

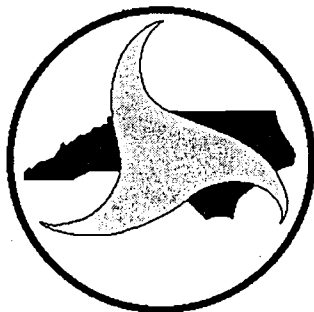
FEASIBILITY STUDY

Carthage

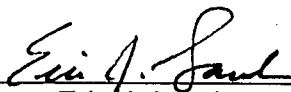
**NC 24-27 (Monroe St.)
from Courthouse Circle to US 15-501
Moore County**

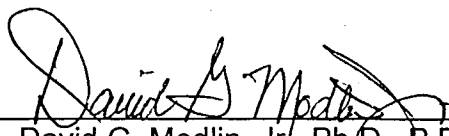
Division 8

U-3628



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


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Date

Carthage
NC 24-27 (Monroe St.)
from Courthouse Circle to US 15-501
Moore County
U-3628

I. General Description

This feasibility study describes widening NC 24-27 (Monroe St.) from Courthouse Circle to US 15-501, a distance of 1.2 miles (1.9 km). The project location is shown on Figure 1. The recommended cross-section is a three-lane curb and gutter section, 44 feet (13.4m) wide from face-to-face of curbs with 10-foot (3.0-m) berms. The recommended right-of-way width varies between 64 feet (19.5 m) and 70 feet (21.3 m) with no access control. It is anticipated that there will be no residences or businesses relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$1,800,000.

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 proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

II. Need for Project

The purpose of this project is to improve the safety and traffic flow within the project limits. This project is supported by the Town of Carthage.

NC 24-27 (Monroe St.) is designated as a major thoroughfare in the Moore County Thoroughfare Plan and as a minor rural arterial in the North Carolina Statewide Functional Classification System.

Courthouse Circle is a traffic circle which runs around the Moore County Courthouse, a National Register historic site. From Courthouse Circle to NC 22/ SR 1651 (McNeill St.), NC 24-27 runs through the Carthage central business district (CBD) and is currently a two-lane curb and gutter roadway with a pavement width of 56 feet (17.1 m) from face-to-face of curbs. There are stores and a sidewalk on the north side of the street with approximately fifteen angled parking spaces, while on the south side there are six parallel parking spaces, a sidewalk and access to a service station.

From NC 22 / SR 1651 (McNeill St.) to SR 1802 (Vass Rd.), NC 24-27 is a two-lane curb and gutter roadway with a pavement width of 44 feet (13.4 m) from face-to-face of curbs with intermittent sidewalks. Development in this section is a mix of single-family residential homes and small businesses. From SR 1802 to US 15-501, NC 24-27 is a two-lane roadway with a pavement width of 26 feet (7.9 m) with soil shoulders and is located asymmetrically in the right-of-way. Development in this section is light-density commercial, with a small shopping center on the south side of the intersection with US 15-501 and SR 1006 (Glendon-Carthage Rd.)

There is an existing traffic signal at the intersection with NC 22 / SR 1651 (McNeill St.).

TIP Project R-2212 will construct a four-lane bypass around Carthage on new location. This project is expected to remove a substantial amount of traffic from NC 24-27 when constructed. This project is scheduled for post-year right-of-way acquisition and construction.

The portion of NC 24-27 within the project limits is utilized as a connector route in Moore County's bicycle route plan. Wide outside lanes to accommodate bicycle traffic will be required.

The 1996 Average Daily Traffic (ADT) along NC 24-27 varies from 7,300 to 12,000 vehicles per day (vpd). For the design year 2025, the estimated traffic volumes on NC 24-27 will range between 11,300 and 18,000 vpd. Truck traffic is estimated to make up fourteen percent of daily traffic. If the Carthage Bypass is constructed under TIP Project R-2212, the estimated design year volumes on NC 24-27 will range between 8,400 and 12,400 vpd with five percent truck traffic.

Currently NC 24-27 is operating at Level of Service (LOS) B. If no improvements are made, it is projected that the roadway will operate at LOS E in the design year 2025. Assuming the Carthage Bypass (R-2212) is not constructed and NC 24-27 is widened to a three-lane curb and gutter section, the facility will operate at LOS B in the current year and at LOS C in the design year 2025.

During the three-year period from February 1993 to January 1996, there were 40 accidents reported on NC 24-27 within the project limits. There were 25 injuries reported as a result of these accidents, including no fatalities. The accident rate along NC 24-27 within the project limits is 281.89 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1994 statewide rate of 282.10 acc/100mvm for two-lane urban NC routes.

III. Recommendations

It is recommended to widen NC 24-27 (Monroe St.) from Courthouse Circle to US 15-501, a distance of 1.2 miles (1.9 km). The project location is shown on Figure 1. Descriptions of the individual segments are shown below.

Segment 1 - from Courthouse Circle to SR 1802 (Vass Rd.) - 0.6 miles

The recommended cross-section for this segment is a three-lane curb and gutter section utilizing the existing 44-foot (13.4-m) curb and gutter cross-section and existing right-of-way, which is approximately 65 feet (19.5 m). Pavement overlay and restriping should be sufficient to implement a three-lane cross-section without requiring major modifications to the existing street.

In order to accommodate an additional left-turn lane from NC 22-24 onto SR 1651 (McNeill St.), it is recommended to remove the six parking spaces on the south side of the roadway west of the intersection and to remove access from NC 24-27 to the service station in the southwest quadrant of this intersection.

Segment 2 - from SR 1802 to US 15-501 - 0.6 miles

From SR 1802 to US-15-501, it is recommended to widen the existing two-lane shoulder section to a three-lane curb and gutter roadway, 44 feet (13.4m) wide from face-to-face of curbs with 10-foot (3.0-m) berms on 70 feet (21.3 m) of right-of-way with no access control. Wide outside lanes of 14 feet (4.3 m) will accommodate bicycle traffic adequately. Widening on this segment of the project should be done asymmetrically to the south side of the roadway.

If TIP Project R-2212 is not constructed, the intersection with US 15-501 and SR 1006 (Glendon-Carthage Rd.) should be redesigned. This area currently has a high concentration of accidents due to the sprawling nature of the existing intersections. It is recommended to realign this intersection to form a signalized four-leg intersection (see Figure 1).

It is anticipated that no residences or businesses will be relocated due to the project. The total cost of the project is as follows:

Construction.....	\$	1,300,000
Right-of-way.....	\$	500,000
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Total Cost	\$	1,800,000

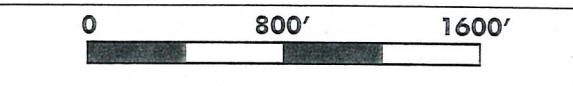
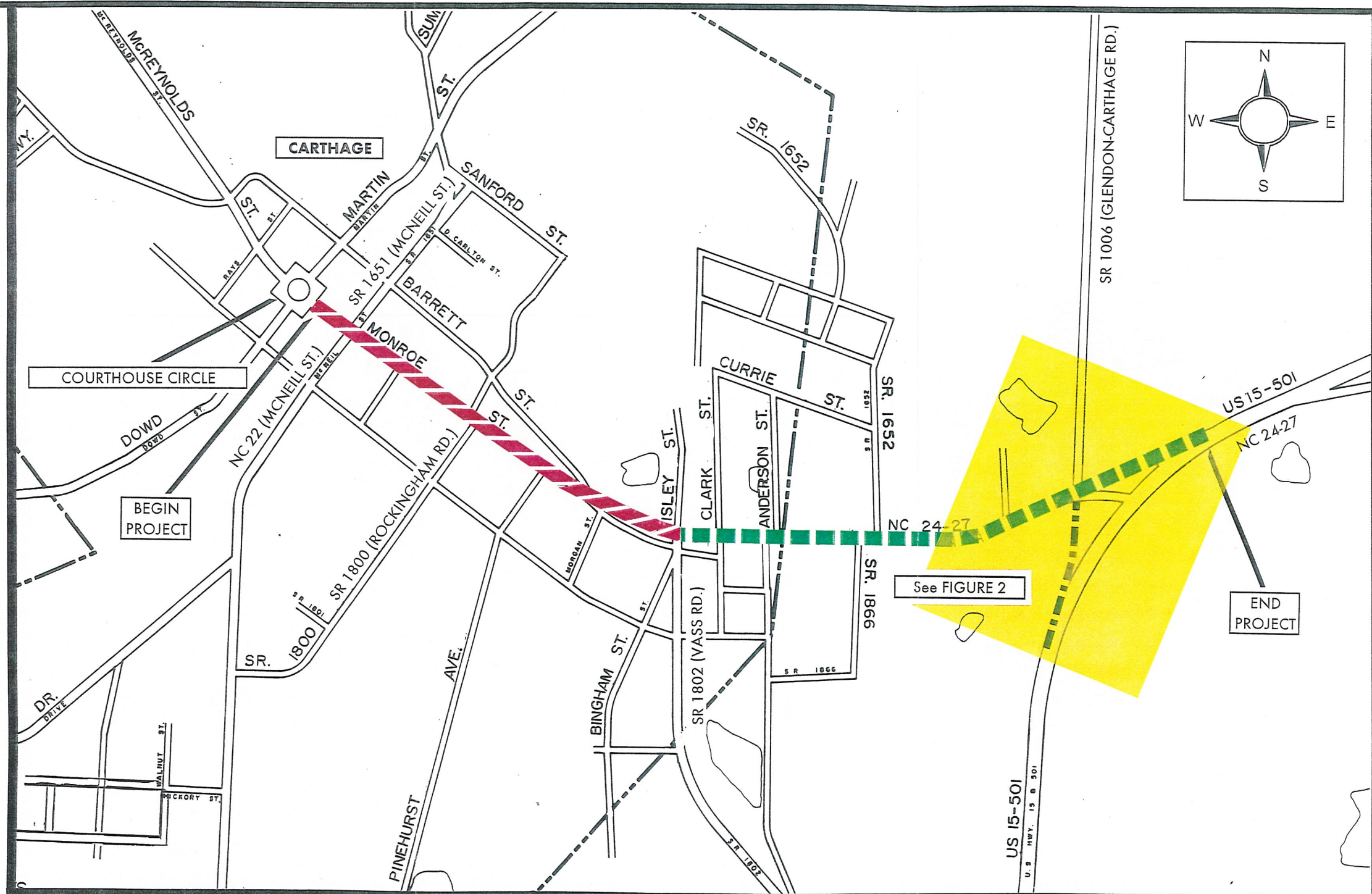
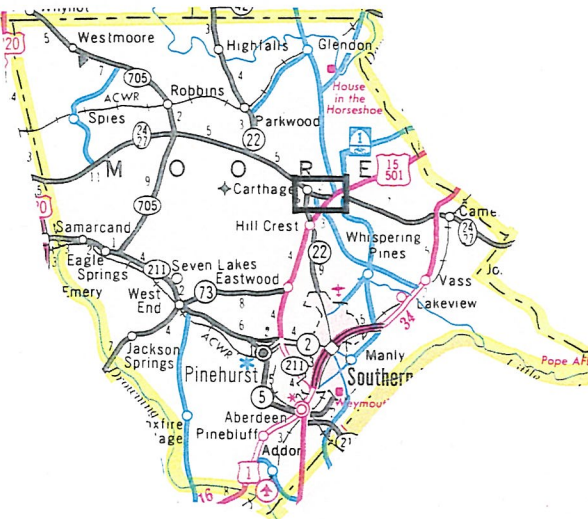
IV. Other Comments




An environmental screening was not conducted for this study. However, no impacts to wetlands are anticipated.

There are two structures within the project limits that are included on the National Register of Historic Places. The Moore County Courthouse is located in the center of Courthouse Circle and the Brice-Dowd-Kennedy House is located on a corner of the intersection with SR 1800 (Rockingham St.). No impacts to these structures are anticipated as a part of this project.

There is also a historical marker located at the intersection of NC 24-27 (Monroe St.) and NC 22 (McNeill St.) indicating that NC 24-27 was part of the Fayetteville-to-Salem Plank Road in the middle of the 19th Century (1849-1854).

Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

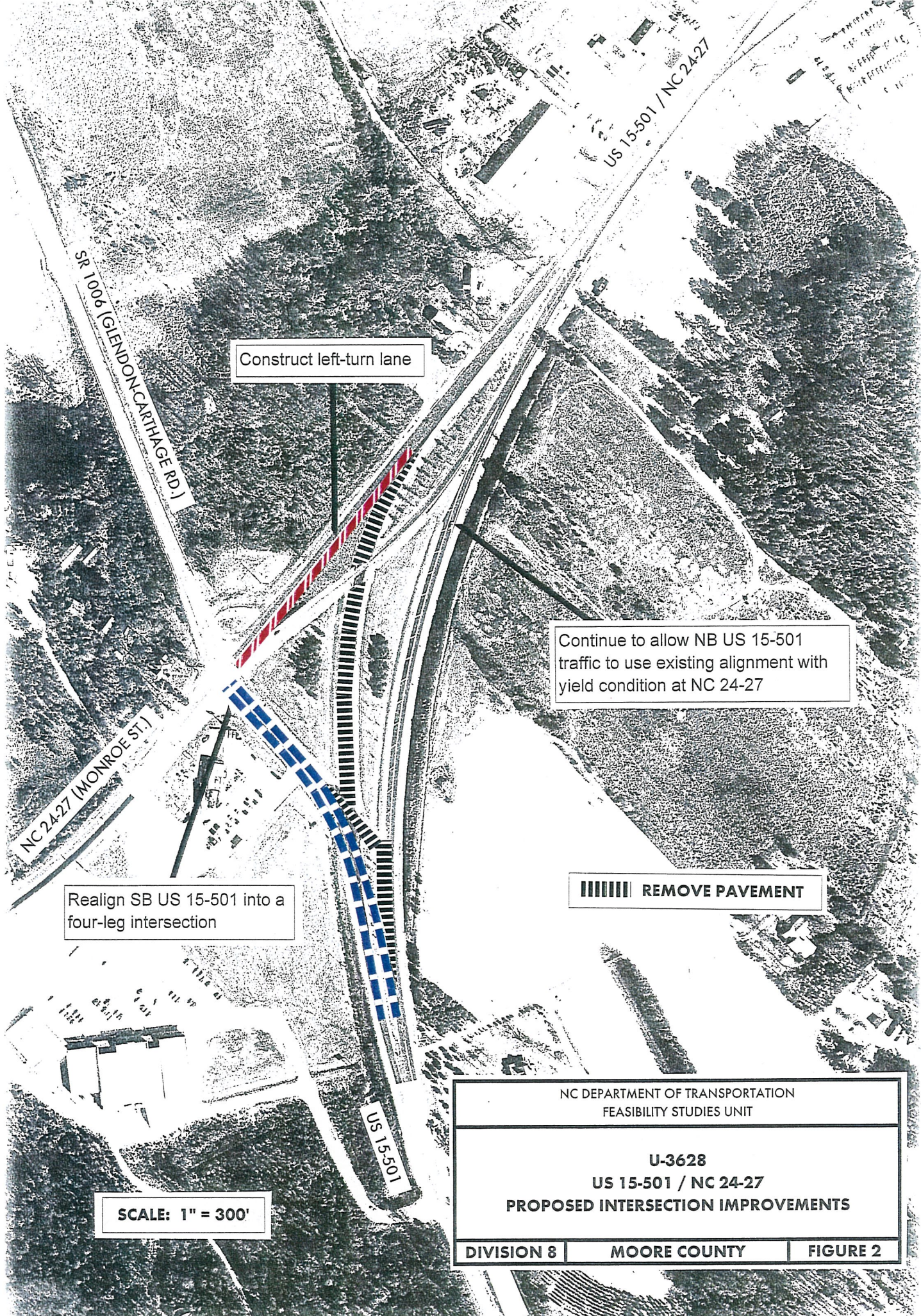


LEGEND	
	SEGMENT 1 - PROPOSED THREE-LANE SECTION ON EXISTING 44' CURB & GUTTER SECTION
	SEGMENT 2 - PROPOSED ASYMMETRICAL THREE-LANE WIDENING TO A 44' CURB & GUTTER SECTION
	PROPOSED REALIGNMENT

NC DEPARTMENT OF TRANSPORTATION
FEASIBILITY STUDIES UNIT

U-3628
NC 24-27 (MONROE ST.)
FROM COURTHOUSE CIRCLE
TO US-15-501
CARTHAGE

DIVISION 8	MOORE COUNTY	FIGURE 1
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Realign SB US 15-501 into a four-leg intersection

Construct left-turn lane

Continue to allow NB US 15-501 traffic to use existing alignment with yield condition at NC 24-27

REMOVE PAVEMENT

SCALE: 1" = 300'

NC DEPARTMENT OF TRANSPORTATION FEASIBILITY STUDIES UNIT		
U-3628 US 15-501 / NC 24-27 PROPOSED INTERSECTION IMPROVEMENTS		
DIVISION 8	MOORE COUNTY	FIGURE 2