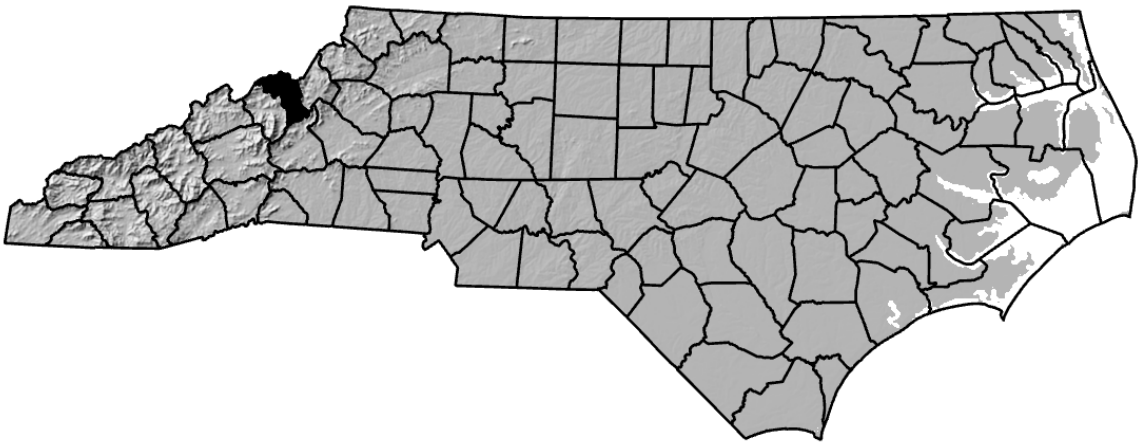
ANNUAL REPORT FOR 2023



UT to Brushy Creek Site #33 Mitigation Site
ONE ID #: 061-005
Mitchell County
TIP No. R-2519B
COE Action ID: SAW-2004-9987181 / 2004-30631
NCDWR Project #: 2013-0743v.2

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

TABLE OF CONTENTS

FIGURES

APPENDICES

SUMMARY

The following report summarizes the stream monitoring activities that have occurred during the Year 2023 at the UT to Brushy Creek Site #33 Mitigation Site in Mitchell County. The North Carolina Department of Transportation (NCDOT) completed the streambank reforestation in March 2020. This report provides the monitoring results for the fourth formal year of monitoring (Year 2023). The Year 2023 monitoring period was the fourth of five scheduled years of monitoring on the UT to Brushy Creek Site #33 Mitigation Site (See Success Criteria Section 2.1).

Based on the overall conclusions of monitoring at the UT to Brushy Creek Site #33, it has met the required monitoring protocols for the fourth formal year of monitoring on the stream. The channel throughout the stream site is stable at this time. The streambank area planted vegetation is surviving at this time.

NCDOT proposes to continue stream and vegetation monitoring at the UT to Brushy Creek Site #33 Mitigation Site in 2024.

1.0 INTRODUCTION

1.1 Project Description

The following report summarizes the stream monitoring activities that occurred during the Year 2023 at the UT to Brushy Creek Site #33 Mitigation Site. Site #33 is located on US 19 across from Old US 19E (SR 1236) in Mitchell County from Sta. 346+50 to 348+50 -L- Rt. (Figure 1). The UT to Brushy Creek Site #33 was constructed to provide mitigation for stream impacts associated with Transportation Improvement Program (TIP) number R-2519B in Yancey and Mitchell Counties.

The mitigation site provided approximately 300 linear feet of stream relocation. Streambank reforestation was completed in March 2020 by NCDOT. The relocation of the UT to Brushy Creek Site #33 Mitigation Site included relocating 300 feet of UT to Brushy Creek due to road widening and the installation of two new 7x7 reinforced concrete box culverts on the inlet side of the channel. The riparian buffer was planted along both sides of the stream relocation. The existing transmission line, proposed utility line and gas line will not be moved per the utility plans for this project and will continue to impact the buffer for the entire relocated length.

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 to Brushy Creek Site #33 Mitigation Site. Hydrologic monitoring was not required for this site.

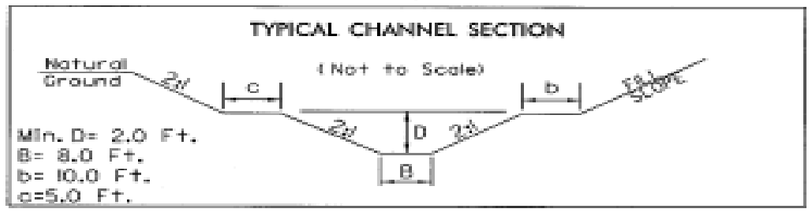
1.3 Project History

March 2020	Streambank Reforestation Completed
September 2020	Stream Channel and Vegetation Monitoring (Year 1)
February 2021	Supplemental Planting Completed
July 2021	Stream Channel and Vegetation Monitoring (Year 2)
August 2021	Herbicide Application on Invasive Species
August 2022	Stream Channel and Vegetation Monitoring (Year 3)
September 2022	Herbicide Application on Invasive Species
July 2023	Stream Channel and Vegetation Monitoring (Year 4)

1.4 Debit Ledger

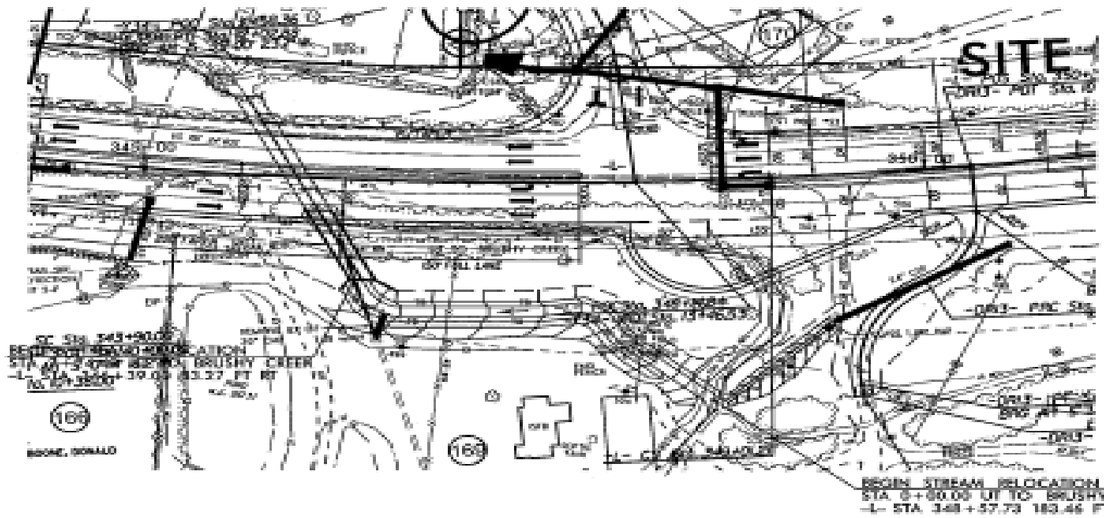
The entire UT to Brushy Creek Site #33 stream mitigation site was used for the R-2519B project to compensate for unavoidable stream impacts.

Figure 1. Vicinity Map



FROM STA. 346+39 TO STA. 348+57.73 –L– RT

SITE 33 UT TO BRUSHY CREEK STREAM RELOCATION



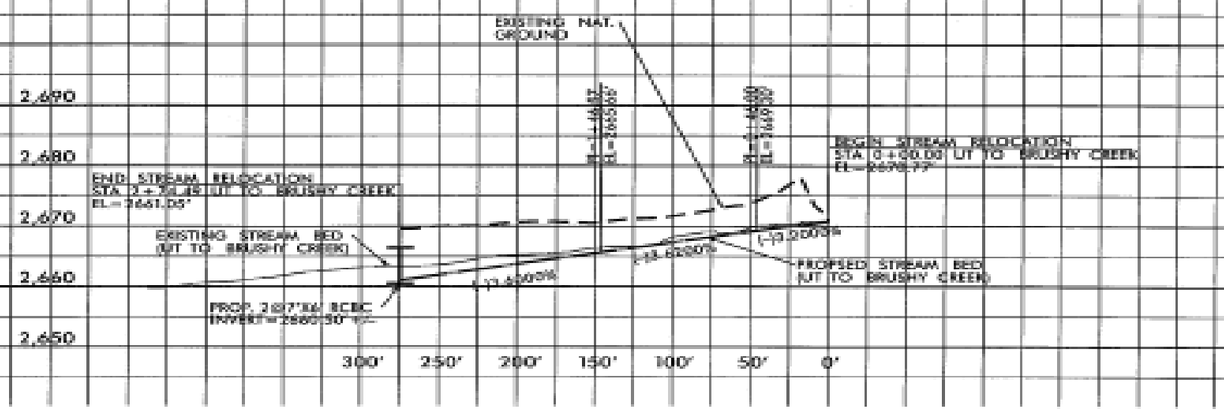


Figure 2. Site #33 Map

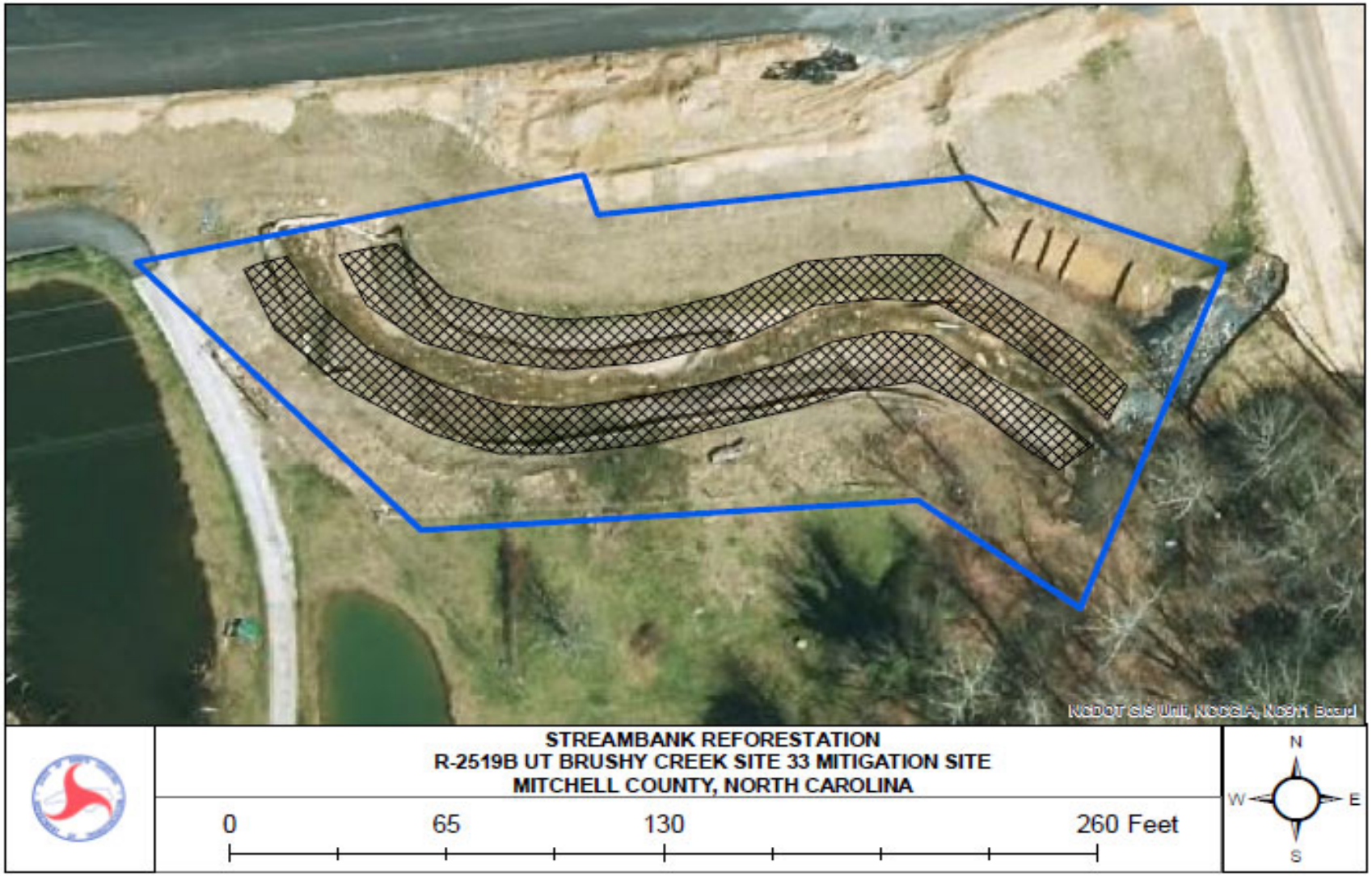


Figure 3. Reforestation Plan

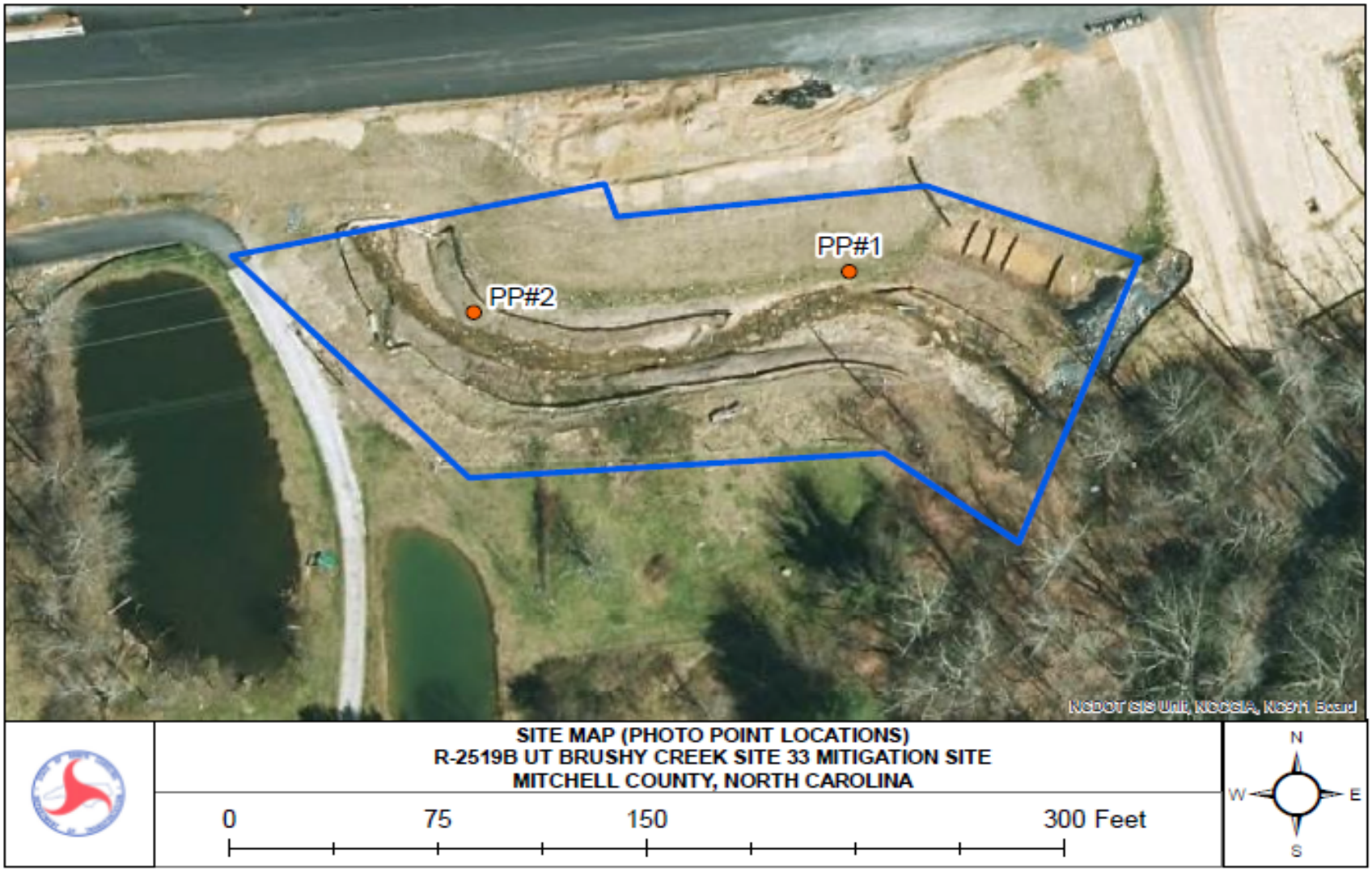


Figure 4. Site Map

2.0 STREAM ASSESSMENT

2.1 Success Criteria

Based on email correspondence with the Regulatory Agencies it was agreed to maintain consistency and follow the mitigation plan language as it relates to vegetation monitoring.

Mitigation Plan

Performance Standards
Performance standards are based on the April 2003 Stream Mitigation Guidelines. Success for vegetation monitoring within the riparian buffer areas will be based on the survival of at least 260 stems of five-year-old trees at year five. Assessment of channel stability will be based on the survival of riparian vegetation and lack of significant bank erosion, channel widening or down-cutting.

Monitoring Requirements
Each site will be monitored for five years with no less than two bankfull events, which must occur in separate monitoring years and be documented. If less than two bankfull events occur during the first five years, monitoring will continue until the second bankfull event is documented. The following components of Level 1 monitoring will be performed annually for the monitoring period: reference photos, plant survival monitoring (identification of specific problem areas and remedial action), and visual inspection of channel stability. Vegetation stem counts will be conducted on Sites 8, 21, and 30 only. Physical measurements of channel stability/morphology will only be performed on Site 30. An as-built will be submitted for each site and will include stream channel profile and cross-section surveys which will provide a baseline for comparison if it is determined at any time during the monitoring period that a problem has occurred. Annual monitoring reports will be made available on the NCDOT website.

NCDWR Condition #1
The permittee shall visually monitor the vegetative plantings to assess and ensure complete stabilization of the mitigation stream segments. Riparian area success shall be determined by conducting stem counts to ensure a tree survival rate of 320 stems/acre. The monitoring shall be conducted annually for a minimum of 3 years after final planting. Photo documentation shall be utilized to document the success of the riparian vegetation and submitted to NCDWR in a final report within sixty days after completing monitoring. After 3 years the NCDOT shall contact NCDWR to schedule a site visit to “close out” the mitigation site.

2.2 Stream Description

2.2.1 Post-Construction Conditions

The relocation of the UT to Brushy Creek Site #33 Mitigation Site included relocating 300 feet of UT to Brushy Creek due to road widening and the installation of two new 7x7 reinforced concrete box culverts on the inlet side of the channel. The riparian buffer will be planted along both sides of the stream relocation. The existing transmission line, proposed utility line and gas line will not be moved per the utility plans for this project and will continue to impact the buffer for the entire relocated length.

2.2.2 Monitoring Conditions

The objective of the UT to Brushy Creek Site #33 stream relocation was to restore a stream as identified in Rosgen's Applied River Morphology. 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 noted that the channel appears stable with little or no active bank erosion. Minor bank scouring previously noted along the left bank downstream of Photo Point #2 showed little to no change since last year. NCDOT will continue to monitor the channel stability at Site #33 in 2024.

3.0 VEGETATION: UT TO BRUSHY CREEK SITE #33

3.1 Description of Species

The following tree species were planted on the streambank:

Salix nigra, Black Willow

Cornus amomum, Silky Dogwood

The following tree species were planted in the buffer area:

Liriodendron tulipifera, Yellow Poplar

Platanus occidentalis, Sycamore

Fraxinus pennsylvanica, Green Ash

Quercus alba, White Oak

3.2 Results of Vegetation Monitoring

Streambank & Buffer Vegetation: Visual planted vegetation assessment noted the planted vegetation is surviving at this time. Silky Dogwood, Black Willow, Green Ash and Sycamore were noted onsite. Tag Alder was also noted along the streambank. Type II buffer plantings are not proposed for replanting due to the utility lines impacting the buffer which was stated in the approved mitigation plan. Powerline easement had been sprayed since last year. Japanese Knotweed was noted onsite.

3.3 Conclusions

NCDOT proposes to continue monitoring the planted vegetation at Site #33 and plans to spray invasive species in 2024.

4.0 OVERALL CONCLUSIONS/RECOMMENDATIONS

The UT to Brushy Creek Site #33 Mitigation Site has met the required monitoring protocols for the fourth formal year of monitoring. The channel throughout the stream site is stable at this time. The planted vegetation is surviving at this time.

NCDOT proposes to continue stream and vegetation monitoring at the UT to Brushy Creek Site #33 Mitigation Site in 2024.

5.0 REFERENCES

Mitigation Plan, US 19E Widening, Yancey and Mitchell Counties, North Carolina TIP Number R-2519B, WBS No. 35609.1.1, May 6, 2013 (Revised November 4, 2013)

Department of the Army Permit, Permittee: North Carolina Department of Transportation, Permit No. 2004-9987181 / 2004-30631, TIP No. R-2519B, Issuing Office: CESAW-RG-A

North Carolina Department of Environment and Natural Resources, Division of Water Resources, December 2, 2013, Proposed improvements to US 19E from SR 1186 in Yancey County to multilane section west of Spruce Pine in Mitchell County, State Project No. 6.909001T, WBS Element No. 35609.1.1, TIP R-2519B, NCDWR Project No. 2013-0743v.2

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 Resources.

APPENDIX A

SITE PHOTOGRAPHS

UT to Brushy Creek Site #33

Photo Point #1 (Upstream)

Photo Point #1 (Downstream)

Photo Point #2 (Upstream)

Photo Point #2 (Downstream)

July 2023