

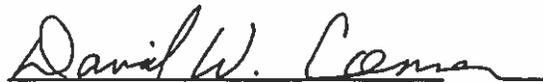
FEASIBILITY STUDY

**NC 294
from the Tennessee State Line
to US 64-74
Cherokee County**

Division 14

R-3622

Prepared by the
Program Development Branch
Division of Highways
N. C. Department of Transportation

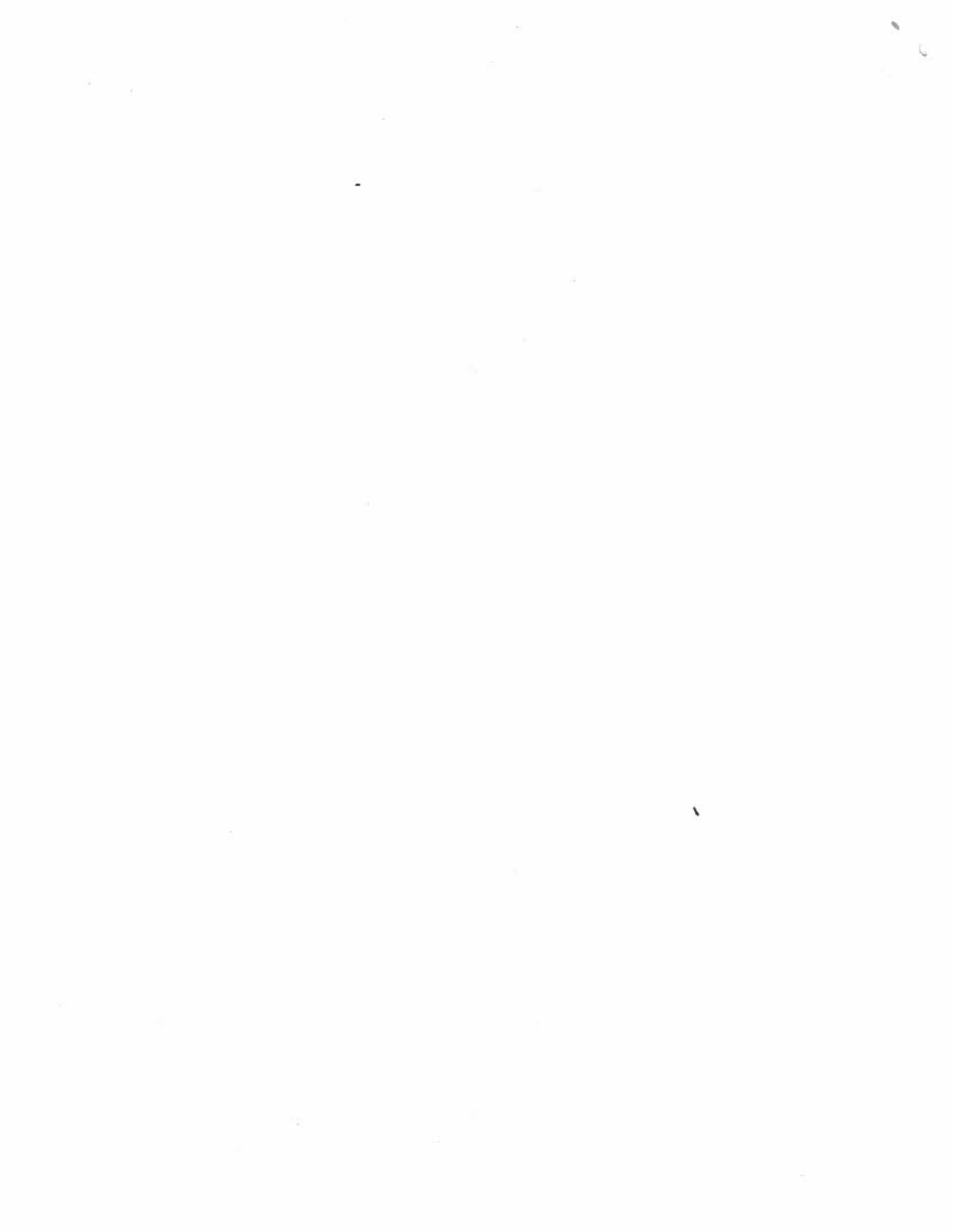


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NC 294

From The Tennessee State Line
To US 64-74
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I. General Description

This preliminary study describes recommended improvements to NC 294 in Cherokee County. It is recommended that NC 294 be widened from the Tennessee state line to US 64-74, a distance of approximately 13.5 miles (21.7 km). For a location map, please see Figure 1.

It is recommended that the roadway be realigned, to improve horizontal curvature problems, and be widened to a 2-lane, rural shoulder section with one 12-foot (3.6-m) wide travel lane in each direction, 2-foot (0.6-m) wide paved shoulders, and 6-foot (1.8-m) wide soil shoulders.

The proposed widening and realignment should be accomplished on a 100-foot (30.5-m) wide right-of-way.

It is estimated that there will be 30 residences and no businesses relocated as a result of this project.

The total cost for right-of-way and construction is estimated to be \$21,300,000 as follows:

Right-of-Way	\$ 5,900,000
Construction	15,400,000
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Total Cost	\$ 21,300,000

This study is the initial step in the planning and design process for this project and is not to be considered the product of exhaustive environmental or design investigations. The purpose of the study is to describe the problem, recommend a

treatment including costs, and identify potential problem areas that deserve consideration in the planning and design phases.

II. Need For Project

The purpose of this project is to improve the traffic carrying capacity and accident experience of NC 294 between the Tennessee state line and US 64-74. The project is strongly supported by area emergency service units.

NC 294 is designated as a major collector on the North Carolina Statewide Functional Classification System.

The project route is generally characterized by woodlands and mountainous terrain and there are a few residences scattered along the roadway. Fields of the Wood, an area tourist attraction, is located approximately 0.3 miles (0.5 km) southeast of SR 1157. At approximately 0.9 miles (1.4 km) southeast of SR 1314, the Hiwassee Dam School and the Hiwassee Dam Fire Department are located on the southwest side of the roadway.

Existing NC 294 is generally a 2-lane roadway with 18-foot (5.5-m) to 20-foot (6.1-m) wide pavement and no useable shoulders. The roadway includes very little area to pass safely and is typified by mountainous terrain and numerous curves. The roadway offers very few areas to pull off for breakdown situations. Immediately west of the project, on the Tennessee side of the state line, the roadway has 12-foot (3.6-m) wide travel lanes, and 2-foot (0.6-m) wide paved shoulders.

There are two structures located along the project route. Bridge #30, over Shoal Creek, is located immediately southeast of SR 1314. It has a clear deck width of 20.1 feet (6.1-m) and a length of 64 feet (19.5 m). It was constructed in 1935 and has a sufficiency rating of 53.3 points (out of a possible 100.0 points). Bridge #50, over Persimmon Creek, is located approximately 0.7 miles (1.1 km) southeast of SR 1130. It has a clear deck width of 17.8 feet (5.4-m) and a length of 120 feet (36.6 m). It was constructed in 1950 and has a sufficiency rating of 66.4 points (out of a possible 100.0 points).

The estimated 1995 Average Daily Traffic (ADT), on NC 294, ranges from a high of approximately 2,200 vehicles per day (vpd) at US 64-74 to a low of 1,300 vpd at the Tennessee state line. The design year (2020) estimates are approximately 4,000 vpd and 2,450 vpd, respectively. Current and future truck volumes are estimated to total about 5% of the traffic volumes.

The current Level of Service (LOS), on NC 294 is estimated to be Level C. Without improvements, it is estimated that the Level of Service will deteriorate to Level

D around the year 2000. With the recommended improvements, Level C is expected to prevail through the design year.

During the period from March 1, 1993, through February 29, 1996, there were 65 accidents reported within the project termini. This resulted in an accident rate of 252.7 accidents per 100 million vehicle miles (Acc/100MVM), compared to a statewide average of 207.3 Acc/100 MVM for all rural NC routes during 1994. There was one fatality reported during the period and 40 of the accidents resulted in non-fatal injuries. The most prevalent accident type was ran-off-road (50.7%), and 62% of the total accidents were single vehicle accidents with 28 vehicles hitting a tree or ditch bank. The recommended improvements should reduce the potential for these types of accidents.

III. Detailed Description

It is recommended that NC 294 be widened to a 2-lane, rural shoulder section with one 12-foot (3.6-m) wide travel lane in each direction, 2-foot (0.6-m) wide paved shoulders, and 6-foot (1.8-m) wide soil shoulders.

In addition to the widening NC 294, it is proposed that the following improvements be made (for the location of the improvements, see the corresponding numbers on Figure 1):

1. Improve horizontal alignment from approximately 0.6 miles (1.0 km) east of SR 1150 to approximately 1.3 miles (2.1 km) east of SR 1150
2. Improve horizontal alignment from approximately 0.6 miles (1.0 km) west of SR 1157 to approximately 0.2 miles (0.3 km) west of SR 1157
3. Improve horizontal alignment from approximately 0.6 miles (1.0 km) east of SR 1157 to approximately 1.5 miles (2.4 km) east of SR 1157.
4. Replace bridge #30, over Shoal Creek, with a new bridge having a clear deck width of 28 feet (8.5 m).
5. Improve horizontal alignment from approximately 0.3 miles (0.5 km) west of SR 1312 to approximately 0.1 miles (0.2 km) west of SR 1312.
6. Improve horizontal alignment from approximately 0.4 miles (0.6 km) west of SR 1130 to approximately 0.1 miles (0.2 km) west of SR 1130.
7. Improve horizontal alignment from approximately 0.3 miles (0.5 km) east of SR 1130 to approximately 1.0 miles (1.6 km) east of SR 1130.
8. Replace bridge #50, over Persimmon Creek, with a new bridge having a clear deck width of 28 feet (8.5 m).
9. Improve horizontal alignment from approximately 1.4 miles (2.2 km) east of SR 1130 to approximately 1.5 miles (2.4 km) east of SR 1130.
10. Improve horizontal alignment from approximately 1.6 miles (2.6 km) east of SR 1130 to approximately 2.0 miles (3.2 km) east of SR 1130.

The proposed widening and realignment should be accomplished on a 100-foot (30.5-m) wide right-of-way.

It is estimated that there will be 30 residences and no businesses relocated as a result of this project.

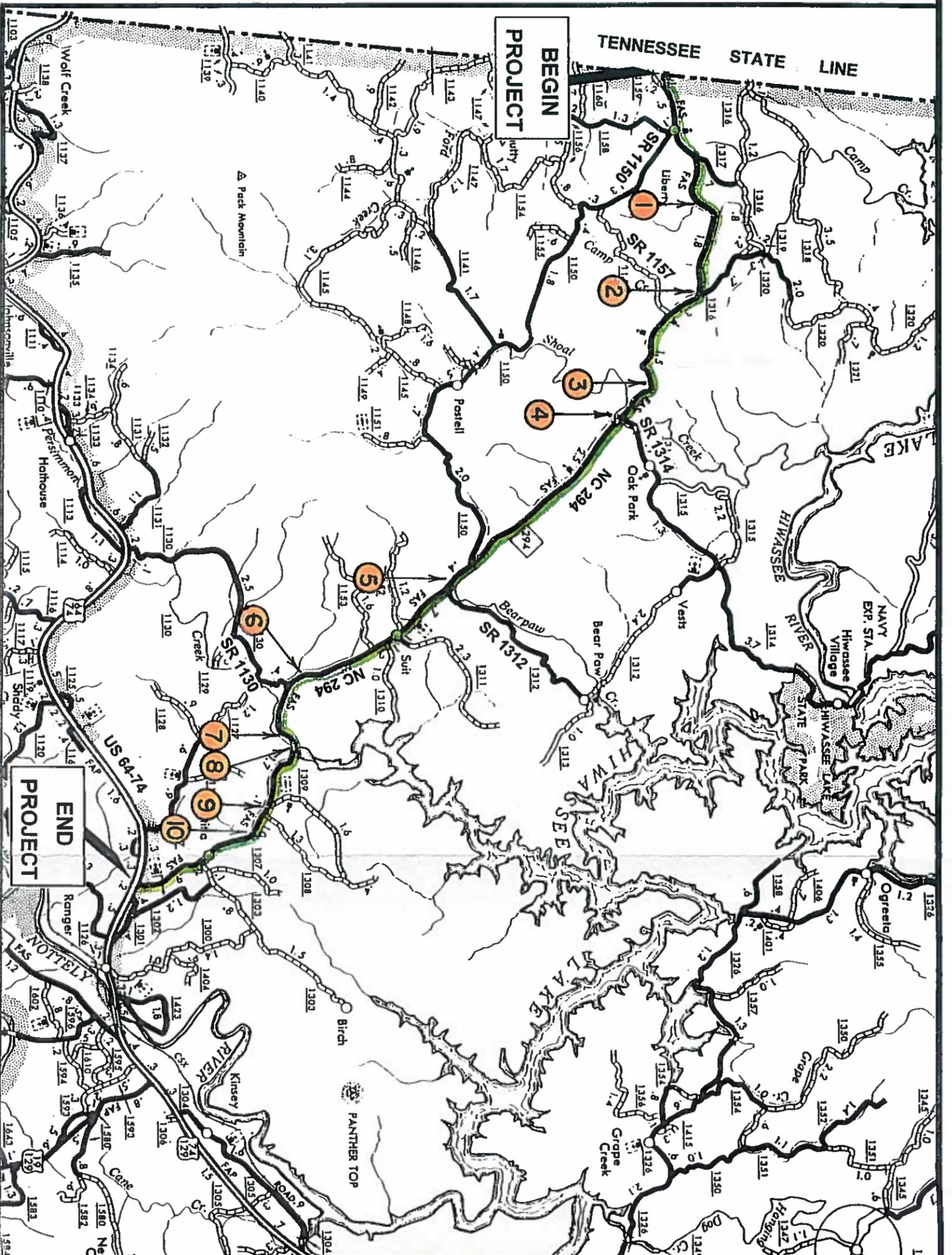
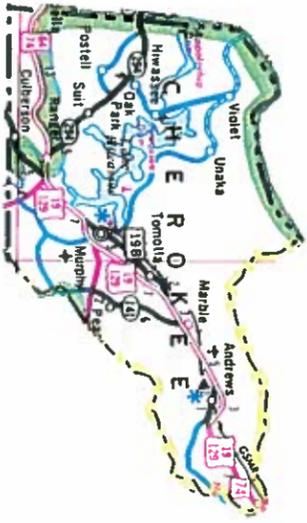
The total cost for right-of-way and construction is estimated to be \$21,300,000 as follows:

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Total Cost	\$ 21,300,000

IV. Other Comments

An environmental screening was not conducted for this study; however, due to the construction potential in the areas of Shoal Creek and Persimmon Creek, Corps of Engineers permits and wetlands mitigation will be required. The costs for wetlands mitigation is not included as part of the above estimated project costs.

No provisions for bicycles have been included in this report.



SCALE

North Carolina Department of Transportation
 Program Development Branch
R-3622
 NC 294
 from the Tennessee State Line
 to US 64 & US 74
 Cherokee County
 DIVISION 14
 FIGURE 1

