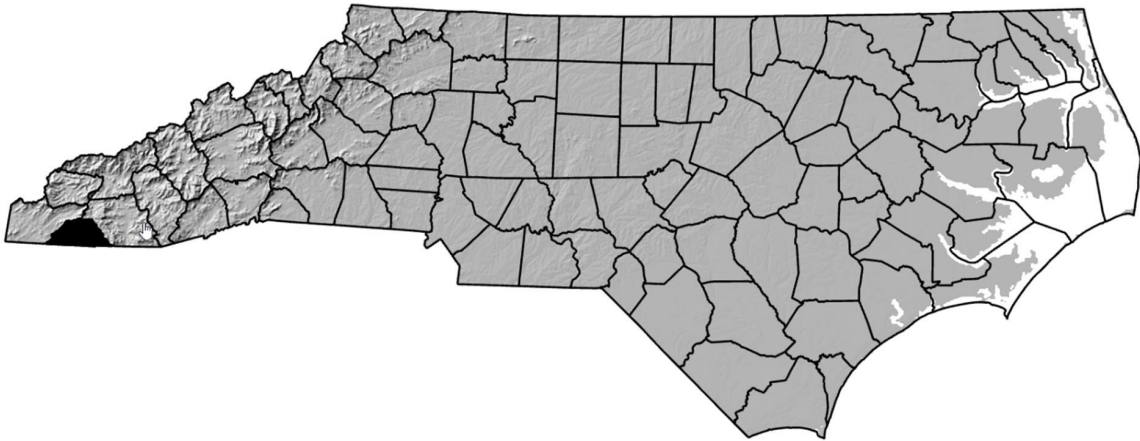


ANNUAL REPORT FOR 2023



UT to Chatuge Lake (Sites 2, 3A, 3B, & 4)

Clay County

TIP No. R-5742

COE Action ID: SAW-2016-01118

NCDWR Project #: 20180823



Prepared By:
Roadside Environmental Unit and Environmental Analysis Unit
North Carolina Department of Transportation
October 2023

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SUMMARY

The following report summarizes the stream monitoring activities that have occurred during the Year 2023 at the UT's to Chatuge Lake Sites 2, 3A, 3B, and 4 in Clay County, hereafter, referred to as UT's to Chatuge Lake. This report provides the monitoring results for the first formal year of monitoring (Year 2023). The Year 2023 monitoring period was the first of five scheduled years of monitoring on the UT's to Chatuge Lake Mitigation Sites (See Success Criteria Section 2.1).

Based on the overall conclusions of monitoring at the UT's to Chatuge Lake, all sites have met the required monitoring protocols for the first formal year of monitoring on the streams. The channel throughout the stream sites are stable at this time. The streambanks at Sites 2 and 3A had planted vegetation surviving but Sites 3B and 4 did not have any planted live stakes noted onsite.

NCDOT proposes to complete live staking at Sites 3B and 4 in 2024. NCDOT will continue stream and vegetation monitoring at the UT's to Chatuge Lake in 2024.

1.0 INTRODUCTION

1.1 Project Description

The following report summarizes the stream monitoring activities that occurred during the Year 2023 at UT's to Chatuge Lake. Site locations are as follows (see Figure 1):

- Site 2 is located adjacent to NC 175 just south of Hunter Road at Sta. 41+00 -L- RT.
- Site 3A is located adjacent to NC 175 at Jack Rabbit Road at Sta. 48+00 - L- LT. to 50+00 -L- RT.
- Site 3B is located adjacent to NC 175 just northeast of Jack Rabbit Road at Sta. 52+50 to 55+50 -L- RT.
- Site 4 is located adjacent to NC 175 just northeast of Jake Rabbit Road from Sta. 55+50 to 59+00 -L- LT.

The UT's to Chatuge Lake were constructed to provide mitigation for stream impacts associated with Transportation Improvement Program (TIP) number R-5742 in Clay County.

- Site 2: 90 linear feet
- Site 3A: 123 linear feet
- Site 3B: 326 linear feet
- Site 4: 308 linear feet

Construction of the UT's to Chatuge Lake involved relocating 847 linear feet of stream at Sites 2, 3A, 3B, and 4. A new channel was excavated, and the streambanks were planted.

1.2 Purpose

In order for a mitigation site to be considered successful, the site must meet the success criteria. This report details the monitoring in 2023 at the UT's to Chatuge Lake. Hydrologic monitoring was not required for these sites.

1.3 Project History

March 2023

Streambank Reforestation Completed

July 2023

Stream Channel and Vegetation Monitoring (Year 1)

1.4 Debit Ledger

The entire UT's to Chatuge Lake stream mitigation sites were used for the R-5742 project to compensate for unavoidable stream impacts.

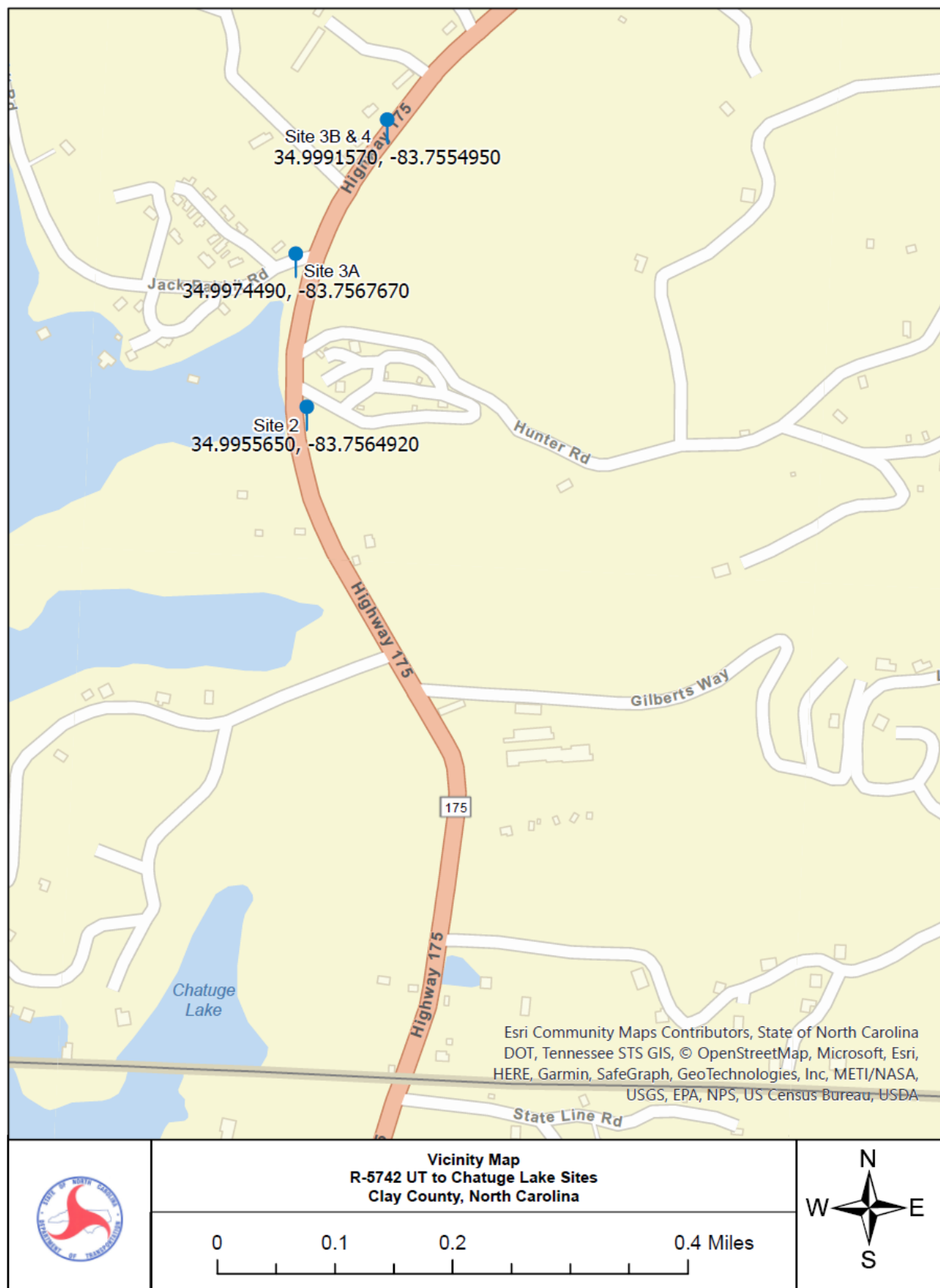


Figure 1. Vicinity Map

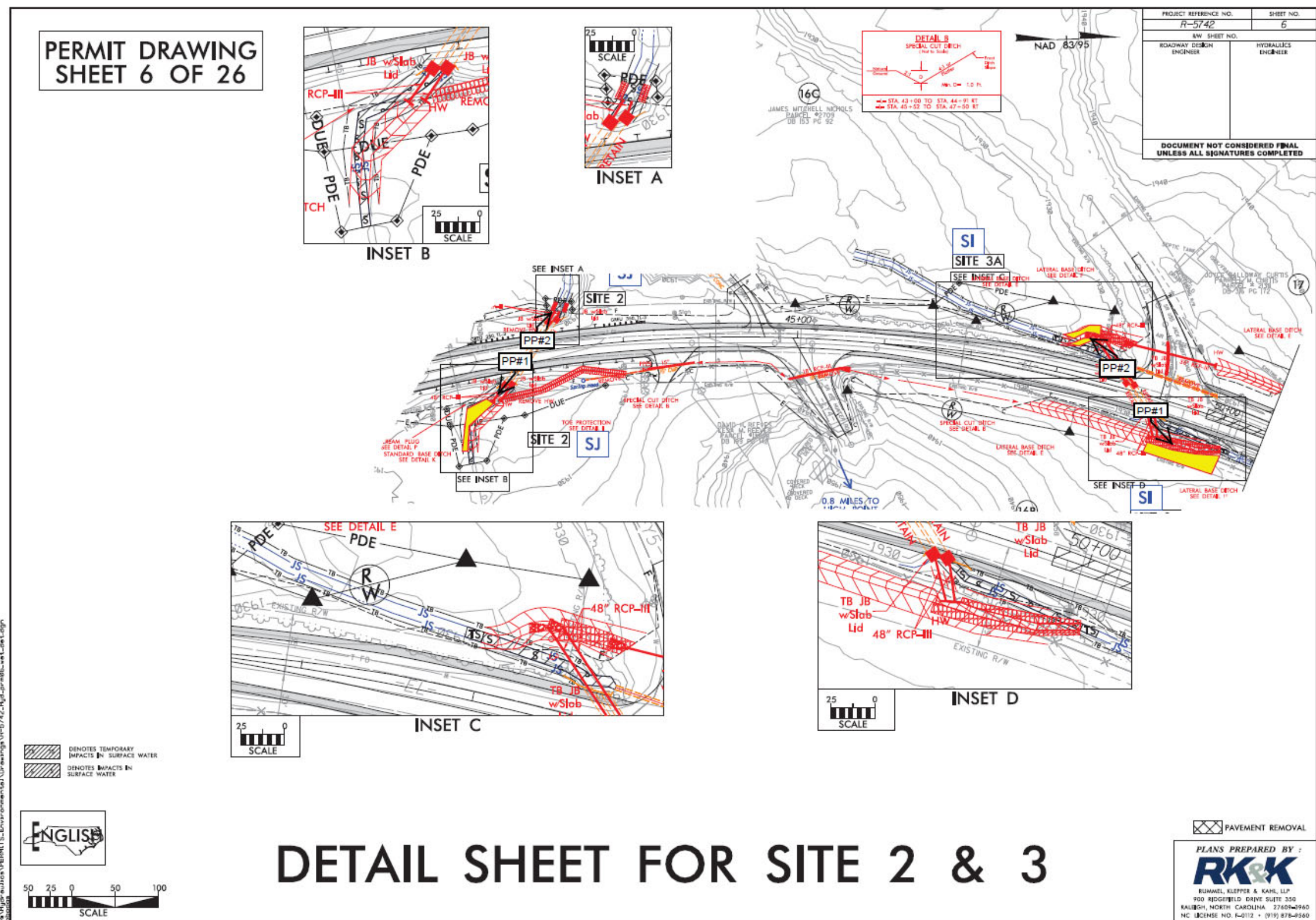
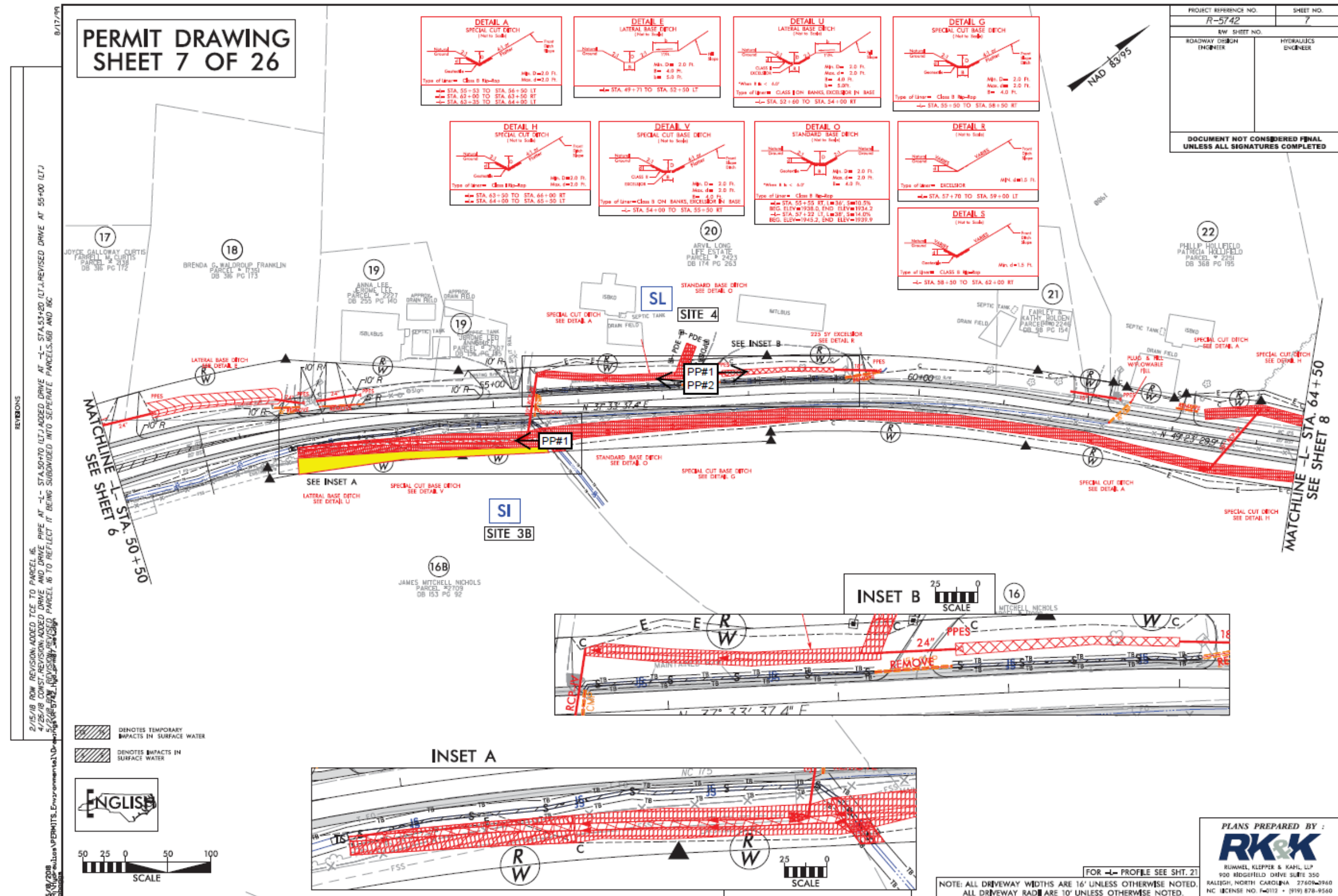


Figure 2. Sites 2 and 3A Permit Drawing



2.0 STREAM ASSESSMENT

2.1 Success Criteria

Mitigation Plan

General Monitoring Plan

Monitoring data collected at the Sites will include reference photos of each relocation reach. Stream morphology is proposed to be visually monitored annually for a period of five years. The results of visual monitoring will be reported in all monitoring reports. Monitoring will be conducted by NCDOT or its duly authorized representatives. Monitoring reports of the data collected will be submitted to USACE annually, no later than April 1 of the year following the monitoring year.

Visual Monitoring

As noted previously, the sites will be visually monitored annually to identify problems with results documented (photo) and recommended courses of action identified for approval by USACE.

Remedial Actions

Monitoring reports will address remedial actions. However, identified needs for remedial action will be communicated as soon as possible after identification to USACE.

2.2 Stream Description

2.2.1 Post-Construction Conditions

The relocation of the UT's to Chatuge Lake involved relocating 847 feet of stream at Sites 2, 3A, 3B, and 4. A new channel was excavated, and the streambanks were planted.

2.2.2 Monitoring Conditions

The objective of the UT's to Chatuge Lake stream relocations was to restore the stream with comparable hydrologic functions of the previous channels but the water quality and stream habitat should be lifted by improving bank stability and reducing sediment inputs. A visual stream assessment will be conducted annually each year of the monitoring period.

2.3 Results of the Stream Assessment

2.3.1 Site Data

The visual assessment of the stream relocations noted that the channels appear stable with no active bank erosion. NCDOT will continue to monitor the channel stability at UT's to Chatuge Lake in 2024.

3.0 VEGETATION: UT'S to CHATUGE LAKE

3.1 Description of Species

The following tree species were planted on the streambank:

Salix nigra, Black Willow

Cornus amomum, Silky Dogwood

3.2 Results of Vegetation Monitoring

Streambank & Buffer Vegetation: Black Willow and Silky Dogwood live stakes were noted surviving at Sites 2 and 3A. There were no planted live stakes noted at Sites 3B or 4.

3.3 Conclusions

NCDOT will complete the streambank reforestation at Sites 3B and 4 and will continue monitoring the planted vegetation in 2024.

4.0 OVERALL CONCLUSIONS/RECOMMENDATIONS

The UT's to Chatuge Lake have met the required monitoring protocols for the first formal year of monitoring. The channel throughout the stream sites is stable at this time. Sites 2 and 3A live stakes were surviving but Sites 3B and 4 did not have any live stakes noted onsite.

NCDOT proposes to complete the streambank reforestation at Sites 3B and 4 and to continue stream and vegetation monitoring the UT's to Chatuge Lake in 2024.

5.0 REFERENCES

R-5742 Stream Relocation Monitoring Plan, UTs to Chatuge Lake, Clay County, Version 1.0, July 13, 2018, NCDOT Division 14.

Department of the Army Permit, Permittee: North Carolina Department of Transportation, NC 175 Improvement Project, Clay County, Action ID: SAW-2016-01118, TIP No. R-5742.

North Carolina Environmental Quality, Approval of 401 Water Quality Certification with Additional Conditions, July 19, 2018, NC 175 from GA Border to NC Hwy 64 in Clay County, State Project No. 46325.1.D.1, TIP R-5742, NCDWR Project No. 20180823.

APPENDIX A

SITE PHOTOGRAPHS

UT's to Chatuge Lake



Site 2 Photo Point #1 (Upstream)



Site 2 Photo Point #2 (Downstream)



Site 3A Photo Point #1 (Upstream)



Site 3A Photo Point #2 (Downstream)



Site 3B Photo Point #1 (Downstream)

July 2023

UT's to Chatuge Lake



Site 4 Photo Point #1 (Upstream)



Site 4 Photo Point #2 (Downstream)

July 2023