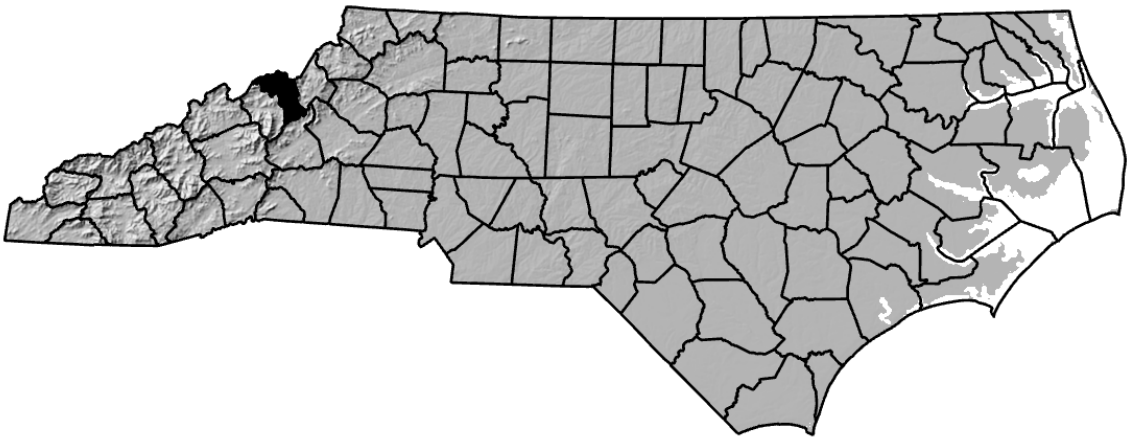
ANNUAL REPORT FOR 2023



Fox Hollow Creek Site #25 Mitigation Site
ONE ID #: 061-003
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

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SUMMARY

The following report summarizes the stream monitoring activities that have occurred during the Year 2023 at the Fox Hollow Creek Site #25 Mitigation Site in Mitchell County. The North Carolina Department of Transportation (NCDOT) completed the streambank reforestation at this project 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 Fox Hollow Creek Site #25 Mitigation Site (See Success Criteria Section 2.1).

Based on the overall conclusions of monitoring at the Fox Hollow Creek Site #25, 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. A headcut previously noted approximately 30 feet upstream from the culvert remains stable at this time with little or no change since last year. The planted vegetation in the streambank and buffer area is surviving at this time.

NCDOT proposes to continue stream and vegetation monitoring at the Fox Hollow Creek Site #25 Mitigation Site in 2024.

1.0 INTRODUCTION

1.1 Project Description

The following report summarizes the stream monitoring activities that have occurred during the Year 2023 at the Fox Hollow Creek Site #25 Mitigation Site. Site #25 is located on US 19 at the intersection with Hoot Owl Rd. (SR 1157) in Mitchell County from Sta. 299+30 to 300+31 -L- Rt. (Figure 1). The Fox Hollow Creek Site #25 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 94 linear feet of stream relocation. Streambank reforestation was completed in March 2020 by NCDOT. Construction at the Fox Hollow Creek Site #25 Mitigation Site included relocating 94 feet of Fox Hollow Creek due to road widening and the installation of a new 54-inch reinforced concrete pipe. The planted riparian buffer will consist of a 50-foot buffer on the northern side and a 10-to-25-foot buffer on the southern side of the stream. No utility easements will impact this mitigation site.

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 Fox Hollow Creek Site #25 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 Buffer 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 Fox Hollow Creek Site #25 stream mitigation site was used for the R-2519B project to compensate for unavoidable stream impacts.

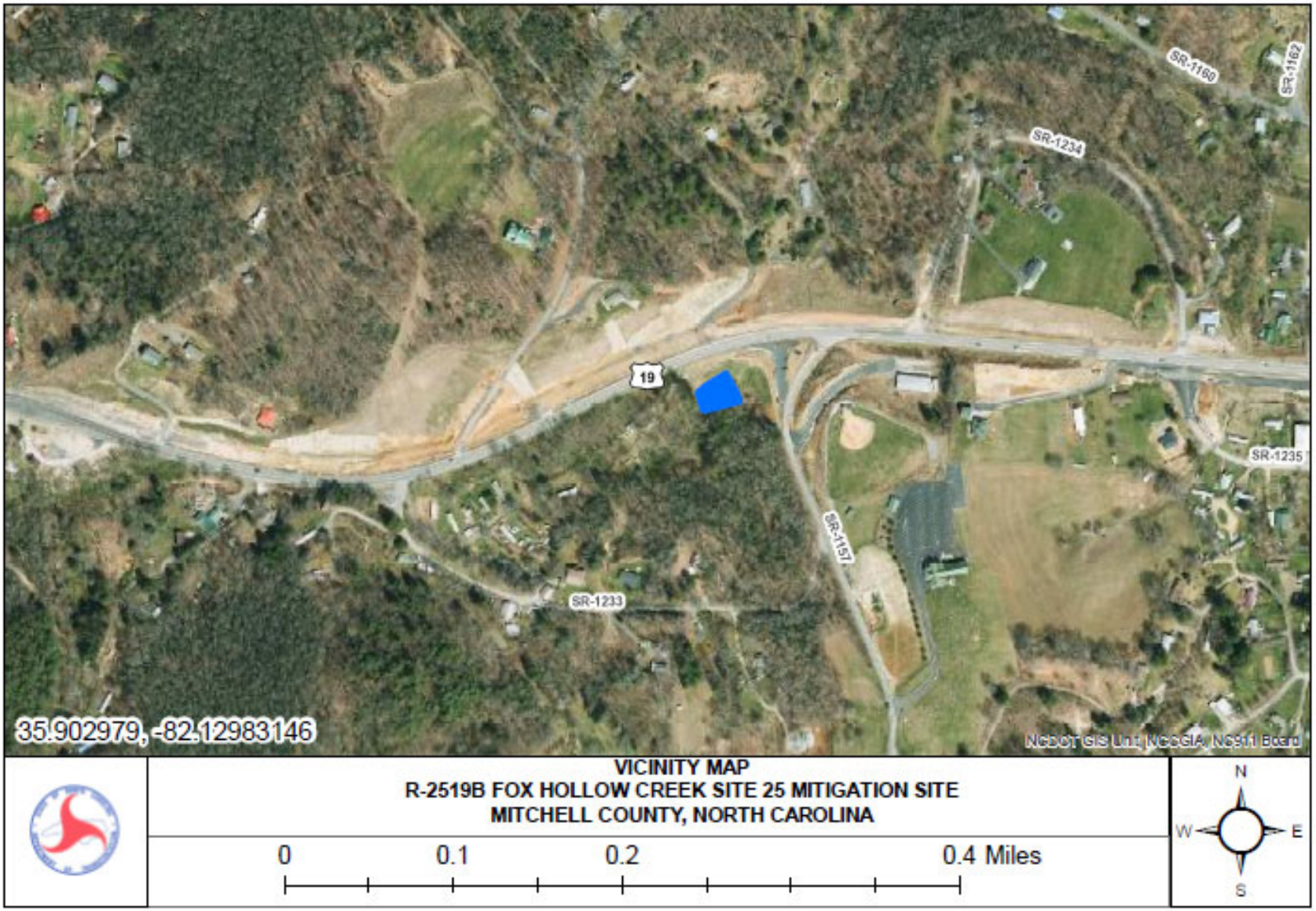

Figure 1. Site #25 Vicinity Map

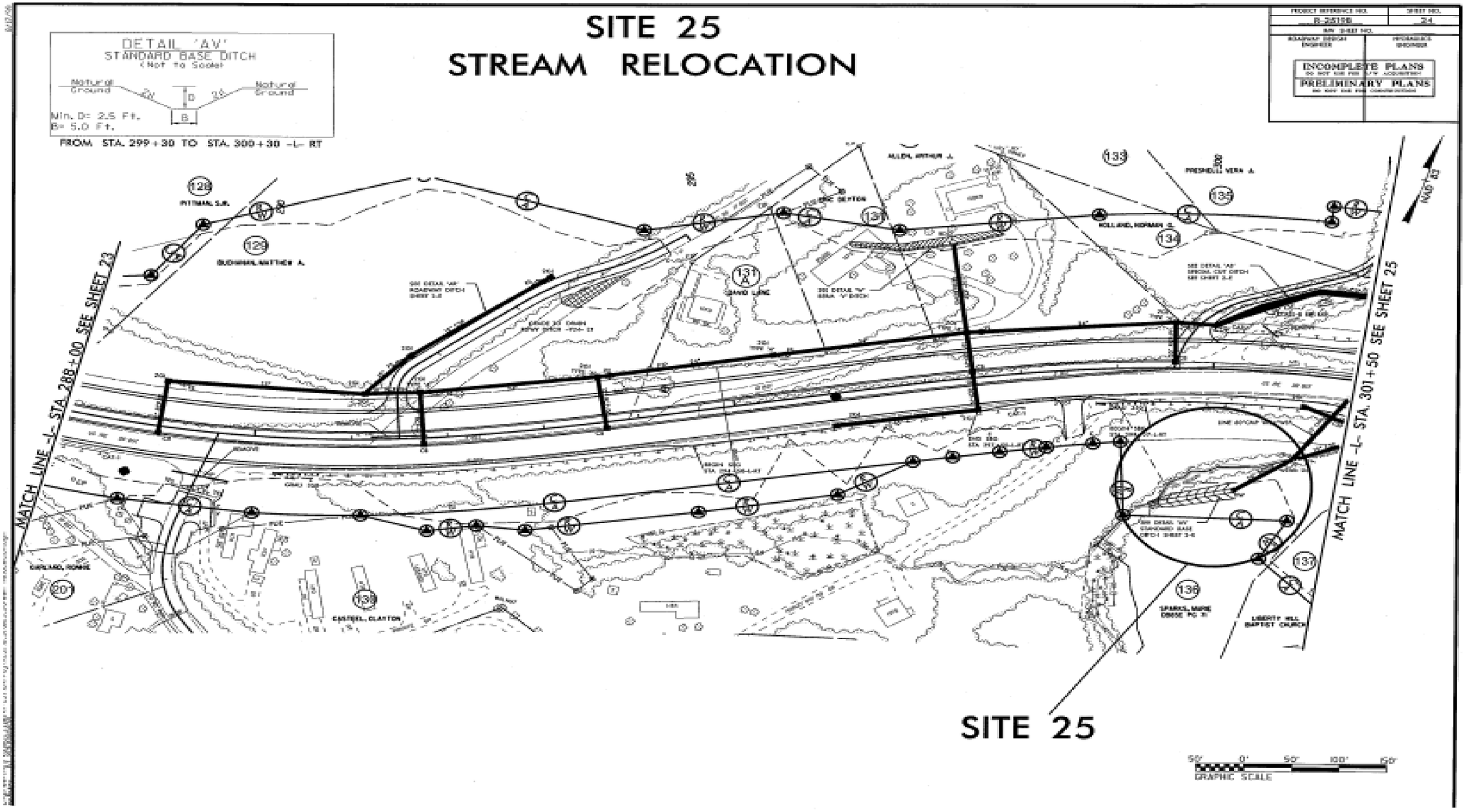

Figure 2. Site #25 Map

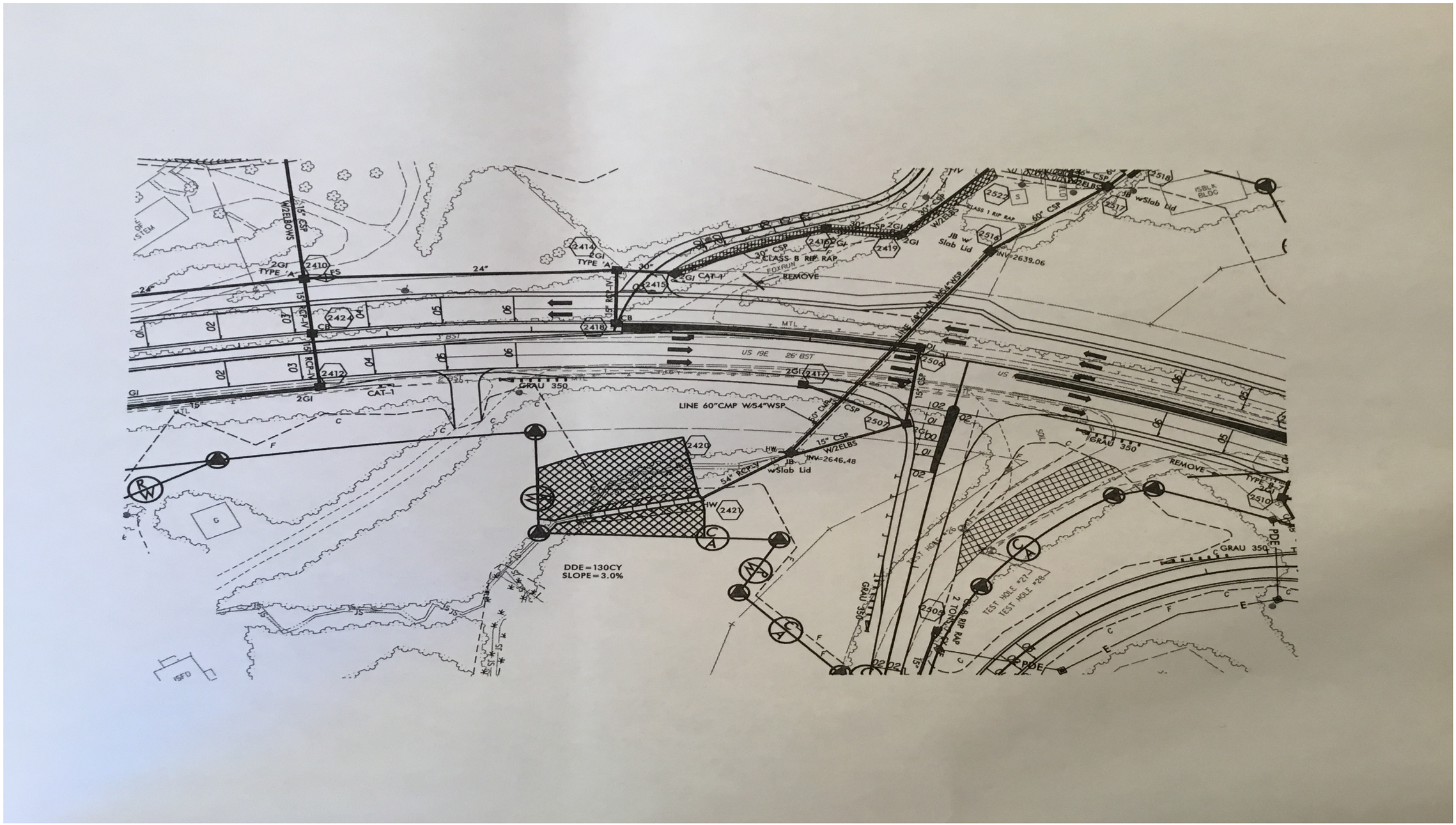

Figure 3. Site #25 Reforestation Plan

Figure 4. Site #25 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 the 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 downcutting.

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 restoration of the Fox Hollow Creek Site #25 Mitigation Site included relocating 94 feet of Fox Hollow Creek due to road widening and the installation of a new 54-inch reinforced concrete pipe. The planted riparian buffer consists of a 50-foot buffer on the northern side and a 10-to-25-foot buffer on the southern side of the stream. No utility easements will impact this mitigation site.

2.2.2 Monitoring Conditions

The objective of the Fox Hollow Creek Site #25 stream restoration 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. A headcut previously noted approximately 30 feet upstream from the culvert remains stable at this time with little or no change since last year. The headcut has stabilized at the bedrock within channel. This area continues to remain highly vegetated and stable at this time. NCDOT proposes to continue monitoring the channel stability at Site #25 in 2024.

3.0 VEGETATION: FOX HOLLOW CREEK SITE #25

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

Quercus rubra, Northern Red Oak

Betula nigra, River Birch

Quercus phellos, Willow Oak

3.2 Results of Vegetation Monitoring

Streambank & Buffer Vegetation: Visual planted vegetation assessment noted the planted vegetation is surviving along the streambanks and within the buffer at this time. Planted vegetation noted onsite included Silky Dogwood, Black Willow, Tulip Poplar, Sycamore, Green Ash, White Oak, Northern Red Oak, and River Birch. Multiflora Rose was noted onsite.

3.3 Conclusions

NCDOT proposes to continue monitoring the planted vegetation and plans to spray the multiflora rose in 2024.

4.0 OVERALL CONCLUSIONS/RECOMMENDATIONS

The Fox Hollow Creek Site #25 Mitigation Site has met the required monitoring protocols for the fourth formal year of monitoring. The channel throughout the stream site is stable. The planted vegetation is surviving at this time.

NCDOT proposes to continue stream and vegetation monitoring at the Fox Hollow Creek Site #25 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

Fox Hollow Creek Site #25

Photo Point #1 (Upstream)

Headcut

July 2023