

FEASIBILITY STUDY

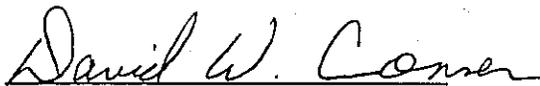
Elizabethtown

**US 701
from NC 87 Bypass (R-522)
to Dunham Street
Bladen County**

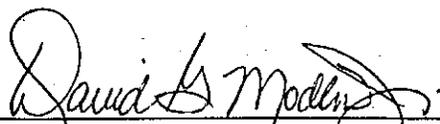
Division 6

R-2818

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



David W. Conner
Highway Planning Engineer



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

2/18/97

Date

R-2818

Elizabethtown
US 701
From NC 87 Bypass (R-522)
To Dunham Street
Bladen County

I. General Description

This preliminary study describes recommended improvements to US 701 south of Elizabethtown. It is recommended that US 701 be widened from NC 87 Bypass to the existing 5-lane, curb-and-gutter section at Dunham Street, a distance of approximately 1.5 miles (2.4 km). For a location map, please see Figure 1.

The recommended cross section is a 64-foot (19.5-m) wide (face-to-face), curb-and-gutter section with two travel lanes in each direction, a center turn lane, and 10-foot (3.0-m) wide berms for the total project length.

The widening should retain and utilize the existing alignment to the extent possible and will be generally symmetrical to the centerline of the existing roadway. The widening should be accomplished within the existing 150-foot (45.7-m) wide right-of-way.

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

The total cost for right-of-way (utility adjustments) and construction is estimated to be \$4,600,000 as follows:

Utility Adjustments	\$ 200,000
Construction	<u>4,400,000</u>
Total Cost	\$ 4,600,000

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 US 701 and to relieve traffic congestion around East Bladen High School. The project was requested by the Town of Elizabethtown and is endorsed by the Elizabethtown Airport/Economic Development Commission, the

Elizabethtown/White Lake Chamber of Commerce, Bladen County Schools, and the Eastern North Carolina Chamber of Commerce.

US 701 is designated a major thoroughfare on the Elizabethtown Thoroughfare Plan. It is designated as a minor arterial on the North Carolina Statewide Functional Classification System.

From NC 87 Bypass to East Bladen High School, the project route is presently undeveloped. With the completion of NC 87 Bypass, this section of roadway will become prime commercial property which should develop rapidly. From East Bladen High School to the north project terminal, the project route is moderately commercially developed. At the northern project terminal, there is a hospital and medical office complex located on the east side of the roadway.

Existing US 701 is generally a 2-lane roadway with a 26-foot (7.9-m) wide pavement and soil shoulders.

At the southern project terminal, NC 87 Bypass is presently under construction. The Bypass, when completed, will be a 4-lane median divided facility with an at-grade intersection with US 701.

From the northern project terminal into Elizabethtown, US 701 is a 5-lane, 64-foot (19.5-m) wide (face-to-face) curb-and-gutter facility.

There is one structure located along the project route. Immediately north of SR 1785, Bridge #3 crosses Brown's Creek. The bridge is 47 feet (14.3 m) long and has a clear deck width of 28.5 feet (8.7 m). It was constructed in 1926 and has an estimated remaining life of only 10 years. The bridge has a sufficiency rating of 49.9 out of a possible 100 points.

The 1996 Average Daily Traffic (ADT), within the project limits, is estimated to be approximately 5,600 vehicles per day (vpd) and the design year (2020) estimate is approximately 12,700 vpd.

The current estimated Level Of Service (LOS) is Level C. Without improvements, it is estimated that the Level of Service will deteriorate to Level E prior to the design year. With the recommended improvements, the LOS is expected to improve to a Level A which should prevail through the design year.

During the period from March 1, 1993, through February 29, 1996, there were 42 accidents reported within the project terminals. This resulted in an accident rate of 227 accidents per 100 million vehicle miles (Acc/100MVM), compared to a statewide average of 317 Acc/100 MVM for all urban NC routes during 1994. There were no fatalities reported during the period, but 22 of the accidents resulted in injuries. The most prevalent accident types were rear-end (54.8%) and angle (21.4%). The wider cross section with center turn lane will reduce the potential for these types of accidents.

III. Recommendations

It is recommended that US 701 be widened from NC 87 Bypass, south of Elizabethtown, to the existing 5-lane, curb-and-gutter section at Dunham Street, a distance of approximately 1.5 miles (2.4 km). For a location map, please see Figure 1.

The recommended cross section is a 64-foot (19.5-m) wide (face-to-face), curb-and-gutter section with two travel lanes in each direction, a center turn lane, and 10-foot (3.0-m) wide berms for the total project length.

The widening should retain and utilize the existing alignment to the extent possible and will be generally symmetrical to the centerline of the existing roadway. The widening should be accomplished within the existing 150-foot (45.7-m) wide right-of-way.

Bridge #3 over Brown's Creek should be replaced with a new bridge having a clear deck width of 64 feet (19.5 m).

At the southbound approach to NC 87 Bypass, the widened roadway should include a right-turn lane, a through lane, a left-turn lane, and two lanes exiting the intersection.

At the north project terminal, the widened roadway should tie into the existing 64-foot (19.5-m) wide curb-and-gutter roadway.

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

The total cost for right-of-way (utility adjustments) and construction is estimated to be \$4,600,000 as follows:

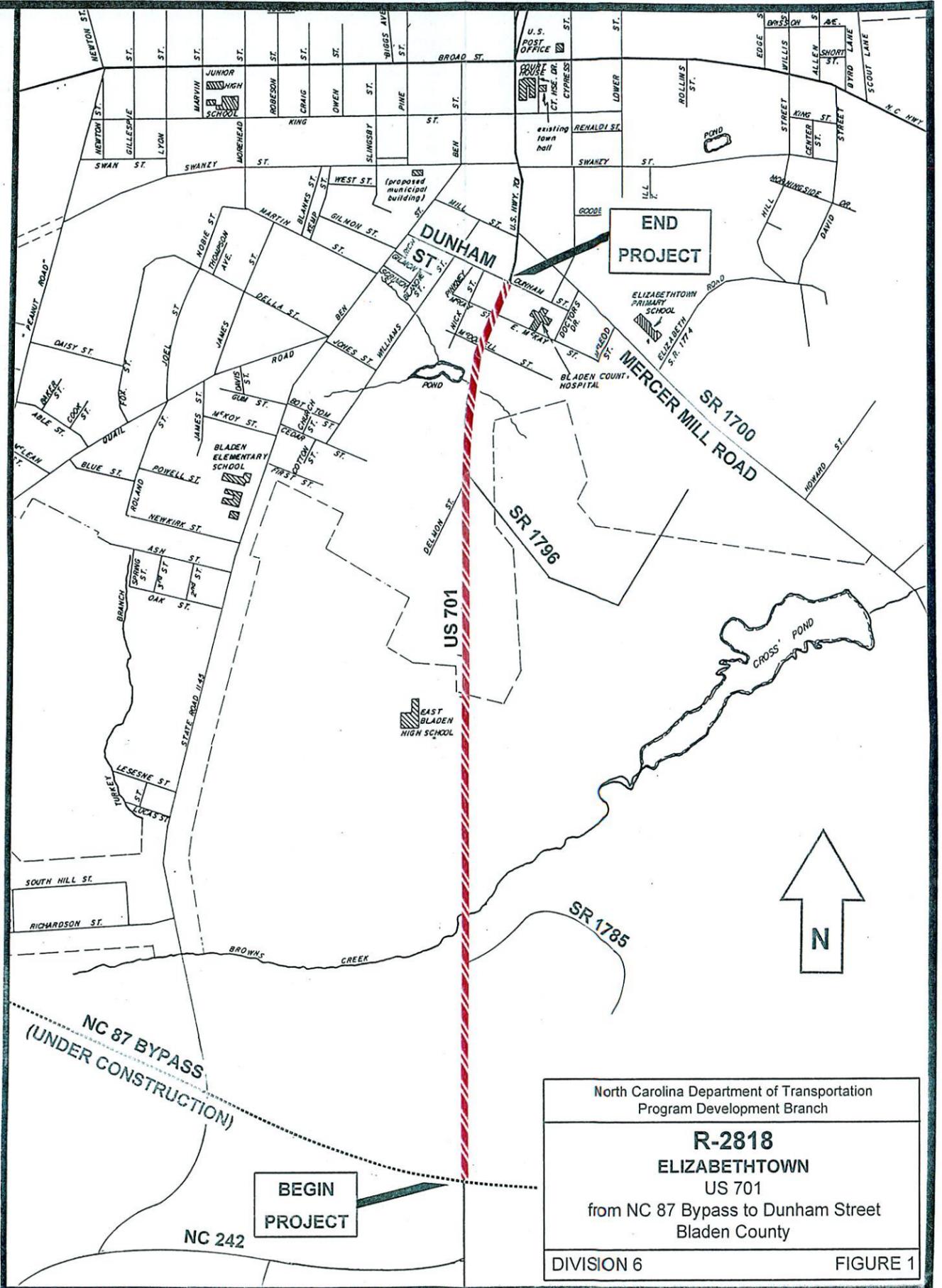
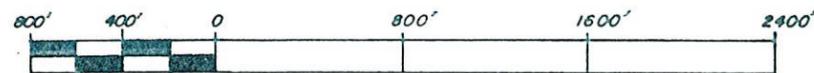
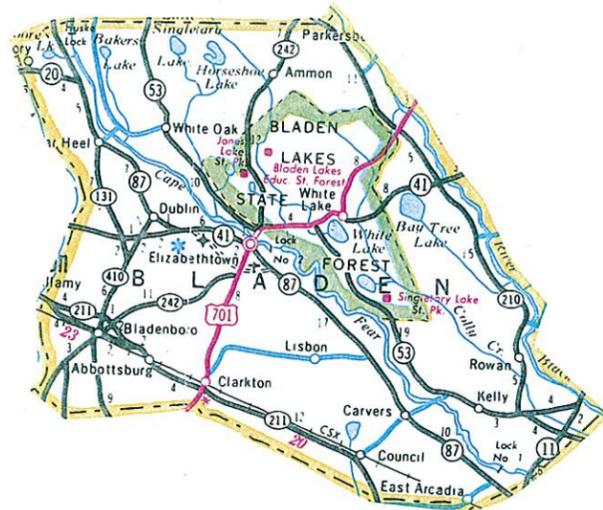
Utility Adjustments	\$ 200,000
Construction	<u>4,400,000</u>
Total Cost	\$ 4,600,000

IV. Other Comments

The recommendations of this feasibility study and the traffic projections on which the LOS calculations are based assume that project R-522 (NC 87 Bypass) will be complete prior to these recommended improvements.

An environmental screening was not conducted for this study; however, due to the construction potential in the area of Brown's 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.



North Carolina Department of Transportation
 Program Development Branch

R-2818
ELIZABETHTOWN
 US 701
 from NC 87 Bypass to Dunham Street
 Bladen County

DIVISION 6 FIGURE 1