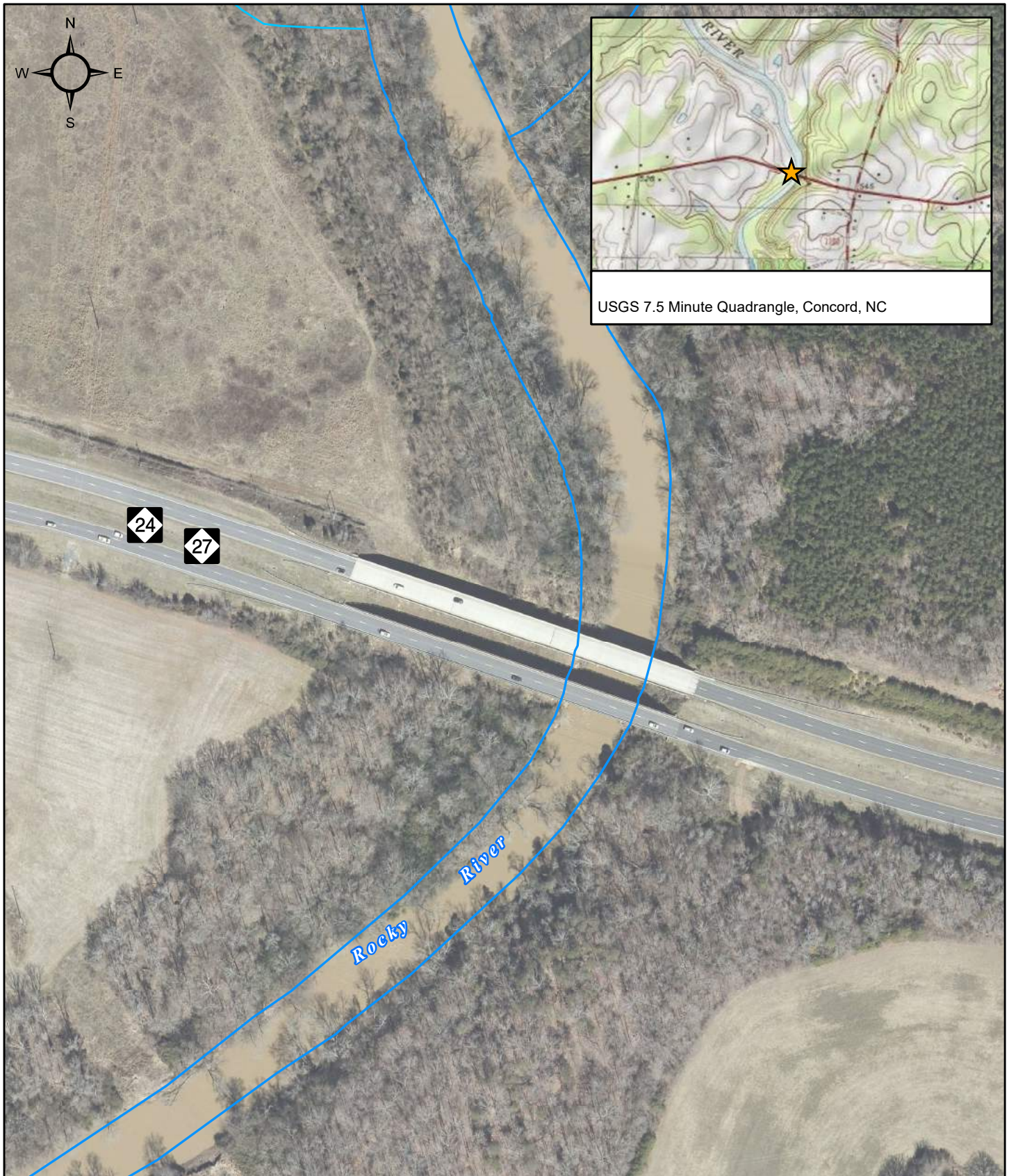
Biological Conclusion for Atlantic Pigtoe: No Effect

7.0 References

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Appendix A

Figures



Prepared By:



Prepared For:



Freshwater Mussel Survey

BRIDGE # 22 on NC 24/27
OVER ROCKY RIVER
B-5810
CABARRUS COUNTY

Date: May 2018

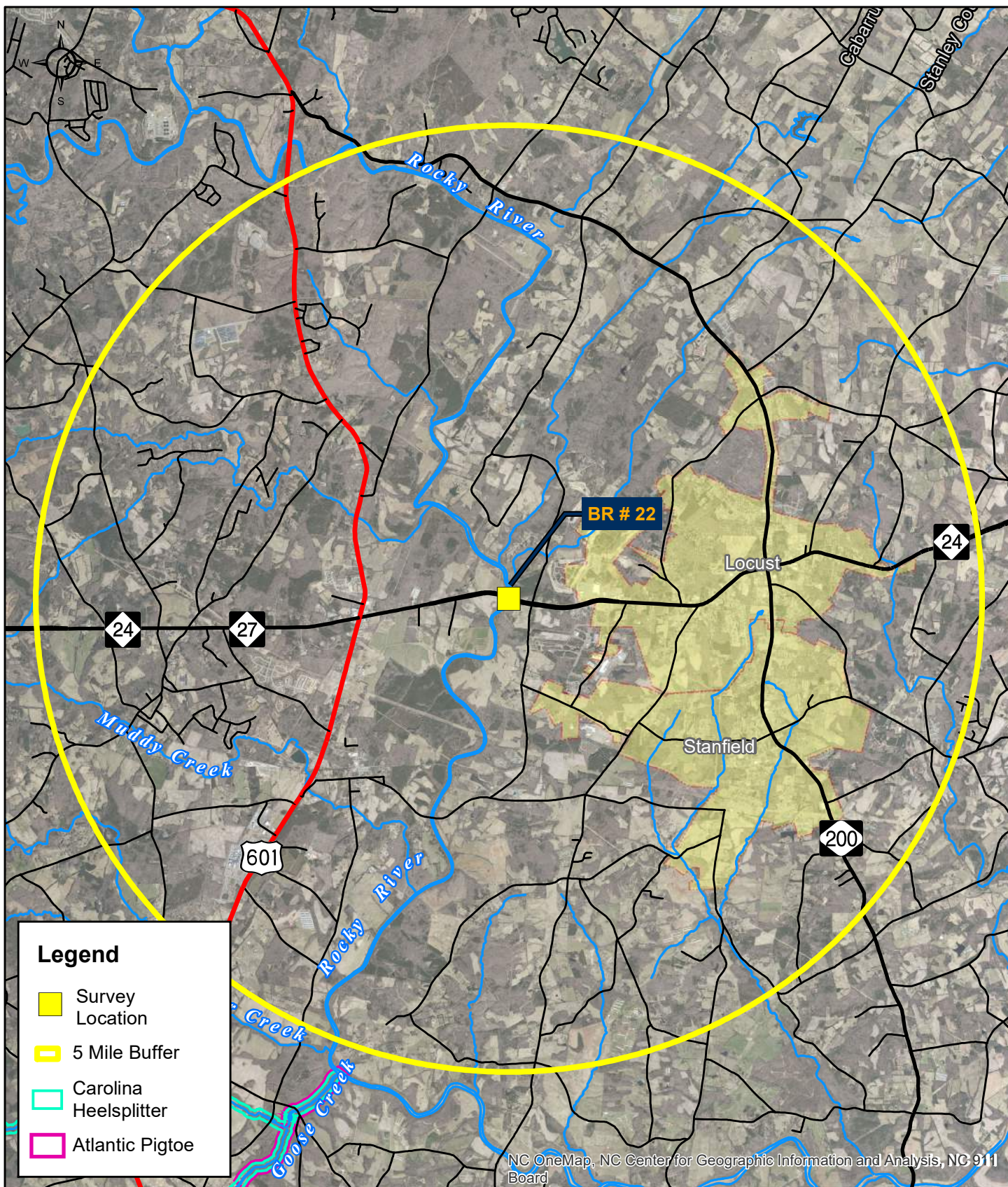
Scale 0 200 Feet

Job No. B-5810

Drawn by: GSM

Checked by: KNM

Figure
1



Prepared By:



Prepared For:



NC NHP
Element Occurrence
BRIDGE # 22 on NC 24/27
OVER ROCKY RIVER
B-5810
CABARRUS COUNTY

Date: May 2018

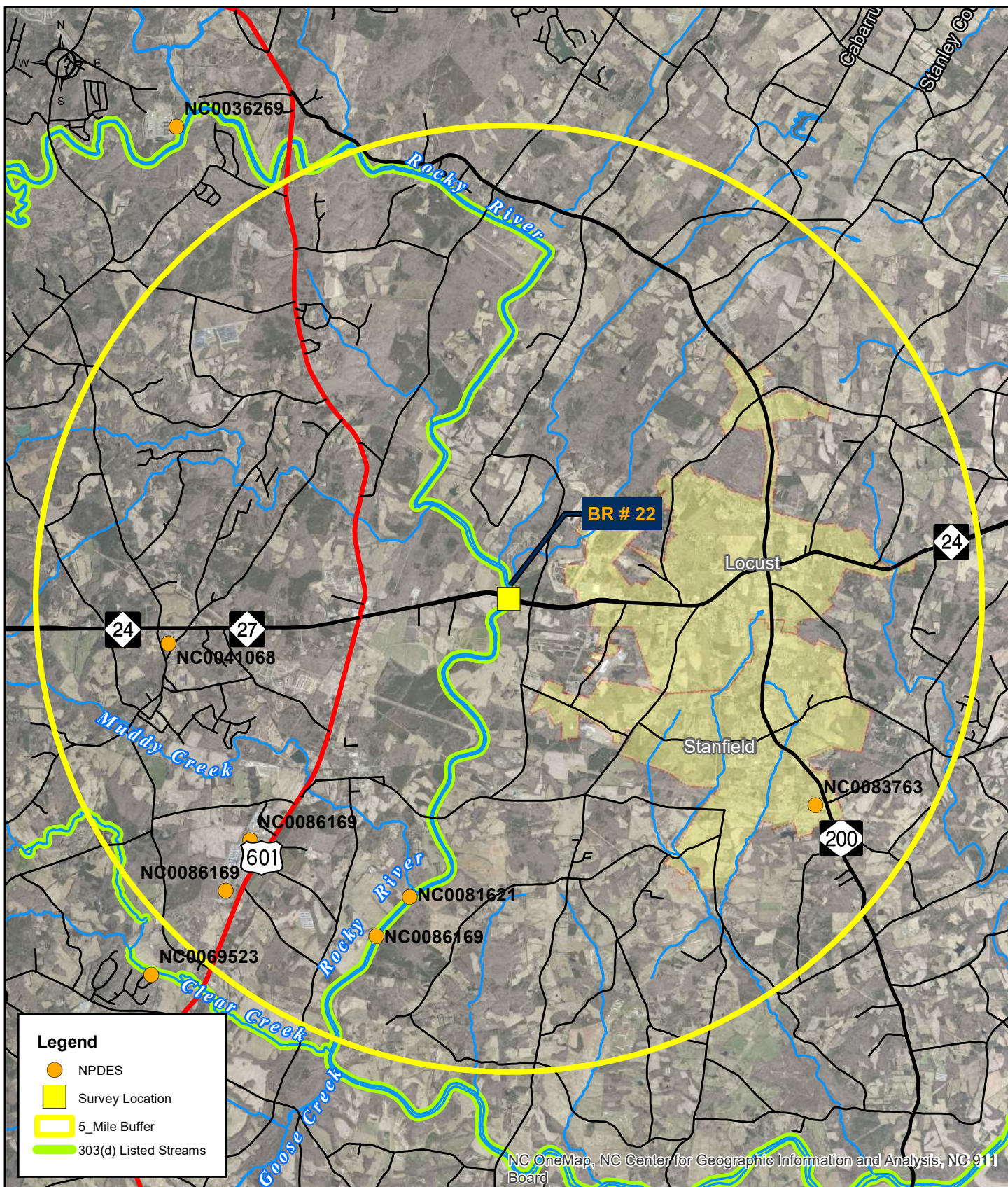
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Job No. B-5810

Drawn by: GSM

Checked by: KNM

Figure
2



Prepared By:



Prepared For:



**NPDES Dischargers and
303(d) Listed Streams
BRIDGE # 22 on NC 24/27
OVER ROCKY RIVER
B-5810
CABARRUS COUNTY**

Date: May 2018

Scale 0 1 Miles

Job No. B-5810

Drawn by: GSM

Checked by: KNM

**Figure
3**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

DATE: August 25, 2021

TO: Jeffrey L. Hemphill, Environmental Specialist II
Environmental Coordination & Permitting Western Group, EAU

FROM: Chris Manley, Environmental Program Consultant
Biological Surveys Group, EAU

SUBJECT: Section 7 survey results for the northern long-eared bat (*Myotis septentrionalis*) associated with the replacement of Bridge No. 22 over Rocky River on NC 24/27, in Cabarrus County, **TIP No. B-5810**.

The North Carolina Department of Transportation (NCDOT, Division 10) proposes to replace Bridge No. 22 over Rocky River on NC 24/27 in Cabarrus County, TIP No. B-5810.

Northern long-eared bat

The project to replace Bridge No. 22 has been reviewed for the effects on the northern long-eared bat (NLEB). As of May 4, 2015, NLEB is listed by the U.S. Fish and Wildlife Service (USFWS) as "Threatened under the Endangered Species Act of 1973. As of August 25, 2021, NLEB is listed in IPaC (<https://ecos.fws.gov/ipac/location>) for Cabarrus County.

According to the North Carolina Natural Heritage (NHP) Biotics Database, most recently updated July 2021, **the nearest NLEB hibernacula record is approximately 94.5 miles west of the project and no known NLEB roost trees occur within 150 feet of the project area.**

NCDOT has also reviewed the Asheville Field Office website (http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html) for consistency with NHP records. This project is located entirely outside of the red highlighted areas (12 digit HUC) that the USFWS Asheville Field Office has determined to be representative of an area that may require consultation. The closest 12 digit (030501010502) red HUC is approximately 90 miles to the west (Upper Wilson Creek) in Avery County.

On August 10, 2021, NCDOT Biologist (Chris Manley and Cheryl Knepp) assessed Bridge No. 22 for potential northern long-eared bat habitat. Some crevices suitable for roosting were present on the structures, but no evidence (bats, staining, and guano) of bats was observed.

Based on the lack of evidence of bats using the bridge, and no known roost trees within 150 feet of the project area, NCDOT recommends a Biological Conclusion of ***May Affect Not Likely To Adversely Affect*** for the northern long-eared bat.

Final design, tree clearing, and percussive activities information will be provided in the permit application.

If you need any additional information, please contact Chris Manley, NCDOT Biological Surveys Group, at 919-707-6135.



Three Oaks Engineering, Inc.
324 Blackwell Street, Suite 1200
Durham, NC 27701
(919) 732-1300

November 30, 2021

North Carolina Department of Transportation
ATTN: Michael Turchy
ECAP Western Regional Team Lead

Mailing Address:
1598 Mail Service Center
Raleigh, NC 27699-1598

Physical Address:
Century Center, Building A
1000 Birch Ridge Drive
Raleigh, NC 27610

SUBJECT: Schweinitz's sunflower (*Helianthus schweinitzii*) Survey Report for STIP No. B-5810 in Cabarrus County, North Carolina

Mr. Turchy:

Below is the Schweinitz's sunflower (*Helianthus schweinitzii*) species survey report for STIP No. B-5810 in Cabarrus County, North Carolina.

Project Description and Survey Methodology

The North Carolina Department of Transportation (NCDOT) is proposing to replace Bridge No. 22 carrying the NC 24 / NC 27 eastbound lane over the Rocky River in Cabarrus County, North Carolina. Three Oaks Engineering, Inc. (Three Oaks) was contracted by NCDOT to perform protected species surveys for Schweinitz's sunflower in suitable habitat within the approximately 11.1-acre project site (Figure 1). The purpose of these surveys was to update previously completed surveys and the following survey report will be used to support environmental documentation for the project and environmental permitting, if the latter is required.



Species Morphology and Habitat Description

Schweinitz's sunflower

U.S. Fish and Wildlife Service (USFWS) Optimal Survey Window: late August – October (or first ground-level frost)

Schweinitz's sunflower is a tall (6.5-foot) perennial plant that is found along the edges of open woodlands and prairie habitats. It is found in maintained utility corridors and in road rights-of-way (ROW) in the Piedmont regions of North and South Carolina. Schweinitz's sunflower is a composite flower that produces yellow rays and blooms from late August until frost. Distinguishing characteristics include a thick tuberous root, a purple stem, opposite leaves on the lower stem with alternate leaves on the upper stem, thick leaves with recurved edges, and stiff hairs along the leaf margins with soft hairs underneath.

Survey Results

On October 11, 2021, Three Oaks staff members Mary Frazer and Byron Levan conducted a plant-by-plant survey for Schweinitz's sunflower within the project study area. A reference site for Schweinitz's sunflower (North Carolina Natural Heritage Program [NCNHP] Element Occurrence No. 104) was visited prior to the surveys on the same day. Suitable habitat for Schweinitz's sunflower was present within the project in areas with moderate disturbance regimes and little-to-no canopy cover. Some early successional associate species were present within the study area. However, no Schweinitz's sunflower individuals were present. A review of the NCNHP October 2021 dataset indicates no known Schweinitz's sunflower occurrences within the study area or within one mile of the project study area. Due to the negative survey results of this survey and no known occurrences within one mile, the Biological Conclusion rendered for Schweinitz's sunflower is **"No Effect."**

Please let me know if you have any questions or require any additional information.

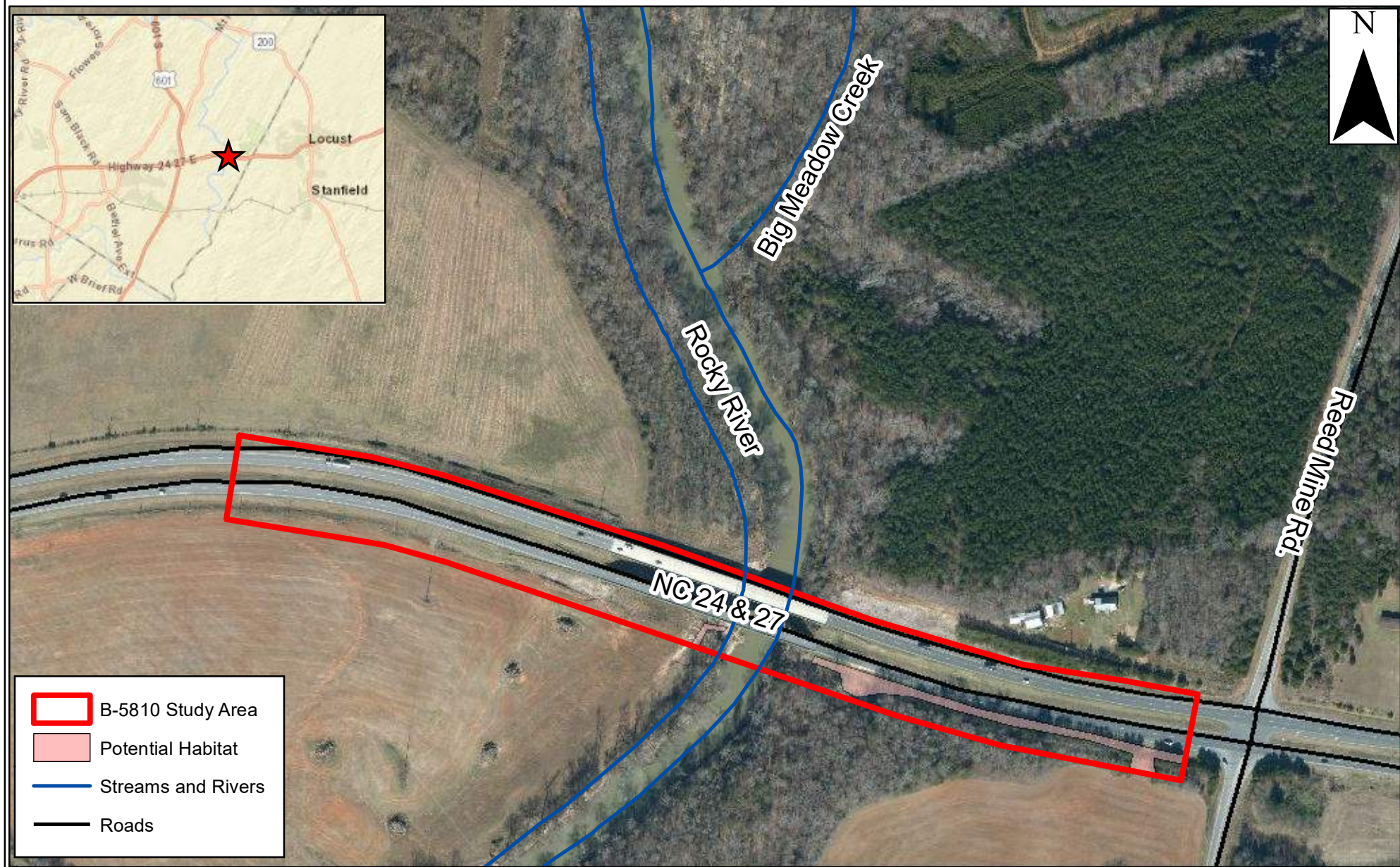
Sincerely,

James Mason
Senior Environmental Scientist
Three Oaks Engineering, Inc.
james.mason@threeoaksengineering.com
Office: (919) 732-1300
Mobile: (704) 604-8358



Appendix A

Figure



Prepared For:



Replacement of Bridge No. 22 carrying
NC 24/NC 27 EBL over Rocky River
STIP No. B-5810

Project Study Area Map/Habitat Map
Cabarrus County, North Carolina

Date: November 2021	
Scale: 0 85 170 340 Feet	
Job No.: 21-625 Sunflower Surveys	
Drawn By: BL	Checked By: JM

Figure

1