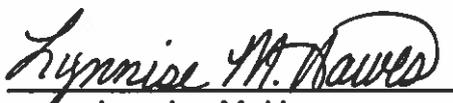


FEASIBILITY STUDY

**Burgaw  
NC 53 (Burgaw Bypass)  
Pender County  
R-3302**

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



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3/13/95

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## FEASIBILITY STUDY

### **Burgaw NC 53 (Burgaw Bypass) Pender County R-3302**

#### **I. GENERAL DESCRIPTION**

This is a feasibility study for the construction of the NC 53 Bypass of the Town of Burgaw, from SR 1340 to SR 1508, a distance of approximately 6 miles (9.7 kilometers) (See Figures 1 and 2). The recommended alignment utilizes both existing routes and new location. The recommended typical cross-section is a two-lane, 24-foot (7.2-meter) wide roadway with 8-foot (2.4-meter) usable shoulders, including 4-foot (1.2-meter) paved shoulders on a 100-foot (30.5-meter) wide right-of-way with no control of access. The estimated cost of the project is \$8,100,000 (\$2,100,000 for right-of-way and \$6,000,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents recommended cross sections for improvements, general corridors of improvements, and estimated cost of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues that deserve consideration in the planning and construction stages.

#### **II. NEED FOR THE PROJECT**

This project was requested by the Town of Burgaw. The existing NC 53 is classified as a major collector in the Statewide Functional Classification System.

The recommended improvements are needed to reduce the truck traffic in downtown Burgaw and to reduce the number of accidents involving trucks. At present, trucks going through downtown must maneuver three 90 degree turns. It is difficult or impossible for two trucks to make the turns simultaneously.

The west terminal of the project is located approximately 0.2 miles (0.3 kilometers) west of the unsignalized intersection of SR 1340 (New Savannah Road) and NC 53. Land use in this area is agricultural and rural residential.

The east terminal of the project is located approximately 0.2 miles (0.3 kilometers) west of the unsignalized intersection of SR 1508 and NC 53. Land use in this area is agricultural, wooded, and rural residential.

As shown on Figure 2, several existing routes were studied along the project corridor. SR 1340 (New Savannah Road), from NC 53 to SR 1345 (Old Savannah Road), is a two-lane, 18-foot (5.4-meter) pavement with 8-foot (2.4-meter) shoulders on a 60-foot (18.3-meter) wide right-of-way. Land use along this road is mainly agricultural. SR 1343 (Henry Brown Road), from NC 53 to SR 1216 (Piney Woods Road), is a two-lane, 20-foot (6.0-meter) pavement with 8 to 10-foot (2.4 to 3.0-meter) shoulders on a 60-foot (18.3-meter) wide right-of-way. Land use along SR 1343 is rural residential and agricultural. SR 1346 (Ed Cowan Road) is a two-lane, 22 to 24-foot (6.6 to 7.2-meter) unpaved road on a 60-foot (18.3-meter) wide right-of-way. Land use along this road is mainly rural residential on the south side and agricultural on the north side.

Bridge Number 7 carries SR 1340 over Long Creek (See Figure 1). This bridge is approximately 0.6 miles (1.0 kilometer) north of the junction with NC 53. The sufficiency rating of this bridge is 63.7, compared to 100.0 for a new structure. Bridge Number 7 is 52 feet (15.8 meters) long with a deck width of 25.4 feet (7.7 meters) and an approach roadway width of approximately 24 feet (7.3 meters).

A sanitary landfill is located on the west side of SR 1340 approximately 0.2 miles (0.3 kilometers) south of the intersection of SR 1216 and SR 1340.

There is a possibility that there are underground storage tanks at the northeastern corner of the junction of SR 1332 and SR 1340 where a gas station may have been located in the past. Further investigation is needed to determine if underground tanks are present.

The estimated 1994 average daily traffic (ADT) on the Burgaw Bypass ranges from 2000 to 2700 vehicles per day (vpd). It is estimated that 17% of the traffic volume would be made up of trucks. In the design year 2020, traffic volumes would range from 3700 to 6700 vpd. The Burgaw Bypass would operate at a level of service (LOS) B in 1994 and a LOS C in the design year 2020.

During the period beginning on April 1, 1991, and ending on March 31, 1994, 85 accidents were reported on the existing NC 53. This resulted in an accident rate of 202.9 accidents per 100 million vehicle miles (acc/100mvm), compared to a statewide average of 205 acc/100mvm for this type of facility. Thirty-three percent of the accidents on NC 53 involved trucks. The recommended improvements are expected to reduce the accident rate.

### **III. RECOMMENDATIONS**

It is recommended that the Burgaw Bypass be constructed from SR 1340 to approximately 0.2 miles (0.3 kilometers) west of SR 1508, a distance of approximately 6 miles (9.7 kilometers). The recommended typical cross-section is a two-lane, 24-foot (7.2-meter) wide roadway with 8-foot (2.4-meter) usable shoulders, including 4-foot (1.2-meter) paved shoulders on a 100-foot (30.5-meter) wide right-of-way with no control of access. This typical cross-section was recommended based on the high volume of trucks. All intersections would be stop sign-controlled, except at US 117. A traffic signal is recommended at the intersection of the Burgaw Bypass and US 117. The recommended alternate is shown on Figure 2 as Section 1 Alternate B and Section 2.

The recommended project corridor would begin by realigning the existing intersection of NC 53 and SR 1340 to make access to the Burgaw Bypass the dominant traffic flow pattern. SR 1340, from NC 53 to SR 1345, would be reconstructed as a two-lane, 24-foot (7.2-meter) pavement with 8-foot (2.4-meter) shoulders including 4-foot (1.2-meter) paved shoulders (a total of 32 feet (9.6 meters) of pavement). Considering the poor condition of the pavement, it is recommended that the existing pavement be rubblized and used as a base course. Also, some curves on SR 1340 may be straightened to improve the horizontal alignment. From approximately 0.2 miles (0.3 kilometers) west of the intersection of SR 1340 and SR 1345, the Bypass would continue on new location to SR 1345 utilizing the recommended two-lane typical cross-section.

It is recommended that Bridge Number 7 be replaced. The recommended bridge deck width is 40 feet (12 meters), which would accommodate 2 lanes of traffic. The bridge length would remain at approximately 52 feet (15.8 meters).

The Bypass would be continued in Section 2. This section would consist of new location from SR 1345 to SR 1346. The recommended typical cross-section is a two-lane, 24-foot (7.2-meter) pavement with 8-foot (2.4-meter) shoulders including 4-foot (1.2-meter) paved shoulders (a total of 32 feet (9.6 meters) of pavement) on a 100-foot (30.5-meter) wide right-of-way with no control of access.

SR 1346 would consist of a two-lane, 24-foot (7.2-meter) pavement with 8-foot (2.4-meter) shoulders including 4-foot (1.2-meter) paved shoulders (a total of 32 feet (9.6 meters) of pavement) on a 100-foot (30.5-meter) wide right-of-way with no control of access. The rail line west of SR 1346 has been removed.

The Bypass would continue on new location from US 117 to NC 53, using the recommended two-lane cross-section. At the east terminal, the existing NC 53 would be realigned to make access to the Burgaw Bypass the dominant traffic movement.

The recommended improvements would reduce the truck traffic in the downtown area and are expected to reduce to number of accidents involving trucks. The recommended improvements also would reroute through traffic away from downtown.

Low utility conflicts are expected.

The following table shows the estimated project costs:

	<u>Section 1</u>	<u>Section 2</u>	<u>Section Total</u>
Construction	\$ 3,600,000	\$ 2,400,000	\$ 6,000,000
Right-of-Way	\$ 1,400,000	\$ 700,000	\$ 2,100,000
Project Total	\$ 5,000,000	\$ 3,100,000	\$ 8,100,000

#### **IV. OTHER COMMENTS AND CONCERNS**

It is estimated that this project would require the relocation of ten residences and three businesses.

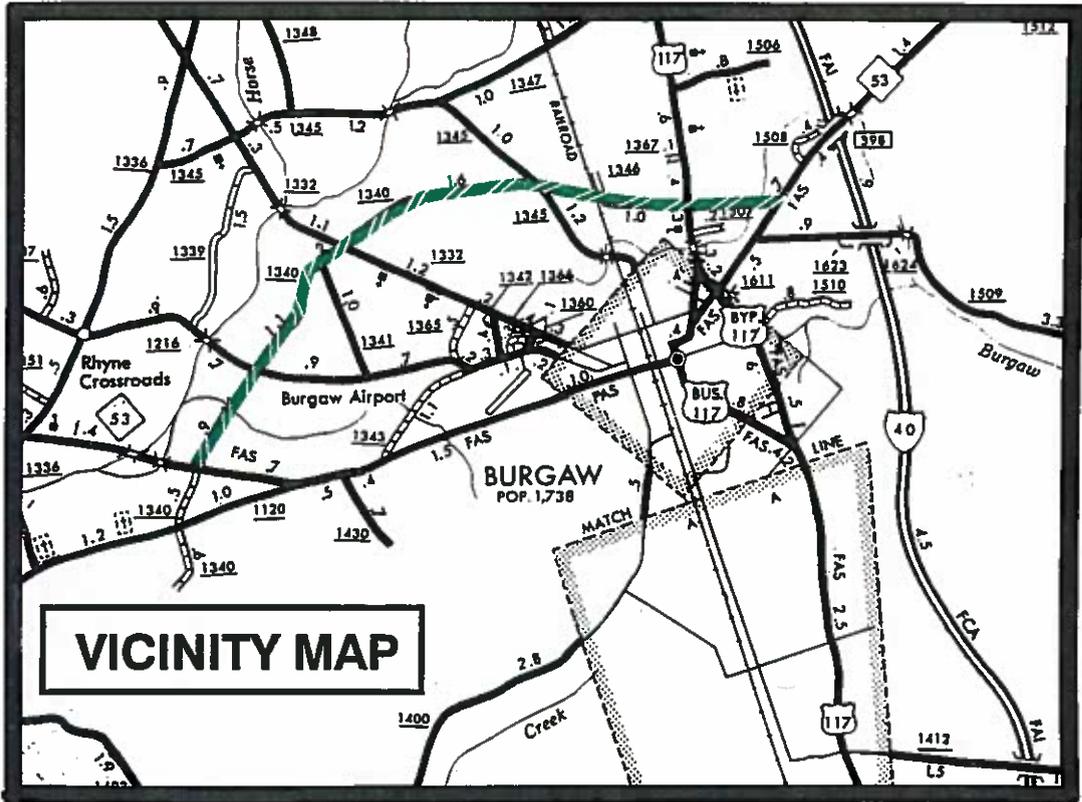
This project may require a Corps of Engineers Section 404 Permit. A portion of this project bisects wetlands. A U.S. Fish and Wildlife Services Section 7 Consultation may be required. Based on information from the Natural Heritage Program (Department of Environment, Health, and Natural Resources) three endangered and/or threatened plant species were identified in the study corridor. These species include *Arnoglossum ovatum*, *Tofieldia glabra*, and *Spiranthes brevilabris* var. *floridana*. It is not anticipated that the sanitary landfill on SR 1340 would be impacted.

#### **V. OTHER ALTERNATES CONSIDERED**

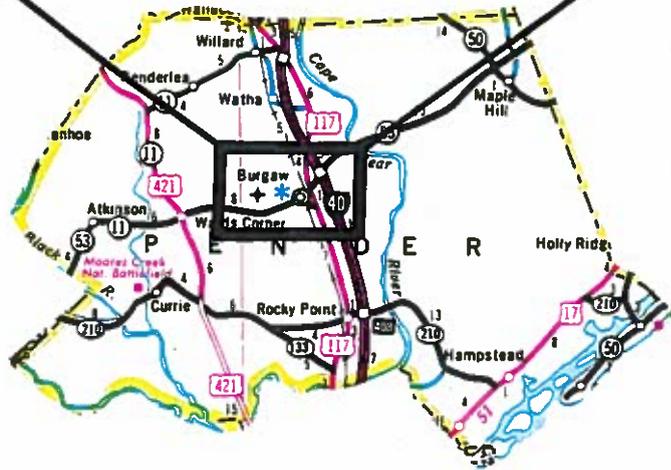
An alternate corridor was studied for Section 1 (shown on Figure 2 as Section 1 Alternate A). Section 1 Alternate A would consist of widening SR 1343, from NC 53 to approximately 0.4 miles (0.6 kilometers) west of the junction of SR 1216 and SR 1343, and continuing on a new location to align with Section 2 of the recommended project. This alternate would be approximately 2.5 miles (4 kilometers) in length (approximately 0.5 miles (0.8 kilometers) of widening and approximately 2 miles of new location). A pipe culvert under

SR 1343 would be replaced. The studied typical cross-section was a two-lane, 24-foot (7.2-meter) pavement with 8-foot (2.4-meter) shoulders including 4-foot (1.2-meter) paved shoulders (a total of 32 feet (9.6 meters) of pavement) on a 100-foot (30.5-meter) wide right-of-way with no control of access. Although this alternate is less expensive and shorter in length than the recommended alternate, it was rejected because it would bisect residential areas along SR 1343 and SR 1216. Trucks traveling through this residential area would raise noise levels and endanger the safety of pedestrians and bicyclists in the neighborhoods. Section 1 Alternate A would cost a total of \$3,400,000 (\$500,000 for right-of-way and \$2,900,000 for construction).



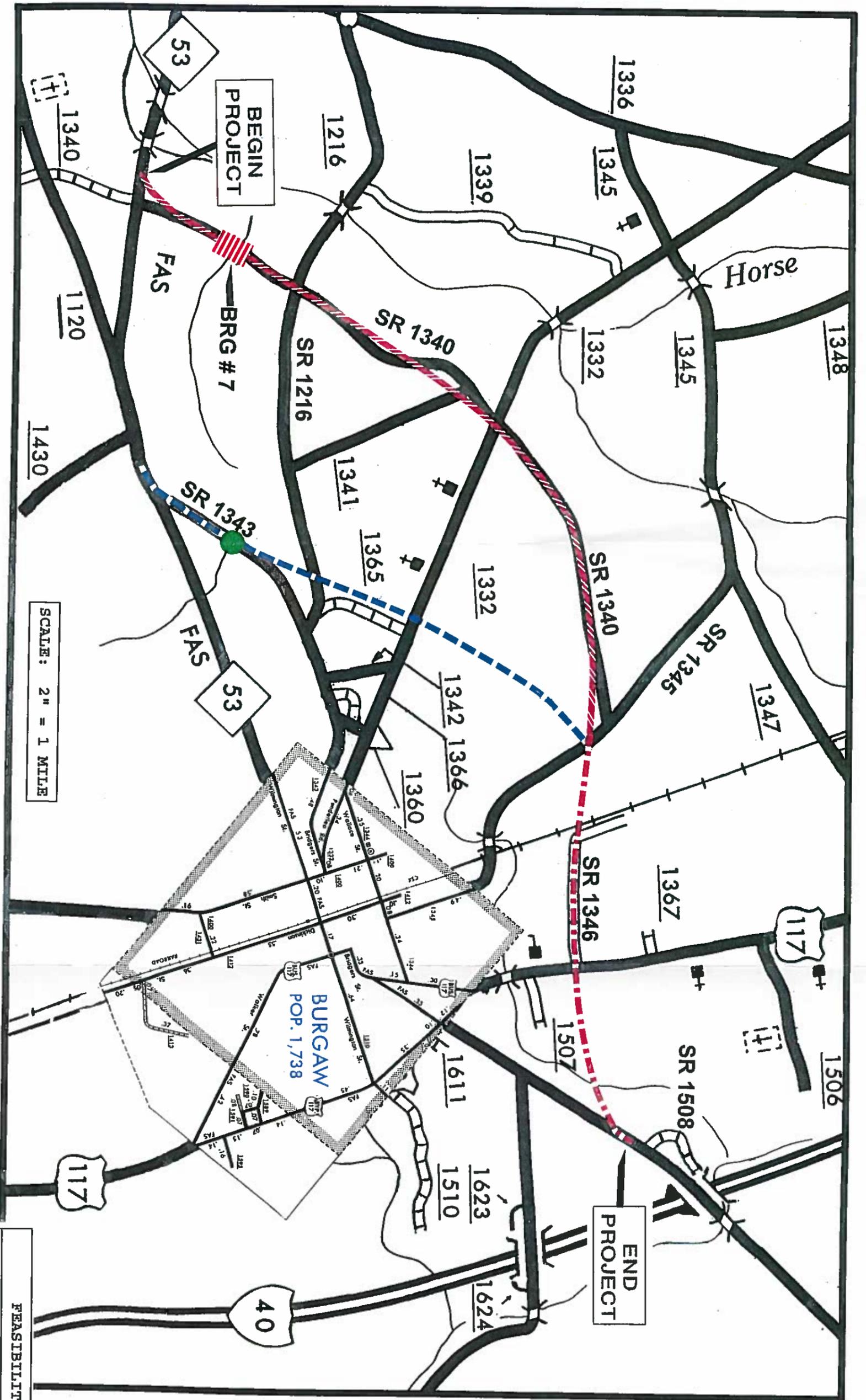


**VICINITY MAP**



<b>FEASIBILITY STUDY UNIT</b>	
R-3302	
BURGAW	
NC 53 (BURGAW BYPASS)	
Pender County	
DIV 3	FIGURE 1





LEGEND	
	SECTION 1: ALTERNATE A (RECOMMENDED)
	SECTION 1: ALTERNATE B (RECOMMENDED)
	SECTION 2: (RECOMMENDED)
	BRIDGE
	CULVERT

FEASIBILITY STUDY UNIT
R-3302
BURGAW
NC 53 (Burgaw Bypass)
Pender County
DIV 3
FIGURE 2

