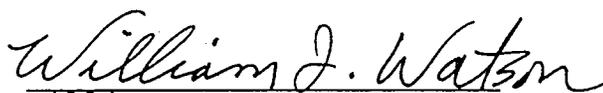


FEASIBILITY STUDY

NC 24
From Butner Road To US 401 Bypass
In Fort Bragg and Fayetteville
Cumberland County
U-3423

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


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2/27/96
Date

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I. GENERAL DESCRIPTION

This preliminary study describes the proposed widening of NC 24 from Butner Road in Fort Bragg to US 401 Bypass in Fayetteville. The project location is shown on Figure 1. The proposed cross-section is a six-lane curb and gutter section with a 16-foot (4.9-m) wide raised median for the entire project length of 4.9 miles (7.8 km). The cross-section width will be 92 feet (28.0 m) wide from face-to-face of curbs and there will be berms 8 feet (2.4 m) wide behind the curbs on each side. There will be three 12-foot (3.6 m) wide travel lanes in each direction of travel. The construction can be done within the existing right-of-way which is 160 feet (48.8 m) wide on the Fort Bragg Reservation and 118 feet (36.0 m) wide south of the Fort Bragg Reservation.

No new right-of-way will be required, however, significant construction easement and utility adjustment cost may be incurred. No residential or business relocations are anticipated.

The total cost including construction and right-of-way (easements and utility adjustments) is estimated to be \$18,300,000.

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the needs, recommend a treatment including costs, and identify potential problem areas that require consideration in the planning and design phases.

II. NEED FOR PROJECT

The purpose of this project is to increase the traffic carrying capacity and improve the accident experience of NC 24 in Fort Bragg and Fayetteville. The project was requested by the Transportation Advisory Committee of the Fayetteville Urban Area and is supported by the City of Fayetteville, the Town of Spring Lake, and Fort Bragg.

NC 24 is classified as an Urban Other Principal Arterial in the North Carolina Statewide Functional Classification System, and is a Major Thoroughfare on the Fayetteville Urban

Area Thoroughfare Plan. Land use along the project corridor between Fort Bragg and US 401 Bypass is dense commercial strip type development.

NC 24, within the project limits, is a two-way, median divided facility. The median is a grass median approximately 30 feet (9.1 m) wide. Between Fort Bragg and US 401 Bypass there are several median openings with associated left-turn lanes in the median. In Fort Bragg, NC 24 has two lanes in each direction of travel. Between Fort Bragg and US 401 Bypass, NC 24 has three travel lanes in the westbound direction and two travel lanes in the eastbound direction. The existing travel lanes are approximately 11 feet (3.3 m) wide.

Traffic volume estimates for NC 24, in Fort Bragg, for the years 1995 and 2020 are 36,700 vehicles per day (vpd) and 65,000 vpd respectively. The Level of Service (LOS) without the proposed improvements is estimated to be LOS C in 1995 and LOS E in 2020. With the proposed improvements the LOS is estimated to be LOS B in 1995 and LOS C in 2020.

Traffic volume estimates for NC 24, between Fort Bragg and US 401 Bypass, for the years 1995 and 2020 are 32,900 vehicles per day (vpd) and 48,000 vpd respectively. The Level of Service (LOS) without the proposed improvements is estimated to be LOS C in 1995 and LOS E in 2020. With the proposed improvements the LOS is estimated to be LOS B in 1995 and LOS C in 2020.

No accident data is available for accidents occurring in Fort Bragg. During the three year period beginning February 1, 1992, and ending March 31, 1995, there were 436 accidents reported on NC 24 between US 401 Bypass and the Fort Bragg boundary. This resulted in a total accident rate of 556 accidents per 100 million vehicle miles (ACC/100MVM). This compares with the statewide average of 317 ACC/100MVM for all urban NC routes, in North Carolina, for 1994. There were 3 fatal accidents reported, and 215 accidents resulted in 368 injured persons. The most prevalent type accidents were Rear-End (52%), Angle (12%), and Ran Off Road (9%).

III. RECOMMENDATIONS

It is recommended to widen NC 24 from Butner Road in Fort Bragg to US 401 Bypass in Fayetteville. The project location is shown on Figure 1. The proposed cross-section is a six-lane curb and gutter section with a 16-foot (4.9-m) wide raised median for the entire project length of 4.9 miles (7.8 km). The cross-section width will be 92 feet (28.0 m) wide from face-to-face of curbs and there will be berms 8 feet (2.4 m) wide behind the curbs on each side. There will be three 12-foot (3.6 m) wide travel lanes in each

direction of travel. The construction can be done within the existing right-of-way which is 160 feet (48.8 m) wide on the Fort Bragg Reservation and 118 feet (36.0 m) wide south of the Fort Bragg Reservation.

At the west project terminal, the new westbound lane will tie into the existing curb and gutter section just east of the Butner Road intersection. The new eastbound lane will begin at the Butner Road intersection.

At the east project terminal, the project will tie into the existing 6-lane median divided curb and gutter section just west of US 401 Bypass.

No new right-of-way will be required, however, significant construction easement and utility adjustment costs may be incurred. No residential or business relocations are anticipated.

The total cost including construction and right-of-way is estimated to be \$ 18,300,000 as follows:

Construction.....	\$ 17,300,000
Right-of-Way (Const. Easements & Utility Adj.) ..	<u>1,000,000</u>
Total Cost.....	\$ 18,300,000

IV. OTHER COMMENTS

An environmental screening was not conducted for this study. No historic properties, wetlands, or endangered species are anticipated.

The City of Fayetteville has indicated a need for a sidewalk on the west side of this project. A 5-foot (1.5 m) wide sidewalk for the entire project length is estimated to cost \$500,000. Cost participation by NCDOT would be subject to current NCDOT policy.

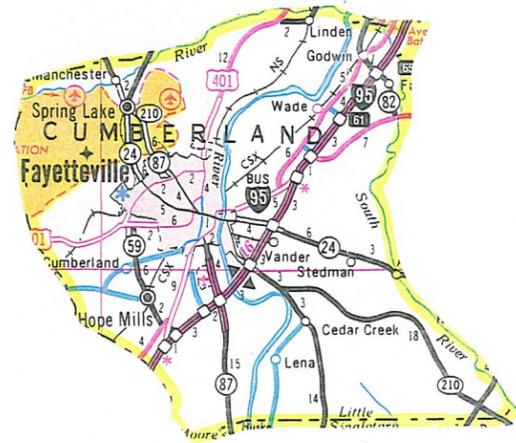
The Cumberland County Planning staff has indicated a need for bicycle accommodation on this project, and there is an existing bicycle path on US 401 Bypass near the east terminal of this project. With current traffic volumes of up to 36,000 vpd and design year estimates of up to 65,000 vpd, it is not recommended to encourage bicycle use on this facility. Providing 14-foot (4.2 m) wide outside travel lanes on this project is estimated to add \$ 650,000 to the project construction cost.

As an alternative to the recommended improvement for that part of the project in Fort Bragg, a rural shoulder

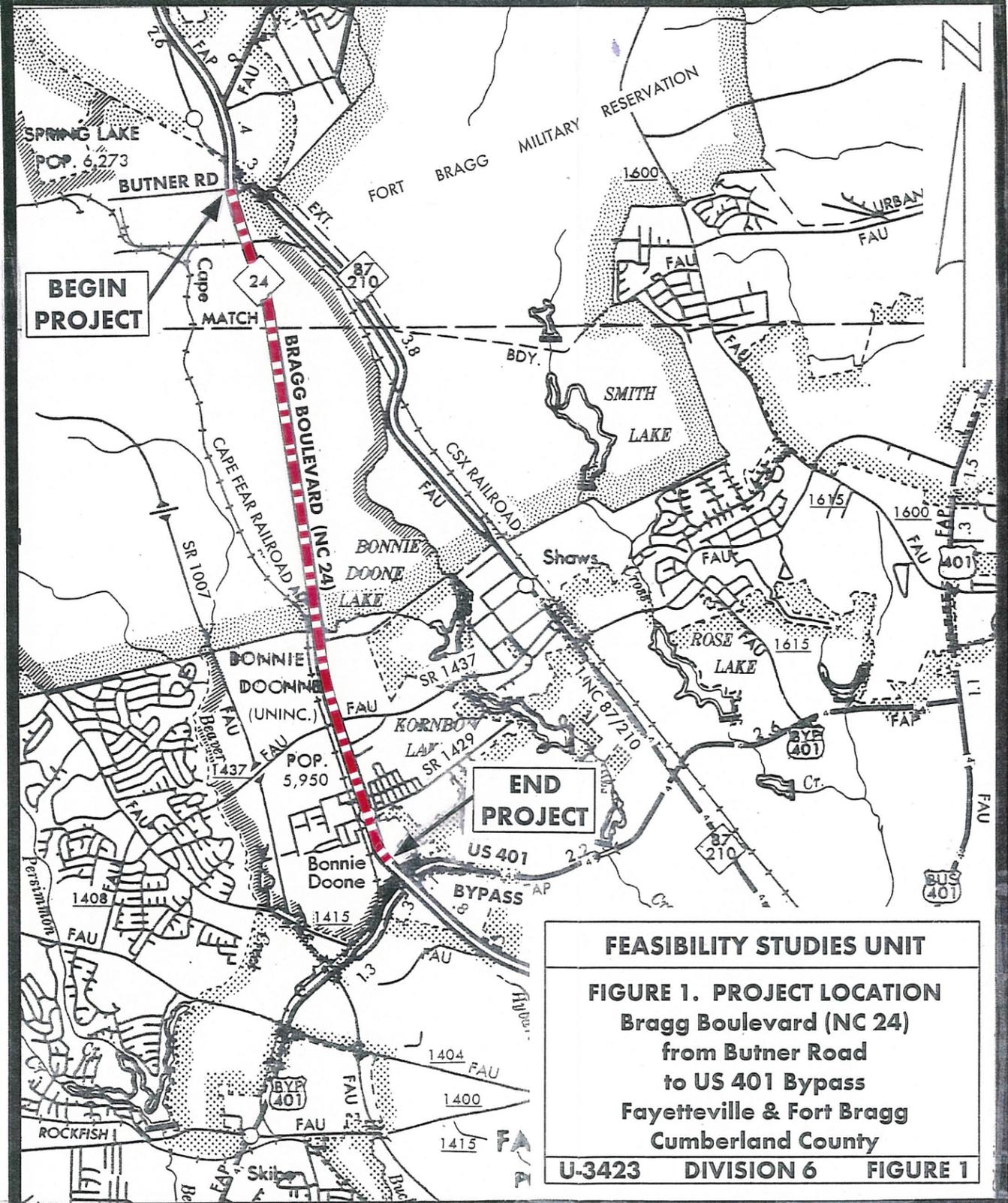
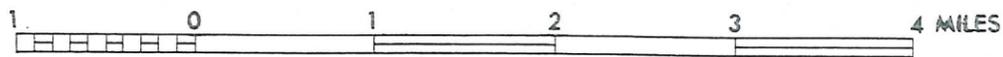
section was considered. This cross-section would provide three 12-foot (3.6-m) travel lanes in each direction of travel, a grass median approximately 30 feet (9.1 m) wide, and 10-foot (3.0-m) wide paved right shoulders and median shoulders. Two feet (0.6 m) of the paved shoulder width will be full-depth pavement. The total shoulder width is 12 feet (3.6 m). The length in Fort Bragg is approximately 3.1 miles (5.0 km). The construction can be done within the existing right-of-way which is 160 feet (48.8 m) wide. Under this alternative, the cross-section south of the military base would be the same curb and gutter section as the recommended cross-section.

The total cost including construction and right-of-way for this alternate is estimated to be \$ 20,600,000 as follows:

Construction.....	\$ 19,600,000
Right-of-Way (Const. Easements & Utility Adj.) ..	<u>1,000,000</u>
Total Cost.....	\$ 20,600,000



SCALE



FEASIBILITY STUDIES UNIT
FIGURE 1. PROJECT LOCATION
 Bragg Boulevard (NC 24)
 from Butner Road
 to US 401 Bypass
 Fayetteville & Fort Bragg
 Cumberland County
 U-3423 DIVISION 6 FIGURE 1