



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JOSH STEIN  
GOVERNOR

J.R. "JOEY" HOPKINS  
SECRETARY

May 21, 2025

U. S. Army Corps of Engineers  
Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28805

NC Division of Water Resources  
Transportation Permitting Branch  
2090 U.S. 70 Highway  
Swannanoa, NC 28778-8211

ATTN: Ms. Lori Beckwith,  
NCDOT Coordinator

Ms. Amy Annino,  
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 33/3 & 401 Water Quality Certification under the Expedited Processing Provisions for Hurricane Helene Response** for the Replacement of Bridge 58 0111 over North Fork Catawba River on SR 1573 (Pitts Station Road) in McDowell County, Division 13, WBS DF18313.2059011.PR.

Dear Madams:

The North Carolina Department of Transportation (NCDOT) proposes the following project as the result of damage caused by Hurricane Helene in late September 2024:

Restoration of Bridge 58 0111 over North Fork Catawba River on SR-1573 (Pitts Station Rd) in McDowell County.

The bridge was heavily damaged with a partial collapse. This structure serves the Baxter Medical Supply Company, a manufacturing facility and international supplier of IV solutions.

A temporary emergency structure is currently in-use for this facility.

**FHWA is the lead federal agency for this project.**

**Proposed Activities in Waters of the United States:**

<b>Impact Site</b>	<b>Impact Category</b>	<b>Permanent Fill</b>	<b>Bank Stabilization</b>	<b>Temporary Impacts</b>	<b>Permit Proposed/ Impact Description</b>
<b>Site 1</b> <b>N. Fork Catawba River</b>	<b>Maintenance Exemption</b>	--	48 lf	--	The previous structure had 48 feet of bank stabilization. This amount was subtracted from the overall 99 feet of bank stabilization.
	Non-Notifying	--	--	--	--
	<b>Notification Required (Not After the fact)</b>	--	51 lf	62 lf (0.140 ac)	<p><b>NWP 3:</b> A new 2-span, 135' long bridge will replace the destroyed 3 span, 121' long bridge. Minimization: -The new structure is 12' longer and will have two spans instead of three, providing a larger hydraulic opening. -The proposed bridge will have no direct discharge into the river. -Stormwater runoff from the bridge will flow to rip rap pads directly outside of the shoulders in the northeast and southeast quadrants, where flow will be diffused. -All proposed stormwater runoff is discharged as far away from the stream and at the lowest velocities practicable.</p> <p><b>NWP 33:</b> A temporary workpad (causeway) will be used to remove an existing interior bent as well as to construct the proposed interior bent.</p> <p>The causeway will have 1.5:1 side slopes to minimize its size and will only extend approximately two feet above the normal water surface elevation to further minimize the effect on river hydraulics.</p> <p><b>No more than 50% of the river will be blocked at one time.</b></p>
	<b>Notification Required (After the fact)</b>	--	--	0.02 ac	<b>NWP 33</b> An interior temporary bent was installed for the temporary bridge currently serving the Baxter Medical facility.
	<b>Totals:</b>	--	<b>99 lf (0.023)</b>	<b>0.142</b>	

*The information above is provided in accordance with the "U.S. Army Corps of Engineers, Wilmington District's Information for Hurricane Helene Recovery and Repair Work Conducted by the North Carolina Department of Transportation in Waters of the U.S." dated February 10, 2025.*

## Endangered Species Act

Protected Species listed from IPaC<sup>1</sup> as of the date of this application:

Common Name	Habitat Present	Survey Dates <sup>2</sup>	Proposed Biological Conclusion	FWS Concurrence Remarks
Gray bat Northern long-eared bat Tricolored bat (Proposed)	Yes	n/a	May Affect, Likely to Adversely Affect	Concurrence Included
Bog turtle	No	n/a	Not Required	n/a
Monarch butterfly (Proposed) <sup>2</sup>	Unknown	n/a	Unresolved	n/a
Small whorled pogonia	No	n/a	No Effect	n/a

1 IPaC – Information for Planning and Consultation (US Fish and Wildlife Service)

2 Due to the recent listings of monarch butterfly within the proposed action area, NCDOT does not have complete information at this time. It is anticipated that construction will be complete by the timeframes proposed for full listing, should the species be formally listed.

## Historic Resources

Information Attached

106 Topic	Findings
Historic Architecture	The NCDOT 106 Programmatic Agreement (PA) checklist was completed for this project (attached). The checklist determined the project is exempt from further Section 106 review in accordance with NCDOT's Section 106 PA.
Archaeology	
Tribal Coordination	The PA checklist exempts the project from tribal coordination.

If you have any questions or need additional information, please contact Michael Turchy, at [maturchy@ncdot.gov](mailto:maturchy@ncdot.gov) or (919) 707-6157.

Sincerely,



Digitally signed by  
Michael Turchy  
Date: 2025.05.20  
17:15:32 -04'00'

Michael A. Turchy  
Environmental Coordination and Permitting Group Leader

ePCN





## Pre-Construction Notification (PCN) Form

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

December 4, 2023 Ver 4.3

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

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

Below is a link to the online help file.

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

### A. Processing Information

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

Does this project involve maintenance dredging funded by the Shallow Draft Navigation Channel Dredging and Aquatic Weed Fund, electric generation projects located at an existing or former electric generating facility, or involve the distribution or transmission of energy or fuel, including natural gas, diesel, petroleum, or electricity? \*

☐ Yes ☒ No

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

☒ Yes ☐ No

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

☐ ARPA ☐ S.L. 2023-134 (earmark) ☒ No

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

McDowell

Is this a NCDMS Project? \*

☐ Yes ☒ No

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

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

Is this project a public transportation project? \*

☒ Yes ☐ No

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

Is this a NCDOT Project? \*

☒ Yes ☐ No

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

WBS # \*

DF18313.2059011.PR

(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

Nationwide Permit (NWP) Number:

03 - Maintenance

Nationwide Permit (NWP) Number:

33 - Temporary Construction

### NWP Numbers (for multiple NWPS):

List all NW 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
- ☐ 401 Water Quality Certification - Express
- ☐ Non-404 Jurisdictional General Permit
- ☐ Riparian Buffer Authorization
- ☒ Individual 401 Water Quality Certification

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

\*

For the record only for DWR 401 Certification:

☐ Yes ☒ No

For the record only for Corps Permit:

☐ Yes ☒ No

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

☒ Yes ☐ No

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

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

☐ Yes ☒ No

#### Acceptance Letter Attachment

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

FILE TYPE MUST BE PDF

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

☐ Yes ☒ No

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

☒ Yes ☐ No

You must submit a copy to the appropriate Wildlife Resources Commission Office.

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? \*

Michael Turchy

#### 1b. Primary Contact Email: \*

maturchy@ncdot.gov

#### 1c. Primary Contact Phone: \*

(xxx)xxx-xxxx

(919)707-6157

#### 1d. Who is applying for the permit? \*

☐ Owner

(Check all that apply)

☒ Applicant (other than owner)

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

☐ Yes ☒ No

## 2. Owner Information

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

NCDOT

#### 2b. Deed book and page no.:

#### 2c. Contact Person:

(for Corporations)

#### 2d. Address \*

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27606-1598

State / Province / Region

NC

Country

US

#### 2e. Telephone Number: \*

(xxx)xxx-xxxx

(919)707-6157

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: \*

maturchy@ncdot.gov

3. Applicant Information (if different from owner)

3a. Name: \*

Michael Turchy

3b. Business Name:

(if applicable)

NCDOT

3c. Address \*

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

Postal / Zip Code

27699-1598

State / Province / Region

NC

Country

US

3d. Telephone Number: \*

(919)707-6157

(xxx)xxx-xxxx

3e. Fax Number:

(xxx)xxx-xxxx

3f. Email Address: \*

maturchy@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: \*

DF18313.2059011

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: \*

Woodlawn

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: \*

35.834521

ex: 34.208504

Longitude: \*

-82.002255

-77.796371

3. Surface Waters

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

North Fork Catawba River

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

B; Tr

[Surface Water Lookup](#)

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

Catawba

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

0305010102

[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: \*

Bridge crossing over North Fork Catawba River. Land use is residential and industrial.

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)

200

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

The purpose of this project is to restore bridge 58 0111 over North Fork Catawba River on SR-1573 (Pitts Station Rd) in McDowell County, which was collapsed during Hurricane Helene in late September 2024.

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

See attached cover letter.  
Standard road and bridge construction equipment 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 *	3h. Impact length *
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S1	Bridge Restoration	Permanent	Bank Stabilization	N. Fork Catawba River	Perennial	Both	30 Average (feet)	51 (linear feet)
S2	Temp Workpad	Temporary	Workpad/Causeway	N. Fork Catawba River	Perennial	Both	30 Average (feet)	99 (linear feet)

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

3i. Total jurisdictional ditch impact in square feet:

0

3i. Total permanent stream impacts:

51

3i. Total temporary stream impacts:

99

3i. Total stream and ditch impacts:

150

3j. Comments:

See attached cover letter for accurate breakdown of impacts.

## 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: \*

Minimization:

- The new structure is 12’ longer and will have two spans instead of three, providing a larger hydraulic opening.
- The proposed bridge will have no direct discharge into the river.
- Stormwater runoff from the bridge will flow to rip rap pads directly outside of the shoulders in the northeast and southeast quadrants, where flow will be diffused.
- All proposed stormwater runoff is discharged as far away from the stream and at the lowest velocities practicable.

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

A temporary workpad (causeway) will be used to remove an existing interior bent as well as to construct the proposed interior bent. The causeway will have 1.5:1 side slopes to minimize its size and will only extend approximately two feet above the normal water surface elevation to further minimize the effect on river hydraulics.  
No more than 50% of the river will be blocked at one time.

### 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

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

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

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

### 1. Diffuse Flow Plan

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

☐ Yes ☒ No

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

If no, explain why:

Waterbody not subject.

### 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

2b. If you answered "yes" to the above question, provide an explanation of the violation(s):

## 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.

## 4. Sewage Disposal (DWR Requirement)

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

☐ Yes ☒ No ☐ N/A

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

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

Asheville

5d. Is another Federal agency involved? \*

☒ Yes ☐ No ☐ Unknown

What Federal Agency is involved?

FHWA

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

☐ Yes ☒ No

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

☒ Yes ☐ No

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

☒ Yes ☐ No

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

☐ Yes ☒ No

Link to the NLEB SLOPES document: [http://saw-reg.usace.army.mil/NLEB/1-30-17-signed\\_NLEB-SLOPES&apps.pdf](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? \*

See attached USFWS concurrence letter.

## 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? \*

n/a

## 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? \*

See cover letter

## 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:

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

FEMA flood maps.

## Miscellaneous

### Comments

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

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

Helene DF18313.2059011.PR Bridge 580111 2025-05-21.pdf

2.74MB

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 \*



Date

5/20/2025

# Permit Drawings





North Carolina Department of Transportation

Highway Stormwater Program  
STORMWATER MANAGEMENT PLAN



(Version 3.02; Released April 23, 2024)

FOR NCDOT PROJECTS

WBS Element: N/A      TIP/Proj No: DF1831.2059011.PR      County(ies): McDowell      Page 1 of 2

General Project Information

WBS Element: N/A      TIP Number: DF1831.2059011.PR      Project Type: Bridge Replacement      Date: 3/19/2025

NCDOT Contact: Yates Allen (Division Environmental Officer)      Contractor / Designer: TGS Engineers (David B. Petty, PE)

	Address:	NCDOT Highway Division 13 55 Orange Street Asheville NC, 28801		Address:	706 Hillsborough Street Suite 200 Raleigh NC, 27603		
	Phone:	828-250-3002		Phone:	919-773-8887 ext. 104		
	Email:	<a href="mailto:yallen@ncdot.gov">yallen@ncdot.gov</a>		Email:	<a href="mailto:dpetty@tgsengineers.com">dpetty@tgsengineers.com</a>		

City/Town: Marion      County(ies): McDowell

River Basin(s): Catawba      CAMA County? No

Wetlands within Project Limits? No

Project Description

Project Length (lin. miles or feet): 0.09 miles      Surrounding Land Use: Rural: wooded, low-density residential, manufacturing plant

	Proposed Project		Existing Site	
Project Built-Up Area (ac.)	0.8	ac.	0.7	ac.

Typical Cross Section Description:	Three 12' paved lanes with 3'-7' paved shoulders.	Three 12' paved lane w/ 0-3' shoulders.
------------------------------------	---	---

Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	390	Year:	2050	Existing:	300	Year:	2024
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General Project Narrative:  
(Description of Minimization of Water  
Quality Impacts)

NCDOT Project DF18313.2059011.PR involves the emergency replacement of Structure #580111 over North Fork Catawba River on SR-1573 (Pitts Station Rd) in McDowell County, NC north of Marion. The bridge was heavily damaged (westbound lane collapsed) during Hurricane Helene in September 2024. Proposed 2-span (1@70', 1@65'), OAL=135 ft, 51 ft wide, 24" Cored Slab bridge to replace pre-existing 121 ft long by 40 ft wide (prestressed concrete cored slab units) 3-span bridge.



The proposed grade will be from 0.5'-1' above existing grade within the vicinity of the bridge and roughly match existing grade approximately 50 ft west and 300 ft east of the bridge.

The existing bridge has openings in the bridge rail/wheel guard that allow for runoff to discharge directly into North Fork Catawba River. The proposed bridge will have no direct discharge into the river. Stormwater runoff from the bridge will flow to rip rap pads directly outside of the shoulders in the northeast and southeast quadrants, where flow will be diffused. All proposed stormwater runoff is discharged as far away from the stream and at the lowest velocities practicable.

A temporary workpad (causeway) will be used to remove an existing interior bent as well as construct the proposed bent. The causeway will have 1.5:1 side slopes to minimize its size and will only extend approximately two feet above the normal water surface elevation to further minimize the effect on river hydraulics.

The existing temporary bridge upstream of the proposed bridge is to be removed and returned to natural conditions.

All impacts to the project have been minimized to the maximum extent practicable.

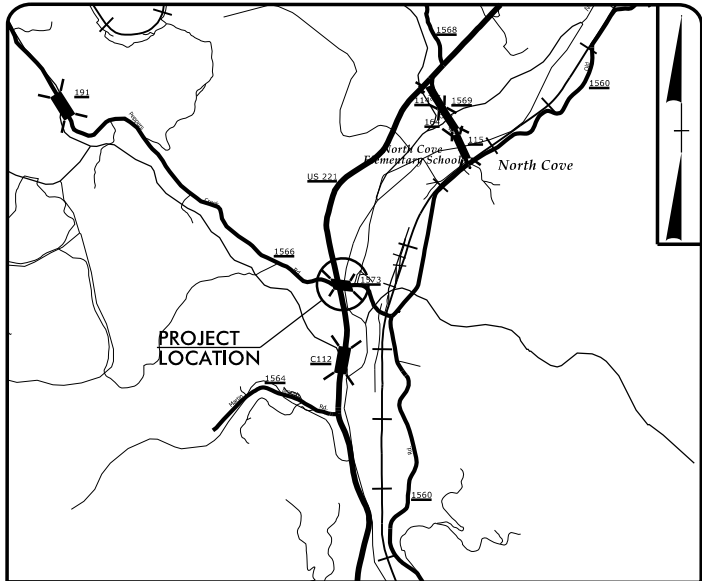
		<div>North Carolina Department of Transportation</div> <div>Highway Stormwater Program</div> <div>STORMWATER MANAGEMENT PLAN</div> <div>FOR NCDOT PROJECTS</div>						
(Version 3.02; Released April 23, 2024)								
WBS Element: N/A		TIP/Proj No.: DF1831.2059011.PR		County(ies): Mcdowell		Page 2 of 2		
General Project Information								
Waterbody Information								
Surface Water Body (1):		North Fork Catawba River		NCDWR Stream Index No.:		11-24-(2.5)		
NCDWR Surface Water Classification for Water Body		Primary Classification:		Class B				
		Supplemental Classification:		Trout Waters (Tr)				
Other Stream Classification:		None						
Impairments:		None						
Aquatic T&E Species?		No		Comments:				
NRTR Stream ID:		North Fork Catawba River			Buffer Rules in Effect:		N/A	
Project Includes Bridge Spanning Water Body?		Yes		Deck Drains Discharge Over 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)						
Surface Water Body (2):				NCDWR Stream Index No.:				
NCDWR Surface Water Classification for Water Body		Primary Classification:						
		Supplemental Classification:						
Other Stream Classification:								
Impairments:								
Aquatic T&E Species?				Comments:				
NRTR Stream ID:					Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?				
Deck Drains Discharge Over Water Body?				(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
		(If yes, provide justification in the General Project Narrative)						
Surface Water Body (3):				NCDWR Stream Index No.:				
NCDWR Surface Water Classification for Water Body		Primary Classification:						
		Supplemental Classification:						
Other Stream Classification:								
Impairments:								
Aquatic T&E Species?				Comments:				
NRTR Stream ID:					Buffer Rules in Effect:			
Project Includes Bridge Spanning Water Body?				Deck Drains Discharge Over Buffer?				
Deck Drains Discharge Over Water Body?				(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
		(If yes, provide justification in the General Project Narrative)						

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PROJECT: DF18313.2059011.PR

CONTRACT: C205019

See Sheet 1A For Index of Sheets



VICINITY MAP (NTS)

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

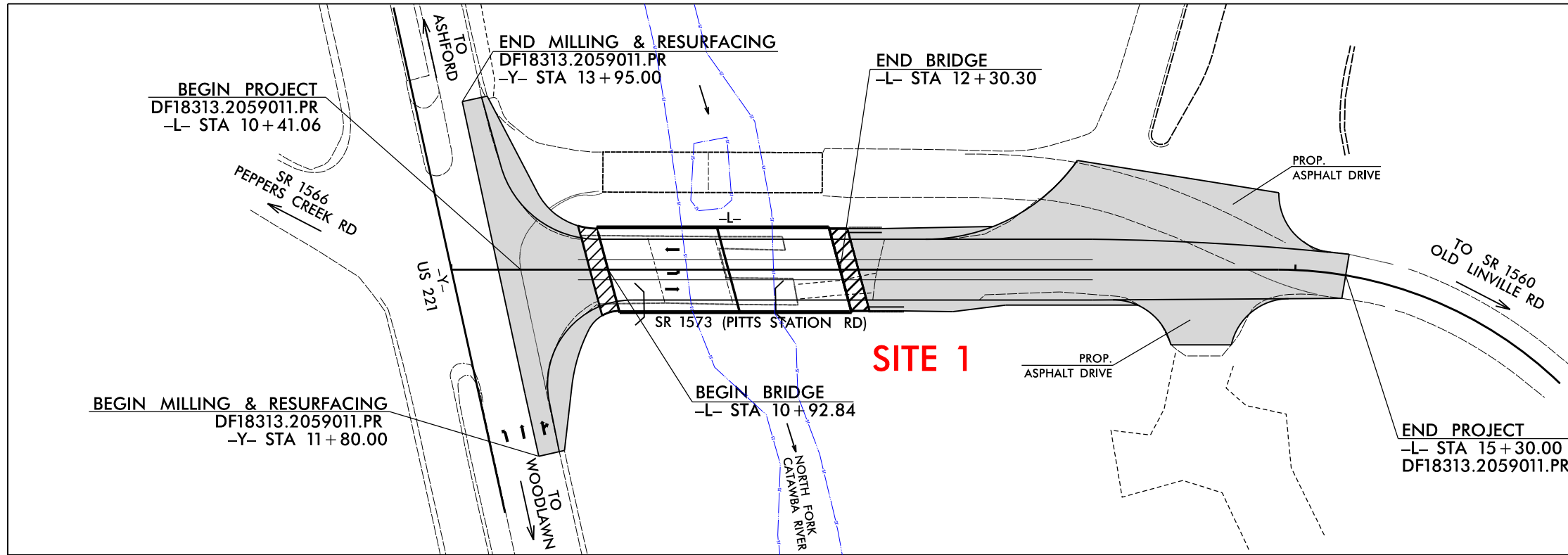
MCDOWELL COUNTY

LOCATION: REPLACEMENT OF STRUCTURE #580III  
ON SR 1573 (PITTS STATION RD) OVER  
NORTH FORK CATAWBA RIVER

TYPE OF WORK: GRADING, DRAINAGE  
PAVING, & STRUCTURE

WETLAND AND SURFACE WATER IMPACTS PERMIT

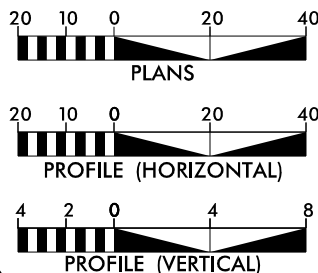
PERMIT DRAWING  
SHEET 1 OF 5



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

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 300  
ADT 2050 = 390  
V = 40 MPH  
TTST = 3% DUAL = 3%  
FUNC CLASS = LOCAL  
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT DF18313.2059011.PR = 0.067 MILES  
LENGTH OF STRUCTURE PROJECT DF18313.2059011.PR = 0.026 MILES  
TOTAL LENGTH OF PROJECT DF18313.2059011.PR = 0.093 MILES

PLANS PREPARED BY:  
TGS ENGINEERS  
201 W. MARION ST  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO. C-0275

BURNS  
R.E. BURNS & SONS CO  
P.O. BOX 1168  
STATESVILLE, NC 28687  
PH (704) 924-8668

2024 STANDARD SPECIFICATIONS  
RIGHT OF WAY DATE:  
DEC. 17, 2024  
LETTING DATE:  
DEC. 17, 2024

PLANS PREPARED FOR:  
NCDOT  
ALTERNATIVE DELIVERY UNIT  
1000 Birch Ridge Dr.  
Raleigh, NC 27610

JIMMY L. TERRY, PE  
PROJECT ENGINEER

AUSTIN R. TURNER, PE  
PROJECT DESIGN ENGINEER

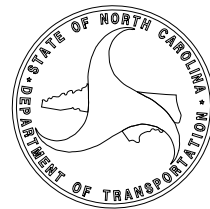
BYRON T. KYLE  
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN  
ENGINEER

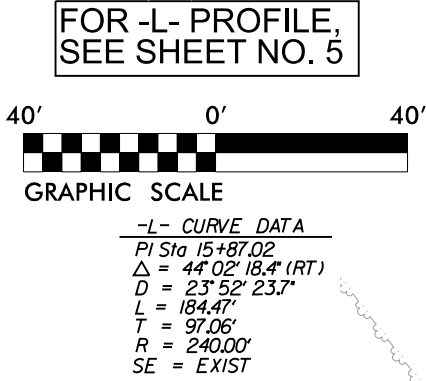
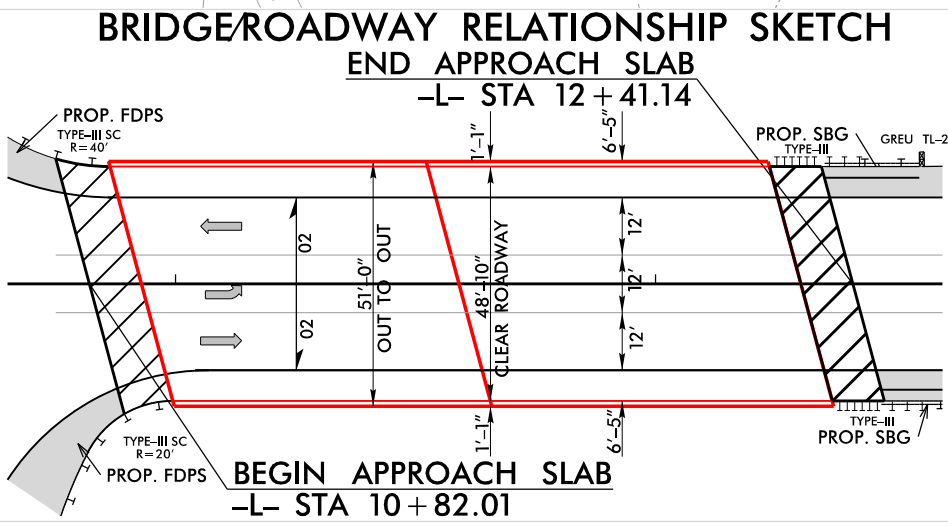
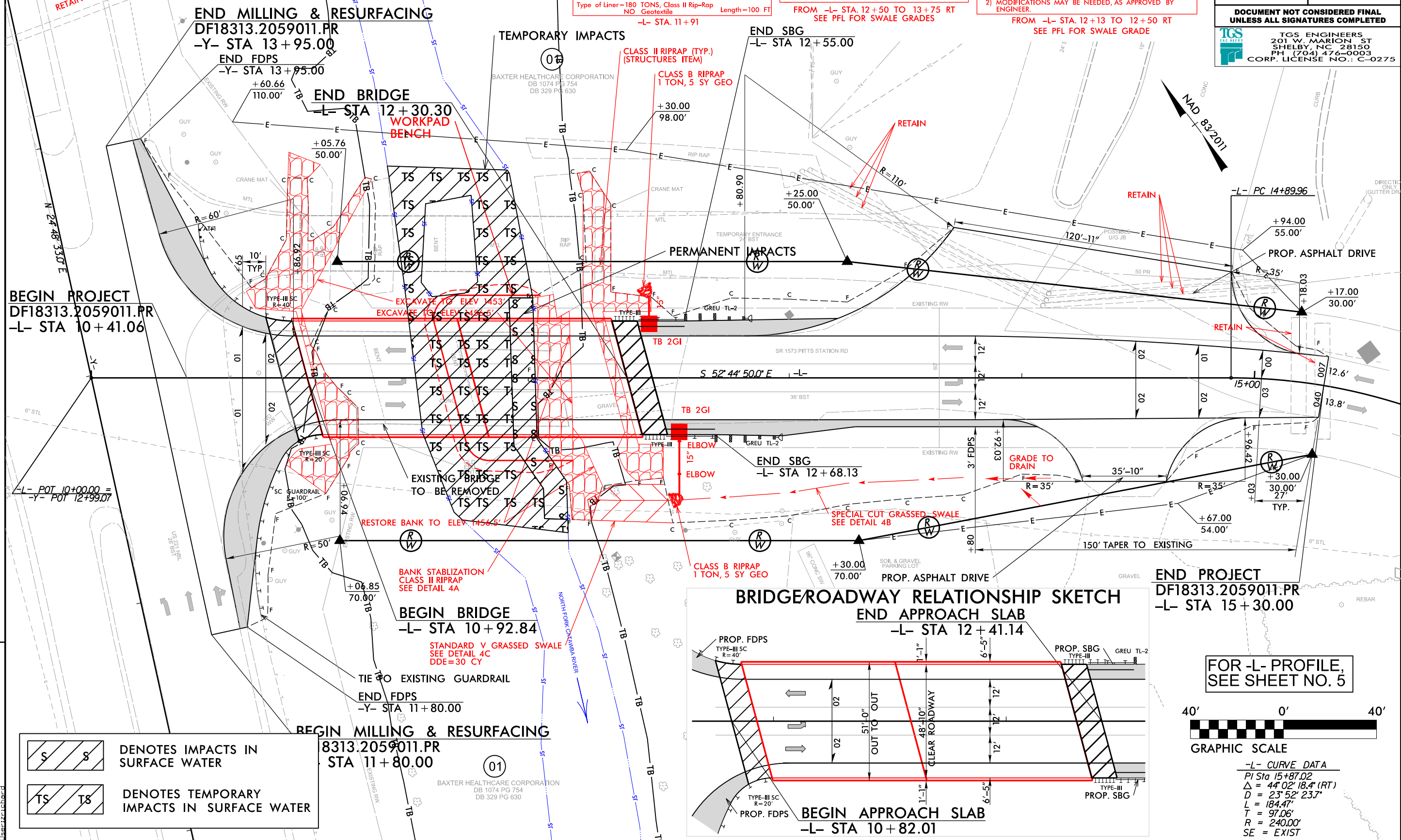
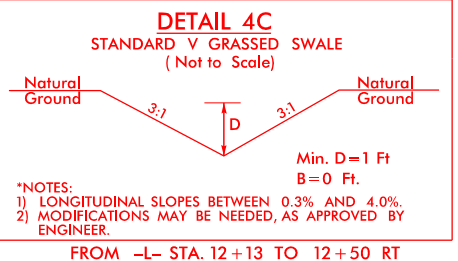
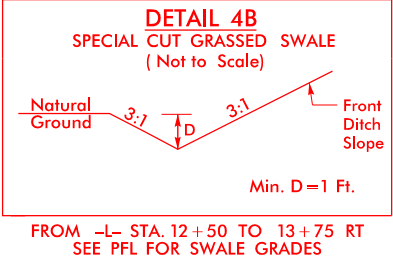
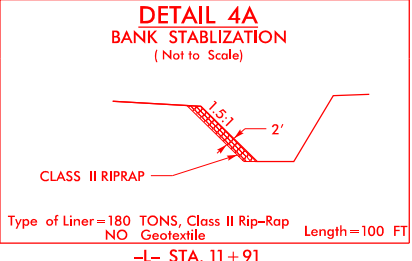
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PERMIT DRAWING  
SHEET 2 OF 5

MCDOWELL COUNTY  
BRIDGE #580111

PROJECT REFERENCE NO. DF18313.2059011.PR		SHEET NO. 4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
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DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

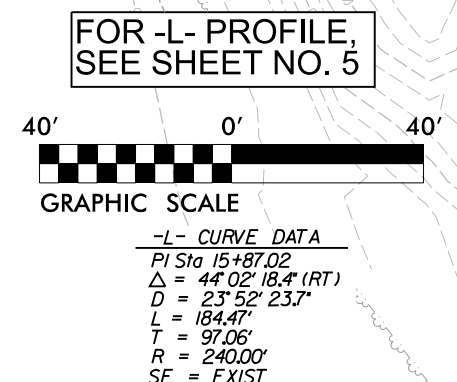
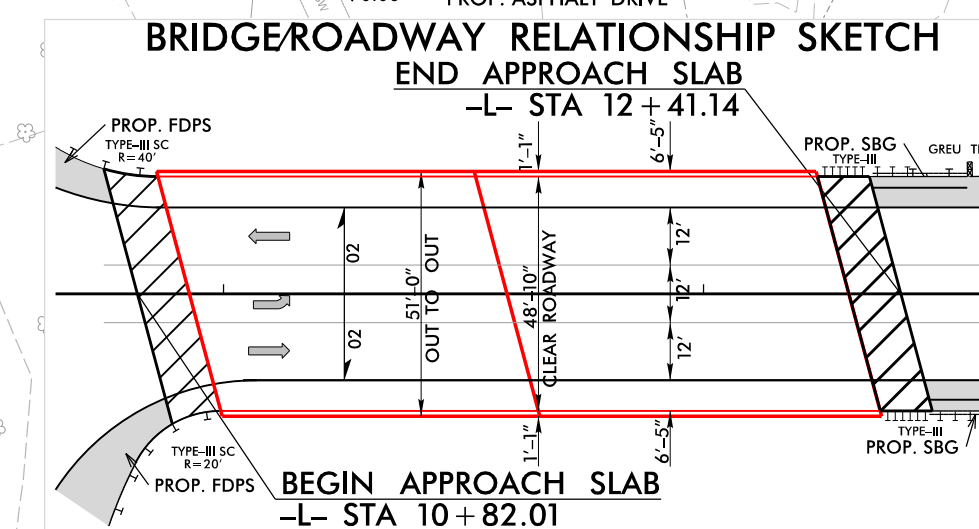
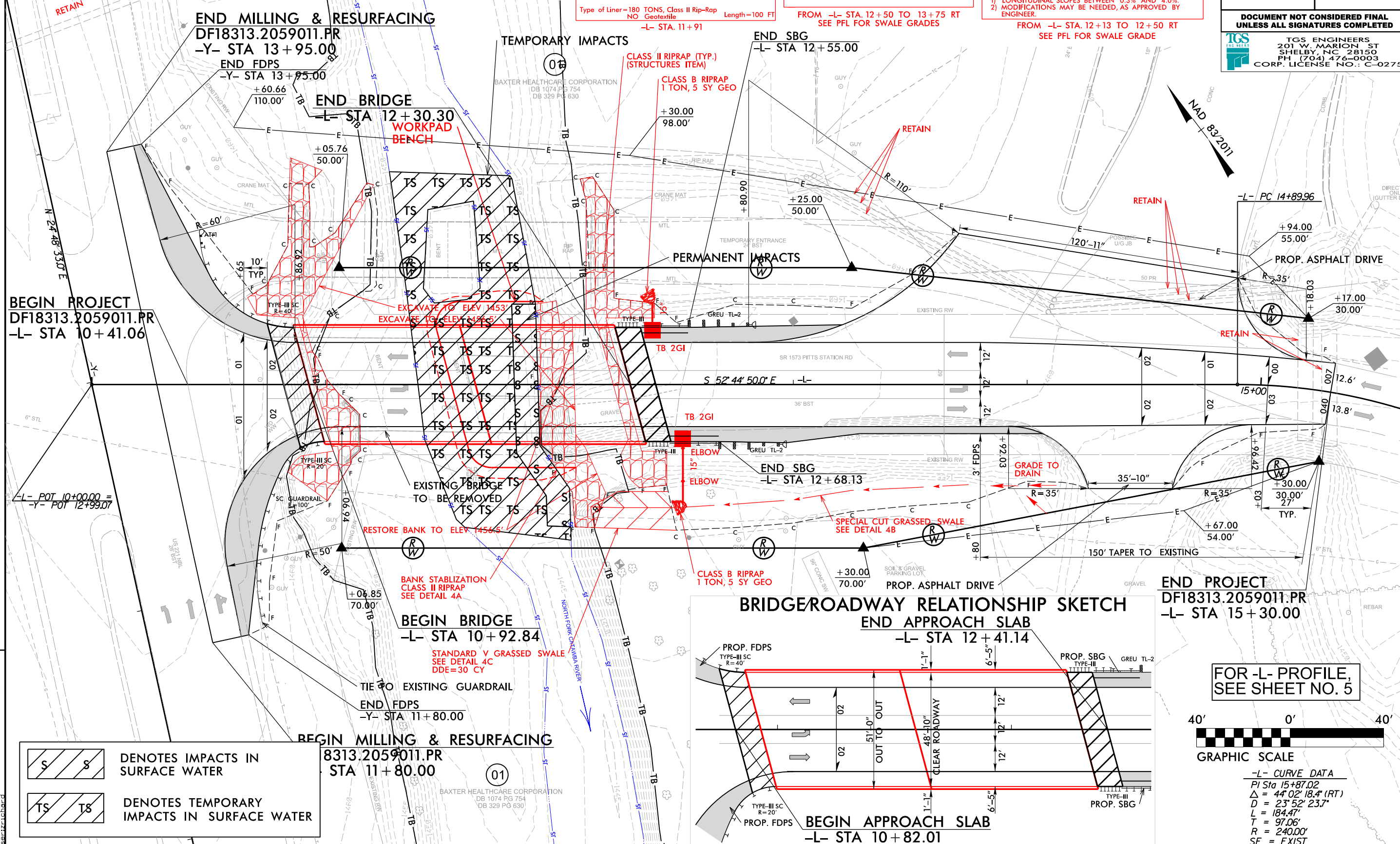
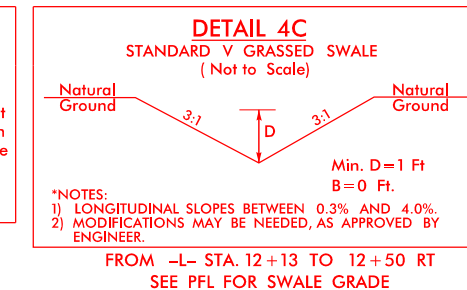
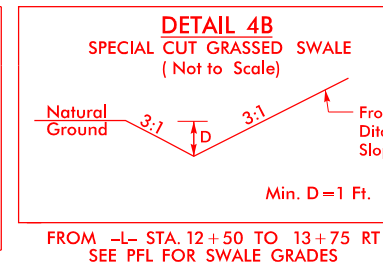
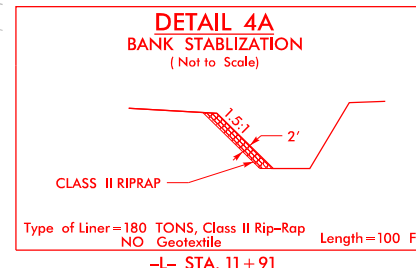
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PERMIT DRAWING  
SHEET 3 OF 5

MCDOWELL COUNTY  
BRIDGE #580111

PROJECT REFERENCE NO. DF18313.2059011.PR	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
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TGS ENGINEERS 201 W. MARION ST SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	



DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

8/17/99

REVISIONS

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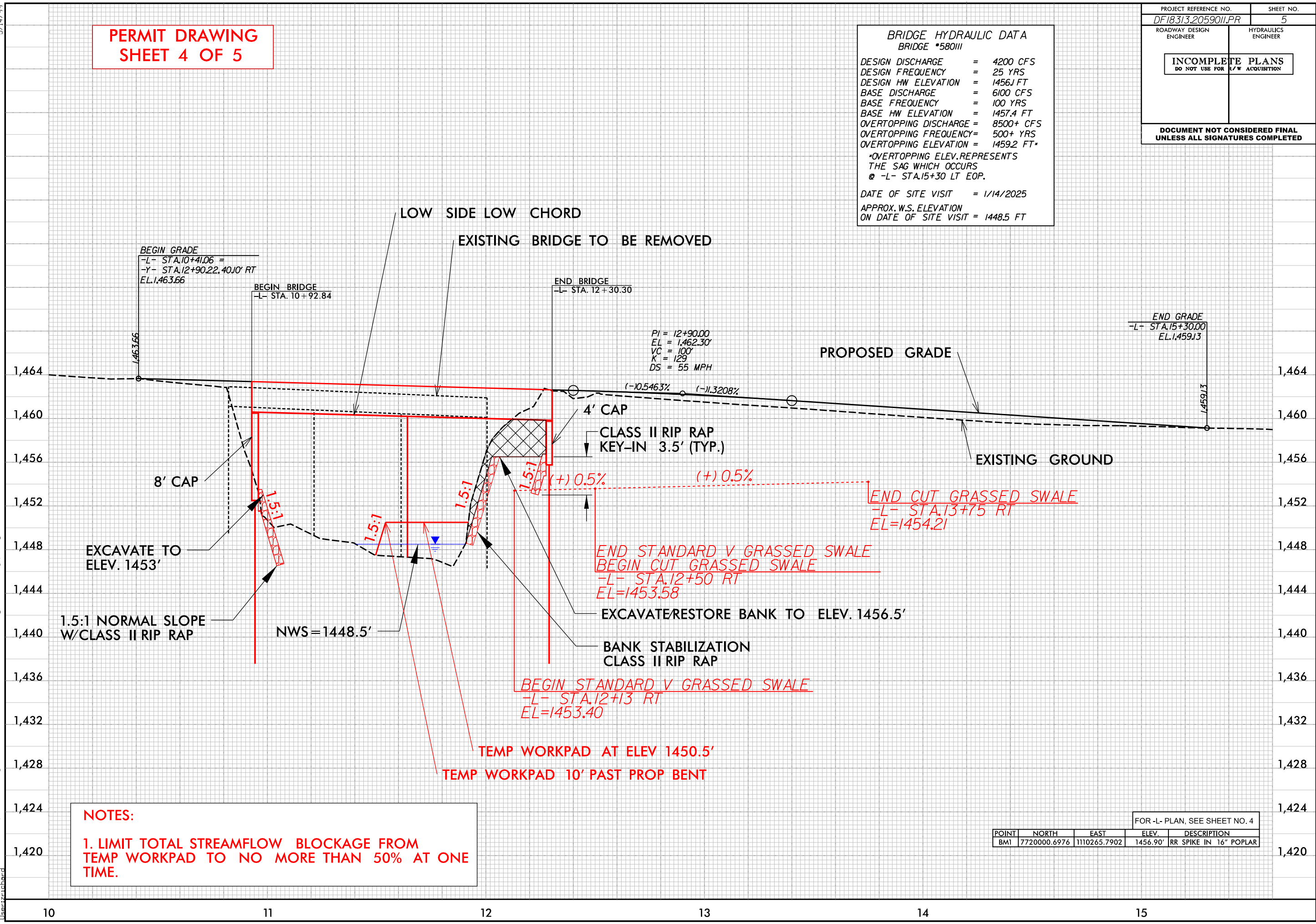
5/14/99

PERMIT DRAWING  
SHEET 4 OF 5

BRIDGE HYDRAULIC DATA	
BRIDGE #580III	
DESIGN DISCHARGE	= 4200 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1456J FT
BASE DISCHARGE	= 6100 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1457.4 FT
OVERTOPPING DISCHARGE	= 8500+ CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1459.2 FT*
*OVERTOPPING ELEV. REPRESENTS THE SAG WHICH OCCURS @ -L- STA.15+30 LT EOP.	
DATE OF SITE VISIT	= 1/14/2025
APPROX. W.S. ELEVATION ON DATE OF SITE VISIT	= 1448.5 FT

PROJECT REFERENCE NO.	SHEET NO.
DF18313.20590II.PR	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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NOTES:  
1. LIMIT TOTAL STREAMFLOW BLOCKAGE FROM TEMP WORKPAD TO NO MORE THAN 50% AT ONE TIME.

FOR -L- PLAN, SEE SHEET NO. 4				
POINT	NORTH	EAST	ELEV.	DESCRIPTION
BM1	7720000.6976	1110265.7902	1456.90'	RR SPIKE IN 16" POPLAR



# Section 7

# Concurrence



**Biological and Conference Opinions and Informal Consultations – Batch Format**

**Replace Multiple Crossing Structures Destroyed by Tropical Storm Helene in  
Buncombe, McDowell, Yancey Counties, North Carolina**

Service Log #25-110 through 25-117



Prepared by:

U.S. Fish and Wildlife Service  
Asheville Ecological Services Office  
160 Zillicoa Street  
Asheville, North Carolina 28801

**JANET MIZZI** Digitally signed by JANET MIZZI  
Date: 2025.02.11 08:27:38 -05'00'

---

Janet Mizzi  
Field Supervisor  
Asheville Ecological Services Field Office  
Asheville, North Carolina

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## Consultation History

**December 2, 2024:** Discussion between U.S. Fish and Wildlife Service (Service) and North Carolina Department of Transportation (NCDOT) regarding consultation batching processes and applicable avoidance and minimization and conservations measures for projects related to Tropical Storm (TS) Helene damage.

**December 3-6, 2024:** Email correspondence between the Service and NCDOT discussing aspects of batching process and need for a virtual discussion.

**December 11, 2024:** Virtual meeting between NCDOT and the Service to discuss batching process and avoidance and minimization and conservations measures.

**December 12, 2024:** NCDOT submitted batched request for informal and formal consultation to the Service.

**December 30-31, 2024:** Service asked NCDOT questions about project impact estimates and NCDOT provided responses.

**January 2, 2025:** Phone discussion between NCDOT and the Service regarding aquatic impact area estimates.

**January 7, 2025:** NCDOT provided needed information on aquatic impact area estimates. Receipt of complete information and official start of formal consultation process.

## Background

On September 27, 2024, TS Helene moved across a large swath of Western North Carolina (WNC). Extreme rainfall and high winds resulted in catastrophic damage across much of the region. Record flooding occurred throughout several watersheds, destroying thousands of transportation sites as well as homes and entire communities. Widespread landslides and timber fall contributed to the damage. In the wake of this disastrous event, the North Carolina Department of Transportation (NCDOT) is tasked with responding to, repairing, and [to the extent possible] replacing the transportation infrastructure destroyed by TS Helene. The following informal and formal consultations are presented in batched format to streamline and expedite review of one group of many similar projects. The format utilized in this consultation is intended for TS Helene-related projects and is tailored to the unique challenges and constraints precipitated by this event. Biological determinations presented below are based on the best available scientific data at the time of this document and incorporate the expertise of WNC's Service and partner resource agency biologists.

## Projects

The table below represents the projects reviewed in this batch of TS Helene-related projects. Work will involve the replacement of damaged or wholly destroyed crossing structures, which may include minimal tree clearing, grading, demolition, and in-water construction. The current estimated timeline is for these projects to be carried out over the next two years. Additional description of the project-associated activities is provided in Section 2 of this document.

**Table 1. Batched Consultation Projects – Crossing Structures**

Structure Number	Waterbody	County	Location	Service Log No.
100203	Beetree Creek	Buncombe	35.61262942, - 82.42700924	25-110
100396	Ashworth Creek	Buncombe	35.50593694, -82.37427045	25-111

100464	Cane Creek	Buncombe	35.5418638, -82.3808703	25-112
100716	Garren Creek	Buncombe	35.5263751, -82.3720587	25-113
580111	North Fork Catawba River	McDowell	35.8345383, -82.0022521	25-114
990062	Ayles Creek	Yancey	35.883833, -82.2178591	25-115
990097	South Toe River	Yancey	35.8711714, -82.1968074	25-116
990194	North Toe River	Yancey	36.0046242, -82.1931341	25-117

## Informal Consultation

The NCDOT assessed each project location addressed in this document for the presence of suitable habitat for listed species and for the potential effects of project work on listed species with suitable habitat present. The following table outlines the project locations and associated “No Effect” (NE) and “May Affect, Not Likely to Adversely Affect” NLAA determinations, with supporting biological rationale.

**Table 2. Species NLAA and NE Determinations**

Structure Number	Waterbody	Service Log No.	NE and NLAA Species
100203	Beetree Creek	25-110	<b>NE:</b> Appalachian elktoe ( <i>Alasmidonta raveneliana</i> ), mountain sweet pitcher plant ( <i>Sarracenia rubra sp. jonesii</i> ), rock gnome lichen ( <i>Gymnoderma lineare</i> ). <b>Rationale:</b> Absence of suitable habitat
100396	Ashworth Creek	25-111	<b>NE:</b> Appalachian elktoe, mountain sweet pitcher plant, rock gnome lichen, white irisette ( <i>Sisyrinchium dichotomum</i> ) <b>Rationale:</b> Absence of suitable habitat
100464	Cane Creek	25-112	<b>NE:</b> Appalachian elktoe, mountain sweet pitcher plant, rock gnome lichen, white irisette. <b>Rationale:</b> Absence of suitable habitat
100716	Garren Creek	25-113	<b>NE:</b> Appalachian elktoe, mountain sweet pitcher plant, rock gnome lichen, white irisette. <b>Rationale:</b> Absence of suitable habitat
580111	North Fork Catawba River	25-114	<b>NE:</b> Appalachian elktoe, small whorled pogonia ( <i>Isotria medeoloides</i> ) <b>Rationale:</b> Absence of suitable habitat
990062	Ayles Creek	25-115	<b>NLAA:</b> Gray bat ( <i>Myotis grisescens</i> ), northern long-eared bat ( <i>Myotis septentrionalis</i> ), tricolored bat ( <i>Perimyotis subflavus</i> ). <b>Rationale:</b> Lack of suitable roosting habitat. <b>NE:</b> Appalachian elktoe, small whorled pogonia, rock gnome lichen, Virginia spiraea ( <i>Spiraea virginiana</i> ). <b>Rationale:</b> Absence of suitable habitat.

990097	South Toe River	25-116	<b>NLAA:</b> Gray bat, northern long-eared bat, tricolored bat. <b>Rationale:</b> Lack of suitable roosting habitat. <b>NE:</b> Small whorled pogonia, rock gnome lichen, Virginia spiraea. <b>Rationale:</b> Absence of suitable habitat.
990194	North Toe River	25-117	<b>NE:</b> Gray bat, rock gnome lichen, small whorled pogonia, tricolored bat, Virginia spiraea. <b>Rationale:</b> For bats, absence of roosting habitat – bridge structure completely gone. For plants, absence of suitable habitat.

In instances where suitable habitat is absent from the action area, or where project actions would not result in impacts to suitable habitat within the action area, we agree that NE determinations are appropriate.

The NLAA determinations for listed bats are based on the presence of suitable riparian roosting, commuting, or foraging habitat and the lack of suitable roosting habitat, as addressed in the table. For these projects, adverse impacts to riparian habitat are not expected. Additionally, general protective measures will be implemented to the maximum extent possible. These measures are listed in Section 2.3 of this document, below, and further serve to reduce the likelihood that project work could adversely affect any bats occurring within the action areas.

We believe the requirements under section 7 of the ESA are fulfilled for the species addressed above in relation to the designated projects. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this proposed action that may affect listed species or critical habitat in a manner not previously considered, (2) this proposed action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the proposed action.

On September 14, 2022, the Service published a proposal in the Federal Register to list the tricolored bat as endangered under the ESA. As a result, NCDOT has requested a conference for the tricolored bat as the projects may be on-going after the effective date of any final listing rule, if one is published. Based on the information provided and the analysis discussed for listed bat species above which also has applicability here, we have determined that the proposed projects will not jeopardize the continued existence of the tricolored bat. Additionally, we would concur with the NCDOT's determination that the projects are NLAA the tricolored bat should the species become listed.

On December 13, 2024, eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*) was proposed for listing as endangered under the ESA. Species proposed for listing are not afforded protection under the ESA; however, as soon as a listing becomes effective, the prohibitions against jeopardizing its continued existence and "take" will apply. Information provided by NCDOT after the originally submitted consultation request for the subject projects indicates that NCDOT has chosen not to conference on eastern hellbender but will consider the species and coordinate with partner resource agencies as project actions move forward.

# Biological Opinion and Conference Opinion

## 1. Introduction

A biological and conference opinion (Opinion) is the document that states the opinion of the Service in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (ESA), as to whether a Federal action is likely to jeopardize the continued existence of species listed as endangered or threatened; or result in the destruction or adverse modification of designated critical habitat.

This document transmits the Service's biological and conference opinions (Opinion) and is based on our review of the proposal to replace several crossing structures (Table 1) and their effects on the federally endangered Appalachian elktoe (*Alasmidonta raveneliana*), federally endangered gray bat (*Myotis grisescens*), federally endangered northern long-eared bat (*Myotis septentrionalis*), and federally proposed endangered tricolored bat (*Perimyotis subflavus*). This Opinion is based on information provided in the assessment submitted to the Service by the NCDOT, field investigations, correspondence between NCDOT and the Service, communications with experts on the affected species, and other sources of information as cited. The Federal Highway Administration is the lead Federal action agency for these projects, with consultation authority delegated to the NCDOT.

## 2. Proposed Action

As defined in the Service's section 7 regulations (50 CFR 402.02), "action" means "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The direct and indirect effects of the actions and activities must be considered in conjunction with the effects of other past and present Federal, state, or private activities, as well as the cumulative effects of reasonably certain future state or private activities within the action areas.

### 2.1 Action Areas

The project action areas are all areas of construction and include any portions of the project waterbodies, as indicated in Table 1, that may be affected by direct or indirect effects. The action areas are comprised of the:

- 1.) Project construction limits including all project related work such as tree-clearing and grading.
- 2.) Limits of sedimentation effect, anticipated to extend 100 meters (m) (328 feet (ft)) upstream from each bridge and 400 m (1,314 ft) downstream from each crossing structure in each respective river.

### 2.2 Project Description

The details of the proposed project designs for each of the crossing structures in Table 1 are not yet known, given the mass response/repair/rebuild efforts for the hundreds of infrastructure failure projects due to TS Helene destruction. The scale of destruction from TS Helene, and associated response efforts, compel a batched consultation response, and the design-build process be expedited. Thus, exact designs and associated action area impact details are not known at the time of this review. However, project activities and estimated impacts, based on the "knowns" associated with NCDOT's crossing structure replacement work, are available. At the time of this consultation, the expectation is that the majority of

the replacement bridges will be concrete box beam or cored slab structures and the culvert structures will be the same or similar materials to those previously in place. The general and expected elements of these crossing structure replacement projects are described below. The current estimated timeline is for these projects to be carried out over the next two years.

### ***In-water impacts***

Considering the range in structure and waterbody sizes analyzed in this review, and basing amounts on past similarly-sized structure and waterbody NCDOT crossing structure projects in WNC, the estimate of combined temporary and permanent in-water impacts for these projects range from 0.01 – 0.35 acres (or 4,356 – 15,246 square feet) per structure. Some structure replacements will fall in the lower portion of that range of in-water impacts while some will fall in the higher range. These impacts may be in the form of work pad causeways, bent removal and/or placement, and placement of stream-bank stabilization materials.

### ***Tree Clearing, Access Roads, and Demolition***

The maximum estimate for tree clearing at structure replacement locations is 0.10 acre. That amount will likely be less at most locations, given the variability in site conditions and the extreme scour (and resulting loss of riparian vegetation) during TS Helene flooding. The season during which clearing will occur is not known for each location. Clearing and grading will occur to allow for access roads and general construction functionality.

Where damaged structures or portions of damaged structures remain in place, demolition will occur. The details of demolition activities and seasonality of demolition will vary by project.

## **2.3 Avoidance and Minimization and Conservation Measures**

NCDOT will employ the following agency Standards, Guides, and Best Practices to avoid and minimize project mediated activities that could negatively impact listed/proposed species or their habitat.

### **2.3.1 Avoidance and minimization measures (AMMs)**

**General** (regardless of species): The following General AMMs will be implemented on all projects to minimize impacts to listed/proposed species and habitat:

General AMM1. NCDOT will ensure that all operators, employees, and contractors working in areas of suitable habitat for federally listed/proposed species are aware of all NCDOT environmental commitments, including all applicable AMMs and all associated NCDOT guidance documents.

General AMM2. Best management practices (BMP) and sediment and erosion control (SEC) measures will be utilized to prevent non-point source pollution, control storm water runoff, and minimize sediment damage to avoid and reduce overall water quality degradation.

General AMM3. Areas of disturbance, such as tree clearing, grubbing, and grading, will be limited to the maximum extent possible.

**Aquatics**- The General AMMs above will minimize impacts to listed/proposed aquatic species. **To the maximum extent possible**, the following AMMs will also be incorporated into project work – though implementation of all aquatic AMMs below cannot be guaranteed at the time of this consultation, given the scale, scope, and timeline constraints addressed previously.



- Aquatic AMM Structure – To the maximum extent possible, structure will be built in the same location as the previous structure, with minimal impact [such as in-water bents] to water resource, built to NCDOT’s current improved highway and hydraulic standards.
- Aquatic AMM Equipment – To the maximum extent possible, heavy machinery will not be utilized within the waterbody. Additionally, staging and storage areas for equipment and materials will be managed in such a way to ensure that potential spills and leaks do not have access to the waterbody.
- Aquatic AMM Temporary and Permanent Fill – Any temporary fill (i.e. causeways) or permanent (i.e. bents/piers) fill in excess of what was previously present will be avoided and minimized to the maximum extent possible.
- Aquatic AMM Abutments - Existing abutments will be completely removed unless removal results in destabilizing of banks or increases the adverse effect to listed/proposed aquatic species.
- Aquatic AMM Deck Drains – Deck drains that empty directly to the waterbody below will not be included in new bridge designs. Surface water drainage transport will be designed to incorporate improved treatment prior to drainage entering the waterbody.
- Aquatic AMM Erosion Control Matting – Coir fiber matting will be utilized instead of plastic or other synthetic matting.

**Bats** - The General AMMs will minimize impacts to listed and proposed bat species. **To the maximum extent possible**, the following AMMs will also be incorporated into project work – though implementation of all bat AMMs below cannot be guaranteed at the time of this consultation, given the scale, scope, and timeline constraints addressed previously.

- Bat AMM Noise - Percussive activities will occur only after tree clearing within the action area has been completed, helping to reduce the exposure of any tree-roosting bats within the action area to high decibel noise.
- Bat AMM Lighting - No new lighting will be added to the action area. Any lighting needed for night work will be directed at the work area and shielded from surrounding waters/landscape, only on when needed, no brighter than necessary, and blue light emissions will be limited.
- Bat AMM Riparian Planting – Disturbed riparian areas will be replanted with native, fast-growing tree and shrub species where feasible, with the understanding that plantings likely cannot be done in utility/drainage/construction easements.

### 2.3.2 Conservation Measures (CMs)

CMs represent actions, pledged in the project description, that the action agency will implement to further the recovery of the species under review. The beneficial effects of CMs are considered in making determinations of whether the projects will jeopardize the species under consideration in this document.

Aquatic CM: Aquatics Contribution - For individual bridge projects that are Likely to Adversely Affect (LAA) aquatic species, the NCDOT will contribute\* \$10,000 for each project structure to the N.C. Nongame Aquatic Species Fund (or subsequently renamed fund).

Aquatic CM: Relocation - For projects that are LAA aquatic species, prior to project construction, the Service – Asheville Field Office Aquatics Recovery Lead and NCDOT liaison and the NC Wildlife Resources Commission (NCWRC) NCDOT liaison will be contacted to discuss the potential for mussel relocation, if applicable and practicable.

\*Contribution amount reached through discussion between NCDOT aquatics group and Service aquatics recovery biologist, with contribution amounts tailored to support ongoing and upcoming conservation and recovery efforts for Appalachian elktoe.

Bat CM - Tree Clearing Bat Fund Contribution: For individual bridge projects that are LAA bat species during tree removal, the NCDOT will contribute a payment\*\* to the N.C. Nongame Terrestrial Species Fund (or other Service-approved Fund) in support of the recovery of federally protected bat species.

Bat CM Structure Removal Bat Fund Contribution: For individual bridge projects that are LAA bat species during structure removal, the NCDOT will contribute a payment\*\*\* to the N.C. Nongame Terrestrial Species Fund (or other Service-approved Fund) in support of the recovery of federally listed bat species.

\*\*Contributions made will be based on a 2:1 ratio multiplier specified for the non-volant pup season (May 15-July 31). This ratio offers the most protective coverage based on the current unknowns surrounding time-of-year clearing. The amount will be determined using the United States Department of Agriculture Farm Real Estate Value for North Carolina for 2024 (\$5,190/acre).

[https://www.nass.usda.gov/Publications/Todays\\_Reports/reports/land0824.pdf](https://www.nass.usda.gov/Publications/Todays_Reports/reports/land0824.pdf)

If tree clearing amount is unknown, an assumed clearing acreage of 0.1 acre will be used based on estimates from previous clearing work at crossing structures (NCDOT 2015). The formula is calculated as follows:

$\$5,190 \times 0.1 \text{ ac} = 519 \times 2 \text{ (critical life stage multiplier)} = \$1,038 \text{ contribution.}$

\*\*\*Structures with documented bat use are generally larger than the average bridge, with a median size of 0.10 acre (length x width) (Service 2020b). Therefore 0.10 acre per crossing structure is used to calculate the amount of suitable bat habitat lost for projects involving structure impacts. However, the impacts to bats that may be displaced during structure demolition/construction are considered temporary in nature because the replacement structures are understood to provide adequate roosting habitat, as addressed in the project description. Additionally, the structures being analyzed here are all damaged and understood to provide reduced areas of suitable bat roosting habitat. Therefore, the 1.5:1 ratio multiplier was determined to be appropriate. If the structures are demolished between March 15 – November 15 (the period during which gray bats could be present on the landscape, which also encompasses the northern long-eared bat and tricolored bat active seasons) a structure-related payment will be made; if not, no structure-related payment will be made. The formula is calculated as follows:  $\$5,190 \times 0.1 \text{ ac} = 519 \times 1.5 \text{ (temporary impact multiplier)} = \$779 \text{ contribution/structure.}$

### 3. Status of the Species

This section summarizes best available data about the biology and current condition of the Appalachian elktoe, gray bat (*Myotis grisescens*), northern long-eared bat (*Myotis septentrionalis*), and tricolored bat (*Perimyotis subflavus*) throughout their ranges that are relevant to formulating an opinion about the actions. More in-depth species information such as species status assessments can be found at the species-specific pages at the Service's Environmental Conservation Online System (ECOS): [ecos.fws.gov/ecp/](https://ecos.fws.gov/ecp/)

### 3.1 Appalachian Elktoe

<b>Scientific Name:</b>	<i>Alasmodonta raveneliana</i>
<b>Status:</b>	Endangered
<b>Date of Listing:</b>	November 23, 1994
<b>Critical Habitat:</b>	Designated in 2002

#### 3.1.1 Description and Life History

The Appalachian elktoe is a freshwater mussel endemic to the Blue Ridge Physiographic Province of WNC. This species exists in several small populations in the Upper Tennessee River system of North Carolina and Tennessee, inhabiting relatively shallow medium-sized creeks and rivers with cool, well-oxygenated, and moderate- to fast-flowing water.

Lea (1834) described the Appalachian elktoe from the French Broad River (FBR) system in North Carolina. Its shell is thin but not fragile, oblong, and somewhat kidney-shaped, with a sharply rounded anterior margin and a broadly rounded posterior margin. The periostracum (outer shell) of the Appalachian elktoe varies in color from dark brown to yellowish-brown in color. Rays may be prominent in some individuals, usually on the posterior slope, and nearly obscure in other specimens. The reproductive cycle of the Appalachian elktoe is similar to that of other native freshwater mussels. Males release sperm into the water column, which is then taken in by the female through their siphons during feeding and respiration. The females retain the fertilized eggs in their gills until the larvae (glochidia) fully develop, after which they are released into the water and attach to appropriate species of fish hosts. Juveniles then detach from their fish host and sink to the stream bottom where they may continue to develop, provided that suitable substrate and water conditions are present (Service 2002).

#### 3.1.2 Status and Distribution

The Appalachian elktoe is known only from the mountain streams of WNC and eastern Tennessee. It is found in gravelly substrates often mixed with cobble and boulders, in cracks of bedrock, and in relatively silt-free, coarse sandy substrates (Service 1996).

Although the complete historic range of the Appalachian elktoe is unknown, available information suggests that the species once lived in the majority of the rivers and larger creeks of the upper Tennessee River system in North Carolina, with the possible exception of the Hiwassee and Watauga River systems. In Tennessee, the species is known only from its present range in the main stem of the Nolichucky River. At the time of listing, two known populations of the Appalachian elktoe existed: the Nolichucky River, including its tributaries (the Cane River and the North Toe River); and the Little Tennessee River and its tributaries. The record in the Cane River was represented by one specimen found just above its confluence with the North Toe River (Service 1996). Since listing, the Appalachian elktoe has been found in additional areas. These occurrences include extensions of the known ranges in the Nolichucky River (North Toe River, South Toe River, and Cane River) and the Little Tennessee River (Tuckasegee River and Cheoah River) as well as a rediscovery in the FBR basin (Pigeon River, Little River, Mills River, and the main stem of the FBR). Many of these newly discovered populations are relatively small in numbers and range.

The Appalachian elktoe has experienced declines in two populations across its range. A sudden die-off in the Little Tennessee River, (once considered the largest and most secure population of this animal), occurred from 2005 – 2015. Surveys in 2017, 2018 and 2019 produced very low numbers, indicating a

remnant population, but the population is limited and only a tiny fraction of its previous size. The species has also declined in the lower portion of the Nolichucky River. Appalachian elktoe were once common in all three tributaries of the Nolichucky River: North Toe, South Toe and Cane River. In 2008, a fish kill linked to a waste-water plant failure resulted in the death of most of the Appalachian elktoe in the Cane River. Beginning in 2013, the Appalachian elktoe population in the lower South Toe River declined steeply which coincided with a major highway construction project and only occurred downstream of receiving streams in the project footprint. Appalachian elktoe are still present in the North and South Toe Rivers, but at reduced densities. It appears that the North Toe population is limited by urban runoff and mining effects to the river. The other populations of Appalachian elktoe appear to be stable (Tuckasegee, Cheoah, and Pigeon Rivers) or expanding (FBR). A remnant population known in the Cheoah River since the early 2000's is presently being augmented by the NCWRC with hatchery-propagated individuals sourced from the Tuckasegee River. This effort appears to be successful in bringing this population back to a viable state. Prior to 2004, the FBR population appeared to be confined to two tributary streams (Little River and Mills River), but over the last few years the known range of Appalachian elktoe in the main stem of the FBR has expanded and it now appears to be well established, albeit at low density, over a broad area. At the time of this document, impacts to Appalachian elktoe from TS Helene in September of 2024 remain largely unknown. Extreme flooding and scour in many of the rivers occupied by the species is believed to have resulted in reduced abundance in several locations, while other areas likely lost fewer individuals.

### 3.1.3 Threats

The decline of the Appalachian elktoe throughout its historic range has been attributed to a variety of factors, including sedimentation, point and nonpoint-source pollution, and habitat modification (impoundments, channelization etc.). The low numbers of individuals and the restricted range of most of the surviving populations make them extremely vulnerable to extirpation from a single catastrophic event or activity. Catastrophic events may consist of natural events, such as flooding or drought, as well as human influenced events, such as toxic spills associated with highways or railroads.

Natural flooding events combined with alteration of watersheds can lead to large fluctuations in abundance observed in Appalachian elktoe populations. Record catastrophic flooding in the range of Appalachian elktoe occurred during TS Helene during late September 2024. Many areas inhabited by Appalachian elktoe were severely damaged by erosive flooding, bedload scour, and bank failures. Observations immediately after the flooding in October 2024 revealed that despite severe flooding, certain portions of Appalachian elktoe occurrences in North Carolina, such as the upper Pigeon River, were relatively intact. Those observations indicate that the species is likely to remain in most of the affected areas, though individual numbers were likely greatly reduced in many inhabited locations. Portions of the FBR basin experienced catastrophic flooding in late summer 2021 as a result of the remnants of Tropical Storm Fred. The flooding likely resulted in loss of Appalachian elktoe individuals within populations in the hardest-hit portions of the Pigeon, Mills and French Broad Rivers.

Siltation resulting from improper erosion control of various types of land use, including agriculture, forestry, road construction, and development, has been recognized as a major contributing factor to the degradation of mussel populations (Service 1996). Siltation degrades substrate and water quality, increasing potential exposure to other pollutants, and direct smothering of mussels (Ellis 1936). The abrasive action of sediment on mussel shells has been shown to cause erosion of the outer shell, which allows acids to reach and corrode underlying layers (Harman 1974).

Sewage treatment effluent has been documented to significantly affect the diversity and abundance of mussel fauna (Goudreau *et al.* 1988). Goudreau *et al.* found that recovery of mussel populations might not occur for up to 2 river miles (3.22 kilometers) below points of chlorinated sewage effluent. Most of the water bodies where Appalachian elktoe still exist have relatively few point source discharges within the watershed and are rated as having "good" to "excellent" water quality by the North Carolina Division of Water Resources.

The introduction of exotic species, such as the Asian clam (*Corbicula fluminea*) and zebra mussel (*Dreissena polymorpha*), pose significant threats to native freshwater mussels. Competitive interactions for space, food, and oxygen between these species and native mussels, possibly at the juvenile stages (Neves and Widlak 1987) are the main concerns. At the time the Appalachian elktoe was listed, the Asian clam was not known from the stretch of the Little Tennessee River that it occupies; however, it has been observed in the Little Tennessee River in recent years and, as mentioned earlier, may be a contributing factor to the decline of that population. When the Appalachian elktoe was listed, it was speculated that, due to its restricted distribution, it "may not be able to withstand vigorous competition" (Service 1996).

### 3.2 Gray Bat

<b>Scientific Name:</b>	<i>Myotis grisescens</i>
<b>Status:</b>	Endangered
<b>Date of Listing:</b>	April 28, 1976
<b>Critical Habitat:</b>	None designated

#### 3.2.1 Description and Life History

The gray bat is a medium-sized insectivorous bat with an overall length of about 3.5 inches and a wingspan of 10 to 11 inches. As the name implies, gray bats have gray fur, but the hair often bleaches to reddish-brown by early summer. The gray bat largely occurs in limestone karst areas, meaning a landscape marked by caves, sinkholes, springs and other features, of the southeastern and midwestern United States.

Gray bats use caves year-round for roosting and hibernating. Seasonal occupancy of caves differs between summer roost and winter hibernacula, and gray bats are known to migrate more than 300 miles between the two. While gray bats are predominantly found roosting in caves, they are known to roost in structures including buildings, bridges and culverts. Bats emerge from summer roosts early in the evening and forage along waterbodies adjacent to forested areas. The species has been documented traveling from a few miles to 20 or more miles between their day roosts and nightly foraging areas.

Adult bats mate upon arrival at the wintering caves in September or early October. Hibernation occurs in deep vertical caves in the winter, where colder temperatures are preferable. Gray bats require consistently cold temperatures to maintain hibernation and conserve energy in the winter months. The adult females will emerge from hibernation in late March or early April. At that time, the females who have mated will begin their pregnancy, while dispersing to maternity caves. Males and juveniles emerge shortly after the females and disperse to bachelor caves. Gray bats are documented using bridges and culverts as roosting habitat during the spring, summer, and fall and show strong philopatry to their summer ranges and typically use the same roost sites year after year (Tuttle 1976; Martin 2007). Gray bats are most commonly observed in bridges of concrete material and their preferred roosting location is in the vertical expansion joints of a bridge deck above piers (NCDOT 2023a), though they can also roost in clogged deck drains and other sheltered areas on crossing structures. According to approximately 2,000 bridge surveys conducted throughout WNC from 2000 - 2023, gray bats have been recorded roosting in bridges

at a usage rate of 3% (NCDOT 2023a), with bridge use observed in the covered area from March – November. Up to 1,000 individuals, including males and females, have been observed day-roosting throughout the summer in expansion joints between box beams at two separate bridges (Weber et al. 2020). Sporadic summer use of other concrete type bridges has also been noted for smaller numbers of day-roosting gray bats (NCDOT, 2023a). Gray bats have also been observed within culverts, most commonly of concrete material.

Gray bats primarily forage over open water bodies, such as rivers, streams, lakes, and reservoirs, and associated riparian areas (Tuttle 1976; LaVal et al. 1977; Weber et al. 2020). While foraging, the gray bat consumes a variety of insects, most of which are aquatic (Brack and LaVal 2006). Bats typically travel individually or in small groups that forage in an area for a short period before moving to another area. Studies suggest that gray bats visit multiple foraging areas during the night and travel frequently between these areas.

### 3.2.2 Status and Distribution

The primary range of gray bats is concentrated in the cave regions of Alabama, Arkansas, Kentucky, Missouri and Tennessee, though its overall range stretches from Virginia to Oklahoma, and Missouri to Alabama. WNC is on the eastern edge of the bat's range. In North Carolina, the gray bat is currently documented from 14 western counties and is possible in an additional 10 counties. Most gray bat occurrences in WNC are centered on the French Broad and Pigeon River watersheds. Gray bats are generally present in North Carolina from March 15 to November 15, when they leave for winter hibernacula. It is believed that many of the gray bats in North Carolina migrate to hibernacula in Tennessee, using the French Broad River as a commuting pathway. The closest active hibernaculum is near Newport, Tennessee (Weber et al. 2020), approximately 20 miles from the border with Haywood and Madison Counties in North Carolina.

Ellison et al. (2003) of the U.S. Geological Survey (USGS) statistically analyzed 1,879 observations of gray bats obtained from 334 roost locations in 14 south-central and southeastern states. They determined that 94.4% of the populations showed stable or increasing populations while 6% revealed a decreasing population. For populations where there was a downward population trend, decreases in population numbers were mostly attributed to continued problems with human disturbance. This increasing population trend has been reflected in the work of Sasse et al. (2007), Martin (2007), and again by Elliott in 2008 in looking at high-priority caves. It is estimated that more than 95% of the species range-wide population hibernate in only 9 caves.

Emergence counts conducted by Indiana State University researchers at known roosts in WNC from 2018-2019 suggested there were at least 2,820 gray bats in the French Broad River basin (Weber et al. 2020). Due to 2024 flooding associated with TS Helene, these numbers may be significantly lower now, though at the time of this document, the impacts from Helene on imperiled species numbers are still unknown. Throughout WNC, there are 58 current element occurrences of the gray bat based on N.C. Natural Heritage Program, NCWRC, and NCDOT records; most are from built structures (largely bridges). The number of gray bats found at each occurrence range from 1 to about 1,500 bats, with some roosts surveyed in the Weber et al. (2020) study hosting >1,000 gray bats during certain times of the season. The most recent winter population estimate of gray bats in the closest hibernaculum to the action area (Rattling Cave, near Newport TN) was 250,689 bats (TWRA 2019).



### 3.2.3 Threats

Cave disturbance and alteration, loss of forested habitat, pollution of waterways, and significant natural factors including those caused by climate change (flooding, freezing, and forest destruction) are threats to gray bats. Gray bats have been infected by the invasive fungus *Pseudogymnoascus destructans*, the causative agent of white-nose syndrome (WNS), a fungal disease contributing to the declines of several bat species in the U.S.; however, WNS is not considered a major threat to the species.

## 3.3 Northern long-eared Bat

<b>Scientific Name:</b>	<i>Myotis septentrionalis</i>
<b>Status:</b>	Endangered
<b>Date of Listing:</b>	April 1, 2015 as Threatened; November 30, 2022 as Endangered
<b>Critical Habitat:</b>	None designated

### 3.3.1 Description and Life History

The northern long-eared bat is a wide-ranging species, found in 37 states and eight provinces in North America. The species typically overwinters in caves and mines and spends the remainder of the year in forested habitats. As its name suggests, the northern long-eared bat is distinguished by its long ears, particularly as compared to other bats in the genus *Myotis*.

Northern long-eared bats are a forest bat species that roosts in a variety of forest types and structures. They are known to roost in trees and have also been documented using roost sites such as buildings, artificial roosts, and bridges. During the active season, northern long-eared bats typically roost singly or in maternity colonies underneath bark or more often in cavities or crevices of both live trees and snags (Service 2023). Males' and non-reproductive females' summer roost sites may also include cooler locations, such as caves and mines (Service 2023). With one exception, all bridge roost records in Northern Carolina are associated with a water crossing. There are no records of northern long-eared bats roosting in culverts in North Carolina, though they have been documented using culverts in other states. Northern long-eared bats will overwinter in caves or mines and have been documented using railroad tunnels, storm sewers, and bunkers. Length of hibernation varies depending on location. They may hibernate singly or in small groups and can be found hibernating in open areas but typically prefer caves with deep crevices, cracks, and bore holes that protect from drafts. They typically hibernate from September or October to March or April. More than 780 hibernacula have been documented within the northern long-eared bat range.

Prior to hibernation between mid-August and mid-November, bat activity will increase during the evenings at the entrance of a hibernaculum (fall swarming). Suitable fall swarming habitat is similar to roosting, foraging, and commuting habitat selected during the summer and is most typically within 4-5 miles of a hibernaculum (Service 2023). Likewise, in the spring they emerge from and stage near hibernacula before moving to maternity areas typically in early April to mid-May; however, they may leave as early as March. Northern long-eared bats also roost in trees near hibernacula during spring staging, and Thalken et al. (2018) found that roost trees were situated within 1.2 miles (2km) of hibernacula during spring staging and the early maternity season. The species migrates relatively short distances between maternity areas and hibernacula.

Northern long-eared bats are more likely to forage under the canopy on forested hillsides and ridges (Nagorsen and Brigham 1993) rather than along riparian areas (Brack and Whitaker 2001; LaVal et al. 1977). Because of this, alternative water sources like seasonal woodland pools may be an important source of drinking water for these bats (rather than just streams and ponds; Franci 2008). Mature forests

may be an important habitat type for foraging (Service 2015). Northern long-eared bats have a diverse diet including moths, beetles, flies, leafhoppers, caddisflies, and arachnids (Service 2020a), which they catch while in flight or by gleaning insects off vegetation (Ratcliffe and Dawson 2003).

### 3.3.2 Status and Distribution

The species' range includes all or portions of 37 eastern and mid-western states and the District of Columbia in the U.S. The northern long-eared bat's range also includes eight Canadian provinces. In WNC, the species range includes all or portions of 26 counties in the western portion of the state.

Prior to the emergence of WNS, northern long-eared bat was abundant and widespread throughout much of its range with 737 occupied hibernacula, a maximum count of 38,181 individuals and its range being spread across >1.2 billion acres in 29 states and 3 Canadian provinces. Numbers vary temporally and spatially, but abundance and occurrence on the landscape were stable (Cheng et al. 2022, p. 204; Wiens et al. 2022, p. 233). Currently, declining trends in abundance and occurrence are evident across much of northern long-eared bat's summer range. Range-wide summer occupancy declined by 80% from 2010–2019. Data collected from mobile acoustic transects found a 79% decline in range-wide relative abundance from 2009–2019 and summer mist-net captures declined by 43–77% compared to pre-WNS capture rates.

There are approximately 169 element occurrences for northern long-eared bat in NC, based on N.C. Natural Heritage Program records, 19 of which are considered historical. The number of bats found at each occurrence ranges from one to more than 80. There have been 22 documented hibernacula, all in caves or mines; however, northern long-eared bats have not been observed using hibernacula in North Carolina since 2014 (NCWRC personal communication September 2022). The Service estimates that there has been an occupancy drop of 85% and a 24% loss of winter colony sites across the Southeast Representation Unit (RPU) overall since 2006 when white-nose syndrome was first documented (Service 2022a).

### 3.3.3 Threats

The primary factor influencing the viability of the northern long-eared bat range-wide population is WNS. Other primary factors that influence the decline in northern long-eared bat numbers include wind energy mortality, effects from climate change, and habitat loss.

## 3.4 Tricolored Bat

<b>Scientific Name:</b>	<i>Perimyotis subflavus</i>
<b>Status:</b>	Proposed Endangered
<b>Date of Proposed Listing:</b>	September 14, 2022
<b>Critical Habitat:</b>	None proposed

### 3.4.1 Description and Life History

The tricolored bat is one of the smallest bats in North America. The once common species is wide-ranging across the eastern and central US and portions of southern Canada, Mexico and Central America. As its name suggests, the tricolored bat is distinguished by its unique tricolored fur that appears dark at the base, lighter in the middle and dark at the tip.

During the winter, tricolored bats are found in caves and mines, although in the southern US, where caves are sparse, tricolored bats are often found roosting in culverts. During the spring, summer and fall,



tricolored bats are found in forested habitats where they roost in trees, primarily among leaves. Additionally, tricolored bats have been observed roosting among pine needles, eastern red cedar (*Juniperus virginiana*), within artificial roost structures, beneath porch roofs, bridges, concrete bunkers, and rarely within caves. Female tricolored bats form maternity colonies and switch roost trees regularly. Maternity colonies typically consist of 1 to several females and pups. They usually have twins in late spring or early summer, which are capable of flight in four weeks.

During the winter, across much of their range tricolored bats hibernate in caves and mines; although, in the southern United States, where caves are sparse, they often hibernate in culverts, as well as sometimes in tree cavities and abandoned water wells. In the southern US, hibernation length is shorter compared to northern portions of the range and in the warmest portions of its range. Hibernating tricolored bats do not typically form large clusters; most commonly roost singly, but sometimes in pairs, or in small clusters of both sexes away from other bats (Service 2021). Tricolored bat hibernacula following population crashes from WNS generally host <100 individuals (Service 2021), though solitary hibernation can often occur with this species (Whitaker and Hamilton 1998).

Before entering hibernacula for the winter, tricolored bats demonstrate ‘swarming’ behavior. The peak swarming period for tricolored bats in much of WNC/eastern Tennessee generally starts in mid to late August and extends into November and is a sensitive period for bats. Suitable fall swarming habitat is similar to roosting, foraging, and commuting habitat selected during the summer. Spring staging is the time period between winter hibernation and spring migration to summer habitat (Service 2023). During this time, bats begin to gradually emerge from hibernation, exit the hibernacula to feed, but re-enter the same or alternative hibernacula to resume daily bouts of torpor (state of mental or physical inactivity). Tricolored bats also roost in trees near hibernacula during spring staging.

Tricolored bats are opportunistic feeders and consume small insects including caddisflies, moths, beetles, wasps, flying ants and flies. The species most commonly forages over waterways and along forest edges

### 3.4.2 Status and Distribution

Tricolored bats have a very wide range that encompasses most of the eastern US from Canada to Florida and west to New Mexico (39 states). They can be found throughout North Carolina and are one of the most commonly encountered cave-dwelling species seen in winter, albeit at much lower densities than prior to the arrival of WNS in the state.

There are 147 NC element occurrences of the tricolored bat based on N.C. Natural Heritage Program records, seven of which are considered historical. The number of bats found at each occurrence range from 1 to 3,000 bats. There have been 79 tricolored bat hibernacula documented, including caves (50), mines (22), root cellars (4), and culverts (3).

For tricolored bats, the Service split the bat’s range into three Representation Units (RPU), two of which, the Northern and Southern RPUs, include the western and eastern halves of WNC, respectively. The Service estimates that, since 2006, the Northern RPU has experienced a 17% decline in summer occupancy and a 57% decline in the number of winter colonies, while the Southern RPU has experienced a 37% decline in summer occupancy and a 24% decline in the number of winter colonies (Service 2021).

### 3.4.3 Threats

WNS is the primary driver of the species’ decline and is predicted to continue to be the primary influence into the future. Wind energy-related mortality is also considered a consequential driver to the bat’s

viability. Although habitat loss is considered pervasive across the species' range, severity has likely been low given historical abundance and spatial extent; however, as tricolored bat's spatial extent is projected to decline in the future (i.e., consolidation into fewer winter and summer colonies) negative impacts (e.g., loss of a hibernaculum or maternity colony) may be significant.

## 4. Environmental Baseline

The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process [50 CFR §402.02].

The project action areas contain the existing crossing structures and the roadway approaches, along with the existing utilities and surrounding riparian areas in which project work will occur, and are located in the Environmental Protection Agency Blue Ridge Ecoregion in WNC. Past impacts include the original construction and placement of the crossing structures within waterbodies to facilitate transportation in the surrounding locations. Because this document addresses several projects, more detailed information regarding other human activities at each location is not included for the purposes of this consultation review.

### 4.1 Appalachian Elktoe Within the Action Areas

Flooding and scour from TS Helene impacted all waterbodies included in this consultation. Yancey Bridges 097 in South Toe River and 194 in North Toe River were completely destroyed and the structures are gone. These locations are within designated critical habitat for Appalachian elktoe. Post-storm in-water surveys have not been conducted at this time, given all of the constraints already addressed, though discussions regarding site conditions as observed by the Service Asheville Field Office Aquatics Recovery Lead and/or aquatic biologists with NCWRC and NCDOT's Biological Surveys Group have occurred. While the major flood and scour event destroyed the crossing structures and degraded the habitat, the potential for individual Appalachian elktoe to still occur within the action area remains. At the time of this consultation, those individual numbers are believed to be reduced from pre-Helene conditions but are not believed to be zero. Five Appalachian elktoe per structure location are estimated based on pre-TS Helene estimates and anticipated storm losses.

### 4.2 Listed and Proposed Bats Within the Action Areas

#### **Structures**

Portions of damaged Buncombe County crossing structures 203, 396, 464, and 716; and McDowell County crossing structure 111 remain in place; however, suitable structural roosting habitat on all structures is extensively reduced and degraded from pre-storm conditions. For gray bats, primary roost structures can support several hundred to over 1,000 individuals, while the majority of structures with observed roosting gray bats in WNC contain 1 to 10 individuals. The structures supporting those higher numbers of gray bats, whether culvert or bridge, are larger than average. The northern long-eared bats observed roosting on bridges in WNC is between 1 and 2 individuals at any given time. In more detail, Natural Heritage data shows 1 bridge roost location in Graham County, 1 in Madison, and 2 in Swain (all pre-WNS except 1 Swain County location). There are currently no culvert roosting records for northern long-eared bat in NC. Records of tricolored bat roosting in bridges and culverts in WNC consist mainly of 1-2 individual per structure. Within the action areas of these damaged crossing structures, given the degraded and reduced roosting habitat available, and based on existing WNC data, it is estimated that 1 individual per species could be present within each structure at each crossing location.

### ***Trees***

Gray bats are not considered “tree-roosting” species. While individuals have been observed utilizing trees in rare occasions, they are generally considered a cave/structure-specific roosting species; therefore, no gray bats are expected to be roosting in trees within the action areas. Northern long-eared bats and tricolored bats roost in trees during the warmer months. Given the minimal amount of riparian vegetation and trees remaining within the action areas, it is unlikely that high number of bats would be utilizing the small amount of available habitat. Based on that rationale, 1 individual per species (of northern long-eared bat or tricolored bat) could be present in trees within the action area per crossing structure location.

## **5. Effects of the Action**

Under section 7(a)(2) of the ESA, "effects of the action" refers to the consequences, both direct and indirect, of an action on the species or critical habitat. The effects of the proposed action are added to the environmental baseline to determine the future baseline, which serves as the basis for the determination in this Opinion. Should the effects of the Federal action result in a situation that would jeopardize the continued existence of the species, we may propose reasonable and prudent alternatives that the Federal agency can take to avoid a violation of section 7(a)(2).

### **5.1 Appalachian Elktoe**

#### **5.1.1 Proximity of the Action, Nature of the Effect, and Disturbance Duration**

Based on the description of the action and the species’ biology, stressors to the Appalachian elktoe have been identified and are outlined below. The proximity of these actions will be within the waters occupied by Appalachian elktoe [within the action area] and duration of disturbance is expected during the construction phase of project work.

#### **5.1.2 Effects Analysis**

Direct Impacts – Direct effects are caused by the action and occur at the same time and place (50 CFR 402.02).

### ***In-water Work***

In-water work, such as the placement of causeways, demolition of remnant structures (if any), and placement of hard materials for new bents/structures or for bank stabilization, are likely to occur at some or all of the project locations. Installation of temporary causeways may result in adverse effects to Appalachian elktoe and their fish host species due to the potential to bury individuals and harm fish host individuals or disrupt passage or other behavior while they are in place. Causeways also constrict river flows, which could potentially modify the hydrology and physical habitat conditions upstream and downstream of the respective fill areas. Causeways may impact hydrology and the physical habitat of the river. Rock causeway material may be washed away during extremely high flow events, which may kill, crush, or bury individuals, or otherwise degrade mussel habitat downstream of the footprint. Causeways increase the risk of stream bed and bank scour. The habitat downstream of causeways may experience higher velocities until removal. Temporary causeways may also act as physical and high-velocity barriers to fish movement. Demolition and construction may result in the loss of materials in the waterbody. While this isn’t expected, given the implementation of BMPs, it is still possible. Materials that aren’t effectively contained during demolition or construction could serve to crush or bury aquatic species. Similarly, the placement of hard materials within the waterbody may result in crushing or burying Appalachian elktoe.

### ***Alteration of Flows and Channel Stability***

The initial construction of a crossing structure is known to cause changes in the flow of the stream and corresponding erosive processes that can alter the adjacent habitat. Channel instability occurs when scour results in degradation or when sediment deposition leads to aggradation (Rosgen 1996). Since most structures are being replaced in the same locations, any alteration of flows and channel stability associated with the new structures are anticipated to be minor and localized. That said, altering the existing in-water structures has the potential to create flow instability which could impact downstream habitat.

### ***Turbidity and Sedimentation***

Increases in turbidity and sedimentation within the action area during demolition and construction are expected. This can occur from in-water work and from the erosion of bare soil in and surrounding the construction zone, especially during heavy rain events. Sediment accumulations of less than one inch have been shown to cause high mortality in most mussel species (Ellis 1936). Adverse effects to mussels resulting from the accumulation of sediments include smothering, disruption of feeding and breeding activity, alteration of habitat, or some combination. Sediment and erosion control (SEC) devices, when properly designed and maintained, are expected to greatly reduce influxes of turbidity; however, heavy rain events can exceed SEC capacity, resulting in sediment releases which degrade mussel habitat in the vicinity.

In summary, the in-water work within the action areas are likely to adversely affect (LAA) Appalachian elktoe and take is expected. Take may occur in the form of killing, wounding, or harming individuals of the species.

### ***Accidental Spills***

The inadvertent spill or discharge of toxic pollutants, such as diesel fuel, hydraulic oil, and uncured concrete into action area waterbodies could occur during demolition and construction activities and result in mortality of Appalachian elktoe. The type, timing, amount, and proximity to the river of any accidental spills would determine the magnitude of effect to Appalachian elktoe, but may result in death, disrupt feeding or reproductive behaviors, influence animals to expend energy relocating to more favorable habitats, or otherwise reduce fitness. Significant spills resulting from negligent operation are possible, but unlikely to occur. Adhering to measures outlined in the AMMs and CMs will minimize the potential for accidental spills to occur.

Indirect Impacts – Indirect effects are defined as those that are caused by the proposed action and are later in time but are still reasonably certain to occur (50 CFR 402.02).

### ***Operational Effects***

Because these projects are limited to the replacement of damaged or destroyed crossing structures and their approaches, which will not result in changes to traffic volumes, any operational effects above the existing baseline conditions are not expected to occur; or, if they do occur, are expected to be minimal.

## **5.2 Gray Bat, Northern Long-eared Bat, and Tricolored Bat**

### **5.2.1 Proximity of the Action, Nature of the Effect, and Disturbance Duration for Bats**

Based on the description of the action and the species' biology, stressors to gray bat, northern long-eared bat, and tricolored bat have been identified and are shared below. The proximity of these actions will be within the entire action area of each project, including the structures, waterways, riparian zone, and any existing forested areas. Duration of disturbance is expected primarily during the construction phase of project work.

### 5.2.2 Effects Analysis for Bats

Replacement structures: Due to the constraints associated with the TS Helene response, such as the high volume of projects and timeline unknowns, the exact designs of replacement crossing structures are not known at the time of this document. However, according to information provided by NCDOT, the majority of replacement bridge structures are expected to be either cored slab or box beam bridges. Such precast concrete bridges may provide suitable bat roosting habitat depending on factors such as spacing between beams/girders, arrangement above any bents, and other design elements that could result in potential roosting crevices. Generally, concrete is a favorable material for roosting due to its thermal stability.

Direct Impacts – Direct effects are caused by the action and occur at the same time and place (50 CFR 402.02).

#### ***Structure Work***

The demolition of remaining portions of structures, if conducted while bats are present, could result in causing bats to flush, which would expose them to risk of predation and would cause increased energy expenditure and create the need for bats to find alternative roost locations. It could also result in physical wounding or death. High-decibel percussive noises associated with demolition or construction may cause bats roosting in close proximity to flush, exposing them to harm and increased energy expenditure. Additionally, if non-volant pups are present, while adults may be able to flush, pups would be left behind with mortality as the likely outcome. In summary, these activities, should they occur while bats are present, are expected to result in harm to gray bat, northern long-eared bat, and tricolored bat.

#### ***Tree Removal***

The removal of suitable roost trees, if conducted while northern long-eared bats or tricolored bats are present, could result in causing bats to flush, which would expose them to risk of predation and would cause increased energy expenditure and create the need for bats to find alternative roost locations. It could also result in physical wounding or death. Given the presence of alternative forested habitat in close proximity to the action areas, bats could likely find trees for roosting. Harm would be expected in the increased exposure to predation from flushing and from the potential for wounding or killing when trees are felled. Additionally, if non-volant pups are present, while adults may be able to flush, pups would be left behind with mortality as the likely outcome. In summary, these activities, should they occur while bats are present, are expected to result in harm to northern long-eared bat and tricolored bat.

Indirect Impacts – Indirect effects are defined as those that are caused by the proposed action and are later in time but are still reasonably certain to occur (50 CFR 402.02).

If bats were utilizing structures or trees (when considering northern long-eared bat and tricolored bat) within the action areas as roost sites prior to demolition/clearing/construction, and return to those roost sites to find the habitat gone or altered, the bats may then have to expend extra energy in finding alternative roosting areas. While this could occur, it is considered unlikely to result in adverse effects given that replacement structures are expected to offer suitable roosting features and alternative forested habitat is available in close proximity to the action areas.

#### ***Operational Effects***

Because these projects are limited to the replacement of damaged or destroyed crossing structures and their approaches, which will not result in changes to traffic volumes, any operational effects above the

existing baseline conditions are not expected to occur; or, if they do occur, are expected to be minimal.

### 5.3 Cumulative Effects

Cumulative effects are defined as "those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation" (50 CFR 402.02). Future federal actions unrelated to the proposed action are not considered because they require separate consultation pursuant to Section 7 of the ESA.

These structure replacements are not expected to induce land development or substantially change the function of the roadways. Any potential effects are anticipated to be localized and consistent with baseline land use patterns. Many private landowners and local governments are recovering from TS Helene and rebuilding homes/businesses and infrastructure. Therefore, there will likely be increased construction in WNC Counties for an undefined period of time. Some of this work will be conducted during seasons when bats are active on the landscape, potentially increasing exposure to construction-related stressors. However, other effects from these private actions cannot be determined at this time.

## 6. Conclusion and Jeopardy Determination

After reviewing the current status of Appalachian elktoe, gray bat, northern long-eared bat, and tricolored bat, the environmental baselines for the action areas, the effects analyses and cumulative effects, the Service's biological and conference opinions are shared below.

### 6.1 Appalachian elktoe

It is the Service's biological opinion that the proposed actions are not likely to jeopardize the continued existence of the Appalachian elktoe. This opinion is based on the following factors: Effects of the actions occur as a result the planned replacement of Yancey County Bridges 097 and 194. The species occurs in approximately 162 river miles in WNC and Eastern Tennessee (as understood pre-Helene); thus, impacts are likely to be limited to about 0.5% of the range-wide occupied habitat. Crossing structure construction activities are likely to negatively affect Appalachian elktoe within the action areas, but the incorporated conservation measures are expected to reduce impacts; notably, relocation efforts that could remove and relocate individual mussels prior to work taking place. Designated critical habitat for this species is present at Yancey Bridge 097 and 194 locations. Based on knowledge of the action area and surrounding portions of the project waters, the projects will not result in adverse modification (that is, "...no direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of listed species" (50 CFR §402.02)) to Appalachian elktoe designated critical habitat.

### 6.2 Gray Bat, Northern Long-eared Bat, and Tricolored Bat

It is the Service's biological and conference opinion that the proposed actions are not likely to jeopardize the continued existence of gray bat, northern long-eared bat, or tricolored bat. This opinion is based on the following factors: Effects of the actions occur as a result the planned replacement of Buncombe County crossing structures 203, 396, 464, and 716; and McDowell County crossing structure 111. These action areas comprise only a small amount of active season habitat within the overall ranges of these species. No changes in the long-term viability of gray bat, northern long-eared bat, or tricolored bat are expected because, given the low numbers of each species which could be expected to occur at each crossing structure location (that is, an estimate of 1 individual per species per structure and an estimate of 1 northern long-eared bat and 1 tricolored bat per forested area within each action area), and the occurrence range-wide of each species – gray bat in 14 states, northern long-eared bat in 37 states, and tricolored bat in 39 states as well as in portions of other North and Central American countries – only a miniscule



percentage of those overall populations may be affected. Crossing structure construction activities are likely to negatively affect gray bat, northern long-eared bat, and tricolored bat within the action areas, but the incorporated conservation measures are expected to reduce impacts.

## 7. Incidental Take Statement

Section 9 of the Endangered Species Act and Federal regulations pursuant to section 4(d) of the Endangered Species Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take “means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 U.S.C §1532). Harm is further defined by the Service as “an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR 17.3). Incidental taking “means any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity” (50 CFR 17.3). Harass is defined by the Service as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering” (50 CFR 17.3). Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered to be prohibited under the Endangered Species Act, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

### 7.1 Amount of Take for Appalachian Elktoe

The Service anticipates incidental take of the Appalachian elktoe may occur as a result of the demolition (if applicable) and construction of Yancey County Bridges 097 and 194. Specifically, take of the species may occur as a result of 1) riverbed disturbance in the form of bent removal and causeway construction, operation, and removal, 2) the resulting river instability, scour, sediment movement, and turbidity produced from those activities, and 3) demolition and construction activities around the crossings. During these activities, individual mussels may be crushed; harmed by increases in turbidity and scour, sediment movement, or other water quality degradation; or dislocated because of physical changes in their habitat. These impacts are expected to occur primarily within the structure construction footprints, with the potential for more minor impacts to occur 100 meters upstream and 400 meters downstream of the current structure locations.

Incidental take of Appalachian elktoe is difficult to measure or detect given that 1) mussels are small, aquatic, cryptic, and generally difficult to observe, 2) finding dead or injured mussels during or following project implementation is unlikely, 3) some incidental take is in the form of non-lethal harm and not directly observable; and 4) losses may be masked by seasonal fluctuations in numbers or other causes. Given this, the estimated amount of riverbed disturbance in acres or square feet is used as a surrogate measure of take for this Opinion. Additionally, as discussed in the Environmental Baseline, no more than 5 Appalachian elktoe are estimated to be present within the construction footprint immediately surrounding the structures and, to the best of situational abilities, efforts will be made to relocate individuals if found prior to construction in an effort to reduce mortality.

Therefore, the incidental take permitted by the Opinion would be exceeded if:

1. The construction footprint (placement of permanent fill, causeways, and associated actions) exceeds 0.35 acres (15,226 square feet) at any crossing structure construction location.
2. Take of greater than 5 Appalachian elktoe per project location is observed.

Exceedance of take as defined above will represent new information that was not considered in this Opinion and shall result in reinitiation of this consultation. The incidental take of Appalachian elktoe is expected to be in the form of harm, wounding, or death.

## 7.2 Amount of Take for Gray Bat, Northern Long-eared Bat, and Tricolored Bat

The Service anticipates incidental take of the gray bat, northern long-eared bat, and tricolored bat may occur as a result of the demolition (if applicable) and construction of Buncombe County Bridges 203, 396, 464, and 716; and McDowell County Bridge 111. Specifically, take of these species may occur as a result of flushing, wounding, or direct mortality during demolition activities (if applicable); or, for northern long-eared bat and tricolored bat, take may occur as a result of clearing suitable roost trees during times of year that these bats could be tree-roosting within the action area, which may similarly result in flushing, wounding, or direct mortality during clearing activities.

Incidental take of bats is difficult to measure or detect given that 1) the animals are small, cryptic, and generally difficult to observe, 2) finding dead or injured bats during or following project implementation is unlikely, and 3) some incidental take is in the form of non-lethal harm and not directly observable. Given this, the 1) maximum estimated tree clearing (for northern long-eared bat and tricolored bat only) and 2) number of structures replaced, are used as surrogate measures of take for this Opinion. Additionally, as discussed in the Environmental Baseline, no more than 1 individual of gray bat or 2 individuals of northern long-eared bat or tricolored bat (given structure and tree roosting) are estimated to be present within the action areas of each crossing structure.

Therefore, the incidental take permitted by the Opinion would be exceeded if:

1. \*Tree clearing amount exceeds 0.10 acre at a single structure location for the crossing structures listed at the beginning of section 7.2.
2. Any more than one structure is demolished/replaced per crossing structure, as listed at the beginning of section 7.2.

*\*For northern long-eared bat and tricolored bat only*

Exceedance of take as defined above will represent new information that was not considered in this Opinion and shall result in reinitiation of this consultation. The incidental take of gray bat, northern long-eared bat, and tricolored bat is expected to be in the form of harm, wounding, or death.

## 7.3 Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure(s) are necessary and appropriate to minimize take of Appalachian elktoe, gray bat, northern long-eared bat, and tricolored bat. These non-discretionary measures reduce the level of take associated with project activities and include only actions that occur within the action area.

1. NCDOT shall ensure that the contractor(s) understands and follows the measures listed in the “Conservation Measures”, “Reasonable and Prudent Measures,” and “Terms and Conditions” sections of this Opinion.
2. NCDOT shall minimize the area of disturbance within the action areas to only the area necessary for the safe and successful implementation of the proposed actions.
3. NCDOT shall monitor and document any take numbers and the surrogate measures of take and report those to the Service in a batched format.



## 7.4 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the Applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and/or monitoring requirements. When incidental take is anticipated, the terms and conditions must include provisions for monitoring project activities to determine the actual project effects on listed fish or wildlife species (50 CFR §402.14(i)(3)). These terms and conditions are nondiscretionary. If this conference opinion is adopted as a biological opinion following a listing or designation, these terms and conditions will be non-discretionary.

1. NCDOT shall adhere to all measures as listed in the Avoidance and Minimization and Conservation Measures section as summarized in this Opinion.
2. The NCDOT will immediately inform the Service if the amount or extent of incidental take in the incidental take statement is exceeded.
3. When incidental take is anticipated, the Terms and Conditions must include provisions for monitoring project activities to determine the actual project effects on listed fish or wildlife species (50 CFR §402.14(i)(3)). In order to monitor the impact of incidental take, the NDOT must report the action impacts on the species to the Service according to the following:
  - a. The NCDOT will submit a report each year not later than September 30 identifying, per individual project (via Service Log # and NCDOT identifiers), the following for the preceding calendar year ending December 31:
    - i. Acreage of in-water impacts, if LAA for Appalachian elktoe.
    - ii. Acreage and dates of tree removal (if any), if LAA for bats (excepting gray bat).
    - iii. Dates of structure removal (if any), if LAA for bats.

## 8. Conservation Recommendations

Section 7(a)(1) of the Endangered Species ESA directs Federal agencies to use their authorities to further the purposes of the Endangered Species ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- **Eastern Hellbender:** Occurrence records for eastern hellbender exist at Yancey County structure 097 in the South Toe River. Ahead of work at this location, coordinate with the NCWRC and the Service to survey for/relocate any hellbender that may be within the action area and vulnerable to impacts from project work.
- **State Species of Concern:** Several aquatic species with North Carolina designations occur at Yancey County structure 194 in the North Toe River. While these species are not currently afforded legal protection under the ESA, we recommend the most protective sediment and erosion control measures possible be used in waters occupied by these species, and we encourage you to coordinate any relocation efforts of such species with the NCWRC.
- **Provide Terrestrial Wildlife Passage:** Where riparian corridors suitable for wildlife movement occur adjacent to a project, a spanning structure that also spans a portion of the floodplain and provides or maintains a riprap-free level path underneath for wildlife passage would provide a safer roadway and facilitate wildlife passage. A 10-foot strip may be ideal, though smaller widths can also be beneficial. Alternatively, a “wildlife path” can be constructed with a top-dressing of finer stone (such as smaller aggregate or on-site alluvial material) to fill riprap voids if full bank plating is required. If a multi-barrel culvert is used, the low flow barrel(s) should accommodate the entire stream width and the other barrel should have sills to the floodplain level and be back-filled to

provide dry, riprap-free wildlife passage and well as periodic floodwater passage.

For the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

## 9. Reinitiation Notice

This concludes formal consultation on the action(s) outlined in the consultation request dated December 12, 2024. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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- Wiens, A.M., J. Szymanski, B.J. Udell, and W. E. Thogmartin. 2022. Winter Colony Count Data Assessment and Future Scenarios for the Little Brown, Northern Long-eared, and Tricolored Bat Species Status Assessment. Chapter E in Straw, B.R, J. A. Martin, J.D. Reichard, and B.E. Reichert, editors. Analytical Assessments in Support of the U.S. Fish and Wildlife Service 3-Bat Species Status Assessment. Cooperator Report prepared in cooperation with the U.S. Geological Survey, United States Fish and Wildlife Service and Bat Conservation International.  
<https://doi.org/10.7944/P9B4RWEU>
- Whitaker, J. O., Jr., L. Pruitt, and S. Pruitt. 2001. The gray bat, *Myotis grisescens*, in Indiana. *Proceedings of the Indiana Academy of Science* 110:114-122.

# Section 106 Checklist

## Cultural Resources Programmatic Agreement Screening Checklist for Section 106

**Project TIP:** FA: WBS: DF18313.2059011

**Project Name:** repair/replace Bridge 111 **County:** McDowell

**Project Description:** Repair/replace Bridge 111 over North Fork Catawba River on Pitts Station Road due to damages incurred by Hurricane Helene

**Funding Source:** anticipated federal reimbursement **Lead Federal Agency:** FHWA/FEMA

**Permits Anticipated:** none anticipated

### **Instructions:**

NCDOT Project Managers, Project Engineers, or the Division Environmental Staff shall complete the following checklist based upon knowledge of the project site and adjacent parcels. Webservices (<https://www.ncdcr.gov/about/history/division-historical-resources/gis-maps-and-data>) should be reviewed for NRHP Eligible or Listed Buildings, Districts, Objects, Sites, or Structures. Before checking “Unable to Determine”, efforts should be made to acquire any available information. If the answer to any question is “Yes” or “Unable to Determine”, the undertaking is subject to further historic preservation review by NCDOT Cultural Resources staff. If answers to all the questions are “No”, the undertaking will be considered to have *Little Potential to Cause Effects – Exempt Activities* and excluded from further historic preservation review, until differing information is discovered. Please reference “Appendix A *Exempt Activities Under Section 106*” of the Programmatic Agreement for Transportation Program in North Carolina prior to completion.

	Yes	No	Unable to Determine
A. Would this activity have the potential to cause effects on historic properties, assuming historic properties are present? See list in Appendix A.		X	
B. Is this project directly related to other actions with individually insignificant, but cumulatively significant environmental effects?		X	
C. Are you aware of any concerns raised by the owner of a historic property or public controversy for this undertaking?		X	
D. Locations of cemeteries have been found on the webservices? ( <a href="https://www.ncdcr.gov/about/history/division-historical-resources/gis-maps-and-data">https://www.ncdcr.gov/about/history/division-historical-resources/gis-maps-and-data</a> )		X	

By my signature, I certify that I have completed a site visit or am familiar with the specifics of the project and to the best of my knowledge answers to the questions above are correct. I also understand that no further environmental analysis is required at this time, as all of the answers are “No”.

Christine Farrell

*Christine Farrell*

11/6/2024

Name (print)

Signature

Date

# NEPA Document

## Type I or II Categorical Exclusion Action Classification Form

STIP/Project No. Bridge 111, Div 13, McDowell County

WBS/DF Element DF18313.2059011

Federal Project No. \_\_\_\_\_

### A. Project Description:

The North Carolina Department of Transportation (NCDOT) intends to re-establish Bridge 111 over North Fork Catawba River on Pitts Station Road in McDowell County, North Carolina (Division 13). See vicinity map.

### B. Description of Need and Purpose:

The Purpose of the project is to replace a structure damaged by floodwaters associated with Hurricane Helene which made landfall in Florida on September 26, 2024. The repair/replacement work is needed to restore essential traffic in Western North Carolina.

### C. Categorical Exclusion Action Classification:

**Type I(B) - Ground Disturbing Action**

### D. Proposed Improvements:

9. The following actions for transportation facilities damaged by an incident resulting in an emergency declared by the Governor of the State and concurred in by the Secretary, or a disaster or emergency declared by the President pursuant to the Robert T. Stafford Act (42 U.S.C. 5121):

a) Emergency repairs under 23 U.S.C. 125; and

b) The repair, reconstruction, restoration, retrofitting, or replacement of any road, highway, bridge, tunnel, or transit facility (such as a ferry dock or bus transfer station), including ancillary transportation facilities (such as pedestrian/bicycle paths and bike lanes), that is in operation or under construction when damaged and the action:

i) Occurs within the existing right-of-way and in a manner that substantially conforms to the preexisting design, function, and location as the original (which may include upgrades to meet existing codes and standards as well as upgrades warranted to address conditions that have changed since the original construction); and

ii) Is commenced within a 2-year period beginning on the date of the declaration.

and/or

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

### E. Special Project Information:

NCDOT conducted a desktop GIS analysis for potential natural and human environment features in early November 2024. The study area was defined as a 200-foot buffer around the bridge location. NCDOT is utilizing an Emergency Express Design-Build contracting process to expedite this process. The repair/replacement bridge work is anticipated to occur within the current NCDOT right-of-way (ROW). If additional ROW is required, or if the final design results in potential impacts outside of the



study area, NCDOT will re-evaluate and document any additional effects. NCDOT is conducting ongoing federal and state agency coordination to determine the most expedient processes for accomplishing NEPA compliance while adhering to emergency relief protocols.

NCDOT is providing comprehensive public outreach to our western NC communities in lieu of site-specific outreach. As site-specific information becomes available, NCDOT will use its various outreach platforms to inform the public.

A Direct and Indirect Screening Tool (DIST) was used to assess potential impacts to the local community, farm lands, and pedestrian accommodations (see project site). The bridge location is surrounded by protected farmland. Should any additional ROW or permanent easements be needed after design is available, the preliminary screening process should be initiated with Community Studies.

The NCDOT 106 PA checklist was completed for this project (see project site). The checklist determined the project is exempt from further Section 106 review in accordance with NCDOT's Section 106 PA. The PA also exempts the project from any further tribal coordination.

The United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool was reviewed on November 1, 2024. USFWS lists the following species below as federally protected with potential to be found within the project study area as of this date:

Species Name	Scientific Name	ESA Status	Biological Conclusion	Habitat Present
Gray bat	<i>Myotis grisescens</i>	Endangered	MALAA	Yes
Northern Long-eared bat	<i>Myotis septentrionalis</i>	Endangered	MALAA	Yes
Tricolored bat	<i>Perimyotis subflavus</i>	Proposed Endangered	MALAA	Yes
Small whorled pogonia	<i>Isotria medeoloides</i>	Threatened	No Effect	No

F. Project Impact Criteria Checklists:

F2. Ground Disturbing Actions – Type I (Appendix A) & Type II (Appendix B)				
<p>Proposed improvement(s) that fit Type I Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix A) including 2, 3, 6, 7, 9, 12, 18, 21, 22 (ground disturbing), 23, 24, 25, 26, 27, 28, &amp;/or 30; &amp;/or Type II Actions (NCDOT-FHWA CE Programmatic Agreement, Appendix B) answer the project impact threshold questions (below) and questions 8 – 31.</p> <ul style="list-style-type: none"> <li><i>If any question 1-7 is checked “Yes” then NCDOT certification for FHWA approval is required.</i></li> <li><i>If any question 1-31 is checked “Yes” then additional information will be required for those questions in Section G.</i></li> </ul>				
<p><b>PROJECT IMPACT THRESHOLDS</b> (FHWA signature required if any of the questions 1-7 are marked “Yes”.)</p>			Yes	No
1	Does the project require formal consultation with U.S. Fish and Wildlife Service (USFWS).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2	Does the project result in impacts subject to the conditions of the Bald and Golden Eagle Protection Act (BGEPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Does the project generate substantial controversy or public opposition, for any reason, following appropriate public involvement?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
4	[REDACTED]	<input type="checkbox"/>	<input type="checkbox"/>	
5	Does the project involve a residential or commercial displacement, or a substantial amount of right of way acquisition?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Does the project require an Individual Section 4(f) approval?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7	Does the project include adverse effects that cannot be resolved with a Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act (NHPA) or have an adverse effect on a National Historic Landmark (NHL)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<p>If any question 8-31 is checked “Yes” then additional information will be required for those questions in Section G.</p>				
<p><b>Other Considerations</b></p>			Yes	No
8	Is an Endangered Species Act (ESA) determination unresolved or is the project covered by a Programmatic Agreement under Section 7?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
9	Is the project located in anadromous fish spawning waters?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
10	Does the project impact waters classified as Outstanding Resource Water (ORW), High Quality Water (HQW), Water Supply Watershed Critical Areas, 303(d) listed impaired water bodies, buffer rules, or Submerged Aquatic Vegetation (SAV)? <a href="https://data-ncdenr.opendata.arcgis.com/datasets/surface-water-classifications/explore">https://data-ncdenr.opendata.arcgis.com/datasets/surface-water-classifications/explore</a>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11	Does the project impact Waters of the United States in any of the designated mountain trout streams? <a href="https://data-ncdenr.opendata.arcgis.com/datasets/surface-water-classifications/explore">https://data-ncdenr.opendata.arcgis.com/datasets/surface-water-classifications/explore</a>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

12	Does the project require a U.S. Army Corps of Engineers (USACE) Individual Section 404 Permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	Will the project require an easement from a Federal Energy Regulatory Commission (FERC) licensed facility?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14	Does the project include a Section 106 of the National Historic Preservation Act (NHPA) effects determination other than a No Effect, including archaeological remains?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
15	Does the project involve GeoEnvironmental Sites of Concerns such as gas stations, dry cleaners, landfills, etc.?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
16	Does the project require work encroaching and adversely affecting a regulatory floodway or work affecting the base floodplain (100-year flood) elevations of a water course or lake, pursuant to Executive Order 11988 and 23 CFR 650 subpart A?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
17	Is the project in a Coastal Area Management Act (CAMA) county and substantially affects the coastal zone and/or any Area of Environmental Concern (AEC)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
18	Does the project require a U.S. Coast Guard (USCG) permit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
19	Does the project involve construction activities in, across, or adjacent to a designated Wild and Scenic River present within the project area? <a href="https://www.rivers.gov/carp/map">https://www.rivers.gov/carp/map</a>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
20	Does the project involve Coastal Barrier Resources Act (CBRA) resources?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
21	Does the project impact federal lands (e.g. U.S. Forest Service (USFS), USFWS, etc.) or Tribal Lands?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
22	Does the project involve any changes in access control or the modification or construction of an interchange on an interstate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
23	Does the project have a permanent adverse effect on local traffic patterns or community cohesiveness?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
24	Will maintenance of traffic cause substantial disruption?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
25	Is the project inconsistent with the STIP, and where applicable, the Metropolitan Planning Organization's (MPO's) Transportation Improvement Program (TIP)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
26	Does the project require the acquisition of lands under the protection of Section 6(f) of the Land and Water Conservation Act, the Federal Aid in Fish Restoration Act, the Federal Aid in Wildlife Restoration Act, Tennessee Valley Authority (TVA), Tribal Lands, or other unique areas or special lands that were acquired in fee or easement with public-use money and have deed restrictions or covenants on the property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
27	Does the project involve Federal Emergency Management Agency (FEMA) buyout properties under the Hazard Mitigation Grant Program (HMGP)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
28	Does the project include a <i>de minimis</i> or programmatic Section 4(f)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
29	Is the project considered a Type I under the NCDOT Noise Policy?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
30	Is there prime or important farmland soil impacted by this project as defined by the Farmland Protection Policy Act (FPPA)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
31	Are there other issues that arose during the project development process that affected the project decision?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

1. The remaining sections of the structure provide habitat for listed bats. NCDOT is unable to determine the time of year that demolition will occur for the structure, therefore presence is assumed and a MALAA biological determination has been rendered. NCDOT has initiated the Section 7 consultation process to ensure the project minimizes effects to listed bat species.

8. NCDOT and our federal partners, USACE and FHWA, completed consultation with USFWS in August 2024 to develop a Programmatic Section 7 Agreement for federally listed bat species in western NC (Divisions 9-14) after initiating the formal consultation process on 5/16/24. Per 50 CFR 402.12 issuance of a Programmatic Biological Opinion (PBO) was required on or before 09/30/24. Following recent and ongoing discussions with all parties, USFWS is expected to issue the PBO in February 2025. Once the PBO is issued, if Section 7 for this project has not been completed, it may need to be evaluated under the terms and conditions of the agreement.

11. North Fork Catawba River is a designated trout water per NCDWR Surfacewater Classification system. If a USACE 404 permit is required for this project, it may include requirements related to trout moratoriums.

16. The County is a participant in the Federal Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA). The project is within a Flood Hazard Zone for which the 100-year base flood elevations and corresponding regulatory floodway/non-encroachment area have been established. The project intersects a FEMA mapped stream studied by the North Carolina Floodplain Mapping Program.

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.

25. This project is an emergency relief project due to Hurricane Helene impacts. Per 40 CFR § 93.126, it is exempt from the requirement to determine conformity because it does not involve substantial functional, locational or capacity changes (23 CFR 450.218(g)).

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

## **NCDOT PROJECT COMMITMENTS**

WBS/DF DF18313.2059011

Re-establishment of Bridge 111 over North Fork Catawba River on Pitts Station Road  
McDowell County

Federal Aid Project No. **Federal Aid Number**

### **COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN**

The remaining sections of the structure provide habitat for listed bats. NCDOT is unable to determine the time of year that demolition will occur for the structure, therefore presence is assumed and a MALAA biological determination has been rendered. NCDOT has initiated the Section 7 consultation process to ensure the project minimizes effects to listed bat species.

NCDOT and our federal partners, USACE and FHWA, completed consultation with USFWS in August 2024 to develop a Programmatic Section 7 Agreement for federally listed bat species in western NC (Divisions 9-14) after initiating the formal consultation process on 5/16/24. Per 50 CFR 402.12 issuance of a Programmatic Biological Opinion (PBO) was required on or before 09/30/24. Following recent and ongoing discussions with all parties, USFWS is expected to issue the PBO in February 2025. Once the PBO is issued, if Section 7 for this project has not been completed, it may need to be evaluated under the terms and conditions of the agreement.

#### **Monarch Butterfly**

The Monarch Butterfly was proposed for federal listing in December 2024. However, no restrictions will take effect until the proposal is finalized, which is expected in late 2025 or early 2026. Until then, proposed species do not receive protection under the Endangered Species Act (ESA), except that federal action agencies must ensure their actions do not jeopardize the species' existence. These agencies may also consult with the U.S. Fish and Wildlife Service (USFWS) to obtain a conference opinion, which will automatically convert to a biological opinion upon the final listing decision.

#### **Construction in FEMA Coordination**

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall: (1) construct all vertical and horizontal elements within the floodplain as designed; and (2) consult with the Hydraulics Unit of any planned deviation of these elements within the floodplain prior to commencing any such changes; and (3) submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction. The Hydraulics Unit will then verify either: (1) the drainage structure(s) and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically; or (2) any changes made to the plans were reviewed and approved to meet FEMA SFHA compliance; or (3) appropriate mitigation measures will be achieved prior to project close-out.

North Fork Catawba River is a designated trout water per NCDWR Surfacewater Classification system. If a USACE 404 permit is required for this project, it may include requirements related to trout moratoriums.

I. Categorical Exclusion Approval:

STIP/Project No. Bridge 111, Div 13, McDowell County

WBS/DF Element DF18313.2059011

Federal Project No. \_\_\_\_\_

**Prepared By:**

12/23/24

Date



Christine Farrell, NEPA Program Consultant  
Environmental Policy Unit, NCDOT

**Prepared For:**

NCDOT Division 13

**Reviewed By:**

2/10/2025

Date



Marissa Cox, Western Regional Team Lead  
Environmental Policy Unit, NCDOT



**Approved**

- If NO grey boxes are checked in Section F (pages 2 and 3), NCDOT approves the Type I or Type II Categorical Exclusion.



**Certified**

- If ANY grey boxes are checked in Section F (pages 2 and 3), NCDOT certifies the Type I or Type II Categorical Exclusion for FHWA approval.
- If classified as Type III Categorical Exclusion.

2/10/2025

Date

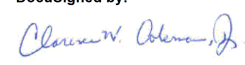


John Jamison, Environmental Policy Unit Manager  
North Carolina Department of Transportation

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

04/03/2025

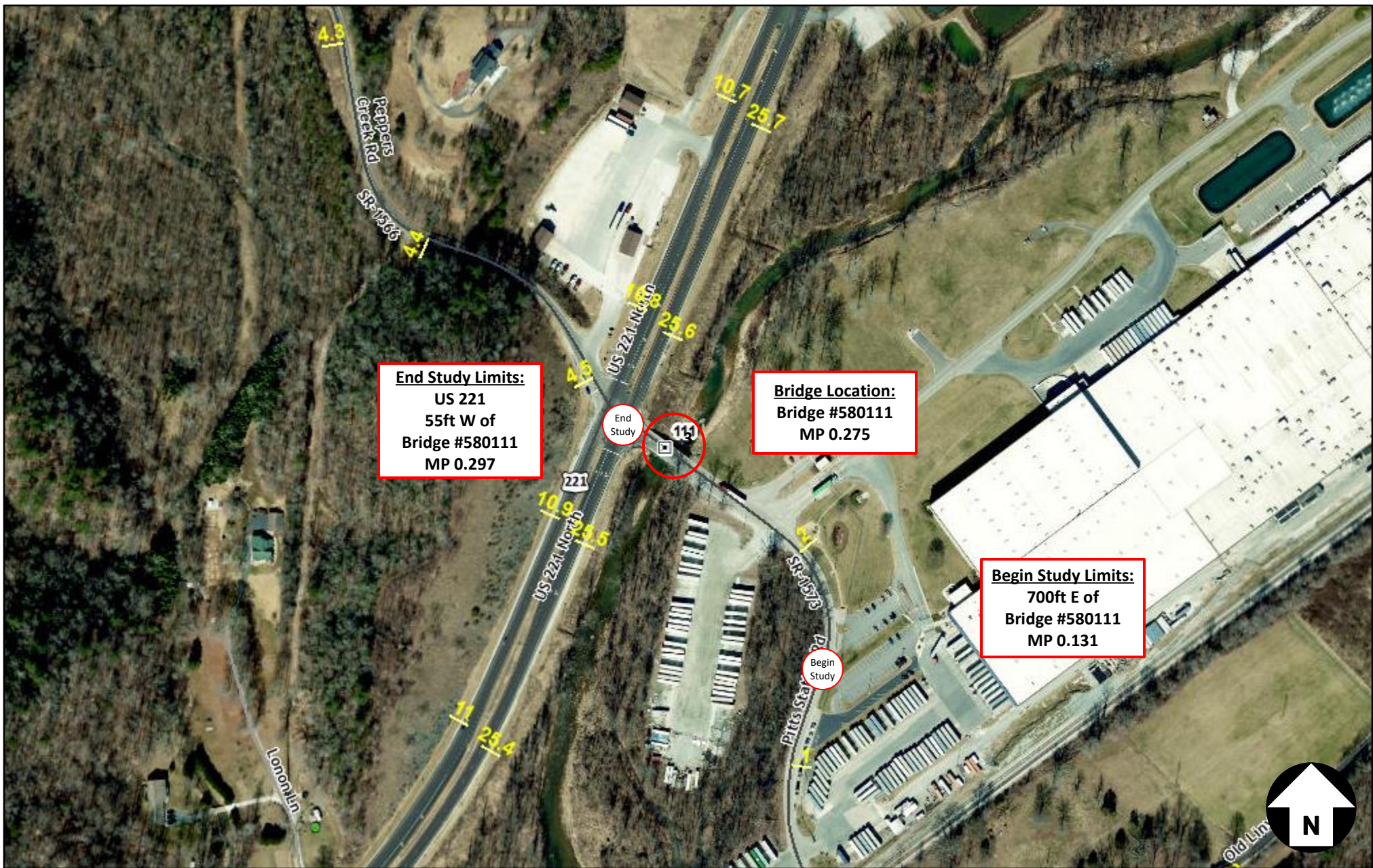
Date

DocuSigned by:  
  
E932DEEC5B6240F...

for Yolonda K. Jordan, Division Administrator  
Federal Highway Administration

*Note: Prior to ROW or Construction authorization, a consultation may be required (please see Section VII of the NCDOT-FHWA CE Programmatic Agreement for more details).*





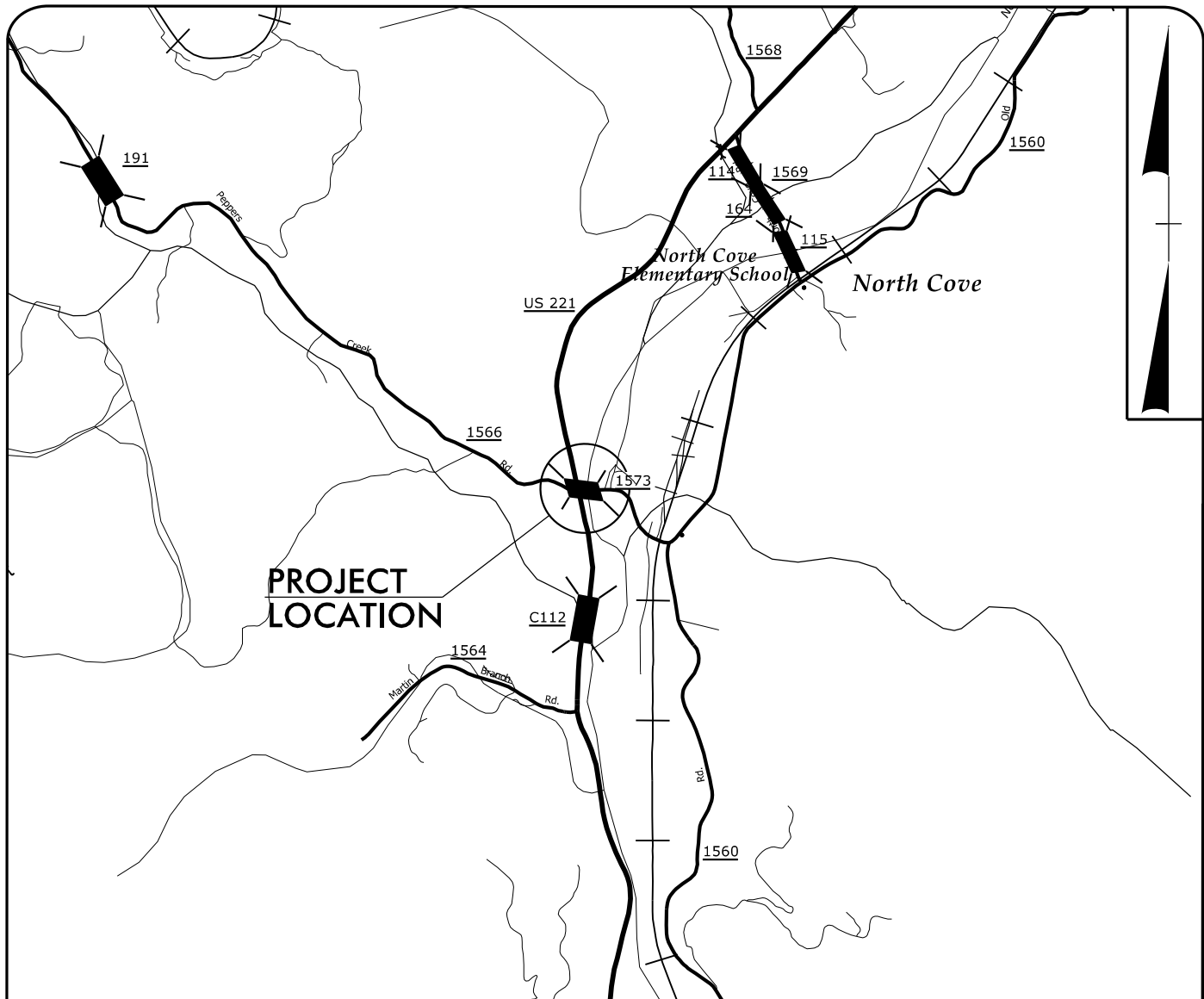
Bridge Number	Division	County	Location Description	Latitude	Longitude
580111	13	McDowell	SR 1573 (Pitts Station Road) from US 221 to 700ft E of Bridge #580111	35.834524	-82.002257



PROJECT: DF18313.2059011.PR

CONTRACT: C205019

See Sheet 1A For Index of Sheets



VICINITY MAP (NTS)

DRPS PLANS

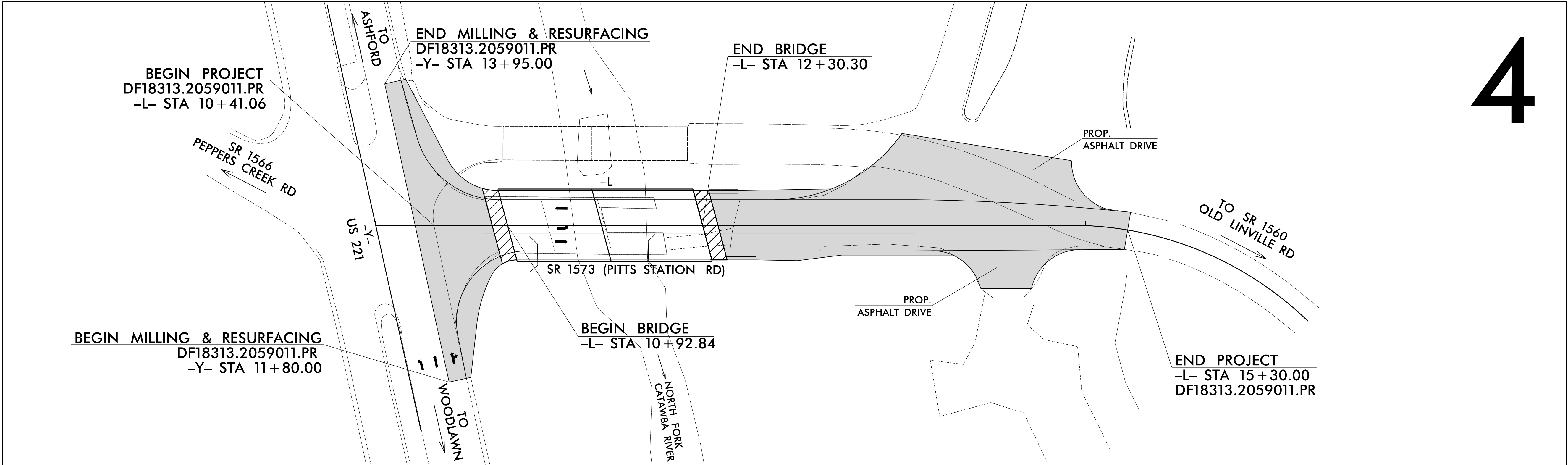
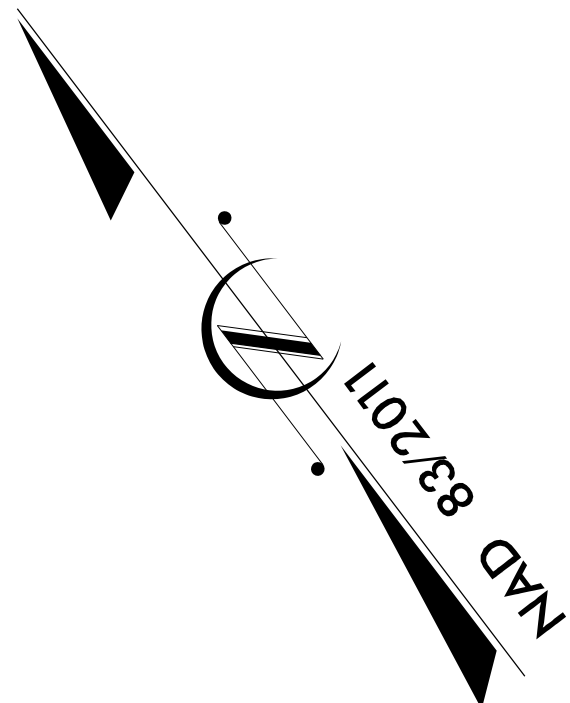
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

MCDOWELL COUNTY

LOCATION: REPLACEMENT OF STRUCTURE #580111  
ON SR 1573 (PITTS STATION RD) OVER  
NORTH FORK CATAWBA RIVER

TYPE OF WORK: GRADING, DRAINAGE  
PAVING, & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18313.2059011.PR	1	
STATE PROJ. NO.	P. A. PROJ. NO.	DESCRIPTION	
DF18313.2059011.PR		PE	
DF18313.2059011.PR		R/W	
DF18313.2059011.PR		UTIL.	
DF18313.2059011.PR		CONST.	

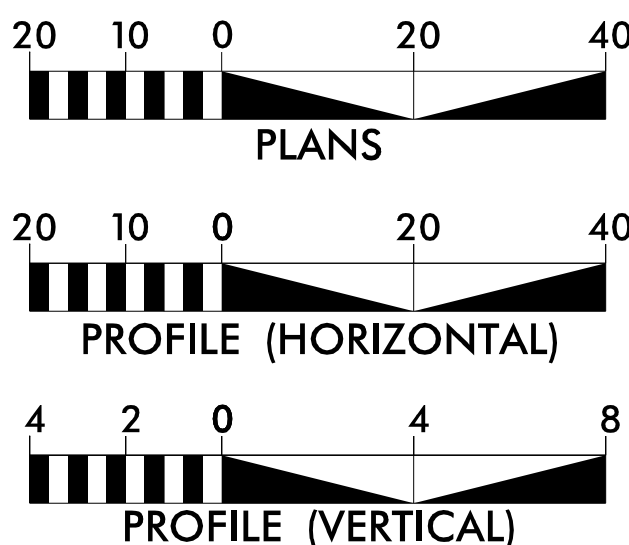


4

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

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 300  
ADT 2050 = 390  
V = 40 MPH  
TTST = 3% DUAL = 3%  
FUNC CLASS = LOCAL  
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT DF18313.2059011.PR = 0.067 MILES  
LENGTH OF STRUCTURE PROJECT DF18313.2059011.PR = 0.026 MILES  
TOTAL LENGTH OF PROJECT DF18313.2059011.PR = 0.093 MILES

PLANS PREPARED BY:  
  
TGS ENGINEERS  
2011 W. MARION ST  
SHELBY, NC 28150  
PH: (704) 476-0003  
CORP. LICENSE NO. C-0275

R.E. BURNS & SONS CO  
P.O. BOX 7168  
STATESVILLE, NC 28687  
PH: (704) 924-8648

2024 STANDARD SPECIFICATIONS  
RIGHT OF WAY DATE:  
DEC. 17, 2024  
LETTING DATE:  
DEC. 17, 2024

PLANS PREPARED FOR:  
NCDOT  
ALTERNATIVE DELIVERY UNIT  
1000 Birch Ridge Dr.  
Raleigh, NC 27610

JIMMY L. TERRY, PE  
PROJECT ENGINEER

AUSTIN R. TURNER, PE  
PROJECT DESIGN ENGINEER

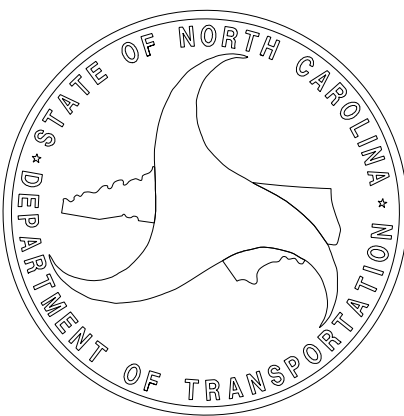
BYRON T. KYLE  
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.





STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

05/20/24

Note: Not to Scale

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin (EIP)	
Computed Property Corner	
Existing Concrete Monument (ECM)	
Parcel / Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	
Sign	
Well	
Small Mine	
Foundation	
Area Outline	
Cemetery	
Building	
School	
Church	
Dam	

HYDROLOGY:

Stream or Body of Water	
Hydro, Pool or Reservoir	
Jurisdictional Stream	
Buffer Zone 1	
Buffer Zone 2	
Flow Arrow	
Disappearing Stream	
Spring	
Wetland	
Proposed Lateral, Tail, Head Ditch	
False Sump	

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

Primary Horiz Control Point	
Primary Horiz and Vert Control Point	
Secondary Horiz and Vert Control Point	
Vertical Benchmark	
Existing Right of Way Monument	
Proposed Right of Way Monument (Rebar and Cap)	
Proposed Right of Way Monument (Concrete)	
Existing Permanent Easement Monument	
Proposed Permanent Easement Monument (Rebar and Cap)	
Existing C/A Monument	
Proposed C/A Monument (Rebar and Cap)	
Proposed C/A Monument (Concrete)	
Existing Right of Way Line	
Proposed Right of Way Line	
Existing Control of Access Line	
Proposed Control of Access Line	
Proposed ROW and CA Line	
Existing Easement Line	
Proposed Temporary Construction Easement	
Proposed Temporary Drainage Easement	
Proposed Permanent Drainage Easement	
Proposed Permanent Drainage/Utility Easement	
Proposed Permanent Utility Easement	
Proposed Temporary Utility Easement	
Proposed Aerial Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	

VEGETATION:

Single Tree	
Single Shrub	
Hedge	

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

\* SUE - Subsurface Utility Engineering  
LOS - Level of Service - A,B,C or D (Accuracy)

POWER:

Existing Power Pole	
Proposed Power Pole	
Existing Joint Use Pole	
Proposed Joint Use Pole	
Power Manhole	
Power Line Tower	
Power Transformer	
U/G Power Cable Hand Hole	
H-Frame Pole	
U/G Power Line Test Hole (SUE - LOS A)*	
U/G Power Line (SUE - LOS B)*	
U/G Power Line (SUE - LOS C)*	
U/G Power Line (SUE - LOS D)*	

TELEPHONE:

Existing Telephone Pole	
Proposed Telephone Pole	
Telephone Manhole	
Telephone Pedestal	
Telephone Cell Tower	
U/G Telephone Cable Hand Hole	
U/G Telephone Test Hole (SUE - LOS A)*	
U/G Telephone Cable (SUE - LOS B)*	
U/G Telephone Cable (SUE - LOS C)*	
U/G Telephone Cable (SUE - LOS D)*	
U/G Telephone Conduit (SUE - LOS B)*	
U/G Telephone Conduit (SUE - LOS C)*	
U/G Telephone Conduit (SUE - LOS D)*	
U/G Fiber Optics Cable (SUE - LOS B)*	
U/G Fiber Optics Cable (SUE - LOS C)*	
U/G Fiber Optics Cable (SUE - LOS D)*	

WATER:

Water Manhole	
Water Meter	
Water Valve	
Water Hydrant	
U/G Water Line Test Hole (SUE - LOS A)*	
U/G Water Line (SUE - LOS B)*	
U/G Water Line (SUE - LOS C)*	
U/G Water Line (SUE - LOS D)*	
Above Ground Water Line	

TV:

TV Pedestal	
TV Tower	
U/G TV Cable Hand Hole	
U/G TV Test Hole (SUE - LOS A)*	
U/G TV Cable (SUE - LOS B)*	
U/G TV Cable (SUE - LOS C)*	
U/G TV Cable (SUE - LOS D)*	
U/G Fiber Optic Cable (SUE - LOS B)*	
U/G Fiber Optic Cable (SUE - LOS C)*	
U/G Fiber Optic Cable (SUE - LOS D)*	

GAS:

Gas Valve	
Gas Meter	
U/G Gas Line Test Hole (SUE - LOS A)*	
U/G Gas Line (SUE - LOS B)*	
U/G Gas Line (SUE - LOS C)*	
U/G Gas Line (SUE - LOS D)*	
Above Ground Gas Line	

SANITARY SEWER:

Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE - LOS A)*	
SS Force Main Line (SUE - LOS B)*	
SS Force Main Line (SUE - LOS C)*	
SS Force Main Line (SUE - LOS D)*	

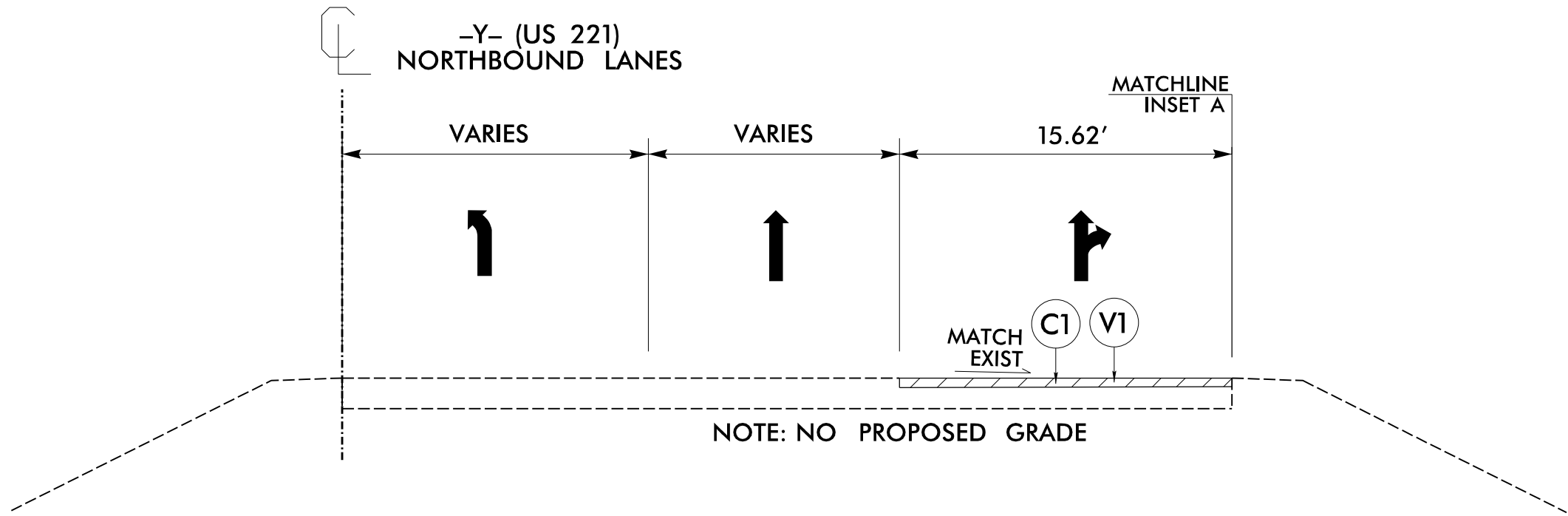
MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE - LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

6/2/299

PAVEMENT SCHEDULE (OCTOBER 28, 2024)	
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3 " ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL
V1	1½" MILLING EXISTING PAVEMENT (SEE MILLING DETAILS THIS SHEET)
V2	INCIDENTAL MILLING, SEE THIS SHEET FOR DETAIL

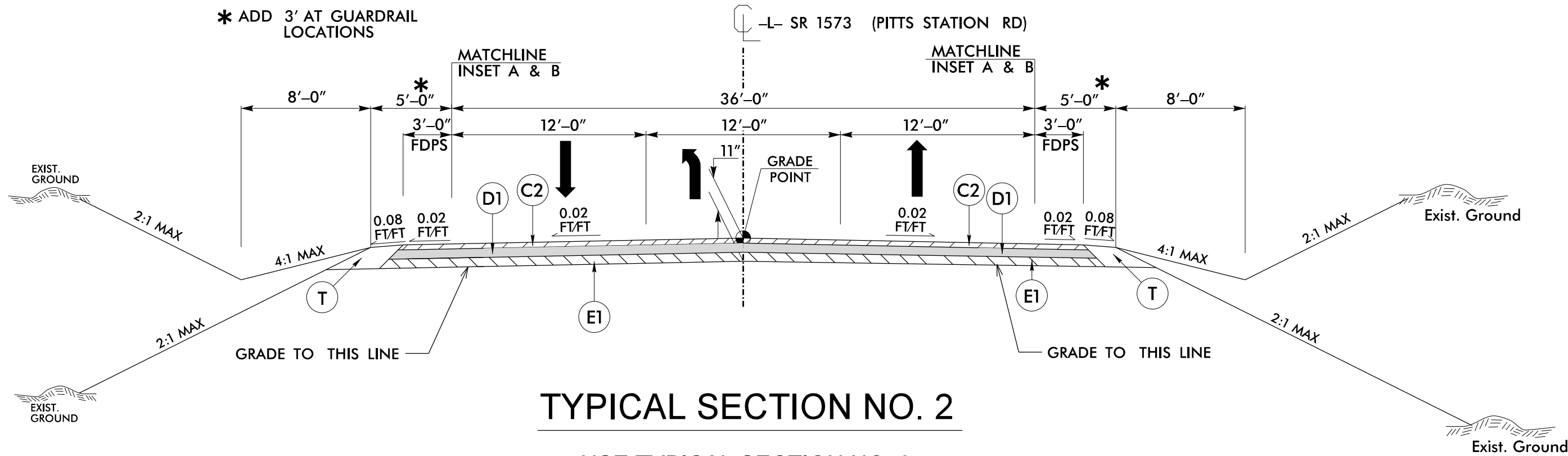
PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN.



### TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

-Y- STA. 11+80.00 RT TO -Y- STA. 13+95.00 RT



### TYPICAL SECTION NO. 2

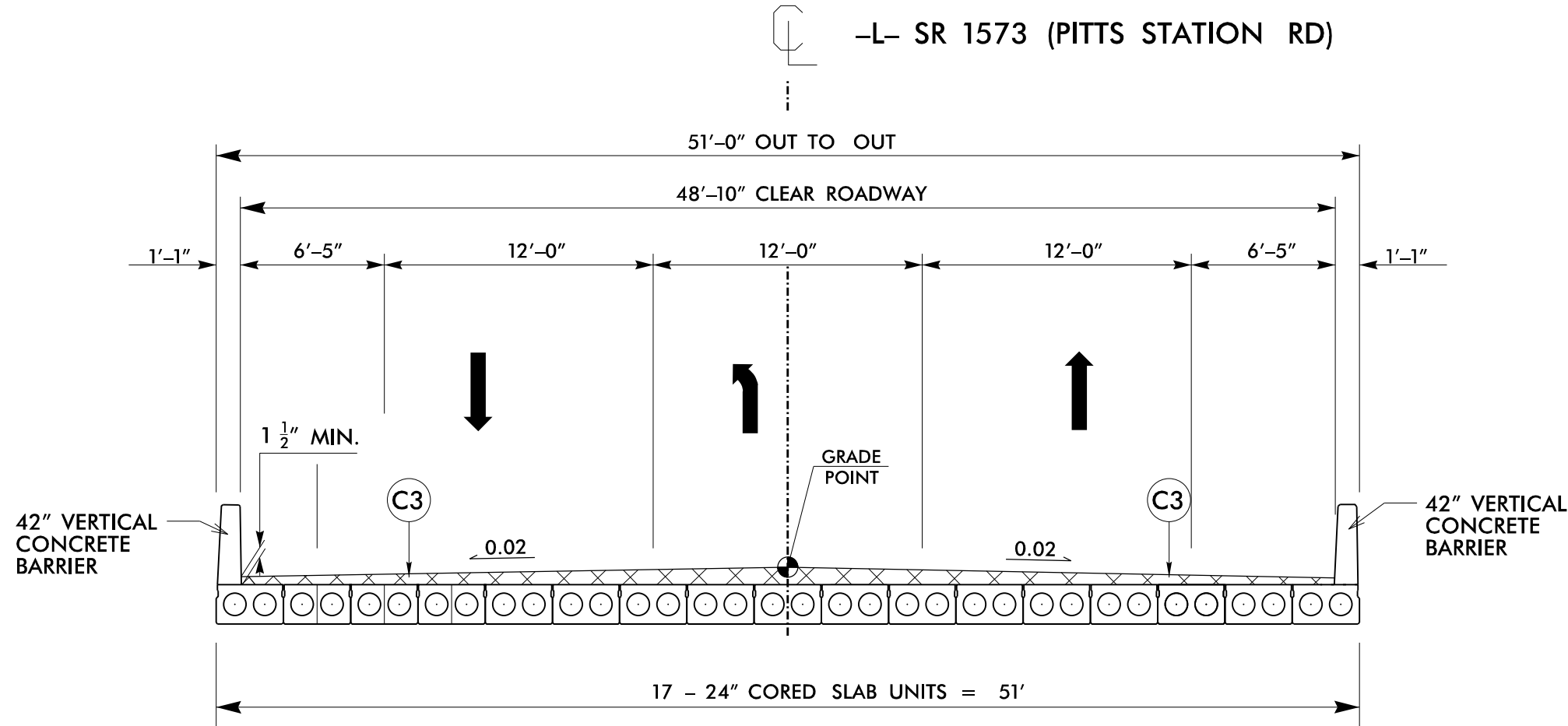
USE TYPICAL SECTION NO. 2

-L- STA. 10+41.06 TO -L- STA. 10+92.84 (BEGIN BRIDGE)

-L- STA. 12+30.30 (END BRIDGE) TO -L- STA. 13+80.00

NOTE: TRANSITION BETWEEN EXISTING AND TYP. SECT. NO.2 AS FOLLOWS:

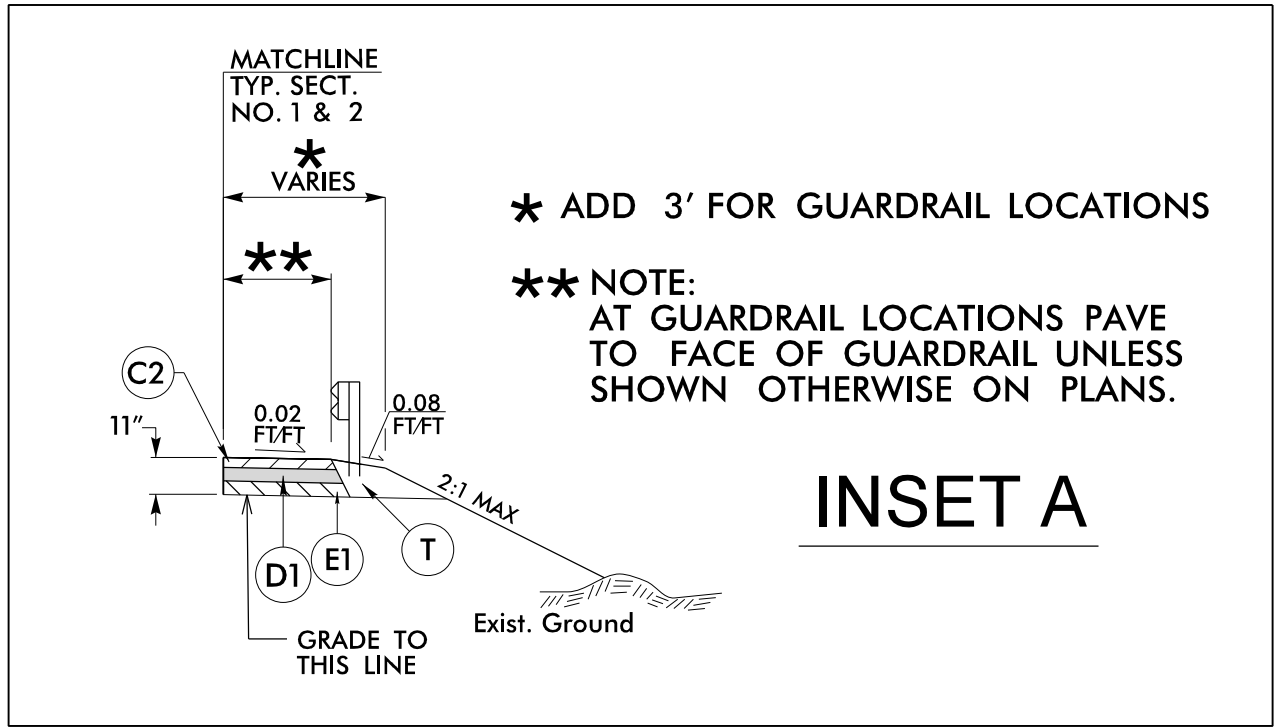
-L- STA. 13+80.00 TO -L- STA. 15+30.00



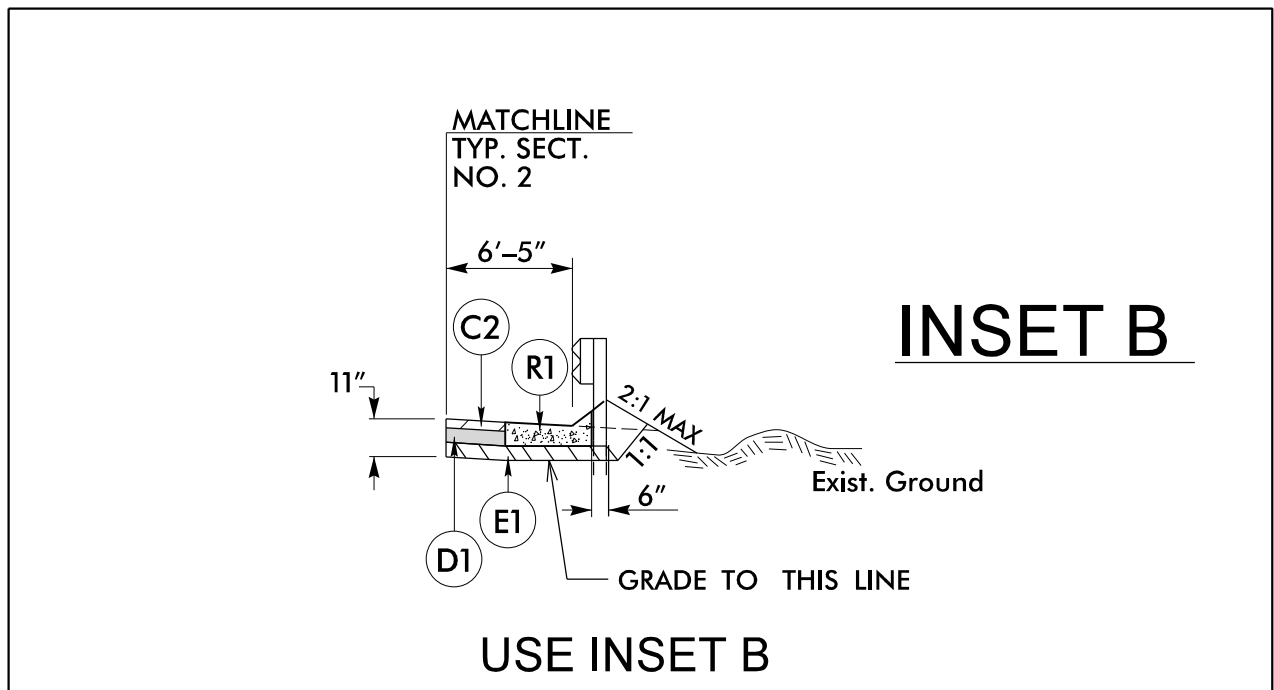
### TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-L- STA. 10+92.84 TO -L- STA. 12+30.30



### INSET A

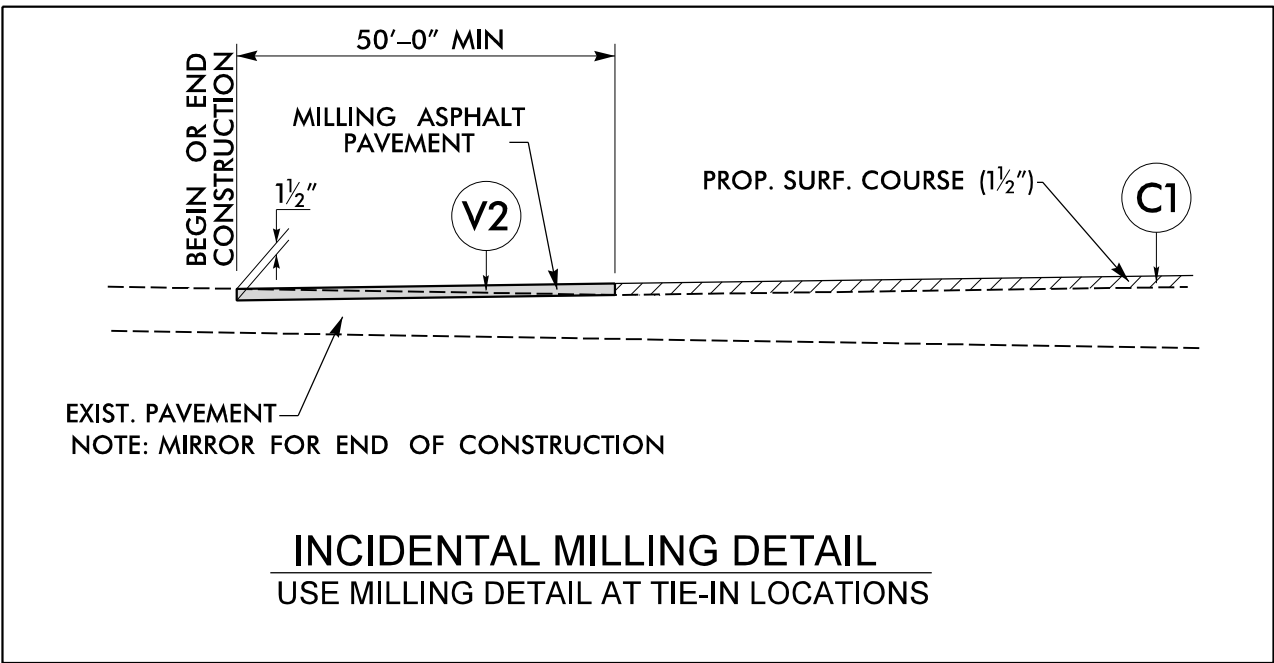


### INSET B

USE INSET B

-L- STA. 12+47.68 RT (END APPROACH SLAB) TO -L- STA. 12+68.13 RT

-L- STA. 12+35.40 LT (END APPROACH SLAB) TO -L- STA. 12+55.00 LT



### INCIDENTAL MILLING DETAIL

USE MILLING DETAIL AT TIE-IN LOCATIONS

PROJECT REFERENCE NO.	SHEET NO.
DF18313.2059011.PR	2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

V:\2025\EDB Div 13 Group 1\580111\Roadway\Proj\580111\_Rdy\_typ.dgn  
6/2/2025 1:00:00 PM  
User: kholmond



PROJECT REFERENCE NO.  
DF18313.2059011.PR

SHEET NO.  
4

RW SHEET NO.

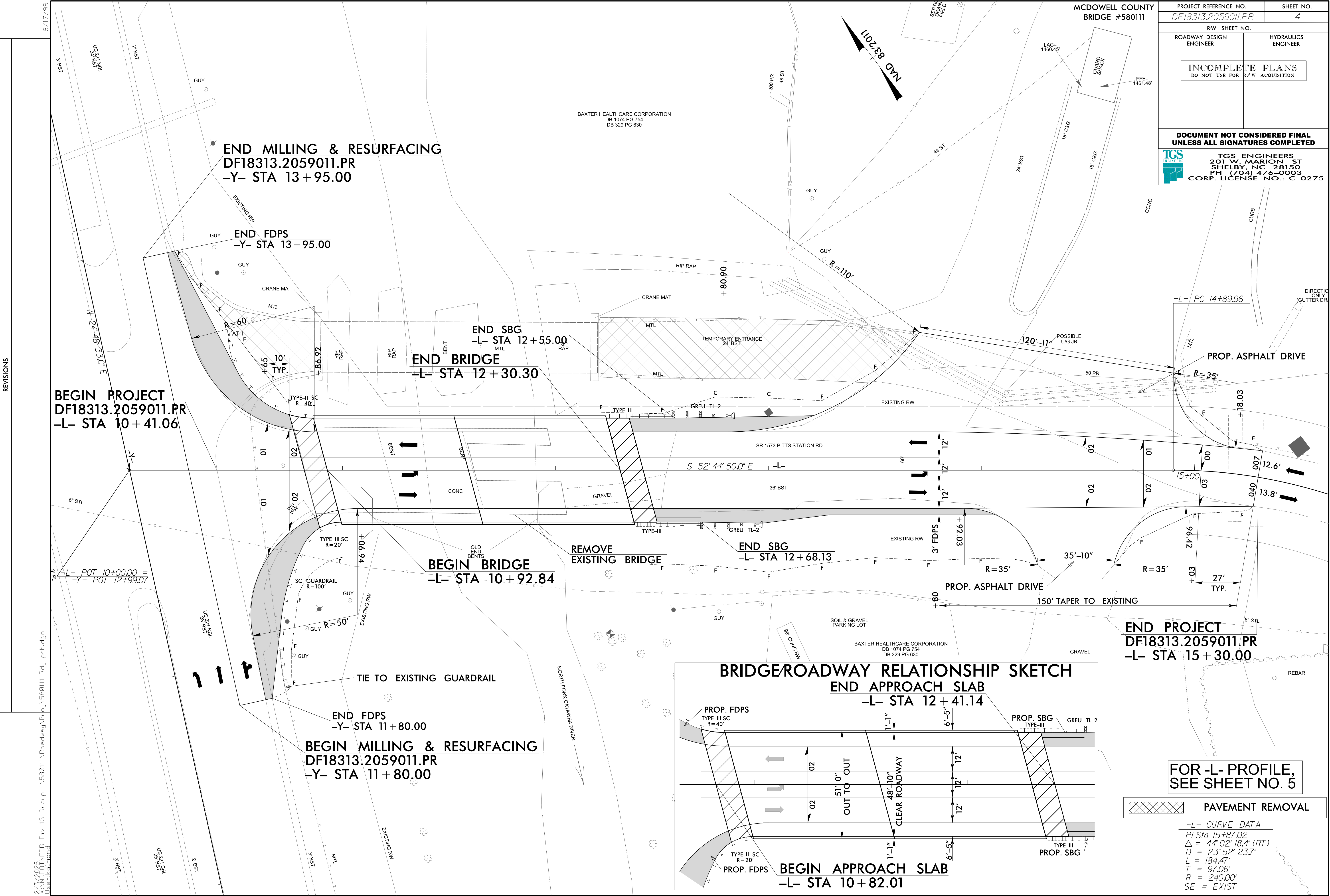
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS  
201 W. MARION ST  
SHELBY, NC 28150  
PH (704) 476-0003  
CORP. LICENSE NO.: C-0275



8/17/99  
2/3/2025  
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User: jacobm



# DF18313.2059011.PR

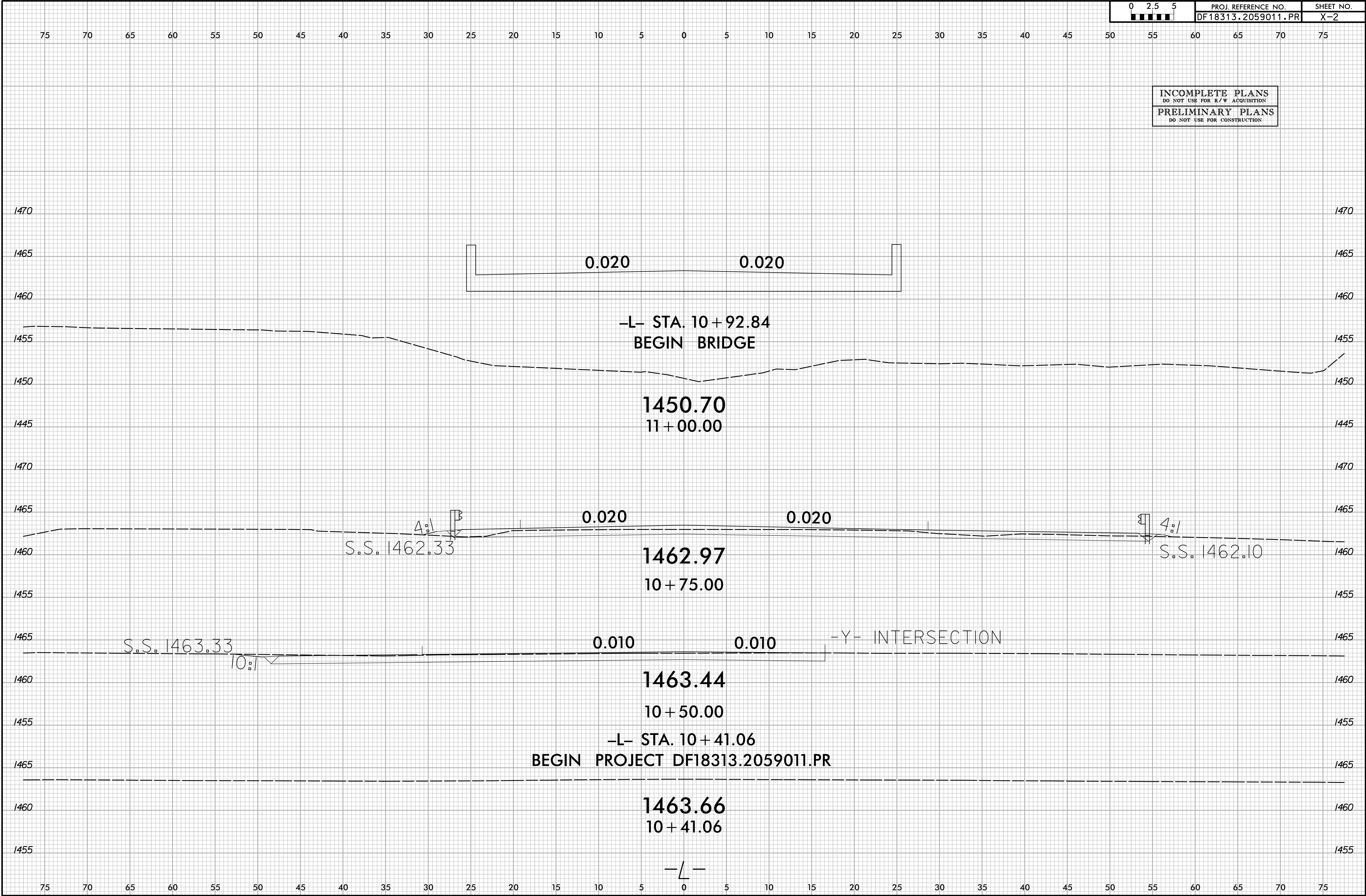
## CROSS-SECTION INDEX

XS - INDEX	X - 1
XS - SUMMARY	TO BE ADDED
- L -	X - 2 THRU X - 7
- Y -	X - 8 THRU X - 9

REVISIONS

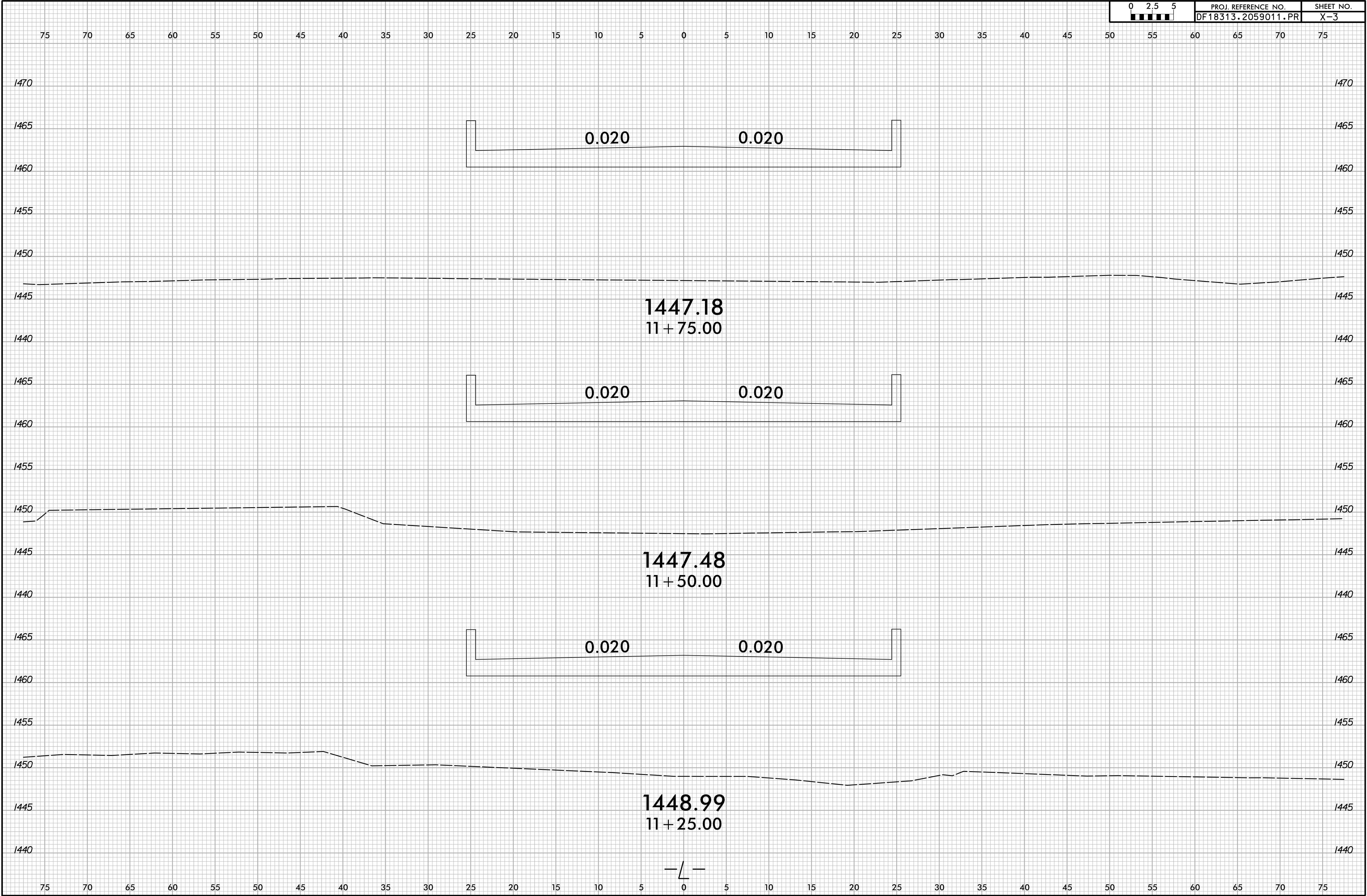
6/23/16

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

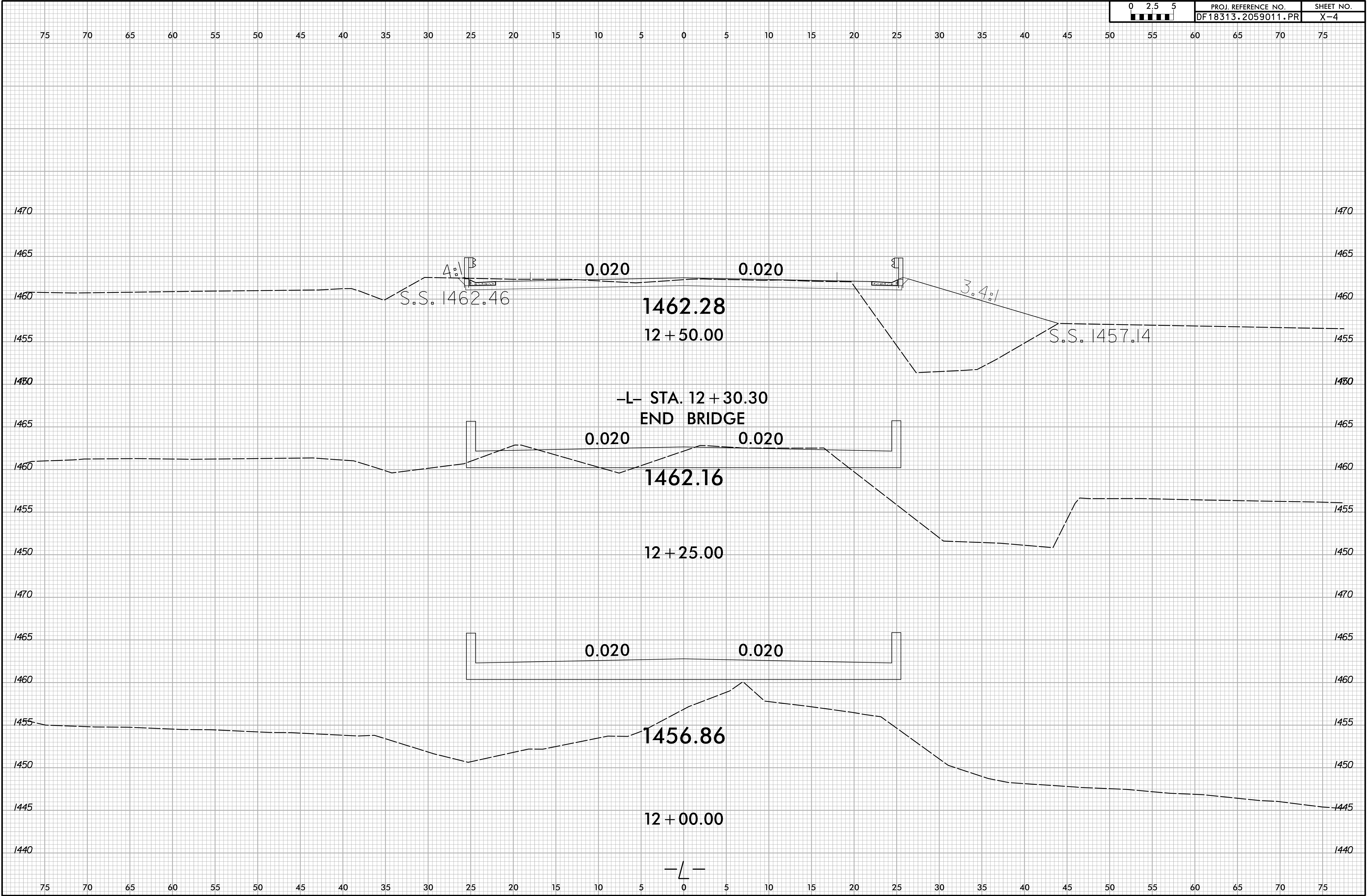




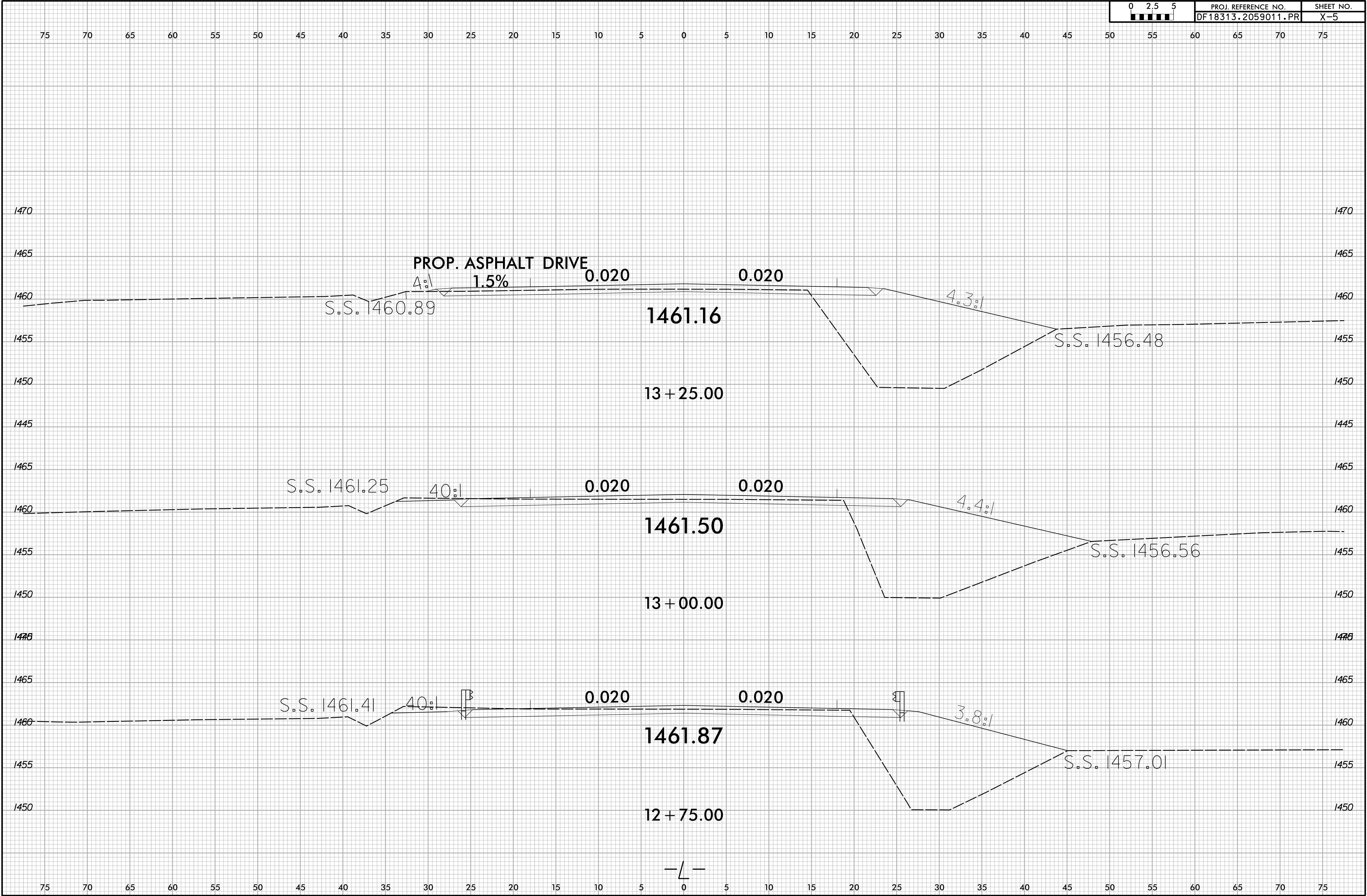
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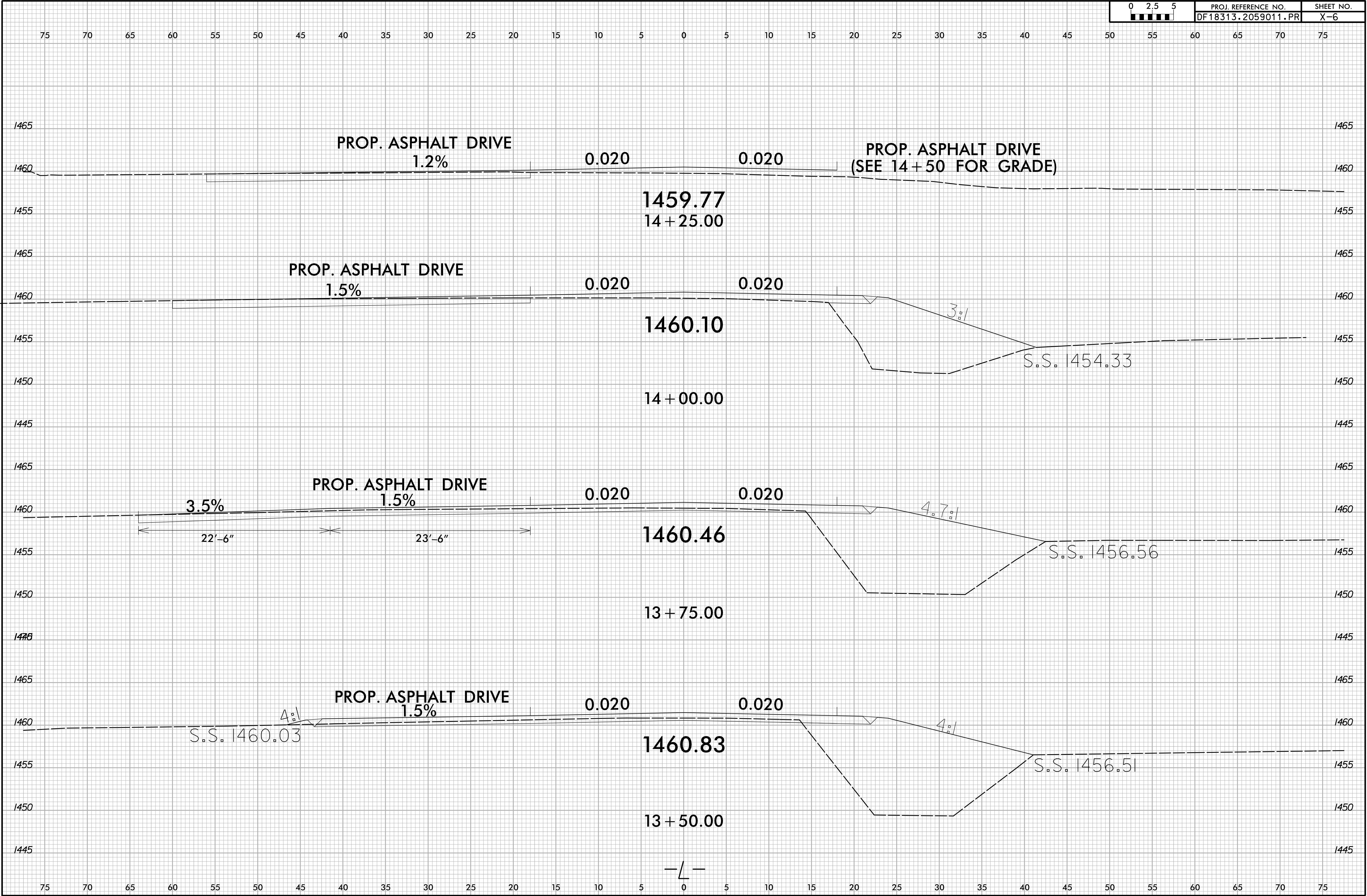


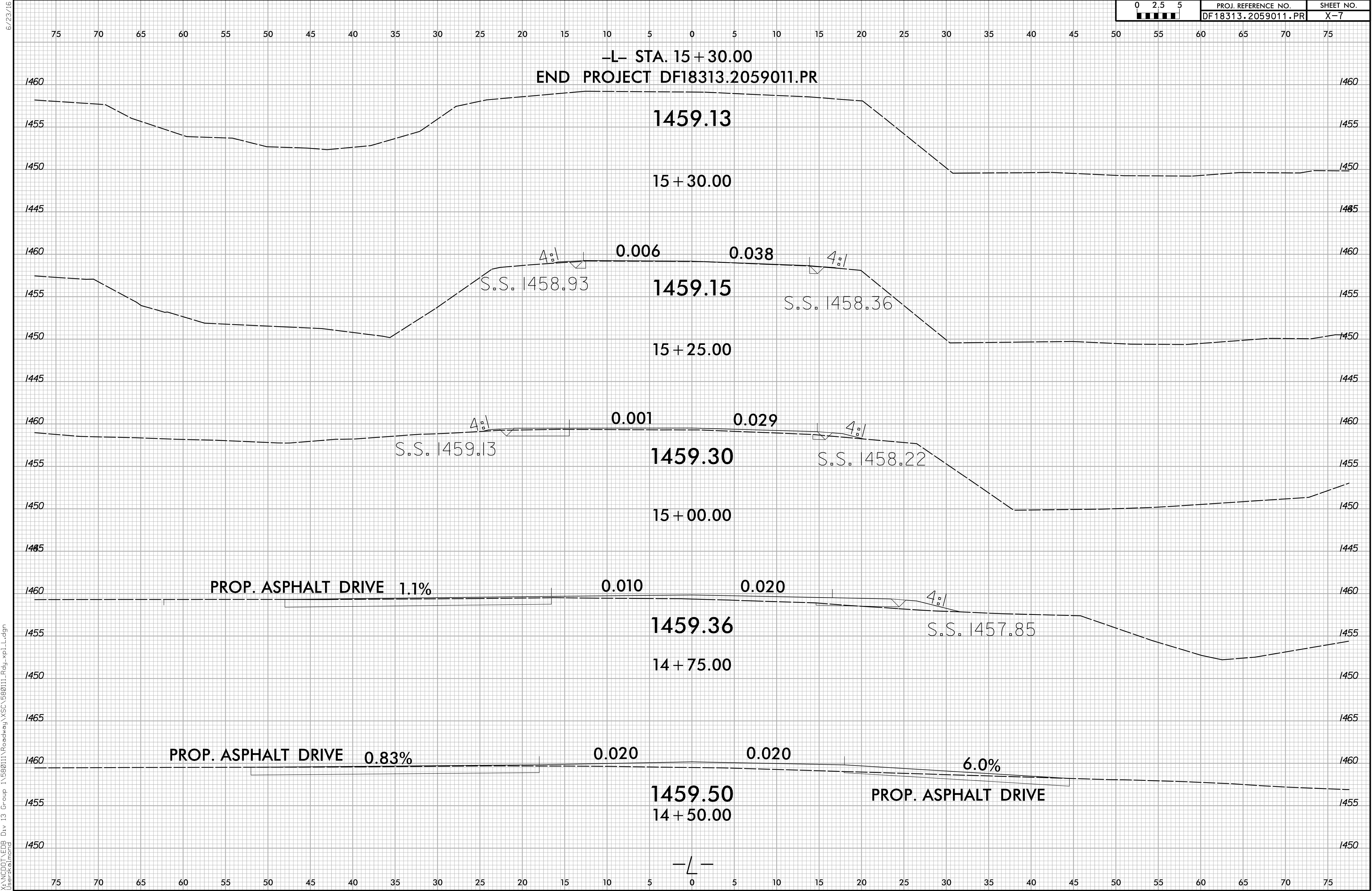


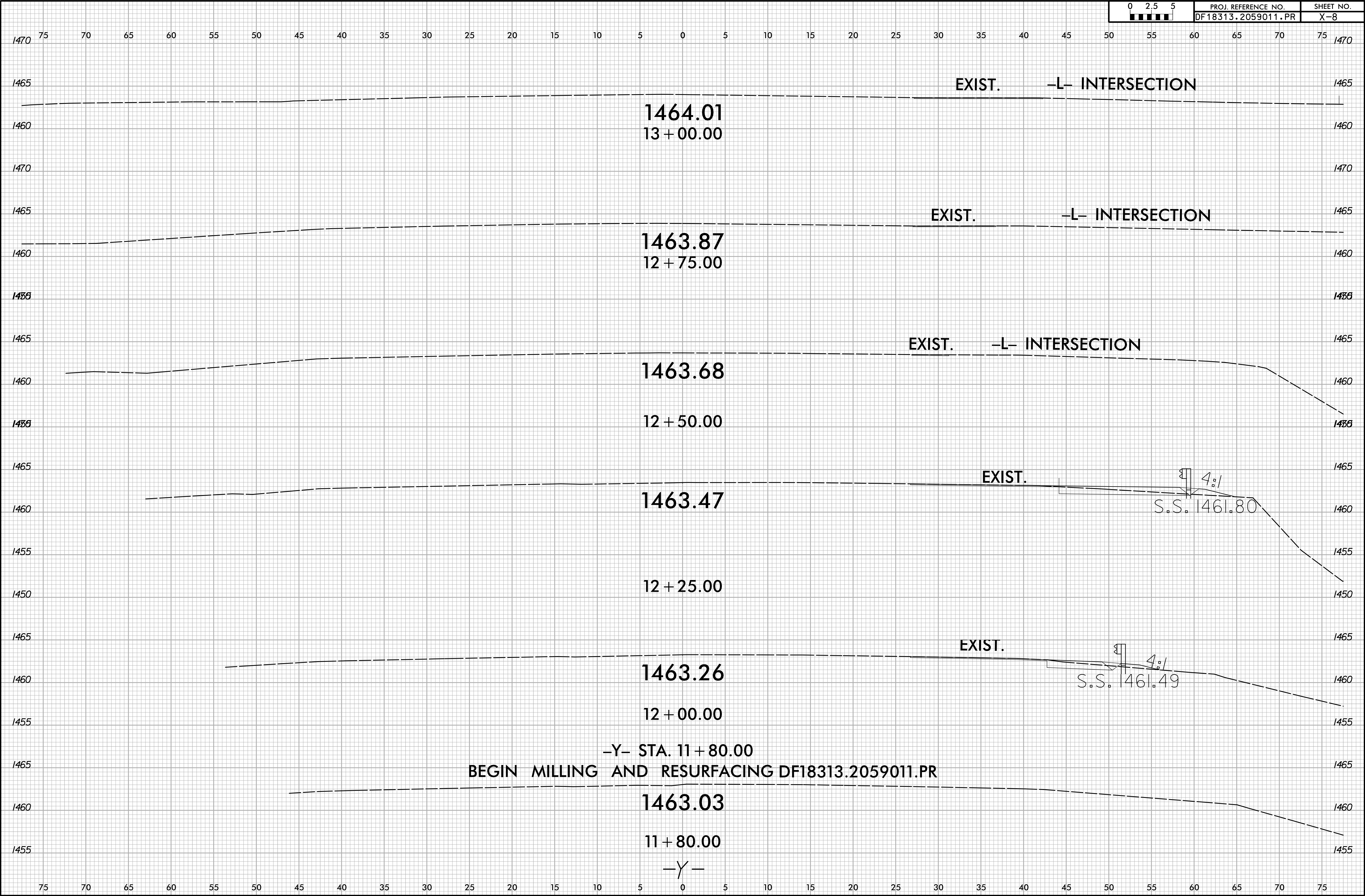
6/23/16



6/23/16









-Y- STA. 13 + 95.00  
END MILLING & RESURFACING  
DF18313.2059011.PR

1464.13  
13 + 95.00

1463.93  
13 + 75.00

1463.83  
13 + 50.00

1463.95  
13 + 25.00

-Y-

EXIST.

EXIST.

EXIST.

S.S. 1463.67

S.S. 1463.48

S.S. 1462.85

4:1