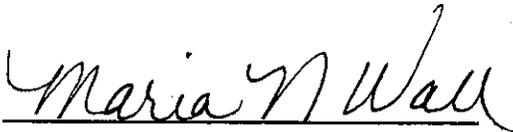


FEASIBILITY STUDY

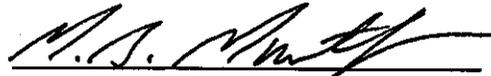
Goldsboro  
US 117  
from US 70 Bypass to SR 1537  
Wayne County

U-2714

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



Maria N. Wall  
Highway Planning Engineer



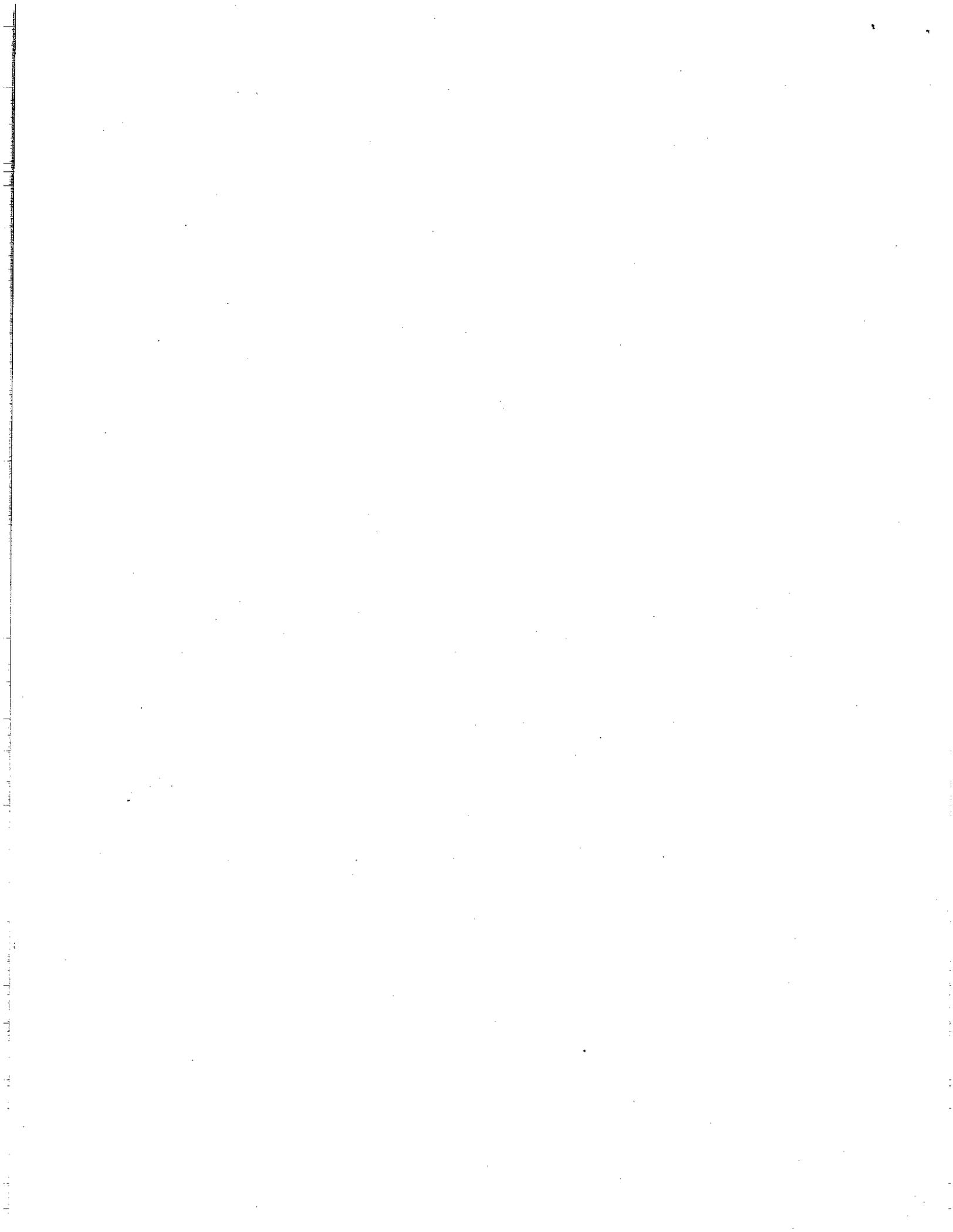
Mohammed B. Mustafa, P.E.  
Highway Planning Engineer

2/21/94

Date



David G. Modlin, Jr., Ph.D., P.E.  
Head of Feasibility Studies



## FEASIBILITY STUDY

Goldsboro  
US 117  
from US 70 Bypass to SR 1537  
Wayne County

U-2714

### I. GENERAL DESCRIPTION

This is a feasibility study for the widening of US 117 from US 70 Bypass, in Goldsboro, to SR 1537, in Belfast, a distance of approximately 3.5 miles (5.6 kilometers) (See Figures 1 and 2). The recommended typical section is a five-lane, 64-foot (19.5-meter), face-to-face, curb and gutter section with 8-foot (2.4-meter) berms, on 100-foot (30.5-meter) wide right-of-way, without access control. The estimated cost of the project is \$10,600,000 (\$5,500,000 for right-of-way and \$5,100,000 for construction).

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

### II. NEED FOR PROJECT

This project was requested by the City of Goldsboro. US 117 is classified as a Minor Arterial on the Statewide Functional Classification System. The recommended improvements are needed to relieve traffic congestion and improve safety on US 117.

Existing US 117, from the US 70 Bypass westbound ramp to SR 1389, is mainly a two-lane, 28 to 34-foot (8.5 to 10.4-meter) pavement with 4 to 8-foot (1.2 to 2.4-meter) shoulders. Additional left turn lanes are included on some segments of US 117. Land use is commercial, industrial, and rural residential along the project corridor.

The south terminal is located at the signalized intersection of US 117 Business and the US 70 Bypass westbound ramp (See Figure 2). There will be no improvements to the US 70 bridges over US 117. South of this location, US 117 Business is a four-lane, 44-foot (13.4-meter), face-to-face, curb and gutter section. Land use around the intersection is commercial.

The north terminal is located at the intersection of SR 1537 and US 117 (See Figure 2). North of this intersection, US 117 is a two-lane, 24-foot (7.3-meter) roadway with 8 to 12-foot (2.4 to 3.6-meter) usable shoulders, including 2 to 4-foot (0.6 to 1.2-meter) paved shoulders. Land use around the intersection is rural residential and agricultural.

TIP Project R-1030 includes the construction of a multi-lane roadway parallel to the existing US 117 corridor between Wilson and Goldsboro. TIP Project R-2554 includes the construction of a multi-lane US 70 Goldsboro Bypass, north of Goldsboro. Interchanges are proposed at the intersections of the US 70 Goldsboro Bypass with the existing US 117 and the R-1030 project. These projects will reduce traffic volumes on the existing US 117.

Estimated 1998 average daily traffic (ADT) on US 117 is 13,100 vehicles per day (vpd). By the year 2018, anticipated traffic is estimated to be 23,600 vpd. These traffic volumes are based on the construction of TIP Projects R-1030 and R-2554. Traffic on the existing facility would experience a level of service (LOS) D in 1998, and a LOS E in 2018. With the recommended improvements, US 117 would experience LOS A in 1998 and is projected to experience a LOS B in the year 2018.

During the period from October 1990 through September 1993, a total of 156 accidents were reported along the studied section of US 117. This resulted in an accident rate of 335.9 accidents per 100 million vehicle miles (acc/100mvm), compared to a statewide average of 245.8 acc/100mvm. Rear end accidents accounted for 37% of the accidents. Trucks accounted for 16% of the vehicles involved in accidents. The proposed improvements are expected to reduce the accident rate.

### III. RECOMMENDATIONS

It is recommended that US 117, from the US 70 Bypass westbound ramp to SR 1537, be widened. The recommended typical cross-section is a five-lane, 64-foot (19.5-meter) face-to-face, curb and gutter section with 8-foot (2.4-meter) berms, on a 90 to 100-foot (27.4 to 30.5-meter) wide right-of-way with no control of access. Based on the layout of the interchange of US 117 and US 70 Bypass, US 117 will not need to be widened between the US 70 eastbound and westbound lane. The additional fifth lane north of the US 70 westbound ramp, a left-turn only lane, will not be continued under the US 70 bridges.

Some intersections, along the project corridor, would be realigned to improve traffic capacity and reduce accident potential (See Figures 3A, 3B, and 3C).

The existing SR 1590 intersects the US 70 Bypass eastbound ramp. It is recommended that SR 1590 be realigned to intersect US 117 at Dewey Street (See Figures 2 and 3A). The recommended typical cross-section is a two-lane, 24-foot (7.2-meter) pavement with 8-foot (2.4-meter) shoulders, including 2-foot (0.6-meter) wide paved shoulders. This improvement would improve traffic flow on the ramp and provide enhanced safety for vehicles. No other changes would be made to the interchange.

The existing intersections of US 117 with US 117 Bypass/US 13 and NC 111 are spaced close together (See Figure 3B). Realignment of US 117 Bypass/US 13 and NC 111, to form a single four-leg signalized intersection would improve traffic movements and decrease bottlenecks in this area. This improvement would also improve access from east of US 117 to the proposed new US 117 corridor (R-1030) west of the existing US 117.

The existing SR 1389, SR 1537 northbound only, and SR 1537 intersect US 117 within a 500-foot (152-meter) spacing (See Figure 3C). Realignment of the intersection of these routes into a single unsignalized intersection would increase safety at the northern terminal of the project.

The recommended improvements are needed to increase safety and reduce congestion on the existing US 117. Although TIP Projects R-1030 and R-2554 would reduce thru traffic, the remaining local traffic volumes would still require a five-lane typical cross-section.

Total project cost is estimated at:

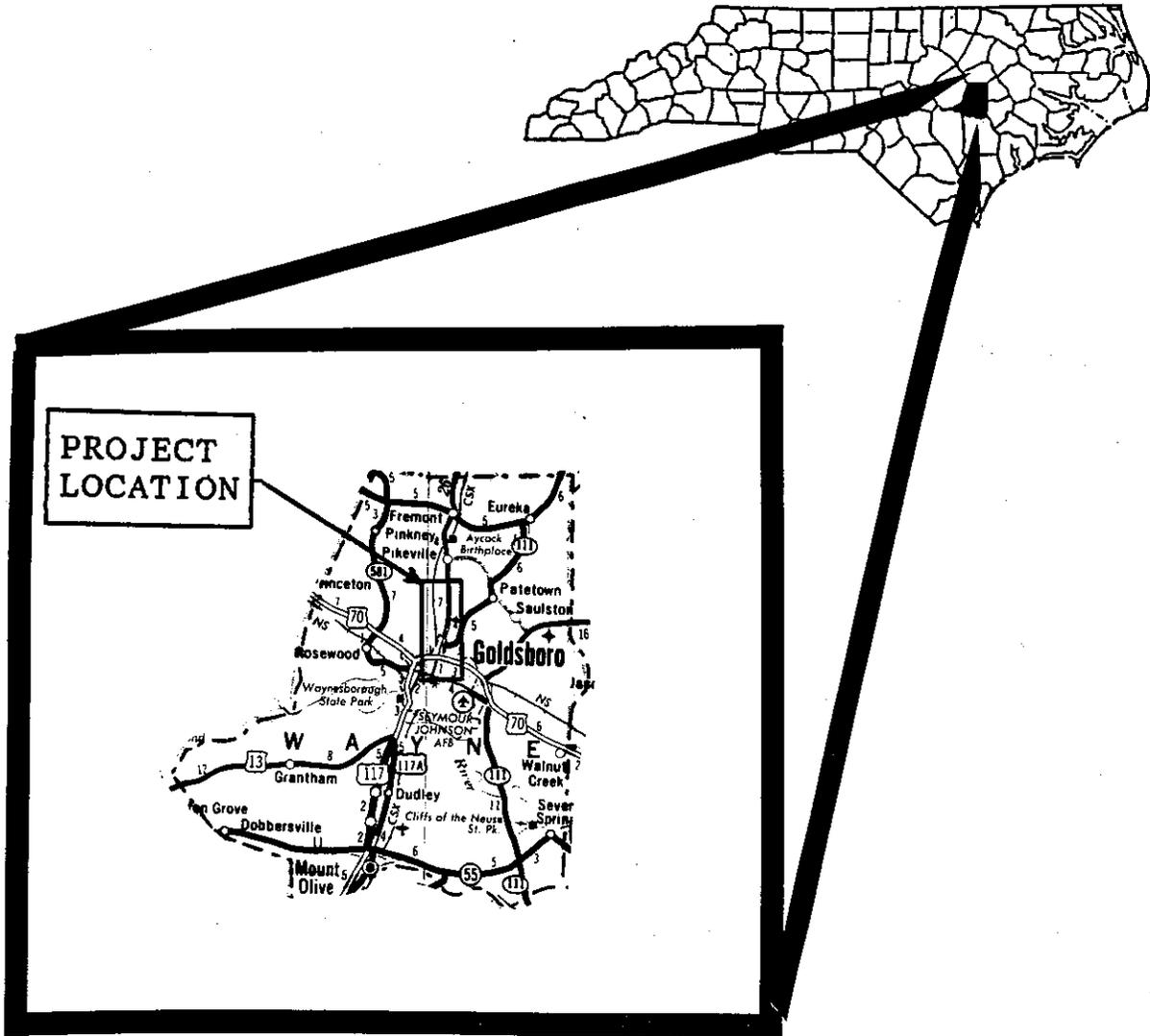
Right-of-way	\$ 5,500,000
Construction	\$ 5,100,000
Project Cost	\$10,600,000

High utility conflicts are expected.

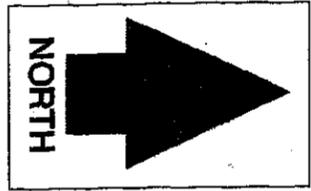
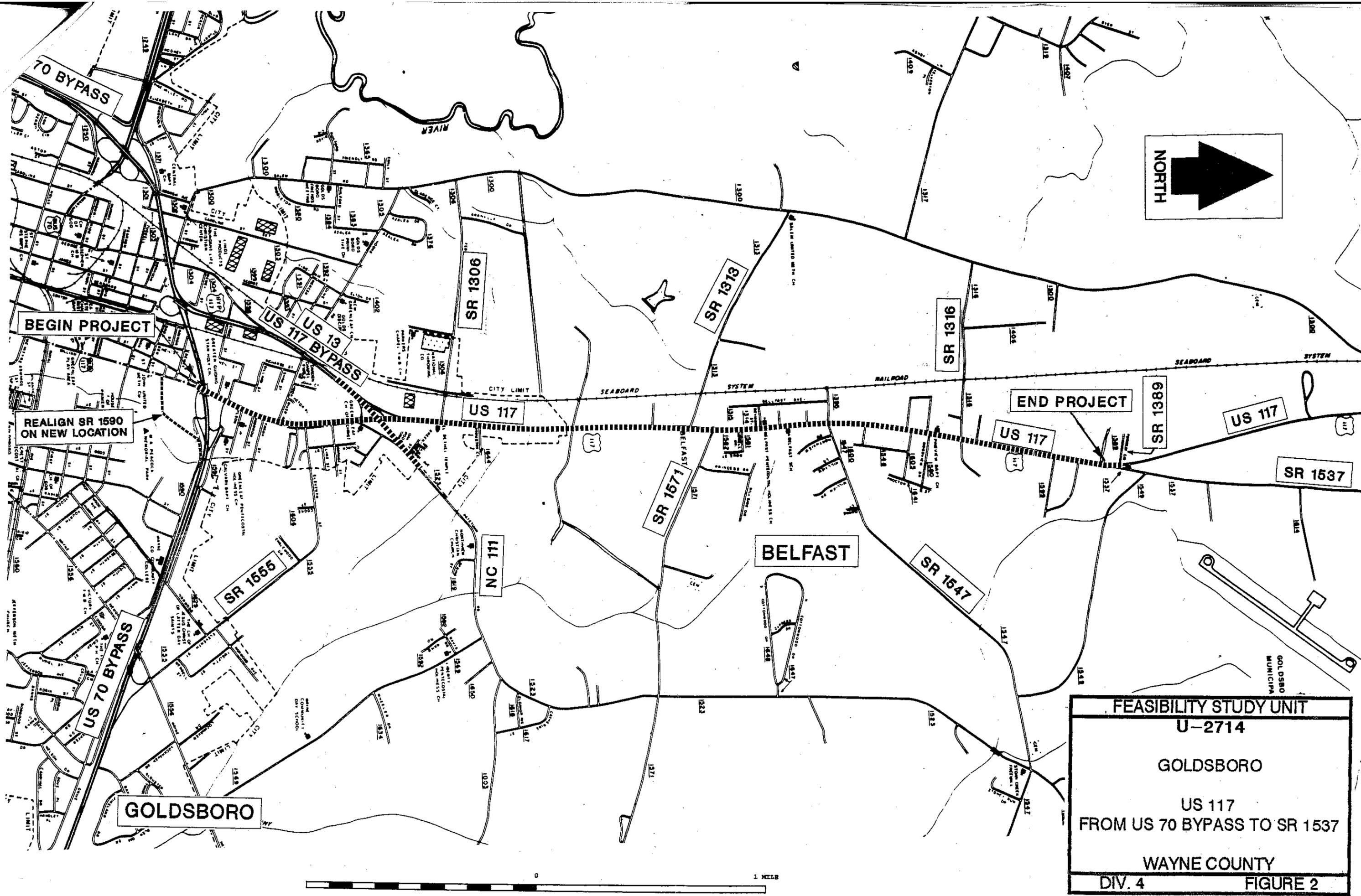
#### IV. OTHER COMMENTS AND CONCERNS

It is estimated that this project would require the relocation of 11 residences and 5 businesses.

This project may involve placement of fill in wetlands, and may require a Corps of Engineers Section 404 Permit. No historical or architectural sites are known to be located in the vicinity of the project. No public parks would be affected.



FEASIBILITY STUDY UNIT	
U-2714	
GOLDSBORO	
US 117	
FROM US 70 BYPASS TO SR 1537	
WAYNE COUNTY	
DIV. 4	FIGURE 1



BEGIN PROJECT

END PROJECT

REALIGN SR 1590  
ON NEW LOCATION

GOLDSBORO

BELFAST

FEASIBILITY STUDY UNIT  
U-2714

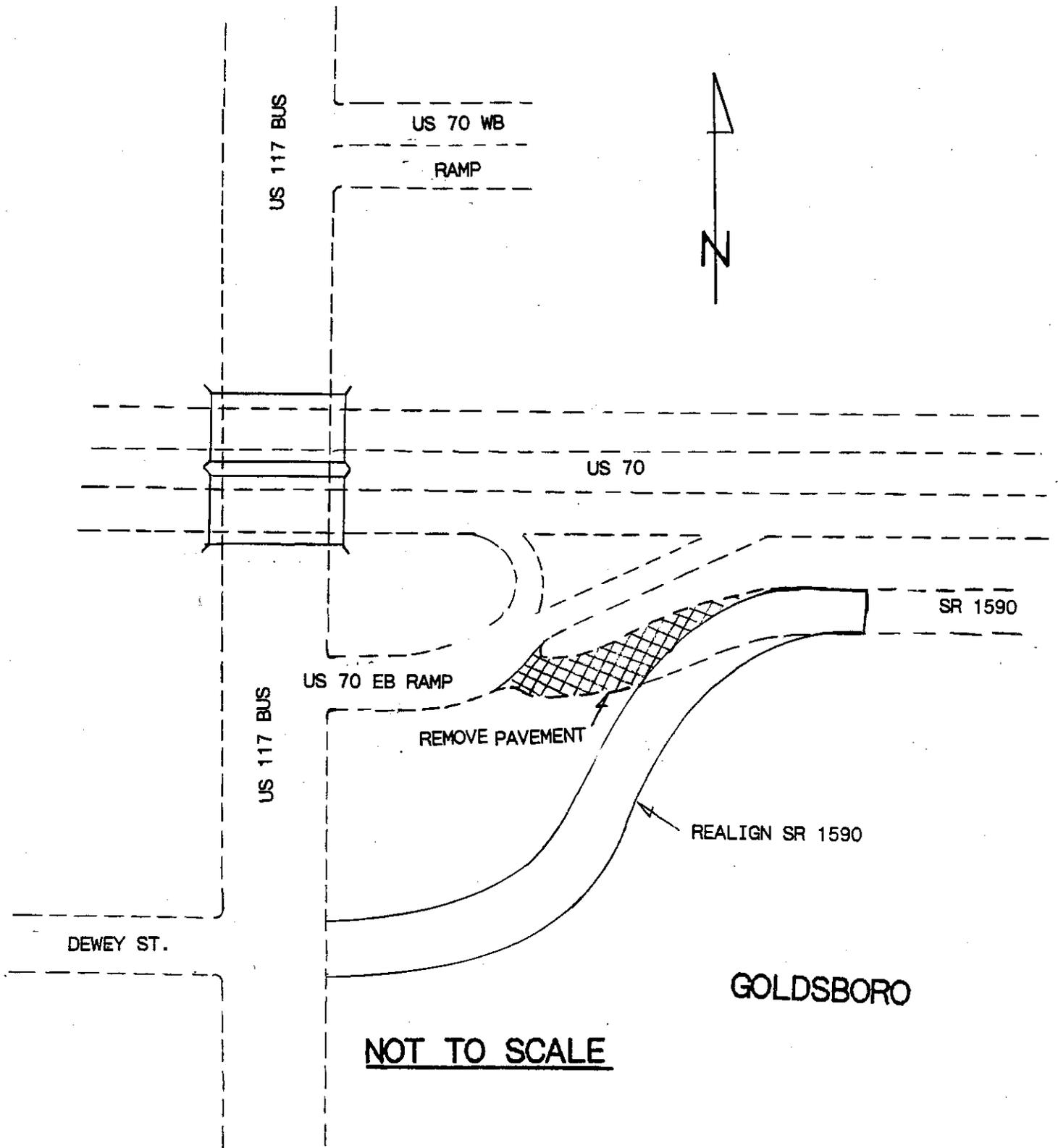
GOLDSBORO

US 117  
FROM US 70 BYPASS TO SR 1537

WAYNE COUNTY

DIV. 4                      FIGURE 2

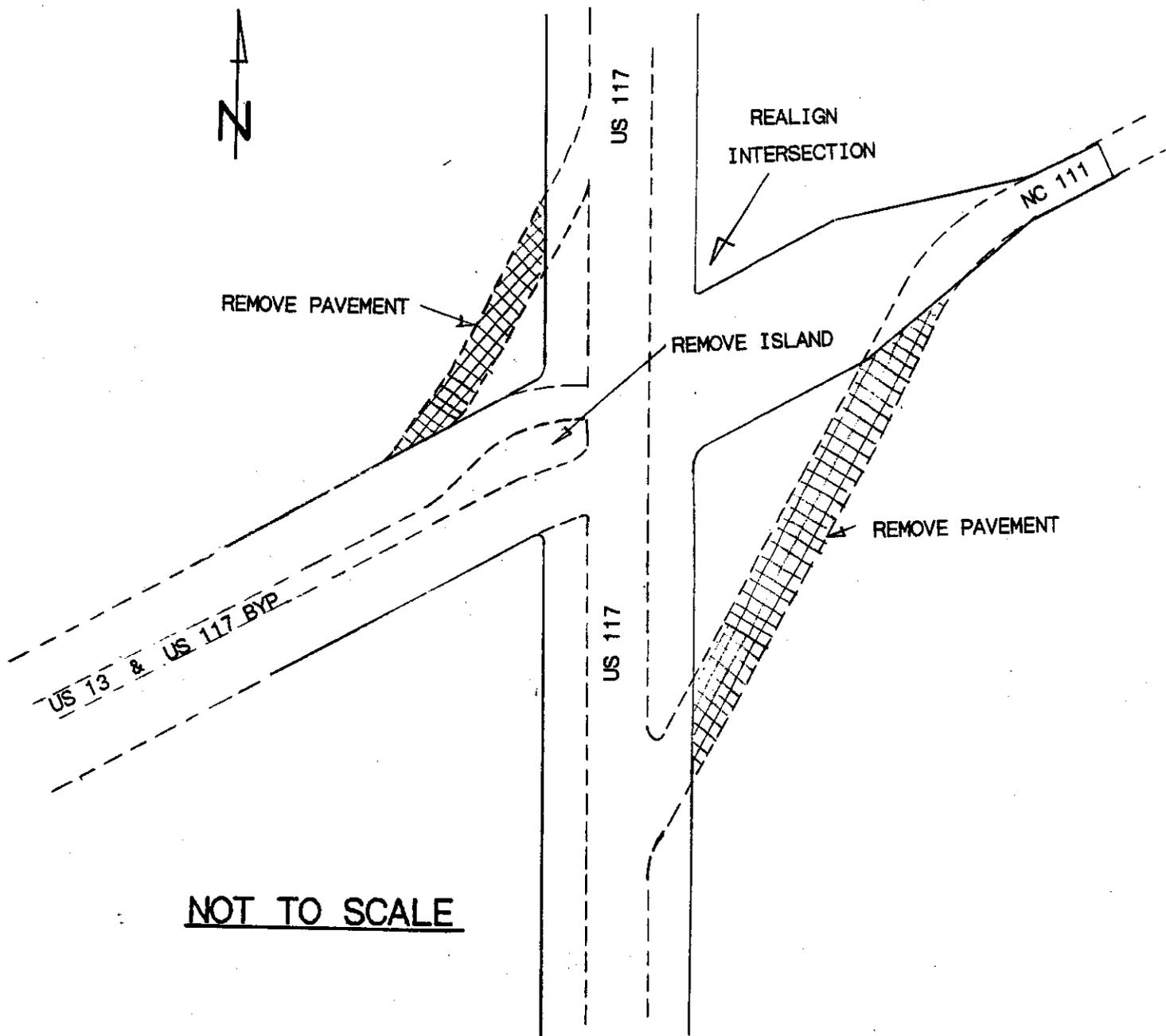




**NOT TO SCALE**

**GOLDSBORO**

FEASIBILITY STUDIES UNIT
U-2714
Improvement of SR 1590 and US 70 EB ramp
Figure 3A



NOT TO SCALE

FEASIBILITY UNIT STUDY
U-2714
Improvement of US 117, US 13, NC 111, and US 117 Bypass
Figure 3B

