

NC 60
From Georgia State Line
to US 64-74
Cherokee County
State Project 6.911010
T.I.P. #R-2110

ADMINISTRATIVE ACTION

STATE ENVIRONMENTAL ASSESSMENT

N. C. Department of Transportation

Division of Highways

In Compliance with the North Carolina Environmental Policy Act

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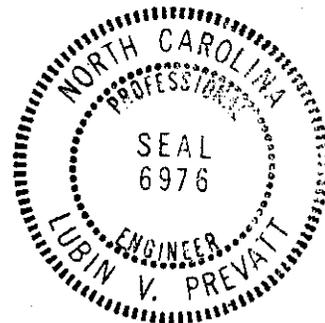


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I. NEED FOR THE PROPOSED PROJECT

A. General Description

This report presents the results of a study of possible improvements to a segment of NC 60 (See Figure 1). The studied section begins at the Georgia state line and ends at US 64-74, which is a distance of five miles.

Within the project limits, NC 60 is classified as a Rural Major Collector in the North Carolina Functional Classification System. It is also designated as Federal-Aid route 2711.

B. Historical Resume and Project Status

The proposed project is included in the 1991-1997 North Carolina Transportation Improvement Program with an estimated cost of \$10,050,000. Right of Way acquisition and construction are scheduled for Fiscal Years 1993 and 1996, respectively.

C. Characteristics of the Existing Facility

1. Cross-Section

The existing roadway consists of 18 feet of pavement and varies from 2-foot to 3-foot grassed shoulders.

2. Right of Way

The existing right of way width is 30 feet (maintained).

3. Horizontal and Vertical Alignment

Rolling terrain exists along the subject section of NC 60. Horizontal alignment is judged to be fair. Vertical alignment is judged to be fair to poor. Approximately 85% of the segment has restricted passing sight distances of less than 1500 feet (Figure 2 offers photos of existing conditions).

4. Speed Limit

The subject section of NC 60 has a 55 mph posted speed limit.

5. Intersecting Roads

All intersecting roads connect with NC 60 at grade. The intersections are stop sign controlled.

6. Access Control

No access control exists along the project.

7. Degree of Roadside Development

Roadside development is very light throughout the project area.

8. Drainage Structures

The existing roadway crosses Rapiers Creek, Rapiers Mill Creek, and Nottely River. Characteristics of structures at these crossings are given below:

Bridge No. 28 over Rapiers Creek has a travelway width of 20.2 feet and is 52 feet in length. The bridge has a sufficiency rating of 54.2, and an estimated remaining life of 14 years.

Bridge No. 49 over Rapiers Mill Creek has a travelway width of 20.2 feet and is 69 feet in length. The bridge has a sufficiency rating of 48.4, and an estimated remaining life of 14 years.

Bridge No. 55 over Nottely River has a travelway width of 20 feet and is 160 feet in length. The bridge has a sufficiency rating of 56.9, and an estimated remaining life of 22 years.

9. Terminals of the Project

The southern terminal of the proposed project is at the Georgia State Line. The existing cross section consists of 24 feet of pavement and 8-foot shoulders (2' paved).

The northern terminal of the proposed project is US 64-74. The existing cross section consists of 2 24' pavements divided by a 36' median, and 10 feet of outside shoulder area (4' paved).

D. Traffic Volumes and Capacity Analysis

Existing traffic volumes along the studied section of NC 60 range from 2100 to 2500 vehicles per day (See Figure 4). Presently, an average of 275 vehicles per hour are using the facility during peak traffic periods. An analysis of the existing two-lane roadway indicates that the flow rate for level of service C is approximately 491 vehicles per hour and 1921 vehicles per hour for level of service E. The subject two-lane section of NC 60 is currently operating at a level of service C. However, if upgraded to a 24-foot cross section as proposed this section will operate at level of service B.

The design year (2115) average daily traffic volumes are estimated to range from 4100 to 4800 vehicles per day (See Figure 4). Based on the analysis of future traffic volumes, the Level of Service of the existing facility, if not improved, would decline to D in the design year. If the existing facility is upgraded to a standard 24-foot cross section as proposed, it will operate at a Level of Service B through the design year.

Currently at the NC 60 US 64-74 intersection all moves are operating at a Level of Service A with the exception of the left turn movement (from NC 60 onto US 64 going west). Based on an estimated 15 turns at peak hour it is operating at Level of Service D. No signal is recommended for this intersection at this time. However, it is anticipated that a signal will be provided at this intersection during the design life of the project. Capacity analysis shows a signal will provide a level of service A for the design life.

E. Accident Study

An accident study of the existing highway was conducted by the Traffic Studies Section of the Traffic Engineering Branch of the NCDOT for the time period from January 1, 1987 through April 30, 1990. Summarized statistics are as follows:

	NC 60 From Georgia State Line to US 64-74	Statewide Average for Similar NC Primary Routes
Total Accidents	35	N/A
Fatal Accidents	0	N/A
Non-Fatal Injury Accidents	20	N/A
Total Accident Rate (ACC/100MVM)*	330.50	210.4
Fatal Accident Rate (ACC/100MVM)	0.00	2.7
Non-Fatal Injury Accident Rate (ACC/100MVM)	188.86	99.7

*ACC/100 MVM = Accident per 100 Million Vehicle Miles.

The accident analysis shows that the studied segment has a total accident rate and non-fatal injury accident rate above the statewide averages for similar two-lane NC primary routes. A further review of the accident data shows that "running off road" (46%), "rear-ends" (17%), and "angles" (14%) constitute the highest percentage of accidents types occurring on this segment of NC 60.

F. School Bus Data

Presently there are 3 school buses using this route.

II. DESCRIPTION OF THE PROPOSED ACTION

A. General Description

The North Carolina Department of Transportation proposes to improve NC 60 to a 24-foot pavement plus 8-foot shoulders between the Georgia state line and NC 64-74 in Cherokee County (See Figure 3). The total length of the subject project is 5 miles.

B. Summary of Proposed Action

1. Cross-Section

It is recommended that the studied roadway be widened to a 24-foot pavement, with 8-foot shoulders.

2. Right of Way

The acquisition of adequate right of way to contain the recommended cross-section is proposed. A Right of Way width of 100 feet plus easements is anticipated to contain construction.

3. Proposed Design Speed

The design speed for the roadway improvements is proposed to be 60 mph. This speed should not be confused with the posted speed limit, as the design speed reflects the geometrics of the highway. It is anticipated that the proposed facility will have a posted 55 mph speed limit.

4. Access Control

No control of access is recommended.

5. Permits

Based upon the estimated impacts to wetlands, it is anticipated that the Nationwide Permits will be applicable for the proposed action. In order for the project's impact to qualify for consideration under the Nationwide Permit, special conditions, 330.5(b), must be followed and special management practices (330.6) must be adopted. Final judgement concerning specific permit applicability will be made when final designs are completed, so that actual impacts can be verified. Final discretionary permit authority rests with the COE.

6. Structures Required

The existing structures over Rapiers Creek, Rapiers Mill Creek, and Nottely River will be replaced.

SITE NO.	STREAM NAME	EXISTING STRUCTURE	RECOMMENDED STRUCTURE
1	S. Fork Rapier Mill Creek	52' bridge	80' bridge
2	Rapier Mill Ck.	69' bridge	100' bridge
3	Nottely River	160' bridge	180' bridge
4	Nottely River Tributary	1 @ 5' x 5' RCBC	Retn. & Extn.
5	Nottely River Tributary	1 @ 5' x 4' RCBC	1 @ 71" RCP

7. Cost Estimates

Construction
Structures
Right of Way
Total

\$5,691,700 ↑
808,300 ↓
1,662,000 ←
\$8,162,000

April 88
1,100,000
210,000 Util.
123,000 Relo.
600,000 Relo.
2,033,000

April 91
925,000 Land
132,000 Relo.
380,000 Util.
225,000 A/c
1,662,000

III. ALTERNATIVES TO THE PROPOSED ACTION

A. Alternative Improvements along the Existing Facility

In order to determine the best method of improving NC 60 from the Georgia State Line to US 64-74, studies were conducted in the project area to investigate the costs and impacts of several alternatives. The studies reviewed the utility, capacity, safety, and cost-effectiveness of the various alternatives. The effects of the alternatives as they relate to the disruption of the local community, the relocation of families and businesses, and the impact on the natural environment were also considered.

After examining all of the possible methods of improving the subject section of NC 60, the NCDOT determined that widening the existing facility to a standard two-lane cross-section and improving passing sight distance offered the most feasible and cost-effective choice.

B. "No Build" Alternative

The "no build" alternative would avoid some negative impacts of the proposed project, such as the disruption of the natural environment caused by the use of additional land and an increased noise level. However, benefits of the proposed action, such as an improved and safer facility and enhancement of the economic environment, would also be eliminated. The long term benefits resulting from the improvement of the NC 60 facility will more than compensate for any unavoidable adverse impacts. Consequently, a "no build" decision is not considered prudent and is not recommended.

C. Postponement of the Proposed Action

Postponing the implementation of the proposed improvements is not considered a prudent course of action. The existing facility is currently an 18-foot roadway with 2 to 3-foot shoulders and an eighty-five percent (85%) "no-passing" zone. This is not considered desirable and is not in conformance with the standard 24-foot cross-section.

D. Corridor on New Location

A relocation alternative does not offer any advantages over the recommended improvement. The existing highway is a direct route between the project terminals, while the relocation alternative is not direct and would be more environmentally damaging and costly.

IV. SOCIAL, ECONOMIC, AND ENVIRONMENTAL ASPECTS CONSIDERED

A. Social Impacts

The proposed action will not disturb social cohesion. The project will not interfere with public facilities and services, nor will it divide any neighborhoods or communities.

1. Land Characteristics

a. Scope and Status of Planning

The proposed improvement is located within the jurisdiction of Cherokee County, which does not currently engage in land use planning or zoning activities.

The project also lies within the boundary of the Nantahala National Forest, but does not directly affect land owned or managed by the National Forest Service. 1986-2000 The Land and Resources Management Plan: directs land use activities for the Nantahala and Pisgah National Forests.

b. Existing Land Use

The land adjacent to NC 60, north from the Georgia State Line, to just beyond SR 1123, is used predominantly for agriculture. There is also residential structures and accompanying accessory buildings along the proposed project. Portions of the Nottely River floodplain adjacent to US 60, land at the intersections of US 60 and SR 1598, and US 60 and SR 1626 are also farmed. The remaining land along US 60 is wooded, with residential structures set back several hundred feet from the existing road. Some small farms are interspersed among the forested areas.

c. Farmland

The Governors Executive Order Number 96 and the National Environmental Protection Act require that state and federal agencies consider the potential impact on farmland caused by construction and land acquisitions. The Soil Conservation Service was contacted to determine whether farmland, as defined by the Farmland Protection Policy Act, exists within the project area. To date, no soil survey has been completed for Cherokee County. Therefore, the Soil Conservation Service is unable to determine the existence of farmland soils in the vicinity of the project (See page A-16). Therefore, the project is exempt from further consideration under the Farmland Protection Policy Act and North Carolina Executive Order No. 96.

2. Neighborhood Analysis

Cherokee County is in the western section of the state and is bounded by Graham, Macon, and Clay Counties, the State of Georgia and the State of Tennessee. Based on the 1980 US Census, Cherokee County has a total population of 18,933 persons.

The proposed project site is characterized by a mountainous rural setting. Development such as homes and commercial establishments are scattered at various intervals along the proposed project site.

3. Relocation of Individuals and Families

There will be an estimated 5 residences and 1 businesses displaced along the proposed project. A relocation summary report giving a demographic profile of the relocatees is included in the Appendix.

It is the policy of the NCDOT to ensure that comparable replacement housing will be available prior to construction of federally assisted projects. Furthermore, the North Carolina Board of Transportation has the following three programs to minimize the cost of relocation:

- * Relocation Assistance,
- * Relocation Moving Payments, and
- * Relocation Replacement Housing Payments or Rent Supplement.

With the Relocation Assistance Program, experienced NCDOT staff will be available to assist displacees with information such as availability and prices of homes, apartments, or businesses for sale or rent, and financing or other housing programs. The Relocation Moving Payments Program, in general, provides for payment of actual moving expenses encountered in relocation. Where displacement will force an owner or tenant to purchase or rent property of higher cost or to lose a favorable financing arrangement (in case of ownership), the Relocation Replacement Housing Payments or Rent Supplement Program will compensate up to \$22,500 to owners who are eligible and qualify, and up to \$5,250 to tenants who are eligible and qualify.

The relocation program for the proposed action will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646), and the North Carolina Relocation Assistance Act (GS-133-5 through 133-17). The program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations for relocation assistance advisory services without regard to race, color, religion, sex, or national origin. The NCDOT will so schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing which meets decent, safe, and sanitary standards. The displacees are given at least a 90-day written notice after NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities.

Rent and sale prices of replacement housing offered will be within the financial means of the families and individuals displaced, and be reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations, and farm operations in searching for and moving to replacement property.

All tenant and owner residential occupants who may be displaced will receive an explanation regarding all available options, such as (1) purchase of replacement housing, (2) rental of replacement housing, either private or public, or (3) moving existing owner-occupant housing to another site (if possible). The relocation officer will also supply information concerning other state or federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

The Moving Expense Payments Program is designed to compensate the displacee for the costs of moving personal property from homes, businesses, non-profit organizations, and farm operations acquired for a highway project. Under the Replacement Program for Owners, NCDOT will participate in reasonable incidental purchase payments for replacement dwellings such as attorney's fees, surveys, appraisals, and other closing costs. If applicable, the NCDOT will pay for any increased interest expenses for replacement dwellings. Reimbursement to owner-occupants for replacement housing payments, increased interest payments, and incidental purchase expenses may not exceed \$22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed \$5,250, to rent a replacement dwelling or to make a down payment, including incidental expenses, on the purchase of a replacement dwelling. The down payment is based upon what the state determines is required.

It is a policy of the state that no person will be displaced by the NCDOT's federally-assisted construction projects unless and until comparable or adequate replacement housing has been offered or provided for each displacee within a

reasonable period of time prior to displacement. No relocation payment received will be considered as income for the purposes of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law.

Last Resort Housing is a program used when comparable replacement housing is not available or when it is unavailable within the displacee's financial means, and the replacement payment exceeds the federal and state legal limitation. The purpose of the program is to allow broad latitudes in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided. It is not felt that this program will be necessary since it is used as the name implies, only as a "last resort". There appears to be adequate opportunities for relocation within the area. However, it will be available if necessary.

4. Public Facilities

The Culberson Post Office is located along the proposed project site.

5. Cultural Resources

a. Architectural and Historical

This project is subject to review pursuant to North Carolina General Statutes 121-12(a) which requires that if a state action will have an adverse effect upon a property listed in the National Register of Historic Places, the North Carolina Historical Commission will be given an opportunity to comment.

The area of potential effect on historic architectural properties was delineated, and the maps and files of the North Carolina State Historic Preservation Officer (SHPO) were consulted. This search revealed no properties listed in the National Register located within that area of potential effect.

These results were conveyed to the State Historic Preservation Officer (SHPO), and he concurred with these findings. (See page A-32). This completes compliance with GS 121-12(a).

b. Archaeological

This project was coordinated with the State Historic Preservation Officer (SHPO) in accordance with the procedures for compliance with the North Carolina Environmental Policy Act (GS 113) and the North Carolina Historic Commission (GS 121.12). The SHPO requested that

this archaeological study be conducted in order to evaluate the project's possible impact upon sites listed in the National Register of Historic Places.

The project area was surveyed on August 30, 1990, by the NCDOT staff Archaeologist. The results of the archaeological study indicate that the project will have no impacts upon any archaeological sites that are eligible for, or are listed on, the National Register of Historic Places.

In the Nottely River vicinity, no artifacts or cultural deposits were found within 100 feet of the existing roadway. All of the subsurface tests were negative, no artifacts or cultural deposits were present. However, one artifact, a quartz projectile point tip fragment (possibly a Pisgah Triangular type with missing stem), was found on the ground surface approximately 125 feet east of the roadway. No other artifacts were discovered in the vicinity. The place where the artifact was found is on a small bench or terrace that protrudes from the slope above the floodplain. This may be all that remains of site 31Ce42.

During the reconnaissance of the remainder of the project area, no tracts with high potential for significant cultural remains (historic or prehistoric) were noted. Since the project (as currently planned) will have no effects on any archaeological sites that are on or are eligible for listing on the National Register of Historic Places, no further archaeological work is recommended.

B. Economic Impacts

In the month of July 1990, Cherokee County had a labor force of 10,400 persons. Of this total, 8,670 persons were employed, leaving an unemployment total of 1,730 persons, or 16.6 percent. It appears that the proposed improvements will not significantly impact the economy.

C. Environmental Impacts

1. Geological Features

The project area consists of rock which is gray-green, mica schist with thin interbeds of quartzite. Most of the material on the project is soft weathered rock or hard saprolite. Very little of the exposed rock in the cuts is fresh rock. The dip angles of the rock range from 55 to 60 degrees southeast while the regional strike in the area is North 50-60 degrees East.

As NC 60 trends northeast-southeast, the road cuts on the northwest side have fallen back to the steeply dipping foliation planes. However, on the southeast side of NC 60, the foliation planes dip into the cut slopes, which are also very steep. Though these cuts are very steep on both sides, they are vegetated and appear stable

On this project, the majority of work will consist of widening the existing very narrow cuts. Past improvements to NC 60 has left as little as 3-4 feet between the toe of the slope and the pavement's edge. At most, there is only 5-6 feet from the edge of pavement to the cut slope.

No acidic rock is anticipated on the project and no underground storage tanks should be affected by the project. There are three stream crossings where the existing narrow bridges may have to be widened or replaced.

2. Plant Communities

a. Uplands

Upland communities likely to be impacted by the proposed project are mostly fringed areas of upland forests and unmaintained roadside shoulder areas, including the fill slope zones. Since the proposed action is likely to impact areas less than 25 feet outside of the existing edge of pavement, most of these impacts will be experienced by forested fringe areas or open habitat. Some forested strips may be cut particularly where construction easements are necessary to accommodate realignments and drainage or slope modifications.

Forests are either stands of mixed hardwoods, relatively pure white pine, or areas of pine-mixed hardwood or mixed hardwood pine. Except for isolated stands, most areas had been logged in recent years and climax character was not easy to discern. Because of their relatively young age, the hardwood forests were characteristic of several communities. Since almost all of the anticipated impacts to these forests are in fringe zones, these communities will be designated as Unclassified Fringe Communities.

b. Unclassified Fringe Community

This community, located at the edges of maintained shoulder and slope areas on roadside ditches, consists of large numbers of herbaceous plants, intermixed with a less diverse woody flora. Dominance in this fringe community is difficult to specify for herbaceous flora, but white pine (Pinus strobus), Virginia pine (Pinus virginiana), short needle pine (Pinus echinata), flowering dogwood (Cornus

florida), tulip tree (Liiodendron tulipifera), black cherry (Prunus serotina) and white oak (Quercus alba) were the dominant canopy and sapling class plants.

Impacts to this fringe community are likely to be minor. Some upland habitat will be removed; however, successional recruitment of indigenous flora is likely to rapidly supplant post-construction erosion control planting in roadside areas.

c. Animal Life

The forested types in and around the project area are homing sites for a variety of wildlife. Such mammals as opossum (Didelphis virginiana), gray squirrel (Sciurus carolinensis), short-tailed shrew (Blarina brevicauda), white-footed mouse (Peromyscus leucopus), southern flying squirrel (Graecomys leucopus), eastern chipmunk (Tamias striatus), raccoon (Procyon lotor), bobcat (Lynx rufus), eastern cottontail (Sylvilagus floridanus), striped skunk (Mephitis mephitis), white-tailed deer (Odocoileus virginianus) and occasional woodchuck (Marmota monax), longtail weasel (Mustela frenata) and gray fox (Urocyon cinereoatgenteus) are likely to be common inhabitants of the area. Amphibians common to the area include hellbender (Cryptobranchus alleganiensis), eastern newt (Notophthalmas viridescens), common mudpuppy (Necturus maculosus), Cherokee salamander (Desmognathus aeneus) and spotted salamander (Ambystoma maculatum), as well as American toad (Bufo americanus), northern cricker frog (Acris crepitans), spring peeper (Hyla crucifer) and bullfrog (Rana catesbeiana). Likely reptiles would include snapping turtle (Chelydra serpentina), eastern fence lizard (Sceloporus undulatus), five-lined skink (Eumeces fasciatus), corn snake (Elaphe guttata), rat snake (E. obsoleta), eastern king snake (Lampropeltis getulus), northern water snake (Nerodia sipedon), copperhead (Aqkistrodon contortrix) and timber rattlesnake (Crotalus horridus). Common birds in the vicinity of the project would include common flicker (Colaptes auratus), common nighthawk (Chordeiles minor), blue-jay (Cyanocitta cristata), common crow (Corvus brachyrhynchos), Carolina chickadee (Parus caroliniensis), white-breast nuthatch (Sitta caroliniensis), eastern bluebird (Sialia sialis) and cooper's hawk (Accipiter cooperii).

Although the proposed action does not pose a significant threat to terrestrial fauna, it is likely to have substantial effects on the aquatic environment. Demolition activities are likely to place sediment into the water column, as will pier/end bent installation. These activities can be devastating to local populations of aquatic organisms, including sport fish such as smallmouth

bass, trout and bream (or sunfish), as well as invertebrates such as mollusks, crustacea and insect larvae, which are important parts of the aquatic food chain.

Based upon information supplied by the NCWRC, the streams in the area support a spring spawning run of two important game fish: whitebass and walleye. Critical months during these spawning activities are February through April. Construction activities that are likely to impact these streams should be curtailed during these months to avoid disturbing to these important fishery resources.

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 these adoptive communities will result in a redefinition of population equilibria.

3. Natural Resources

a. Man-dominated Systems

Predominant vegetation varies at each impacted site, but lawns, pastured areas and roadside shoulders/slopes have tall fescues/creeping fescues/chewing fescues (*Festuca* spp.) and bluegrasses (*Poa* spp.), or combinations thereof, as groundcovers. Other planted areas include zones of ornamental trees, shrubs and herbaceous plantings associated with homes/farm structures. These plantings include a variety of oak (*Quercus* spp.), maples (*Acer* spp.), white pine (*Pinus strobus*), walnut (*Juglans nigra*), Canadian hemlock (*Tsuga canadensis*), white poplar (*Populus alba*), bear-grass (*Yucca filamentosa* var. *smalliana*), and other ornamentals.

These areas, considered highly modified and disturbed, are attractive to a range of opportunistic wildlife which experience increased fitness in these areas. Their adaptive behavior has enabled them to enjoy a relatively safe existence at the fringes of man's domain, often cohabiting the same structure, as rodents do. Impacts on these habitat zones are not likely to be severe in terms of diminishing populations. Some temporary fluctuation in populations of animal groups which utilize these areas is anticipated during the course of construction, but post-project levels are expected to return to normal.

The so-called natural communities, which the proposed alignment is likely to impact, are only natural in the relative sense. They are in various stages of succession, recovering from previous disturbances, whether from

forestry practices, construction/development activities. They are indeed natural when contrasted with a parking lot or a well-groomed residential site, but are far from natural in the context of "virgin", old-growth, or native.

b. Federally-listed Species

Plants and animals with federal protection statuses of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of the Endangered Species Act. In a September 1990 letter from USFWS, that agency informed NCDOT that neither E, T, PE, nor PT species are likely to be encountered by the proposed project. Although not protected by federal law, the USFWS letter did report that, Four Status Review (SR) species are found in the general geographic area. Table 3 lists these species and their status.

Table 3. Federal SR species listed for study area by USFWS.

Scientific Name	Common Name	US Status
<u>Plecotus rafinesquii</u>	Rafinesque's Big-eared Bat	C2
<u>Cryptobranchus alleganiensis</u>	Hellbender	C2
<u>Percina squamata</u>	Olive Darter	C2
<u>Platanthera integrilabia</u>	White Fringeless Orchid	C2

C2 (Candidate 2) species are those for which there is some evidence of vulnerability, but for which there are not enough data to support listing as endangered or threatened at this time. Listing is "warranted but precluded by other pending proposals of higher priority."

No efforts were made to confirm or refute the possible occurrence of either of these species within the study area.

c. State-listed Species

Plants or animals with state designations of Endangered (E), Threatened (T) or Special Concern (SC) are granted protection by the State Endangered Species Act (G.S. 113-331 to 113-337) and the State of North Carolina Plant Protection and Conservation Act of 1979 (G.S. 196:106-202.12 to 106-202.19), administered and enforced by the NC Wildlife Resources Commission and the NC Department of Agriculture, respectively.

Records in the NC Natural Heritage Program files do not report any plant or animal species with a NC status of

Endangered (E) or Threatened (T), but 2 amphibians with Special Concern (SC) status, the mole salamander (Ambystoma talpoideum) and the four-toes salamander (Hemidactylum scutatum) are listed as occurring in the area of the proposed action.

No efforts were made to locate these aquatic organisms in streams crossed by the project.

3. Soils

A published soil survey is not available for Cherokee County, but soil information was obtained from the SCS office in Murphy. Eight native soil series exist in areas adjacent to the roadway. These soils include Junaluska, Tsali, Arkaqua, Toxaway, Rosman, Hemphill, Dillard and Shelocta. Junaluska and Tsali soils are generally located in upland areas, whereas Arkaqua, Toxaway and Rosman soils are found in floodplain locations. Hemphill, Dillard and Shelocta series are mostly associated with low stream terraces and drainageways. Toxaway loam is listed as a hydric soil and Arkaqua loam often has hydric inclusions of Toxaway soils.

4. Water Quality

Two major stream crossings are anticipated, Nottely River and Rapier Mill Creek, as well as several smaller, unnamed drainages, most of which are tributaries to the main streams, or are either seepages or intermittent, "wet weather" streams. Rapiers Mill Creek, the smaller of the named streams, flows from its headwaters into Nottely River, which ultimately empties into the Hiwassee River. These streams are given a "Best Usage" classification of C. Class C fresh waters are best suited for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture.

5. Wetlands

The information in the table below provides estimates of the anticipated magnitude of impacts at each wetland site. Wetland sites are shown on Figure 3.

Summary of likely Impacts to Wetlands along NC 60

WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT (sq. ft.)
1, 2, 6-9, 11-14	(Pp) Drainage	800 (per site)
3	(Pa) Drainage	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	Pastureland	15000

Note: Pp and Pa denote perpendicular and parallel drainages, respectively.

Wetlands are variously defined, although ecologically, they tend to be ecotones, which are transitional areas between uplands and deeper water systems. These areas can be important to wildlife and, depending on individual attributes, can serve to buffer flood flow, remove pollutants from surface waters, recharge subsurface water tables. Jurisdictional wetlands are specifically defined by CFR 328.3 (b) (Federal Interagency Committee for Wetland Delineation, 1989).

Several relatively small wetland areas lie adjacent to the roadway. Most of these areas are associated with small tributary or intermittent stream channels which bisect the roadbed via corrugated metal pipe. The only other wetland type is a pasture site, adjacent to the highway on the west side, south of SR 1122. All three major stream crossing involve bank-to-bank wetlands only. No floodplain wetlands are apparent at any of these sites.

All sites are highly disturbed excavated channels or pastureland. Dominant conspicuous plants in the vicinity of these wetlands include box elder (Acer Negundo) red maple (Acer rubrum), black willow (Salix nigra), silky dogwood (Cornus amomum), touch-me-not (Impatiens pallida), branch alder (Alnus serrulata), cane (Arundinaria gigantea) elderberry (Sambucus canadensis), cardinal flower (Lobelia cardinalis) blue lobelia (L. syphilitica) knotweed (Polygonum pennsylvanicum), sedges (Cyperus spp. an Carex spp.), rushes (Juncus spp.) and water hemlock (Cicuta maculata).

Impacts on these wetlands are likely to be relatively minor. In the case of the stream channel fringe wetlands, those channels which lie parallel to the roadbed are likely to be relocated outside the impact zone. It is anticipated that the wetlands which derive from the saturated soils adjacent to these channels will be reestablished following channel relocation. Impacts on the pastureland wetland is likely to result in the conversion of farm-use land to roadbed, although impacts to natural communities is negligible. Wetland sites are shown on Figure 3. The Nationwide Permit is anticipated to be applicable for wetland impacts caused by the project. No other special permits are anticipated to be required. NCDOT Best Management Practices will be used to minimize and avoid environmental impacts associated with this project.

6. Special Commitments

NCDOT proposes that no construction will be conducted in the streams between February 15 and May 15 of any year without prior approval of the N. C. Wildlife Resources Commission.

7. Flood Hazard Evaluation

Cherokee County is a participant in the National Flood Insurance Program. Figure 5 shows the limits of the 100-year flood boundaries for South Fork Rapiel Mill Creek, Rapiel Mill Creek, and Nottely River. The terrain in the vicinity of the project is a rolling mountainous with natural draws and streams located such that the proposed project can be drained without difficulty.

Ground water and existing drainage patterns will not be significantly affected by the project construction. Siltation of adjacent areas and streams due to project construction will be kept to a minimum by the use and maintenance of the standard erosion control measures and devices. None of the streams involved in the proposed project limits are designated as a 'trout stream'.

8. Traffic Noise Analysis

A traffic noise analysis was performed to determine the effect of the widening and segmental relocation of NC 60 in Cherokee County on noise levels in the immediate project area between the Georgia State Line and US 64-74. The investigation included an inventory of existing noise sensitive land uses and a field survey of ambient (existing) noise levels in the study area. It also included a comparison of the predicted noise levels and the ambient noise levels to determine if traffic noise impacts can be expected to result from the proposed project. Traffic noise impacts were determined from the current procedures for the abatement of highway traffic noise and construction noise, appearing as Part 772 of Title 23 of the Code of Federal Regulations. Where traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts are considered.

CHARACTERISTICS OF NOISE

Noise is basically defined as unwanted sound. It is emitted from many sources, including airplanes, factories, railroads, power generation plants and highway vehicles. Highway noise, or traffic noise, is usually a composite of noises from engine exhaust, drive train, and tire-roadway interaction.

The magnitude of noise is usually described by its sound pressure. Since the range of sound pressures varies greatly, a logarithmic scale is used to relate sound pressures to some common reference level, usually the decibel (db). Sound pressures described in decibels are called sound pressure levels and are often defined in terms of frequency weighted scales (A, B, A, or D).

The weighted "A" scale is used almost exclusively in vehicle noise measurements because it places most emphasis on the frequency range to which the human ear is most sensitive (1,000-6,000 Hertz). Sound levels measured using "A" weighting are often expressed as dbA. Throughout this report, references will be made to dbA, which means an "A" weighted decibel level. Several examples of noise pressure levels in dbA are listed in Table N1 (See page A-2).

A review of Table N1 indicates that most individuals in urbanized areas are exposed to fairly high noise levels from various sources as they go about their daily activities. The degree of disturbance or annoyance of unwanted sound depends essentially on three things: 1) the amount and nature of the intruding noise, 2) the relationship between the background noise and the intruding noise, and 3) the type of activity occurring where the noise is heard.

NOISE ABATEMENT CRITERIA

In order to determine whether highway noise levels are or are not, compatible with various land uses, the Federal Highway Administration (FHWA) has developed noise abatement criteria and procedures to be used in the planning and design of highways. These abatement criteria and procedures are set forth in the aforementioned Federal reference (Title 23 CFR, Part 772). A summary of the noise abatement criteria for various land uses is presented in Table N2. The Leq, or equivalent sound level, is the level of constant sound which, in a given situation and time period, has the same energy as does time-varying sound. In other words, the fluctuating sound levels of traffic noise are represented in terms of a steady noise level with the same energy content.

AMBIENT NOISE LEVELS

Ambient noise measurements were taken in the vicinity of the project to determine the existing background noise levels. The purpose of this noise level information was to quantify the existing acoustic environment and to provide a base for assessing the impact of noise levels for residences, businesses, and other noise sensitive receivers in the vicinity of the project. The existing Leq noise level along NC-60, as measured at 50 feet from the roadway, ranged from 65 dbA in areas just north of the Georgia State Line to 66 dbA near the northern terminus at US-64-74.

PROCEDURE FOR PREDICTING FUTURE NOISE LEVELS

The prediction of highway traffic noise is a complicated procedure. In general, the traffic situation is composed of a large number of variables which describe different cars driving at different speeds through a continually changing highway configuration and surrounding terrain. Obviously, to assess the problem certain assumptions and simplifications must be made.

The procedure used to predict future noise levels in this study was the Noise Barrier Cost Reduction (BCR) Procedure, STAMINA 2.0 and OPTIMA (revised March 1983). The BCR procedure is based upon the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108). The BCR traffic noise prediction model uses the number and type of vehicles on the planned roadway, their speeds, the physical characteristics of the road (curves, hills, depressed, elevated, etc.), receptor location and height, and, if applicable, barrier type, barrier ground elevation, and barrier top elevation.

In this regard, it should be noted that only preliminary alignment was available for use in this noise analysis. The proposed project is to widen and upgrade the existing 2-lane roadway to a 24-foot section with 2-foot paved shoulders and upgrade the horizontal and vertical alignment using minor relocation improvements. The proposed project was modeled assuming no special noise abatement measures would be incorporated. Only those existing natural or man-made barriers which could be modeled were included.

The roadway sections and proposed intersections were assumed to be flat and at-grade. Thus, this analysis represents "worst-case" topographic conditions. The noise predictions made in this report are highway-related noise predictions for the traffic conditions during the year being analyzed.

Peak hour design and Level-of-Service (LOS) C volumes were compared, and the volumes resulting in the noisiest conditions were used with proposed posted speed limits. Thus, during all other time periods, the noise levels will be no greater than those indicated in this report.

The STAMINA 2.0 computer model was utilized to enable the determination of the number of land uses (by type) which, during the peak hour in the design year 2015, would be exposed to noise levels approaching or exceeding the FHWA noise abatement criteria and those land uses predicted to expect a substantial noise increase. The basic approach was to select receptor locations such as 25, 50, 100, 200, 400, 800, and 1600 feet from the center of the near traffic lane (adaptable to both sides of the roadway). The locations of these receptors were determined by the change in projected traffic volumes along the proposed project. The result of this procedure was a grid of receptor points along the project. Using this grid, noise levels were calculated for each identified receptor.

The traffic noise impact of this project, in terms of increased noise levels, is predicted to range between +3 and +6 dbA. When real-life noise is heard, level changes of 2-3 dbA are barely perceptible. A 5 dbA change is more readily noticeable, and a 10 dbA change is judged by most people as a doubling or a halving of the loudness of the sound.

The number of receivers in each activity category that are predicted to approach or exceed the FHWA Noise Abatement Criteria (NAC) is shown in Table N3 (See page A-4). As shown, two receptors (both residences) in the project area are predicted to approach or exceed the NAC. However, no substantial noise level increases are expected along NC 60 as a result of this project. Other information included in Table N3 is the maximum extent of the 72 and 67 dbA noise level contours. This information should assist local authorities in exercising land use control over the remaining undeveloped lands adjacent to the roadway in local jurisdiction and to prevent further development of incompatible activities and land uses.

TRAFFIC NOISE IMPACT ANALYSIS

Traffic noise impacts occur when the predicted traffic noise levels either (a) approach or exceed the FHWA Noise Abatement Criteria (NAC), with approach meaning within 1 dbA of the Table N2 (See page A-3) value, or (b) substantially exceed existing noise levels. The NCDOT definition of substantial increase is displayed at the bottom of Table N2.

Noise abatement must be considered when either of the two preceding conditions exist. Physical measures to abate anticipated traffic noise levels can often be applied with a measurable degree of success by the application of solid mass, attenuable measures which effectively deflect, absorb and reflect highway traffic noise emissions. Solid mass, attenuable measures may include earth berms or artificial abatement walls.

The project will maintain no control of access, most commercial establishments and residences will have direct driveway connections, and all intersections will adjoin the project at grade.

For a noise barrier to provide sufficient noise reduction, it must be high enough and long enough to shield the receptor from significant sections of the highway. Access openings in the barrier severely reduce the noise reduction provided by the barrier. It then becomes economically unreasonable to construct a barrier for a small noise reduction. Safety at access openings (driveways, crossing streets, etc.) due to restricted sight distance is also a concern. Furthermore, to provide a sufficient reduction, a barrier's length would normally be eight times the distance from the barrier to the receptor. For example, a receptor located 50 feet from the barrier would normally require a barrier 400 feet long. An access opening of 40 feet (10 percent of the area) would limit its noise reduction to approximately 4 dBA (FUNDAMENTAL AND ABATEMENT OF HIGHWAY TRAFFIC NOISE, Report No. FHWA-HHI-HEV-73-7976-1, USDOT, chapter 5, section 3.2, page 5 -27). Businesses, churches, and other related establishments located along a particular highway normally require accessibility and high visibility. Solid mass, attenuable measures for traffic noise abatement would tend to disallow these two qualities and thus, would not be acceptable abatement measures in that case.

Based on past project experience, isolated receptors generally require noise barriers which are too costly because of the length and height required for a reasonable noise level reduction. For this reason, no isolated receptors were analyzed in detail for this report.

Based on past project experience, these factors effectively negate the effectiveness of any physical abatement measures and none are recommended for this project.

"DO NOTHING" ALTERNATIVE

The traffic noise impact for the "Do Nothing" alternative was also considered. Due to the nature of the project, with lane widening (no additional through-lane construction) and minor horizontal and vertical alignment alteration, the "Do Nothing" alternative is very similar to the build condition in terms of traffic noise impacts and the effect on the acoustical environment in the project area. Like the "build" scenario, results of "Do Nothing" analysis show that two receptors (both residences) would experience

traffic noise impacts. Furthermore, noise level increases would be on the order of 3-6 dBA. This increase would represent a barely to readily perceptible change in traffic noise levels for those living and working in the project area.

CONSTRUCTION NOISE

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passerby and those individuals living or working near the project, can be expected, particularly from paving operations and from the earth moving equipment during grading operations. Overall, construction noise impacts are expected to be minimal since the project is along the existing roadway, traversing through low-density areas. Considering the relatively short-term nature of construction noise, these impacts are not expected to be substantial. The transmission loss characteristics of nearby wooded areas and structures will likely be sufficient to moderate the effects of intrusive construction noise.

SUMMARY

Based on these preliminary studies, no traffic noise abatement is reasonable or feasible along this project and none is proposed. This evaluation completes the highway traffic noise requirements of Title 23 CFR, Part 772, and unless a major project change develops, no additional reports are required for this project.

9. Air Quality Analysis

Air pollution is the result of industrial emissions and emissions from internal combustion engines. The impact resulting from the construction of a new highway or the improvement of an existing highway can range from aggravating existing air pollution problems to improving the ambient air conditions. Motor vehicles are known to emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), particulate matter, sulfur dioxide (SO₂), and lead (Pb) (listed in order of decreasing emission rate).

The primary pollutant emitted from automobiles is carbon monoxide. Automobiles are considered to be the major source of CO in the project area. For these reasons, most of the analyses presented are concerned with determining expected carbon monoxide levels in the vicinity of the project.

In order to determine the ambient CO concentration at a receptor near a highway, two concentration components must be used: local and background. The local component is due to CO emissions from cars operating on highways in the near vicinity (i.e., distances within 100 meters) of the receptor location. The background component is due to CO emissions from cars operating on streets further from the receptor location.

In this study, the local component was determined using line source computer modeling and the background component was determined by the North Carolina Department of Environment, Health and Natural Resources (NCDEHNR). These two concentration components were determined separately, then added together to determine the ambient CO concentration for comparison to the National Ambient Air Quality Standards (NAAQS).

Automobiles are generally regarded as sources of hydrocarbons and nitrogen oxides. Hydrocarbons and nitrogen oxides emitted from cars are carried into the atmosphere where they react with sunlight to form ozone and nitrogen dioxide. It is the ozone and nitrogen dioxide that are of concern and not the precursor hydrocarbons and nitrogen oxide. Area-wide automotive emissions of HC and NO are expected to decrease in the future due to the continued installation and maintenance of pollution control devices on new cars, and thus help lower ambient ozone and nitrogen dioxide levels.

The photochemical reactions that form ozone and nitrogen dioxide require several hours to occur. For this reason, the peak levels of ozone generally occur 10 to 20 kilometers downwind of the source of hydrocarbon emissions. Urban areas as a whole, not individual streets and highways, are regarded as sources of hydrocarbons. The emissions of all sources in an urban area mix together in the atmosphere, and in the presence of sunlight, the mixture reacts to form ozone, nitrogen dioxide, and other photochemical oxidants. The best example of this type of air pollution is the smog which forms in Los Angeles, California.

Automobiles are not generally regarded as significant sources of particulate matter and sulfur dioxide. Nationwide, highway sources account for less than seven percent of particulate matter emissions and less than two percent of sulfur dioxide emissions. Particulate matter and sulfur dioxide emissions are predominantly the result of non-highway sources (e.g., industrial, commercial, and agricultural). Because emissions of particulate matter and sulfur dioxide from cars are very low, there is no reason to suspect that traffic on the project will cause air quality standards for particulate matter and sulfur dioxide to be exceeded.

Automobiles emit lead as a result of burning gasoline containing tetraethyl lead, which is added by refineries to increase the octane rating of the fuel. Vehicles with catalytic converters burn unleaded gasoline, thereby eliminating lead emissions. Also, the United States Environmental Protection Agency (EPA) has required the reduction in the lead content of leaded gasoline. The overall average lead content of gasoline in 1974 was 2 grams per gallon (gpg). By 1989, this composite average had dropped to 0.01 gpg.

In the future, lead emissions are expected to decrease as more cars use unleaded fuels and as the lead content of leaded gasoline is reduced. Because of these reasons, it is not expected that traffic on the proposed project will cause the NAAQS for lead to be exceeded.

A microscale air quality analysis was performed to determine future CO concentrations resulting from the proposed highway improvements. "CALINE3 - A Versatile Dispersion Model For Predicting Air Pollutant Levels Near Highways And Arterial Streets" was used to predict the CO concentration at the nearest sensitive receptor to the project.

Inputs into the mathematical model to estimate hourly CO concentrations consisted of a level roadway under normal conditions with predicted traffic volumes, vehicle emission factors, and meteorological parameters. The traffic volumes are based on the annual average daily traffic projections. The modeling analysis was performed for a "worst-case" condition, using winds blowing parallel to the roadway. Carbon monoxide vehicle emission factors were calculated for the years 2005 and 2015 using the EPA publication "Mobile Source Emission Factors" and the MOBILE4 mobile source emissions computer model.

The background CO concentrations for the project area was estimated to be 1.9 parts per million (ppm). Consultation with the Air Quality Section, Division of Environmental Management (DEM), North Carolina Department of Environment, Health and Natural Resources (NCDEHNR) indicated that an ambient CO concentration of 1.9 ppm is suitable for most rural environs.

The receptor affected by "worst-case" air quality conditions resulting from building the proposed project is R54 (residence). The "Do Nothing" alternative was also considered for its effects on air quality in the project area. Receptor R54 (residence) will also experience "worst-case" air quality conditions if the project is not built in future years. Predicted 2005 and 2015 one-hour average CO concentrations for the proposed project and the "do nothing" alternative are presented in the table below:

PROJECT ALTERNATIVE	"WORST-CASE" RECEPTOR	ONE-HOUR CARBON MONOXIDE CONCENTRATION (ppm)	
		2005	2015
Widen/realign facility	R54 (RES)	2.2	2.2
"Do Nothing"	R54 (RES)	2.2	2.2

Comparison of the predicted CO concentrations with the NAAQS (maximum 1-hour-35 ppm; 8 hour average - 9 ppm) indicates no violation of these standards. Since the results of the "worst-case" 1-hour CO analysis is less than 9 ppm, it can be concluded that the 8-hour CO level does not exceed the standard. See Tables A1 through A4 for input data (See pages A-5 - A-6).

The project is located within the Western Mountain Air Quality Control Region. The ambient air quality for Cherokee County has been determined to be in compliance with the National Ambient Air Quality Standards. Since this project is located in an area where the State Implementation Plan (SIP) does not contain any transportation control measures, the conformity procedures of 23 CFR 770 do not apply to this project.

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition, or other operations will be removed from the project, burned, or otherwise disposed of by the Contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. Care will be taken to insure burning will be done at the greatest distance practicable from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance.

Measures will be taken in allaying the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

10. Construction Impacts

To minimize potential adverse effects caused by construction, the following measures, along with those already mentioned, will be utilized during the construction phase:

1. Solid wastes created as a result of highway construction will be disposed of in accordance with Section 802 of the NCDOT Standards Specifications.
2. Borrow pits and all ditches will be drained insofar as possible to alleviate breeding areas for mosquitoes. In addition, care should be taken not to block existing drainage ditches.
3. An extensive rodent control program will be established where structures are to be removed or demolished in order to prevent the migration of rodents into surrounding areas.
4. Any burning will be done in accordance with applicable local laws and ordinances, along with regulations of the North Carolina Plan for Implementing National Ambient Air Quality Standards. Burning will be done only on the Right of Way, under constant surveillance, with good atmospheric conditions, as remote from dwellings as possible.
5. The contractor shall maintain the earth surface of all waste areas, both during the work and until the completion of all seeding and mulching or other erosion control measures specified, in a manner which will effectively control erosion and siltation.

6. Prior to the approval of any borrow source developed for use on this project, the Contractor shall obtain a certification from the State Department of Cultural Resources certifying that the removal of material from the borrow source will have no effect on any known district, site, building, structure, or object that is included, or is eligible for inclusion, in the National Register of Historic Places. A copy of this certification shall be furnished to the Engineer prior to performing any work on the proposed borrow source.
7. Traffic services in the immediate area may be subjected to brief disruption during construction of the project. Every endeavor will be made to insure that the transportation needs of the public will be met both during and after construction.
8. Before construction is started, a preconstruction conference involving the Contractor, pertinent local officials, and the Division of Highways will be held to discuss various construction procedures, including a discussion of precautionary steps to be taken during the time of construction that will minimize interruption of water service. In all cases, the contractor is responsible for any damages to water lines incurred during the construction process. This procedure will insure that water lines, as well as other utilities, are relocated with a minimum of disruption in service to the community.
9. The NCDOT will contact the National Geodetic Information Center prior to construction.

V. COMMENTS AND COORDINATION

Input concerning the effects of the project on the environment was requested from appropriate Federal, State, and Local agencies in preparing this Environmental Assessment. Listed below are the agencies which were contacted.

- *U. S. Army of Corps of Engineer-Wilmington.
- *U. S. Department of Interior-Washington
 - U. S. Bureau of Indian Affairs-Washington
- *U. S. Environmental Protection Agency-Atlanta
 - U. S. Fish & Wildlife Service-Atlanta
 - U. S. Fish & Wildlife Service-Raleigh
 - U. S. Forest Service-Asheville
- *State Clearinghouse
- *N. C. Department of Cultural Resources
- N. C. Department of Human Resources
- N. C. Department of Public Instruction
- N. C. Department of Natural Resources and
Community Development
- Region A Council of Governments
- Cherokee County Commissioners
- City of Murphy

*Denotes agencies from which input was received.

No significant problems or objections were raised by the above agencies. Copies of the comments received are included in the Appendix.

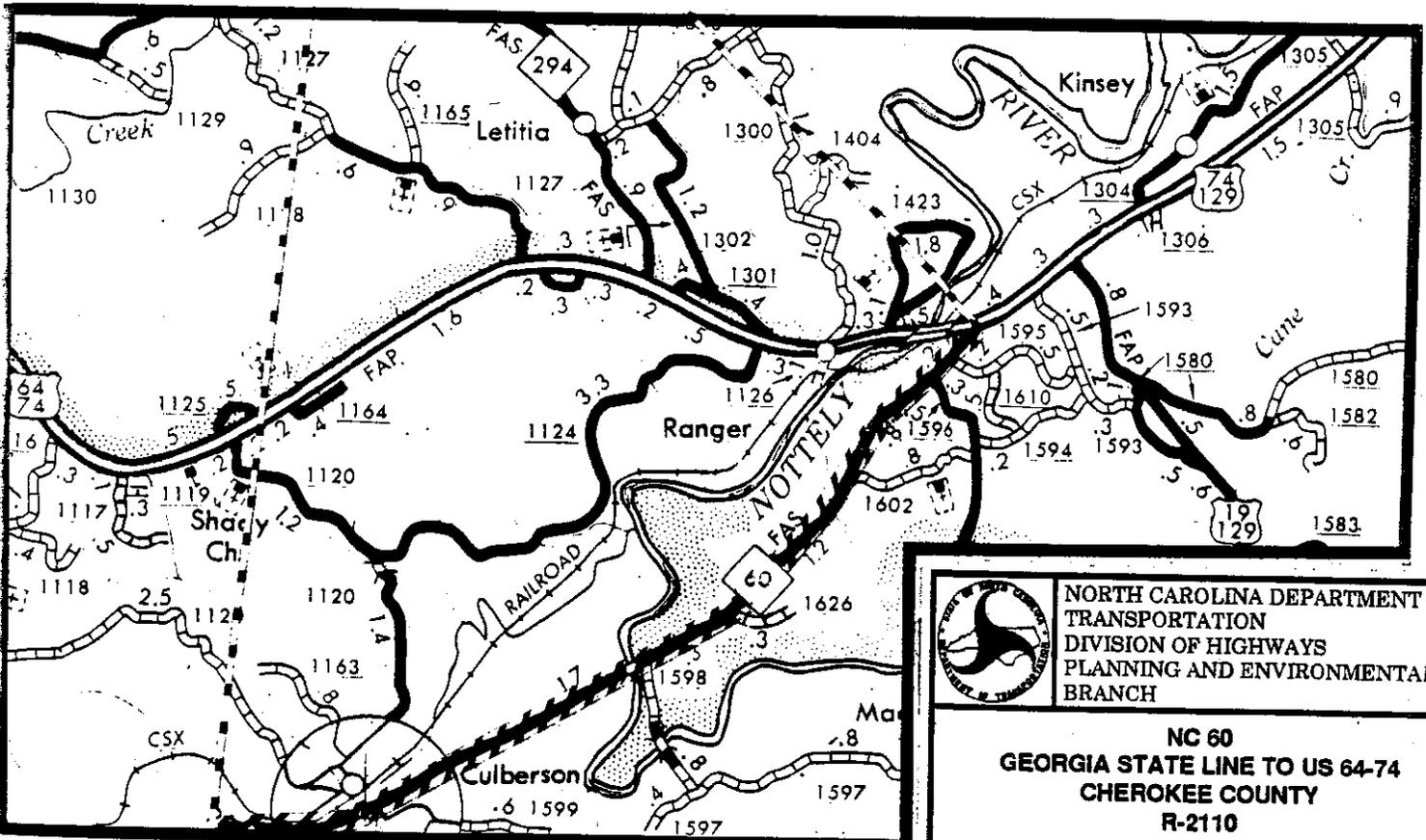
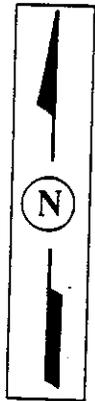
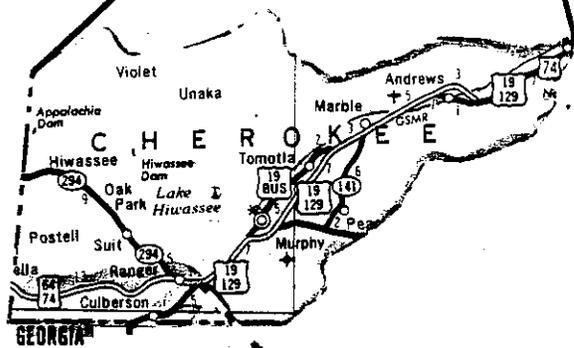
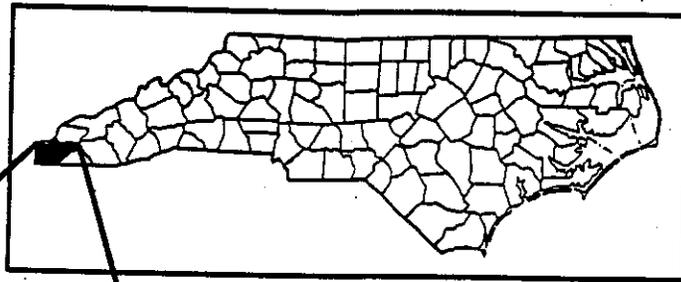
A public meeting was held on October 23, 1990 at the Murphy High School. The purpose of this meeting was to familiarize local citizens with the background and intent of the proposed project, and to solicit their comments at an early stage in the planning process.

The general feeling of the Local officials and residents was a strong desire to have a four-lane facility. Reasons stated for wanting a four-lane facility are as follows:

1. Upcoming Olympics in Atlanta
2. General access to Atlanta
3. A possible State Resort Park in Cherokee County
4. Expanding Development along NC 60
5. Generally, to attract development and tourists to Cherokee County.

JSJ/plr

APPENDIX



NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH

NC 60
GEORGIA STATE LINE TO US 64-74
CHEROKEE COUNTY
R-2110

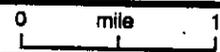
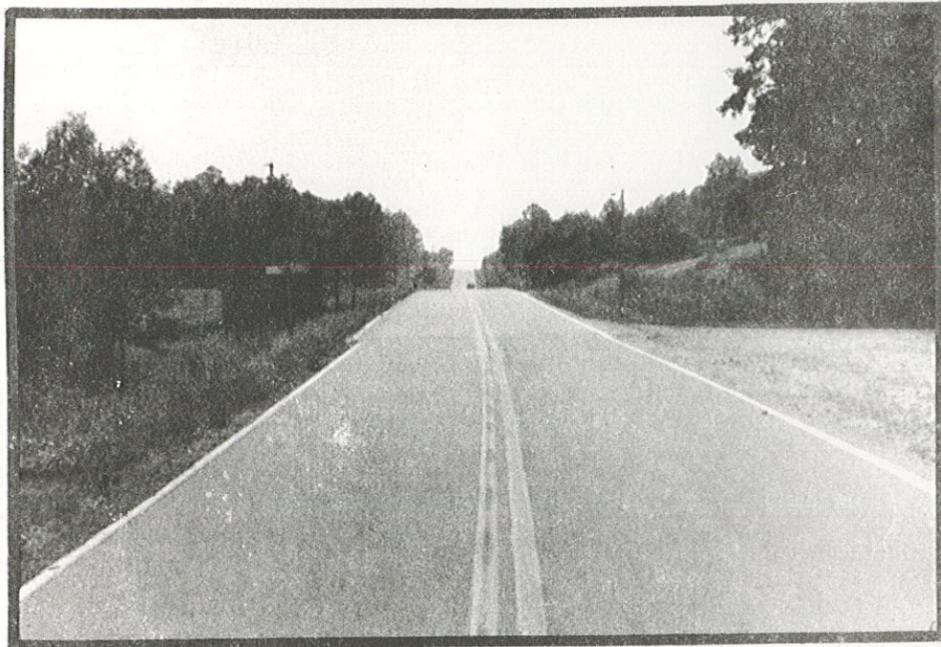
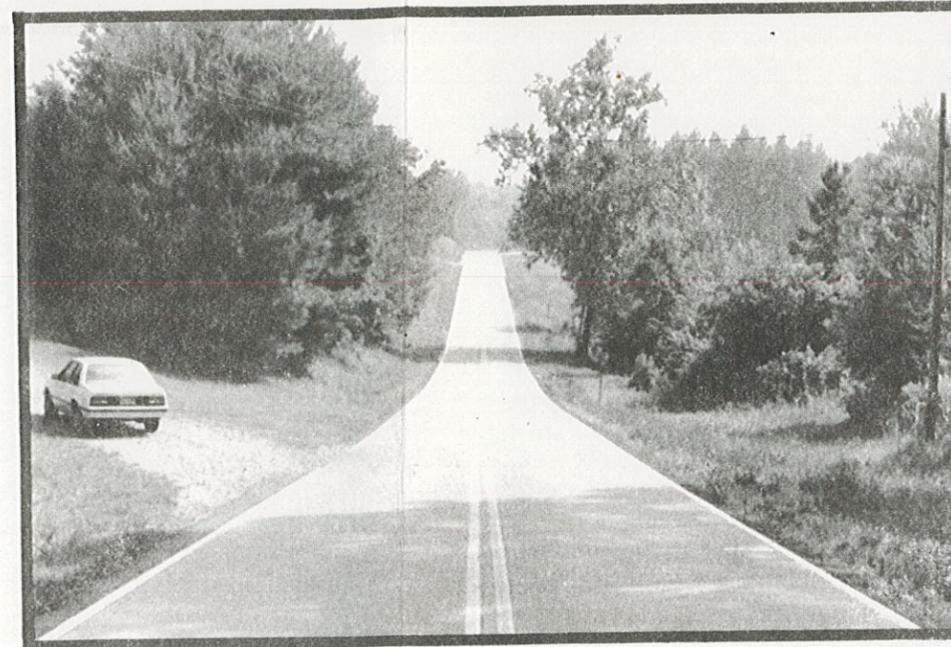


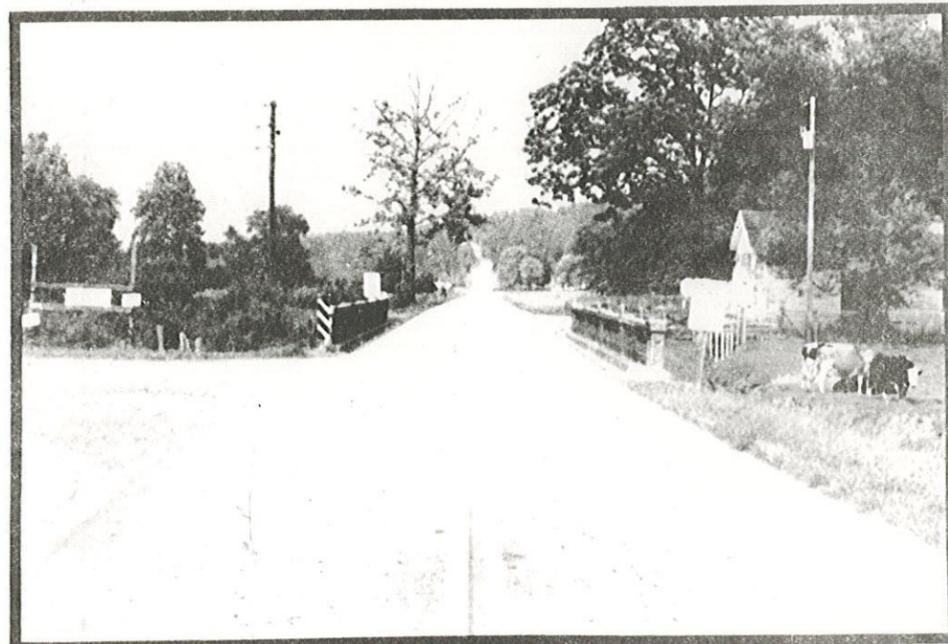
FIG. 1



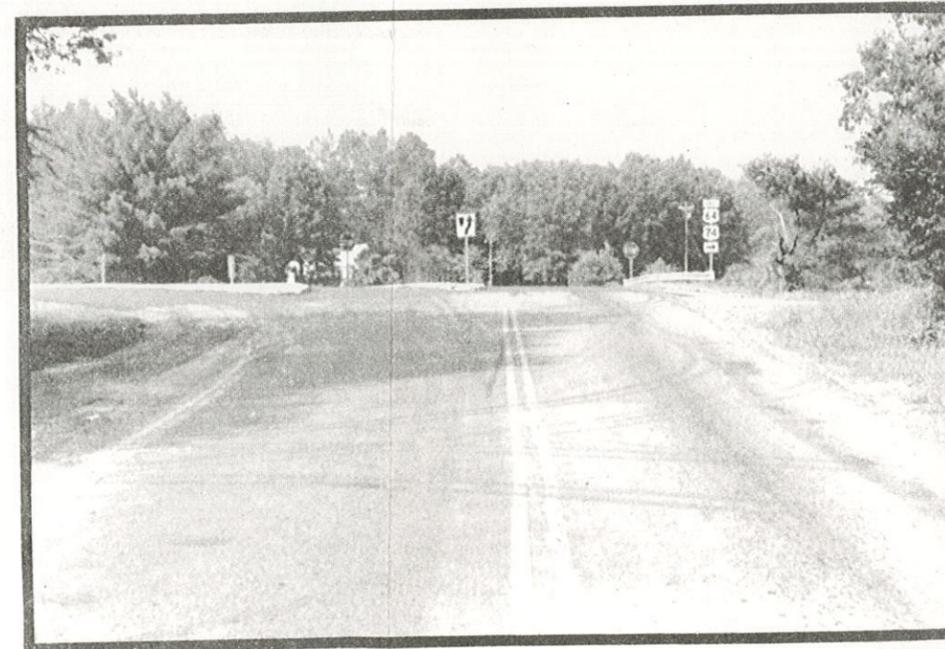
LOOKING SOUTH ON
NC 60 AT GEORGIA
STATE LINE



TYPICAL SECTION OF
NC 60 LOOKING SOUTH
TOWARDS GEORGIA



LOOKING SOUTH AT
BRIDGE OVER RAPIERS
MILL CREEK

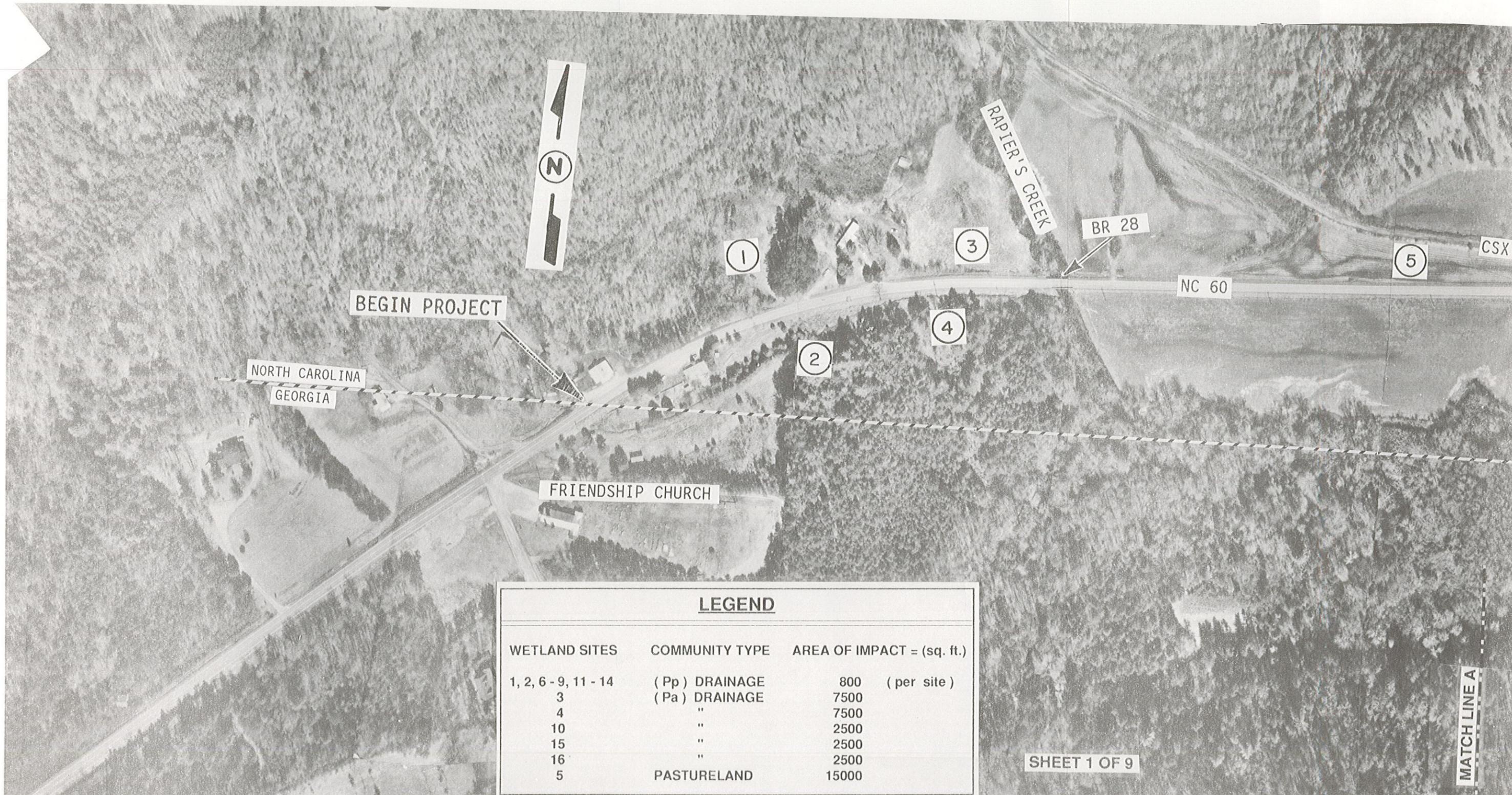


LOOKING NORTH ON
NC 60 AT US 64-74
INTERSECTION



NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH

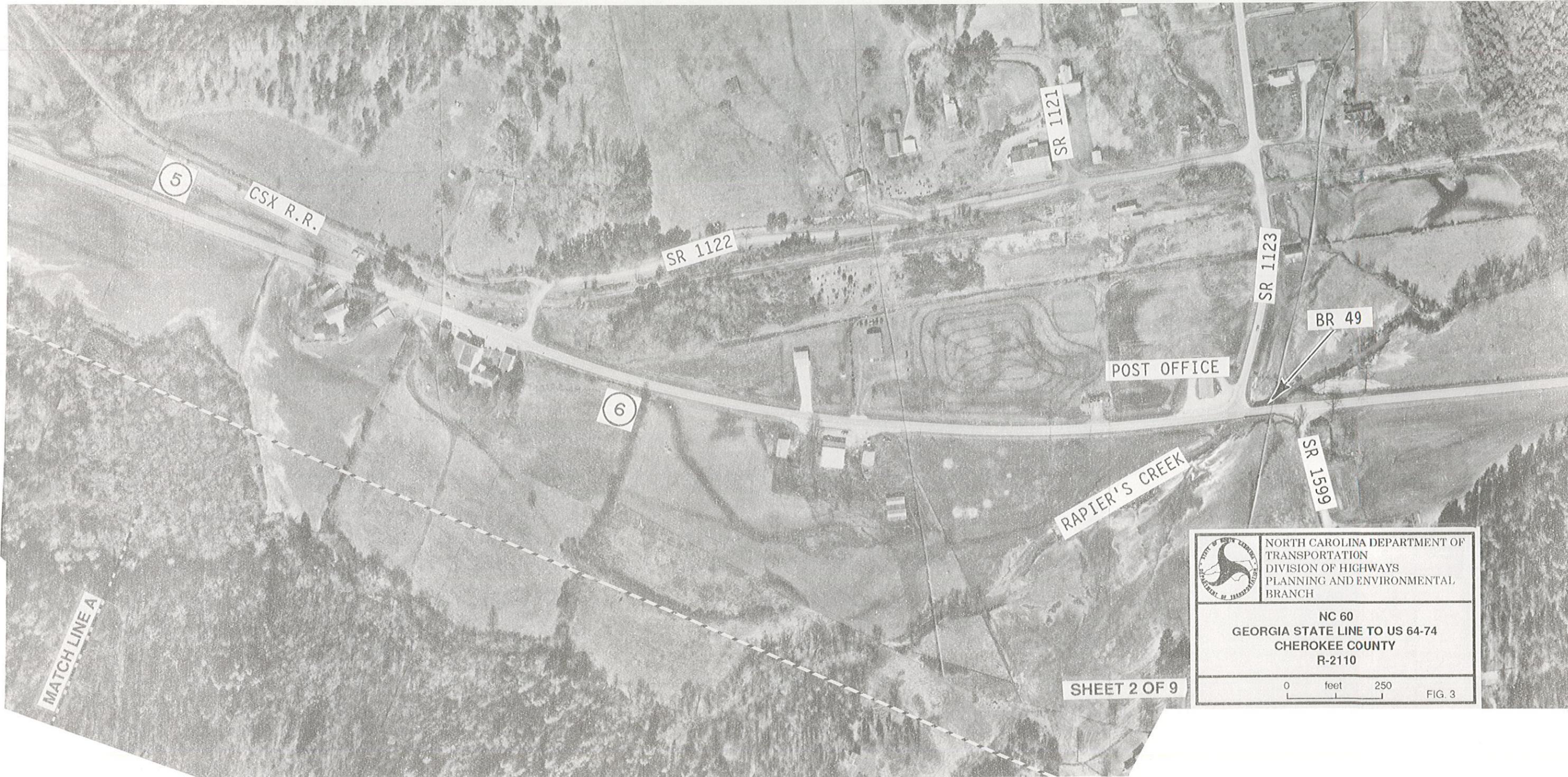
NC 60
PHOTOS OF EXISTING CONDITIONS
CHEROKEE COUNTY
R 2110



LEGEND		
WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000

SHEET 1 OF 9

MATCH LINE A



MATCH LINE A

5

CSX R.R.

SR 1122

SR 1121

SR 1123

BR 49

POST OFFICE

6

RAPIER'S CREEK

SR 1599

SHEET 2 OF 9

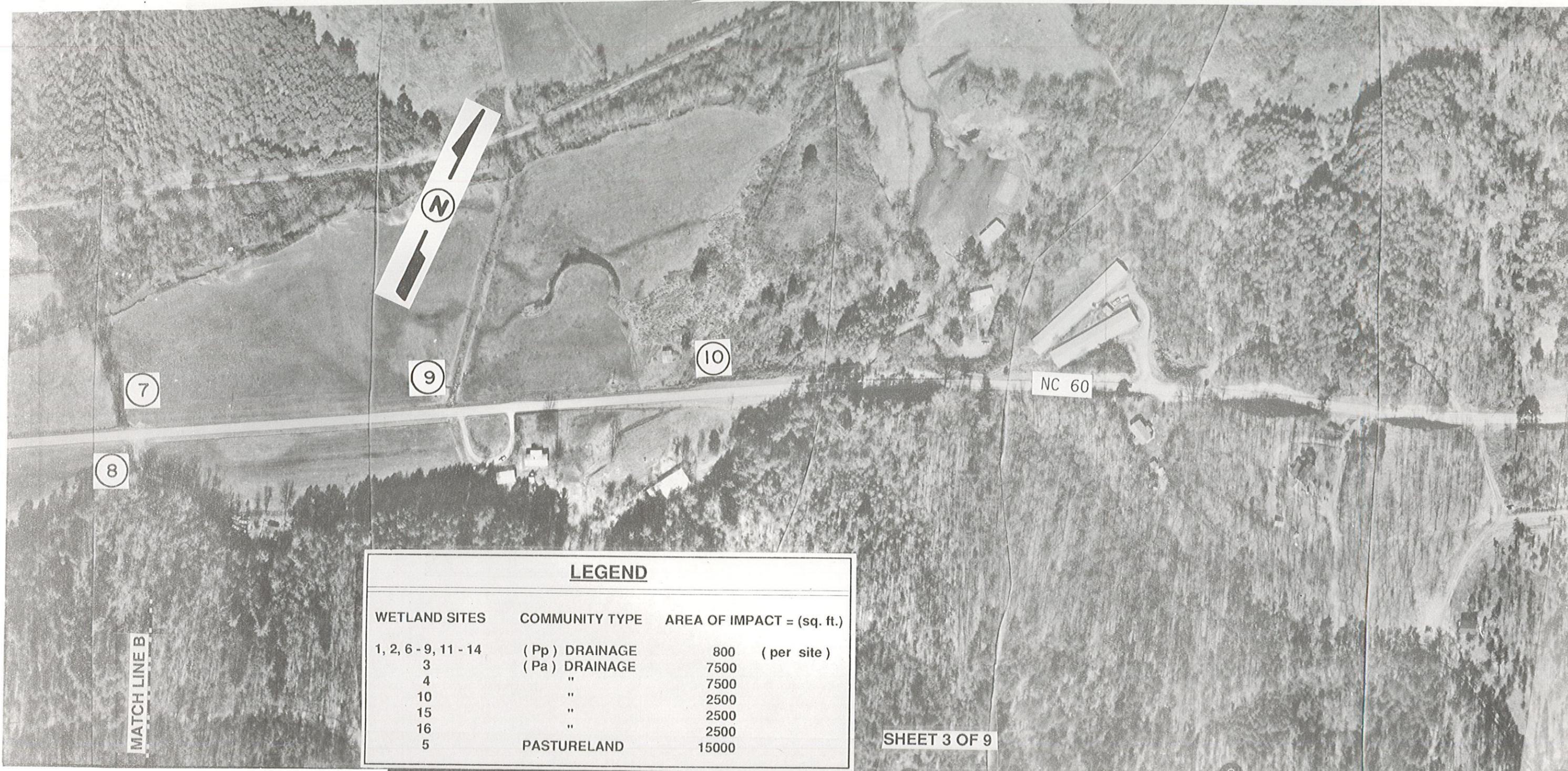


NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH

NC 60
GEORGIA STATE LINE TO US 64-74
CHEROKEE COUNTY
R-2110

0 feet 250

FIG. 3



LEGEND		
WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000



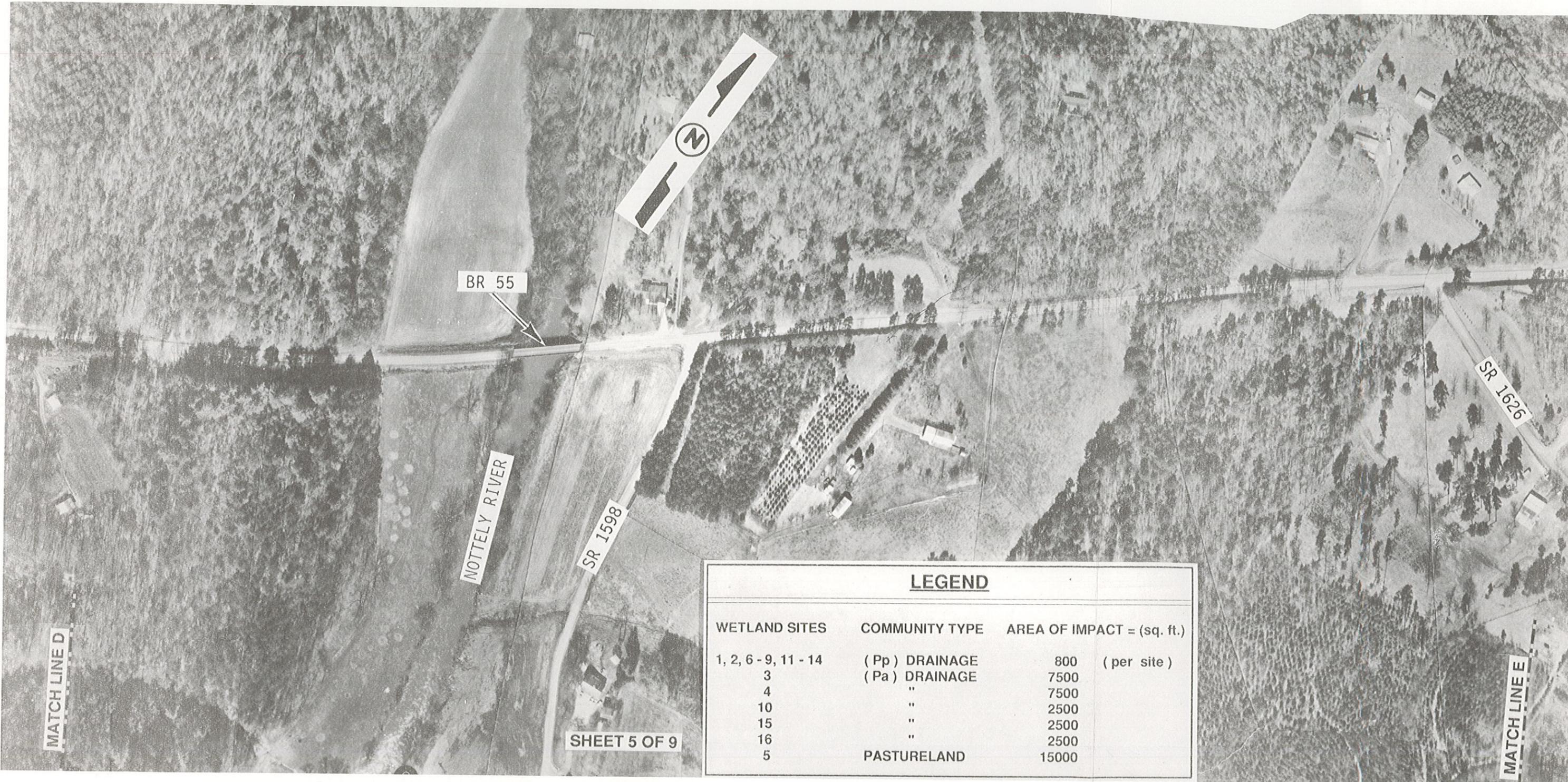
NC 60

MATCH LINE C

MATCH LINE D

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH
	NC 60 GEORGIA STATE LINE TO US 64-74 CHEROKEE COUNTY R-2110
0 feet 250	
FIG. 3	

SHEET 4 OF 9



LEGEND		
WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000



MATCH LINE E

SR 1626

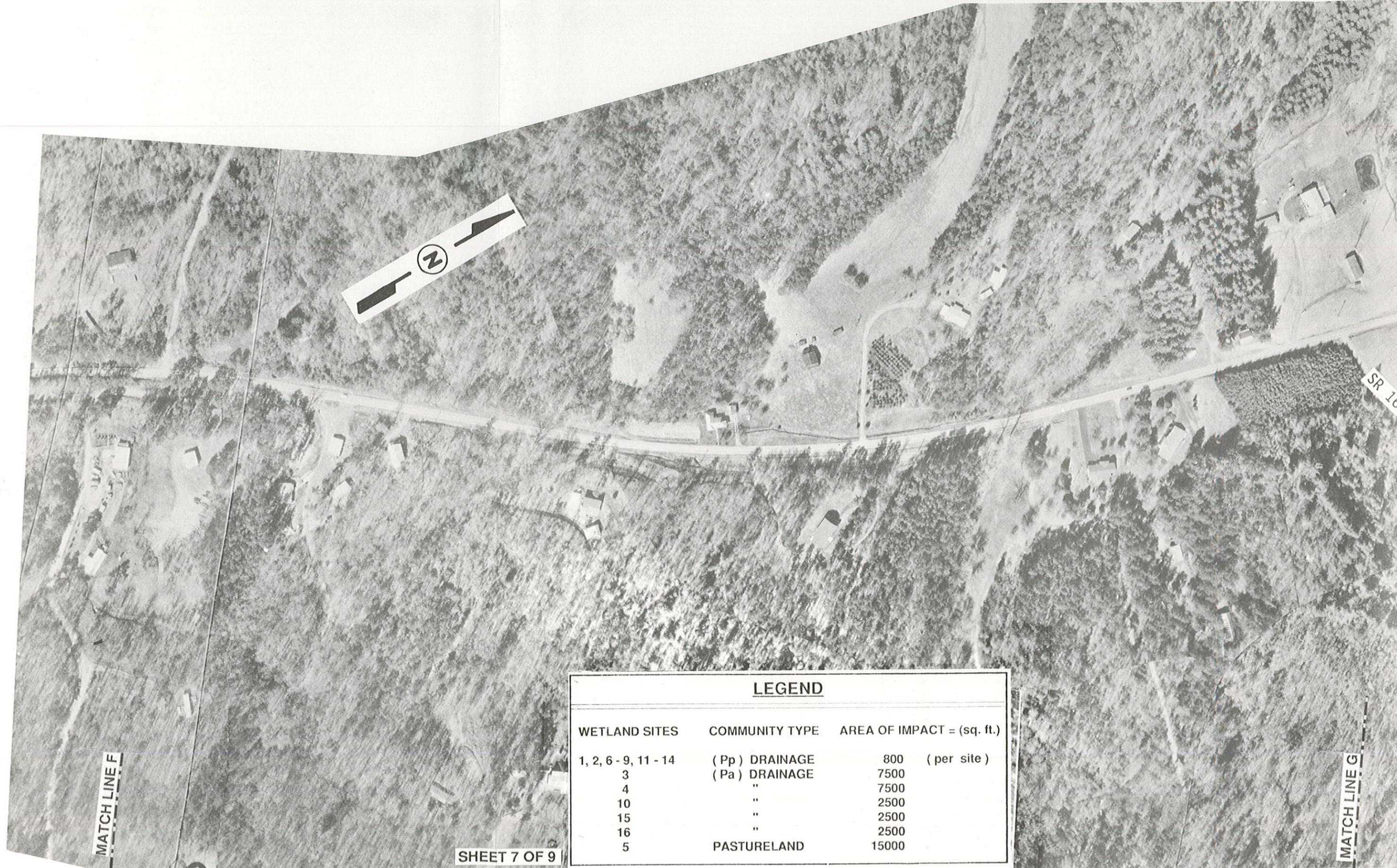
11

12

MATCH LINE F

SHEET 6 OF 9

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH
	NC 60 GEORGIA STATE LINE TO US 64-74 CHEROKEE COUNTY R-2110
0 feet 250	
FIG. 3	



SR 160

MATCH LINE F

MATCH LINE G

SHEET 7 OF 9

LEGEND		
WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000



MATCH LINE G

13

14

SR 1602

SHEET 8 OF 9



NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH

NC 60
GEORGIA STATE LINE TO US 64-74
CHEROKEE COUNTY
R-2110

0 feet 250 FIG 3

MATCH LINE H



LEGEND

WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000

SHEET 9 OF 9

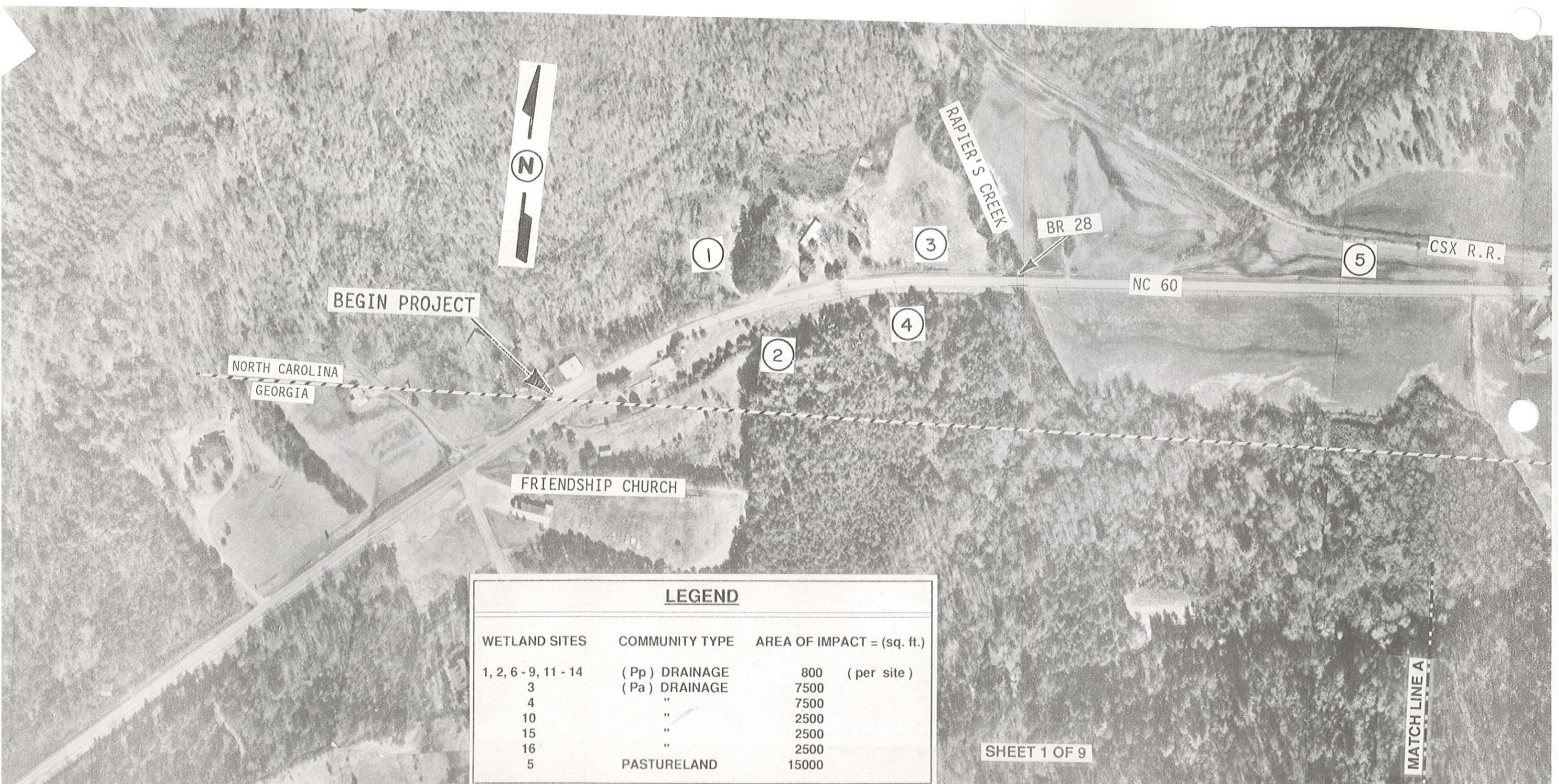


NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH

NC 60
GEORGIA STATE LINE TO US 64-74
CHEROKEE COUNTY
R-2110

0 feet 250

FIG. 3



BEGIN PROJECT

NORTH CAROLINA
GEORGIA

FRIENDSHIP CHURCH

RAPIER'S CREEK

BR 28

NC 60

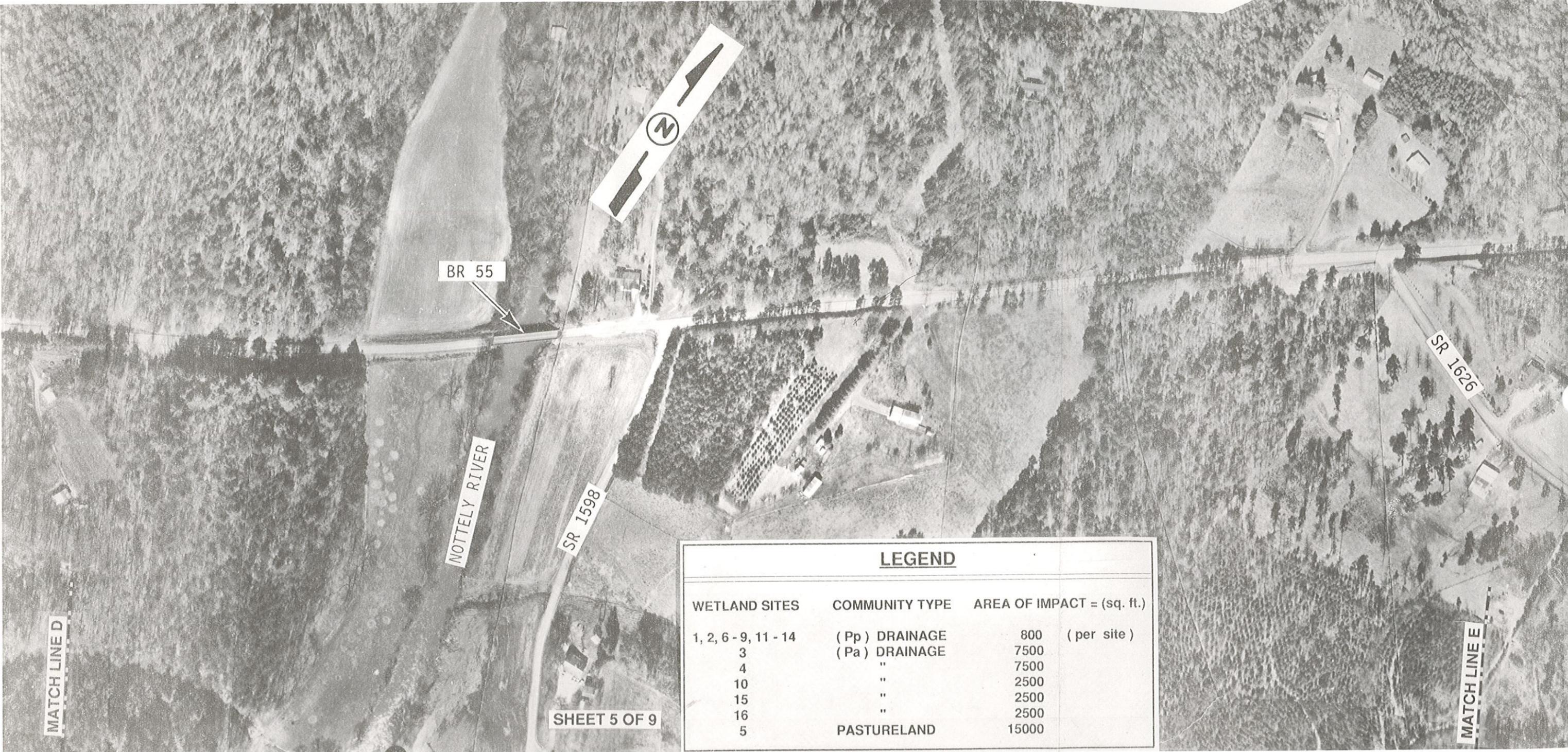
CSX R.R.

LEGEND

WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000

SHEET 1 OF 9

MATCH LINE A



MATCH LINE D

BR 55

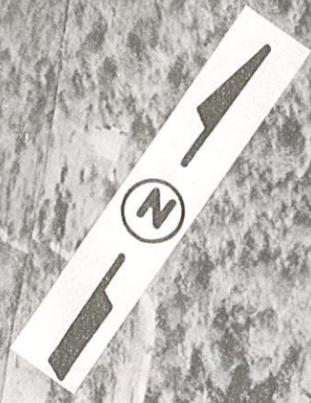
NOTTELY RIVER

SR 1598

SR 1626

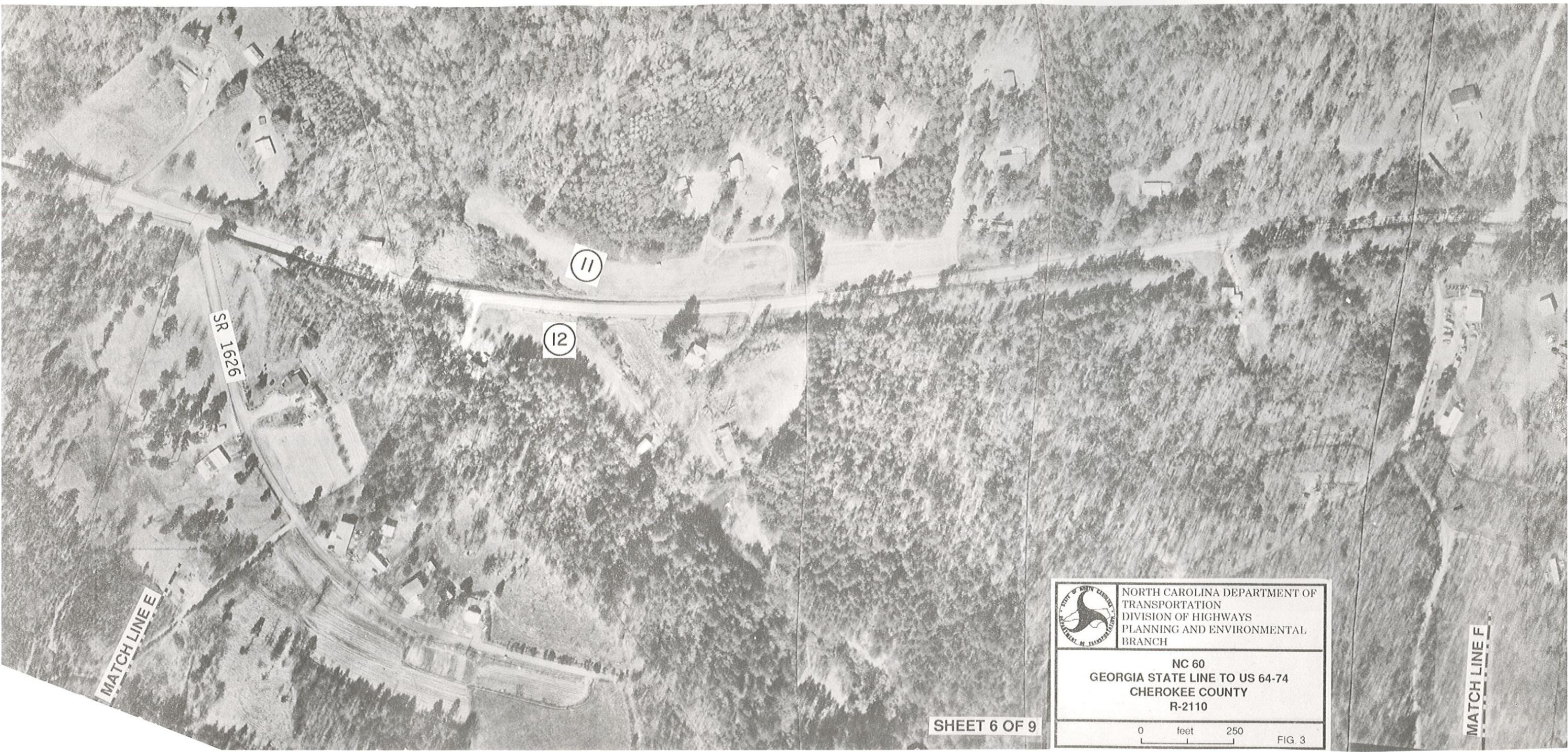
SHEET 5 OF 9

MATCH LINE E



LEGEND

WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000

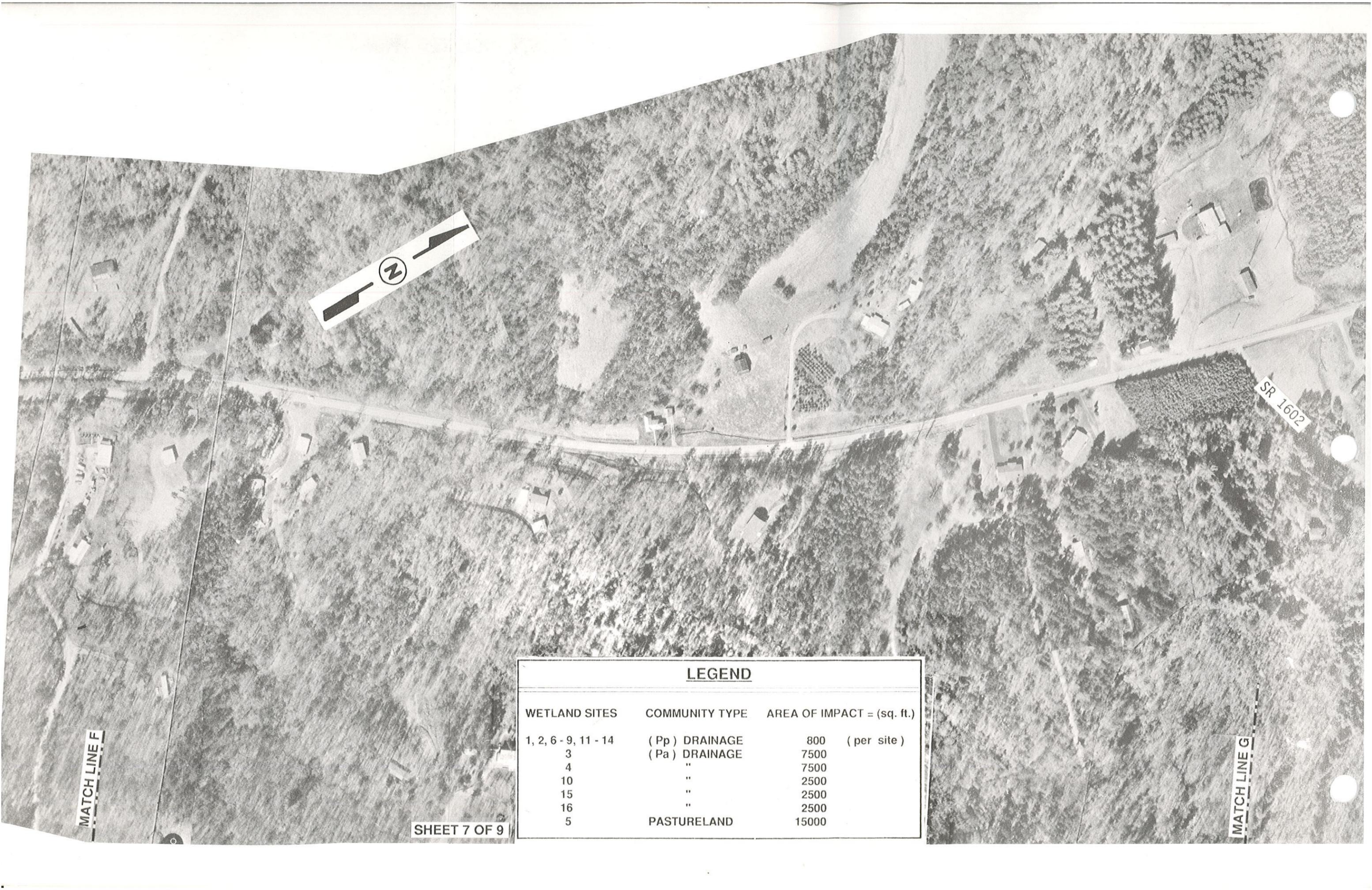


SHEET 6 OF 9

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH
	NC 60 GEORGIA STATE LINE TO US 64-74 CHEROKEE COUNTY R-2110
0 feet 250	
FIG. 3	

MATCH LINE E

MATCH LINE F



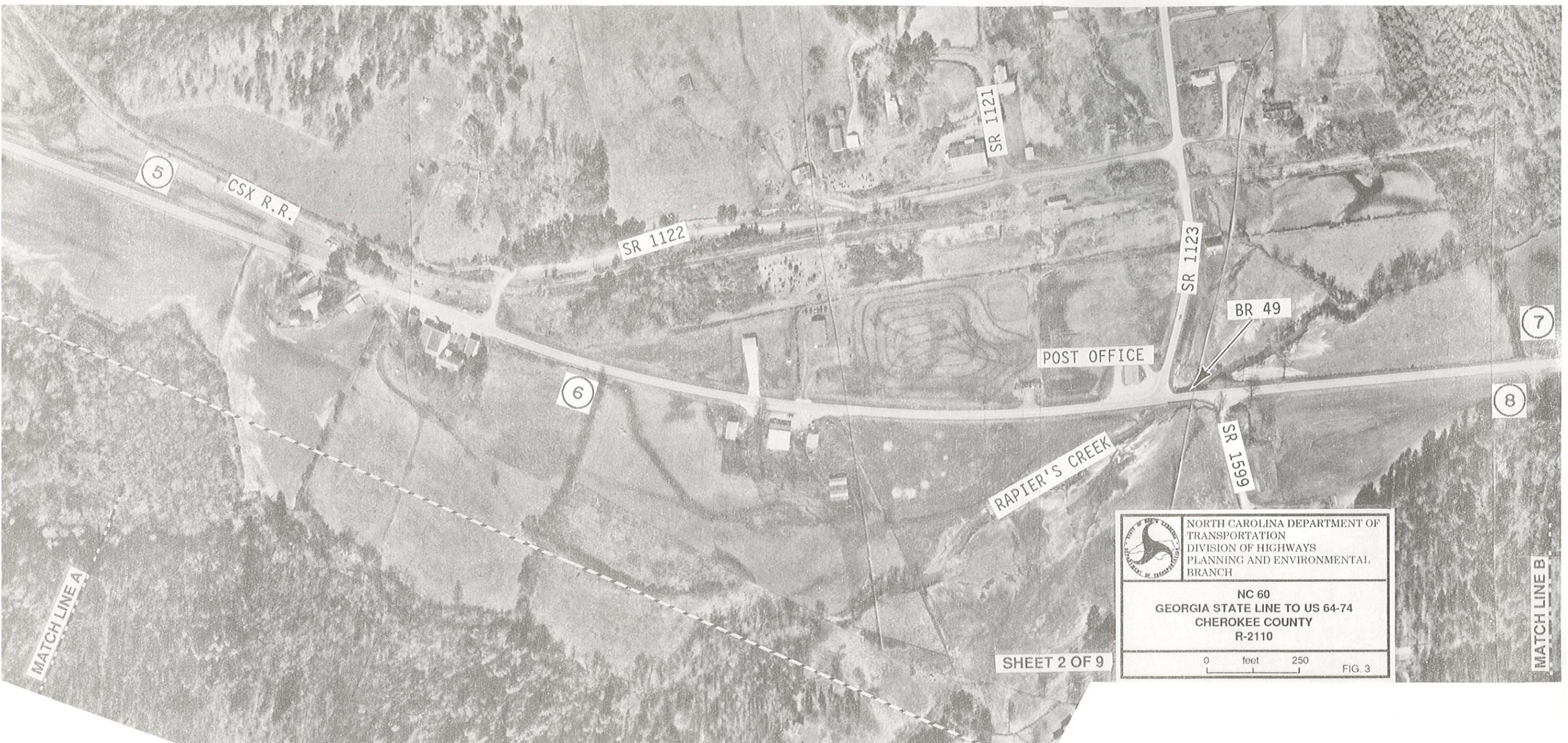
SR 1602

MATCH LINE F

MATCH LINE G

SHEET 7 OF 9

LEGEND		
WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000



5

CSX R.R.

SR 1122

SR 1121

SR 1123

BR 49

POST OFFICE

6

7

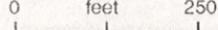
8

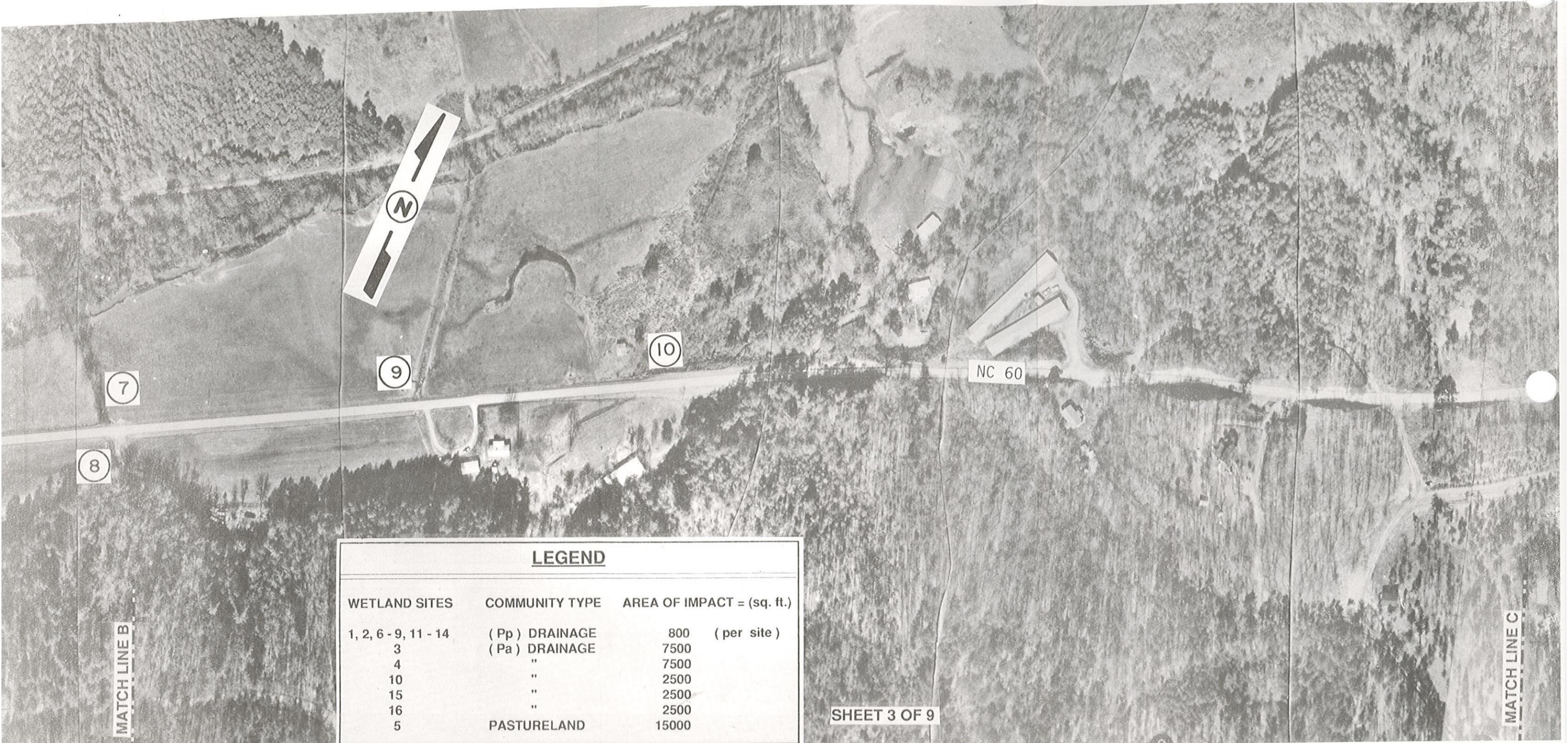
RAPIER'S CREEK

SR 1599

MATCH LINE A

MATCH LINE B

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH
	NC 60 GEORGIA STATE LINE TO US 64-74 CHEROKEE COUNTY R-2110
0 feet 250 	
SHEET 2 OF 9 FIG. 3	

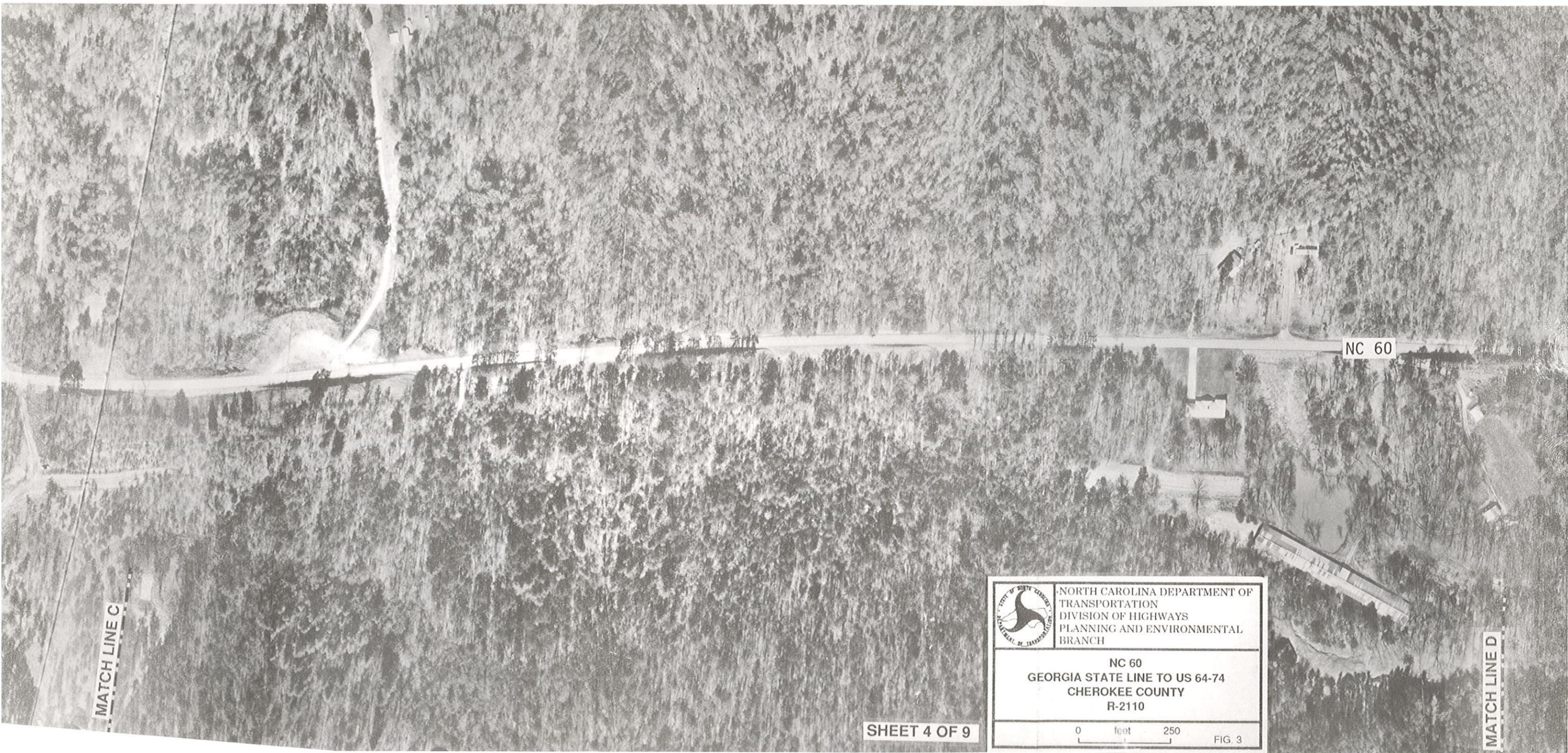


LEGEND		
WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
1, 2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000

SHEET 3 OF 9

MATCH LINE B

MATCH LINE C



NC 60

MATCH LINE C

MATCH LINE D

SHEET 4 OF 9

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH
	NC 60 GEORGIA STATE LINE TO US 64-74 CHEROKEE COUNTY R-2110
0 feet 250	
FIG. 3	



13

14

SR 1602

MATCH LINE G

MATCH LINE H

	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND ENVIRONMENTAL BRANCH
	NC 60 GEORGIA STATE LINE TO US 64-74 CHEROKEE COUNTY R-2110
0 feet 250	
FIG 3	

SHEET 8 OF 9



LEGEND

WETLAND SITES	COMMUNITY TYPE	AREA OF IMPACT = (sq. ft.)
2, 6 - 9, 11 - 14	(Pp) DRAINAGE	800 (per site)
3	(Pa) DRAINAGE	7500
4	"	7500
10	"	2500
15	"	2500
16	"	2500
5	PASTURELAND	15000



NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH

NC 60
GEORGIA STATE LINE TO US 64-74
CHEROKEE COUNTY
R-2110

0 feet 250

FIG. 3

SHEET 9 OF 9

NC 60
AVERAGE DAILY TRAFFIC VOLUMES
EST. 1990/1995/2015 ADT IN HUNDREDS
NC 60 FROM US 64-74 TO GEORGIA STATE LINE

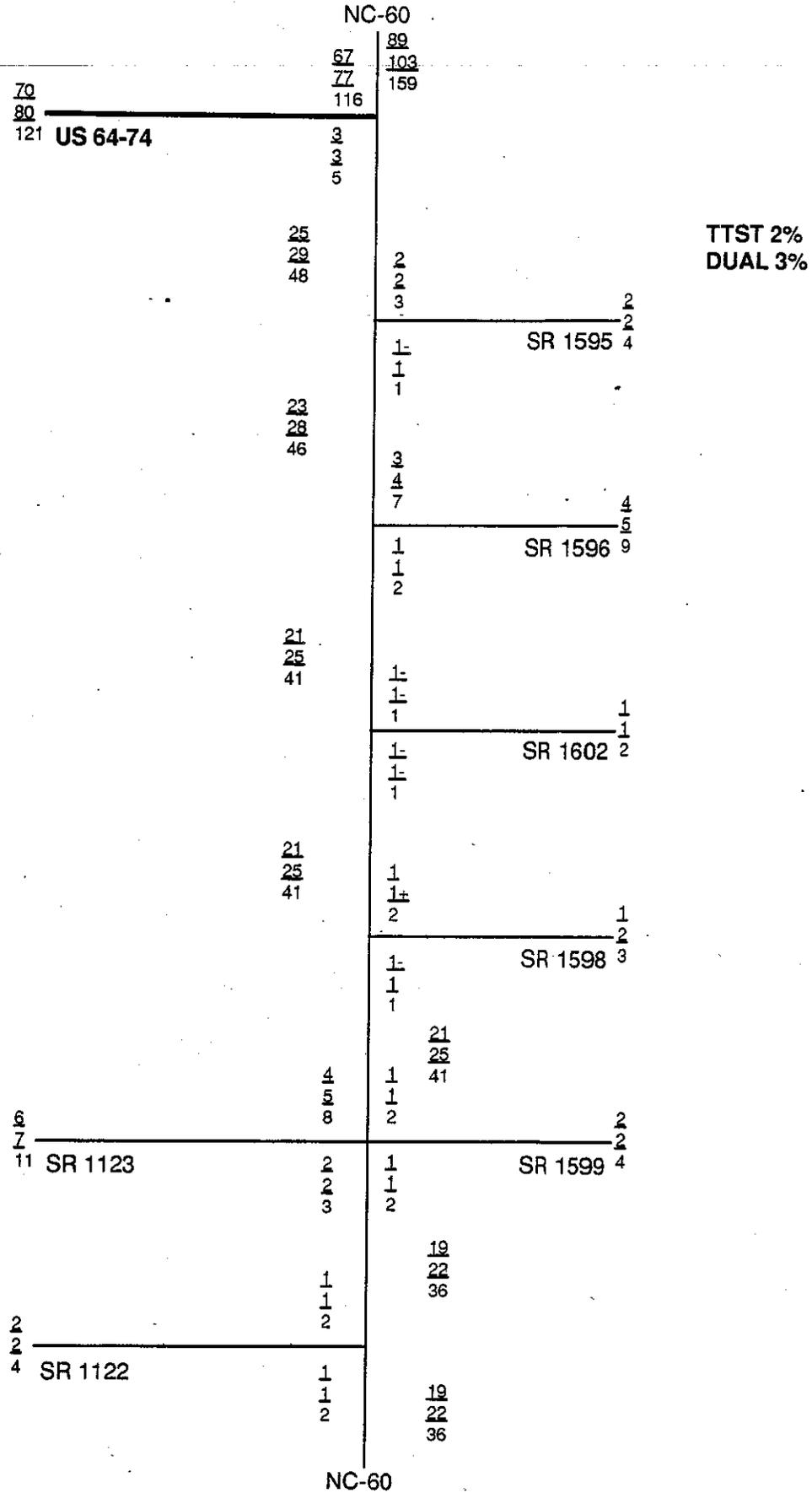
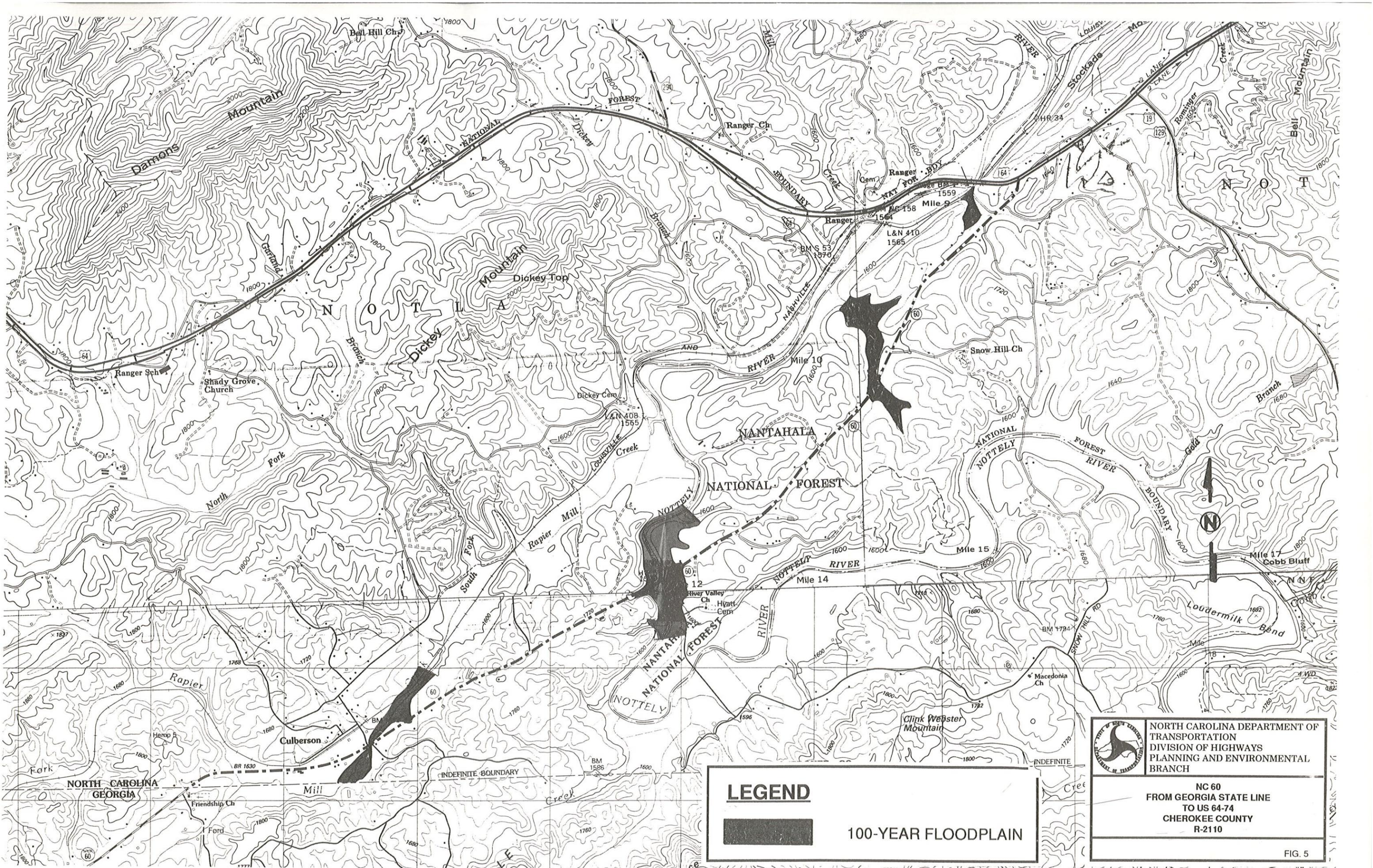


FIGURE 4



LEGEND



100-YEAR FLOODPLAIN

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL
BRANCH**

**NC 60
FROM GEORGIA STATE LINE
TO US 64-74
CHEROKEE COUNTY
R-2110**

APPENDIX

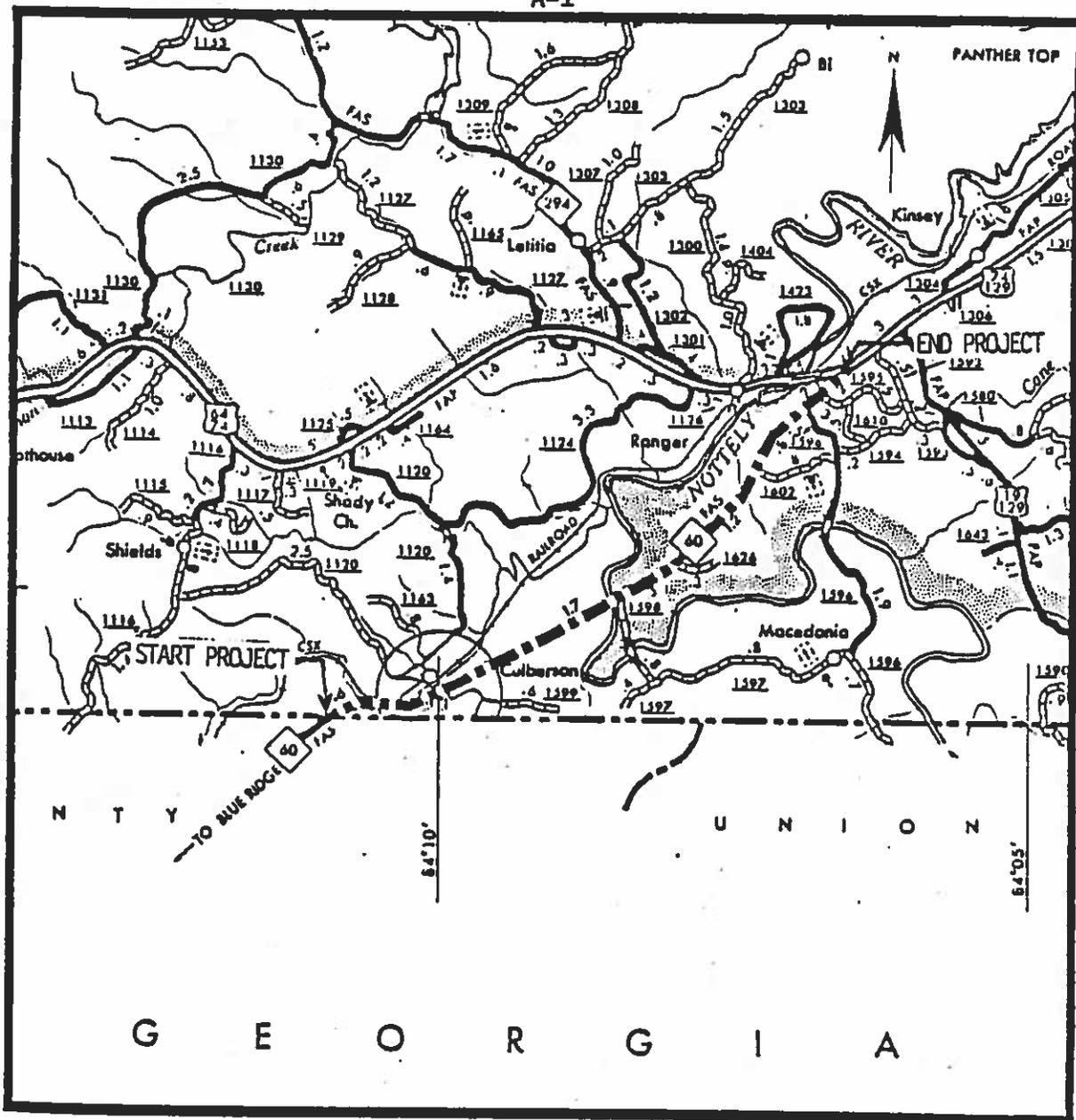


FIGURE N1 - PROJECT LOCATION
NC-60 FROM GEORGIA STATE LINE
TO US-19-64-74, CHEROKEE COUNTY
STATE PROJECT # 6.9110101.

TABLE N1

HEARING: SOUNDS BOMBARDING US DAILY

140	Shotgun blast, jet 100 ft away at takeoff Motor test chamber	FAIN HUMAN EAR PAIN THRESHOLD
130	Firecrackers	
120	Severe thunder, pneumatic jackhammer Hockey crowd Amplified rock music	UNCOMFORTABLY LOUD
110	Textile loom	
100	Subway train, elevated train, farm tractor Power lawn mower, newspaper press Heavy city traffic, noisy factory	LOUD
90		
80	Diesel truck 40 mph 50 ft. away Crowded restaurant, garbage disposal Average factory, vacuum cleaner Passenger car 50 mph 50 ft. away	MODERATELY LOUD
70		
60	Quiet typewriter Singing birds, window air-conditioner Quiet automobile Normal conversation, average office	QUIET
50		
40	Household refrigerator Quiet office	VERY QUIET
30	Average home Dripping faucet Whisper 5 feet away	
20	Light rainfall, rustle of leaves	AVERAGE PERSON'S THRESHOLD OF HEARING JUST AUDIBLE
10	Whisper	
0		THRESHOLD FOR ACUTE HEARING

Sources: World Book, Rand McNally Atlas of the Human Body, Encyclopedia Americana, "Industrial Noise and Hearing Conversation" by J. B. Olishifski and E. R. Harford (researched by M. Jane Hunt and published in the Chicago Tribune in an illustrated graphic by Ted Heinz.)

A-3
Table N2

NOISE ABATEMENT CRITERIA

Hourly A-Weighted Sound Level - decibels (dBA)

Activity Category	Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Title 23 Code of Federal Regulations (CFR) Part 772, U. S. Department of Transportation, Federal Highway Administration

DEFINITION OF SUBSTANTIAL INCREASE

Hourly A-Weighted Sound Level - decibels (dBA)

Existing Noise Level in Leq(h)	Increase in dBA from Existing Noise Levels to Future Noise Levels
≤ 50	≥ 15
> 50	≥ 10

Source: North Carolina Department of Transportation Noise Abatement Guidelines.

CALINE3: CALIFORNIA LINE SOURCE DISPERSION MODEL - SEPTEMBER, 1973 VERSION

JOB: NC-60/CHEROKEE/R-2110

RUN: 2005 BUILD/55 MPH

I. SITE VARIABLES

U = 1 M/S CLAS = 6 (F) VS = 0 CM/S ATIM = 60 MINUTES HIGH = 400 M
 BRG = 5 DEGREES ZO = 10 CM VD = 0 CM/S ANB = 1.9 PPM TEMP = 25 °F

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M)				LINK LENGTH (M)	LINK BRG (DEG)	TYPE	VPH	ZF (G/MI)	H (M)	W (M)
	X1	Y1	X2	Y2							
A. NC-60	0	-1000	0	1000	2000	360	AG 480	5.502	0	13.1	

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	COORDINATES (M)			CO (PPM)
	X	Y	Z	
1. R54 RES 50' LEFT	-15.2	0	1.8	2.2

TABLE A2

CALINE3: CALIFORNIA LINE SOURCE DISPERSION MODEL - SEPTEMBER, 1975 VERSION

JOB: NC-60/CHEROKEE/R-2110

RUN: 2015 BUILD/55 MPH

I. SITE VARIABLES

U = 1 M/S CLAS = 6 (F) VS = 0 CM/S ATIM = 60 MINUTES HIGH = 400 M
 BRG = 5 DEGREES ZO = 10 CM VD = 0 CM/S ANB = 1.9 PPM TEMP = 26 °F

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M)				LINK LENGTH (M)	LINK BRG (DEG)	TYPE	VPH	ZF (G/MI)	H (M)	W (M)
	X1	Y1	X2	Y2							
A. NC-60	0	-1000	0	1000	2000	360	AG 480	6.526	0	13.2	

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	COORDINATES (M)			CO (PPM)
	X	Y	Z	
1. R54 RES 50' LEFT	-15.2	0	1.8	2.2

A-6
TABLE A1

CALINE3: CALIFORNIA LINE SOURCE DISPERSION MODEL - SEPTEMBER, 1973 VERSION

JOB: NC-60/CHEROKEE/R-2110

RUN: 2065 BUILD/55 MFH

I. SITE VARIABLES

U = 1 M/S CLAS = 6 (F) VS = 0 CM/S ATIN = 60 MINUTES HIGH = 100 M
BRG = 5 DEGREES ZO = 10 CM VD = 0 CM/S AHB = 1.9 PPM TEMP = 25 °F

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M)				LINK LENGTH (M)	LINK BRG (DEG)	TYPE	VPH	ZF (G/MI)	H (M)	W (M)
	X1	Y1	X2	Y2							
A. NC-60	0	-1000	0	1000	2000	360	AG	480	6.562	0	13.1

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	COORDINATES (M)			CO (PPM)
	X	Y	Z	
1. R54 RES 50' LEFT	-15.2	0	1.3	2.2

TABLE A2

CALINE3: CALIFORNIA LINE SOURCE DISPERSION MODEL - SEPTEMBER, 1973 VERSION

JOB: NC-60/CHEROKEE/R-2110

RUN: 2015 BUILD/55 MFH

I. SITE VARIABLES

U = 1 M/S CLAS = 6 (F) VS = 0 CM/S ATIN = 50 MINUTES HIGH = 100 M
BRG = 5 DEGREES ZO = 10 CM VD = 0 CM/S AHB = 1.9 PPM TEMP = 26 °F

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M)				LINK LENGTH (M)	LINK BRG (DEG)	TYPE	VPH	ZF (G/MI)	H (M)	W (M)
	X1	Y1	X2	Y2							
A. NC-60	0	-1000	0	1000	2000	360	AG	480	6.526	0	13.3

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	COORDINATES (M)			CO (PPM)
	X	Y	Z	
1. R54 RES 50' LEFT	-15.2	0	1.3	2.2



A-7

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

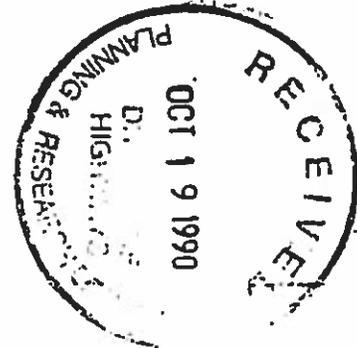
Prevatt
Jackson

October 17, 1990

IN REPLY REFER TO

Planning Division

Mr. L. J. Ward, P.E., Manager
Planning and Environmental Branch
Division of Highways
North Carolina Department
of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611-5201



Dear Mr. Ward:

We have reviewed your letter of August 27, 1990, requesting information for "NC 60, from the Georgia State Line to US 19-64-74, Cherokee County, State Project No. 6.911010, T.I.P. #R-2110" and offer the following comments.

Department of the Army permit authorization, pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent and/or isolated wetlands in conjunction with this project, including disposal of construction debris. Under our mitigation policy, impacts to wetlands should first be avoided or minimized. We will then consider compensation or mitigation for unavoidable impacts. When final plans are completed, including the extent and location of any work within waters of the United States and wetlands, our Regulatory Branch would appreciate the opportunity to review these plans for a project-specific determination of Department of the Army permit requirements. Should you have any questions, please contact Mr. David Baker, Regulatory Branch, at (704) 259-0856.

We appreciate the opportunity to comment on this project. If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,

Christina B. Concale
Lawrence W. Saunders
Chief, Planning Division

CPV - NCO01



United States Department of the Interior

FISH AND WILDLIFE SERVICE

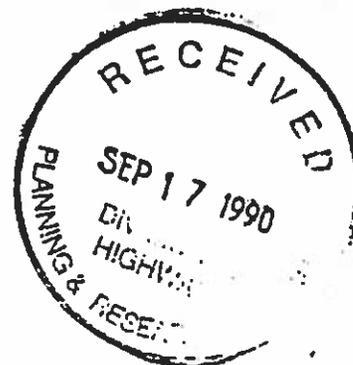
ASHEVILLE FIELD OFFICE

100 OTIS STREET, ROOM 224

ASHEVILLE, NORTH CAROLINA 28801



September 14, 1990



Mr. L. J. Ward, P.E.
Manager, Planning and Research Branch
North Carolina Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Ward:

Subject: Proposed widening of NC 60 from the Georgia state line to US 19-64-74 in Cherokee County, North Carolina (State Project No. 6.911010, TIP No. R-2110)

This responds to your letter of August 27, 1990 (received August 30, 1990), requesting our comments on the subject proposal. These comments are provided in accordance with the provisions of the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

The U.S. Fish and Wildlife Service is particularly concerned about the potential impacts the proposed action may have on stream and wetland ecosystems within the project impact area. Preference should be given to alternative alignments, stream crossing structures, and construction techniques that avoid and/or minimize encroachment and impacts to these resources.

The Service's review of any environmental document would be greatly facilitated if the document contained the following information:

- (1) A complete analysis and comparison of all available alternatives including the no action alternative.
- (2) A description of the fishery and wildlife resources within existing and required additional rights-of-way and any areas, such as borrow areas, which may be affected directly or indirectly by the proposed improvements.
- (3) Acreage and descriptions of branches, creeks, streams, rivers, or wetlands which will be filled as a consequence of proposed highway improvements. Wetlands affected by the proposed project should be mapped in accordance with the Federal Manual for Identifying and Delineating Jurisdictional Wetlands.
- (4) Linear feet of any water courses which will be relocated as a consequence of the proposed improvements.

- (5) Acreage of upland habitats, by cover type, which will be eliminated as a consequence of proposed highway improvements.
- (6) Techniques which will be employed for designing and constructing any relocated stream channels or for creating replacement wetlands.
- (7) Description of all expected secondary and cumulative environmental impacts associated with this proposed work.
- (8) Mitigation measures which will be employed to avoid, eliminate, reduce, or compensate for habitat value losses associated with any of the proposed improvements.

Based on our records there are no federally listed or proposed endangered or threatened species within the impact area of the proposed action. In view of this, we believe that requirements of Section 7(c) of the Endangered Species Act, as amended (Act), are fulfilled. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect endangered or threatened species or critical habitat in manner not previously considered; (2) this action is subsequently modified in a manner not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by the action.

Although our records indicate there are no federally listed or proposed species within the project vicinity, we have enclosed a list of species that are currently under status review by the Service which may occur in the project impact area. Status review species are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as endangered/threatened. We are including these species in our response for the purpose of giving you advance notification. These species may be listed in the future, at which time they will be protected under the Act. In the meantime we would appreciate anything you might do to avoid affecting these species.

We appreciate the opportunity to provide these comments and request that you continue to keep us apprised on the progress of this project. In any future correspondence concerning this project, please reference our log number 4-2-90-092.

Sincerely,

V. Gary Henry

V. Gary Henry
Acting Field Supervisor

Enclosure

cc:
Section Manager, North Carolina Wildlife Resources Commission, Archdale
Building, 512 N. Salisbury Street, Raleigh, NC 27611
Mr. Charles Roe, Director, North Carolina Natural Heritage Program,
P.O. Box 27687, Raleigh, NC 27611
North Carolina Department of Agriculture, Plant Conservation Program,
P.O. Box 27647, Raleigh, NC 27611
Division Administrator, Federal Highway Administration, Box 26806,
Raleigh, NC 27611
Field Supervisor, FWS, P.O. Box 33726, Raleigh, NC 27636-3726

STATUS REVIEW SPECIES

"Status Review" (SR) species are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as endangered/threatened. We are including these species in our response for the purpose of giving you advance notification. These species may be listed in the future, at which time they will be protected under the Endangered Species Act. In the meantime, we would appreciate anything you might do to avoid impacting them.

MAMMALS

Rafinesque's big-eared bat - Plecotus rafinesquii

AMPHIBIANS

Hellbender - Cryptobranchus alleghaniensis

FISHES

Olive darter - Percina squamata

PLANTS

Yellow fringeless orchid - Platanthera integrilabia



A-12

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

OCT 24 1990

VICK
PREWITT
JACKSON



4PM-FAB/DM

Mr. L.J. Ward, Manager
Planning and Research
North Carolina Department of Transportation
P.O. Box 25201
Raleigh, NC 27611-5201

Subject: Upgrade of NC 60 from Georgia State Line to US 19-64-74
Cherokee County, NC; State Project No. 6.911010

Dear Mr. Ward:

We have reviewed your advanced information for the above referenced project. Because of the limited nature of the information provided, it is difficult to make substantive comments at this time. However, we are able to make some generic comments as well as provide some specific comments.

Enclosed is a list of special environmental concerns relating to potential impacts from highway construction projects. As you can see, potential impacts to water quality, wetlands, and air quality due to the construction and use of the proposed facility must be investigated. Noise related impacts due to the project must also be documented. Potential impacts to aquatic life, wildlife, and protected or sensitive species of the area should also be investigated and discussed. All potential environmental impacts and ways to minimize them should be carefully evaluated in your draft environmental document and this evaluation should be conducted for each project alternative, including the no-build alternative.

Also, we note in the information provided that several streams and freshwater wetlands are in the project corridor. Disturbance of these areas should be avoided and project alternatives that do not impact wetlands and streams must be investigated. Any unavoidable impacts associated with the project must be carefully documented and the reason that the impacts are unavoidable must be thoroughly explained. If alternatives are evaluated that indicate possible disturbance of these areas, a complete plan for mitigation of any damage should be included in the document.

An additional area of concern that needs to be addressed is non-point source pollution from the highway. We encourage the use of best management practices to control non-point source pollution and prevent pollutants contained in highway runoff water from entering area waterways. These control methods could include the use of closed bridge drainage systems, retention basins, grassed swales or other techniques. Consideration for the potential impact that the roadway could have on area drinking water sources and the potential

CONF - NCDOT

-2-

for hazardous materials being spilled into the waterways should also be addressed. Also, the corridors under consideration should be investigated for the presence of acidic shales. In Appalachian areas, acid bearing shales will occasionally be encountered during excavation. In some cases, serious water quality problems can occur from runoff from disturbed areas that contain these shales. Therefore, a careful survey of the routes must be made so the areas that contain the shales can be identified and avoided. If the shales are encountered in the right-of-way, a complete contingency plan for handling these shales in an environmentally acceptable manner should be included in the document. Also, a monitoring plan for streams that drain the project area, especially areas that contain the acidic shales, should be presented in the document. This monitoring should be conducted before, during and after construction. The stream monitoring would be used to determine if the water quality of area streams is impacted by construction activities and indicate if further mitigation is required. Finally, the routes must be examined for hazardous materials that may be present in permitted or unpermitted dump sites.

Highway construction in mountainous areas requires extremely diligent efforts to control erosion from the project due to the steepness of the terrain and the large number of streams. Large areas of cut and fill in the steep slopes also require special construction techniques to prevent erodable material from entering and degrading streams. The special construction techniques that will be used to control erosion from the project site should be completely discussed in the document.

Since overall environmental impacts associated with improvement of the existing roadway corridor can be much less environmentally harmful than constructing a new corridor, we encourage you to continue to give serious consideration to the alternative that utilizes the current roadway alignment. We appreciate the opportunity to provide comments to you early in the SEPA review process. Please continue to keep us informed about the progress of this project and provide copies of environmental documents when available. If you have any questions regarding our comments, please contact David Melgaard of my staff at (404) 347-3776 or (FTS) 257-3776.

Sincerely,



Heinz J. Mueller, Chief
Environmental Policy Section
Federal Activities Branch

The following list is a generalized synopsis of special concerns relevant to generic highway projects.

Wetlands/Water Quality

- ° Protection of wetlands pursuant to the Section 404(b) Guidelines of the Clean Water Act
- ° Avoiding/minimizing wetland activities such as:
 - * channel realignments
 - * dredging and filling
 - * flow alterations causing wetland drainage or flooding
 - * erosion and siltation
 - * habitat loss
 - * disturbance of rare and endangered species
- ° Conformance with Executive Order 11988 ("Floodplain Management") and Executive Order 11990 ("Protection of Wetlands"), if federal funds are involved
- ° Avoidance of environmental impacts and feasible mitigation for unavoidable impacts (e.g., wetland creation and restoration).
- ° Construction impacts (e.g., erosion)
- ° Public complaints concerning construction-related wetland alteration and state mechanisms to properly address them.

Air Quality

- ° Conformance with National Ambient Air Quality Standards (NAAQS) of the Clean Air Act to determine whether a site is located in an attainment, non-attainment, or unclassified area
- ° Conformance with the State Implementation Plan (SIP)
- ° Conformance with the Prevention of Significant Deterioration (PSD) regulations
- ° Conformance with EPA and state modeling guidance
- ° Existing and predicted levels of various relevant air-quality parameters such as carbon monoxide (CO).
- ° Public complaints concerning construction-related fugitive emissions.

Noise

- ° Conformance of on-site existing (ambient) and project predicted noise levels with FHWA Noise Abatement Criteria

(NAC) guidelines for commercial/industrial receptors ($L_{10}=75\text{dBA}$; $Leq=72\text{dBA}$) and residential/institutional receptors ($L_{10}=70\text{dBA}$; $Leq=67\text{dBA}$). Preferred descriptors for existing, predicted, and NAC levels are $Leq(1)$ or L_{10} . The hour (1) of the $Leq(1)$ descriptor should be defined (e.g., peak rush hour). $Leq(24)$ values are also helpful in association with $Leq(1)$ data. Ambient levels should be measured at representative sites rather than estimated.

- ° Preferably, determinations for predicted noise levels should be made for all noise receptors along the entire highway corridor (as opposed to just specific sites along the corridor) affected by the project and should be compared with existing (ambient) noise levels. The name of the FHWA-approved noise model (e.g., STAMINA) used for predictions should be listed. The number of project-affected noise receptors should be arranged into the following groups:

- * receptors receiving an increase of 5-9 dBA
- * receptors receiving an increase of 10-14 dBA
- * receptors receiving an increase of 15 dBA and greater.

Those receptors receiving a noise increase resulting in a level above their NAC should be indicated. Inclusion of actual ambient vs. predicted noise levels would be beneficial to an evaluation (e.g., 60dBA elevated to 75dBA L_{10} for a given receptor). It would be of particular interest to know how many decibels a predicted level exceeded the NAC for all so-affected receptors.

- ° Project-related noise level elevations: all project-generated noise increases above the existing site noise level are considered impacts, but particularly if above design levels, if elevated 10 dBA or more, and/or if long termed. An increase of 5-9 dBA is considered important, a 10-14dBA is considered substantial, and a 15 dBA and greater increase is considered severe, even if the resultant elevated noise levels are below the NAC. Feasible mitigation of project-generated increases above the NAC should be accomplished and feasible mitigation for increases of 10 dBA or more (below the NAC) should be considered. Mitigation should at least be at the level of FHPM 7-7-3 guidance.
- ° Additional helpful information includes the existing and predicted percentage of trucks using the old/new highway.
- ° Construction impacts (e.g., construction machinery, pile driving, blasting)
- ° Also of concern are public complaints concerning construction-related noise emissions and state mechanisms to properly address them.



United States
Department of
Agriculture

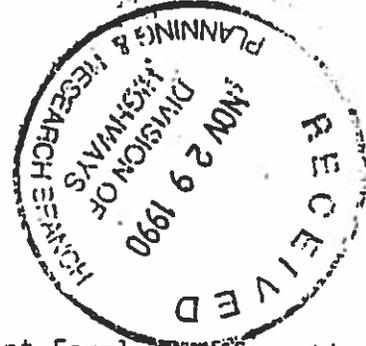
Soil
Conservation
Service

A-16

4405 Bland Road, Suite 205
Raleigh, NC 27609
Telephone: (919) 790-2905

November 19, 1990

Mr. L. J. Ward, P.E., Manager
Planning and Environmental Branch
N. C. Department of Transportation
P. O. Box 25201
Raleigh, NC 27611-5201



Dear Mr. Ward:

We are unable to complete your request for Important Farmland information at this time. The soil survey for Cherokee County has not been completed. We regret the negative response.

Sincerely,

Bobby J. Jones
Bobby J. Jones
State Conservationist

Distribute to:

Pool	Webb	C'Quinn
Oudeck	Proctor	Caston
Newman	Swain	Snulder
Norwood	Stiles	Neawidek
Modlin	Webb	Springer
Tewell	Elmore	
	Grimes	



The Soil Conservation Service
is an agency of the
Department of Agriculture

INTERGOVERNMENTAL REVIEW COMMENTS

MAILED TO

N.C. DEPT. OF TRANSPORTATION
L.J. WARD
PLANNING & ENV. BRANCH
HIGHWAY BLDG./INTER-OFFICE

FROM

MRS. CHRYS BAGGETT
DIRECTOR
N C STATE CLEARINGHOUSE

PROJECT DESCRIPTION

SOLICITING COMMENTS FOR THE PROPOSED IMPROVEMENTS TO NC 60,
FROM THE GEORGIA STATE LINE TO US 19-16-74 IN CHEROKEE
COUNTY (TIP R-2110)

SAI NO 91E42200159 PROGRAM TITLE - SCOPING

THE ABOVE PROJECT HAS BEEN SUBMITTED TO THE NORTH CAROLINA
INTERGOVERNMENTAL REVIEW PROCESS. AS A RESULT OF THE REVIEW THE FOLLOWING
IS SUBMITTED () NO COMMENTS WERE RECEIVED

(X) COMMENTS ATTACHED

SHOULD YOU HAVE ANY QUESTIONS; PLEASE CALL THIS OFFICE (919) 733-0499.

C.C. REGION A

COPY - NCDOT



State of North Carolina
 Department of Environment, Health, and Natural Resources
 512 North Salisbury Street • Raleigh, North Carolina 27611

James G. Martin, Governor
 William W. Cobey, Jr., Secretary

Douglas G. Lewis
 Director
 Planning and Assessment



MEMORANDUM

TO: Chrys Baggett
 State Clearinghouse

FROM: Bill Flournoy *BF*

RE: 91-0159 - Scoping - Upgrade of NC 60 from the
 Georgia State Line to US 19-64-74, Cherokee County

DATE: October 19, 1990

The Department of Environment, Health, and Natural Resources (EHNR) has reviewed the proposed project. Please find attached EHNR's comments which include several concerns that need to be addressed before moving forward with the upgrading of NC 60 from the Georgia State Line to US 19-64-74.

If there are any questions, please advise.

Thank you for the opportunity to review.

WLF:bsb

Attachments

COPY - NCDOT



North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Melba McGee, Planning and Assessment
Dept. of Environment, Health & Natural Resources

FROM: Richard B. Hamilton *Richard B. Hamilton*
Assistant Director

DATE: October 10, 1990

SUBJECT: Scoping comments for the planned upgrade of NC 60
from US 19-64-74 to the North Carolina-Georgia
State Line, State Project No. 6.911010, T.I.P.
#R-2110.

The Wildlife Resources Commission has reviewed the information provided by L. J. Ward of NCDOT and professional biologists on our staff are familiar with habitat values of the project area. An onsite investigation was conducted on October 2, 1990 for the purpose of further assessing construction impacts on wildlife and fisheries resources. Our comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), and North Carolina General Statutes (G.S. 113-131 et. seq.).

The North Carolina Wildlife Resources Commission is concerned about the potential adverse impacts of this proposed project on fish and wildlife along the project route. The present NC 60 crosses the Nottely River, Rapiers Mill Creek and at least 3 unnamed tributaries to the Nottely River. Proposed construction plans that do not avoid or minimize the negative impacts to these habitats may cause damage. While the quality of the fisheries habitat in the Nottely River has been reduced by land disturbing activities and by an upstream hydropower operation, its fisheries are still utilized by the public. The Nottely River and possible the other streams also support a spring spawning run of white bass and walleye. Any construction work which occurs during the late winter and early spring months could decrease or eliminate the spawning success of these important species.

COPY - NCDOT

A-20

In addition to an erosion control plan and other activities which decrease the negative impacts of construction, we require that all wetlands and stream losses due to construction be mitigated by replacement of these habitats with areas of equal habitat value. If replacement of wetlands or a stream channel change is needed with the final road alignment, plans should be made during the right-of-way acquisition period to acquire land for this mitigation; however, we prefer avoidance over mitigation. Any construction plans requiring filling of wetlands will require a 404 permit and NCWRC will be a review agency for the Corps of Engineers.

On this project there exists an excellent opportunity for DOT to mitigate negative impacts caused by this project or other projects which may result in the loss of fisheries habitat. Between the two Rapier Mill Creek bridges the creek passes through a pasture in which livestock have access to the full length of the creek. DOT could work with the Soil Conservation Service (through their cost-share program) to develop a plan where by the livestock would be fenced out of the creek. The Wildlife Resources Commission would consider this mitigation for lost habitat due to filling of wetlands or other negative impacts from this project or other road projects within the DOT district. since all streams affected by this project are either trout waters or tributaries to trout waters.

We appreciate the opportunity to provide our comments concerning this project. If we can provide further assistance, please contact us.

RBH/lp

cc: Micky Clemmons, D-9 Fisheries Biologist
Joffrey Brooks, D-9 Wildlife Biologist
Robert Johnson, Army Corps of Engineers

A-21
DEPARTMENT OF ENVIRONMENT, HEALTH
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number
91-0159
County
Cherokee

Inter-Agency Project Review Response

Project Name NC 60 from GA State Line to US 19 64 77

Type of Project RD

The following are our comments on the above referenced subject.

- The applicant should be advised that plans and specifications for all water system improvements must be approved by the Division of Environmental Health prior to the award of a contract or the initiation of construction (as required by 10 NCAC 100 .0900 et. seq.). For information, contact the Public Water Supply Section, (919) 733-2460.
- Several water lines possibly are located in the path of an adjacent to the proposed project. Due to a possible rupture during construction, the contractor should contact the appropriate water system officials to specify a work schedule.
- The proposed project will be constructed near water resources which are used for drinking. Precaut should be taken to prevent contamination of the watershed and stream by oil or other harmful substance. Additional information is available by contacting the Public Water Supply Section at (919) 733-2321.
- Back flow preventors should be installed on all incoming potable water lines. Additional information is available by contacting the Public Water Supply Section at (919) 733-2321.
- This project will be classified as a community public water supply and must comply with state and federal drinking water monitoring requirements. For more information the applicant should contact the Public Water Supply Section, (919) 733-2321.
- If this project is constructed as proposed, we will recommend closure of _____ feet of adjacent waters to the harvest of shellfish. For information regarding the shellfish sanitation program, the applicant should contact the Shellfish Sanitation Branch (919) 726-6827.
- The applicant should be advised to contact the local health department regarding their requirements for septic tank installations (as required under 10 NCAC 10A .1900 et. seq. and/or sanitary facility requirements for this project if applicable.) For information concerning septic tank and other on-site waste disposal methods, contact the On-site Sewage Branch at (919) 733-2895.
- The applicant should be advised that prior to the removal or demolition of dilapidated structures, an extensive rodent control project may be necessary in order to prevent the migration of the rodents to adjacent areas. For information concerning rodent control, contact the local health department or the Public Health Pest Management Section (919) 733-6407.
- The spoil disposal area(s) proposed for this project may produce a mosquito breeding problem. For information concerning appropriate mosquito control measures, the applicant should contact the Public Health Pest Management Section at (919) 733-6407.

COPY - NCDOT

BIO Browder
Reviewer

Envir Health/Water Supply
Branch/Unit

10/10/76
Date

27 miles from intake



State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Land Resources

James G. Martin, Governor
William W. Cobey, Jr., Secretary

Charles H. Gardner
Director



MEMORANDUM

Date: September 10, 1990
To: Melba McGee
From: Randy Cotten *RC*
Thru: Gary Thompson *Gut*
Subject: 91-0159, Cherokee County, NC 60, from the Georgia state line to US 19-64-74, State Project 6.911010, TIP R-2110

We have reviewed the above referenced project and find that 2 geodetic survey markers will be impacted.

The N.C. Geodetic Survey should be contacted at P.O. Box 27687, Raleigh, N.C. 27611, (919) 733-3836 prior to construction. Intentional destruction of a geodetic monument is a violation of N.C. General Statute 102-4.

GWT/ajs
cc: Joe Creech, NCDOT

CPY - KCOOT

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North Carolina Department of Cultural Resources

James C. Martin, Governor
 Patric Dorsey, Secretary

Division of Archives and History
 William S. Price, Jr., Director

October 25, 1990



MEMORANDUM

TO: L. J. Ward, P.E., Manager
 Planning and Environmental Branch
 Division of Highways
 Department of Transportation

FROM: David Brook, Deputy State
 Historic Preservation Officer *David Brook*

SUBJECT: Upgrading NC 60 from Georgia State Line
 to US 19-64-74, Cherokee County, State
 Project 6.911010, TIP R-2110, CH 91-E-4220-0159,
 CS 91-0013

We have received notification from the State Clearinghouse concerning the above project, as well as the archaeological survey report by Thomas Padgett.

During the course of the survey one previously recorded site was located within the project area. Mr. Padgett has recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since this project will not involve significant archaeological resources.

These comments are made in accord with G.S. 121-12(a) and Executive Order XVI. If you have any questions regarding them, please contact Ms. Renee Gledhill-Earley, environmental review coordinator, at 733-4763.

DB:slw

cc: State Clearinghouse
 T. Padgett



North Carolina Department of Crime Control and Public Safety

James G. Martin, Governor
Joseph W. Dean, Secretary

Division of Emergency Management
116 W. Jones St., Raleigh, N. C. 27603-1335
(919) 733-3867

September 14, 1990

MEMORANDUM

To: N.C. State Clearinghouse, Department of Administration
From: J. Russell Capps, Division of Emergency Management,
NFIP Section *JRC*

Subject: Intergovernmental Review

Re: State # N.C. 91-E-4220-0159

N.C. DOT - Proposed improvements to NC 60 in
Cherokee County.

For information purposes, the Commission is advised that on July 24, 1990, Governor Martin signed Executive Order 123, a Uniform Floodplain Management Policy, which must be followed for development on any site.

PROJECT: 6.911010

COUNTY: Cherokee

Alternate 1 of 1

I.D. NO.: R-2110

F.A. PROJECT:

DESCRIPTION OF PROJECT: NC 60 From Georgia State Line to US 64-74

ESTIMATED DISPLACEDS					INCOME LEVEL														
Type of Displacee	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 LP	VALUE OF DWELLING				DSS DWELLINGS AVAILABLE					
Individuals	0	0	0	0	1	3	1	0	0	Owners		Tenants		For Sale		For Rent			
Families	5	0	5	0	0	0	0	0	0	0-20M	2	\$ 0-150	0	0-20M	0	\$ 0-150	0		
Businesses	1	0	1	0	20-40M	3	150-250	0	20-40M	25	150-250	0	40-70M	100	250-400	0	40-70M	100	
Farms	0	0	0	0	40-70M	0	250-400	0	40-70M	100	250-400	0	70-100	100	400-600	0	70-100	100	
Non-Profit	1	0	1	0	70-100	0	400-600	0	70-100	100	400-600	0	100 LP	50	600 LP	0	100 LP	50	
					TOTAL	5		0		275									

ANSWER ALL QUESTIONS
EXPLAIN ALL "YES" ANSWERS

YES	NO	QUESTION
	x	1. Will special relocation services be necessary
	x	2. Will schools or churches be affected 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
	x	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
		ANSWER THESE ALSO FOR DESIGN
		10. Will public housing be needed for project
		11. Is public housing available
		12. Is it felt there will be adequate DSS housing available during relocation period
		13. Will there be a problem of housing within financial means
		14. Are suitable business sites available (list source)
		15. Number months estimated to complete RELOCATION

REMARKS (Respond by Number)

3. Only one retail grocery is being affected and the project will not disrupt business services in the area.

4. A small retail grocery is affected by the project. The business occupies approximately 2,500 SF with three (3) employees and no minorities. A United States Post Office building is affected. The building is approximately 900 square feet with two employees and no minorities.

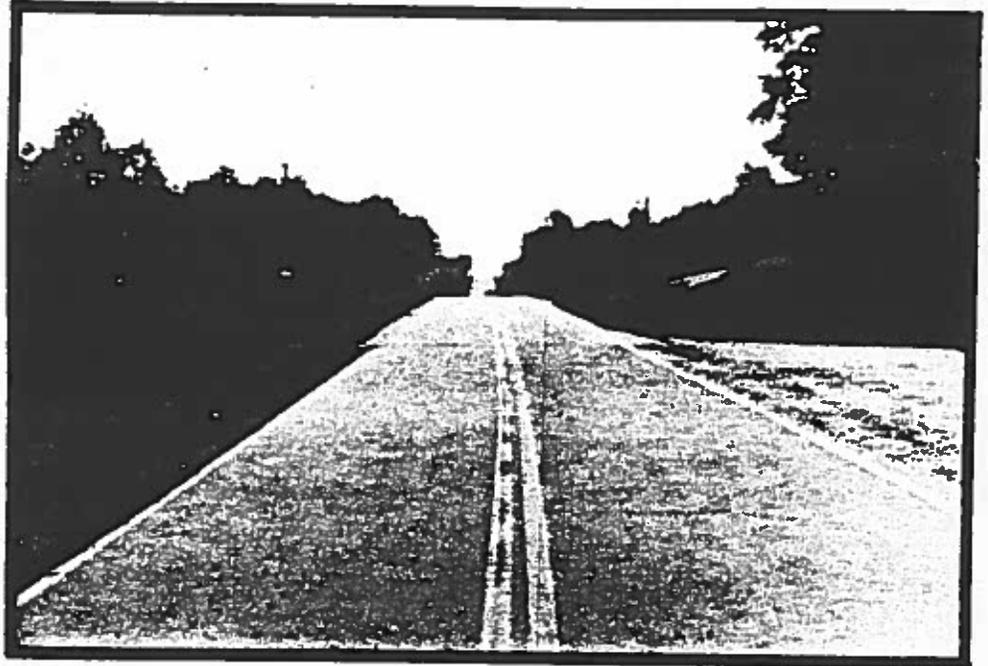
6. Blake Realty of Murphy, N. C., supplied the housing information.

8. As necessary in accordance with State Law.

Roy Peter White 11-15-90 AP Williams 11-21-90
 Relocation Agent Date Approved Date
 Form 15.4 Revised 5/90
 Original & 1 Copy: State Relocation Agent
 2 Copy: Area Relocation File



North Carolina Department of Transportation
Planning and Environmental Branch



**NC 60
IMPROVEMENT PROJECT
FROM GEORGIA STATE LINE
TO US 64-74**

**CHEROKEE COUNTY
OCTOBER 23, 1990**

Public Meeting

PUBLIC MEETING
 NC 60
 From the Georgia State Line to US 64-74
 Cherokee County
 Project R-2110

PURPOSE OF MEETING

This meeting is being held to review proposed improvements for NC 60. Any comments or suggestions concerning the proposed highway improvement or areas of environmental concern in the study will be appreciated. All comments and suggestions received during the project study will be considered in determining a recommendation for the project.

Request for additional information or written comments should be addressed to:

Mr. L. J. Ward, P. E., Manager
 Planning and Environmental Branch
 Division of Highways
 North Carolina Department of Transportation
 Post Office Box 25201
 Raleigh, North Carolina 27611

PROJECT DESCRIPTION

The 1990-1996 Transportation Improvement Program calls for up-grading the existing two-lane facility.

CURRENT SCHEDULE

Right of way acquisition and construction are scheduled to begin in Fiscal Years 1993 and 1995, respectively. These schedules are subject to the availability of highway funds.

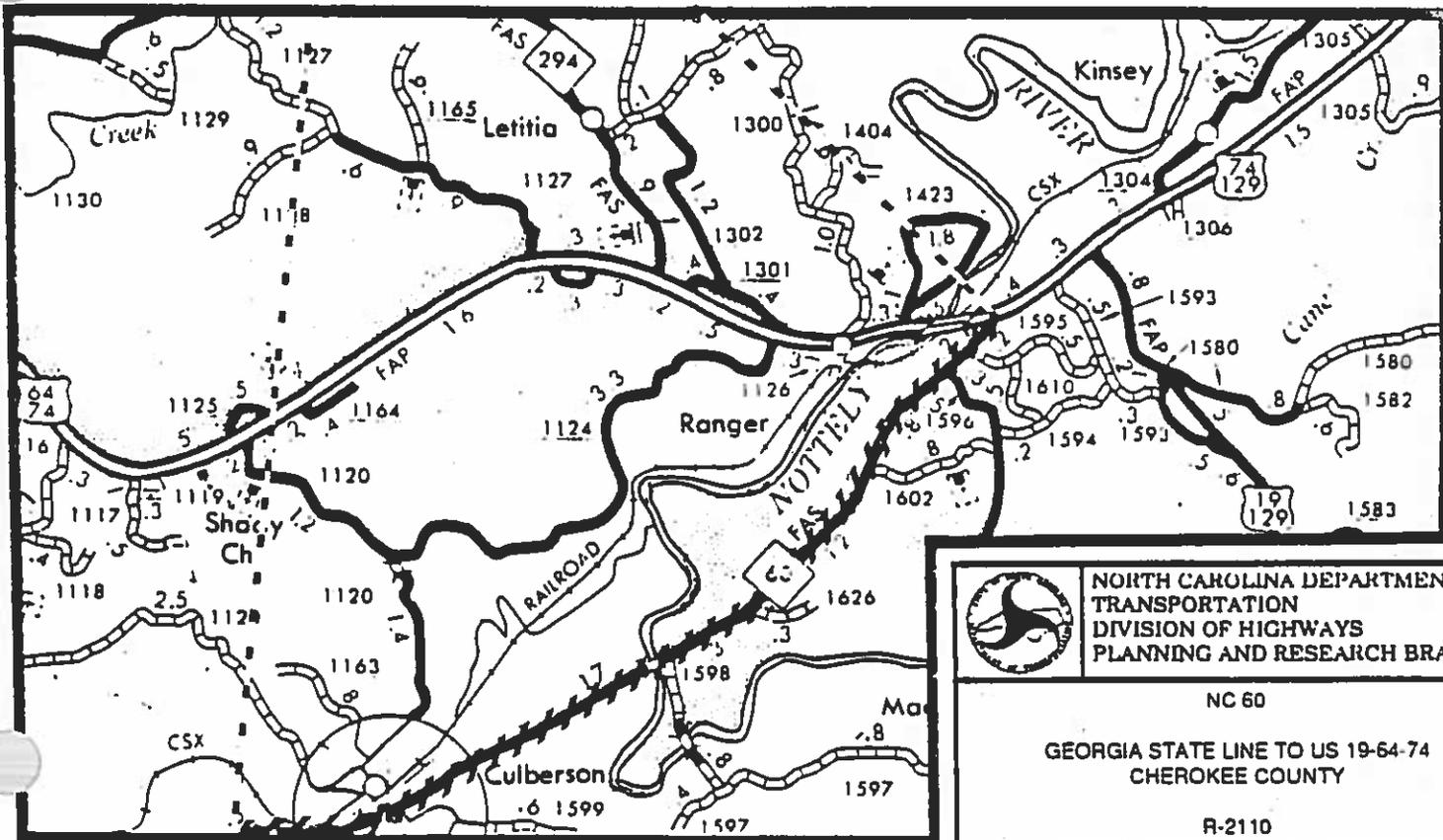
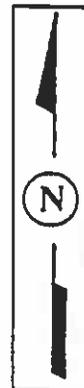
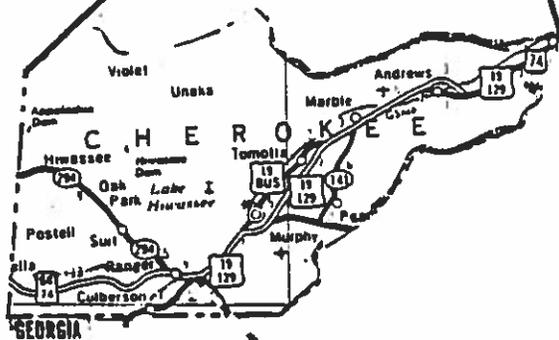
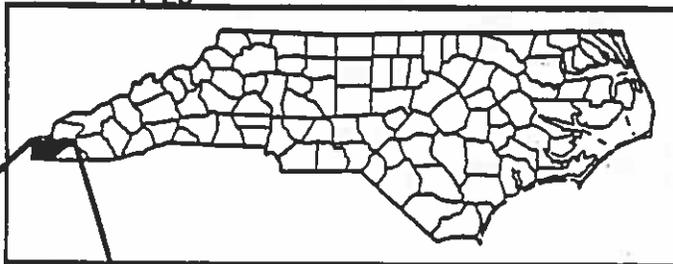
EXISTING FACILITY

The studied segment of NC 60 is approximately 5 miles in length. NC 60 is basically a two-lane facility with an 18-foot pavement and three-foot shoulders.

Current (1990) Average Daily Traffic along NC 60 ranges from 1900 to 2500 vehicles per day. Projected (2015) Average Daily Traffic ranges from 2200 to 4800 vehicles per day.

COST ESTIMATE

Construction	\$ 5,900,000
Right of Way	\$ 2,050,000
Total	\$ 7,050,000



 NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

NC 60

GEORGIA STATE LINE TO US 19-64-74
CHEROKEE COUNTY

R-2110

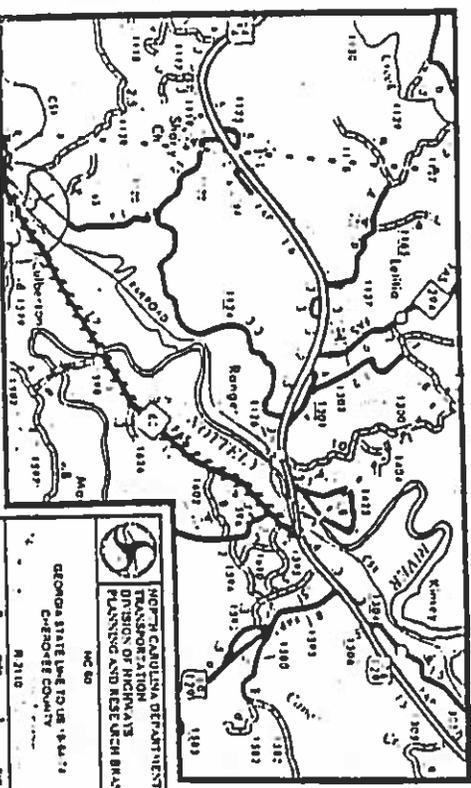
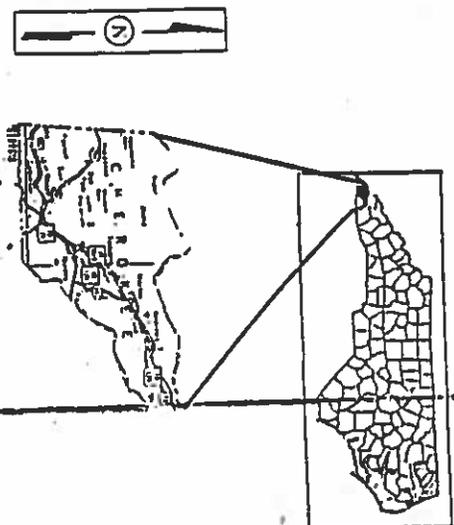
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FIG 1

Few Attend NC 60 Public Hearing: DOT Says Four Lane Highway Is Not An Option At This Time

Despite poor attendance at a public hearing Thursday concerning upcoming proposed improvement projects on NC 60, state Department of Transportation officials note that the road is still scheduled for improvements beginning in the mid 1990s, with the main objective to make the narrow highway a safer road.

However, possible four laneing of NC 60 is currently only an idea, with no actual



Maps Show Road Improvement Plan

Liden Named Director Of MMC Capital Development

David Liden, Development Director at the John C. Campbell Folk School, will be leaving his duties there to take on the dual position of Director of Capital Development for the Murphy Medical Center and executive director of its new foundation on Dec. 1.

Ron Hill, Folk School director, made the announcement, noting that Liden has been a professional colleague of his for five years, as well as a friend and neighbor. "Although I recognize that David's departure is a major loss both to the John C. Campbell Folk School

and to me personally, I fully support his decision to accept this new responsibility to work with our community to develop a capital base which will establish our hospital as a signal regional health care center." During my tenure as county See DIRECTOR, page 10

feasibility study for this option slated anywhere down the line. Only 20 people attended the NC 60 public hearing held at the Murphy High School cafeteria from 3 to 7 p.m.

All supported the plans to widen and renovate the five-mile NC 60 spur which connects with the Georgia border at Fannin County, explained Lubin Prevalt, unit leader for Rural Project Planning, Planning and Research Branch of the NCDOT. Prevalt, along with Justice Jackson, project engineer for Rural Project Planning, were the two DOT representatives who presided over Thursday's four hour long session.

Prevalt also noted that a large number of those in attendance spoke in support of a possible option to four lane North Carolina's side of the highway, which would then give Cherokee County a four-lane connector to Georgia.

Georgia improved its portion of the highway a few years ago, widening the existing road, replacing abutment bridges and widening road shoulders.

Those in support of a four lane project for NC 60 have stressed the need to begin working now with Georgia officials and DOT representatives in an effort to jointly establish a four-lane connector between Georgia and North Carolina.

Prevalt added that of those 20 people who attended Thursday's public hearing, many were lawn, county and state representatives, such as Murphy Mayor Cloe Moore, county commissioner Bob Gibson and state Sen. Robert Carpenter, who all voiced their

support of further looking into the four lane option.

"As it stands right now," Prevalt continued, "the improvement project for NC 60 begins in 1993 with the purchase of rights of way for See NC 60, page 10

NC 60 -

Continued from front page

widening the existing two lanes. Actual renovations projects are projected to begin in 1995. The roadway is to be widened from the current 18 feet to 24 feet, with eight foot shoulders replacing the current three foot shoulders. Replacement of all abutment bridges will also occur.

Total estimated cost of the renovation projects is listed by the DOT at \$7.5 million.

Prevalt, however, also explained that while the NC 60 project is now listed to begin in 1992, the schedules under the

Transportation Improvement Program (TIP) are subject to change due to the availability of highway funds. A new TIP listing is scheduled to be released by the DOT in about six weeks, Prevalt added.

As for the four lane option, Prevalt noted, "The department currently has no four lane studies scheduled anywhere in Cherokee County."

According to Prevalt, if residents really see four laneing of NC 60 as the option most favored, then they need to let their representative on the state's Board of Transportation know. "The current region representative on the DOT board is Jim Myers, who may be contacted at 458-3240.

Prevalt also pointed out that if four laneing of NC 60 does become a viable option, then renovations of the narrow road could feasibly be postponed until a much later date.

Indeed, if four laneing becomes an option, Prevalt noted, then we would have to look at the project under an entire new different light, which could feasibly postpone any improvements to be done on the road for quite a while.

-Party Little

RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE

X E.I.S. CORRIDOR DESIGN

PROJECT: 6.911010 COUNTY: Cherokee Alternate 1 of 1 Alternate
S. NO.: R-2110 F.A. PROJECT:

DESCRIPTION OF PROJECT: NC 60 From Georgia State Line to US 64-74

ESTIMATED DISPLACED					INCOME LEVEL								
Type of Displacee	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP				
Individuals	0	0	0	0	1	3	1	0	0				
Families	5	0	5	0	0	0	0	0	0				
Businesses	1	0	1	0	VALUE OF DWELLING				DDS DWELLINGS AVAILABLE				
Farms	0	0	0	0	Owners		Tenants		For Sale		For Rent		
Non-Profit	1	0	1	0	0-20M	2	\$ 0-150	0	0-20M	0	\$ 0-150	0	
ANSWER ALL QUESTIONS YES NO EXPLAIN ALL "YES" ANSWERS 1. Will special relocation services be necessary 2. Will schools or churches be affected by displacement 3. Will business services still be available after project 4. Will any business be displaced. If so, indicate size type, estimated number of employees, minorities, etc. 5. Will relocation cause a housing shortage 6. Source for available housing (list) 7. Will additional housing programs be needed 8. Should Last Resort Housing be considered 9. Are there large, disabled, elderly, etc. families ANSWER THESE ALSO FOR DESIGN 10. Will public housing be needed for project 11. Is public housing available 12. Is it felt there will be adequate DDS housing available during relocation period 13. Will there be a problem of housing within financial means 14. Are suitable business sites available (list source) 15. Number months estimated to complete RELOCATION <u> </u>					20-40M	3	150-250	0	20-40M	25	150-250	0	
					40-70M	0	250-400	0	40-70M	100	250-400	1	
					70-100	0	400-600	0	70-100	100	400-600	1	
					100 UP	0	600 UP	0	100 UP	50	600 UP	0	
					TOTAL	5		0		275		2	
					REMARKS (Respond by Number)								
					3. Only one retail grocery is being affected and the project will not disrupt business services in the area. 4. A small retail grocery is affected by the project. The business occupies approximately 2,500 SF with three (3) employees and no minorities. A United States Post Office building is affected. The building is approximately 900 SF with two employees and no minorities. 6. Blake Realty of Murphy, N. C., supplied the housing information. 8. As necessary in accordance with State law. NOTE: (1) In addition to the above, one other residence may be affected by a limited access. (2) There are two vacant business buildings which may be occupied by the time the project starts								

Thomas A. Bell
Relocation Agent
Form 15.4 Revised 5/90

6-3-91
Date

J. B. Williamson Jr. 6-5-91
Approved Date
Original & 1 Copy: State Relocation Agent
2 Copy: Area Relocation File



North Carolina Department of Cultural Resources

James G. Martin, Governor
Patric Dorsey, Secretary

Division of Archives and History
William S. Price, Jr., Director

June 5, 1991

MEMORANDUM

TO: B. J. O'Quinn
Assistant Branch Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*
Deputy State Historic Preservation Officer

SUBJECT: NC 60 from the Georgia State Line to
US 64-74, R-2110, GS 91-0102

Thank you for your letter of April 4, 1991, concerning the above project.

We have conducted a search of our files and are aware of no National Register-listed properties located within the planning area. Therefore, we concur that no further compliance with G.S. 121-12(a) is required.

However, we have located the following structure of historical or architectural importance within the general area of the project:

Hyatt House. South side of SR 1599, 0.1 mile southeast of the junction with NC 60, Culberson.

Since the last historic and architectural inventory of Cherokee County was conducted in 1981, we feel there may be other properties in the project area of which we are unaware and that we would now consider historically or architecturally significant. We are especially concerned because we can see on the USGS topographical map that the houses along NC 60 are located very close to the roadway.

Also, please note that the Western Office of the Division of Archives and History requires that an appointment be made to view their maps and files. Members of our staff noticed that your architectural historian used the Western Office files on April 2 and 3, 1991. However, our staff was not informed of which project was being investigated or which files were needed. This means that files could have been missed or overlooked by the North Carolina Department of Transportation architectural historian and thereby invalidate her findings.

While we note that this project is to be state funded, the potential for federal permits may require further consultation and compliance with Section 106 of the National Historic Preservation Act.

These comments are made in accord with G.S. 121-12(a) and Executive Order XVI. If you have any questions regarding them, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: B. Church