

**Buncombe County  
Bridge No. 259 on SR 3466 (McFee Road)  
over South Hominy Creek  
Federal Aid Project No. BRZ-3466(2)  
W.B.S. No. 46115.1.1  
T.I.P. No. B-5400**

MARCH 2017

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

3/23/17  
DATE

Beverly G. Robinson  
Beverly G. Robinson, Western Region Group Leader  
Project Development & Environmental Analysis Unit

3/24/17  
DATE

for [Signature]  
John F. Sullivan, III, Division Administrator  
Federal Highway Administration

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3/23/17  
DATE

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Matthew Potter, PE  
Project Manager (AECOM)

For the North Carolina Department of Transportation

## **PROJECT COMMITMENTS:**

**Buncombe County  
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### **Roadway Design Unit, Division 13**

Based on the Buncombe County CTP recommendation to improve bicycle accommodations on the facility, the bridge will include 3-foot 9-inch offsets, between the outside of the travel lane and the bridge rail parapet. Additionally, the structure will provide 42 inch Oregon or F-shape bridge railing, as appropriate for bicycle and pedestrian use.

### **All Design Groups/Division 13 Resident Construction Engineer**

The NCDWR has identified South Hominy Creek in the study area as trout waters. However, in a letter dated July 30, 2013, the NCWRC noted that the NCWRC does not expect significant reproducing trout resources downstream of the project and therefore, are not requesting a trout moratorium. Stringent sedimentation and erosion control measures and standard recommendations should apply.

NCDOT will implement *Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina* in the design and construction of this project.

### **Hydraulics Unit**

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).

### **All Design Groups**

The replacement structure will be a new bridge to promote long term bank stability for the stream.

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**INTRODUCTION:** The proposed project will replace Buncombe County Bridge No. 259 on SR 3466 (McFee Road) over South Hominy Creek. The project is included in the current 2016-2025 North Carolina State Transportation Improvement Program (STIP) as project number B-5400. The location is shown in **Figure 1** (Vicinity Map). No substantial environmental impacts are anticipated with this project. The project is classified as a Federal Categorical Exclusion (CE).

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

North Carolina Department of Transportation (NCDOT) Bridge Management Unit records indicates Bridge No. 259 has a sufficiency rating of 15.07 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a substructure condition appraisal of 4 out of 9 and is functionally obsolete due to structural evaluation, deck geometry and approach roadway alignment appraisals of 3 out of 9 according to Federal Highway Administration (FHWA) standards.

The substandard deck width, bridge railing, approach guardrail and approaching roadway alignment are becoming increasingly unacceptable and replacement of the bridge will result in safer traffic operations. Components of both the superstructure and substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The weight limit posted on the bridge is 40 tons for single vehicles and 44 tons for truck-tractor semi-trailers. The superstructure consists of steel I-beams and a timber floor with asphalt overlay. The I-beams are of salvage material with holes in the webs and flanges. Repairs have been made in most locations; however, further repairs will continue to be costly and only short term solution for maintenance purposes. The bridge, originally built in 1961, is an aging structure and is approaching the end of its useful life. Therefore, replacement of the bridge is necessary.

## **II. EXISTING CONDITIONS**

Bridge No. 259 is located in the rural Candler area of Buncombe County. The bridge is located approximately 13 miles southeast of the City of Asheville and about 13 miles east of the Town of Canton (see **Figure 1**). Development in the area contains a mix of single-family residences, open space, and agricultural operations.

McFee Road is classified as a Local Route in the Statewide Functional Classification System and it is not a National Highway System Route.

In the vicinity of the bridge, McFee Road has a 20-foot pavement width with 5-foot grass shoulders. The existing bridge is skewed 90 degrees to South Hominy Creek and was built in 1961. The bridge roadway deck is situated approximately 14 feet above the creek bed.

Bridge No. 259 is a single-span structure that consists of a timber deck on steel I-beam girders, with an asphalt-wearing surface. The substructure of the bridge consists of end bents constructed from timber caps, posts and sills. The overall length of the structure is 41 feet. The clear roadway width is 19.2 feet. The bridge is currently posted with a weight limit of 40 tons for single vehicles and 44 tons for truck-tractor semi-trailers.

There are no utilities attached to the existing structure, but overhead power lines cross over McFee Road approximately 100 feet southeast of the bridge. AT&T Telephone has underground fiber optic telephone lines on the south side of McFee Road which crosses over South Hominy Creek via aerial poles on the west side of the bridge. From there it returns underground and runs north along the south side of SR 3454 (Lower Glady Creek Road). The City of Asheville has a 20 inch water main running along the north side of SR 3446 (Bennett Road) which crosses under South Hominy Creek near the east side of the bridge and then turning and running west along the north side of Lower Glady Creek Road.

The current (2016) traffic volume of 633 vehicles per day (VPD) is expected to increase to 900 VPD by the year 2040. The projected volume includes two percent truck-tractor semi-trailers (TT-ST's) and five percent dual axel trucks (Duals). The statutory speed limit is 55 miles per hour in the project area. One school bus crosses the bridge daily on its morning and afternoon route.

There was one accident reported in the vicinity of Bridge No. 259 during the period between December 2002 and November 2012. No crashes were reported on or at the bridge.

The French Broad River Metropolitan Planning Organization (MPO) and Buncombe County Comprehensive Transportation Plans (CTP's) recommends improving the on-road bicycle facilities on this bridge to accommodate bicyclists as part of the proposed improvements.

### **III. ALTERNATIVES**

#### **A. Preferred Alternative**

##### **New Location – South of Existing**

This new location alternative was studied in detail for replacing Bridge No. 259 and involves replacement of the structure with a new bridge located on the south side (upstream) of the existing bridge and would utilize the existing bridge to maintain traffic during construction. The new location structure will be a bridge approximately 65 feet long, and provide 27-foot 10-inch clear deck width. The bridge length is based on preliminary design information and is set by hydraulic requirements. The bridge will be built just south of the existing location and at approximately the same elevation as that of the existing bridge, with a minimum 0.3% gradient to facilitate deck drainage. The bridge will be sufficient width to provide for two 10-foot lanes.

Based on the Buncombe County CTP recommendation to improve bicycle accommodations on the facility, the bridge will include 3-foot 11-inch offsets, between the outside of the travel lane and the bridge rail parapet. Additionally, the structure will provide 42 inch Oregon or F-shape bridge railing, as appropriate for bicycle and pedestrian use.

Improvements to the approach roadway will extend approximately 100 feet to the southwest along SR 3454 (Bailey Road), 100 feet to the northeast along Bailey Road, 140 feet to the southeast along McFee Road and 120 feet to the northeast along SR 3446 (Bennett Road). The approaches will be widened to include a 20-foot pavement width providing two 10-foot lanes. Variable width grass or paved shoulders will also be provided (3-foot 11-inch to 4-foot 11-inch with guardrail, 3-foot without). The roadway will be designed as a Rural Local Route using NCDOT Sub-Regional Tier Guidelines for Bridge Projects, with a 30 mile per hour design speed.

NCDOT Division 13 concurs that this is the preferred alternative.

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

### **No Build**

The no build alternative will eventually necessitate closure of the bridge and McFee Road. This is unacceptable given the deterioration of the bridge and the limited connectivity to other routes in the vicinity.

### **Rehabilitation**

Rehabilitation of the old bridge is not practical due to its age, structure type and deteriorated condition. Bridge No. 259 was built in 1961 and has reached its life expectancy, and therefore, further rehabilitation of Bridge No. 259 is impractical. Also, rehabilitation of Bridge No. 259 would not adequately address the substandard deck width and approach roadway alignment.

### **Off-site Detour**

An off-site detour alternative is not feasible given the limited connectivity to other routes in the project vicinity. The Upper Hominy Fire Chief noted that available detour routes would involve traveling into an adjacent fire district and add 20-25 minutes to response times. The detour would impact access to about one-third of their service area, which includes approximately 500 homes. Additionally, due to the topographic characteristics of the area, most routes in the vicinity are not acceptable detours due to their tight curves and turns.

### New Location – North of Existing

This new location alternative was studied in detail for replacing Bridge No. 259 and involves replacement of the structure with a new bridge located on the north side (downstream) of the existing bridge, and would utilize the existing bridge to maintain traffic during construction. The new location structure would be located approximately 115 feet northeast of the existing location. The new location structure would be a bridge approximately 50 feet long, and provide 27.5 feet of clear deck width.

This alternative was eliminated due to concerns with the hydraulic open area under the proposed bridge at this location. The current stream channel is narrower at this location by approximately 10 feet, and the roadway grade required for tie-ins to Bailey Road and Bennett Road is lower than the grade of existing bridge. The current FEMA stream model shows that the existing structure is overtopped during the 100 year flood event by approximately 5 feet. Due to the increased potential of bridge overtopping, this is not a suitable alternative.

#### IV. ESTIMATED COSTS

**Table 1: The estimated costs (Date of Estimate 06/22/2015)**

<b>Cost Estimates</b>	<b>New Location – South of Existing (Preferred)</b>
Structure	\$ 216,000
Bridge Approach Slabs	18,000
Roadway Approaches	104,825
Structure Removal	16,000
Retaining Wall	38,400
Misc. & Mob. (Structures)	43,775
Misc. & Mob. (Roadway)	47,000
Total Contract Cost	\$ 484,000
Eng. & Contingencies	66,000
<b>Total Construction Cost</b>	<b>\$ 550,000</b>
Land, Improvements and Damages	\$ 44,430
Acquisition	20,000
<b>Total Estimated R/W Cost</b>	<b>\$ 64,430</b>
<b>Total Estimated Utility Relocation</b>	<b>\$ 37,818</b>
<b>Total Project Cost</b>	<b>\$ 652,248</b>

## V. NATURAL ENVIRONMENT

Natural Resources in the project area were reviewed in the field in March 2013 and documented in a Natural Resources Technical Report (NRTR) (June 2013), incorporated by reference. This section includes a summary of the existing conditions, as well as the potential environmental impacts of the preferred alternative. A full version of the NRTR can be viewed at the Project Development & Environmental Analysis Unit located at Century Center Bldg. A, 1000 Birch Ridge Drive, Raleigh, NC.

### A. Physical Characteristics

The study area lies in the mountain physiographic region of North Carolina. Topography in the project vicinity is comprised of steep ridges, deep valleys and limited areas of relatively level topography. Elevations in the study area range from approximately 2,000 feet to 2,200 feet above mean sea level. Land use in the project vicinity consists primarily of residential interspersed with agricultural development in the areas with relatively level topography and forested areas located along the steep ridges.

#### Soils

The Buncombe County Soil Survey identifies six soil types within the study area (**Table 2**).

**Table 2: Soils in the study area**

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Clifton clay loam, moderately eroded	CkC2	Well Drained	Nonhydric
Evard-Cowee complex	EvE	Well Drained	Nonhydric
Evard-Cowee complex, moderately eroded	EvD2, EvE2	Well Drained	Nonhydric
Iotla loam	IoA	Somewhat Poorly Drained	Hydric*
Rosman fine sandy loam	RsA	Well to Moderately Well Drained	Hydric*
Tate loam	TaB	Well Drained	Nonhydric

\*Soils which are primarily nonhydric, but which may contain hydric inclusions

#### Water Resources

Water resources in the study area are part of the French Broad River basin [U.S. Geological Survey (USGS) Hydrologic Unit 06010105]. Three streams were identified in the study area (**Table 3**). The location of each water resource is shown on **Figure 2**. The physical characteristics of these streams are provided in **Table 4**.

**Table 3: Water Resources in the study area**

Stream Name	Map ID	NCDWR Index Number	Best Usage Classification
South Hominy Creek	South Hominy Creek	6-76-5	C;Tr
UT to South Hominy Creek	SB	6-76-5	C;Tr
UT to South Hominy Creek	SC	6-76-5	C;Tr

**Table 4: Physical characteristic of water resources in the study area**

Map ID	Bank Height (ft)	Bankful Width (ft)	Water Depth (in)	Channel Substrate	Velocity	Clarity
South Hominy Creek	3	35	10-24	Silt, Sand, Gravel, Cobble, Bedrock	Fast	Clear
SB	1	3	6-12	Silt, Sand, Gravel, Cobble	Moderate	Clear
SC	.5	3	12	Silt, Sand	Moderate	Clear

The North Carolina Division of Water Resources (NCDWR) has identified South Hominy Creek as trout water. There are no designated anadromous fish waters or Primary Nursery Areas (PNA) present in the study area. There are no designated High Quality Waters (HQW), Outstanding Resources Waters (ORW) or water supply watersheds (WS-I or WS-II) within 1.0 mile downstream of the study area. South Hominy Creek is not listed on the North Carolina 2014 Final 303(d) list of impaired waters due to sediment and/or turbidity.

**Biotic Resources**

Two terrestrial communities were identified in the study area: maintained/disturbed and chestnut-oak forest (Herbaceous subtype).

Maintained/disturbed areas are scattered throughout the study area in places where the vegetation is periodically mowed, such as roadside shoulders, agricultural fields, and residential lawns. The vegetation in this community is comprised of sparse canopy and shrub species including bamboo, blackberry, black walnut, Chinese privet, and sycamore. Herbaceous species observed include broom sedge, fescue, and Japanese grass. Vines were limited to Japanese honeysuckle.

The chestnut-oak (herbaceous subtype) forest communities are located along the slopes adjacent to South Hominy Creek. Dominant species in the community include American beech, mockernut hickory, red maple, red oak, tulip poplar, and white oak in the overstory,

and American holly, Devil’s walking stick, and rhododendron in the shrub and ground layers. Vines observed in this community were limited to muscadine.

**Table 5: Coverage of Terrestrial Communities in the Study Area**

Community	Coverage (ac.)
Maintained-Disturbed/Agriculture	7.20
Chestnut-Oak Forest (Herbaceous Subtype)	1.76
<b>Total</b>	<b>8.96</b>

**Invasive Species**

Four species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the study area. The species identified were bamboo (Moderate Threat), Chinese privet (Threat), Japanese grass (Threat), and Japanese honeysuckle (Moderate Threat). NCDOT will manage invasive plant species as appropriate.

**B. Jurisdictional Topics**

**Clean Water Act Waters of the U.S.**

Three jurisdictional streams were identified in the study area (**Table 6**). All jurisdictional streams in the study area have been designated as cool water streams for the purpose of stream mitigation.

**Table 6: Jurisdictional characteristics of water resources in the study area**

Map ID	Length (ft)	Estimated Impacts* (ft)	Classification	Compensatory Mitigation Required	River Basin Buffer
South Hominy Creek	984	185	Perennial	Yes	Not Subject
SB	303	16**	Perennial	Yes	Not Subject
SC	82	0	Perennial	Yes	Not Subject
<b>Total</b>	<b>1,369</b>	<b>201</b>			

\*Estimated impacts are calculated using current preliminary design slope stakes plus an additional 25-foot buffer.

\*\*Impacts noted are due to 25-foot buffer. The preferred alignment was shifted north to avoid impacts to SB.

No jurisdictional wetlands are located within the study area.

**Permits**

The proposed project has been designated as a Categorical Exclusion (CE) for the purposes of National Environmental Policy Act (NEPA) documentation. As a result, a Nationwide Permit (NWP) 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 United States Army Corps of Engineers (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 NCDWR will be needed.

### Construction Moratoria

In a letter dated July 30, 2013, the North Carolina Wildlife Resources Commission (NCWRC) noted that the NCWRC does not expect significant reproducing trout resources downstream of the project and therefore, are not requesting a trout moratorium. Stringent sedimentation and erosion control measures and standard recommendations should apply.

### Federally Protected Species

As of January 18, 2017 the U.S. Fish and Wildlife (USFWS) lists twelve federally protected species in Buncombe County, listed in **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.

**Table 7: Federally protected species assessment in the study area**

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
Bog turtle	<i>Clemmys muhlenbergii</i>	T (S/A)	No	Not Required
Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	E	No	No Effect
Gray bat	<i>Myotis grisescens</i>	E	No	No Effect
Spotfin chub* (=turquoise shiner)	<i>Erimonax monachus</i>	T	No	No Effect
Tan riffleshell*	<i>Epioblasma florentina walker</i> (=E. walker)	E	No	No Effect
Northern long-eared bat	<i>Myotis septentrionalis</i>	T	**	**
Appalachian elktoe*	<i>Alasmidonta raveneliana</i>	E	No	No Effect
Spruce-fir moss spider	<i>Microhexura montivaga</i>	E	No	No Effect
Spreading avens	<i>Geum radiatum</i>	E	No	No Effect
Virginia spiraea*	<i>Spiraea virginiana</i>	T	Yes	No Effect
Rock gnome lichen	<i>Gymnoderma lineare</i>	E	No	No Effect
Rusty-patched bumble bee*	<i>Bombus affinis</i>	E	***	***

E – Endangered

T – Threatened

T(S/A) – Threatened due to similarity of appearance

\*- Historic record (the species was last observed in the county more than 50 years ago)

\*\* - NLEB is exempt due to consistency with the 4(d) rule

\*\*\* - No Section 7 survey, conclusion, or consultation is required at this time

## **Bog turtle**

**Habitat Description:** Bog turtle habitat consists of open, groundwater supplied (springfed), graminoid dominated wetlands along riparian corridors or on seepage slopes. These habitats are designated as mountain bogs by the NCNHP, but they are technically poor, moderate, or rich fens that may be associated with wet pastures and old drainage ditches that have saturated muddy substrates with open canopies. Potential habitats may be found in western Piedmont and Mountain counties from 700 to 4500 feet elevation in North Carolina.

### **Biological Conclusion: Not Required.**

Species listed as threatened due to similarity of appearance do not require Section 7 consultation with the USFWS. This project is not expected to affect the bog turtle because no suitable habitat is present within the study area. No wetlands are present within the study area.

## **Carolina northern flying squirrel**

**Habitat Description:** There are several isolated populations of the Carolina northern flying squirrel in the mountains of North Carolina. This nocturnal squirrel prefers the ecotone between coniferous (red spruce, Fraser fir, or hemlock) and mature northern hardwood forests (beech, yellow birch, maple, hemlock, red oak, and buckeye), typically at elevations above 4,500 feet mean sea level. In some instances, the squirrels may be found on narrow, north-facing valleys above 4,000 feet mean sea level. Both forest types are used to search for food and the hardwood forest is used for nesting sites. Mature forests with a thick evergreen understory and numerous snags are most preferable. In winter, squirrels inhabit tree cavities in older hardwoods, particularly yellow birch.

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

Habitat is not present in the project area due to the lack of spruce-fir forest. According to the NCNHP database, the nearest known occurrence of Carolina northern flying squirrels is approximately six miles away at Mount Pisgah near the Buncombe-Haywood county line.

## **Gray bat**

**Habitat Description:** Gray bats are known mainly from the cave regions of the Southeast and Midwest. They live in colonies in caves, utilizing different caves for summer roosting and winter hibernating. Summer caves are usually within one half mile of a river or reservoir, which provides foraging habitat. During the summer, females give birth and rear the young in maternity caves, while males and yearlings roost in separate bachelor caves. Caves preferred for hibernation are typically deep, vertical caves with a temperature between 42 and 52 degrees Fahrenheit. Gray bats are highly selective in choosing suitable caves, and nine known caves are thought to provide hibernation space for 95 percent of the population. Migration from summer to winter caves begins in September and is mainly complete by the beginning of November.

**Biological Conclusion: No Effect**

Gray bats use caves and abandoned mines for roosting year-round; however, they may roost periodically in bridges. Bridge 259 is a timber bridge with a clearance of approximately 13 feet. Early evidence from several structure surveys suggests that this species prefers tall, concrete bridges. Timber bridges (which are often slathered in creosote) with low clearances tend to stay cool and damp, and are not typically preferred roosting locations by bats. Bats prefer dry, elevated roost sites. Therefore, no suitable roosting habitat for gray bat is present. Based on low height and type of bridge (timber and steel), the proposed project will have a biological conclusion of No Effect for gray bat.

**Spotfin chub (= turquoise shiner)**

**Habitat Description:** The spotfin chub occurs in the Little Tennessee River drainage system. This minnow typically inhabits moderate to large streams, 49-230 feet in width. However, they have been documented utilizing smaller tributaries in the fall. These streams should have a good current, clear water, cool to warm temperatures, and pools alternating with riffles. Specimens of spotfin chub have been taken from a variety of substrates but rarely from significantly silted substrates. This species has been observed spawning under loose rocks over bedrock.

**Biological Conclusion: No Effect**

Prior to conducting an in-stream survey, a review of the North Carolina Natural Heritage Program (NCNHP) database was conducted (February 4, 2013) to determine if there were any records of rare mussels or fish within the proposed project study area or receiving waters. The historic record of turquoise shiner is located 16 miles away from the project downstream in the Swannanoa River. A mussel screening was completed for the project crossing by NCDOT biologists on February 6, 2013 and a mussel survey was conducted 0.2 miles upstream as a part of TIP project B-4037 by Alderman Environmental Services on September 7, 2003. As a result of the prior mussel survey and screening, as well as the review of GIS and NCNHP data, it appears that turquoise shiner does not exist in the project vicinity and there is a lack of habitat at this crossing according to Steve Fraley with NCWRC.

**Tan riffleshell**

**Habitat Description:** Historic occurrences of the Tan riffleshell are known from the French Broad and Hiwassee Rivers in North Carolina. Currently, the only known viable population of this species is located in Tazwell County, Virginia. Individuals are typically found in headwaters, riffles, and shoals in sand and gravel substrates.

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

Prior to conducting an in-stream survey, a review of the North Carolina Natural Heritage Program (NCNHP) database was conducted (February 4, 2013) to determine if there were any records of rare mussels or fish within the proposed project study area or receiving waters. The records for the Tan riffleshell are historic and obscure. A mussel screening was completed for the project crossing by NCDOT biologists on February 6, 2013 and a mussel survey was conducted 0.2 miles upstream as a part of TIP project B-4037 by Alderman Environmental Services on September 7, 2003. As a result of the prior mussel survey and screening, as well as the review of GIS and NCNHP data, it appears that Tan riffleshell does not exist in the project vicinity and there is a lack of habitat at this crossing according to Steve Fraley with NCWRC.

### **Northern long-eared bat**

**Habitat Description:** The Northern long-eared bat (NLEB) is found across much of the eastern and north central US and all Canadian provinces. Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible. Summer roosting occurs singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. It has also been found, rarely, roosting in human-made structures such as buildings, barns, behind window shutters, on utility poles and in bat houses. This species is a medium-sized bat with females tending to be slightly larger than males. This species is distinguished by its relatively long ears that extend beyond the nose when laid forward.

### Biological Conclusion: **Consistent with the final Section 4(d) rule**

According to the North Carolina Natural Heritage Program (NHP) Biotics Database, most recently updated October 2016, the nearest NLEB hibernacula record is 16 miles southwest of the project (EO ID 34288) and no known NLEB roost trees occur within 150 feet of the project area. EO 34288 represents the Big Ridge Site with multiple observations from 2004 to 2014.

NCDOT has also reviewed the USFWS Asheville Field office website for consistency with NHP records. This project is located entirely outside of the red highlighted areas (12- digit HUC) that the USFWS Asheville Field Office has determined to be representative of an area that may require consultation.

For the proposed action, NCDOT has committed to the conservation measures listed below:

- 1) No alterations of a known hibernacula entrance or interior environment if it impairs an essential behavioral pattern, including sheltering northern long-eared bats (January 1 through December 31);
- 2) No tree removal within a 0.25 mile radius of a known hibernacula (January 1 through December 31); and

3) No cutting or destroying a known, occupied maternity roost tree, or any other trees within a 150-foot radius from the known, occupied maternity tree during the period from June 1 through and including July 31.

NCDOT has determined that the proposed action does not require separate consultation on the grounds that the proposed action is consistent with the final Section 4(d) rule, codified at 50 C.F.R. § 17.40(o) and effective February 16, 2016. NCDOT may presume its determination is informed by best available information and consider Section 7 responsibilities fulfilled for NLEB.

### **Appalachian elktoe**

**Habitat Description:** The Appalachian elktoe is known from the French Broad River watershed in North Carolina. The Appalachian elktoe has been observed in moderate-to fast-flowing water, in gravelly substrates often mixed with cobble and boulders, in cracks of bedrock and in relatively silt-free, coarse, sandy substrates. Apparently, stability of the substrate is critical to this species, as it is seldom found in stream reaches with accumulations of silt or shifting sand, gravel, or cobble.

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

Prior to conducting an in-stream survey, a review of the North Carolina Natural Heritage Program (NCNHP) database was conducted (February 4, 2013) to determine if there were any records of rare mussels or fish within the proposed project study area or receiving waters. The historic record of Appalachian elktoe is located 14 miles away from the project downstream in the French Broad River. A mussel screening was completed for the project crossing by NCDOT biologists on February 6, 2013 and a mussel survey was conducted 0.2 miles upstream as a part of TIP project B-4037 by Alderman Environmental Services on September 7, 2003. As a result of the prior mussel survey and screening, as well as the review of GIS and NCNHP data, it appears that Appalachian elktoe does not exist in the project vicinity and there is a lack of habitat at this crossing according to Steve Fraley with NCWRC.

### **Spruce-fir moss spider**

**Habitat Description:** This species is known only from spruce-fir forests in the Appalachian mountains of North Carolina and Tennessee. The spruce-fir moss spider occurs in well-drained moss and liverwort mats growing on rocks or boulders. These mats are found in well-shaded areas in mature, high elevation (> 5,000 feet mean sea level) Fraser fir and red spruce forests. The spruce-fir moss spider is very sensitive to desiccation and requires environments of high and constant humidity.

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

No such habitat is present in the project area. Elevations in the study area do not exceed 2,200 feet mean sea level. There is no critical habitat in the vicinity of the project. According to the NCNHP database, the nearest known occurrence of this spider is over 23 miles away at the Haywood-Jackson county line.

## **Spreading avens**

**Habitat Description:** Spreading avens occurs in areas exposed to full sun on high elevation cliffs, outcrops, and bases of steep talus slopes. This perennial herb also occurs in thin, gravelly soils of grassy balds near summit outcrops. The species prefers a northwest aspect, but can be found on west-southwest through north-northeast aspects. Forests surrounding known occurrences are generally dominated by either red spruce-Fraser fir, northern hardwoods with scattered spruce, or high-elevation red oaks. Soils may be well drained but almost continuously wet, with soils at some known occurrences subject to drying out in summer due to exposure to sun and shallow depths. Known populations occur at elevations ranging from 4,296 to 6,268 feet above mean sea level. Blue Ridge goldenrod, Heller's blazing star, and Roan Mountain bluet are a few of its common associate species.

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

Suitable habitat for spreading avens does not exist within the study area. Elevations in the study area do not exceed 2,200 feet mean sea level. A review of the NCNHP records, updated January 2017, indicates no known spreading avens occurrence within 1.0 mile of the study area.

## **Virginia spiraea**

**Habitat Description:** Virginia spiraea occurs in flood-scoured, high-gradient sections of rocky river banks of second and third order streams, often in gorges or canyons. This perennial shrub grows in sunny areas on moist, acidic soils, primarily over sandstone. The shrub tends to be found in thickets with little arboreal or herbaceous competition along early successional areas that rely on periodic disturbances such as high-velocity scouring floods to eliminate such competition. Virginia spiraea also occurs on meander scrolls and point bars, natural levees, and other braided features of lower stream reaches, often near the stream mouth. Occurrences in depositional habitats are found among riparian debris piles, on fine alluvial sand and other alluvial deposits, or between boulders.

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

Suitable habitat for Virginia spiraea exists in the study area along South Hominy Creek. Surveys for Virginia spiraea were conducted on June 5, 2013. No individuals were found. A review of the NCNHP records, updated January 2017, identifies a Virginia spiraea occurrence along South Hominy Creek within one mile of the project site. However, this occurrence is noted as being 'extirpated'. A follow-up survey will be conducted by NCDOT within the project limits in 2017.

## **Rock gnome lichen**

Habitat Description: Rock gnome lichen occurs in high elevation coniferous forests (particularly those dominated by red spruce and Fraser fir) usually on rocky outcrop or cliff habitats. This squamulose lichen only grows in areas with a great deal of humidity, such as high elevations above 5,000 feet mean sea level where there is often fog, or on boulders and large outcrops in deep river gorges at lower elevations. Habitat is primarily limited to vertical rock faces where seepage water from forest soils above flows only at very wet times. The species requires a moderate amount of sunlight, but cannot tolerate high-intensity solar radiation. The lichen does well on moist, generally open sites with northern exposures, but requires at least partial canopy coverage on southern or western aspects because of its intolerance to high solar radiation.

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

Suitable habitat for the rock gnome lichen does not exist within the study area. There are no high elevation coniferous forests, rocky outcrops or cliff habitats with a great deal of humidity and seepage that flows during wet periods. Elevations in the study area do not exceed 2,200 feet mean sea level. A review of the NCNHP records, updated January 2017, indicates no known rock gnome lichen occurrence within 1.0 mile of the study area.

## **Bald 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.

A desktop-GIS assessment of the study area, as well as the area within a 1.13-mile radius (1.0 mile plus 660 feet) of the project limits, was performed on February 25, 2013 using 2012 National Agriculture Inventory Program color aerials. No water bodies large enough or sufficiently open enough to be considered a potential feeding source were identified. Since there was no foraging habitat within the review area, a survey of the study area and the area within 660 feet of the project limits was not conducted. Additionally, a review of the NCNHP records updated January 2017, revealed no known occurrences of this species within 1.0 mile of the study area. Due to the absence of known occurrences, lack of potential feeding habitat, and minimal impact anticipated for this project, it has been determined that this project will not affect this species.

## **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 (federally 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.

### **Historic Architecture**

NCDOT – Human Environment Section, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no historic properties are located within the project’s area of potential effect and that no surveys are required (see Historic Architecture and Landscapes No Survey Required Form dated April 4, 2013 in Appendix A).

### **Archaeology**

NCDOT – Human Environment Section, under the provisions of a Programmatic Agreement with FHWA, NCDOT, HPO, OSA and the Advisory Council on Historic Preservation (effective July 1, 2009), reviewed the proposed project and determined that no surveys are required (see No Archeological Survey Required Form dated April 2, 2013 in Appendix A).

### **B. Community Impacts**

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. No business or residential relocations are expected with implementation of the proposed alternative.

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 the project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. There are soils classified as prime, unique, or having state or local importance in the vicinity of the project. Farmland Protection Policy Act eligible soils are located in the northwest and southeast quadrants of the Direct Bridge Impact Area. Therefore, the project will involve the direct conversion of farmland acreage within these classifications.

As is required by the Farmland Protection Policy Act, Form NRCS-AD-1006 has been completed according to FHWA guidelines. A preliminary screening with the AD 1006 form resulted in a score of 53 points out of 160. Since this project received a total point value of less than 60 points, this site falls below the NRCS minimal criteria and will not be evaluated further for farmland impacts. No other alternatives than those discussed in this document will be considered without a re-evaluation of the project’s potential impacts upon farmland. The project will not have a significant impact to farmland.

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

### **C. Noise & Air Quality**

The project is located in Buncombe County, which has been determined to comply with the National Air Quality Standards. The proposed project is located in an attainment area; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

This project will not result in any meaningful changes in traffic volume, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. As such 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 MSAT concerns. Consequently this effort is exempt from analysis for MSAT's.

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.

This project has been determined to be a Type III Noise Project and therefore, no traffic noise analysis is required to meet the requirements 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 operations.

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

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

An examination of local, state and federal regulatory records by the NCDOT GeoEnvironmental Section revealed no sites with a Recognized Environmental Concern (REC) within the project limits. RECs are most commonly underground storage tanks, dry cleaning solvents, landfills and hazardous waste disposal areas.

Buncombe County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

The NCDOT's 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).

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.

### **VIII. COORDINATION & AGENCY COMMENTS**

NCDOT has sought input from the following agencies as a part of the project development: U.S. Forest Service, U.S. Environmental Protection Agency, Tennessee Valley Authority, U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service, N.C. Division of Water Resources, N.C. Wildlife Resource Commission, North Carolina State Historic Preservation Office, Buncombe County Planning Department and Eastern Band of Cherokee Indians.

The N.C. Wildlife Resource Commission and U.S. Fish & Wildlife Service in standardized letters provided a request that they prefer any replacement structure to be a spanning structure.

**Response:** NCDOT will be replacing the existing structure with a new bridge.

The **N.C. Wildlife Resource Commission**, in a standardized letter, stated that they do not expect significant, reproducing trout resources downstream of the project and therefore, are not requesting a trout moratorium. Stringent sedimentation and erosion control measures and standard recommendations should apply.

**Response:** NCWRC has designated this stream as trout waters and therefore *Design Standards for Sensitive Watersheds* will be incorporated throughout design and construction of the project. Additionally, NCDOT's *Best Management Practices for Protection of Surface Waters* (March 1997) will be followed throughout the design and construction of the project. NCDOT will also implement *Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina* in the design and construction of this project.

The **U.S. Fish & Wildlife Service** noted that a review of available information indicates that there are records of the eastern hellbender (*Cryptobranchus alleganiensis*), a federal species of concern, in Hominy Creek, downstream of the proposed action area. The eastern hellbender is a species that is threatened by habitat loss due to erosion and excessive sediment in streams. The lower portion of Hominy Creek is on the (2012) Clean Water Act 303(d) list of impaired streams due to turbidity. Due to the high density of development in this watershed and the frequency of insufficient buffers, there is a higher than normal risk that the instability of stream banks will lead to additional sediment pollution in the stream. We recommend that the structure for this replacement be designed in a way that promotes long-term bank stability.

**Response:** The lower portion of Hominy Creek is not listed on the 2014 303(d) list of impaired streams; However, South Hominy Creek is listed on the 2014 303(d) list as Benthos Fair. The replacement structure will be a new bridge to promote long term bank stability for the stream.

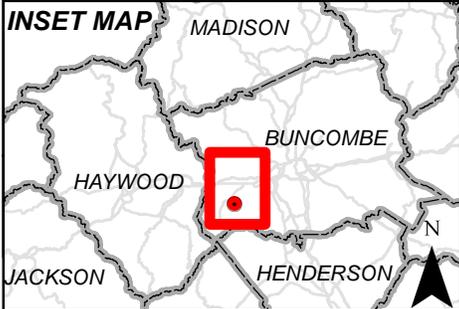
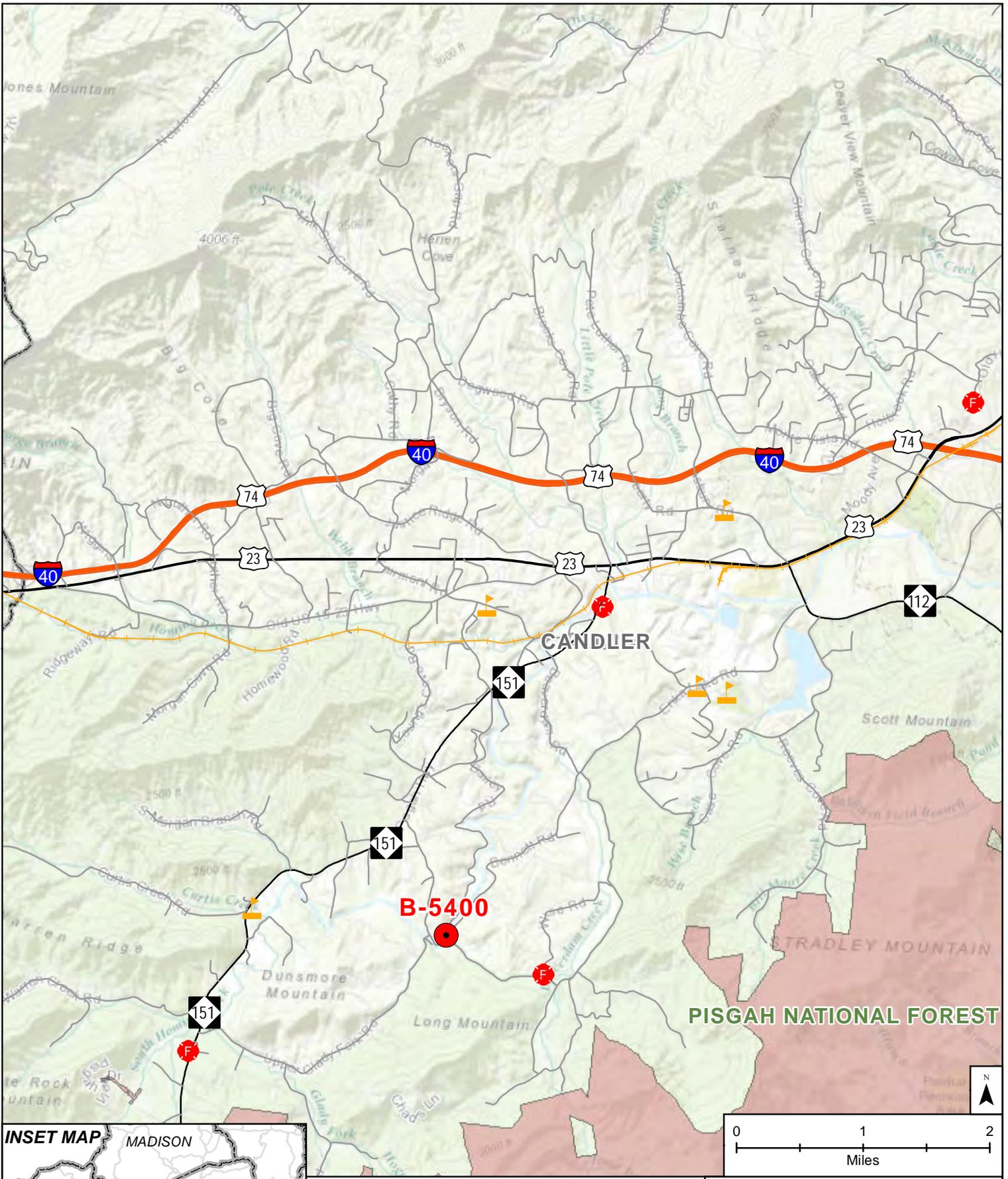
## **IX. PUBLIC INVOLVEMENT**

A Landowner Notification letter was sent out to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

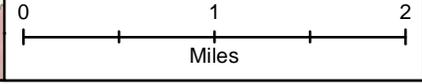
Based on responses, or lack thereof, to the landowner notification letter, a Public Meeting was determined unnecessary.

## **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.

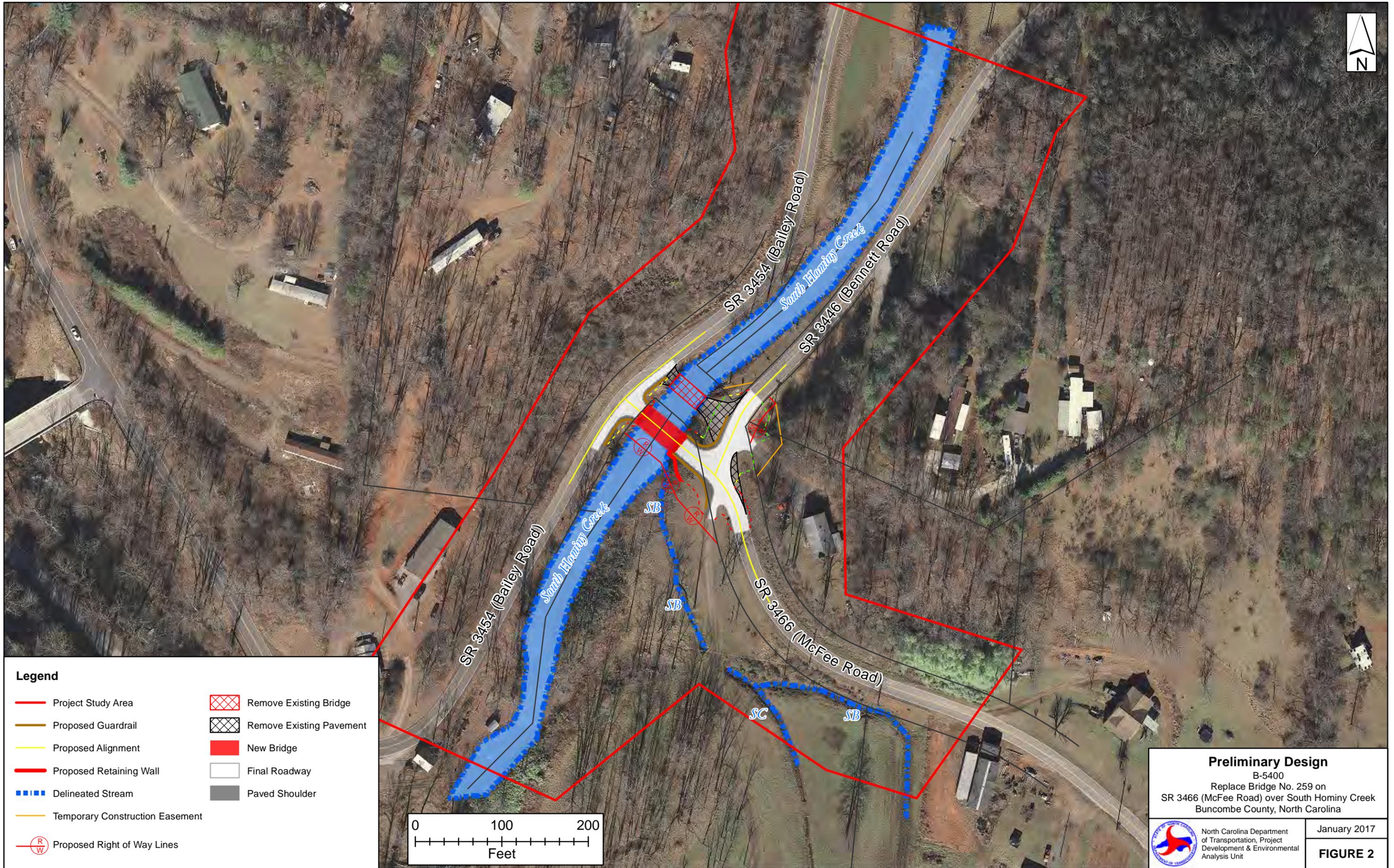


Legend	
	Fire Station
	B-5400
	School
	Interstate
	US Highway
	NC Highway
	State Road
	Local Route



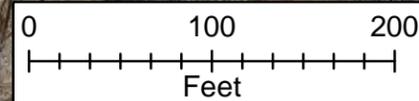
**Vicinity Map**  
 Replace Bridge No. 259 on  
 SR 3466 over South Hominy Creek  
 Buncombe County, North Carolina  
*TIP Project B-5400*

November 2016	<b>FIGURE 1</b>
---------------	-----------------



**Legend**

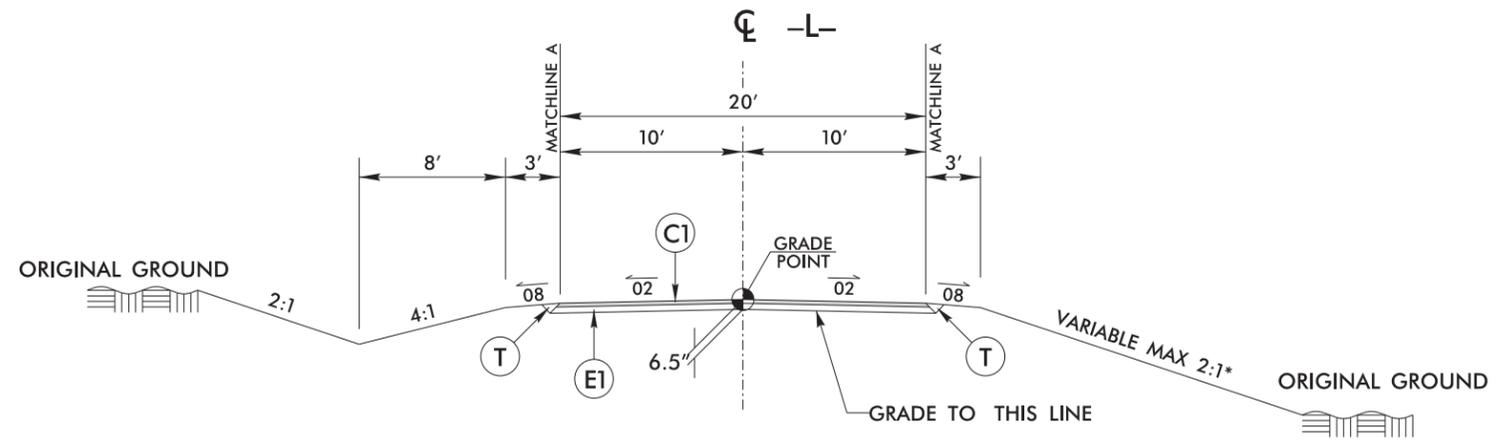
- Project Study Area
- Proposed Guardrail
- Proposed Alignment
- Proposed Retaining Wall
- ▬▬▬ Delineated Stream
- Temporary Construction Easement
- R  
W Proposed Right of Way Lines
- Remove Existing Bridge
- Remove Existing Pavement
- New Bridge
- Final Roadway
- Paved Shoulder



<b>Preliminary Design</b>	
B-5400	
Replace Bridge No. 259 on	
SR 3466 (McFee Road) over South Hominy Creek	
Buncombe County, North Carolina	
North Carolina Department of Transportation, Project Development & Environmental Analysis Unit	January 2017  <b>FIGURE 2</b>

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	ASPHALT WEDGING (SEE DETAIL)

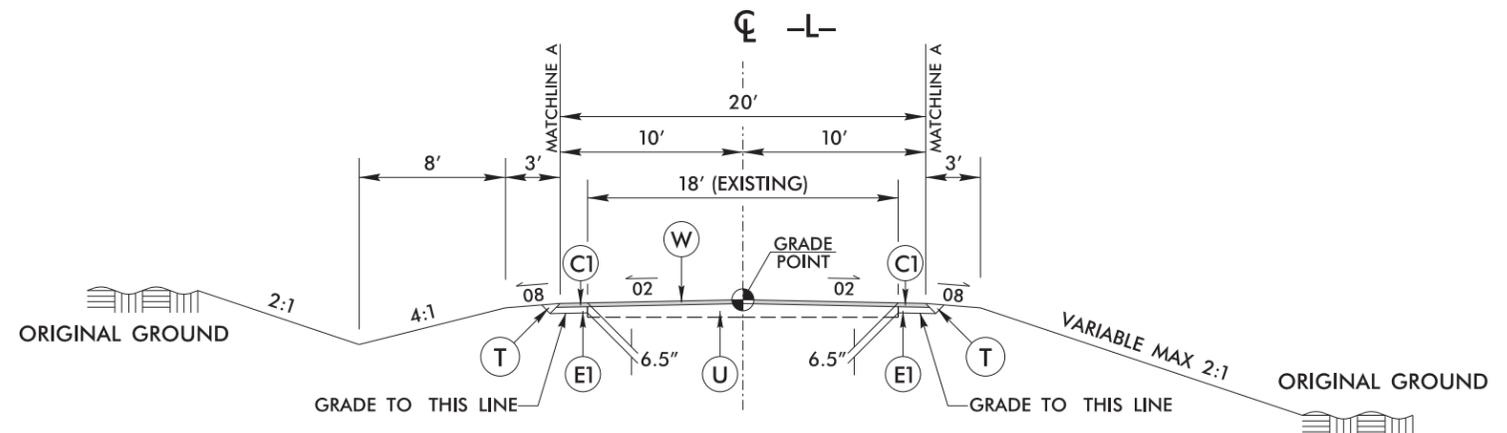
NOTE: PAVEMENT EDGE SLOPES ARE 1:1, UNLESS SHOWN OTHERWISE



**TYPICAL SECTION NO. 1**

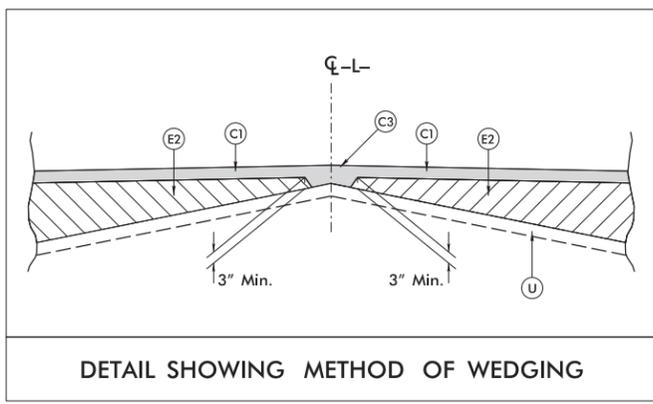
-L- STA. 10+09.00 TO -L- STA. 10+21 +/- (BEGIN BRIDGE)  
 -L- STA. 10+86 +/- (END BRIDGE TO -L- STA. 11+30.72

\*UTILIZE 1.5:1 SLOPES ON RIGHT SIDE OF -L- FROM END OF BRIDGE TO STA. 11+00.00

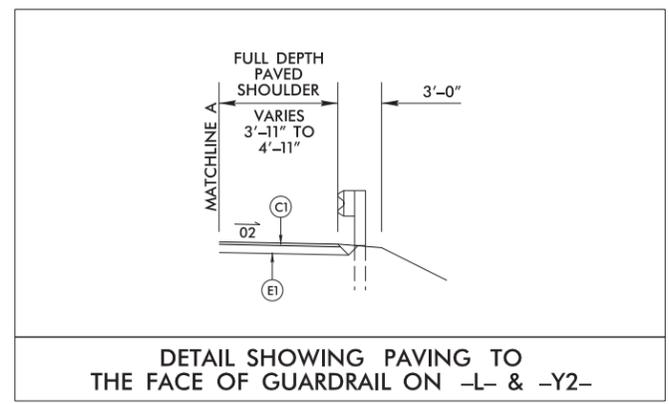


**TYPICAL SECTION NO. 2**

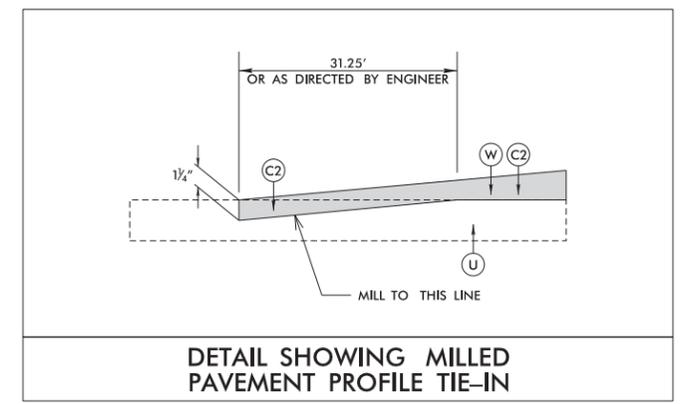
-L- STA. 11+30.72 TO -L- STA. 12+50.00



DETAIL SHOWING METHOD OF WEDGING



DETAIL SHOWING PAVING TO THE FACE OF GUARDRAIL ON -L- & -Y2-



DETAIL SHOWING MILLED PAVEMENT PROFILE TIE-IN

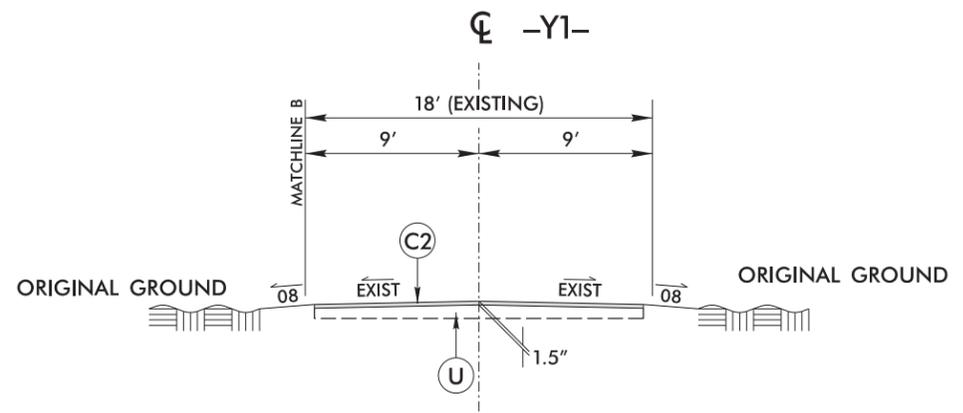
REVISIONS

B-17/99

PROJECT REFERENCE NO. B-5400	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
 <small>                 Firm License No. C-1212                  421 Fayetteville St.                  Raleigh, NC 27601                  P: 919.386.2700                  www.stewartinc.com             </small>	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	

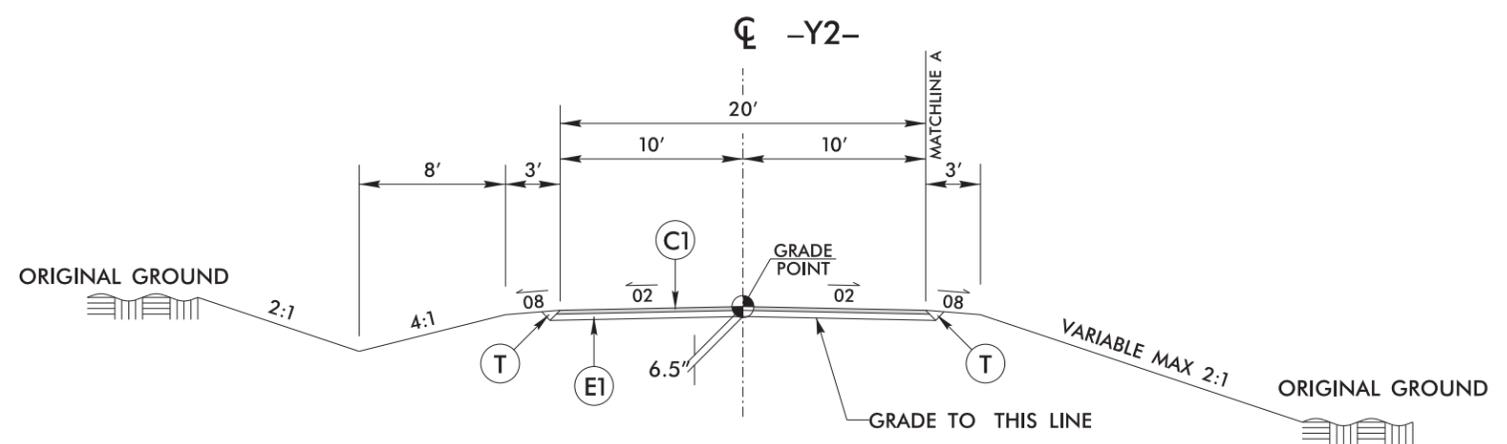
PAVEMENT SCHEDULE <i>(FINAL PAVEMENT DESIGN)</i>	
C1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	ASPHALT WEDGING (SEE DETAIL)

NOTE: PAVEMENT EDGE SLOPES ARE 1:1, UNLESS SHOWN OTHERWISE



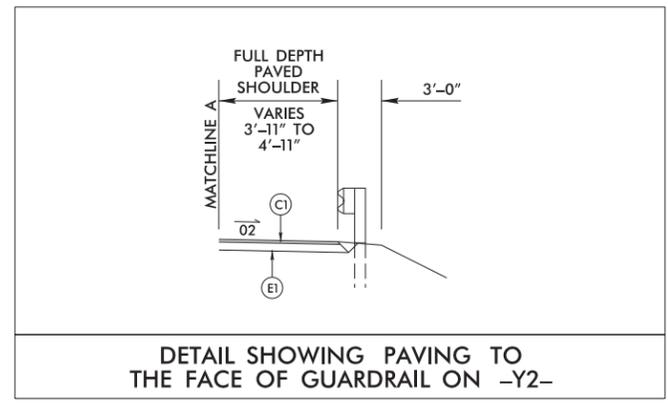
**TYPICAL SECTION NO. 3**

-Y1- STA. 11+50.00 TO -Y1- STA. 13+50.00

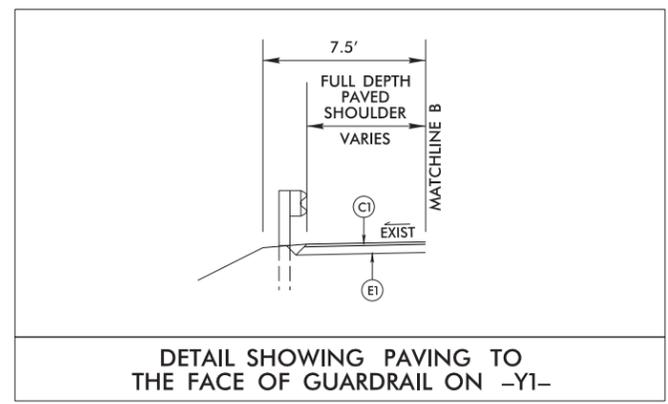


**TYPICAL SECTION NO. 4**

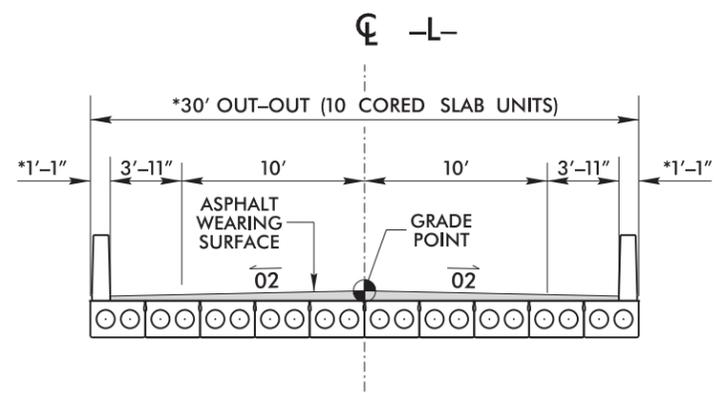
-Y2- STA. 11+50.00 TO -Y2- STA. 12+71.68



DETAIL SHOWING PAVING TO THE FACE OF GUARDRAIL ON -Y2-

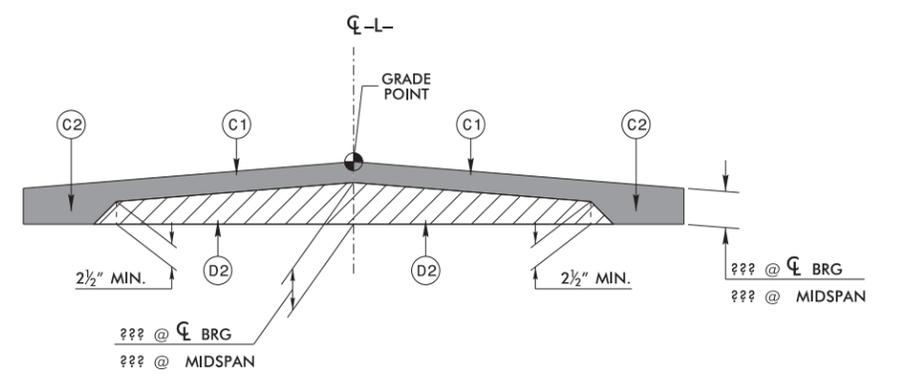


DETAIL SHOWING PAVING TO THE FACE OF GUARDRAIL ON -Y1-



**TYPICAL SECTION NO. 5**

-L- STA. 10+21+/- TO -L- STA. 10+86+/-



DETAIL SHOWING METHOD OF WEDGING ON BRIDGE

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 3

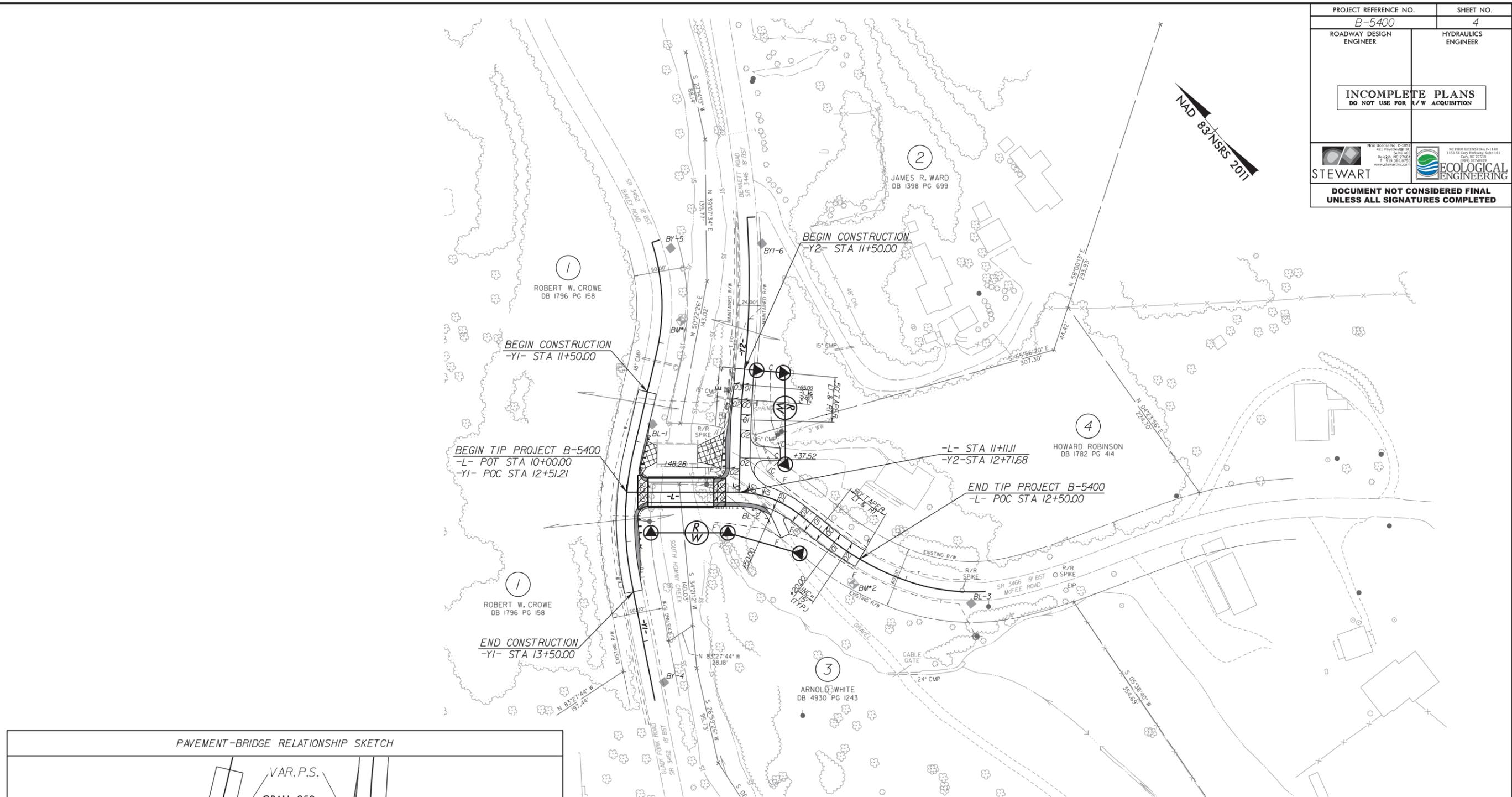
REVISIONS

2/8/2017  
 I:\Projects\B5400\B5400\_Rdjt\_tjup.dgn  
 USF/REK/MS

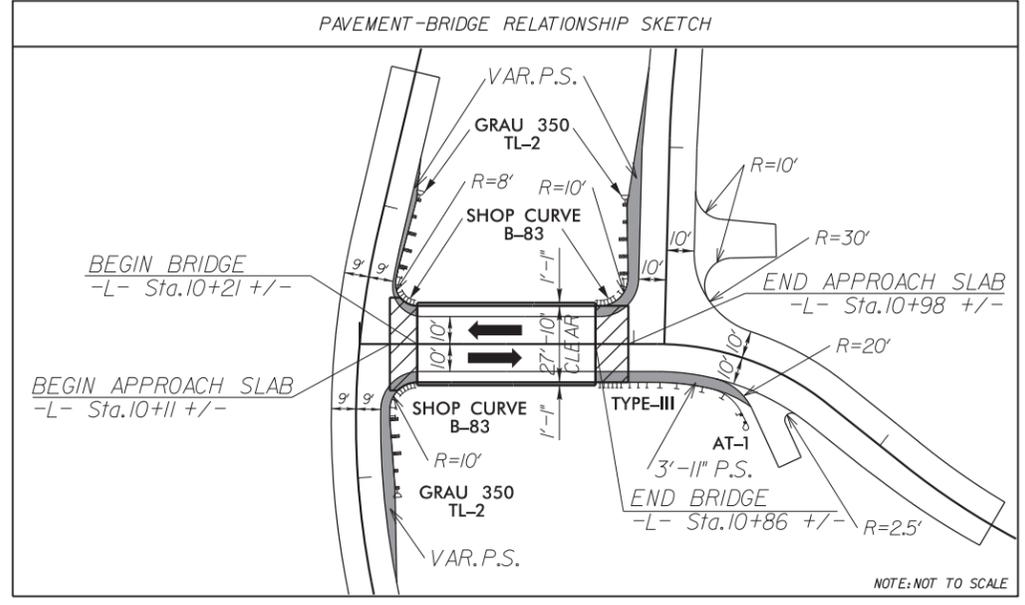
B.17/99

REVISIONS

PROJECT REFERENCE NO. <b>B-5400</b>		SHEET NO. <b>4</b>	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION			
 STEWART <small>Firm License No. C-2151 421 Fayetteville St. Fayetteville, NC 27801 P: 919.336.0794 www.stewartinc.com</small>		 ECOLOGICAL ENGINEERING <small>NC FIRM LICENSE No. E-1168 1313 S. Cary Parkway, Suite 111 Cary, NC 27513 P: 919.257.0429</small>	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED			



NAD 83 NRS 2011



**2018/2040 AVERAGE ANNUAL DAILY TRAFFIC**

	-Y1- SR 3452 (BAILEY RD.)		-Y2- SR 3446 (BENNETT RD.)	
119 200	537 700	437 600	100 700	319 400
	119 200	656 900		
	537 700			
537 700			-L- SR 3466 (MCFEE RD.)	
	-Y1- SR 3452 (GLADY FORK RD.)			
				2018 2040 AADT

FOR ALIGNMENT AND CURVE DATA, SEE SHEET 2B-1

FOR -L- PROFILE, SEE SHEET 5

FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-7

2/8/2017 10:55:40 AM Rdj\_psh\_04.dgn

# Appendix A

## Forms

- Historic Architecture and Landscapes No Survey Required Form
- No Archeological Survey Required Form

13-03-0035



## 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-5400	<b>County:</b>	Buncombe
<b>WBS No.:</b>	46115.1.1	<b>Document Type:</b>	PCE
<b>Fed. Aid No:</b>	BRZ-3466(2)	<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><u>Project Description:</u></b> Replace Bridge No 259 on SR 3466 over South Hominy 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 April 3, 2013. Based on this review there are no NR, DE, LL, SL, or SS in the project area. There is c. 1945 house in the APE but it does not meet the criteria for eligibility. (see attached property card). All of the other structures in the APE are not yet 50 years of age. 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 Buncombe 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*

NCDOT Architectural Historian

*April 4, 2013*

Date



13-03-0035



## NO ARCHAEOLOGICAL SURVEY REQUIRED 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-5400** County: **Buncombe**  
 WBS No: **46115.1.1** Document: **PCE or CE**  
 F.A. No: **BRZ-3466(2)** Funding:  State  Federal

Federal Permit Required?  Yes  No Permit Type: **Unknown at this time**

#### Project Description:

The project calls for the replacement of Bridge No. 259 at the intersection of SR 3446/3466 (Bennett Road/McFee Road) and SR 3452 (Bailey Road) over South Hominy Creek in Buncombe County. SR 3446 and SR 3466 are two contiguous roads aligned on the east side of South Hominy Creek, while SR 3452 is to the west. Bridge 259 joins the roads. The archaeological Area of Potential Effects (APE) for the project is defined as two adjoining 400-foot (121.92 m) long corridor running 200 feet (60.96 m) northeast and 200 feet southwest along both SR 3446/3466 and SR 3452 from either end of Bridge No. 259. The corridors are approximately 200 feet wide extending 100 feet (30.48 m) on either side of each road from their present center.

### SUMMARY OF CULTURAL RESOURCES REVIEW

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

Bridge No. 259 is southwest of Asheville, south of Candler, and just west of the community of Beaverdam in the southwest section of Buncombe County, North Carolina. The project area is plotted at the southern edge of the Enka USGS 7.5' topographic quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on April 1, 2013. No previously recorded archaeological sites have been identified within or adjacent to the APE, but two known sites (31BN110 and 31BN111) have been reported within a mile radius of bridge. In addition, no existing National Register of Historic Places (NRHP), State Study Listed (SL), Locally Designated (LD), Determined Eligible (DE), or Surveyed Site (SS) properties are within or adjacent to the archaeological APE according to the North Carolina State Historic Preservation Office online data base (HPOWEB 2013). Topographic maps, USDA soil survey maps, aerial photographs (NC One Map), and historic maps (North Carolina maps website) were utilized to gauge environmental factors that may have contributed to prehistoric or historic settlement within the project limits and to assess the level of ground disturbance.

Bridge No. 259 crosses South Hominy Creek roughly east to west, while SR 3446/3466 and SR 3452 run alongside the creek from the northeast to southwest within the project area before SR 3466 turns east. The creek flows north and empties into Hominy Creek. These waterways are part of the French Broad drainage basin. The APE is situated primarily along the edge of hillsides with a very small portion falling on a floodplain and disturbed stream terrace on the east side of the creek (Figure 2). The hillside to the west of South Hominy Creek is forested with SR 3452 placed between the hill and stream. To the east, open residential properties make up the APE with SR 3446/3466 occupying the stream terrace and the

foot of the hill. The floodplain found to the southeast of the bridge contains a private drive and a small unnamed tributary. Overall, ground disturbance is considered moderate to heavy on the fairly level landforms from previous road activities and moderate along the hillsides from soil erosion.

According to the USDA soil survey map, the APE encompasses three soil types (Figure 3). The hillsides on either side of creek are composed of the Evard-Cowee complex (EvD2; EvE2; EwE). This series is well drained with a slope that ranges from 15 to 50 percent. Generally, slope of 15 percent or more is considered unsuitable for significant archaeological sites. The stream terrace to the north is found upon Tate loam (TaB). This is also a well drained soil but with a much gentle slope of 2 to 8 percent. Although this series can potential yield intact and significant deposit, it is unlikely any will be found within the current APE. This is due to disturbance from SR 3446, which covers nearly the entire stream terrace between South Hominy Creek and the hillside. Lastly, the floodplain to the southeast consists of Iotla loam (IoA). This is a somewhat poorly drained soil that is subject to occasional floods. Slope is less than 2 percent. Due to persistent wetness and flooding, it is very unlikely that early settlement activities took place on this soil series. As a result, it appears that no subsurface testing is required on any of the landforms.

A review of the site files recognized few archaeological investigations in the vicinity of the bridge, which have produced mixed results. The two nearest sites (31BN110 and 31BN111) are just to the southwest within the South Hominy Creek floodplain on well drained Rosman fine sandy loam (RsA). They were recorded by the University of North Carolina at Chapel Hill in 1941. These sites yielded ceramic sherds and lithic material from an unspecified prehistoric period. Their eligible for the NRHP has yet to be assessed. Other more recent and nearby sites outside of a mile away were found by TRC in 2009 for the Upper South Hominy Creek Ecosystem Enhancement Project. They identified five prehistoric isolated artifact occurrences (31BN952–31BN956) on well drained soils that are all ineligible. While the banks of South Hominy Creek have produced sites, most are insignificant isolated finds and all have been found on well drained soils. This suggests that it is improbable that a significant deposit will be encountered along the undisturbed portions of the poorly drained floodplain within the APE. However, if the current project expands further to the south onto neighboring the Rosman series, then test excavations will be needed.

Lastly, a historic map review was also conducted. Most early maps from the 18th and 19th centuries provide only general details concerning the region illustrating just major roads and settlements. The 1901 USGS Asheville topographic map is likely one of the first in which an approximate location for the project area can be found (Figure 4). This map depicts South Hominy Creek and a road similar to SR 3446/3466 but shows no crossing or SR 3452 in the vicinity of the current bridge. The map also depicts no structures in the area. Subsequent maps from the early 20th century show no new information. For example, the 1920 soil survey map for Buncombe County continues to illustrate SR 3446/3466 as an unimproved road and depicts no structures or SR 3452. The nearest crossing over South Hominy Creek is located southwest of the current bridge well away from the project area (Figure 5). It appears from the map review that it is highly unlikely for any deposits associated with former structures to be encountered within the project area.

***Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:***

The defined archaeological APE for the proposed replacement of Bridge No. 259 is located along hillside slopes and the South Hominy Creek floodplain and stream terrace. It is unlikely intact and significant archaeological deposits will be present within the APE. This is primarily due to slope of 15 percent or more along the hillside, poorly drained and persistently wet soil in the floodplain, and ground disturbance associated with SR 3446 along the stream terrace. In addition, previously known sites in the area suggest the likelihood of encountering a significant site is very doubtful along the poorly drained floodplain. Finally, the historic maps suggest no significant archaeological deposits from former historic structures

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are within or near the project limits. As long as impacts to the subsurface occur within the defined APE, no further archaeological work is recommended for the replacement of Bridge No. 259 in Buncombe County. If construction should affect subsurface areas beyond the defined APE, further archaeological consultation will be necessary especially to the south on the well drained Rosman soil series, which contains nearby archaeological sites 31BN110 and 31BN111.

**SUPPORT DOCUMENTATION**

See attached:  Map(s)     Previous Survey Info     Photos     Correspondence  
 Photocopy of County Survey Notes    Other: **Images from historic maps**

**FINDING BY NCDOT ARCHAEOLOGIST***NO ARCHAEOLOGY SURVEY REQUIRED*


4/2/13

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C. Damon Jones  
NCDOT ARCHAEOLOGIST II

Date