Buncombe County

Bridge No. 262 on SR 4352 over South Hominy Creek

Federal-Aid Project No. BRZ-3452(1)

State Project 8.2844701

WBS # 33403.1.1

TIP Project No. B-4037

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

02/15/05
DATE

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Project Development and Environmental
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2/16/05
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Buncombe County

Bridge No. 262 on SR 3452 over South Hominy Creek

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CATEGORICAL EXCLUSION

February 2005

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PROJECT COMMITMENTS

Buncombe County
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In addition to the standard Nationwide Permit No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Project Development and Environmental Analysis Branch:

Approval under Section 26a of the Tennessee Valley Authority (TVA) Act will be required. A copy of the approved CE will be provided to the TVA.

A jurisdictional determination for South Hominy Creek will be required prior to permitting.

Division Construction/Project Services Unit:

There will be an in-stream and 25-foot buffer work moratorium from October 15 to April 15.

The "Guidelines for Construction of Highway Improvements Adjacent to or Crossing Trout Waters in North Carolina" (October 27, 1992) will be adhered to throughout design and construction of this project.

NCDOT will implement Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B .0024).

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INTRODUCTION: The replacement of Bridge No. 262 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and the Federal-Aid Bridge Replacement 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

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 43.2 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of an inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

Bridge No. 262 is located on SR 3452 (Upper Glady Fork Road) in Buncombe County. SR 3452 is classified as a rural local route in the Statewide Functional Classification System. Land use in the project area is woodland and residential. A private residence and maintained yard is located in the southeast quadrant. SR 3452 is a two-lane roadway, with 19 feet of pavement width and variable 2-foot to 4-foot grass shoulders on both sides. The bridge is located in the jurisdiction of the Tennessee Valley Authority (TVA) oversight. Buncombe County is designated as a trout county by the North Carolina Wildlife Resources Commission.

There is a waterline, underground cable and overhead utility lines on the downstream (south) side (Figure 4). Utility impacts are expected to be moderate.

Bridge No. 262 was constructed in 1961. The existing structure is 82.3 feet in length and consists of two spans of equal length. The clear roadway width is 19.1 feet, providing two travel lanes with no effective shoulder width. The existing right of way width is 60 feet. The superstructure of Bridge No. 262 consists of a timber floor on I-beams with an asphalt wearing surface and timber railing. The substructure of the bridge consists of reinforced concrete abutments, and one interior bent consisting of timber caps on timber piles with timber sills. The bed to crown height is approximately 17 feet. The normal depth of flow observed in the field is 1.3 feet. The posted weight limit is 16 tons for single vehicles (SV) and 19 tons for truck-tractor semi-trailers (TTST).

The approach roadway from the west is on a horizontal tangent with a length of 90 feet before entering a horizontal curve with a length of 85 feet using a radius of 150 feet prior to the bridge. The approach roadway from the east is on a horizontal curve with a length of 121 feet using a radius of 100 feet before entering a 99-foot tangent in advance of the bridge. The approach roadways have variable 2-foot to 4-foot grass shoulders. A gravel driveway (Sunray Cove) approaches from the south and intersects SR 3452 on the west end of the bridge. SR 3454 (Lower Glady Fork Road) approaches from the north and intersects SR 3452 on the east end of the bridge. The speed limit on SR 3452 (Upper Glady Fork Road) in the vicinity of the bridge is posted at 45 mph.

The estimated 2004 average daily traffic volume is 700 vehicles per day (vpd). The projected traffic volume is expected to increase to 1,100 vpd by the design year 2030. The volumes include 1 percent TTST and 2 percent dual tired vehicles.

This section of SR 3452 in Buncombe County is not part of a designated bicycle route and is not listed in the TIP as needing incidental bicycle accommodations. Five (5) school buses cross this bridge four (4) times daily for a total of twenty (20) daily trips.

There is one (1) two-vehicle accident reported for the three-year period of September 1, 2000 through August 31, 2003.

III. ALTERNATIVES

A. Project Description

The proposed bridge will consist of two 11-foot travel lanes with three-foot shoulders. The proposed approach roadway will consist of two 11-foot travel lanes with five-foot shoulders. The typical cross sections are shown in Figure 3.

The drainage area for the bridge is 27.4 square miles and is not located in a FEMA Detailed Study area. The proposed alternatives satisfy the freeboard requirements and will have no adverse impacts on the existing floodplain. The channel geometry is such that the only floodplain is on the Southwest side. The creek is otherwise surrounded by mountains. The length and opening size of the proposed structure may increase or decrease as necessary to accommodate peak flows, as determined by a detailed hydraulic analysis to be performed during the final design phase of the project.

B. Build Alternatives

Four (4) build alternatives studied for replacing the existing bridge are described below:

Alternative 1 (Figure 2A) replaces the structure at its existing location. During construction, traffic will be re-routed to an off-site detour. The detour route includes SR 3454 (Lower Glady Fork Road) to the north and the south end of SR

3452 (Upper Glady Fork Road), both providing access to NC 151 (Pisgah Highway) along a 6.0-mile route. It is anticipated that the bridge length will be approximately 110 feet. The final bridge length will be determined during final design. Alternative 1 was not selected as the preferred alternative because it requires an off-site detour and does not address the safety concerns of the local residents.

Alternative 2 (Figure 2B) replaces the existing structure on new alignment 35 feet upstream of the existing bridge. During construction, traffic will be maintained on the existing structure. It is anticipated that the bridge length will be approximately 115 feet. The final bridge length will be determined during final design. Alternative 2 was not selected as the preferred because it is not cost-effective and does not address the safety concerns of the local residents.

Alternative 3 (Preferred – Figure 2C) replaces the existing structure on new alignment 400 feet upstream of the existing bridge. During construction, traffic will be maintained on the existing structure. It is anticipated that the bridge length will be approximately 180 feet. The final bridge length will be determined during final design. The new roadway approach from the east would form a new stop-controlled intersection with Lower Glady Fork Road while the roadway from the west would tie-in to an existing curve as the new Upper Glady Fork Road. The existing roadway section of Upper Glady Fork Road, from the existing structure to the west of the new structure, would be left as a local access driveway.

Alternative 4 (Figure 2D) replaces the structure at its existing location with no roadway improvements. During construction, traffic will be re-routed to an off-site detour. It is anticipated that the bridge length will be approximately 80 feet. The final bridge length will be determined during final design. Alternative 4 was not selected as the preferred alternative because it requires an off-site detour and does not address the safety concerns of the local residents.

C. Alternatives Eliminated from Further Study

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge. This is not desirable due to the traffic service provided by SR 3452.

Investigation of the existing structure by the Bridge Maintenance Unit indicates the **rehabilitation** of the existing bridge is not feasible due to its age and deteriorated condition.

D. Preferred Alternative

Alternative 3 was selected as the preferred alternative because it is less expensive than Alternative 1 or Alternative 2, provides a substantial improvement to address

the safety concerns (the existing roadway curvature and grade) and maintains traffic on the existing structure during construction.

The Division Engineer concurs with Alternative 3 as the preferred alternative.

IV. ESTIMATED COSTS

The estimated costs, based on 2003 prices, are as follows:

	Alternative 1	Alternative 2	Alternative 3 (Preferred)	Alternative 4
Structure Removal (existing)	$13,120.00	$13,120.00	$13,120.00	$13,120.00
Structure (proposed)	$330,000.00	$345,000.00	$540,000.00	$240,000.00
Roadway approaches	$169,050.00	$239,702.00	$181,315.00	$31,650.00
Miscellaneous and Mobilization	$132,830.00	$162,178.00	$165,565.00	$55,230.00
Engineering and Contingencies	$95,000.00	$115,000.00	$150,000.00	$60,000.00
ROW/Const. Easements/Utilities	$397,000.00	$395,000.00	$60,000.00	$41,000.00
Total	$1,137,000.00	$1,270,000.00	$1,110,000.00	$441,000.00

The estimated cost of the project, as shown in the 2004-2010 Transportation Improvement Program, is $550,000 including $50,000 for right-of-way and $500,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Field investigations were conducted along the project study area during the month of October 2003. Pedestrian surveys were undertaken to determine natural resource conditions and to document natural communities, wildlife, and the presence of protected species or their habitats.

Published information regarding the project study area and region was derived from a number of sources including: USGS 7.5-minute topographical quadrangle map (Enka, North Carolina), United States Fish and Wildlife Service (USFWS) database reviews, National Wetland Inventory (NWI) map, NCDOT aerial photography (1" = 200'), and Natural Resources Conservation Service (NRCS) soil survey mapping of Buncombe County.

Surface waters within the project study area were evaluated in the field to document their physical characteristics and jurisdictional status. Water resources information was obtained from publications of the North Carolina Department of Environment and Natural Resources Division of Water Quality (NCDENR-DWQ).

Approximate boundaries of plant communities were mapped in the field utilizing aerial photography of the project study area. Dominant plant species were identified in each strata for each plant community. Plant community descriptions are based on the classifications utilized by Schafale and Weakly (1990). Plant names follow the nomenclature found in Radford *et al.* (1968).

Wildlife occurrences were determined through visual field observations, evaluation of habitat types within the project study area, secondary indicators of species (tracks, scat, and burrows), as well as a review of supporting literature (Coe, 1994, Martof, *et al* 1980, and Webster, 1985). Field observations and literature reviews (Bogan, 2002, Jenkins and Burkhead, 1993, Voshell, Jr., 2002) were utilized to assess aquatic life.

Information concerning the potential occurrence of federal and state protected species within the project study area and project vicinity was obtained from the USFWS list of protected species (updated February 5, 2003 – current update as of January 3, 2005) and the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (updated January 2004 – current update as of January 3, 2005). Field evaluations of the project study area were conducted to identify suitable habitat for protected species. If suitable habitat was identified, field surveys were conducted for Federally listed endangered or threatened species.

Jurisdictional wetlands were identified and delineated based on the methodology outlined in the *1987 Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987). Wetland systems were classified based on the U.S. Fish and Wildlife Service *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et al., 1979).

B. Physiography and Soils

Buncombe County is situated in the Blue Ridge mountain physiographic province of western North Carolina. The county encompasses 646 square miles and is primarily rural. The county ranges in elevation from approximately 1,900 feet mean sea level (MSL) where the adjoining Broad River flows into Henderson County to over 6,000 feet MSL. Elevations within the project study area range from approximately 2,180 to 2,200 feet MSL, with the stream bed near the bridge lying at approximately 2,180 feet MSL. Bridge No. 262 is located in the southwest portion of the county. The land uses surrounding and within the project study area is mainly forest and agricultural land with scattered residential homes.

The geologic features underlying the project study area are associated with the Blue Ridge Belt, specifically, muscovite-biotite gneiss which is sulfidic and interlayered with mica schist, minor amphibolite, and hornblende gneiss rock (North Carolina Division of Land Resources, 1985). The project vicinity is located within the Oconee Supergroup.

The portion of Buncombe County within the project study area has been mapped by NRCS under the currently provisional (unpublished) soil survey. Official soil series descriptions were also obtained by the NRCS.

Clifton clay loam consists mainly of very deep, well-drained soils on gently sloping to very steep ridges and side slopes. The surface layer is typically brown loam up to 5.0 inches thick. Permeability is moderate and runoff is moderate to rapid. In the project study area, Clifton clay loams occur on moderate slopes in the northwestern and northeastern portions of the project area.

Evard-Cowee complex consists mainly of moderately deep to very deep, well-drained soils on moderate slopes. The surface layer is typically dark reddish brown loam and gravelly loam up to 4.0 inches thick. Permeability is moderate and surface runoff is medium. In the project study area, the Evard and Cowee loams occur on moderate slopes in the north-central portion of the project study area.

Rosman fine sandy loam consists mainly of very deep, well-drained to moderately well-drained soils on nearly level floodplains. The surface layer is typically dark brown loam up to 15 inches thick. Permeability is moderately rapid and surface runoff is slow. In the project area, Rosman fine sandy loams occur along the floodplain of South Hominy Creek.

Iotla sandy loam consists of very deep, somewhat poorly drained soils located on floodplains. The surface layer is dark yellowish brown sandy loam up to 12 inches thick. Permeability is moderately rapid or rapid and surface runoff is slow. In the project study area, Iotla sandy loam occurs along the lower banks and bed of South Hominy Creek.

Based on the Buncombe County soil survey, Rosman fine sandy loam and Iotla sandy loam are listed as containing hydric inclusions (NRCS, 1995).

C. Water Resources

1. Waters Impacted

Streams, creeks, and tributaries within the project vicinity are part of the South Hominy Creek watershed within the French Broad River Basin. The French Broad River basin covers approximately 2,842 square miles.

South Hominy Creek accounts for the surface waters in the project area. The project study area is situated just downstream of the confluence of South Hominy Creek and the Pigeon River. It is located in NCDWQ Subbasin 04-03-02 and USGS Hydrologic Unit 06010106. South Hominy Creek from an unnamed tributary located near Laurel Cove Road to Morgan Branch, which includes the project area, has been identified by the NCDWQ Stream Index # 6-76-5.

NCDWQ classifies surface waters of the state based on their intended best uses. South Hominy Creek in the project vicinity has been assigned a primary water resource classification of "C" and a supplemental water resource classification of "Tr". Class "C" refers to waters that are protected for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture, and other uses found suitable for Class "C" waters. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. The surface water classification of "Tr" is a supplemental classification intended to protect freshwaters for natural trout propagation and survival of stocked trout. There are no restrictions on watershed development or types of discharges in Class "C" waters.

No surface waters classified as High Quality Water (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) occur within one mile of the project study area.

2. Water Resource Characteristics

South Hominy Creek is a perennial stream that flows generally in a southeasterly direction. The top of bank width is approximately 30 feet wide with a wetted width of 15 to 20 feet. One to two feet of moderately flowing water was observed within the channel during the site visit. South Hominy Creek has a bankfull depth of four feet throughout the project study area. The three to five feet tall stream banks appeared stable. The substrate consisted of silt and sand with cobble and gravel riffle sections with some sections of bedrock. The water was clear with moderate sediment deposition. Excellent habitat conditions exist within the channel for numerous aquatic species. The stream received a DWQ stream classification of 38.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine water quality monitoring stations strategically located for the collection of physical and chemical water quality data. The waters in the project area are currently rated as *Partially Supporting*.

Based on Rosgen classification methods and field observations made during the site visits, South Hominy Creek is an "F" channel. It is entrenched with a meandering, riffle/pool channel on a low gradient with a high width/depth ratio.

Point source dischargers located throughout North Carolina are regulated through the National Pollutant Discharge Elimination System (NPDES) program. Dischargers are required by law to register for a permit. There are two permitted NPDES dischargers in the subbasin, with one of those being a major discharger (>0.5 MGD). However, there are no registered point dischargers located in or directly upstream of the project study area.

Nonpoint source discharge refers to runoff that enters surface waters through stormwater, snowmelt or atmospheric deposition. Land use activities such as land development, construction, mining operations, crop production, animal feeding lots, failing septic systems, landfills, roads and parking lots are contributors of non-point source pollutants. The land uses surrounding and within the project study area are mainly scattered residential homes with some agriculture and forests.

3. Anticipated Impacts to Water Resources

a) General Impacts

The proposed project is expected to impact both soils and topography. The topography within the project study area is gently sloping. The possible construction of a new bridge and/or road improvements is likely to require the removal of soils and the placement of fill. No adverse long-term impacts to soils and topography are expected from the proposed bridge replacement.

The primary sources of water-quality degradation in rural areas are agricultural operations and construction. Aquatic organisms are very sensitive to discharges and inputs resulting from construction. Potential impacts associated with construction of the proposed project include: increased sedimentation, scouring of the streambed, soil compaction, and loss of shading due to vegetation removal. Increased sedimentation from lateral flows is also expected. Measures to minimize these potential impacts include the formulation of an erosion and sedimentation control plan, provisions for waste materials and storage, stormwater management measures, and appropriate road maintenance measures. NCDOT's *Best Management Practices for Protection of Surface Waters* and Sedimentation Control guidelines will be strictly enforced during the construction stages of the project.

NCDOT will strictly adhere to North Carolina's "*Design Standards in Sensitive Watersheds*" (15A NCAC 04B .0024) throughout design and construction of the project because of the classification as trout waters. Due to the potential for water quality impacts during construction, North Carolina Wildlife Resources Commission (NCWRC) requests an in-stream construction moratorium to limit the effects on fishery resources. The NCWRC has requested an in-stream and 25-foot buffer work moratorium from October 15 to April 15 for brown and brook trout.

4. Impacts Related to Bridge Demolition and Removal

The superstructure of Bridge No. 262 consists of a timber floor on I-beams with an asphalt wearing surface and timber railing. The substructure of the bridge consists of reinforced concrete abutments, and one interior bent consisting of timber caps on timber piles with timber sills. The bridge has 2 equal spans that total 82 feet in length.

The superstructure and substructure elements can be cut and removed without any temporary fill falling into South Hominy Creek during demolition.

D. Biotic Resources

This section describes the existing vegetation and associated wildlife that occur within the project study area. The project study area is composed three vegetative communities based on topography, soils, hydrology, and disturbance. These systems are interrelated and in many aspects interdependent. Scientific nomenclature and common name (when applicable) are provided for each plant and animal species listed. Subsequent references to the same organism only include the common name.

1. Plant Communities

The three plant communities observed in the project study area are low mountain alluvial forest, montane oak-hickory forest, and maintained-disturbed area. Maintained-disturbed land does not correspond to any Schafale and Weakley (1990) community classification because the native vegetation has been removed.

a) Low Mountain Alluvial Forest

This community occurs along the banks of South Hominy Creek. Dominant tree species observed within the low mountain alluvial forest at the time of site investigation include red maple (*Acer*

rubrum), sycamore (*Platanus occidentalis*), black walnut (*Juglans nigra*), tulip tree (*Liriodendron tulipifera*), chestnut oak (*Quercus prinus*), sassafras (*Sassafras albidum*), silver maple (*Acer saccharinum*), Canada hemlock (*Tsuga canadensis*), and Virginia pine (*Pinus virginiana*). Dominant sapling and shrub species observed include ironwood (*Carpinus caroliniana*), sourwood (*Oxydendrum arboreum*), spicebush (*Lindera benzoin*), black cherry (*Prunus serotina*), hickory (*Carya* spp.), pale rhododendron (*Rhododendron maximum*), black locust (*Robinia pseudo-acacia*), tag alder (*Alnus serrulata*), witch-hazel (*Hamamelis virginiana*), wild hydrangea (*Hydrangea arborescens*), Chinese privet (*Ligustrum sinense*), flowering dogwood (*Cornus florida*), and multiflora rose (*Rosa multiflora*). Dominant herbaceous species observed at the time of site investigation include blackberry (*Rubus* sp.), creeping grass (*Microsteguim vimineum*), and pokeweed (*Phytolacca americana*). Dominant vine species include poison ivy (*Toxicodendron radicans*), Japanese honeysuckle (*Lonicera japonica*), common greenbrier (*Smilax rotundifolia*), and Virginia creeper (*Parthenocissus quinquefolia*).

b) Montane Oak Hickory Forest

A montane oak-hickory forest occurs along lower slopes, steeply north-facing slopes, and ravines within the project area. Dominant tree species observed within the montane oak-hickory forest at the time of site investigation include red maple, black walnut, tulip tree, northern red oak (*Quercus rubra*), southern red oak (*Quercus falcata*), white oak (*Quercus alba*), and sassafras. Dominant sapling and shrub species observed at the time of site investigation include sourwood, black cherry (*Prunus serotina*), hickories (*Carya* spp.), pale rhododendron, black locust, witch-hazel, flowering dogwood, and multiflora rose. Dominant herbaceous species observed at the time of site investigation include goldenrod (*Solidago* sp.), and chicory (*Chichorium intybus*). Dominant vine species observed at the time of site investigation include common greenbrier, poison ivy, and Virginia creeper.

c) Maintained-Disturbed Land

These communities are located along the rights-of-way bordering SR 3452, including maintained residential areas and agricultural areas which include some pasture. No mature trees were observed within the maintained areas; however, saplings and seedlings of the following species were observed: red maple, sycamore, black walnut, tulip tree, northern red oak, flowering

dogwood, southern red oak, black cherry, and hickories. The following shrub species were also observed within rights-of-way: elderberry (*Sambucus canadensis*), autumn olive (*Elaeagnus umbellata*), sumac (*Rhus* spp.), witch-hazel, hydrangea, Chinese privet, blackberry, and multiflora rose. Dominant herbaceous species observed include creeping grass, Queen Anne's lace (*Daucus carota*), henbit (*Lamium amplexicaule*), pokeweed, chicory, and clover (*Trifolium* spp.). Dominant vine species observed at the time of site investigation include poison ivy, Japanese honeysuckle, common greenbrier, and Virginia creeper.

2. Terrestrial Wildlife

The alluvial forest and oak-hickory forest community in conjunction with open agricultural lands and other disturbed areas offer high plant diversity and water availability; thus providing high quality wildlife habitat. These communities provide a variety of habitat for amphibians, reptiles, birds, and mammals.

The maintained-disturbed areas provide rich ecotones for foraging, while the alluvial forest and oak-hickory forest provide foraging and cover. Raccoon (*Procyon lotor*) tracks were observed along South Hominy Creek. Wildlife accustomed to human activity was sighted such as the northern cardinal (*Cardinalis cardinalis*) and turkey vulture (*Cathartes aura*).

Common mammals, which could be expected to utilize the project study area include Virginia opossum (*Didelphis virginiana*), smoky shrew (*Sorex fumeus*), woodchuck (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), eastern chipmunk (*Tamias striatus*), gray squirrel (*Sciurus carolinensis*), eastern harvest mouse (*Reithrodontomys humulis*), muskrat (*Ondatra zibethicus*), coyote (*Canis latrans*), mink (*Mustela vison*), beaver (*Castor canadensis*), and white-tailed deer (*Odocoileus virginianus*), white-footed mouse (*Peromyscus leucopus*), and bobcat (*Felis rufus*).

Common birds, which could be expected to utilize the project study area include hairy woodpecker (*Picoides villosus*), downy woodpecker (*P. pubescens*), eastern wood-pewee (*Contopus virens*), eastern phoebe (*Sayornis phoebe*), blue jay (*Cyanocitta cristata*), barn swallow (*Hirundo rustica*), Carolina chickadee (*Parus carolinensis*), tufted titmouse (*Parus bicolor*), white-breasted nuthatch (*Sitta carolinensis*), American robin (*Turdus migratorius*), yellow warbler (*Dendroica petechia*), and brown-headed cowbird (*Molothrus ater*). Game species such as woodcock (*Scolopax minor*) and wild turkey (*Meleagris gallopavo*) may be present.

Predatory birds such as red-tailed hawk (*Buteo jamaicensis*), and eastern screech owl (*Otus asio*) are likely to be found in the project vicinity.

Common reptiles and amphibians, which could be expected to utilize the project area habitat, include brown snake (*Storeria dekayi*), northern water snake (*Nerodia sipedon*), rat snake (*Elaphe obsoleta*), eastern fence lizard (*Sceloporus undulatus*), five-lined skink (*Eumeces fasciatus*), broadhead skink (*E. laticeps*), snapping turtle (*Chelydra serpentina*) and eastern box turtle (*Terrapene carolina*).

3. Aquatic Communities

South Hominy Creek provides aquatic habitat within the project study area. The quality of aquatic habitat within the project study area is expected to be high due in large part to a natural mix of riffles, runs, and pools. Woody debris located throughout the stream provides habitat, shade, and concealment pockets for several aquatic species. Aquatic invertebrates are a major component of aquatic ecosystems, as primary and secondary consumers, as well as prey items for organisms higher in the food chain.

Insects typically found in this type of community include mayflies (Ephemeroptera), stoneflies (Plecoptera), caddisflies (Trichoptera), dragonflies (*Odonta* sp.) and aquatic beetles (Coleoptera). Pleuorcerid snails (Pleuroceridae), flathead mayflies (Heptageniidae), caddisfly casings, waterstriders (Gerridae), and whirligig beetle (Gyrinidae) were observed during field review.

Brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*) are small gamefish that typically occur in this community. Fish species collected include mirror shiner (*Notropis spectrunculus*), Tennessee shiner (*Notropis leuciodus*), saffron shiner (*Notropis rubricroceus*), Swannanoa darter (*Etheostoma swannanoa*), mottled sculpin (*Cottus bairdi*), warpaint shiner (*Luxilus coccogenis*), creek chub (*Semotilus atromaculatus*), central stoneroller (*Campostoma anomalum*), river chub (*Nocomis micropogon*), and blacknose dace (*Rhinichthys atratulus*).

No freshwater mussels were found during a field survey of the project study area conducted on September 7, 2003 from 328 feet upstream to 1,310 feet downstream of the existing bridge on South Hominy Creek.

4. Anticipated Impacts to Biotic Communities

a) Terrestrial Communities

Table 1 describes the acreage of plant communities within the proposed construction limits that would be impacted. Impacts to plant communities associated with construction activities include the removal of vegetation, soil compaction, damaging and/or exposing root systems, as well as potential impacts associated with petroleum spills.

TABLE 1
ANTICIPATED IMPACTS TO PLANT COMMUNITIES

Community Type	Alternative 1 Impact Acres	Alternative 2 Impact Acres	Alternative 3 (Preferred) Impact Acres	Alternative 4 Impact Acres
Montane Oak-Hickory Forest	0.88	0.47	0.18	0.00
Low Mountain Alluvial Forest	0.00	0.00	0.02	0.00
Maintained-Disturbed	0.55	1.26	0.47	0.00

Due to the minimal disturbance of plant communities anticipated as a result of the bridge replacement, substantial impacts to terrestrial wildlife populations are not expected.

Loss of wildlife is an unavoidable aspect of development. Temporary fluctuations in populations of animal species that utilize these communities are anticipated during the course of construction. Slow-moving, burrowing, and/or subterranean organisms will be directly impacted by construction activities, while mobile organisms will be displaced to adjacent communities. Competitive forces in the adapted communities will result in a redefinition of population equilibria.

b) Aquatic Communities

Aquatic organisms are acutely sensitive to changes in their environment, and environmental impacts from construction activities may result in long term or irreversible effects. Impacts usually associated with in-stream construction include alterations to the substrate and impacts to adjacent streamside vegetation. Such disturbances within the substrate lead to increased siltation,

which can clog the gills and/or feeding mechanisms of benthic organisms, fish, and amphibian species.

The removal of streamside vegetation and placement of fill material during construction enhances erosion and possible sedimentation. Quick revegetation of these areas helps to reduce the impacts by supporting the underlying soils.

Impacts to "Waters of the United States" have been determined based on the construction limits (Table 2).

TABLE 2
ANTICIPATED IMPACTS TO JURISDICTIONAL STREAMS
(LINEAR FEET WITHIN CONSTRUCTION LIMITS)

Jurisdictional Streams	Alternative 1 Linear feet	Alternative 2 Linear feet	Alternative 3 (Preferred) Linear feet	Alternative 4 Linear feet
South Hominy Creek	39	37	27	37

E. Special Topics

1. "Waters of the United States": Jurisdictional Issues

Section 404 of the Clean Water Act requires regulation of discharges into "Waters of the United States." The U.S. Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act. The USACE regulatory program is defined in 33 CFR 320-330.

Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The project study area was surveyed for jurisdictional wetlands. The survey approach incorporated three criteria for delineating wetlands: (1) the presence of hydrophytic vegetation, (2) the presence of hydric soils, and (3) evidence of wetland hydrology. All three criteria must be present in a given location for an area to be considered a jurisdictional wetland.

No jurisdictional wetlands were identified within the project study area.

2. Permits

Impacts to jurisdictional surface waters are anticipated to occur as a result of project construction.

a) Section 404 of the Clean Water Act

Impacts to "Waters of the United States" come under the jurisdiction of the USACE. Any action that proposes to place fill into these areas falls under the jurisdiction of the USACE under Section 404 of the Clean Water Act (33 USC 1344). Permits will be required for highway encroachment into jurisdictional wetlands and streams. The Nationwide Permit 23 should cover the impacts to jurisdictional wetlands and streams in the project study area. Nationwide Permit 33 may be needed for temporary construction access.

b) Section 401 Water Quality Certification

A Section 401 General Water Quality Certification is also required for any activity which may result in a discharge into "Waters of the United States" or for which an issuance of a federal permit is required. The issuance of a required Section 401 certification is a prerequisite to the issuance of a Section 404 permit. The NCDENR-DWQ has regulatory input through Section 401 Water Quality Certification.

Final determination of permit applicability lies with USACE. NCDOT will coordinate with the USACE to obtain the necessary permits.

c) TVA

The proposed project is located in the Tennessee Valley Authority's (TVA) Land Management District. Approval pursuant to Section 26a of the TVA Act is also required for all construction or development involving streams or floodplains in the Tennessee River drainage basin.

3. Mitigation

The USACE has adopted, through the Council on Environmental Quality (CEQ), a mitigation policy which embraces the concepts of "no net loss of wetlands" and project sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of "Waters of the United States," specifically wetlands. Mitigation of wetland impacts

has been defined by the CEQ to include: avoidance of impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these aspects (avoidance, minimization, and compensatory mitigation) must be considered in sequential order.

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." Some unavoidable impacts to surface waters may result from project construction.

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to "Waters of the United States." Compensatory mitigation is not normally considered until anticipated impacts to "Waters of United States" have been avoided and minimized to the maximum extent possible.

In accordance with 15A NCAC 2H.0506 (h) and 40 CFR 1508.20, mitigation will be required for impacts to jurisdictional streams requiring mitigation when these impacts are equal to or greater than 150 linear feet per stream. In addition, mitigation may be required for wetland impacts exceeding 0.10 acre. It is anticipated that the bridge replacement over the South Hominy Creek will likely impact less than 150 linear feet of stream. No wetlands are located within the project study area. Therefore, no stream or wetland mitigation requirement is anticipated. However, final permit/mitigation decisions will be determined by the USACE and NCDWQ.

NCDENR has adopted permanent Nutrient Sensitive Waters Management Strategy rules to protect and maintain 50-foot wide riparian buffers in several watersheds across the state. At this time, surface waters in the French Broad River Basin are not subject to NCDENR's Nutrient Sensitive Waters Management Strategy rules.

The buffer protection regulations in the French Broad River Basin apply in watersheds classified as Water Supply Watersheds which would include East Fork Pigeon River and Hungry Creek. Public projects such as road crossings are allowed to encroach upon the buffers when no practicable alternative exists.

F. Rare and Protected Species

Federal law under the provisions of Section 7 of the Endangered Species Act (ESA) of 1973, as amended, requires that any action likely to adversely affect a federally-protected species be subject to review by the U.S. Fish and Wildlife Service. Other species may warrant protection under separate state laws.

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the ESA. The USFWS lists 12 federally protected species for Buncombe County with one threatened due to similarity of appearance as described in Table 3 and in the following text.

TABLE 3
FEDERALLY PROTECTED SPECIES FOR BUNCOMBE COUNTY

Common name	Scientific name	Federal Status	Biological Conclusions
Bog turtle	*Clemmys muhlenbergii*	T(S/A)	N/A
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	Endangered	No Effect
Spotfin chub	*Hybopsis monacha*	Threatened	No Effect
Gray bat	*Myotis grisescens*	Endangered	No Effect
Eastern cougar	*Puma concolor couguar*	Endangered	No Effect
Appalachian elktoe	*Alasmidonta raveneliana*	Endangered	No Effect
Oyster mussel	*Epioblasma capsaeformis*	Endangered	No Effect
Bunched arrowhead	*Sagittaria fasciculata*	Endangered	No Effect
Mountain sweet pitcher plant	*Sarracenia jonesii*	Endangered	No Effect
Spreading avens	*Geum radiatum*	Endangered	No Effect
Rock gnome lichen	*Gymnoderma lineare*	Endangered	No Effect
Virginia spiraea	*Spiraea virginiana*	Threatened	No Effect

+ Tan Rifflesheil

Bog turtle (*Clemmys muhlenbergii*)

Bog turtles are small (3 to 4.5-inch) reptiles with a weakly keeled carapace (upper shell) that ranges in color from light brown to ebony. This species is easily distinguished from other turtles by a large, conspicuous, bright orange to yellow blotch on each side of its head. Bog turtles are semi-aquatic and inhabit muddy, bog-like habitats. They can be found during the spring mating season from June to July and at other times from April to October when the humidity is high and temperatures are in the 70s. Bog turtle habitat consists of bogs, swamps, marshy

meadows, and other wet environments, specifically those which exhibit soft, muddy bottoms (USFWS 2004).

In November 1987, the northern population of the bog turtle (from New York south to Maryland) was listed as federally threatened, and the southern population (from Virginia south to Georgia) was listed as federally threatened due to similarity of appearance. The southern populations are not protected under Section 7 of the Endangered Species Act; however, the T(S/A) designation bans the collection and interstate or international commercial trade of bog turtles from the southern population.

This site contains no wetlands; therefore, suitable habitat for the bog turtle is not present. No bog turtles were observed in the project vicinity. NCNHP has no records of any known populations of the bog turtle within a one-mile radius of the project area. No impacts to this species from project construction are anticipated.

Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*)

The northern flying squirrel is a small nocturnal mammal that inhabits the high elevation ecotone between coniferous and northern hardwood forest. This high elevation habitat usually occurs above 5,500 feet above MSL. These squirrels are 10 to 12 inches long and weigh 3 to 5 ounces. Adults are gray with a light brown to reddish cast on their backs and light gray to white or buff undersides. The broad tails and folds of skin between the wrist and ankles form wing-like surfaces that enable these animals to glide downward from tree to tree or tree to ground. These mammals eat a wide variety of foods such as lichens, mushrooms, seeds, nuts, insects and fruits. These squirrels nest in tree cavities such as woodpecker holes and usually produce one litter in the early spring (USFWS 2004).

Suitable habitat for the Carolina northern flying squirrel, consisting of mixed deciduous/coniferous forests located above 5,500 feet above MSL, does not exist within the project study area. Review of NCNHP maps indicated no known populations of this species within one mile of the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Eastern cougar (*Felis concolor couguar*)

The eastern cougar is described as a large, unspotted, long-tailed cat. Its body and legs are a uniform fulvous or tawny hue, and its belly is pale reddish or reddish white. The inside of this cat's ears are light-colored, with a blackish color behind the ears. Cougars feed primarily on deer, but their diet may also include small mammals, wild turkeys, and occasionally domestic livestock, when available. Cougars begin breeding when two or three years old and breed thereafter once

every two to three years. A typical litter size is three, with the newborn kittens weighing 8 to 16 ounces.

The primary habitat appears to be large wilderness areas with an adequate food supply. Cougars avoid human-developed areas and have been considered by some as extirpated for this reason. Male cougars typically occupy a range of 25 or more square miles, and females from 5 to 20 square miles. Sightings have been reported in three North Carolina areas including the Nantahala National Forest, the northern portion of the Uwharrie National Forest, and North Carolina's southeastern counties. The remaining population of this species is extremely small, with exact numbers unknown (USFWS, 2004).

There are no large expanses of relatively undeveloped lands within the in the project study area. Also, cougars are not likely to be found in the project area due to the frequency of human activity within the study area and localized development near the study area. The NCNHP has no records of any known populations of the eastern cougar within a one-mile radius of the project area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Gray bat (*Myotis grisescens*)

The gray bat is the largest of its genus in the eastern United States. It weighs between 0.25 and 0.56 ounces and has a forearm that reaches from 1.6 to 1.8 inches in length. This bat can be distinguished from other eastern bats by its uni-colored dorsal fur and by its wing membrane that connects to the foot at the ankle. Other eastern species of bats have bi- or tri-colored dorsal fur and have a wing membrane that connects to the base of their first toe. The gray bat's fur is dark gray for a short time after it molts in July or August and then turns to a russet color in between molts. It is known to feed on aquatic insects, especially mayflies.

This bat inhabits only caves or cave-like habitats. They are very selective about which caves they will inhabit. The caves are usually located within 0.6 miles of a river or reservoir and have a specific temperature in both the summer and the winter (USFWS 2004).

A memorandum dated July 2, 2002 serves as a programmatic screening/survey for the project. The results of the habitat evaluation indicated no survey was required. Review of NCNHP maps indicated no known populations of this species within one mile of the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Spotfin Chub (*Hybopsis monacha*)

Spotfin chub is a small fish growing to a maximum size of 3.6 inches in length. The body is elongate; usually there is one pair of minute, terminal labial barbels; scales are moderate to somewhat small in size; and a distinctive large black spot is present in the caudal region. The spotfin chub is restricted to the Tennessee River drainage where it once occurred widely in 12 tributary systems distributed over five states. The spotfin chub inhabits moderate to large streams, 50 to 200 feet average width, with a good current, clear water, and cool to warm temperatures. These streams have pools frequently alternating with riffles (USFWS 2004).

Suitable habitat for the spotfin chub consisting of a medium sized stream with coarse sand to boulder substrate (no mud) and moderate to swift currents is readily available in the project area. Review of NCNHP maps indicated no known populations of this species within one mile of the project study area. An aquatic survey conducted by qualified aquatic biologist on September 7, 2003 found no spotfin in the project study area. No impacts to this species from project construction are anticipated.

Biological conclusion: ***No Effect***

Appalachian elktoe (*Alasmidonta ravelneliana*)

The Appalachian elktoe, listed in 1994 by USFWS, is a kidney-shaped freshwater mussel endemic to the upper Tennessee River system in western North Carolina and eastern Tennessee. The adult shell reaches 3.5 inches in length and is usually dark brown with prominent to obscure greenish rays. This mussel inhabits relatively shallow medium-sized creeks and rivers with moderate to fast flowing water. It is generally found in gravelly substrates mixed with cobbles and boulders or occasionally in silt-free, coarse sandy substrates. Reproduction is similar to that of other freshwater mussels, and the banded sculpin (*Cottus carolinea*) has been identified as a host species for developing glochidia. Historically, this mussel was found in the French Broad River system, including French Broad main stem and the Little River in Transylvania County (USFWS, 2004).

Suitable habitat for the Appalachian elktoe consisting of shallow medium-sized creeks with fast flowing water and clean, silt-free, gravel substrates is readily available in the project area. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. A mussel survey conducted by a qualified aquatic biologist on September 7, 2003 found no mussels in the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Oyster mussel (*Epioblasma capsaeformis*)

The oyster mussel is a small, up to 2.1 inches in length, freshwater mussel. Its distinguishing characteristic is the pronounced development of the posterior-ventral region in the females. The outer shell or perostracum is dull to sub-shiny yellowish to green with numerous thin dark green rays. The inside shell or nacre is whitish to bluish-white in color. This mussel inhabits small to medium sized streams with a coarse sand to boulder substrate (no mud) and moderate to swift currents (USFWS 2004).

Suitable habitat for the oyster mussel is readily available in the project area. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. A mussel survey conducted by a qualified aquatic biologist on September 7, 2003 found no mussels in the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Bunched arrowhead (*Sagittaria fasciculate*)

Bunched arrowhead is an emergent aquatic perennial herb, which grows 6.0 to 13.0 inches in height. Its spatulate-shaped leaves reach 12 inches long and 0.3 inch wide, and stem from the base of the plant. Three white petals are present during flowering and fruiting occurs from May to July.

Bunched arrowhead grows in seepage areas that have little or no net flow but are not stagnant. The soil in the seepages can be characterized as sandy loams overtopped by a muck layer ranging in depth from 9.8 to 23.6 inches (USFWS 2004).

Review of NCNHP maps indicated no known populations of this species within one mile of the project area. No wetlands or seepages are located in the project study area; therefore no suitable habitat for the bunched arrowhead exists within the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Mountain sweet pitcher plant (*Sarracenia jonesii*)

Mountain sweet pitcher plant is a perennial, carnivorous herb. Its leaves form pitchers that are hollow, trumpet shaped, and dull green with criss-crossing maroon to purple veination. The deep maroon flowers are three to four inches wide and borne singly at the top of a stalk in the spring, usually in May. Due to its distinct appearance, this plant is readily identifiable outside of its spring

flowering season. This species inhabits wet bogs with mucky surfaces and sandy bottoms (USFWS 2004).

Review of NCNHP maps indicated no known populations of this species within one mile of the project area. No mucky bog habitat is present; therefore no suitable habitat exists in the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Spreading avens (*Geum radiatum*)

Spreading avens is a perennial herb of the Rosaceae family. The densely pubescent plant forms a basal rosette arising from horizontal rhizomes. The basal leaves are kidney-shaped, serrate, and three to six inches wide. The inflorescence is an indefinite cyme supporting a few, large (1 to 2 inches) in diameter, yellow flowers. Flowering occurs from June through September. This plant is found in sunny locations such as high elevation rocky balds, pockets of soil on nearly vertical cliffs, and shrub-free (due to rock or ice falls) grassy areas at the base of cliffs. These sunny/rocky openings are surrounded by spruce-fir (*Picea rubens-Abies fraseri*) forests that generally occur above 5,500 feet elevation (USFWS 2004).

The highest elevation in the project study area is approximately 2,100 feet above MSL, well below the high elevation habitats where this plant grows. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. No suitable habitats such as rocky balds or vertical cliffs were observed in the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Virginia spiraea (*Spiraea virginiana*)

Virginia spiraea grows from 2.0 to 10.0 feet tall and has arching, upright stems. This shrub bears cream-colored flowers on branched and flat-topped axles. Its alternate leaves are of different sizes and shapes. Spiraea spreads clonally and forms dense clumps, which spread in rock crevices and around boulders. Flowering occurs in June and July.

Virginia spiraea occurs along rocky, flood-scoured riverbanks in gorges or canyons. Flood scouring is essential to this plant's survival because it eliminates taller woody competitors and creates river wash deposits and early successional habitats. Spiraea is found in thickets (USFWS 2004).

Review of NCNHP maps indicated no known populations of this species within one mile of the project area. No rocky, flood scoured riverbanks exist within the project study area; therefore no habitat for Virginia spiraea is located within the project study area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

Rock gnome lichen (*Gymnoderma lineare*)

Rock gnome lichen is a squamulose lichen of the reindeer moss family. This species is the only member of its genus occurring in North America. It occurs in small (usually less than one square yard), dense colonies of narrow, strappy, leaf-like pads. These strap-like lobes are usually blue-gray on the upper surface and generally shiny white on the lower surfaces. The fruiting bodies are borne at the tips of the strap-like lobes and are black, in contrast to the red to brown fruiting bodies of other reindeer moss lichens. These lichens fruit from July through September. The rock gnome lichen is endemic to the southern Appalachian Mountains of North Carolina and Tennessee. They primarily inhabit vertical rock faces in areas of high humidity such as river gorges or areas frequently bathed in fog. Most populations occur above an elevation of 5,000 feet (USFWS 2004).

The project study area lacks suitable habitat for the rock gnome lichen consisting of high humidity environments such as deep river gorges or other seepy wet rock faces. The highest elevation in the project study area is approximately 3,050 feet above MSL, well below the elevations (5,000 feet above MSL) preferred by this species. Review of NCNHP maps indicated no known populations of this species within one mile of the project area. No impacts to this species from project construction are anticipated.

Biological Conclusion: ***No Effect***

There are 33 federal species of concern listed by the USFWS for Buncombe County (Table 4). Federal species of concern (FSC) are not afforded federal protection under the Endangered Species Act and are not subject to any of its provisions, including Section 7.

TABLE 4
FEDERAL SPECIES OF CONCERN FOR BUNCOMBE COUNTY

Common Name	Scientific Name	State Status	Habitat Requirement	Habitat Present
Bachman's sparrow	*Aimophila aestivalis*	SC	open longleaf pine forests, old fields [breeding season only]	No
Southern Appalachian saw-whet owl	*Aegolius acadicus*	T	spruce-fir forests or mixed hardwood/spruce forests (for nesting)	No
Rafinesque's big-eared bat	*Corynorhinus (=Plecotus) rafinesquii*	T	roosts in old buildings, caves, and mines, usually near water	Yes
Hellbender	*Cryptobranchus alleganiensis*	SC	large and clear fast-flowing streams	Yes**
Cerulean warbler	*Dendroica cerulea*	SR	mature hardwood forests; steep slopes and coves in mountains	No
Blotched chub	*Erimystax insignis*	SR	primarily French Broad drainage	No
Southern Appalachian red crossbill	*Loxia curvirostra*	SC	coniferous forests, preferably spruce-fir	No
Eastern small-footed myotis	*Myotis leibii*	SC	roosts in hollow trees (warmer months), in caves and mines (winter)	No
Southern Appalachian woodrat	*Neotoma floridana haematoreia*	SC	rocky places in deciduous or mixed forests	Yes
Alleghany woodrat	*Neotoma magister*	SC	rocky places and abandoned buildings in deciduous or mixed forests in the northern mountains and adjacent Piedmont	No
Longhead darter	*Percina macrocephala*	SC	larger creeks and small to medium sized rivers often in silty areas	No
Southern Appalachian black-capped chickadee	*Poecile atricapillus practicus*	SC	high elevation forests, mainly spruce-fir [breeding season only]	No
Paddlefish	*Polyodon spathula*	E	French Broad River	No
Southern water shrew	*Sorex palustris punctulatus*	SC	stream banks in montane forests	Yes
Southern Appalachian yellow-bellied sapsucker	*Sphyrapicus varius appalaciensis*	SC	mature, open hardwoods with scattered dead trees [breeding season only]	No
Appalachian Bewick's wren	*Thryomanes bewickii altus*	E	woodland borders or openings, farmlands or brushy fields, at high elevations [breeding season only]	No
French Broad crayfish	*Cambarus reburrus*	W2	tributaries of French Broad	No
Tawny crescent butterfly	*Phycoides batesii batesii*	SR	rocky ridges, woodland openings, at higher elevations; host plants -- asters, mainly Aster undulatus	No
Diana fritillary butterfly	*Speyeria diana*	SR	rich woods and adjacent edges and openings; believed extirpated from the lower Piedmont; host plants -- violets (Viola)	No

Fraser fir	*Abies fraseri*	SR-L	spruce-fir forests	No
Piratebush	*Buckleya distichophylla*	E	bluffs, dry slopes, forests on lower slopes	No
Cain's reedgrass	*Calamagrostis cainii*	E	high elevation rocky summits	No
Glade spurge	*Euphorbia purpurea*	SR-T	forests, especially over mafic rock	No
Mountain heartleaf	*Hexastylis contracta*	E	acidic forests under rhododendron	No
French Broad heartleaf	*Hexastylis rhombiformis*	SR-L	cove forests	No
Butternut	*Juglans cinerea*	Not listed	cove forest and rich woods	No
Gray's lily	*Lilium grayi*	T-SC	bogs, wet meadows, seeps, grassy balds, high elevation forests	No
Fraser's loosestrife	*Lysimachia fraseri*	E	forests, roadsides	Yes
Sweet pinesap	*Monotropsis odorata*	SR-T	dry forests and bluffs	No
Pinnate-lobed black-eyed susan	*Rudbeckia triloba* var. *pinnatoloba*	SR-T	mafic cliffs	No
Carolina saxifrage	*Saxifraga caroliniana*	SR-T	high to middle elevation moist cliffs and rock outcrops	No
Divided-leaf ragwort	*Senecio millefolium*	T	on or near rock outcrops	No
Mountain catchfly	*Silene ovata*	SR-T	rich slopes, cove forests, montane oak-hickory forests	No

**A hellbender was caught during aquatic survey with a seine haul.

VI. CULTURAL RESOURCES

A. 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 as 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 to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) for Bridge No. 262 was conducted on June 7, 2002. All structures within the APE were photographed, and later an NCDOT staff architectural historian reviewed these photos. There was one structure within the APE over fifty years of age, Property #1, and it was determined to be ineligible for the National Register of Historic Places by the NCDOT staff architectural historian. The photographs were shown to the State Historic Preservation Office (HPO) in a meeting on April 4, 2003. At that meeting HPO staff concurred that Property #1 was not eligible for the National Register and a form was signed that reflects these findings. Therefore, there are no National Register-listed or National Register-eligible properties within the APE for this project. Copies of all correspondence are included in the Appendix.

C. Archaeology

In a memorandum dated April 5, 2002, it was recommended by SHPO that no archaeological investigation be conducted in connection with this project. A copy of the memorandum is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

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

The project is a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

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

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

No adverse impact on the community is anticipated. Right-of-way acquisition is proposed to be limited to a 60-foot corridor on new location. No relocations are expected with the implementation of the proposed alternative.

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

There are no publicly owned recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply.

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

This project is an air quality "neutral" project, so it is not required to be included in the regional emission analysis (if applicable) and a project level CO analysis is not required.

The traffic volumes will not increase or decrease because of this project. The project's impact on noise and air quality will not be substantial.

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA) and no additional reports are required.

A field reconnaissance survey was conducted in the vicinity of the project and based on the survey, there are no anticipated underground storage tank (UST) impacts with this project. Research shows that no regulated or unregulated landfills or dumpsites occur within the project limits, and no superfund sites were identified in the vicinity of the project.

Buncombe County is a participant in the National Flood Insurance Program. The project site on South Hominy Creek is not included in a Detailed FEMA Study area. A copy of the Flood Insurance Rate Map is shown in Figure 5. The project is not anticipated to increase the level or extent of the upstream flood hazard and no practical alternatives exist to crossing the flood plain.

On the basis of the above discussion, it is concluded that no significant adverse environmental effects will result from implementation of the project.

VIII. PUBLIC INVOLVEMENT

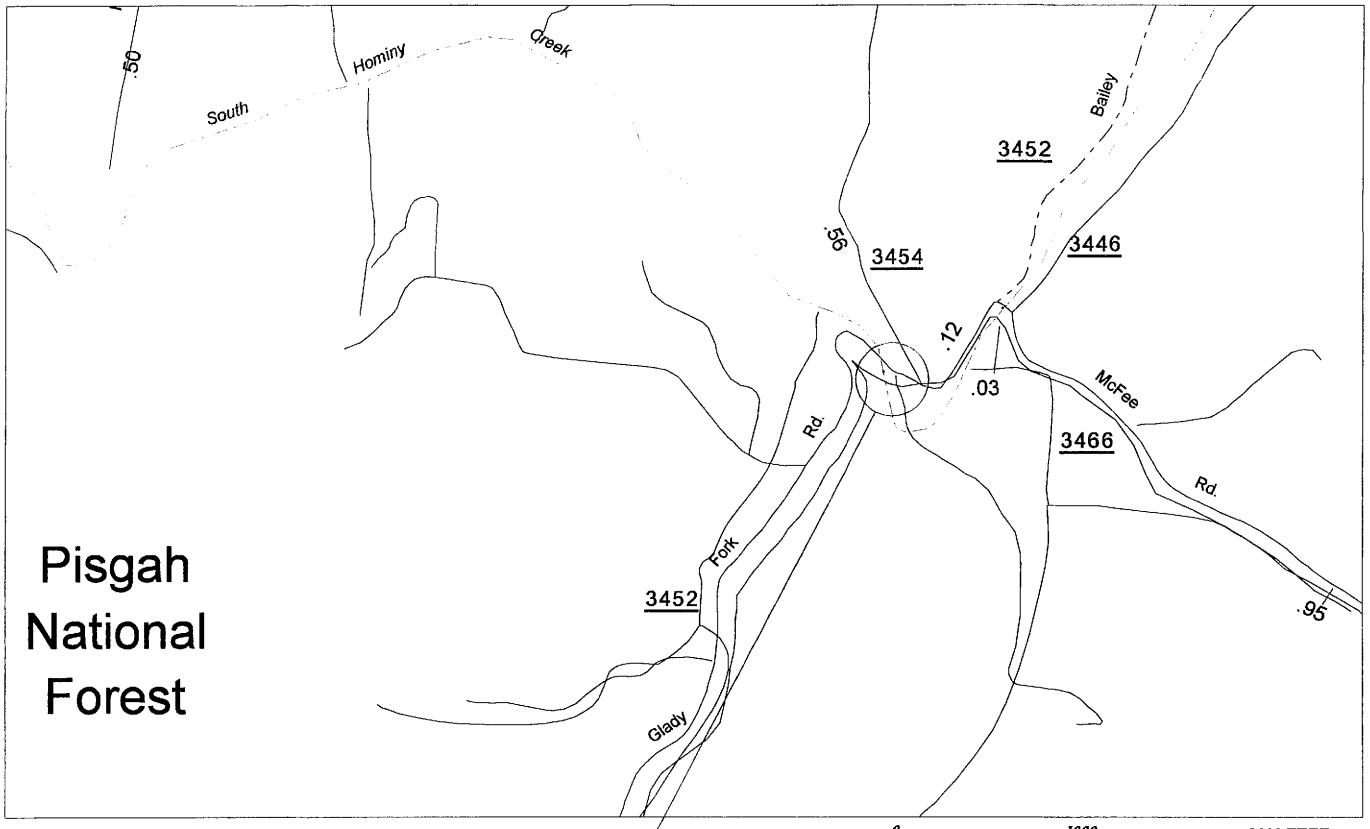
Efforts were undertaken early in the planning process (January 2003) to contact local officials to involve them in the project development with scoping letters. A newsletter was mailed to local residents and public officials on July 8, 2004 announcing the Citizens' Informational Workshop. A Citizens' Informational Workshop was held on July 28, 2004 at Pisgah Elementary School in Candler, Buncombe County, from 4:30 p.m. to 6:30 p.m. Alternative 4 was presented as the preferred alternative. The citizens were concerned about vehicular crashes due to the grade and curvature of the roadway. They were also concerned about the sight distance at the intersection nearest the bridge for turning school buses. Alternative 4 does not improve existing roadway approach geometry. The citizens noted a preference for Alternative 3 to potentially reduce crashes. The citizens noted that most crashes are unreported in the area of the bridge and replacing the bridge without changes to the roadway will do little to improve safety in the area. In response to the citizens' input received during the workshop and by mail, the Department selected Alternative 3 as the preferred alternative.

IX. AGENCY COMMENTS

United States Department of the Interior – National Park Service (NPS): Since NC 151 is an important connecting road to the Blue Ridge Parkway, NPS requests information on any potential delays or reroutes to through traffic as a result of this project and desires a review of detour signage if applicable.

> **Response:** This project is not anticipated to create delays or reroutes for traffic on NC 151. A copy of the Categorical Exclusion will be provided to the National Park Service.

FIGURES



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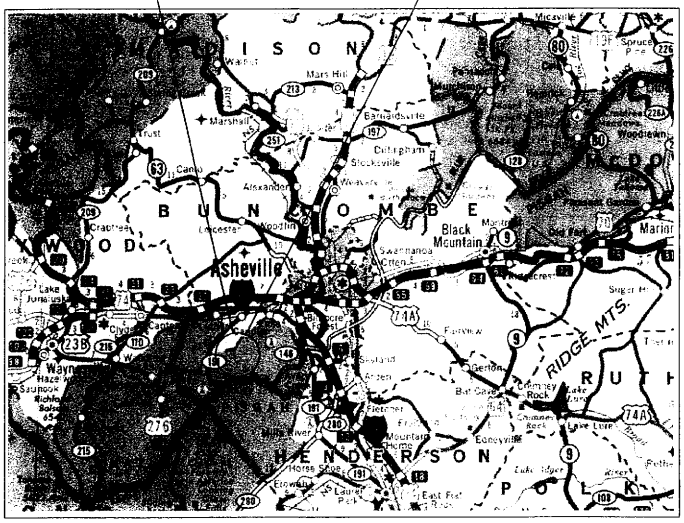

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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

BUNCOMBE COUNTY

BRIDGE NO. 262 ON SR 3452 OVER SOUTH HOMINY CREEK

TIP NO. B-4037

VICINITY MAP
FIGURE 1

h:\PN\01103606B\graphics\262FIG1.dgn

10/08/2004

PI Sta 11+04.20
Δ = 45° 44' 36.2" (LT)
D = 24° 54' 40.4"
L = 196.67'
T = 104.20'
R = 230.00'

PI Sta 13+09.23
Δ = 26° 53' 16.6" (RT)
D = 57° 17' 44.8"
L = 46.93'
T = 23.90'
R = 100.00'

PI Sta 14+26.26
Δ = 121° 10' 19.2" (RT)
D = 108° 06' 19.3"
L = 112.09'
T = 94.01'
R = 53.00'

PI Sta 14+97.92
Δ = 16° 03' 02.7" (RT)
D = 15° 04' 39.4"
L = 106.45'
T = 53.58'
R = 380.00'

PI Sta 17+75.64
Δ = 35° 08' 19.7" (LT)
D = 38° 11' 49.9"
L = 91.93'
T = 47.18'
R = 150.00'
SE = 0.02
RO = 24°

PI Sta 20+46.18
Δ = 62° 45' 13.3" (LT)
D = 54° 34' 02.7"
L = 116.00'
T = 64.05'
R = 105.00'
SE = 0.06
RO = 126°

PI Sta 21+38.65
Δ = 9° 18' 28.9" (LT)
D = 11° 14' 03.9"
L = 82.86'
T = 41.52'
R = 510.00'

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

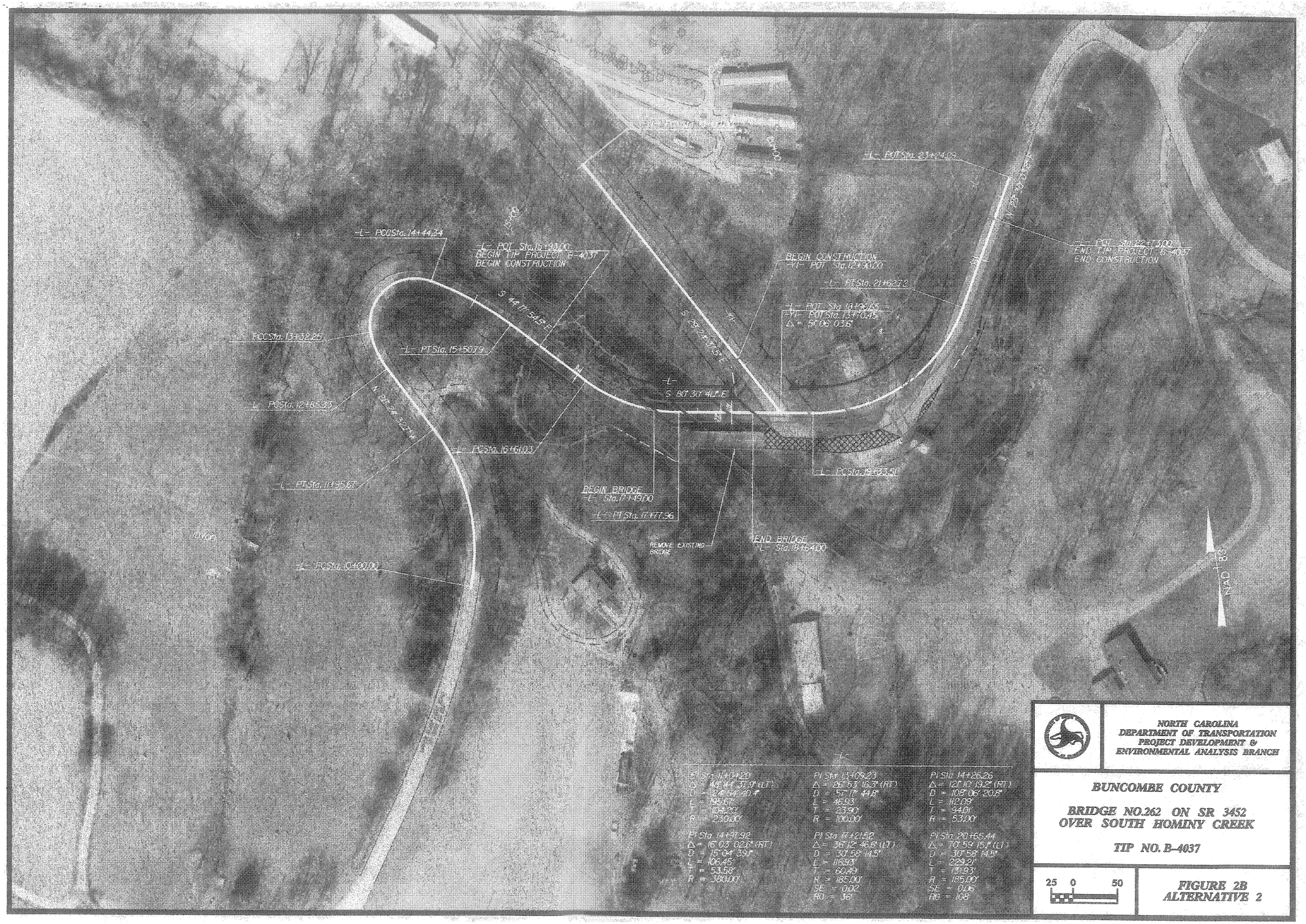
BUNCOMBE COUNTY

BRIDGE NO.262 ON SR 3452
OVER SOUTH HOMINY CREEK

TIP NO. B-4037

25 0 50

FIGURE 2A
ALTERNATIVE 1



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

BUNCOMBE COUNTY

BRIDGE NO.262 ON SR 3452
OVER SOUTH HOMINY CREEK

TIP NO. B-4037

25 0 50

FIGURE 2B
ALTERNATIVE 2

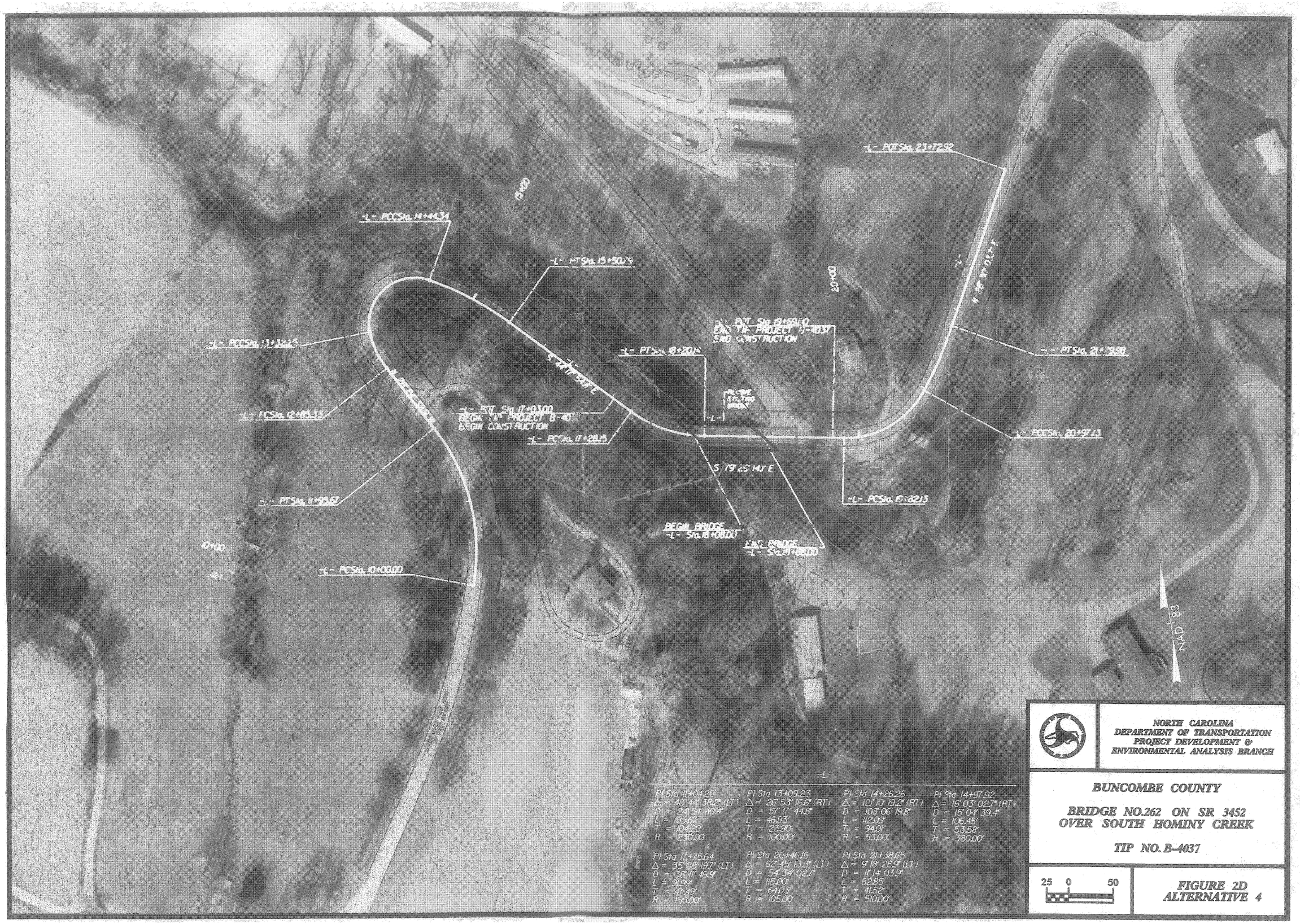
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

BUNCOMBE COUNTY

BRIDGE NO.262 ON SR 3452
OVER SOUTH HOMINY CREEK

TIP NO. B-4037

FIGURE 2C
ALTERNATIVE 3



-L-

PI Sta 11+43.20	PI Sta 13+09.23	PI Sta 14+26.26	PI Sta 14+97.92
Δ = 43° 44' 38.2" (LT)	Δ = 26° 53' 16.6" (RT)	Δ = 121° 10' 19.2" (RT)	Δ = 16° 03' 02.7" (RT)
D = 24° 34' 49.8"	D = 57° 17' 44.8"	D = 108° 06' 19.8"	D = 15° 04' 39.4"
L = 87.62'	L = 46.93'	L = 112.09'	L = 106.45'
T = 46.20'	T = 23.96'	T = 94.01'	T = 53.58'
R = 233.00'	R = 100.00'	R = 53.00'	R = 380.00'

PI Sta 17+75.64	PI Sta 20+46.18	PI Sta 21+38.65
Δ = 35° 08' 19.7" (LT)	Δ = 62° 45' 13.3" (LT)	Δ = 9° 18' 28.9" (LT)
D = 38° 11' 49.9"	D = 54° 34' 02.7"	D = 11° 14' 03.9"
L = 91.99'	L = 119.00'	L = 82.85'
T = 47.49'	T = 64.03'	T = 41.52'
R = 150.00'	R = 105.00'	R = 510.00'

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

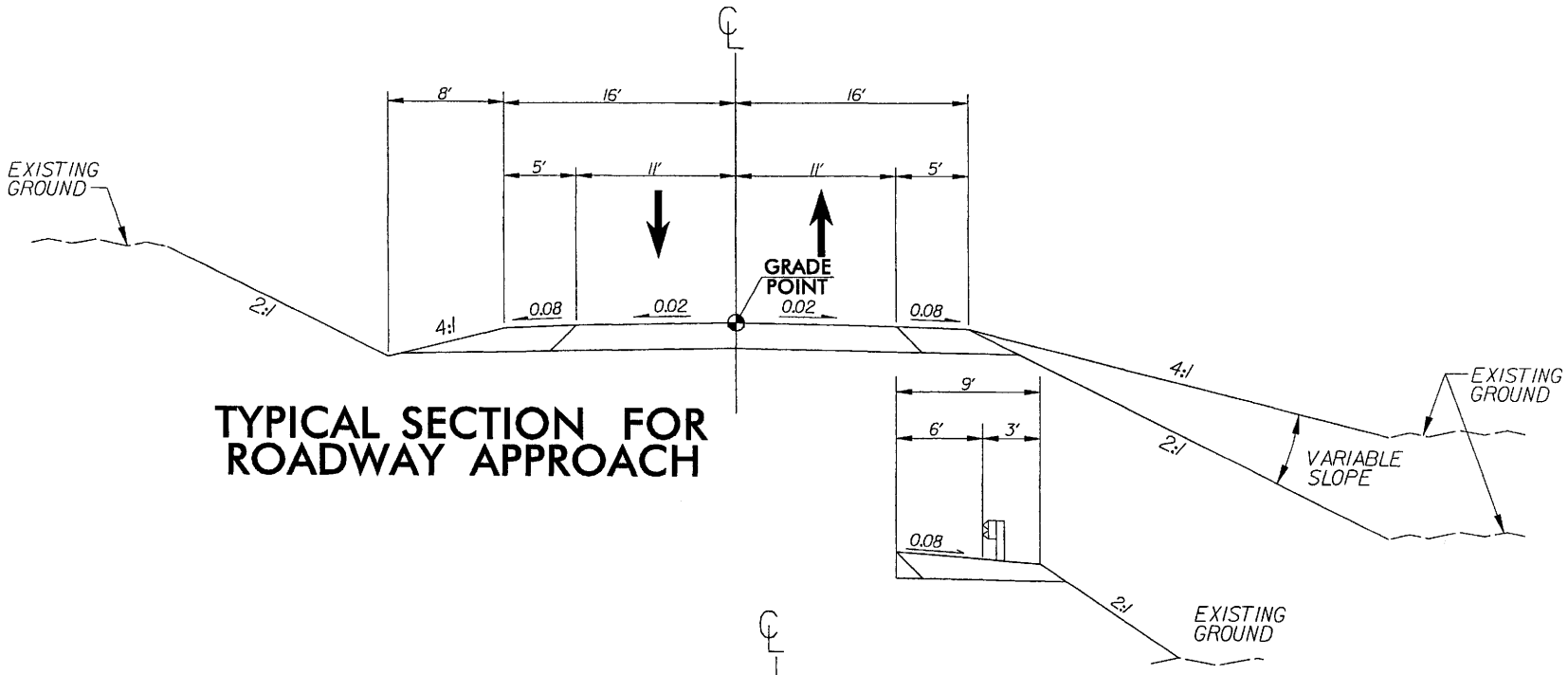
BUNCOMBE COUNTY

BRIDGE NO.262 ON SR 3452
OVER SOUTH HOMINY CREEK

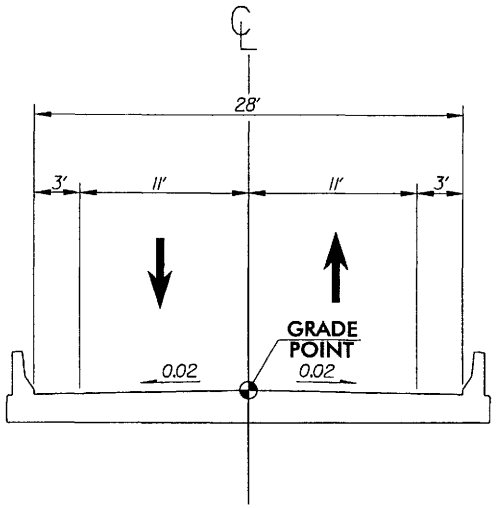
TIP NO. B-4037

25 0 50

FIGURE 2D
ALTERNATIVE 4



TYPICAL SECTION FOR ROADWAY APPROACH



TYPICAL SECTION FOR PROPOSED STRUCTURE

DESIGN DATA

FUNCTIONAL CLASSIFICATION:
RURAL LOCAL
DESIGN SPEED – 50 mph
2004 ADT – 700 vpd
2030 ADT – 1,100 vpd
DUAL – 2 %, TTST – 1 %

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

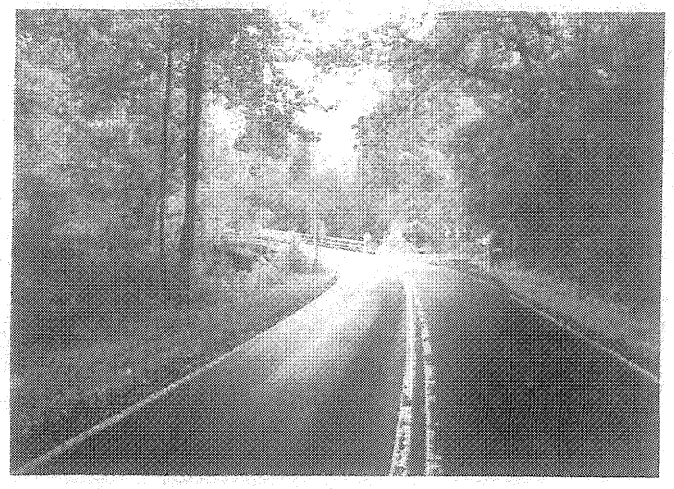
BUNCOMBE COUNTY

BRIDGE NO. 262 ON SR 3452
OVER SOUTH HOMINY CREEK

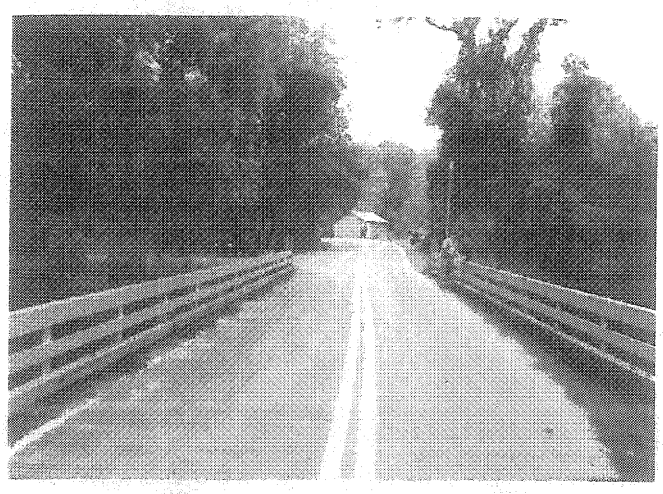
TIP NO. B-4037

FIGURE 3

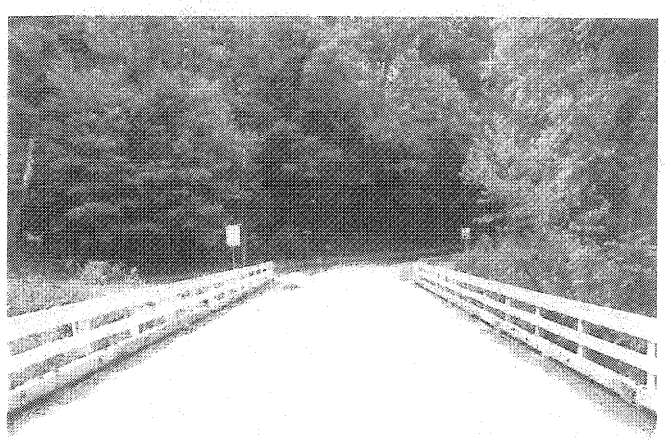
FIGURE 4 – COLOR PHOTOGRAPHS
B-4037 Buncombe County
Bridge No. 262 on SR 3452 over
South Hominy Creek



Looking Southeast Along SR 3452
Toward Bridge No. 262



Looking East Along SR 3452 on Bridge
No. 262



Looking West Along SR 3452 on Bridge
No. 262

Looking East toward Bridge No. 262
from the West Side of SR 3452

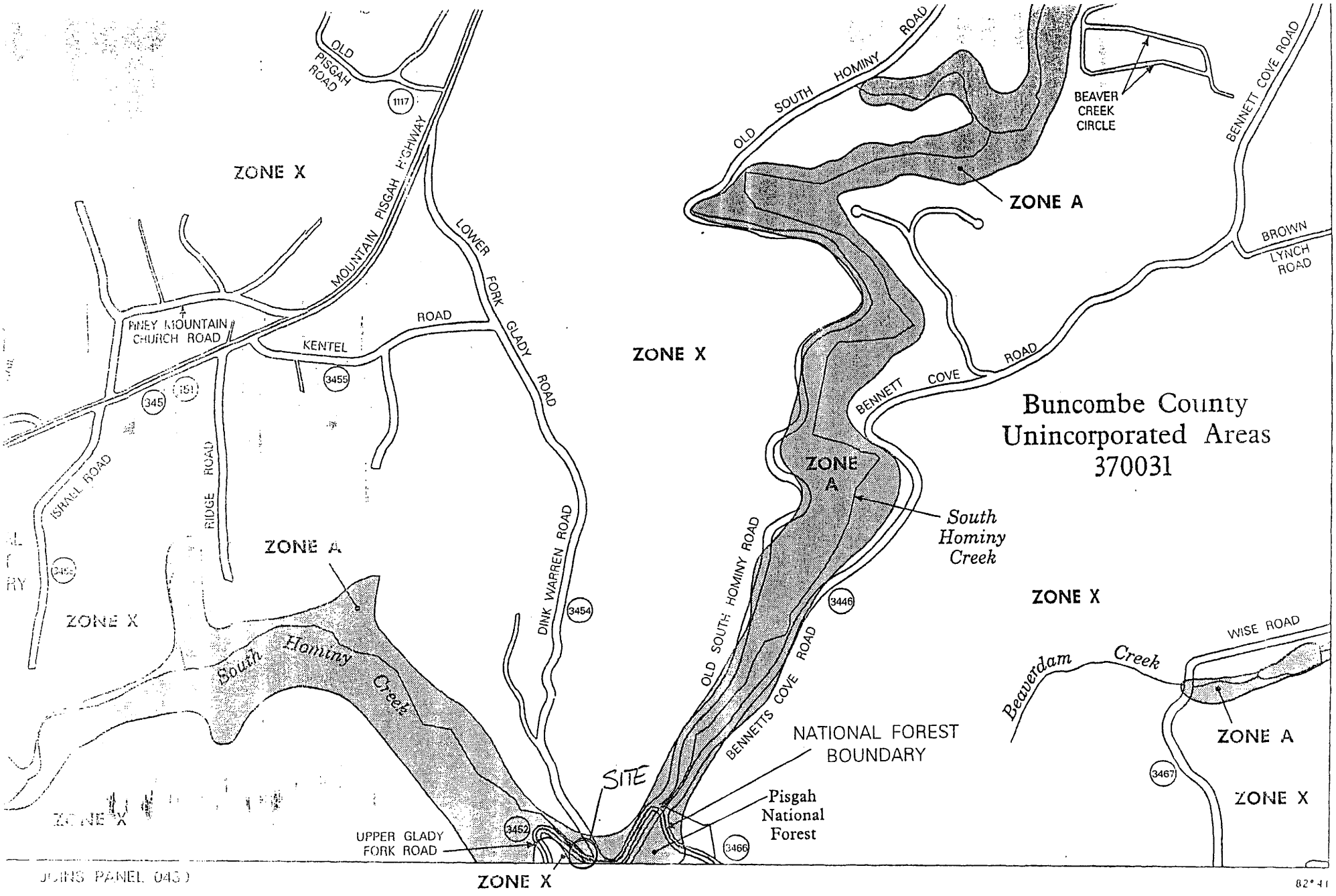


FIGURE 5
FLOODPLAIN MAP

Appendix

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
151 PATTON AVENUE
ROOM 208
ASHEVILLE, NORTH CAROLINA 28801-5006

COPY

REPLY TO
ATTENTION OF

CESAW-RG-A

May 23, 2003

MEMORANDUM FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT), PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH, ATTN: Gregory J. Thorpe, PhD, Environmental Management Director

SUBJECT: Natural Resources Technical Reports, Bridge Replacement Projects, 2002-2008 Transportation Improvement Plan

1. The purpose of this memorandum is to respond to your requests of January 6, 2003, April 10, 2003 and May 6, 2003 with supplemental information provided on May 13, 2003 seeking our comments on 6 bridge replacement projects in Division 10 and 12 bridge replacement projects in Division 13.

2. Based on the referenced reports and other information provided, 12 project sites exhibit characteristics that would cause us to place them in your yellow to red categories meaning that additional close coordination with resource and regulatory agencies should be maintained for successful project completion. These characteristics include the presence of high quality aquatic habitat, outstanding resource waters, trout fisheries, presence of wetlands, presence of endangered species or suitable habitat for endangered species and unresolved endangered species issues. Under these circumstances, we would normally recommend that the existing bridge structure be replaced with another spanning structure and that construction of onsite detours be avoided unless the detours are also spanning structures. In addition, bridge demolition should not result in any discharge into waters or wetlands at the site. These 12 projects include the following TIP's: B-3905, B-4032, B-4036, B-4037, B-4051, B-4182, B-4258, B-4262, B-4278, B-4294, B-4295, B-4296.

3. The remaining 6 project sites lack the distinguishing characteristics referenced above and we would therefore place them in your green category meaning that normal processing procedures should be able to address anticipated impacts to aquatic resources. These 6 projects include the following TIP's: B-3813, B-3815, B-3874, B-3907, B- 4261, B-4263.

4. Please be reminded that all 12 projects in Division 13 are located in trout waters counties and will require pre-discharge notification to this office and the North Carolina Wildlife Resources Commission prior to the use of any Nationwide Permit.

5. If you have any questions, please contact me at telephone (828) 271-7980, extension 4.

Steven W. Lund
Regulatory Project Manager

Cc: William T. Goodwin
Bridge Replacement Planning Unit

COPY

United States Department of the Interior

NATIONAL PARK SERVICE
Blue Ridge Parkway
199 Hemphill Knob Road
Asheville, North Carolina 28803

IN REPLY REFER TO

L7619
PIN 1280

February 11, 2003

Gregory J. Thorpe, Ph. D.
Environmental Management Director
North Carolina Department of Transportation
Project Development & Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Subject: Request for comments on Bridge Replacement Projects B-4032, B-4036, B-4037, B-4258, B-4261, B-2988, B-4144, B-4291

Dear Dr. Thorpe:

Thank you for the opportunity to comment on the above referenced projects. Parkway staff reviewed the scoping document and the potential impacts of the proposed project on resource values that may be present on National Park Service (NPS) lands and have the following comments:

The proposed projects should have no impact to park natural resources.

In reference to Bridge Number 262, over south Hominy Creek on SR 3452 connecting to State Route 151: SR 151 is an important connecting road to the Blue Ridge Parkway. Would this bridge construction in any way delay SR 151 traffic or reroute vehicular traffic on the Blue Ridge Parkway from SR 151? If so what would be the delay duration? We would want to review detour sign planning, if applicable. Otherwise, we have no visual impact concerns to the Blue Ridge Parkway, as this bridge is located out of the park viewshed area.

In reference to Bridge Number 13, on SR 1890 and near SR 276, crossing over the East Fork of the Pigeon River: SR 276 is an important connecting road to the Blue Ridge Parkway. Would this bridge construction in any way delay SR 276 traffic or reroute vehicular traffic on the Blue Ridge Parkway from SR 276? If so what would be the delay duration? We would want to review detour sign planning, if applicable. Otherwise, we have no visual impact concerns to the Blue Ridge Parkway, as this bridge is located out of the park viewshed area.

Again, thank you for the opportunity to review and comment on these important bridge replacement projects. If you have any questions, please contact Suzette Molling, Environmental Protection Specialist, at 828/271-4779 ext. 219.

Sincerely,

Daniel W. Brown
Superintendent

cc: Park Resident Landscape Architect, BLRI
Chief, Branch of Resource Management, BLRI
Highlands District Ranger, BLRI
Highlands District Resource Management Specialist, BLRI

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality

Michael Easley, Governor
Bill Ross, Secretary
Alan Klimek, Director

NCDENR
NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

June 18, 2002

Memorandum To: William T. Goodwin, Jr., PE, Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch

Through: John Dorney
NC Division of Water Quality, 401 Unit

From: Robert Ridings
NC Division of Water Quality, 401 Unit

Subject: Review of Natural Systems Technical Reports for bridge replacement projects scheduled for construction in CFY 2005: "Yellow Light" Projects: B-4037, B-4076, B-4116, B-4016, B-4052, B-4015, B-4013, B-4012, B-4011, B-4202, B-4199, B-4196, B-4195, B-4322, B-4317, B-4316, B-4285, & B-4028.

On all projects, use of proper sediment and erosion control will be needed. Sediment and erosion control measures should not be placed in wetlands. Sediment should be removed from any water pumped from behind a cofferdam before the water is returned to the stream. Sedimentation and Erosion Control Guidelines for Sensitive Watersheds (15A NCAC 4B .0024) must be implemented prior to any ground-disturbing activities to minimize impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation must be planted on all bare soil *within 10 days* of ground-disturbing activities to provide long term erosion control.

This office would prefer bridges to be replaced with new bridges. However if the bridge must be replaced by a culvert and 150 linear feet or more of stream is impacted, a stream mitigation plan will be needed prior to the issuance of a 401 Water Quality Certification. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

Any proposed culverts shall be installed in such a manner that the original stream profile is not altered (i.e. the depth of the channel must not be reduced by a widening of the streambed). Existing stream dimensions are to be maintained above and below locations of culvert extensions.

For permitting, any project that falls under the Corps of Engineers' Nationwide Permits 23 or 33 do not require written concurrence by the NC Division of Water Quality. Notification and courtesy copies of materials sent to the Corps, including mitigation plans, are required. For projects that fall under the Corps of Engineers Nationwide Permit 14 or Regional General Bridge Permit 31, the formal 401 application process will be required including appropriate fees and mitigation plans.

Do not use any machinery in the stream channels unless absolutely necessary. Additionally, vegetation should not be removed from the stream bank unless it is absolutely necessary. NCDOT should especially avoid removing large trees and undercut banks. If large, undercut trees must be removed, then the trunks should be cut and the stumps and root systems left in place to minimize damage to stream banks.

Use of rip-rap for bank stabilization must be minimized; rather, native vegetation should be planted when practical. If necessary, rip-rap must be limited to the stream bank below the high water mark, and vegetation must be used for stabilization above high water.

Rules regarding stormwater as described in (15A NCAC 2b.0216 (3) (G)) shall be followed for these projects. These activities shall minimize built-upon surface area, divert runoff away from surface waters and maximize utilization of BMPs. Existing vegetated buffers shall not be mowed in order to allow it to be most effectively utilized for storm water sheet flow.

Special Note on projects B-4037 and B-4076: these waters are classified as 303(d) waters. Special measures for sediment control will be needed.

Also note that projects B-4037, B-4052, B-4015,B-4013, B-4012, B-4011, B-4202, B-4196, B-4322, B-4317, and B-4316 occur in Trout waters. Any trout-specific conditions that would be determined by the North Carolina Wildlife Resources Commission, to protect the egg and fry stages of trout from sedimentation during construction, would be required on any 401 certifications.

Streams classified as "+" signify a stream draining into another stream that is ORW or HQW. Projects that occur in "+" streams are: B-4016, B-4012, B-4011, and B-4317.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost.

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: William T. Goodwin, P.E., Unit Head
Bridge Replacement Planning Unit
Project Development and Environmental Analysis Branch, NCDOT

FROM: Owen F. Anderson, Mountain Region Coordinator
Habitat Conservation Program

DATE: May 10, 2002

SUBJECT: Scoping and Natural Resources Technical Report, Replace Bridge No. 262 on SR 3452 Over South Hominy Creek, Buncombe County, TIP No. B-4037
Fish and Wildlife Project Status: YELLOW

Biologists with the North Carolina Wildlife Resources Commission familiar with the project area have reviewed the technical report for the subject project to assess the potential for adverse impacts to fish and wildlife resources. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The proposed work involves the replacement of bridge 262 on SR 3452 over South Hominy Creek. Construction impacts on fish and wildlife resources will depend on the extent of disturbance in the streambed and surrounding floodplain areas. The riparian corridor within the project area is characterized as Piedmont/Mountain Bottomland Forest and has a discontinuous wetland fringe along the stream. From a fish and wildlife perspective, this should be considered good to high quality habitat and efforts should be made to minimize impacts.

We prefer bridge designs that do not alter the natural stream morphology or impede fish passage. Efforts should be made during design to place bridge supports outside of the bankfull channel. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. Correction of altered stream morphology at the road crossing should be considered during design.

Streams and riparian zones provide connectivity of the landscape; and thus, are natural movement corridors for terrestrial wildlife species. Bridge designs should consider leaving sufficient corridors under the bridge to encourage movement of wildlife under the bridge rather than across the highway. The movement of animals, especially larger animals (e.g., deer and bear), under the bridge may reduce automobile crashes involving wildlife. Where feasible, increasing the riparian corridor width under the bridge is recommended.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • **Fax:** (919) 715-7643

The Division of Water Quality classifies South Hominy Creek as C trout. An unidentified trout was listed in the technical report Therefore, this stream does in fact support trout We are of the opinion that this project could result in adverse impacts to trout. We do not have records of endangered, threatened, special concern or rare species from this stream reach and none were identified in the technical report. The technical report indicated suitable freshwater mussel habitat If no recent surveys for mussels exist for this reach, we recommend that the area be surveyed for freshwater mussels.

In most cases, we prefer the replacement of the existing structure at the same location with road closure If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation The area should be stabilized with native herbaceous species and planted with native tree species If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Listed below are our standard recommendations on this project. Because the Corps of Engineers (COE) recognizes the project county as a "trout water county", the NCWRC will review any nationwide or general 404 permits for the proposed projects and will likely request the following as conditions of the 404 permit

1 This bridge should be replaced with another spanning structure.

2 Bridge deck drains should not discharge directly into the stream.

3 Live concrete should not be allowed to contact the water in or entering into the stream Water that has inadvertently come in contact with live concrete should not be discharged to surface waters but should be disposed in an upland area.

4 If possible, bridge supports (bents) should not be placed in the stream

5 If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil

6 A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7 Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

8 Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control

9 All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water

10. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into surface waters.

11. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

12. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

13. Wastewater from drilling operations should not be discharged to surface waters but should be pumped to upland areas.

14. **Instream construction and construction within the 25-foot buffer is prohibited during the trout-spawning period of October 15 to April 15 to avoid impacts on trout reproduction.**

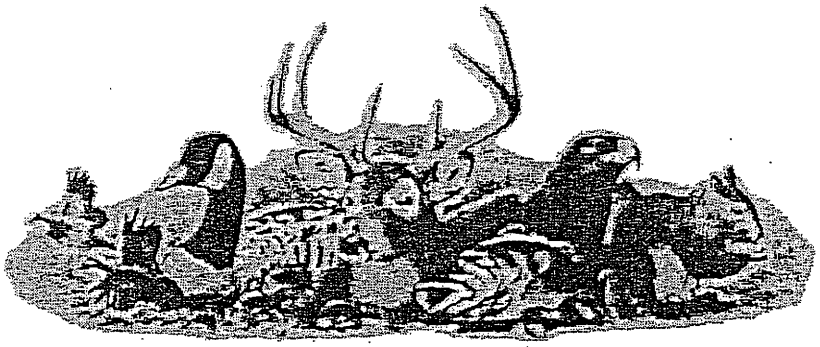
15. Discharge of materials into surface waters from demolition of the old bridge should be avoided as much as practicable. Any materials that inadvertently reach surface waters should be removed.

16. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.

17. Suitable mussel habitat may exist at this project site; therefore the project area should be surveyed for freshwater mussels. NCDOT biologist Mr. Tim Savidge should be notified. If survey results reveal the presence of listed species, special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project

Thank you for the opportunity to review and comment during the early stages of these projects. If you have any questions regarding these comments, please contact me at (828) 452-2546.

cc: Mr. John Hendrix, NCDOT Coordinator, COE, Asheville
Ms. Marella Buncick, Biologist, USFWS Asheville



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

TO: John Wadsworth, Project Planning Engineer
Project Development and Environmental Analysis Branch, NCDOT

FROM: Marla Chambers, Highway Projects Coordinator
Habitat Conservation Program, NCWRC

DATE: March 21, 2003

SUBJECT: Scoping review of NCDOT's proposed bridge replacement projects B-4032, B-4036, B-4037, B-4258, B-4261, B-2988, B-4144, B-4291 in Buncombe, Rutherford, Haywood and Transylvania Counties.

North Carolina Department of Transportation (NCDOT) has requested comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject project. Staff biologists have reviewed the information provided and have the following preliminary comments. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Our standard recommendations for bridge replacement projects of this scope are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • **Fax:** (919) 715-7643

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, Mr. Hal Bain with the NCDOT - ONE should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream end to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, the base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must 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.

4. Riprap should 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 professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed

down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. Tall fescue should not be used in riparian areas. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-4032, Buncombe Co., Bridge No. 130 over the Broad River. The Broad River is classified as C-Tr and rainbow trout are present. An in-stream and 25-foot buffer work moratorium from January 1 to April 15 should apply.

2. B-4036, Buncombe Co., Bridge No. 220 over Reems Creek. Reems Creek is classified as C-Tr and is hatchery supported trout water. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply.

3. B-4037, Buncombe Co., Bridge No. 262 over South Hominy Creek. South Hominy Creek is classified as C-Tr and rainbow and brown trout are present. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply.

4. B-4258, Rutherford Co., Bridge No. 7 over the Broad River. The Broad River flows into Lake Lure just downstream of this bridge and is classified as B-Tr and C-Tr in the project vicinity. The site is downstream of Hatchery Supported Trout Water and an in-stream and 25-foot buffer work moratorium for rainbow trout, from January 1 to April 15, is most appropriate for this project.

5. B-4261, Rutherford Co., Bridge Nos. 39 and 37 over Fork of Cathey's Creek. The Santee chub (*Cyprinella zanema*), a state listed significantly rare fish species, occurs both upstream and downstream of the project. An in-stream work moratorium to protect smallmouth bass and redbreast sunfish, from May 1 to July 15, is most appropriate for this project.

6. B-2988, Haywood Co., Bridge No. 13 over the East Fork of the Pigeon River. The East Fork of the Pigeon River is classified as WS-III Tr in the project area and rainbow and brown trout are present. Appalachian elktoe (*Alasmidonta raveneliana*), a federal and state listed endangered mussel species and the olive darter (*Percina squamata*), a state listed special concern fish species, are present in the Pigeon River downstream of the East Fork Pigeon River confluence. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply. Special precautions should be taken to prevent sedimentation downstream.

7. B-4144, Haywood Co., Bridge No. 211 over Richland Creek. Trout are present in Richland Creek, class B waters, which joins the Pigeon River not far downstream of the project site. Longear sunfish (*Lepomis megalotis*), a state significantly rare fish species, has been observed in Richland Creek upstream of the project. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply.

8. B-4291, Transylvania Co., Bridge No. 193 over the Davidson River. Rainbow and brown trout are present in the project area of Davidson River, class C waters, which joins the French Broad River not far downstream of the project site. The creeper (*Strophitus undulatus*), a state listed threatened mussel species, is present in the French Broad River immediately downstream of the confluence of the Davidson River. Two amphibian species, the common mudpuppy (*necturus maculosus*), state special concern, and the hellbender (*Cryptobranchus alleganiensis*), federal species of concern and state special concern, have been found in the Davidson River upstream of the project site. An in-stream and 25-foot buffer work moratorium from October 15 to April 15 should apply. Special precautions should be taken to prevent sedimentation downstream. In addition, a public access area should be incorporated into the plans for this project.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (704) 485-2384. Thank you for the opportunity to review and comment on these projects.

cc: Cynthia Van Der Wiele, DWQ
Marella Buncick, USFWS
Sarah Kopplin, NHP

Federal Aid # BRZ-3452(1) *TIP* # B-4037 *County*: Buncombe

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: Replace Bridge No. 262 on SR 3452 over South Hominy Creek

On 04/01/2003, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [ ] Federal Highway Administration (FHWA)
- [x] North Carolina State Historic Preservation Office (HPO)
- [ ] Other

CITIZENS PARTICIPATION RECEIVED APR 9 2003

Reviewed the subject project at

- [ ] Scoping meeting
- [x] Historic architectural resources photograph review session/consultation
- [ ] Other

All parties present agreed

- [ ] There are no properties over fifty years old within the project's area of potential effects.
- [x] There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- [x] There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the property identified as Property #1 is considered not eligible for the National Register and no further evaluation of it is necessary.
- [x] There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- [x] All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- [x] There are no historic properties affected by this project. (*Attach any notes or documents as needed*)

Signed:

Mary Pope Furr — 4.1.03
Representative, NCDOT — Date

[signature] — 4/4/03
FHWA, for the Division Administrator, or other Federal Agency — Date

[signature] — 4/1/03
Representative, HPO — Date

David Brook — 4/1/03
State Historic Preservation Officer — Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

April 5, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook DSG for David Brook

SUBJECT: Replace Bridge No. 262 on SR 3452 over South Hominy Creek, B-4037, Buncombe County, ER 02-8498

Thank you for your letter of September 25, 2001, concerning the above project.

Because of the location and topography of the project area, it is unlikely that any archaeological sites which may be eligible for listing in the National Register of Historic Places will be affected by the proposed construction. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

If there are any structures more than fifty years old on or adjacent to the project site, please send us photographs (Polaroid type snapshots are fine) of each structure. These photographs should be keyed to a map that clearly shows the site location. If there are no buildings over fifty years old on or adjacent to the project site, please notify us of this in writing

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT

RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	8.2844701	COUNTY	BUNCOMBE	Alternate 1 Of 4 Alternates	
I.D. NO.:	B-4037	F.A. PROJECT			
DESCRIPTION OF PROJECT:	Bridge Number 262 on SR 3452 (Upper Glady Fork Road) over South Hominey Creek				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	0	0	0
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	0	0	0	0

VALUE OF DWELLING / DSS DWELLING AVAILABLE

Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	5	$ 0-150	0
20-40M	0	150-250	0	20-40M	11	150-250	1
40-70M	0	250-400	0	40-70M	16	250-400	7
70-100M	0	400-600	0	70-100M	18	400-600	11
100 UP	0	600 UP	0	100 UP	36	600 UP	6
TOTAL	0		0		86		25

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	x	1. Will special relocation services be necessary?
	x	2. Will schools or churches be affect by displacement?
x		3. Will business services still be available after project?
	x	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	x	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	x	7. Will additional housing programs be needed?
x		8. Should Last Resort Housing be considered?
	x	9. Are there large, disabled, elderly, etc. families?
	x	10. Will public housing be needed for project?
x		11. Is public housing available?
x		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	x	13. Will there be a problem of housing within financial means?
		14. Are suitable business sites available (list source). **N/A**
		15. Number months estimated to complete RELOCATION? **N/A**

REMARKS (Respond by Number)

No relocatees on this alternate.

You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to possible proximity damage being a factor on the Cost Estimate Report and improvements not actually in the proposed acquisition areas shown on the plans.

David C. Roberts	7-22-03	Ann Simpler	8-1-03
Right of Way Agent	Date	Relocation Coordinator	Date

Form 15.4 Revised 09-02

Original & Copy 1: Relocation Coordinator
Copy 2: Division Relocation File

RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	8.2844701	COUNTY	BUNCOMBE	Alternate 2 Of 4 Alternates
I.D. NO.:	B-4037	F.A. PROJECT		
DESCRIPTION OF PROJECT:	Bridge Number 262 on SR 3452 (Upper Glady Fork Road) over South Hominey Creek			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	1	0	1	0
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	1	0	0	0

VALUE OF DWELLING / DSS DWELLING AVAILABLE

Owners		Tenants		For Sale		For Rent	
0-20M	0	$ 0-150	0	0-20M	5	$ 0-150	0
20-40M	0	150-250	0	20-40M	11	150-250	1
40-70M	1	250-400	0	40-70M	16	250-400	7
70-100M	0	400-600	0	70-100M	18	400-600	11
100 UP	0	600 UP	0	100 UP	36	600 UP	6
TOTAL	1		0		86		25

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affect by displacement?
X		3. Will business services still be available after project?
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
		14. Are suitable business sites available (list source). **N/A**
		15. Number months estimated to complete RELOCATION? **12 months**

REMARKS (Respond by Number)

3. **Business services will not be disrupted due to the project.**
6. **Beverly-Hanks Realtors and local real estate publications indicate that sufficient DSS housing properties will be available.**
8. **As necessary in accordance with State law.**
12. **Beverly-Hanks Realtors and local real estate publications indicate that sufficient DSS housing properties will be available.**

You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to possil proximity damage being a factor on the Cost Estimate Report and improvements not actually in the proposed acquisition areas shown on the plans.

Daryl C Roberts — Right of Way Agent — 7-22-03 — Date

Ann Simpkins — Relocation Coordinator — 8-1-03 — Date

Form 154 Revised 09-02

Original & Copy 1: Relocation Coordinator
Copy 2: Division Relocation File

RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	8.2844701	COUNTY	BUNCOMBE	Alternate 3 Of 4 Alternates	
I.D. NO.:	B-4037	F.A. PROJECT			
DESCRIPTION OF PROJECT:	Bridge Number 262 on SR 3452 (Upper Glady Fork Road) over South Hominey Creek				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	0	0	0
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	0	0	0	0

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	0	150-250	0
40-70M	0	250-400	0
70-100M	0	400-600	0
100 UP	0	600 UP	0
TOTAL	0		0

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	5	$ 0-150	0
20-40M	11	150-250	1
40-70M	16	250-400	7
70-100M	18	400-600	11
100 UP	36	600 UP	6
	86		25

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affect by displacement?
X		3. Will business services still be available after project?
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
		14. Are suitable business sites available (list source). **N/A**
		15. Number months estimated to complete RELOCATION? **N/A**

REMARKS (Respond by Number)

No relocatees on this alternate.

You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to possible proximity damage being a factor on the Cost Estimate Report and improvements not actually in the proposed acquisition areas shown on the plans.

Daryl C. Roberts — Right of Way Agent — 7-22-03 — Date

Ann Simpson — Relocation Coordinator — 8-1-03 — Date

Form 15.4 Revised 09-02

Original & Copy 1: Relocation Coordinator
Copy 2: Division Relocation File

RELOCATION REPORT

North Carolina Department of Transportatio
RELOCATION ASSISTANCE PROGRA

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	8.2844701	COUNTY	BUNCOMBE	Alternate 4 Of 4 Alternates
I.D. NO.:	B-4037	F.A. PROJECT		
DESCRIPTION OF PROJECT:	Bridge Number 262 on SR 3452 (Upper Glady Fork Road) over South Hominey Creek			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	0	0	0	0
Businesses	0	0	0	0
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	0	0	0	0

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	0
20-40M	0	150-250	0
40-70M	0	250-400	0
70-100M	0	400-600	0
100 UP	0	600 UP	0
TOTAL	0		0

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	5	$ 0-150	0
20-40M	11	150-250	1
40-70M	16	250-400	7
70-100M	18	400-600	1
100 UP	36	600 UP	6
	86		2

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affect by displacement?
X		3. Will business services still be available after project?
	X	4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
		14. Are suitable business sites available (list source). **N/A**
		15. Number months estimated to complete RELOCATION? **N/A**

REMARKS (Respond by Number)

No relocatees on this alternate.

***You may notice a difference in the number of displacees on the Relocation EIS Report and the Appraisal Cost Estimate. This is due to possi proximity damage being a factor on the Cost Estimate Report and improvements not actually in the proposed acquisition areas shown on the plans.*

Right of Way Agent	7-22-03 Date	Relocation Coordinator	8-1-03 Date

Form 15.4 Revised 09-02

Original & Copy 1: Relocation Coordinator
Copy 2: Division Relocation File

Buncombe County Public Schools

Transportation Department
74 Washington Avenue
Asheville, North Carolina 28804
Phone: (828) 232-4240 — Fax: (828) 252-8637

July 23, 2001

Mr. Davis Moore
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

RE: Replacement of Bridge Number 262 located on SR 3452 over South Hominy Creek

Dear Mr. Moore:

I am writing in response to your request concerning the number of school buses that cross bridge number 262 on SR 3452 (Upper Glady Fork Road) in Buncombe County. Five school buses cross this bridge four times a day. This does not include the parents who transport their children to and/or from school. Students who live in this area attend Pisgah Elementary School, Hominy Valley Elementary School, Enka Middle School, and Enka High School.

Buses could be temporarily rerouted onto SR 3454 (Lower Glady Fork Road) during bridge construction, if it is not feasible to provide an on-site detour. Buses traveling on Lower Glady Fork Road will still need to be able to access SR 3466 (McFee Road) and SR 3452 (Bailey Road). When the bridge is closed, a school bus turnaround point will need to be provided on the southwest side of the bridge on Upper Glady Fork Road (i.e., the opposite side of the bridge from its intersection with Lower Glady Fork Road). Also, it is currently very difficult for a school bus to make a right turn from Lower Glady Fork Road onto Upper Glady Fork Road because of the road and bridge alignment. Please consider making the necessary changes to road and bridge alignment to solve this problem.

Please notify the Buncombe County Schools' Transportation Department at the address above when a date has been set for the beginning of this project. This will provide us with sufficient time to establish new bus runs with the schools that are affected.

If you need additional information, please contact me at the address or telephone number listed on page one.

Sincerely,

Harold F. Laflin
Director of Transportation

Attachment

pc: Mr. Marshall Roberts

County of Buncombe

BUNCOMBE COUNTY EMERGENCY MANAGEMENT AGENCY

EMERGENCY OPERATING CENTER
35 WOODFIN STREET
ASHEVILLE, NORTH CAROLINA 28801

M. Jerry Vehaun Director of Emergency Services

Mr. Davis Moore
NCDOT
Project Development &
Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

July 3, 2001

Re: State Project No. 8.2844701-B-4037
State Project No. 8.2844601-B-4036
State Project No. 8.1845601-B-4032

Dear Mr. Moore:

In reply to your request for information regarding the above listed projects, there are no problems which we will not be able to address by re-routing emergency vehicles while these projects are underway. There are no unworkable situations involved with these three projects.

Should you need additional information, please feel free to contact me.

Sincerely,

M. Jerry VeHaun, Director
Emergency Services

NCDWQ Stream Classification Form

Project Name	B-4037	River Basin	French Broad	County	Buncombe	Evaluator	BTR
DWQ Prj Number		Nearest Stream	South Hominy Creek	Latitude		Signature	
Date	10/10/2003	USGS QUAD	Enka, NC	Longitude		Location	Bridge no. 262 SR 3452

*PLEASE NOTE: *If evaluator and landowner agree that the feature is a man-made ditch, then use of this form is not necessary. Also, if in the best professional judgement of the evaluator, the feature is a man-made ditch and not a modified natural stream—this rating system should not be used**

Primary Field Indicators					
I. Geomorphology	**Absent**	**Weak**	**Moderate**	**Strong**	**Score**
1) Is There A Riffle-Pool Sequence?	0	1	2	**3**	3
2) Is The USDA Texture In Streambed Different From Surrounding Terrain?	0	1	2	**3**	3
3) Are Natural Levees Present?	0	**1**	2	3	1
4) Is The Channel Sinuous?	0	1	2	**3**	3
5) Is There An Active (Or Relic) Floodplain Present?	0	**1**	2	3	1
6) Is The Channel Braided?	0	**1**	2	3	1
7) Are Recent Alluvial Deposits Present?	0	**1**	2	3	1
8) Is There A Bankfull Bench Present?	0	1	**2**	3	2
9) Is A Continuous Bed & Bank Present?	0	1	2	**3**	3
(NOTE: If Bed & Bank Caused By Ditching And WITHOUT Sinuosity Then Score=0*)*					
10) Is A 2nd Order Or Greater Channel (As Indicated On Topo Map And/Or In Field) Present?	**Yes**	**3**	**No**	0	3
PRIMARY GEOMORPHOLOGY INDICATOR POINTS:					21
II. Hydrology	**Absent**	**Weak**	**Moderate**	**Strong**	
1) Is There A Groundwater Flow/Discharge Present?	0	**1**	2	3	1
PRIMARY HYDROLOGY INDICATOR POINTS:					1
III. Biology	**Absent**	**Weak**	**Moderate**	**Strong**	
1) Are Fibrous Roots Present In Streambed?	3	2	**1**	0	1
2) Are Rooted Plants Present In Streambed?	3	2	**1**	0	1
3) Is Periphyton Present?	0	**1**	2	3	1
4) Are Bivalves Present?	**0**	1	2	3	0
PRIMARY BIOLOGY INDICATOR POINTS:					3
Secondary Field Indicators:					
I. Geomorphology	**Absent**	**Weak**	**Moderate**	**Strong**	
1) Is There A Head Cut Present In Channel?	0	0.5	**1**	1.5	1
2) Is There A Grade Control Point In Channel?	0	0.5	**1**	1.5	1
3) Does Topography Indicate A Natural Drainage Way?	0	0.5	1	**1.5**	1.5
SECONDARY GEOMORPHOLOGY INDICATOR POINTS:					3.5
II. Hydrology	**Absent**	**Weak**	**Moderate**	**Strong**	
1) Is This Year's (Or Last's) Leaflitter Present In Streambed?	1.5	**1**	0.5	0	1
2) Is Sediment On Plants (Or Debris) Present?	**0**	0.5	1	1.5	0
3) Are Wrack Lines Present?	0	0.5	**1**	1.5	1
4) Is Water In Channel *And* >48 Hrs. Since Last Known Rain? (*NOTE: If Ditch Indicated In #9 Above Skip This Step And #5 Below*)	0	0.5	1	**1.5**	1.5
5) Is There Water In Channel During Dry Conditions Or In Growing Season)?	0	0.5	1	**1.5**	1.5
6) Are Hydric Soils Present In Sides Of Channel (Or In Headcut)?	**Yes**	**1.5**	**No**	0	1.5
SECONDARY HYDROLOGY INDICATOR POINTS:					6.5
III. Biology		**Absent**	**Weak**	**Moderate**	**Strong**	
1) Are Fish Present?		0	0.5	**1**	1.5	1
2) Are Amphibians Present?		**0**	0.5	1	1.5	0
3) Are Aquatic Turtles Present?		**0**	0.5	1	1.5	0
4) Are Crayfish Present?		**0**	0.5	1	1.5	0
5) Are Macrobenthos Present?		0	0.5	1	**1.5**	1.5
6) Are Iron Oxidizing Bacteria/Fungus Present?		**0**	0.5	1	1.5	0
7) Is Filamentous Algae Present?		**0**	0.5	1	1.5	0
8) Are Wetland Plants In Streambed?	SAV	Mostly OBL	Mostly FACW	Mostly FAC	Mostly FACU/UPL	
	2	1	0.75	0.5	0	0.5
(NOTE: If Total Absence Of All Plants In Streambed As Noted Above Skip This Step UNLESS SAV Present*)*						
SECONDARY BIOLOGY INDICATOR POINTS:						3
TOTAL POINTS (Primary + Secondary)	(If Greater Than Or Equal To 19 Points The Stream Is At Least Intermittent)					38

USACE AID#_____ DWQ #_____ Site #____ (indicate on attached map)

STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:

1. Applicant's name: NCDOT B-4037
2. Evaluator's name: N Webster
3. Date of evaluation: 10/10/03
4. Time of evaluation: 3:00 pm
5. Name of stream: South Homing Creek
6. River basin: French Broad
7. Approximate drainage area: ~
8. Stream order: 3+
9. Length of reach evaluated: 500'
10. County: Buncombe
11. Site coordinates (if known): prefer in decimal degrees.
12. Subdivision name (if any): n/a

Latitude (ex. 34.872312): 35.5555 Longitude (ex. -77.556611): 82.7167

Method location determined (circle): GPS (Topo Sheet) Ortho (Aerial) Photo/GIS Other GIS Other_____

13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):

Bridge no. 262 on SR 3452

14. Proposed channel work (if any): Bridge replacement
15. Recent weather conditions: clear
16. Site conditions at time of visit: clear
17. Identify any special waterway classifications known: ___Section 10 ___Tidal Waters ___Essential Fisheries Habitat

X Trout Waters ___Outstanding Resource Waters ___Nutrient Sensitive Waters ___Water Supply Watershed ____(I-IV)

18. Is there a pond or lake located upstream of the evaluation point? YES (NO) If yes, estimate the water surface area:_____
19. Does channel appear on USGS quad map? (YES) NO
20. Does channel appear on USDA Soil Survey? (YES) NO
21. Estimated watershed land use: 20 % Residential 10 % Commercial ___% Industrial 30 % Agricultural

40 % Forested ___% Cleared / Logged ___% Other (_____)

22. Bankfull width: 40+'
23. Bank height (from bed to top of bank): 3.5'
24. Channel slope down center of stream: ___Flat (0 to 2%) X Gentle (2 to 4%) ___Moderate (4 to 10%) ___Steep (>10%)
25. Channel sinuosity: ___Straight X Occasional bends ___Frequent meander ___Very sinuous ___Braided channel

Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.

Total Score (from reverse): 83 **Comments:** Jurisdictional channel.

Evaluator's Signature _____ **Date** 10/10/03

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

STREAM QUALITY ASSESSMENT WORKSHEET

	#	CHARACTERISTICS	ECOREGION POINT RANGE			SCORE
			Coastal	Piedmont	Mountain	
PHYSICAL	1	**Presence of flow / persistent pools in stream** (no flow or saturation = 0; strong flow = max points)	0 – 5	0 – 4	0 – 5	5
	2	**Evidence of past human alteration** (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	4
	3	**Riparian zone** (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	4
	4	**Evidence of nutrient or chemical discharges** (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	4
	5	**Groundwater discharge** (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0 – 4	0 – 4	4
	6	**Presence of adjacent floodplain** (no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	2
	7	**Entrenchment / floodplain access** (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0 – 2	1
	8	**Presence of adjacent wetlands** (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0 – 4	0 – 2	1
	9	**Channel sinuosity** (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0 – 3	2
	10	**Sediment input** (extensive deposition = 0; little or no sediment = max points)	0 – 5	0 – 4	0 – 4	2
	11	**Size & diversity of channel bed substrate** (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0 – 5	4
STABILITY	12	**Evidence of channel incision or widening** (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	3
	13	**Presence of major bank failures** (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	4
	14	**Root depth and density on banks** (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	4
	15	**Impact by agriculture, livestock, or timber production** (substantial impact = 0; no evidence = max points)	0 – 5	0 – 4	0 – 5	4
HABITAT	16	**Presence of riffle-pool/ripple-pool complexes** (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0 – 5	0 – 6	6
	17	**Habitat complexity** (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0 – 6	0 – 6	6
	18	**Canopy coverage over streambed** (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	4
	19	**Substrate embeddedness** (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	4
BIOLOGY	20	**Presence of stream invertebrates** (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0 – 5	4
	21	**Presence of amphibians** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	3
	22	**Presence of fish** (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	4
	23	**Evidence of wildlife use** (no evidence = 0; abundant evidence = max points)	0 – 6	0 – 5	0 – 5	4
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on first page)				83

* These characteristics are not assessed in coastal streams.