

FEASIBILITY STUDY

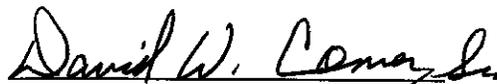
Sanford

**NC 42 (Broadway Road)
from US 421 (Horner Boulevard)
to SR 1579
Lee County**

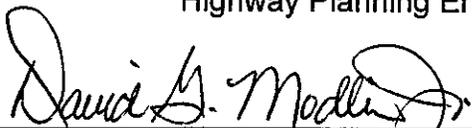
Division 8

R-3830

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



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Date

R-3830

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NC 42 (Broadway Road)
from US 421 (Horner Boulevard)
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I. General Description

This preliminary study describes recommended improvements to NC 42 (Broadway Road), on the southeast side of Sanford. It is recommended that Broadway Road be widened from US 421 (Horner Boulevard) to SR 1579, a distance of approximately 3.1 miles (5 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 12-foot (3.6-m) wide travel lanes in each direction, a center turn lane, and 10-foot (3.0-m) wide berms.

The widening should retain and utilize the existing alignment to the extent possible and should be generally symmetrical to the centerline of the existing roadway. The recommended right-of-way width is 100 feet (30.5 m).

It is estimated that the recommended right-of-way for this project will not result in the relocation of any residences or businesses; however, the relocation of a number of graves will be required.

The total cost for right-of-way and construction is estimated to be \$9,600,000 as follows:

Right-of-way	\$2,300,000
Construction	7,300,000
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Total	\$9,600,000

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 NC 42 (Broadway Road).

Broadway Road is designated a major thoroughfare on the Sanford Thoroughfare Plan. It is designated as a minor arterial on the North Carolina Statewide Functional Classification System.

From US 421 (Horner Boulevard) to approximately 0.3 miles (0.5 km) east of SR 1519 (Nash Street), Broadway Road is heavily developed commercially on both sides of the roadway. From approximately 0.3 miles (0.5 km) east of Nash Street to approximately 0.1 miles (0.2 km) west of the eastern SR 1523 (Rice Road) intersection, Broadway Road generally includes light density residential development along with two churches and a large cemetery. The cemetery, located approximately 0.1 miles (0.2 km) west of the western Rice Road intersection, includes graves along both sides of Broadway Road. From approximately 0.1 miles (0.2 km) west of the eastern Rice Road intersection to approximately 0.3 miles (0.5 km) east of SR 1529 (Cox Mill Road), development is heavy along both sides of the roadway and includes East Lee Middle School, manufacturing facilities, and a large mobile home park. From approximately 0.3 miles east of Cox Mill Road to the eastern project terminus, development is light and rural in nature.

From Horner Boulevard to Nash Street, Broadway Road is a 3-lane, 40-foot (12.2-m) wide (face-to-face), curb-and-gutter section. From Nash Street to the east project terminus, Broadway Road is generally a 2-lane rural shoulder section with 12-foot (3.6-m) wide travel lanes and 6-foot (1.8-m) wide soil shoulders. The Horner Boulevard, Nash Street, and Cox Mill Road intersections are signalized.

At the west project terminus, existing Horner Boulevard is a 4-lane, 52-foot (15.8-m) wide curb-and-gutter section. North from Broadway Road/Main Street, the roadway is being widened to 5-lane curb-and-gutter section (TIP Project No. U-2921).

The corridor for the proposed US 421-Sanford Bypass (TIP Project No. R-2417) crosses Broadway Road at approximately 0.5 miles (0.8 km) west of Cox Mill Road. The bypass will be a 4-lane median divided freeway facility with an interchange at Broadway Road.

There is one existing at-grade railroad crossing within the project boundaries. An industrial spur of Atlantic and Western Railroad crosses Broadway Road just east of Nash Street. The spur, which is not used on a regular basis, has an Investigative Index of only 40 and the crossing does not include any mechanical safety devices or warning systems.

The 1997 Average Daily Traffic (ADT) on Broadway Road, within the study limits, was estimated to range from a low of approximately 6,000 vehicles per day (vpd), near SR 1579, to a high of approximately 14,000 vpd just east of Nash Street. The design year (2020) estimates are from 12,000 vpd to 28,000 vpd.

The current estimated Level Of Service is estimated to range from Level C to Level E. Without the recommended improvements, it is estimated that the Levels of Service will deteriorate to Levels D and F prior to the design year (2020). With the recommended improvements, it is estimated that the Level of Service will improve to

Level A for the entire roadway segment and should not deteriorate to less than Level B through the design year.

During the period from August 1, 1994, through July 31, 1997, there were 31 accidents reported on Broadway Road, between Nash Street and SR 1579. This resulted in an accident rate of 101 accidents per 100 million vehicle miles (Acc/100MVM), compared to a statewide average of 288 Acc/100 MVM for all urban NC routes during 1996. There were no fatalities reported during the period, and 7 of the accidents resulted in injuries. The most prevalent accident types were rear end (45.2%) and angle (22.6%). The wider cross section with center turn lane will reduce the potential for these types of accidents.

III. Detailed Description of Project

It is recommended that NC 42 (Broadway Road), southeast of Sanford, be widened from US 421 (Horner Boulevard) to SR 1579, a distance of approximately 3.1 miles (5 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 12-foot (3.6-m) wide travel lanes in each direction, a center turn lane, and 10-foot (3.0-m) wide berms.

The traffic signals at Horner Boulevard, SR 1519 (Nash Street), and SR 1529 (Cox Mill Road) should be upgraded.

At Horner Boulevard, the westbound approach should include a right-turn lane, a through lane, a left-turn lane, and two eastbound lanes.

At the east project terminus, the roadway should transition to a 4-lane section and include a right-turn lane to SR 1579, a through lane, and two westbound lanes.

New gates and flashers should be installed at the Atlantic and Western Railroad crossing.

The recommended widening should retain and utilize the existing alignment to the extent possible and should be generally symmetrical to the centerline of the existing roadway. The recommended right-of-way width is 100 feet (30.5 m).

It is estimated that the recommended right-of-way for this project will not result in the relocation of any residences or businesses; however, the relocation of a number of graves will be required.

The total cost for right-of-way and construction is estimated to be \$9,600,000 as follows:

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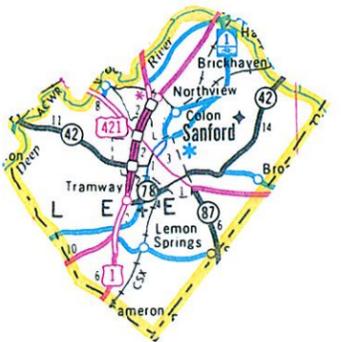
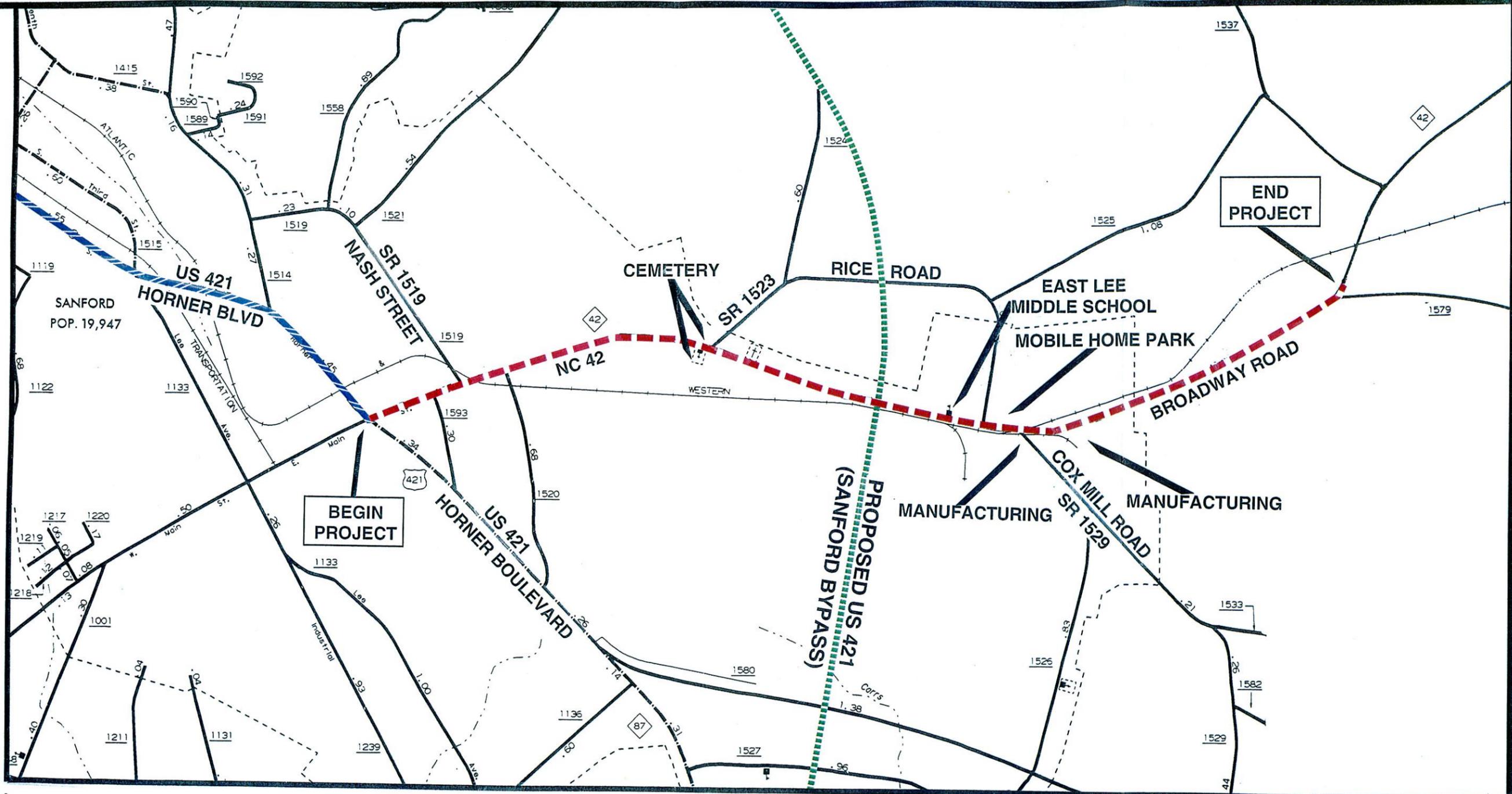
IV. Other Comments

The City of Sanford has requested the inclusion of sidewalks from East Lee Middle School to Horner Boulevard. It is estimated that the cost of 5-foot (1.5-m) wide sidewalks along both sides of the roadway will cost \$475,000. The cost of the sidewalks is not included in the previously outlined project costs. .

An environmental screening was not conducted for this study.

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 and no wetlands are expected to be encountered.

No provisions for bicycles have been included in this report.



LEGEND	
	R-2417
	R-3830
	U-2921

North Carolina Department of Transportation
 Program Development Branch

R-3830
 NC 42
 from US 421 (Horner Boulevard)
 to SR 1579

Lee County

DIVISION 8 FIGURE 1