

**Union County  
Bridge No. 448 on SR 2154 (Gulledge Parker Road)  
over Buffalo Creek  
Federal Aid Project No. BRZ-2154(1)  
W.B.S. No. 46089.1.1  
T.I.P. No. B-5374**

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS



1-7-16  
DATE

*FOR* Richard W. Hancock, PE, Manager  
Project Development & Environmental Analysis Unit

1-7-16  
DATE

*for* John F. Sullivan, III, Division Administrator  
Federal Highway Administration

**Union County  
Bridge No. 448 on SR 2154 (Gulledge Parker Road)  
over Buffalo Creek  
Federal Aid Project No. BRZ-2154(1)  
W.B.S. No. 46089.1.1  
T.I.P. No. B-5374**

**CATEGORICAL EXCLUSION**



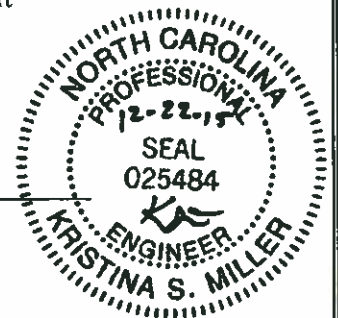
Documentation Prepared by RK&K  
For the  
Project Development and Environmental Analysis Unit

12-22-15

DATE

Handwritten signature of Kristina Miller in black ink.

Kristina Miller, PE  
Project Manager  
RK&K



01-07-2016

DATE

Handwritten signature of Charles R. Cox in blue ink.

Charles R. Cox, PE  
Project Development Group Supervisor  
Project Development Section

01-06-2016

DATE

Handwritten signature of Zahid M. Baloch in black ink.

Zahid M. Baloch, PE  
Project Development Planning Engineer  
Project Development Section

**Union County**  
**Bridge No. 448 on SR 2154 (Gulledge Parker Road)**  
**Over Buffalo Creek**  
**Federal Aid Project No. BRZ-2154(1)**  
**W.B.S. No. 46089.1.1**  
**TIP No. B-5374**

**Project Commitments**

**Hydraulic Unit – FEMA Coordination**

The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), to determine status of project with regard to applicability of NCDOT'S Memorandum of Agreement, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

**Division Construction-FEMA**

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

**Division Office Bridge Program – School Buses**

NCDOT will coordinate with the school system on construction activities along this route.

**Division Construction – Farmland Soils and Signage Notification**

NCDOT will minimize impacts to farmland associated with the preferred alternative by reducing the right of way and restoring impacted soils within the construction easements to farmable conditions.

NCDOT will continue discussions on the installation of caution signs on both ends of the project to notify drivers of a one-lane roadway during construction.

## Table of Contents

I.	PURPOSE AND NEED STATEMENT .....	1
II.	EXISTING CONDITIONS.....	1
III.	ALTERNATIVES.....	2
A.	Alternative 1 .....	3
B.	Alternative 2 (Preferred Alternative).....	3
C.	Alternatives Eliminated from Further Consideration .....	3
IV.	ESTIMATED COSTS .....	4
V.	NATURAL ENVIRONMENT .....	4
A.	Physical Characteristics .....	4
1.	Water Resources .....	4
2.	Biotic Resources .....	5
B.	Jurisdictional Topics .....	5
1.	Surface Waters and Wetlands.....	5
2.	Permits .....	6
C.	Federally Protected Species .....	7
1.	Federally Threatened and Endangered Species .....	7
2.	Bald Eagle and Golden Eagle Protection Act.....	9
3.	Candidate Species.....	9
4.	Essential Fish Habitat.....	9
VI.	HUMAN ENVIRONMENT .....	9
A.	Section 106 Compliance Guidelines.....	9
1.	Historic Architecture .....	9
2.	Archaeology .....	9
B.	Community Impacts.....	9
C.	Noise and Air Quality .....	10
VII.	GENERAL ENVIRONMENTAL EFFECTS.....	11
VIII.	COORDINATION AND AGENCY COMMENTS .....	11
IX.	PUBLIC INVOLVEMENT .....	12
X.	CONCLUSION.....	12
XI.	REFERENCES .....	13

## List of Tables

Table 1:	Estimated Costs .....	4
Table 2:	Water Resources in the Study Area .....	4
Table 3:	Physical Characteristics of Water Resources in the Study Area .....	4
Table 4:	Coverage of Terrestrial Communities in the Study Area .....	5
Table 5:	Jurisdictional Characteristics of Water Resources in the Study Area .....	5
Table 6:	Jurisdictional Characteristics of Wetlands in the Study Area .....	6
Table 7:	Federally Protected Species Listed for Union County .....	7

## List of Figures

- Figure 1: Vicinity Map
- Figure 2: Project Study Area
- Figure 3: Typical Sections
- Figures 4A and 4B: Alternatives 1 and 2
- Figure 5: Jurisdictional Features
- Figure 6: Terrestrial Communities
- Figure 7: Community Features
- Figure 8: Photos of the Existing Bridge and Approaches

## Appendices

### Appendix A: Agency Correspondence

- January 11, 2013 US Fish and Wildlife Service
- December 31, 2013 US Department of Agriculture, Farmland Conversion Impact Rating
- March 18, 2013 NC Division of Water Resources
- October 22, 2013 Union County Planning Department
- March 22, 2013 Historic Architecture and Landscapes Form (13-03-0039)
- April 19, 2013 No NRHP Eligible or Listed Archaeological Sites Form (13-03-0039)

### Appendix B: Newsletter

**Union County**  
**Bridge No. 448 on SR 2154 (Gulledge Parker Road)**  
**over Buffalo Creek**  
**Federal Aid Project No. BRZ-2154(1)**  
**W.B.S. No. 46089.1.1**  
**T.I.P. No. B-5374**

INTRODUCTION: Bridge No. 448 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion.”

## **I. PURPOSE AND NEED STATEMENT**

NCDOT Bridge Management Unit records (March 2014) indicate that Bridge No. 448 has a sufficiency rating of 33 out of a possible 100. This bridge was built in 1965 and is considered structurally deficient<sup>1</sup> due to a rating<sup>2</sup> of 3 on the substructure and 4 on the deck condition. It is also considered functionally obsolete<sup>3</sup> due to a rating of 3 on the structural evaluation. The bridge is approaching the end of its useful life and is in need of replacement.

Bridge No. 448 has a timber deck on continuous I-beams. The substructure consists of end bents, a crutch at end bent no. 1, interior bents, timber caps, posts and sills. Old timber structures have a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement.

## **II. EXISTING CONDITIONS**

The project is located in Union County on SR 2154, approximately 0.1 mile west of the junction at NC 207 (Wolf Pond Road) and 8 miles south of Monroe, NC. The local area is rural with agricultural fields on rolling hills. The project location is shown in **Figure 1**.

Bridge No. 448 is a two-span bridge 40-feet long (25 feet and 15 feet) and has a clear roadway width of 19.2 feet. The bridge deck is situated approximately 11 feet above the creek bed and the normal depth of water is approximately 3 feet.

---

<sup>1</sup> “Structurally deficient” means that while the bridge remains safe, it requires repairs and was built to design standards no longer used for bridges. It is in relatively poor condition, and/or has insufficient load-carrying capacity. The insufficient load capacity could be due to age, the original design or to wear and tear.

<sup>2</sup> Bridge Inspection Evaluation codes: “Critical” is 0-3; “Poor” is 4; “Fair” is 5-6; and “Good” is 7-9.

<sup>3</sup> “Functionally obsolete” means that the bridge is safe, but needs to be replaced to meet current and future traffic demands. It is narrow, has inadequate under-clearances, has insufficient load-carrying capacity, is poorly aligned with the roadway, and/or can no longer adequately service today’s traffic.

SR 2154 is a dead-end road with low traffic. At the bridge site, SR 2154 approach roadway narrows to 16 feet with shoulders. An off-site detour is not feasible. The bridge has a timber deck, guardrails, wing walls, end bents, wheel guards, I-bent near the edge of water, and steel girders. SR 2154 and the bridge have Bituminous Surface Treatment (BST) pavement. There is no posted weight limit for single vehicles (SV) and for truck tractor semi-trailer (TTST). The posted speed limit is 35 mph on SR 2154.

General Telephone has a buried cable along the south side of SR 2154. Union Power Corporation has an aerial transmission line along the north side of the road that crosses over Buffalo Creek parallel to the north side of the bridge. A water line and metal silos were observed away from the bridge at the intersection of SR 2154 and NC 207.

According to the NCDOT Bridge Inspection Report, dated March 4, 2014, average daily traffic (ADT) in year 2000 is listed at 100 vehicles per day (vpd). Future traffic in year 2025 is estimated at 200 vpd. The posted speed limit is 35 miles per hour in the project area.

There are three school buses that use SR 2154 each weekday, for a total of eight trips per day during the school calendar year (*NCDOT Community Impact Assessment, 2013*). Only some of the buses have both morning pick up and afternoon drop offs. The number of buses that use SR 2154 will change each year due to the continual growth of school-aged children and their changes in transportation needs. NCDOT will coordinate with the school system on construction activities along this route.

There were no accidents reported in the vicinity of Bridge No. 448 during a recent ten-year period from November 1, 2004 to October 31, 2014.

SR 2154 is not part of a designated bicycle route. There are no sidewalks or pedestrian pathways located along the project corridor.

There are no railways near the project. The nearest airport/airfield is Utility Aerodome, which is approximately 10 miles west of the project.

### **III. ALTERNATIVES**

Two alternatives are being studied. Alternative 1 is a culvert located at the existing bridge with an on-site detour to the north of the existing bridge. Alternative 2 is a culvert, located at the existing bridge that will be stage-constructed to maintain traffic during construction activities.

The NCDOT Bridge and Approach Investigation Checklist notes that a reasonable bridge speed is 45 mph. See **Figures 3, 4A and 4B** for the typical section and preliminary designs for both alternatives.

### **A. Alternative 1**

Alternative 1 is a double-barrel culvert (12 feet wide x 10 feet high x 80 feet long) located at the existing bridge with an on-site detour to the north (upstream) to maintain traffic during construction.

The roadway approach will include two 10-foot lanes with 3-foot shoulders. The shoulder will extend up to six feet to include guardrail, as needed. The design speed is 45 mph.

The on-site detour will include a temporary 68-foot pipe extension to the north of the existing bridge for the detour road. The roadway typical section has two 10-foot lanes with 4 to 6-foot shoulders. The design speed of the detour roadway is 35 mph.

### **B. Alternative 2 (Preferred Alternative)**

Alternative 2 is a double barrel culvert (12 feet wide x 10 feet high x 80 feet long) at the same location as the existing bridge. The roadway will be extended to the north side and constructed in stages (staged-constructed) to maintain traffic during construction activities. This alternative is approximately \$87,500 less expensive than Alternative 1 because it maintains traffic on the existing alignment and therefore does not include construction of an on-site detour. Two-way traffic will utilize one travel lane to cross Buffalo Creek.

The roadway will include two 10-foot lanes with 3-foot shoulders. The shoulders will go up to six feet with guardrail. The length of the culvert allows construction to continue while one lane of two-way traffic is maintained. NCDOT will continue discussions on the installation of caution signs on both ends of the project to notify drivers of a one-lane roadway during construction. The design speed is 40 mph.

Alternative 2 was selected as the Preferred Alternative because it is less expensive than Alternative 1 due to the use of stage-construction techniques to maintain traffic rather than building a separate on-site detour. There is also a reduction in impacts and property acquisition.

### **C. Alternatives Eliminated from Further Consideration**

The No Build Alternative will eventually necessitate the closure of the bridge, which would not be acceptable to the general public nor to the residents that live and live off of SR 2154. Rehabilitation of the existing structure is not feasible due to its age and deteriorated condition.

Replacing the bridge to the south side of the roadway was considered but not studied due to the increase in wetland impacts. Moving the roadway southward would impact a small wetland and a driveway (and possibly silos) near the bridge.



#### IV. ESTIMATED COSTS

The estimated costs, based on 2015 prices, are as follows:

**Table 1: Estimated Costs**

Description	Alternative 1 (On-site Detour)	Alternative 2 (Staged Culvert) (Preferred Alternative)
Structure	\$224,000.00	\$268,800.00
Roadway Approaches	\$64,200.00	\$166,200.00
Detour Structure and Approaches	\$180,900.00	\$0.00
Structure Removal	\$24,000.00	\$24,000.00
Miscellaneous and Mobilization	\$141,900.00	\$119,000.00
Engineering and Contingencies	\$115,000.00	\$97,000.00
Total Construction Cost	\$750,000.00	\$675,000.00
Right-of-Way Costs	\$25,000.00	\$30,000.00
Right-of-Way Utility Costs	\$50,300.00	\$32,800.00
<b>Total</b>	<b>\$825,300.00</b>	<b>\$737,800.00</b>

#### V. NATURAL ENVIRONMENT

##### A. Physical Characteristics

The study area lies in the piedmont physiographic region of North Carolina. Topography in the project vicinity is comprised of gently rolling hills with narrow, level floodplains along streams. Elevations in the study area range from 550 to 570 feet above sea level. Land use in the project vicinity consists primarily of agriculture interspersed with residential development.

##### 1. Water Resources

Water resources in the study area are part of the Yadkin-Pee Dee River basin [U.S. Geological Survey (USGS) Hydrologic Unit 03040202)]. One stream was identified in the study area (**Table 2**). The location of the water resource is shown in **Figure 5**. The physical characteristics of the stream are provided in **Table 3**.

**Table 2. Water Resources in the Study Area**

Stream Name	Map ID	NCDWQ Index Number	Best Usage Classification
Buffalo Creek	Buffalo Creek	13-49-2	C

**Table 3. Physical Characteristics of Water Resources in the Study Area**

Map ID	Bank Height (ft)	Bankful Width (ft)	Water Depth (in)	Channel Substrate	Velocity	Clarity
Buffalo Creek	6-8	20-25	24-48	Sand, silt, gravel	Moderate	Turbid

There are no designated High Quality Waters (HQW), Outstanding Resource Waters (ORW), or water supply watersheds (WS-I or WS-II) within 1.0 mile downstream of the study area. No streams located within 1.0 mile of the study area support trout or anadromous fish. There are no impaired waters identified by the North Carolina 2014 Integrated Report for 303(d) listed waters within the study area for sedimentation or turbidity or within one mile downstream.

No benthic macroinvertebrate or fish sampling sites were identified within 1.0 mile of the project study area.

## 2. Biotic Resources

One terrestrial community was identified in the study area: maintained/disturbed. **Figure 6** shows the location and **Table 4** shows the extent of this terrestrial community in the study area. Maintained and disturbed areas are represented throughout the study area in places where the vegetation is periodically mowed, such as roadside shoulders, commercial parking areas, and agricultural fields. The vegetation in this community is comprised of low-growing grasses and herbs, including fescue, clover, Japanese honeysuckle, Chinese privet and wild onion. Trees found in this community include red maple, eastern red cedar, and hackberry. Wetland WA and WB (non-tidal freshwater marsh), discussed in Section V.B.1, are found in this community.

**Table 4. Coverage of Terrestrial Communities in the Study Area**

Community Type	Alternative 1 (acres)*	Alternative 2 (Preferred Alternative) (acres)*
Maintained / Disturbed	1.0	0.3
Open Water	0.1	0.1
<b>Totals</b>	<b>1.1</b>	<b>0.4</b>

\*The area of impact is based on the preliminary design slope stake lines plus a 25-foot offset minus the existing ROW.

## B. Jurisdictional Topics

### 1. Surface Waters and Wetlands

One jurisdictional stream was identified in the project study area (**Table 5**). The location of this stream is shown on **Figure 5**. Buffalo Creek has been designated as a warm water stream for the purposes of stream mitigation.

**Table 5. Jurisdictional Characteristics of Water Resources in the Study Area**

Map ID	Alternative 1 (feet)*	Alternative 2 (Preferred Alternative) (feet)*	Classification	Compensatory Mitigation Required	River Basin Buffer
Buffalo Creek	184	130	Perennial	Yes	Not Subject

\*The area of impact is based on the preliminary design slope stake lines plus a 25-foot offset.

Two jurisdictional wetlands were identified within the project study area (see **Figure 5**). Wetland classification and quality rating data are presented in **Table 6**. This wetland in the study area is within the Yadkin-Pee Dee River basin (USGS Hydrologic Unit 03040202). Wetland site WA and WB are included within the maintained/disturbed community.

**Table 6. Jurisdictional Characteristics of Wetlands in the Study Area**

Map ID	NCWAM Classification	Hydrologic Classification	NCDWQ Wetland Rating	Alternative 1 (ac.)*	Alternative 2 (Preferred Alternative) (ac.)*
WA	Non-tidal freshwater marsh	Riparian	24	0.06	0.01
WB	Non-tidal freshwater marsh	Riparian	24	0.01	0
<b>Total</b>				<b>0.07</b>	<b>0.01</b>

*\*The area of impact is based on the preliminary design slope stake lines plus a 25-foot offset.*

## 2. Permits

A Nationwide Permit (NWP) No. 23 will likely be applicable. A NWP No. 33 may also apply for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation. The USACE holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required then a Section 401 Water Quality Certification (WQC) from the NCDWQ will be needed.

Union County is not one of the twenty counties under the jurisdiction of the Coastal Area Management Act (CAMA). Therefore, no CAMA Areas of Environmental Concern (AEC) exist in the study area. A CAMA permit from the North Carolina Division of Coastal Management (NCDWM) will not be required.

No construction moratoria are anticipated to be required for work within the study area. The project is not located in a Wildlife Resources Commission (WRC) trout county.

There are no buffer rules administered by NCDWR for the Yadkin-Pee Dee River Basin. Therefore, these streams are not subject to buffer rule protection.

There are no Navigable Waters under Section 10 of the Rivers and Harbors Act located in the project study area.

The NCDOT has attempted to avoid and minimize impacts to streams and wetlands to the greatest extent practicable in choosing and designing the preferred alternative. NCDOT will investigate potential on-site stream and wetland mitigation opportunities once the design is refined and impacts are minimized. If on-site mitigation is not feasible, mitigation will be provided by the NCDENR Ecosystem Enhancement Program (EEP).

### C. Federally Protected Species

#### 1. Federally Threatened and Endangered Species

As of March 25, 2015, the United States Fish and Wildlife (USFWS) lists three federally protected species for Union County (**Table 7**). A brief description of each species' habitat requirements follows, along with the Biological Conclusion rendered based on survey results in the study area. Habitat requirements for each species are based on the current best available information from referenced literature and/or USFWS.

**Table 7. Federally Protected Species Listed for Union County**

Scientific Name	Common Name	Federal Status*	Habitat Present	Biological Conclusion
<i>Lasmigona decorata</i>	Carolina heelsplitter	E	No**	No Effect
<i>Rhus michauxii</i>	Michaux's sumac	E	Yes	No Effect
<i>Helianthis schweinitzii</i>	Schweinitz's sunflower	E	Yes	No Effect

\*E – Endangered

\*\*No - Based on additional site visits after the July 2013 Natural Resources Technical Report, in an email dated November 3, 2015, NCDOT-NES confirmed that Buffalo Creek's quality was such that habitat for Carolina heelsplitter was not present.

#### **Carolina heelsplitter**

USFWS optimal survey window: year round

Habitat Description: The Carolina heelsplitter was historically known from several locations within the Catawba and Pee Dee River systems in North Carolina and the Pee Dee and Savannah River systems, and possibly the Saluda River system, in South Carolina. In North Carolina, the species is now known only from a handful of streams in the Rocky and Catawba River systems. The species exists in very low abundances, usually within six feet of shorelines, throughout its known range. The general habitat requirements for the Carolina heelsplitter are shaded areas in large rivers to small streams, often burrowed into clay banks between the root systems of trees, or in runs along steep banks with moderate current. The more recent habitat where the Carolina heelsplitter has been found is in sections of streams containing bedrock with perpendicular crevices filled with sand and gravel, and with wide riparian buffers.

#### **Biological Conclusion: No Effect**

Surveys for this mussel occurred on August 7, 2013. The stream has extremely poor quality with low potential to provide Carolina heelsplitter habitat. Stream width and bank heights were highly variable. Banks had some erosion and undercutting. The reach had mostly open canopy. Water was slightly turbid and at normal depth for time of year. Substrates included silt, sand, clay, cobble, pebble, gravel, boulder and bedrock. Sand and clay were dominant. Compactness was mostly normal. Stream buffer width was non-existent with agricultural fields on either side. Evidence of beavers was observed with gnawed sticks in the stream. Given habitat quality, lack of any native mussel taxa, and the isolation of this surveyed stream from known species occurrences, the biological conclusion associated with this project for the Carolina heelsplitter is "No Effect."

### **Michaux's sumac**

USFWS optimal survey window: May-October

Habitat Description: Michaux's sumac, endemic to the inner Coastal Plain and lower Piedmont, grows in sandy or rocky, open upland woods on acidic or circumneutral, well-drained sands or sandy loam soils with low cation exchange capacities. The species is also found on sandy or submesic loamy swales and depressions in the fall line Sandhills region as well as in openings along the rim of Carolina bays; maintained railroad, roadside, powerline, and utility rights-of-way; areas where forest canopies have been opened up by blowdowns and/or storm damage; small wildlife food plots; abandoned building sites; under sparse to moderately dense pine or pine/hardwood canopies; and in and along edges of other artificially maintained clearings undergoing natural succession. In the central Piedmont, it occurs on clayey soils derived from mafic rocks. The plant is shade tolerant and, therefore, grows best where disturbance (e.g., mowing, clearing, grazing, periodic fire) maintains its open habitat.

### **Biological Conclusion: No Effect**

Suitable habitat was present on October 26, 2014. The area consisted of roadside shoulders and edges of agriculturally maintained open areas. No species were found during the site visit. A review of NCNHP records, updated July 8, 2015, indicated no known occurrences within 1.0 mile of the study area. An additional survey conducted on October 20, 2015 resulted in no species found.

### **Schweinitz's sunflower**

USFWS Optimal Survey Window: late August-October

Habitat Description: Schweinitz's sunflower, endemic to the Piedmont of North and South Carolina. The few sites where this rhizomatous perennial herb occurs in relatively natural vegetation are found in Xeric Hardpan Forests. The species is also found along roadside rights-of-way, maintained power lines and other utility rights-of-way, edges of thickets and old pastures, clearings and edges of upland oak-pine-hickory woods and Piedmont longleaf pine forests, and other sunny or semi-sunny habitats where disturbances (e.g., mowing, clearing, grazing, blow downs, storms, frequent fire) help create open or partially open areas for sunlight. It is intolerant of full shade and excessive competition from other vegetation. Schweinitz's sunflower occurs in a variety of soil series, including Badin, Cecil, Cid, Enon, Gaston, Georgeville, Iredell, Mecklenburg, Misenheimer, Secrest, Tatum, Uwharrie, and Zion, among others. It is generally found growing on shallow sandy soils with high gravel content; shallow, poor, clayey hardpans; or shallow rocky soils, especially those derived from mafic rocks.

### **Biological Conclusion: No Effect**

Suitable habitat was present on October 26, 2014. The area consisted of roadside shoulders and edges of agriculturally maintained open areas. No species were found during the site visit. A review of NCNHP records, updated July 8, 2015, indicated no known occurrences within 1.0 mile of the study area. An additional survey conducted on October 20, 2015 resulted in no species found.

## 2. Bald Eagle and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within 1.0 mile of open water. Suitable habitat for bald eagle does not exist in or within 1.13 miles (1.0 mile plus 660 feet) of the study area. Additionally, a review of the NCNHP database on July 8, 2015 revealed no known occurrences of this species within 1.0 mile of the study area.

## 3. Candidate Species

As of March 25, 2015, the USFWS lists one Candidate species for Union County: Georgia aster (*Symphyotrichum georgianum*). Habitat is present for this species however NCNHP records, updated July 8, 2015, indicated that there is one known occurrence of Georgia aster located 4,362 feet from the study area.

## 4. Essential Fish Habitat

There are no Essential Fish Habitat areas identified by the National Marine Fisheries Service (NMFS) in the study area.

# VI. HUMAN ENVIRONMENT

## A. Section 106 Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federal funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

### 1. Historic Architecture

NCDOT-Human Environment Unit, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation, reviewed the proposed project and determined that no surveys are required (see form dated March 22, 2013 in **Appendix A**).

### 2. Archaeology

NCDOT-Human Environment Unit, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation, reviewed the proposed project and determined that no eligible or listed archaeological sites are present or affected by this project (see form dated April 19, 2013 in **Appendix A**).

## B. Community Impacts

Although limited in nature, this bridge replacement will have some impacts to the farming community at SR 2154 and NC 207. An on-site detour or the use of staged construction will

allow access to be maintained during the construction process. However, access to Cauthen Farm and Grain and its tractor trailer storage lot, as well as the other access driveways may be impacted during construction if trucks and farming equipment cannot access the property (see **Figure 7**)

No notably adverse community impacts are anticipated with this project and no Environmental Justice populations appear to be affected; thus impacts to minority and low-income populations do not appear to be disproportionately high and adverse. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community, and no denial of benefits is expected.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of this project.

As is required by the Farmland Protection Policy Act (FPPA), the form NRCS-AD-1006 (for point projects) has been completed according to the FHWA guidelines. Since the project received 87 points in Parts III and VI, it was submitted to Natural Resources Conservation Service (NRCS) for review. After the NRCS review, the project received a point total of 170, which exceeds the 160 point rating, and therefore, constitutes a significant impact to farmland. Alternatives exceeding a point total of 160 are those most suitable for protection under FPPA. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts upon farmland. NCDOT will minimize impacts to farmland associated with the preferred alternative by reducing the right of way and restoring impacted soils within the construction easements to farmable conditions.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

### **C. Noise and Air Quality**

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis and project level Carbon Monoxide (CO) or Particulate Matter (PM) 2.5 analyses are not required. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxics (MSAT) concerns. Consequently, this project is exempt from analysis for MSATs. Any burning of vegetation will be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 North Carolina Administrative Code (NCAC) 2D.0520.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

While the proposed culvert is on the existing alignment, it does not include a substantial horizontal or vertical alteration from the existing alignment<sup>4</sup>. No traffic noise analysis is required to meet the requirement of 23 CFR 772.

## VII. GENERAL ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operation.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of the current NCDOT standards and specifications.

The proposed project will not require ROW acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

Union County is a participant in the National Flood Insurance Program, administered by the Federal Emergency Management Agency (FEMA). According to the NC Floodplain Mapping Program, 100-year base flood elevations were established in a Limited Detailed Flood Study. The Hydraulics Unit will coordinate with FEMA to determine if a Conditional Letter of Map Revision (CLOMR) and a subsequent final Letter of Map Revision (LOMR) are required for the project. If required, sealed as-built construction plans will be submitted to the Hydraulics Unit upon project completion certifying the project was built as shown on the construction plans. Furthermore, NCDOT's *Best Management Practices for Protection of Surface Waters* (March 1997) and NCDOT's *Culvert Avoidance and Minimization Design Guidance* (April 2012) will be followed throughout the design process.

## VIII. COORDINATION AND AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: US Army Corps of Engineers, NC Department of Environment and Natural Resources, US Fish and Wildlife Service, NC Wildlife Resource Commission, NC Division of Parks and Recreation, NC State Historic Preservation Office, local planning departments for counties and towns, county school systems, and local emergency services. **Appendix A** contains correspondence from the agencies who responded.

---

<sup>4</sup> Substantial Horizontal Alteration = A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition. Substantial Vertical Alteration = A project that removes shielding, therefore exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor (NCDOT Traffic Noise Abatement Policy, 2011).



In a letter dated January 11, 2013, the US Fish and Wildlife Service recommended a field survey for the Georgia aster (*Symphyotrichum georgianum*) and Schweinitz's sunflower (*Helianthus schweinitzii*).

In a letter dated March 18, 2013, the NCDENR – Division of Water Resources noted that B-5374 traveled over Buffalo Creek, which has a stream classification of “C” waters. No project specific comments were provided.

In an email dated February 24, 2015, the Union County Transportation Planner noted that this project is in a very rural and agricultural area. The road itself, is a local road and is not recommended for any improvements. There are no concerns regarding this bridge replacement project.

## **IX. PUBLIC INVOLVEMENT**

On May 8, 2015, approximately 15 newsletters were mailed to notify property owners on Gulledge Parker Road about the proposed bridge replacement project. **Appendix B** contains a copy of the newsletter. No residents commented on the project via email, letter, or phone call.

There is no substantial controversy on social, economic, or environmental grounds concerning the project.

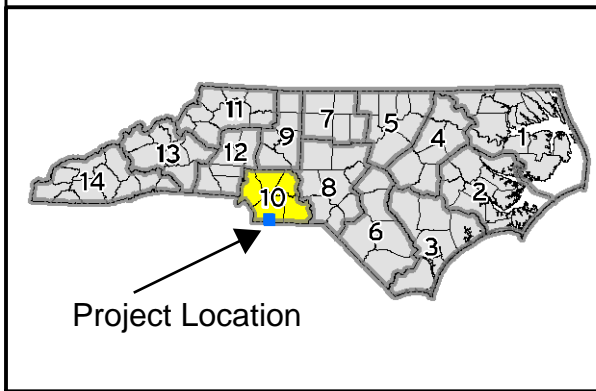
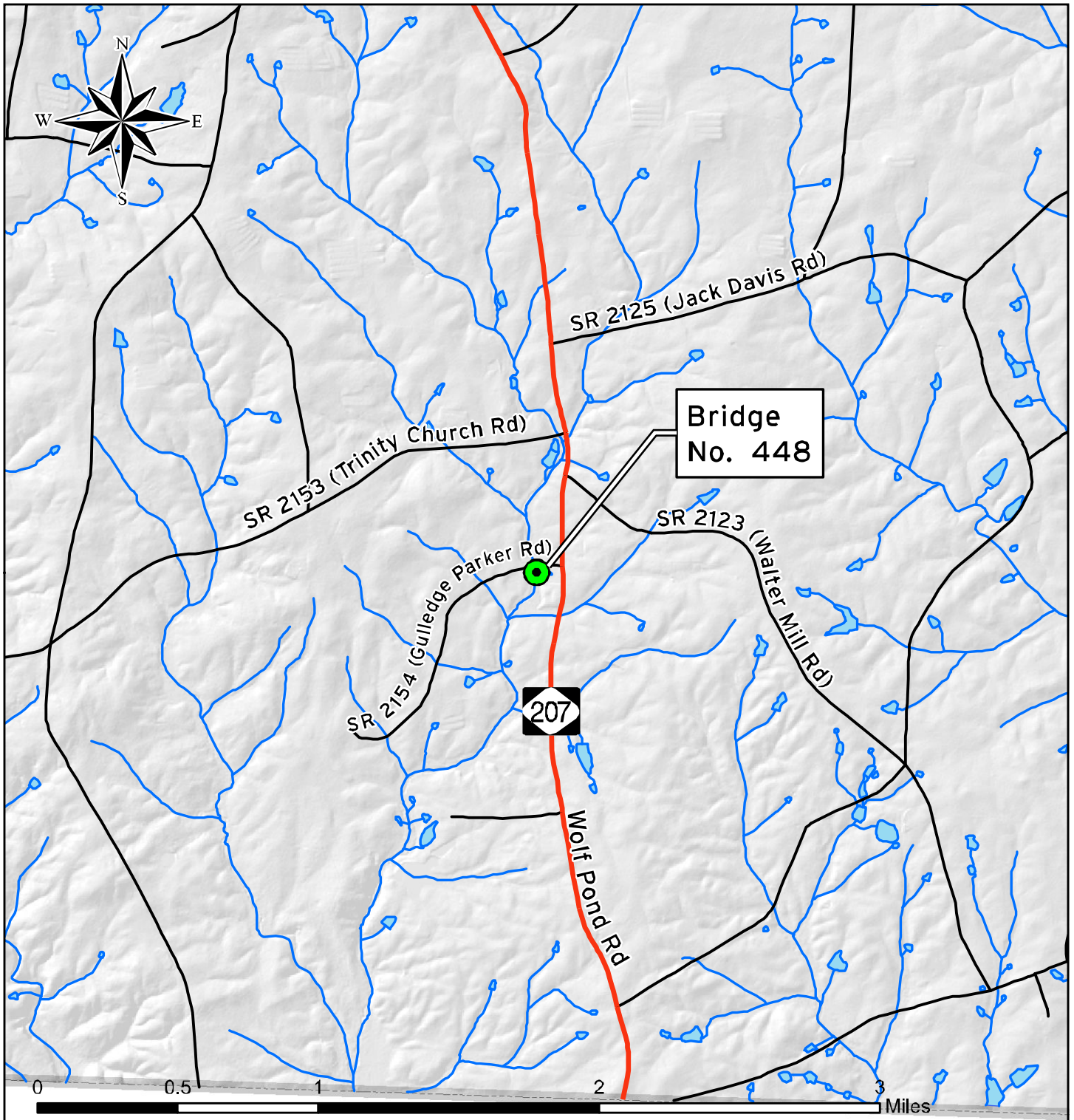
## **X. CONCLUSION**

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a Federal “Categorical Exclusion” due to its limited scope and lack of substantial environmental consequences.

## **XI. REFERENCES**

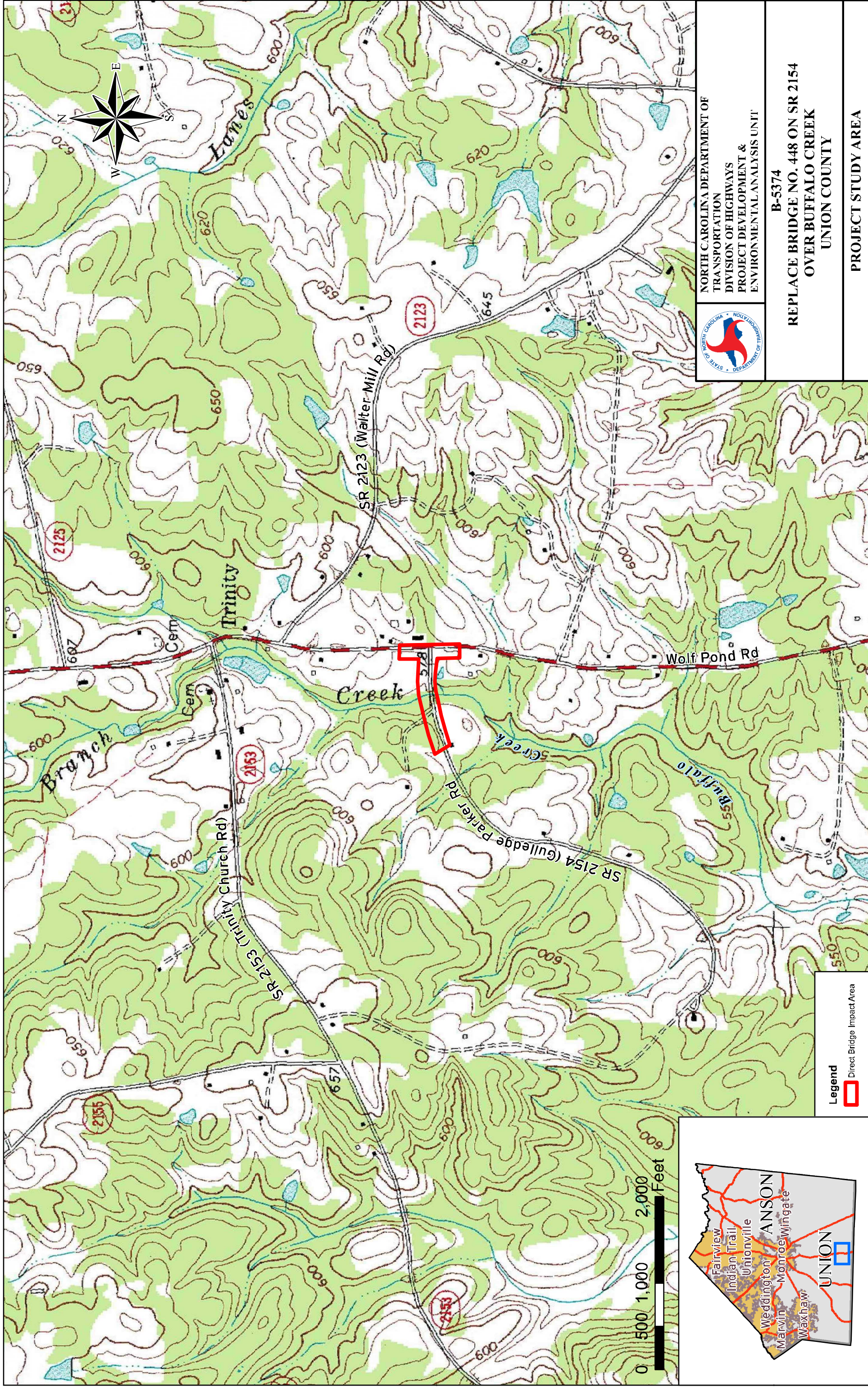
- NCDOT. July 2013. *Natural Resources Technical Report: Bridge No. 448 over Buffalo Creek on SR 2154 (Gulledge Parker Road) TIP B-5374, WBS No. 46089.1.1 (Bridge Replacement), Union County.*
- NCDOT. September 2013. *Freshwater Mussel Survey Report: Replacement of Bridge No. 448 over Buffalo Creek on SR 2154 (Gulledge Parker Road) TIP B-5374, WBS No. 46089.1.1, Union County.*
- NCDOT, Biologist, Mr. Michael Turchy, personal communication on November 2, 2015.
- NCDOT Bridge and Approach Investigation Checklist. *Design Speed Recommendation.* (No date)
- NCDOT. July 13, 2011. *NCDOT Traffic Noise Abatement Policy*
- NCDOT (HNTB). June 3, 2013. *Community Impact Assessment: Bridge No. 448 over Buffalo Creek on SR 2154 (Gulledge Parker Road) TIP B-5374, WBS No. 46089.1.1 (Bridge Replacement), Union County.*
- NCDOT-GeoEnvironmental Section. June 10, 2013. *GeoEnvironmental Report for Planning.*
- NCDOT-Geotechnical Engineering Unit. May 8, 2013. *Geotechnical Report for Planning.*
- NCDOT – Bridge Maintenance Unit. March 5, 2012. *Bridge Inspection Report for Bridge No. 890448.*
- NCDOT. Go!NC GIS Online Maps. April 10, 2015. *North Carolina Statewide Functional Classification System.* Retrieved from <http://ncdot.maps.arcgis.com/>
- NCDOT-Traffic Engineering *Accident Analysis System Strip Analysis Report.* Study Name 41000032765 from November 1, 2004 to October 31, 2014.
- Union County, Transportation Planner, Mr. Joseph Lesch, personal conversation on February 24, 2015.
- United States Fish and Wildlife Service. March 25, 2015. *Endangered, Threatened and Candidate Species and Federal Species of Concern by County in North Carolina, Union County, NC.*

## **FIGURES**



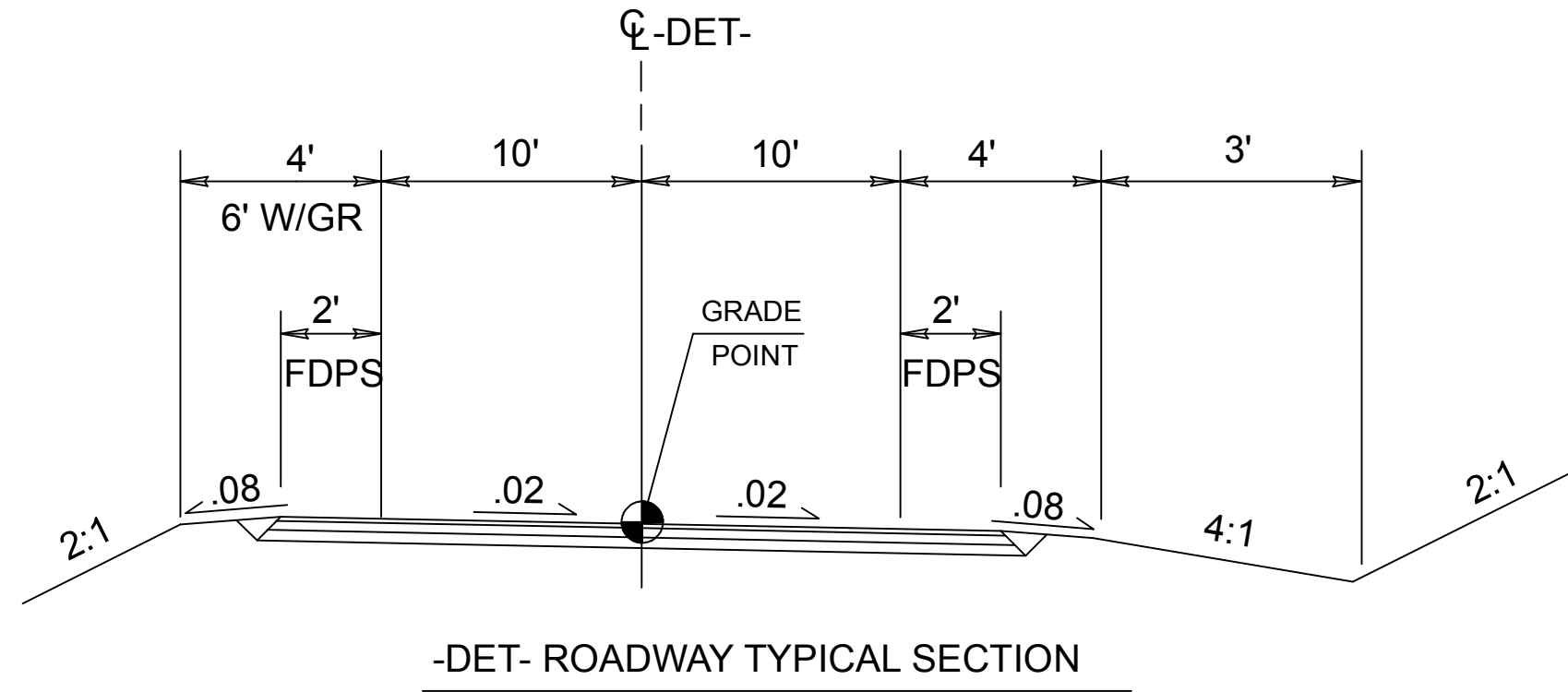
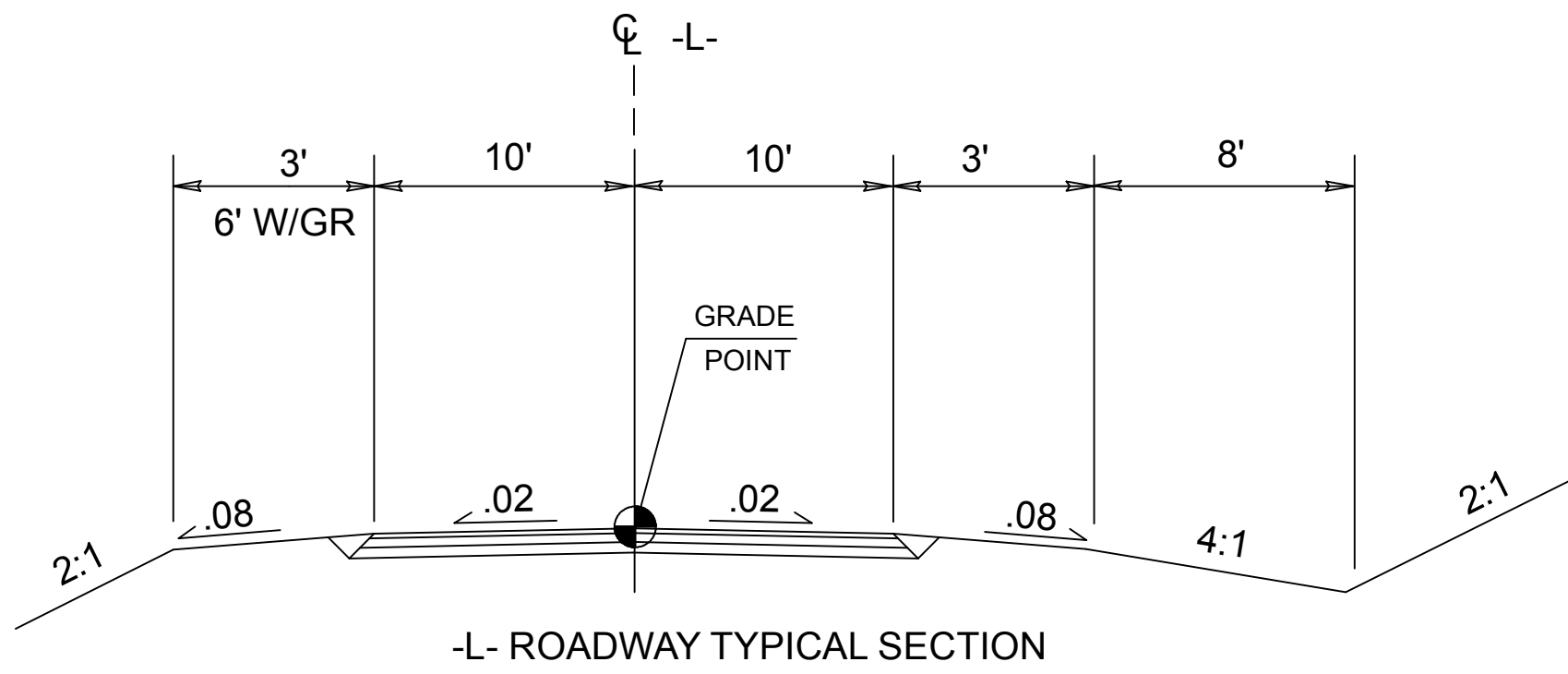
	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT &amp; ENVIRONMENTAL ANALYSIS BRANCH</p>
<p align="center"><b>B-5374</b> <b>REPLACE BRIDGE NO. 448 ON SR 2154</b> <b>OVER BUFFALO CREEK</b> <b>UNION COUNTY</b></p>	
<p align="center"><b>VICINITY MAP</b></p>	

**FIGURE 1**



SOURCE: USGS 7.5 MINUTE QUADRANGLE, TRADESVILLE, NC

FIGURE 2




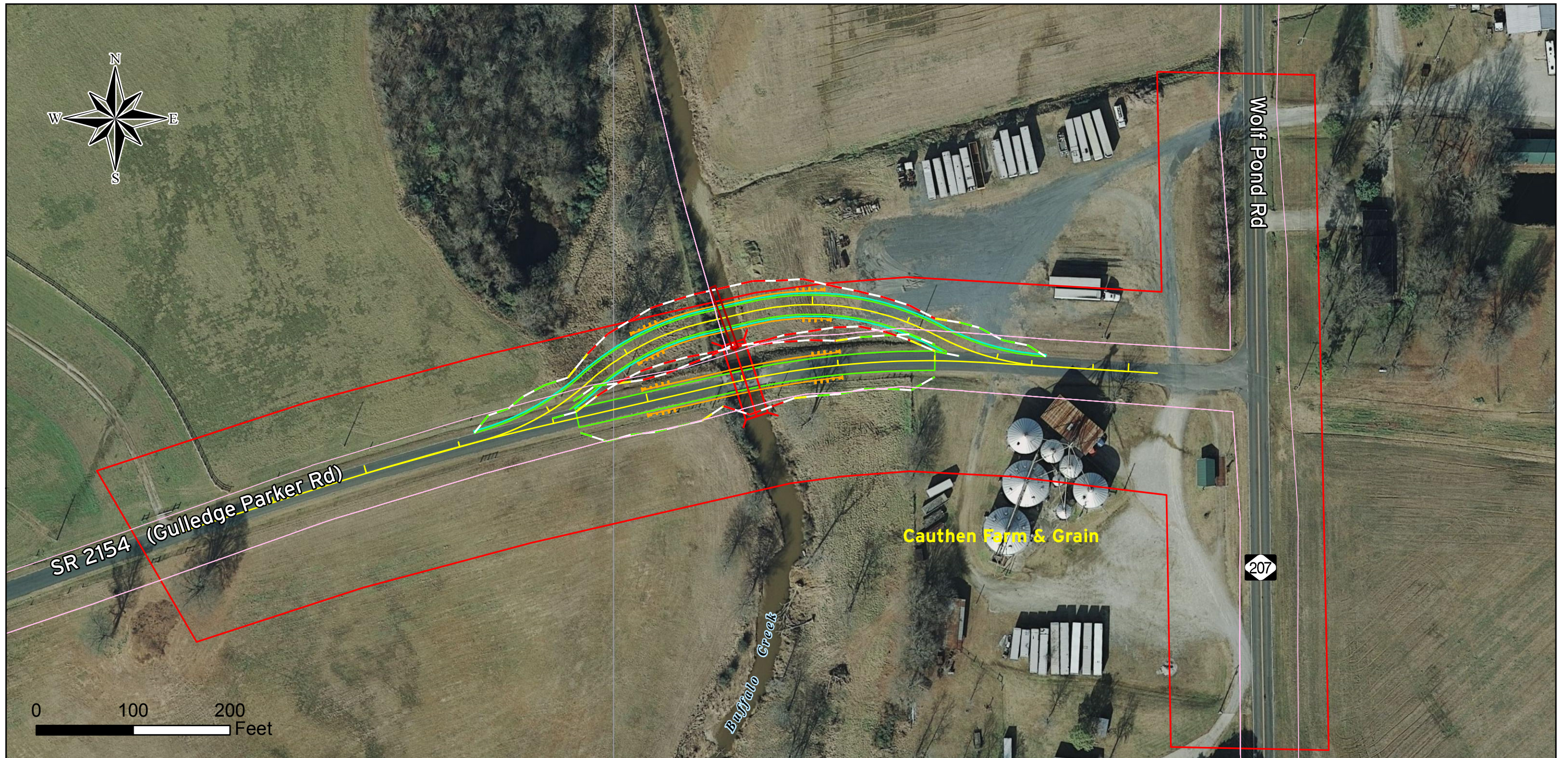
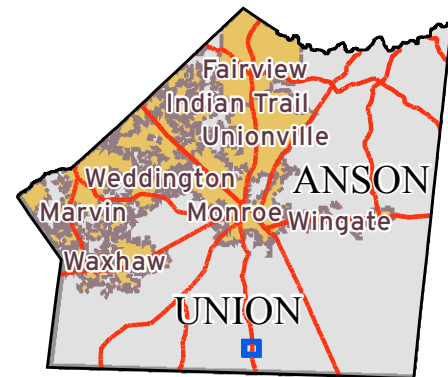
	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT
<b>B-5374</b> <b>REPLACE BRIDGE NO. 448 ON SR 2154</b> <b>OVER BUFFALO CREEK</b> <b>UNION COUNTY</b>	
<b>TYPICAL SECTIONS</b>	

FIGURE 3



0 100 200 Feet



**Legend**

**B5374 Design with Onsite Detour**

- Proposed Edge of Pavement
- Proposed Guardrail
- Proposed Horizontal Alignment
- Proposed Paved Shoulder
- Proposed Roadway Culvert
- Proposed Temporary Culvert

- Direct Bridge Impact Area
- Property Boundaries

**Slopestakes**

- - - Prop SS Cut Line
- - - Prop SS Fill Line
- - - Prop SS Transition Line

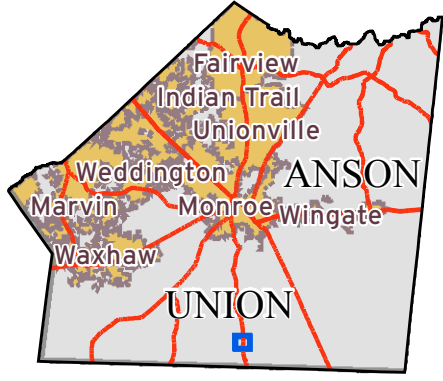
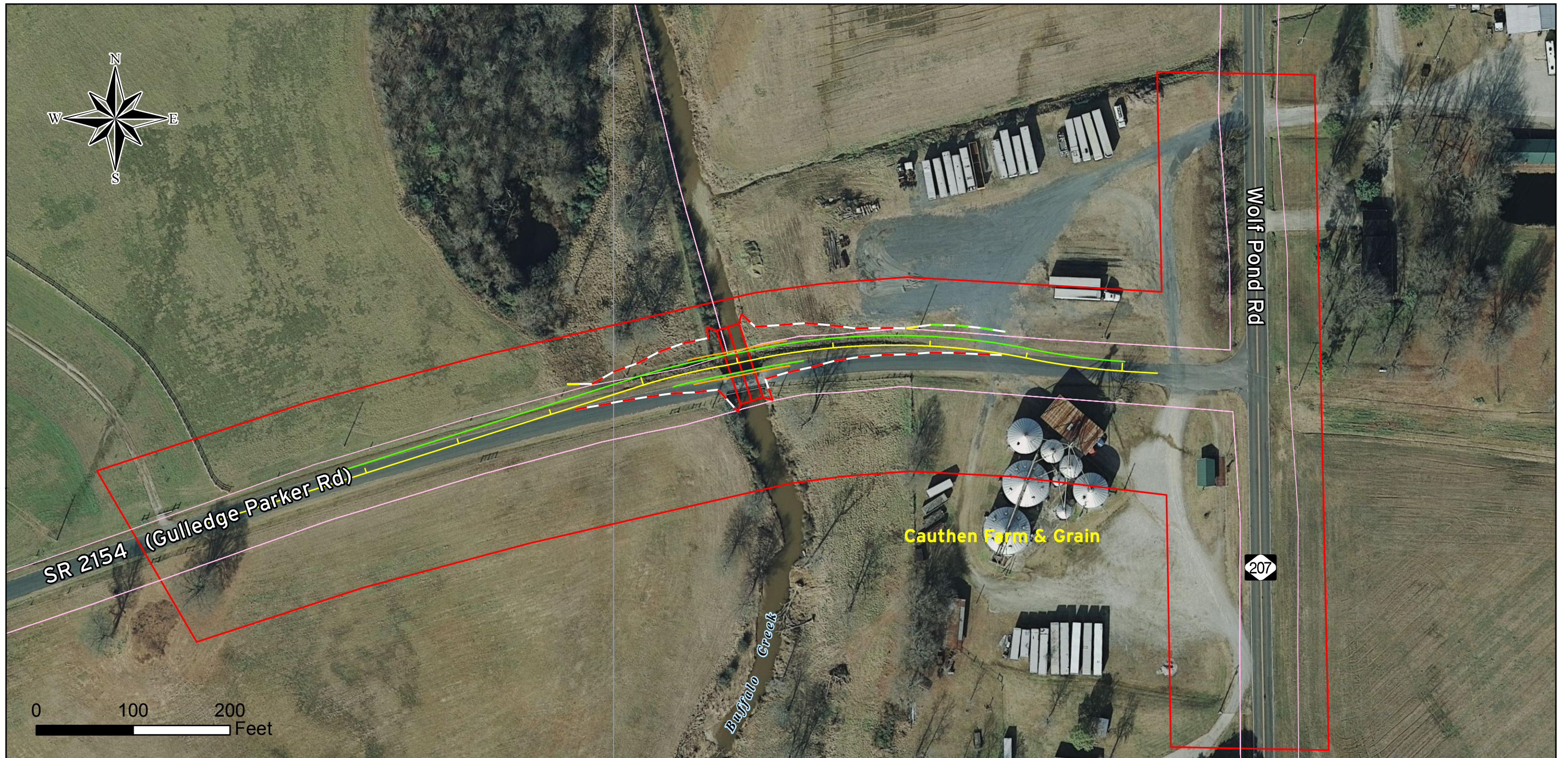


NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS UNIT

**B-5374**  
**REPLACE BRIDGE NO. 448 ON SR 2154**  
**OVER BUFFALO CREEK**  
**UNION COUNTY**

**ALTERNATIVE 1**

FIGURE 4A



Legend	
<b>B5374 Design with Offsite Detour</b>	Direct Bridge Impact Area
Proposed Edge of Pavement	Property Boundaries
Proposed Guardrail	
Proposed Horizontal Alignment	<b>Slopestakes</b>
Proposed Paved Shoulder	Prop SS Cut Line
Proposed Roadway Culvert	Prop SS Fill Line
Proposed Temporary Culvert	Prop SS Transition Line



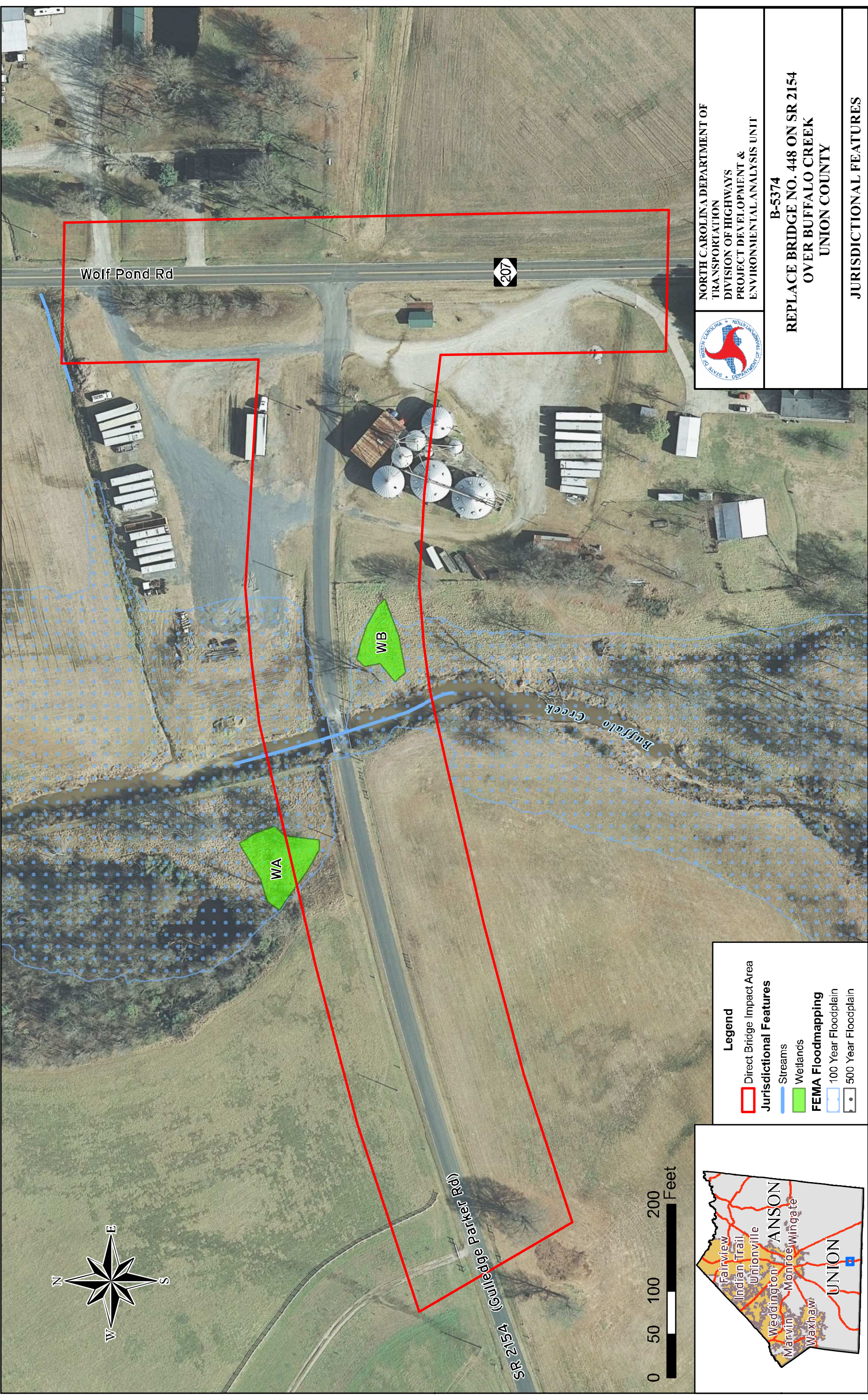
NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS UNIT

**B-5374**  
**REPLACE BRIDGE NO. 448 ON SR 2154**  
**OVER BUFFALO CREEK**  
**UNION COUNTY**

**ALTERNATIVE 2**

FIGURE 4B





NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS UNIT

B-5374

REPLACE BRIDGE NO. 448 ON SR 2154  
OVER BUFFALO CREEK  
UNION COUNTY

JURISDICTIONAL FEATURES

**Legend**

- Direct Bridge Impact Area
- Streams
- Wetlands
- FEMA Floodmapping
- 100 Year Floodplain
- 500 Year Floodplain

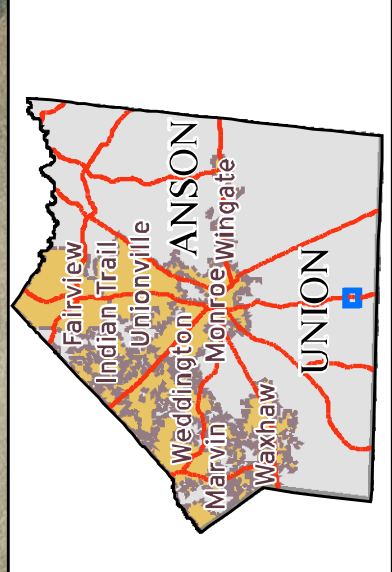
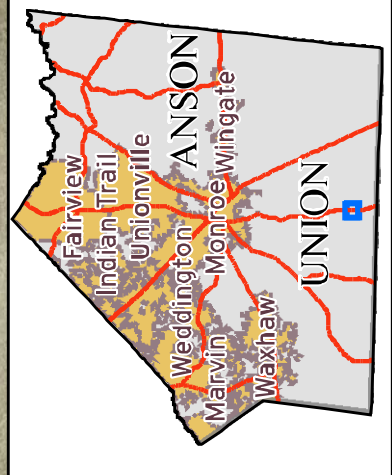
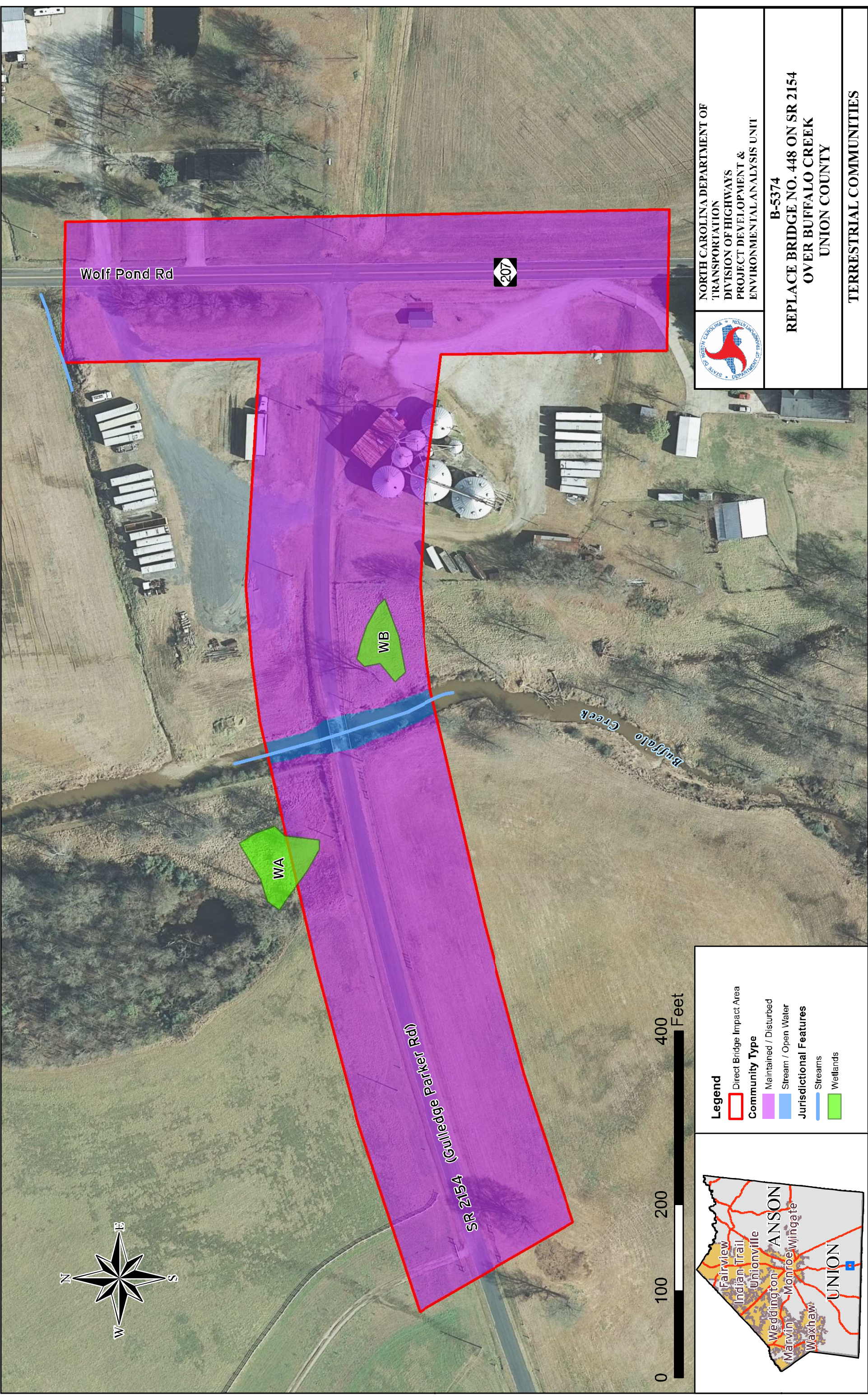


FIGURE 5



**Legend**

- Direct Bridge Impact Area
- Community Type**
- Maintained / Disturbed
- Stream / Open Water
- Jurisdictional Features**
- Streams
- Wetlands



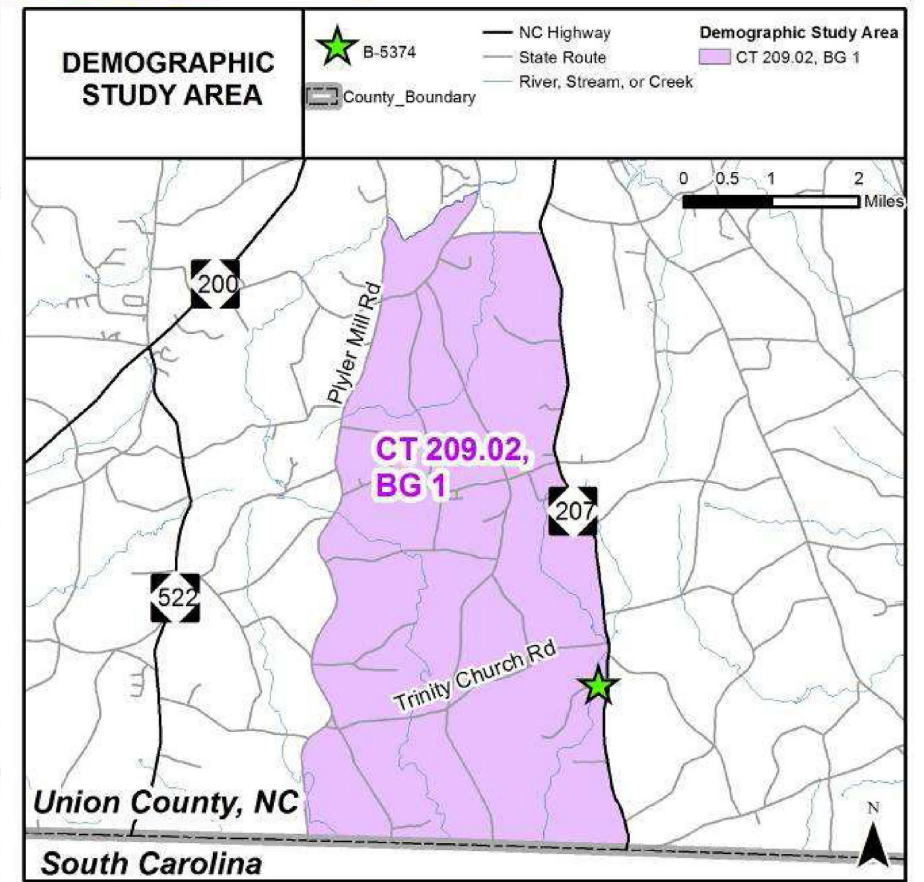
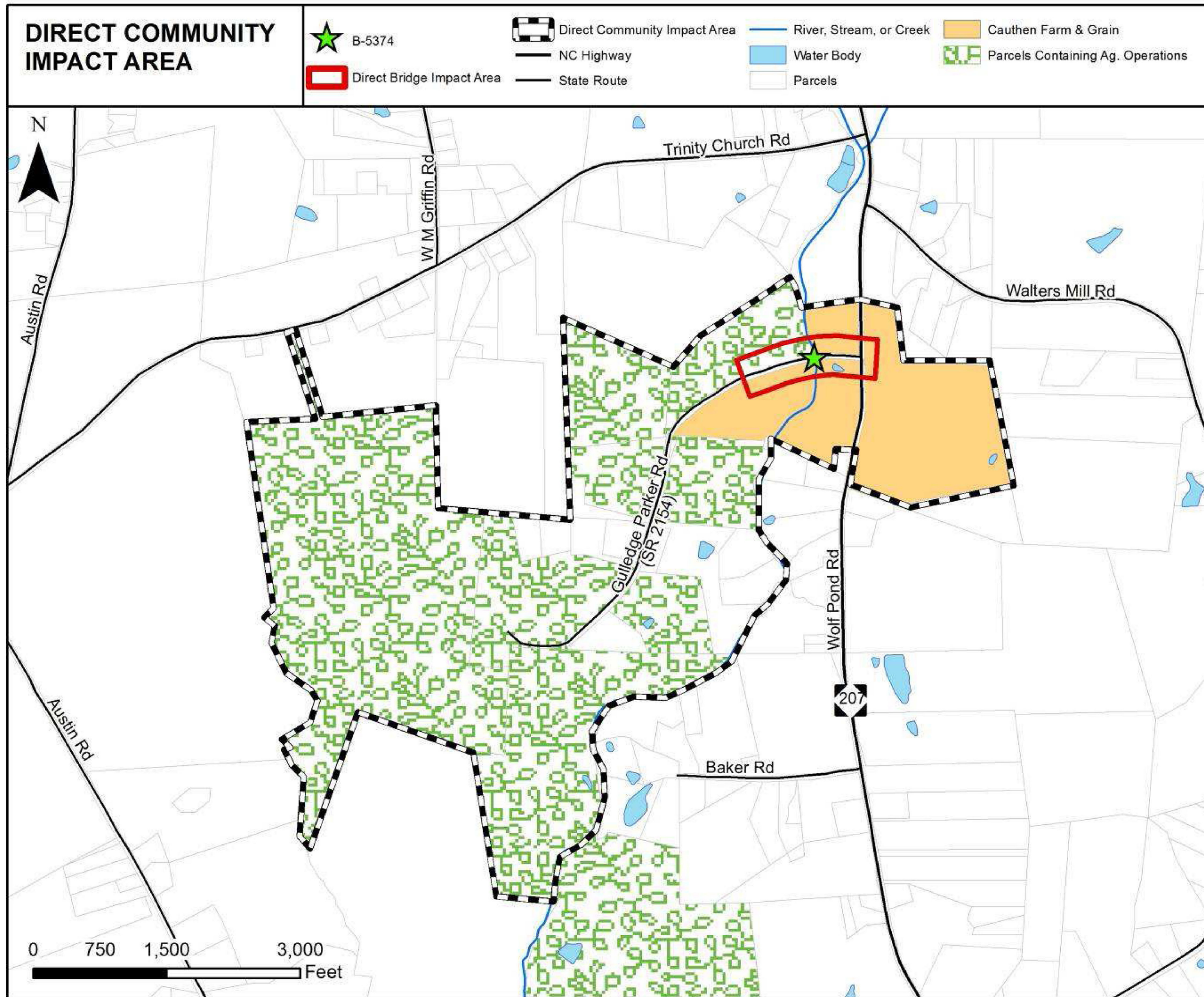
NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS UNIT

B-5374  
**REPLACE BRIDGE NO. 448 ON SR 2154  
OVER BUFFALO CREEK**  
UNION COUNTY

TERRESTRIAL COMMUNITIES

FIGURE 6

# COMMUNITY CONTEXT MAP




	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS UNIT
	B-5374 REPLACE BRIDGE NO. 448 ON SR 2154 OVER BUFFALO CREEK UNION COUNTY
	COMMUNITY FEATURES

FIGURE 7

## Figure 8a: Photographs of B-5374



**Picture 1:** Looking eastbound along Gullede Parker Road from Bridge No. 448



**Picture 2:** Looking westbound along Gullede Parker Road from Bridge No. 448



**Picture 4:** Looking south along Buffalo Creek from Bridge No. 448



**Picture 4:** Looking north along Buffalo Creek from Bridge No. 448

## Figure 8b: Photographs of B-5374



**Picture 5:** Looking east at silos on the corner of Gulledge Parker Road and NC 207.



**Picture 6:** Looking west towards residential community on Gulledge Parker Road from the parking area adjacent to NC 207.



**Picture 7:** Looking west towards residential community on Gulledge Parker Road from Bridge No. 448.



**Picture 8:** Looking at storage/ parking area at corner of Gulledge Parker Road and NC 207.

**APPENDIX A:**  
**Agency Correspondence**



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Asheville Field Office  
160 Zillicoa Street  
Asheville, North Carolina 28801

January 11, 2013

Ms. Dionne C. Brown  
Bridge Project Planning Engineer  
North Carolina Department of Transportation  
1548 Mail Service Center  
Raleigh, North Carolina 27699-1548

Dear Ms. Brown:

Subject: Information Request, State Transportation Improvement Project Numbers B-5369, B-5370, B-5371, B-5373, B-5374, and B-5792

On December 12, 2012, we received your letter (via email) requesting information on the subject projects to aid in initial project evaluation. We submit the following comments and recommendations in accordance with the provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. §§1531-1543); the Fish and Wildlife Coordination Act, as amended (16 U.S.C. §§661-667e); the National Environmental Policy Act (42 U.S.C. §4321 et seq.); the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§1536, 1538); the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d); and the Clean Water Act (33 U.S.C. §1251 et seq.).

**General Recommendations for Replacing Structures that Cross Rivers and Streams** - We generally recommend the use of clear-spanning bridge structures designed, at a minimum, to accommodate the active channel width. Use of culverts is discouraged. Properly sized spanning structures will provide for the passage of aquatic species and accommodate the movement of debris and bed material. Furthermore, spanning structures usually: (1) can be constructed with minimal in-stream impacts, (2) do not require stream-channel realignment, and (3) retain the natural streambed conditions; and the horizontal and vertical clearances may be designed to allow for human and wildlife passage beneath the structures. If possible, bridge supports (bents) should not be placed in the streams. Bents can collect debris during flood events, resulting in the scouring of bridge foundations. In-stream bents can also result in hydrologic changes, such as bedload scour or deposition, which may adversely affect in-stream habitat. Deck drains of the spanning structures should not discharge directly into the streams; instead, they should drain through a vegetated area before entering the streams. Removal of vegetation in riparian areas should be minimized. Armoring of the bank with riprap should be minimized. The reseeded of disturbed areas should be performed promptly after grading, and seed mixes should consist of

native vegetation in order to prevent the spread of invasive plant species. New structures should be constructed without the use of in-stream causeways or work pads whenever possible. When causeways are necessary, using the largest washed stone practicable for the application will prevent unnecessary damage to in-stream habitat and will facilitate complete removal. We recommend that all equipment be refueled and receive maintenance outside of the riparian zone. Refueling and maintenance should take place in designated refueling sites that are provisioned to quickly contain any spills of fuel, lubricants, and other fluids.

**Migratory Birds** - The MBTA (16 U.S.C. 703-712) prohibits the taking, killing, possession, transportation, and importation of migratory birds (including the bald eagle), their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. To avoid impacts to migratory birds, we recommend conducting a visual inspection of the bridges and any other migratory bird nesting habitat within the project area during the migratory bird nesting season of March through September. If migratory birds are discovered nesting in the project impact area, including on the existing bridges, the North Carolina Department of Transportation (NCDOT) should avoid impacting the nests during the migratory bird nesting season (March through September). If birds are discovered nesting on the bridges during years prior to the proposed construction date, the NCDOT, in consultation with us, should develop measures to discourage birds from establishing nests on the bridges by means that will not result in the take of the birds or eggs, or the NCDOT should avoid construction and demolition activities during the nesting period.

**Bald Eagle** - The bald eagle has been removed from the federal list of endangered and threatened species due to its recovery. However, this species continues to be afforded protection by the Eagle Act (16 U.S.C. 668-668d) and the MBTA (16 U.S.C. 703-712). The Eagle Act, enacted in 1940 and amended several times, prohibits anyone without a permit issued by the Secretary of the Interior from "taking" bald eagles, including their parts, nests, or eggs. "Take" is defined as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." "Disturb" means "To agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment." In addition to immediate impacts, these definitions also cover impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present if, upon an eagle's return, such alterations agitate or bother the eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits and causes injury, death, or nest abandonment.

If any active nests are located within a half mile of the project sites, we request that work at the sites be restricted from mid-January through July in order to prevent adverse impacts to the bald eagle. This will prevent disturbance of the eagles from the egg-laying period until the young fledge, which encompasses their most vulnerable times. We ask that you consult with this office before construction begins to confirm that the eagles have left the nest. Once this has been confirmed, construction may begin.

**B-5369 - Bridge No. 53 on SR 2114 over Cold Water Creek in Cabarrus County** - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Cabarrus County is available on the U.S. Fish and Wildlife Service (USFWS) website at <http://www.fws.gov/nc-es/es/countyfr.html>.



A review of available information indicates that the project area is within the municipal area of the Town of Concord. We are unaware of any listed species within the vicinity of the project area. The surrounding area appears to be suburban and probably does not have the habitat requirements for listed species. We request that the NCDOT follow the above-listed recommendations to avoid further disruption to the natural environment.

**B-5370 – Bridge No. 444 on SR 1506 over East Fork Stewarts Creek in Union County** - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Union County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that the project site is within the municipal limits of the Town of Unionville. The project area appears to be disturbed by agricultural and suburban land use, but the area around the bridge has standing timber that may provide habitat for the Georgia aster (*Symphyotrichum georgianum*), a federal species of concern; Michaux's sumac (*Rhus michauxii*), a federally endangered species; and Schweinitz's sunflower (*Helianthus schweinitzii*), a federally endangered species. These species can tolerate minor disturbance and often thrive in areas where human activities limit competition with other plant species. We recommend that a biologist survey for these species prior to construction.

**B-5371 - Bridge No. 71 on US 601 over Clear Creek in Union County** - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Union County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that the project site appears to be disturbed by agricultural and suburban land use, but the area around the bridge has standing timber that may provide habitat for the Georgia aster (*Symphyotrichum georgianum*), a federal species of concern; Michaux's sumac (*Rhus michauxii*), a federally endangered species; and Schweinitz's sunflower (*Helianthus schweinitzii*), a federally endangered species. These species can tolerate minor disturbance and often thrive in areas where human activities limit competition with other plant species. We recommend that a biologist survey for these species prior to construction.

**B-5373 – Bridge No. 44 on SR 1435 over Long Creek in Stanly County** - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Stanly County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates that Long Creek harbors a population of the Carolina creekshell (*Villosa vaughaniana*), a federal species of concern and listed as endangered in North Carolina. The Carolina creekshell is also a species associated with the Carolina heelsplitter (*Lasmigona decorata*), a federally endangered species recorded from adjacent Union County. We recommend that a biologist conduct a survey in Long Creek to look for any listed mussel species. Stanly County is also known to harbor the Schweinitz's sunflower (*Helianthus schweinitzii*), a federally endangered species. We recommend that a biologist survey the action area for this species.

**B-5374 – Bridge No. 448 on SR 2153 over Buffalo Creek in Union County** - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Union County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. Our records indicate that this project is in close proximity to known

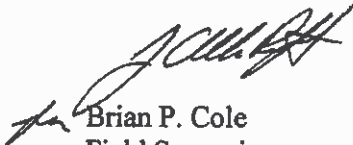
populations of the Georgia aster (*Symphotrichum georgianum*), a federal species of concern, which is commonly associated with the Schweinitz's sunflower (*Helianthus schweinitzii*), a federally endangered species. We recommend that a biologist survey the action area for these species.

**B-5792 – Bridge No. 342 on NC 16 over Andrew Terrance and Irwin Creek in Mecklenburg County** - A full list of federally endangered and threatened species and federal species of concern with known occurrences in Mecklenburg County is available on the USFWS website at <http://www.fws.gov/nc-es/es/countyfr.html>. A review of available information indicates the project site is within the municipal area of the City of Charlotte. This area appears to be heavily affected by urban development. We request that the NCDOT follow the above-listed recommendations to avoid further disruption to the natural environment.

If you have questions about these comments, please contact Mr. Jason Mays of our staff at 828/258-3939, Ext. 226. In any future correspondence concerning these projects, please reference our log numbers with your project numbers as follows:

<u>NCDOT</u> <u>Project Nos.</u>	<u>USFWS</u> <u>Log Nos.</u>
• B-5369	4-2-13-056
• B-5370	4-2-13-057
• B-5371	4-2-13-058
• B-5373	4-2-13-059
• B-5374	4-2-13-060
• B-5792	4-2-13-061

Sincerely,

  
Brian P. Cole  
Field Supervisor

cc:

Ms. Liz Hair, Asheville Regulatory Field Office, U.S. Army Corps of Engineers, 151 Patton Avenue, Room 208, Asheville, NC 28801-5006  
Ms. Marla J. Chambers, Western NCDOT Permit Coordinator, North Carolina Wildlife Resources Commission, 12275 Swift Road, Oakboro, NC 28129  
Ms. Polly Lespinasse, Mooresville Regional Office, North Carolina Division of Water Quality, 610 East Center Avenue, Suite 301, Mooresville, NC 28115

**FARMLAND CONVERSION IMPACT RATING**

<b>PART I</b> (To be completed by Federal Agency)		Date Of Land Evaluation Request <b>12/12/13</b>			
Name of Project <b>B-5374</b>		Federal Agency Involved <b>FHWA</b>			
Proposed Land Use <b>Bridge replacement</b>		County and State Union, NC			
<b>PART II</b> (To be completed by NRCS)		Date Request Received By NRCS <b>12/12/13</b>		Person Completing Form: <b>Kmav</b>	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? <i>(If no, the FPPA does not apply - do not complete additional parts of this form)</i>		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated <b>none</b>	Average Farm Size <b>156</b>
Major Crop(s) <b>Corn</b>	Farmable Land In Govt. Jurisdiction Acres: <b>94.0</b> % <b>384, 651</b>		Amount of Farmland As Defined in FPPA Acres: <b>77.4</b> % <b>291, 581</b>		
Name of Land Evaluation System Used <b>Union County LESA</b>	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS <b>12/31/2013</b>		
<b>PART III</b> (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		.6			
B. Total Acres To Be Converted Indirectly		0			
C. Total Acres In Site		.6			
<b>PART IV</b> (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		.3			
B. Total Acres Statewide Important or Local Important Farmland		.1			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.0001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		46.3			
<b>PART V</b> (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		83			
<b>PART VI</b> (To be completed by Federal Agency) Site Assessment Criteria <i>(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)</i>		<b>Maximum Points</b>	Site A	Site B	Site C
1. Area In Non-urban Use		(15)	15		
2. Perimeter In Non-urban Use		(10)	10		
3. Percent Of Site Being Farmed		(20)	16		
4. Protection Provided By State and Local Government		(20)	0		
5. Distance From Urban Built-up Area		(15)	15		
6. Distance To Urban Support Services		(15)	10		
7. Size Of Present Farm Unit Compared To Average		(10)	0		
8. Creation Of Non-farmable Farmland		(10)	0		
9. Availability Of Farm Support Services		(5)	4		
10. On-Farm Investments		(20)	17		
11. Effects Of Conversion On Farm Support Services		(10)	0		
12. Compatibility With Existing Agricultural Use		(10)	0		
TOTAL SITE ASSESSMENT POINTS		160	87	0	0
<b>PART VII</b> (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	83	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	87	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>		260	170	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

## STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at [http://offices.usda.gov/scripts/ndISAPI.dll/oip\\_public/USA\\_map](http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map), or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

## INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

*(For Federal Agency)*

**Part I:** When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

**Part III:** When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

**Part VI:** Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

**Part VII:** In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.



North Carolina Department of Environment and Natural Resources

Division of Water Quality

Charles Wakild, P. E.  
Director

Pat McCrory  
Governor

John E. Skvarla, III  
Secretary

MEMORANDUM

To: Dionne C. Brown, NCDOT

From: Alan Johnson, NC Division of Water Quality, MRO

Date: March 18, 2013

Subject: Scoping comments on proposed bridge replacement projects

Reference your correspondence dated December 12, 2012, in which you requested comments for the referenced projects:

Project	Stream Name	River Basin	Stream Classification(s)	303(d) Listing
B-5369	Cold Water Crk	Yadkin-Pee Dee	C, 303d	Turbidity, Ecological /Biological Integrity
B-5370	East Fork Stewarts Crk	Yadkin-Pee Dee	WS III	
B-5374	Buffalo Crk	Yadkin-Pee Dee	C	
B-5373	Long Crk	Yadkin-Pee Dee	C, 303d	Copper, Ecological /Biological Integrity
B-5371	Clear Crk	Yadkin-Pee Dee	C, 303d	Turbidity
B-5792	Irwin Crk	Catawba	C, 303d	Copper, Lead, Zinc

Project Specific Comments:

- Streams Classified as 303d waters of the State: It is recommended that the most protective sediment and erosion control BMPS be implemented in accordance with the *Design Standards in Sensitive Watersheds* (15A NCAC 04B .0124) to reduce the risk to further impairment to the affected stream. It is also requested that road design plans provide treatment of storm water runoff through best management practices as detailed in the most recent version of the NCDWQ *Stormwater Best Management Practices*
- B-5369: Rock/gravel substrate. Stream bank is relatively stable. Due to height of bridge, vegetation exist underneath and is not shaded out providing stability.
- B-5371: There are two eroding drainage ditches at this site that requires maintenance. One located in the northeast quadrant, the other in the southwest quadrant.

General Project Comments:

- The use of rip rap should be minimized for stream stabilization where soft measures can be performed. The use of heavy coir fiber/coconut matting and coir fiber logs is encouraged for areas that may need only "temporary" stabilization. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that

precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

2. Riparian vegetation (native trees and shrubs) shall be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
3. The construction of floodway benches/storm water benches is highly recommended to reduce scouring and erosion of the stream banks and which also allows for wildlife passage.
4. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification (if required), the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical.
5. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation, floodplain benches, and/or sills may be required where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
6. Stormwater shall not be discharge directly to the stream. Bridge deck drains shall not directly discharge in the stream. Stormwater shall be directed across the bridge and pre-treated through site appropriate means (grass swales, preformed scour holes, vegetated buffers, etc.) before entering the stream.
7. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.
8. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

Thank you for requesting our input at this time. If you have any questions or require additional information, please contact me at 704-669-1699 or [alan.johnson@ncdenr.gov](mailto:alan.johnson@ncdenr.gov).

cc: Sonia Corrillo, Wetland Unit  
Lyn Hardison, Environmental Assist. Officer,  
Washington Regional Office  
File Copy

13-03-0039



## HISTORIC ARCHITECTURE AND LANDSCAPES NO SURVEY REQUIRED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

### PROJECT INFORMATION

<b>Project No:</b>	B-5374	<b>County:</b>	Union
<b>WBS No.:</b>	46089.1.1	<b>Document Type:</b>	
<b>Fed. Aid No:</b>	BRZ-2154(9)	<b>Funding:</b>	<input type="checkbox"/> State <input checked="" type="checkbox"/> Federal
<b>Federal Permit(s):</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Permit Type(s):</b>	unknown
<b>Project Description:</b> Replace Bridge No 448 on SR 2154 over Buffalo Creek			

### SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

**Description of review activities, results, and conclusions:**

Review of HPO quad maps, relevant background reports, historic designations roster, and indexes was undertaken on March 22, 2013. Based on this review there are no NR, DE, LL, SL, or SS in the project area. There are no historic structures within the APE of this project. There is c. 1957 one house in the APE but it does not meet the criteria for eligibility. There are no National Register eligible structures in the APE of this project.

**Why the available information provides a reliable basis for reasonably predicting that there are no unidentified significant historic architectural or landscape resources in the project area:**

Using HPO GIS website and the Union County GIS Tax Data website provides reliable information regarding the structures in the APE. These combined utilities are considered valid for the purposes of determining the likelihood of historic resources being present.

### SUPPORT DOCUMENTATION

Map(s)     Previous Survey Info.     Photos     Correspondence     Design Plans

**FINDING BY NCDOT ARCHITECTURAL HISTORIAN**

Historic Architecture and Landscapes -- NO SURVEY REQUIRED

*Shelby Spiller*

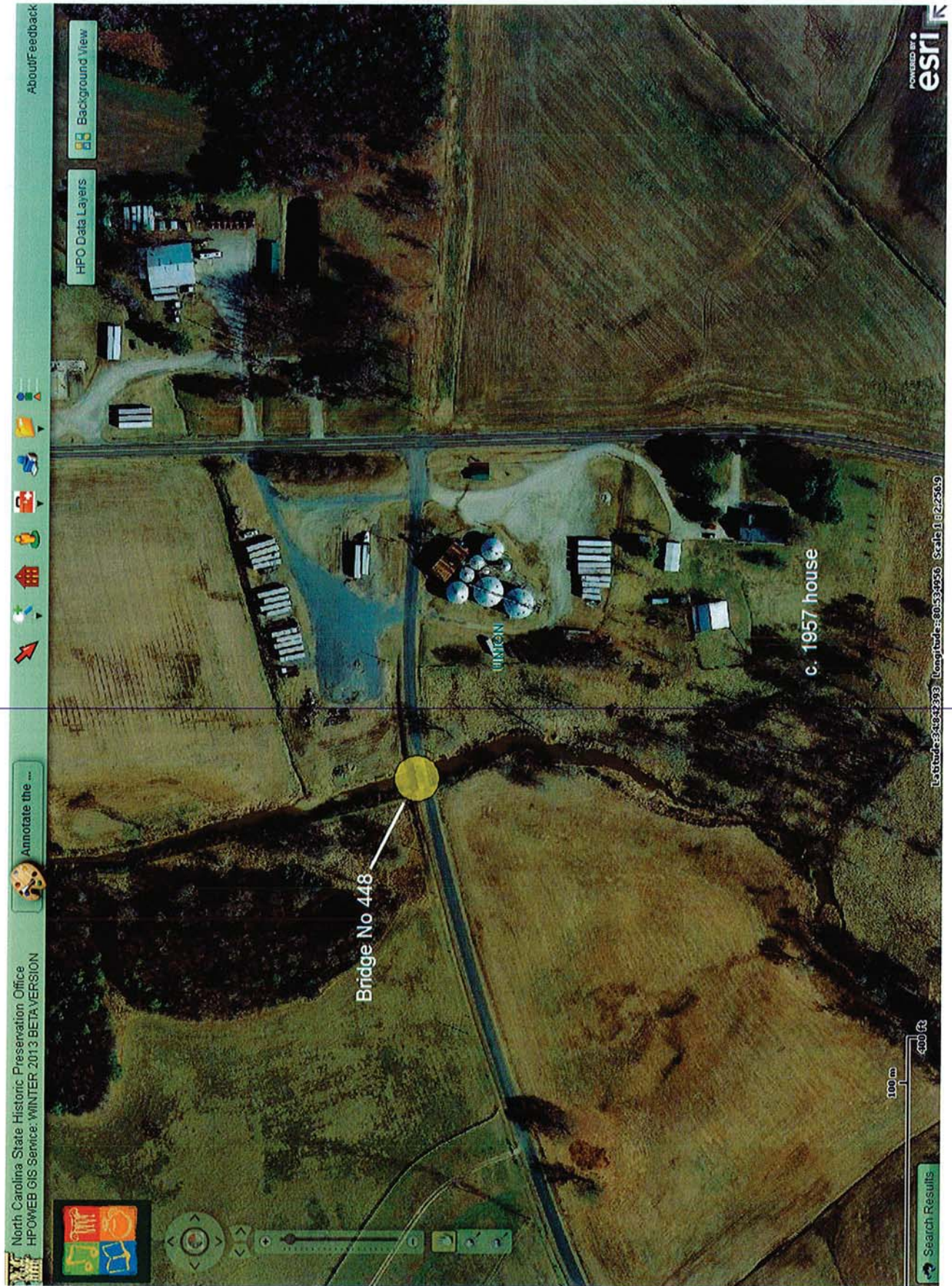
*Nov 22, 2013*

NCDOT Architectural Historian

Date









**NO NATIONAL REGISTER OF HISTORIC PLACES  
ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES  
PRESENT OR AFFECTED FORM**



This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

**PROJECT INFORMATION**

Project No: **B-5374** County: **Union**  
 WBS No: **46089.1.1** Document: **PCE**  
 F.A. No: **BRZ-2154(9)** Funding:  State  Federal

Federal Permit Required?  Yes  No Permit Type: **NWP14**

**Project Description:** Replacement of Bridge No. 448 on SR2154 (Gulledge Parker Rd) over Buffalo Creek in Union County, North Carolina. The archaeological Area of Potential Effects (APE) measures 800ft in length (400ft from each bridge end-point) by 150ft in width (75ft from each side of the SR2154 center-line).

**SUMMARY OF ARCHAEOLOGICAL FINDINGS**

**The North Carolina Department of Transportation (NCDOT) Archaeology Group reviewed the subject project and determined:**

- There are no National Register listed ARCHAEOLOGICAL SITES within the project's area of potential effects.
- No subsurface archaeological investigations are required for this project.
- Subsurface investigations did not reveal the presence of any archaeological resources.
- Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
- All identified archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- There are no National Register Eligible or Listed ARCHAEOLOGICAL SITES present or affected by this project. (*Attach any notes or documents as needed*)

***Brief description of review activities, results of review, and conclusions:***

The project study area is located in the south-central portion of Union County, several miles directly south of Monroe and just north of the South Carolina state border. The subject roadway and bridge alignment is oriented east-west within the archaeological APE. Buffalo Creek, a second order stream, flows north to south through the project area before joining Pole Cat Creek in Chesterfield County, South Carolina. A typical "rolling" southern Piedmont topography characterizes this section. The Gulledge Parker Road APE encompasses disturbances associated with a state materials repository and grain storage facility between Bridge 448 and the SR2154/NC207 junction, and is typified by eroded agricultural lands west of Buffalo Creek.

First, pertinent project information was examined for determining the character and extent of the potential impacts to the APE ground surfaces. Next, a map review and site file search conducted at the Office of State Archaeology (OSA) on Thursday, March 21, 2013 demonstrated that no previously documented archaeological sites are located within the boundaries of the archaeological APE or directly adjacent to the project study area.

Historic structure locations reveal patterns of settlement and occupancy across a landscape. These important resources often contain archaeological deposits which aid in disclosing muted histories and forgotten details of past lives. For this reason, examination of National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), and Surveyed Site (SS) properties employing resources available on the NCSHPO website is crucial in establishing the location of noteworthy historic occupations related to a perspective construction impact area. A cross-check of these mapped resources concluded that no meaningful historic properties were located inward of or directly proximal to the APE. In addition, historic maps of Union County and the project area were examined for evidence of former structure locations and land use patterns. In general, the cultural resources review confirmed that no existing NRHP listed properties or pre-existing, unevaluated archaeological sites will be impacted by the proposed project.

Further, the APE was referenced on topographic, geologic and NRCS soil survey maps (ChA, GsB, BaB) for the appraisal of environmental, geomorphological, hydrological, and other correlatives that may have resulted in past occupation at this location. Also, aerial photographs (NCDOT Spatial Data Viewer) were examined and the Google Street View map application (when amenable) was utilized for assessing disturbances, both natural and human induced, which compromise the integrity of potential archaeological sites/deposits. Based on landform, hydrological, and soil data, as well as a general lack of modern-type disturbances west of the creek location, an archaeological survey of the project area is warranted prior to construction activities due to a heightened prehistoric site potential.

The project study area and archaeological APE was investigated in-field on Wednesday, April 17, 2013. First, a walk-over of all APE ground surfaces was completed. This served to identify any above-ground archaeological or historical remains, and to determine the location and extent of subsurface investigation necessary for project compliance. This initial examination confirmed a high level of disturbance within the eastern project quadrants. The northeastern quadrant is the site of a state materials storage locale. Grading activities and erosion would have eradicated any cultural deposits here. Likewise, the majority of the southeastern quadrant was impacted by the construction of a grain storage facility. A small area of poorly drained and frequently flooded soils is relegated to the portion of the APE between the facility and Buffalo Creek. As such, no subsurface shovel testing was conducted east of Buffalo Creek.

Initially, a total of four shovel test pits were excavated along a transect established approximately 50ft. from the SR2154 center-line within the southwestern project quadrant. The first stp was dug 30ft from Buffalo Creek, and the remaining were excavated at 100ft. intervals and numbered sequentially east to west (see attached GIS map). STP's #1 and #4 (the end points on the transect) were both sterile of cultural material, while the other two test locations (STP's #2 [MV cultural shatter fragment {1}] and #3 [quartz retouch/resharpening flake {1}]) contained prehistoric lithic debris. To determine if the cultural resource extended beyond the APE limits, two radial shovel test pits were excavated along a parallel transect set up 50ft. south of the first. STP #5 returned a single milky white quartz core fragment and STP #6 was sterile. Between the two radial test locations, a metavolcanic manuport/large core was observed and recorded on the field surface. The artifact weighed in excess of ten pounds and contained negative cultural flake scars. A large flake from the core was beside it, but may constitute a non-cultural genesis from a plow hit. In any event, the location of these two surface artifacts was documented, but they were not collected. In order to evaluate whether the site extended across SR2154 into the northwestern quadrant archaeological APE, two shovel test pits were excavated. However, these test pits contained no cultural artifacts, deposits, or features. Further, no shovel test pits were excavated within the low elevation, floodplain section of the northwestern quadrant. Squishy ground surfaces were observed which confirm the poorly drained and frequently flooded soils mapped here by the NRCS and clearly illustrates a high water table at this location.

For the most part, the subsurface soil profiles were nearly identical in all of the excavated shovel test pits. Typically, the first soil layer consisted of 0 - 5/10cmts of 10YR5/4 yellowish brown sandy loam atop a second soil stratum of mottled yellow (10YR7/8) and yellowish red (5YR5/8) clay loam with decayed mudstone bedrock of gley 2 7/5B. Years of cultivation and other agricultural activity has severely eroded and deflated the ground surfaces within the prehistoric site area (as defined by the survey). The site is located on a relatively small ridge-toe landform extending southeasterly toward Buffalo Creek. The site may extend beyond the APE to the south along the level spine of this ridge-toe. Negative test pit locations and sloping ground surfaces make it unlikely that the site extends to the east and west. Although the test pits dug in the northwestern quadrant returned no artifacts, it is possible that the methodology simply did not allow for the further delineation of the site here. Based on landform presence, the area beyond the APE in the northwestern quadrant (landform beyond poorly drained floodplain section) could contain additional prehistoric deposits related or unrelated to the occupation of 31UN363. Yet, soil erosion would likely have impacted intact, significant deposits.

The prehistoric cultural resource identified by this survey was recorded with the North Carolina Office of State Archaeology and given the site designation 31UN363. This archaeological site is considered a common and redundant resource-type, and does not contain the potential to answer key research questions or agendas. For this reason, 31UN363 is recommended not eligible for listing on the National Register of Historic Places. A finding of "no historic properties affected" is considered appropriate for the project as proposed. No further archaeological survey or consultation is necessary for the B-5374 project.

**SUPPORT DOCUMENTATION**

See attached:  Map(s)     Previous Survey Info     Photos     Correspondence

Other:

Signed:

*Gert Halverson*

*4/19/2013*

NCDOT ARCHAEOLOGIST

Date

## Liz Workman

---

**From:** Joseph Lesch <joseph.lesch@co.union.nc.us>  
**Sent:** Tuesday, February 24, 2015 10:07 AM  
**To:** Liz Workman  
**Subject:** RE: B-5374, Bridge No. 448 on Gulledge Parker Road over Buffalo Creek

Elizabeth,

The area of this bridge replacement is very rural and agricultural in nature. The road itself, Gulledge Parker Road, is a local road and is not recommended for any improvements. I have no other concerns or information regarding this bridge replacement project.

Thanks,  
Joe

**Joseph T. Lesch**  
Senior Transportation Planner  
Growth Management  
500 N. Main Street, Suite 70  
Monroe, NC 28112  
(O) 704-283-3690  
[joseph.lesch@co.union.nc.us](mailto:joseph.lesch@co.union.nc.us)  
[www.unioncountync.gov](http://www.unioncountync.gov)



E-mail correspondence to and from this sender may be subject to the North Carolina Public Records law and may be disclosed to third parties. If you are not the intended recipient of this e-mail, please contact the sender immediately.

---

**From:** Elizabeth Workman [mailto:[eworkman@rkk.com](mailto:eworkman@rkk.com)]  
**Sent:** Friday, February 20, 2015 12:18 PM  
**To:** Joseph Lesch  
**Subject:** B-5374, Bridge No. 448 on Gulledge Parker Road over Buffalo Creek

Joseph,

Thanks for talking to me early today about the information for Bridge No. 448. On October 22, 2013, you provided information on this project based off of an inaccuracy in the county maps which showed Bridge No. 448 crossing Trinity Church Road. The true location of the project is on Gulledge Parker Road over Buffalo Creek, which is a dead-end road. Could you please provide us with any information (or a statement that you have no concerns) that you may have concerning this replacement project?

Your previous response was this:

"This road is designed as a minor thoroughfare in the Union County CTP dated February 2012. It is identified as needs improvement and calls for a 2 A cross section (12' wide lanes and wide paved shoulders posted at 55 mph). The bridge should accommodate this cross section."

**APPENDIX B:**  
**Newsletter**



*NCDOT Mission:  
Connecting people and places  
safely and efficiently, with  
accountability and environ-  
mental sensitivity to enhance  
the economy, health, and well-  
being of North Carolina.*

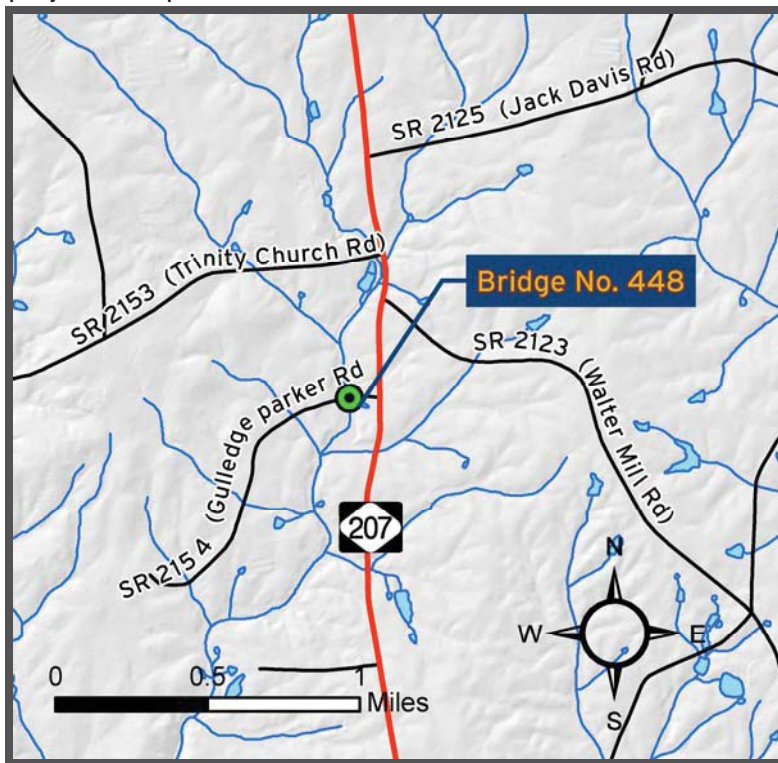
# Bridge No. 448 Replacement Project

*Transportation Improvement Program (TIP)  
No. B-5374*

*Bridge No. 448 on Gulledege Parker Road (S.R. 2154)  
over Buffalo Creek*

## Project Description

The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) are proposing to replace Bridge No. 448 on Gulledege Parker Road (S.R. 2154) over Buffalo Creek in Union County, N.C. Bridge No. 448 was built in 1965 and is reaching the end of its useful life. The purpose of the project is to provide a safer and more durable structure at this location. NCDOT proposes to replace Bridge No. 448 at its existing location with a triple-barrel culvert.



## Schedule for Bridge No. 448

- August 2015: Completion of Environmental Studies
- November 2017: Right-of-Way Acquisition Begins
- November 2018: Construction Begins

## Potential On-site Detour and Construction Information

Traffic will be maintained during construction either from an on-site detour or using staged construction methods to allow the passing of traffic while the new culvert is being constructed. Construction of the new culvert will take approximately six months to complete. Access will be maintained to existing driveways along Gulledege Parker Road (S.R. 2154) during construction.





**Bridge No. 448 Replacement Project on Gulledge Parker Road  
(S.R. 2154) over Buffalo Creek (TIP No. B-5374)**

North Carolina Department of Transportation  
Project Development and Environmental Analysis Unit  
Attn: Zahid Baloch, PE  
1548 Mail Service Center  
Raleigh, North Carolina 27699-1548

**Important Information—Please Read!**

**Contact Us**

For questions or comments about this project, please contact one of the following project team members:

**Zahid Baloch, PE**

NCDOT—PD&EA Unit  
1548 Mail Service Center  
Raleigh, N.C. 27699-1548  
Phone: 919-707-6012  
Email: [zbaloch@ncdot.gov](mailto:zbaloch@ncdot.gov)

**Kristina Miller, PE, or  
Elizabeth Workman-Maurer**

RK&K Consulting Firm  
900 Ridgefield Drive, Ste. 350  
Raleigh, N.C. 27609  
Phone: 919-878-9560  
Fax: 919-790-8382  
Email: [kmiller@rkk.com](mailto:kmiller@rkk.com) or  
[eworkman@rkk.com](mailto:eworkman@rkk.com)

**Do you want to share your  
thoughts on the project?**

Please feel free to mail, email or fax your comments to a project team member by **May 29, 2015**.

Persons who speak Spanish and do not speak English, or have a limited ability to read, speak or understand English, may receive interpretive services upon request by calling (800) 481-6494.