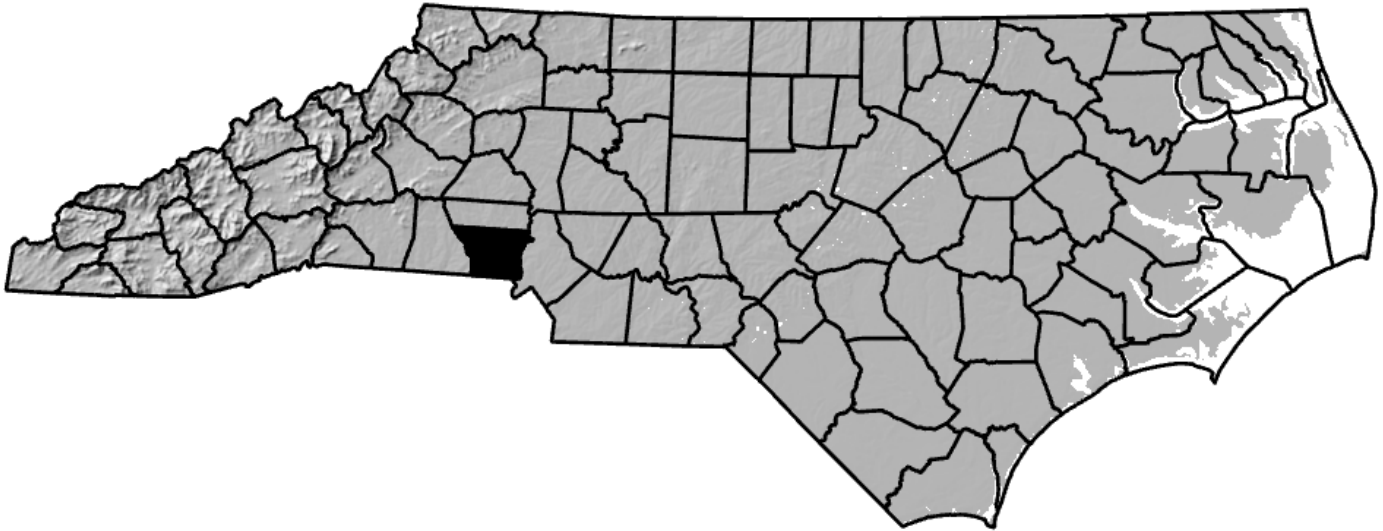


ANNUAL REPORT FOR 2023



Highland Creek Sites #1 and #3
Gaston County
TIP No. I-5000
COE Action ID: SAW-2010-00033
NCDWR Project #: 20161220v.1



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November 2023

TABLE OF CONTENTS

SUMMARY	1
1.0 INTRODUCTION:.....	2
.1 Project Description	2
.2 Purpose	2
.3 Project History	2
.4 Debit Ledger.....	2
2.0 STREAM ASSESSMENT:	6
.1 Success Criteria	6
.2 Stream Description	6
.2.1 Post Construction Conditions.....	6
.2.2 Monitoring Conditions	6
.3 Results of Stream Monitoring	6
.3.1 Site Data	6
3.0 VEGETATION	7
.1 Description of Species.....	7
.2 Results of Vegetation Monitoring.....	7
.3 Conclusions	7
4.0 OVERALL CONCLUSIONS/RECOMMENDATIONS	7
5.0 REFERENCES:	8

FIGURES

Figure 1 – Sites #1 and #3 Vicinity Map	3
Figure 2 – Sites #1 and #3 Permit Drawing	4
Figure 3 – Site #1 Permit Drawing	5

APPENDICES

Appendix A – Site Photographs	
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SUMMARY

The following report summarizes the stream monitoring activities that have occurred during the Year 2023 at Highland Creek Sites #1 and #3 in Gaston County, hereafter, referred to as Highland Creek. The North Carolina Department of Transportation (NCDOT) completed this project in June 2022. This report provides the monitoring results for the second formal year of monitoring (Year 2023). The Year 2023 monitoring period was the second of two scheduled years of monitoring on Highland Creek (See Success Criteria Section 2.1).

Based on the overall conclusions of monitoring at Highland Creek, it has met the required monitoring protocols for the second formal year of monitoring on the stream. The channel throughout the stream site is stable at this time.

NCDOT proposes to discontinue stream stability monitoring at Highland Creek.

1.0 INTRODUCTION

1.1 Project Description

The following report summarizes the stream monitoring activities that have occurred during the Year 2023 at Highland Creek. Highland Creek is located between the I-85 culvert extension (Site 1) and the rock check dam downstream of the Rankin Lake Road Bridge (Site 3) in Gaston County at Sta. 16+85 to 19+99 -RPA- RT and Sta. 28+91 -RPD- RT. (Figure 1). Highland Creek was constructed to provide channel improvements and bank stabilization associated with Transportation Improvement Program (TIP) number I-5000 in Gaston County.

The restoration of Highland Creek involved channel improvements consisting of bank stabilization, Rankin Lake bridge removal, and sediment removal for culvert extension to improve stream function and help prevent future degradation.

1.2 Purpose

In order for the site to be considered successful, the site must meet the success criteria. This report details the monitoring in 2023 at Highland Creek.

1.3 Project History

June 2022	Project Acceptance Date
October 2022	Stream Channel Monitoring (Year 1)
November 2023	Stream Channel Monitoring (Year 2)

1.4 Debit Ledger

The entire Highland Creek site was used for the I-5000 project to compensate for unavoidable stream impacts. Per the merger process, part of typical mitigation (317 linear feet) has been waived due to channel improvements proposed.

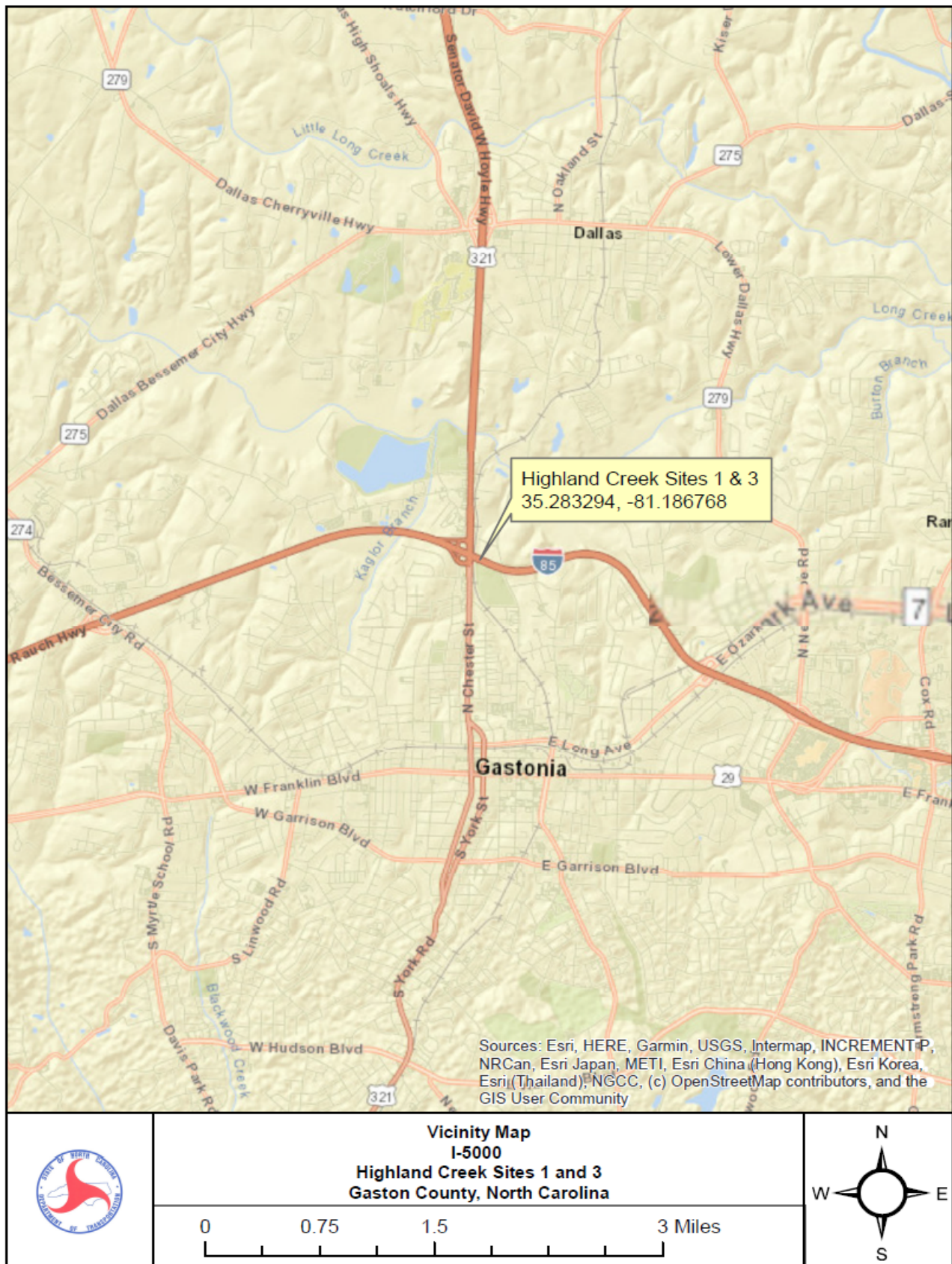


Figure 1. Vicinity Map

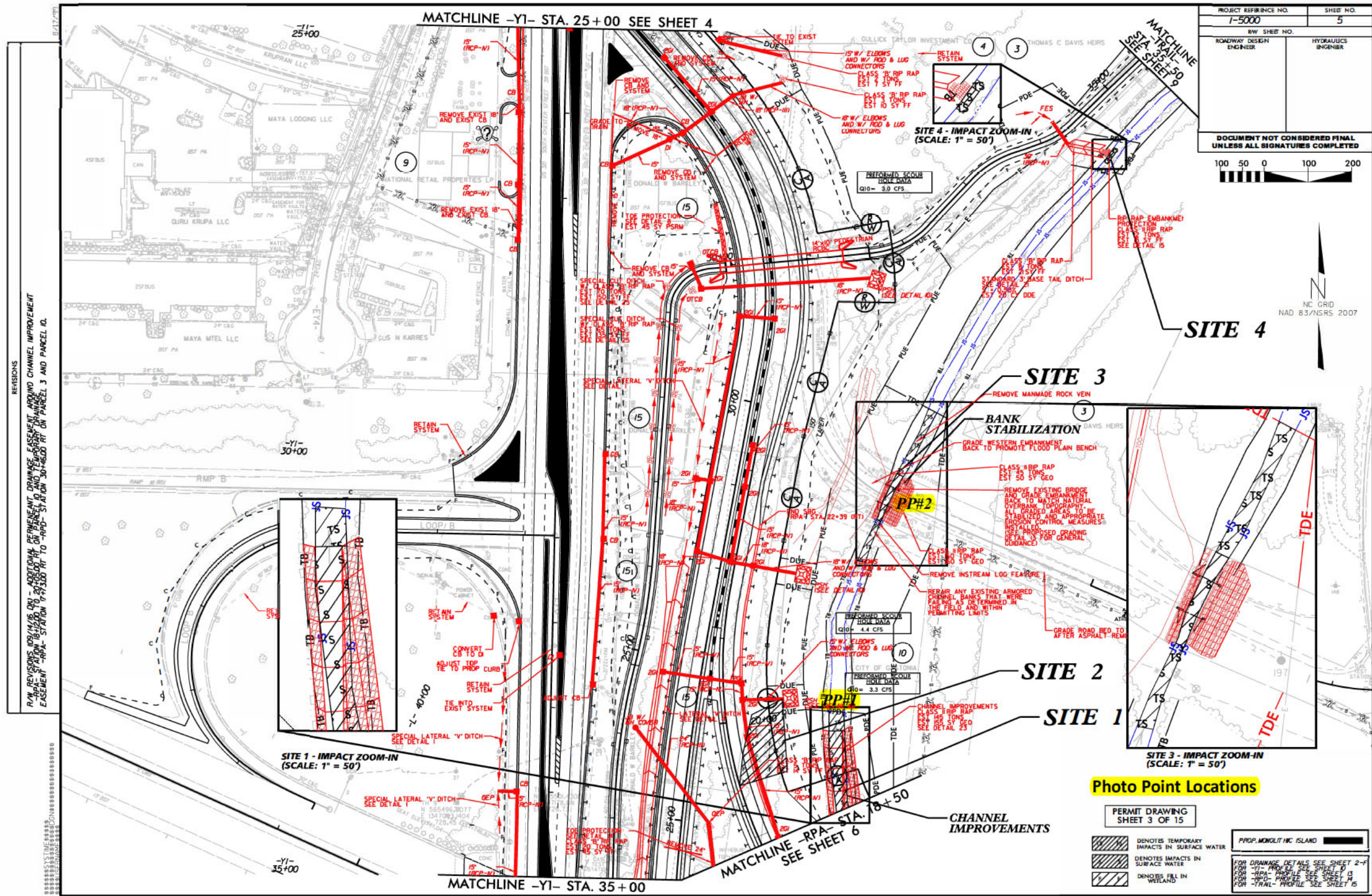


Figure 2. Permit Drawing

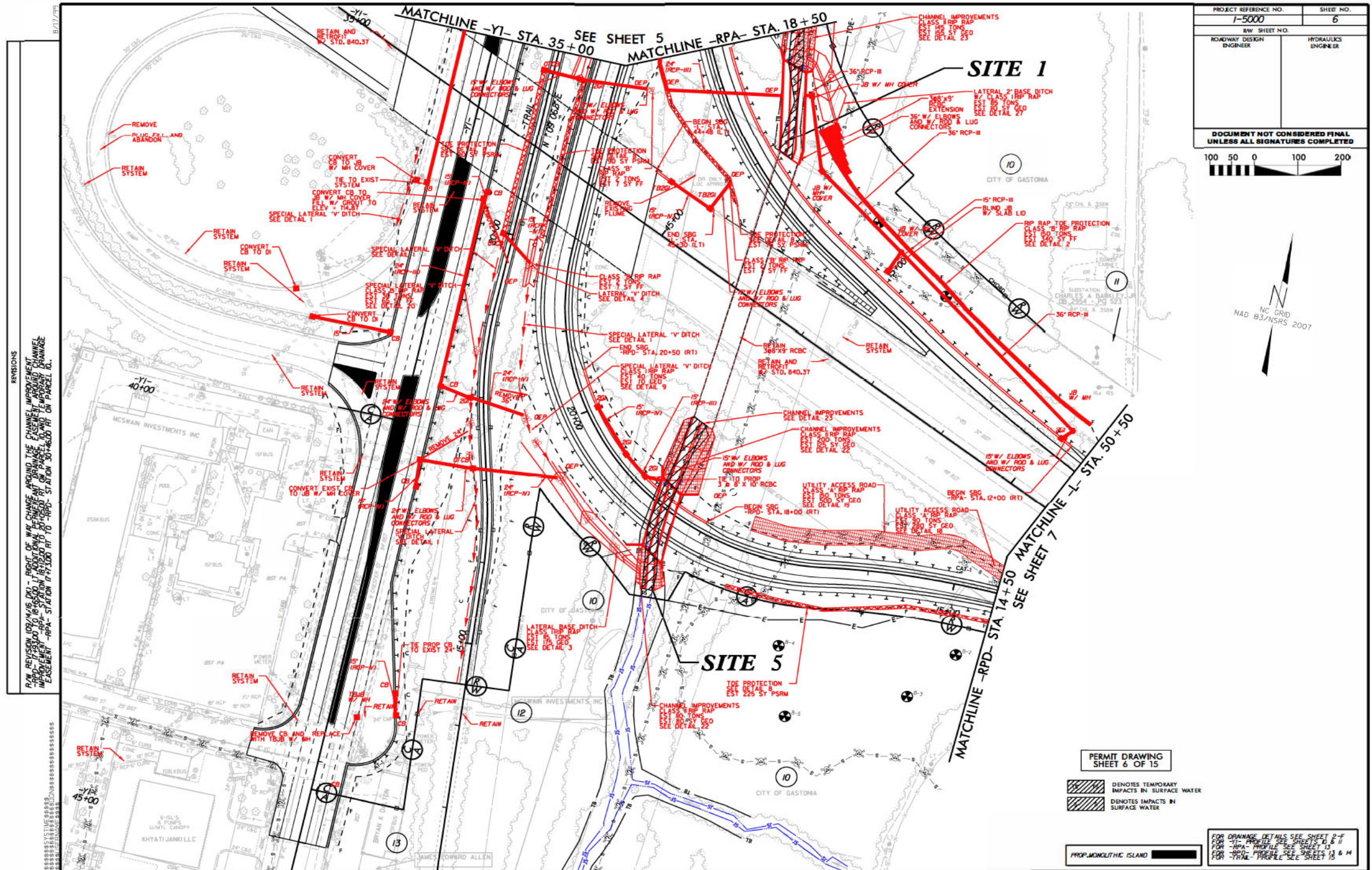


Figure 3. Permit Drawing

2.0 STREAM ASSESSMENT

2.1 Success Criteria

Special Condition #2 / 404 USACE Permit: The stream channel (Highland Creek) within the project area between the I-85 culvert extension (Site 1) and the rock check dam downstream of the Rankin Lake Road Bridge (Site 3) shall be visually monitored with photo stations for a least two bankfull flow events occurring in separate calendar years to ensure channel stability post construction.

2.2 Stream Description

2.2.1 Post-Construction Conditions

The restoration of Highland Creek involved channel improvements consisting of bank stabilization, Rankin Lake bridge removal, and sediment removal for culvert extension.

2.2.2 Monitoring Conditions

The objective of Highland Creek stream restoration was to improve stream function and help prevent future degradation. A visual stream assessment will be conducted annually each year of the two-year monitoring period.

2.3 Results of the Stream Assessment

2.3.1 Site Data

The visual assessment of the stream noted that the channel appears stable with little or no active bank erosion from Site 1 to Site 3. During construction the sediment within the box culvert at Site 1 was removed for the culvert extension. The Year 2 monitoring evaluation noted sediment within culvert and just downstream of the outlet of the culvert moving through the system. NCDOT proposes to discontinue monitoring the channel stability at Highland Creek.

3.0 VEGETATION: HIGHLAND CREEK

3.1 Description of Species

Streambank reforestation was not required per the EC plans.

3.2 Results of Vegetation Monitoring

Streambank Vegetation: Streambanks were vegetated.

3.3 Conclusions

NCDOT proposes to discontinue monitoring the streambank vegetation at Highland Creek.

4.0 OVERALL CONCLUSIONS/RECOMMENDATIONS

Highland Creek has met the required monitoring protocols for the second formal year of monitoring. The channel throughout the stream site is stable and the streambanks are vegetated at this time.

NCDOT proposes to discontinue monitoring at the Highland Creek Site.

5.0 REFERENCES

Department of the Army Permit, Permittee, April 30, 2017, North Carolina Department of Transportation, Permit No. SAW-2010-00033, TIP No. I-5000

North Carolina Department of Environment and Natural Resources, Division of Water Resources, January 30, 2017, I-85/US 321 Interchange Realignment in Gaston County, TIP I-5000, NCDWR Project No. 20161220v.1

APPENDIX A

SITE PHOTOGRAPHS

Highland Creek Sites #1 & #3



Photo Point #1 (Upstream)



Photo Point #1 (Downstream)



Photo Point #2 (Upstream)



Photo Point #2 (Downstream)

November 2023