

ANNUAL REPORT 2025
Year 7 Report for
Horse Creek Stream Relocation Monitoring Plan – Photo Documentation

TIP Project No. I-4729A – Interchange Improvements at I-26 and US 74
USACE Action ID No. **SAW-2017-01737**
NCDWR Project No. **2017-01737**
Polk County, NC

Prepared By:



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TABLE OF CONTENTS

SUMMARY.....	1
1.0 INTRODUCTION	2
1.1 Project Description	2
1.2 Purpose	2
1.3 Project History	2
1.4 Debit Ledger.....	3
2.0 CONCLUSION.....	5
3.0 REFERENCES	5
4.0 QUALIFICATIONS.....	6

LIST OF FIGURES

Figure 1. Site Location Map	4
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LIST OF TABLES

Table 1. Monitoring Schedule.....	2
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APPENDICES

APPENDIX A	CROSS SECTION, VEGETATION PLOT & PHOTO POINT LOCATIONS
APPENDIX B	STREAM PHOTOS – VISUAL ASSESSMENT

SUMMARY

The following report summarizes the Year 7 stream monitoring activities that occurred during 2025 at the Horse Creek Mitigation Site in Polk County. The stream relocation was completed in April 2018 by the North Carolina Department of Transportation (NCDOT). The site was designed as stream mitigation for the impacts associated with construction of TIP Project No. I-4729A (I-26/US 74 Interchange Improvement Project near Columbus, Polk County, North Carolina). The Year 7 monitoring period is the seventh of seven scheduled years of monitoring (See Success Criteria in the I-4729A Stream Relocation Monitoring Report ver. 1.2). The Year 7 monitoring report only requires visual/photo documentation of the site, which references vegetation survival and channel stability visually along the entire stream reach (see appendix A).

Based on Year 7 (2025) visual/photo assessment and comparisons to the Year 6 (2024) Final Monitoring Report (FMR) the stream channel is well vegetated and stable. The two beaver dams that were documented in the 2024 FMR were removed in the spring of 2025 by USDA Wildlife Services and showed no signs of reconstruction in the 2025 field review conducted on November 7, 2025. Beaver dams are no longer causing any channel stability issues along the stream reach noted in the past two stream monitoring reports (2023/2024). All accumulated sediments associated with beaver dams in the past have been flushed downstream and returned the stream profile to a basic riffle pool complex. The streamside vegetation affected by beaver activity is regenerating and recovering nicely along these impacted reaches.

The streambank destabilization near the transition zone at the end of the channel change was exasperated by flooding associated with Hurricane Helene and documented in the 2024 FMR. This streambank failure was beginning to undercut the rock plated fill slope along I-26. The eroded streambank was repaired in February 2025 by NCDOT maintenance forces using FEMA funding associated with Hurricane Helene storm repairs.

The two original stream buffer planting plots are doing well with other volunteer species such as red maple, sweetgum, yellow poplar, pine, blackberry, greenbrier, and various herbaceous species sprouting up throughout the sites/plots. The adjacent stream buffer is growing rapidly and taking on early successional habitat characteristics. The riparian area and floodplain were extremely difficult to navigate through during the recent site visit.

NCDOT recommends that no further stream assessments be conducted at the Horse Creek Mitigation Site and requests that the US Army Corps of Engineers and the NC Division of Water Resources release this site from future monitoring.

1.0 INTRODUCTION

1.1 Project Description

The following report summarizes the stream monitoring activities that have occurred during **2025** at the Horse Creek Mitigation Site. The site is situated in the center of the I-26 and US 74 interchange (see Figure 1). The site was constructed to provide mitigation for stream impacts associated with the construction of TIP Project No. I-4729A. The site is composed of one reach of Horse Creek.

The mitigation project includes 742 linear feet of onsite stream relocation in the center of the I-26/US 74 interchange resulting from a fill slope that is needed to elevate the newly added US 74 eastbound flyover ramp/bridge over the existing lanes within the interchange. Construction began in late November 2017. Following completion of the reinforced concrete box culvert, final channel work, buffer grading and removal of the temporary flow diversion, the stream relocation was completed in April 2018. The stream relocation included instream grade control structures, root wads for aquatic habitat, live staking of the streambanks, and planting of bareroot seedlings in the 30-foot disturbed riparian buffer along the western side of Horse Creek.

1.2 Purpose

For a mitigation site to be considered successful, the site must meet the success criteria. This report details the monitoring in **2025 (Year 7)** at the Horse Creek Mitigation Site. The monitoring schedule was modified from the original schedule due to the repairs of the eroded streambank just below the RCBC in October 2020 at the request of NCDOT. The revised monitoring schedule is highlighted in blue on the table below (Table 1). The Year 7 monitoring report only requires photo documentation of the mitigation site, which was conducted on November 7, 2025.

Table 1. Monitoring Schedule - Revised

Resource	Year (2018 – 2025)						
	1	2	3	4	5	6	7
<i>Stream Channel Monitoring</i>				Added			
<i>Vegetation Monitoring</i>				Added			
<i>Visual Assessment - Photos</i>							
<i>Report Submittal</i>							

1.3 Project History

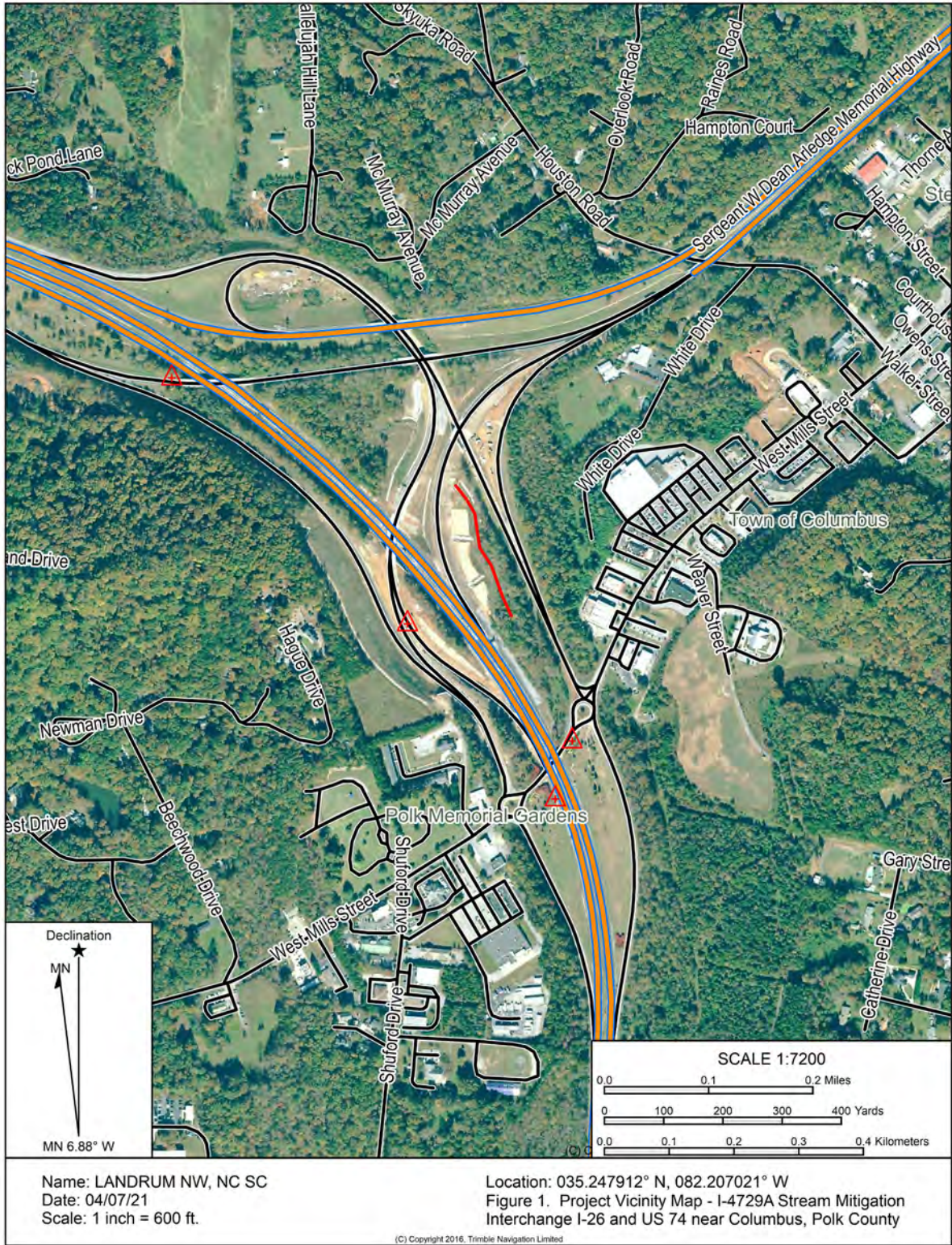
April 2018	As-Built Stream Reforestation Completed
April 2018	As-Built Stream Survey Completed
July 2018	As-Built Vegetation Monitoring
April 2019	Year 1 Stream Survey Completed
April 2019	Year 1 Vegetation Monitoring – Type II Supplemental Planting of Floodplain
April 2020	Year 2 Stream Survey Completed
April 2020	Year 2 Vegetation Monitoring
April 2020	Recommend Stabilization/Repairs of Eroded Streambank and Stream Channel
October 2020	NCDOT Personnel Completed Repairs to Eroded Streambank and Stream Channel
March 2021	Type I & II Supplemental Planting of Streambank Repair and Riparian Area
April 2021	Year 3 Stream Survey Completed (Following Fall 2020 Repairs)
April 2021	Year 3 Vegetation Monitoring

October 2022	Year 4 Stream Survey Completed (Year 4 Survey added due to Fall 2020 Repairs)
October 2022	Year 4 Vegetation Monitoring (Year 4 Survey added due to Fall 2020 Repairs)
November 2023	Year 5 Photo Documentation, Visual Assessment Only
November 2024	Year 6 Stream Survey Completed
November 2024	Year 6 Vegetation Monitoring
November 2025	Year 7 Photo Documentation, Visual Assessment Only

1.4 Debit Ledger

The US Army Corps of Engineers General Permit 31 for the Horse Creek stream relocation indicates the loss of 795 linear feet of stream channel. Fifty-three (53) linear feet of stream channel will be a total loss and is mitigated at a 2:1 ratio. The remaining 742 linear feet of channel relocation will be mitigated at a 1:1 ratio for the I-4729A project to compensate for unavoidable stream impacts.

Figure 1. Project Vicinity Map – Revised 2021



2.0 CONCLUSION

Based on Year 7 (2025) visual/photo assessment and comparisons to the Year 6 (2024) Final Monitoring Report (FMR) the stream channel is well vegetated and stable. The two beaver dams that were documented in the 2024 FMR were removed in the spring of 2025 by USDA Wildlife Services and showed no signs of reconstruction in the 2025 field review conducted on November 7, 2025. Beaver dams are no longer causing any channel stability issues along the stream reach noted in the past two stream monitoring reports (2023/2024). All accumulated sediments associated with beaver dams in the past have been flushed downstream and returned the stream profile to a basic riffle pool complex. The streamside vegetation affected by beaver activity is regenerating and recovering nicely along these impacted reaches.

The streambank destabilization near the transition zone along the southern end of the channel change was exasperated by flooding associated with Hurricane Helene and documented in the 2024 FMR. This streambank failure was beginning to undercut the rock plated fill slope along I-26. The streambank was repaired in February 2025 by NCDOT maintenance forces using FEMA funding associated with Hurricane Helene.

The two original stream buffer planting plots are doing well with other volunteer species such as red maple, sweetgum, yellow poplar, pine, blackberry, greenbrier, and various herbaceous species sprouting up throughout the sites/plots. The adjacent stream buffer is growing rapidly and taking on early successional habitat characteristics. The riparian area and floodplain were extremely difficult to navigate through during the recent site visit.

NCDOT recommends that no further stream assessments be conducted at the Horse Creek Mitigation Site and requests that the US Army Corps of Engineers and the NC Division of Water Resources release this site from future monitoring.

3.0 REFERENCES

I-4729A Stream Relocation Monitoring Plan, Horse Creek, Polk County. Version 1.2, NCDOT Division 14, August 17, 2017.

On-Site Stream Mitigation Plan, Interchange at I-26 and US 74 near Columbus; Polk County, NC, T.I.P. Number I-4729A, WBS No: 34243.1.3, August 17, 2017.

Rosgen, D. L., 1996. Applied River Morphology. Wildland Hydrology, Pagosa Springs, Colorado.

US Army Corps of Engineers (USACE), 2003. Stream Mitigation Guidelines. Prepared with cooperation from the US Environmental Protection Agency, NC Wildlife Resources Commission, and the NC Division of Water Quality.

USDA Wildlife Services, Josh Johnson, personal communication, January 2025.

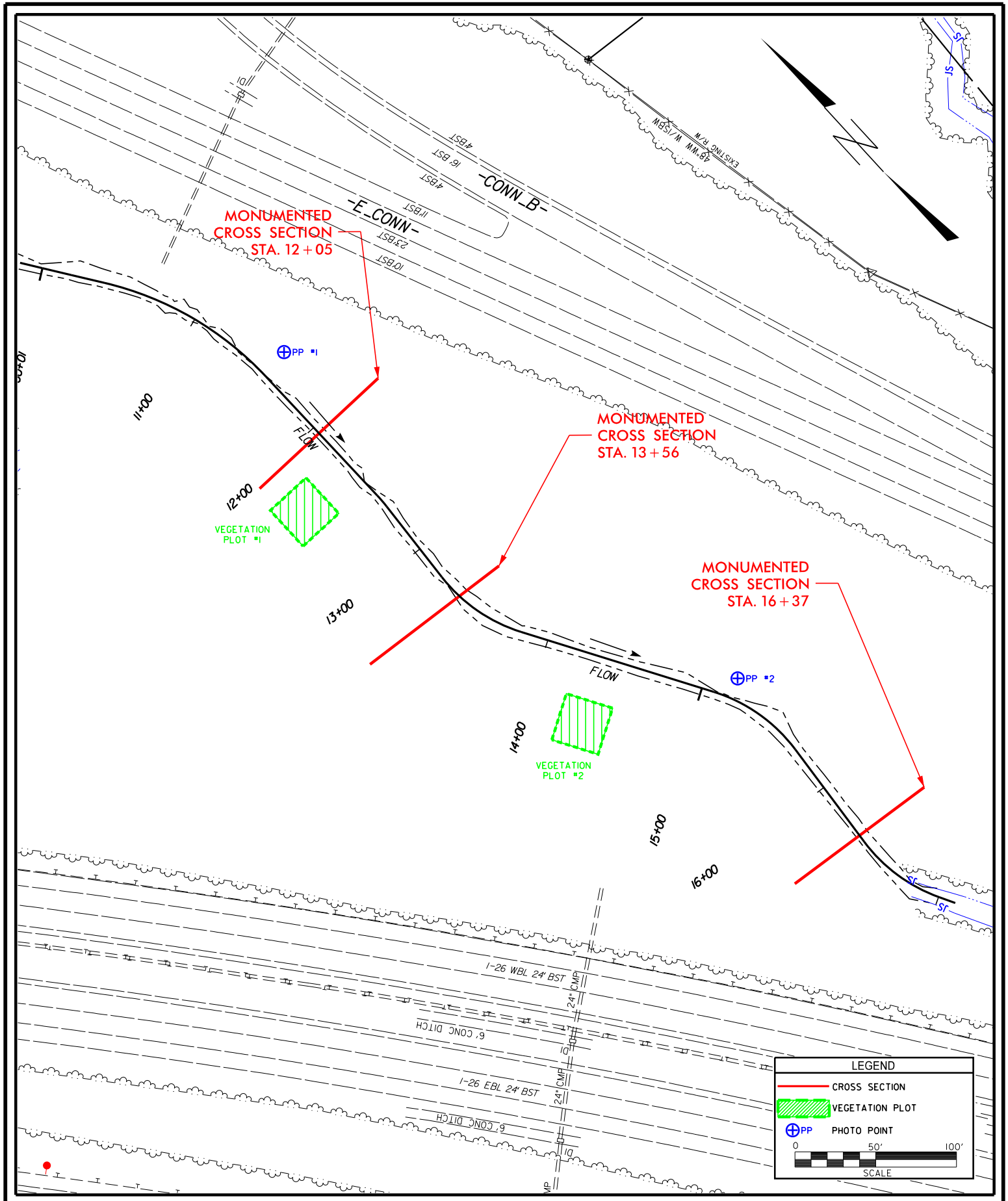
4.0 QUALIFICATIONS

The field photos and preparation of the Stream Monitoring Report 2025 was completed by Mark S. Davis, Senior Environmental Scientist, of JMT (Johnson, Mirmiran, & Thompson, Inc.) for NCDOT Division 14 Environmental Office.

Investigator: Mark S. Davis, Senior Environmental Scientist, JMT
Education: BS Fishery Science, North Carolina State University, 1978
Experience: Senior Environmental Scientist, JMT, 2022 to Present
Environmental Specialist, Vaughn & Melton Consulting Engineers, 2016-2022
Environmental Supervisor, NCDOT Division 14, 2000-2016
Mountain Region Hab/Con Coordinator, NC Wildlife Resources Commission, 1996-2000
Fishery Biologist/Technician, NC Wildlife Resources Commission, 1987-1996
Research Technician, US Forest Service, Coweeta Hydrologic Laboratory, 1980-1985
Biological Technician, US Fish & Wildlife Service, 1978-1979
Responsibilities: Wetland and stream delineations, habitat assessments, T&E species assessments and surveys, SHPO requests, 404/401 and TVA 26a Permit Applications, NEPA/SEPA document preparation.

APPENDIX A

**CROSS SECTION, VEGETATION PLOT & PHOTO POINT
LOCATIONS**



**CROSS SECTIONS, VEGETATION PLOTS,
& PHOTO POINT LOCATIONS**

I-4729A
I-26 AND US 74 INTERCHANGE IMPROVEMENTS
STREAM RELOCATION
POLK CO., NORTH CAROLINA

PROJECT: 31732-05
DATE: FEB. 2019
DWN./CHKD.: SN/JG
FIGURE: **C1**

APPENDIX B
STREAM PHOTO/VISUAL ASSESSMENT

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Upstream from Photo Point 1A



Looking Downstream from Photo Point 1A

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Across X-Section 1 from East to West



Looking Upstream from X-Section 1 from Instream

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Downstream from X-Section 1 from Instream



Looking Across X-Section 2 from East to West

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Upstream from X-Section 2 from Instream



Looking Downstream from X-Section 2 from Instream

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Upstream from Photo Point 2



Looking Downstream from Photo Point 2

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Upstream from Photo Point 2 from Instream



Looking Downstream from Photo Point 2 from Instream

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Across Stream at X-Section 3 – East to West



Looking Upstream from X-Section 3 from Instream

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Downstream from X-Section 3 into Transition Zone – New to Old Channel



Looking Downstream into Transition Zone Streambank Erosion – November 2024

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Transition Zone Streambank Repairs Completed February 2025



Looking Downstream at Transition Zone Streambank Repairs – November 2025

**I-4729A Horse Creek Mitigation Site – Photo/Visual Assessment
November 7, 2025**



Looking Downstream at Transition Zone Streambank Repairs – November 2025



Looking Upstream at Transition Zone Streambank Repairs – November 2025

**I-4729A Horse Creek Mitigation Site – Miscellaneous Photo/Visual Assessment
November 7, 2025**



Looking Upstream toward RCBC – Beginning of Channel Change – North End



Looking Downstream from Below RCBC

**I-4729A Horse Creek Mitigation Site – Miscellaneous Photo/Visual Assessment
November 7, 2025**



Looking Upstream at Cross Vane above X-Section 1



Looking Upstream at Shot Rock Bank Stabilization Repairs from 2020

**I-4729A Horse Creek Mitigation Site – Miscellaneous Photo/Visual Assessment
November 7, 2025**



Looking Downstream at Stream Side Vegetation – Northern End of Channel



Vegetation Plot 1 – Looking from SE Corner to NW Corner

**I-4729A Horse Creek Mitigation Site – Miscellaneous Photo/Visual Assessment
November 7, 2025**



Looking at Vegetation along Floodplain from North to South between Stream and I-26



Looking at Regeneration of Streamside Vegetation Impacted by Beavers