



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

DIVISION OF HIGHWAYS
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

GARLAND B. GARRETT JR.
SECRETARY

March 8, 1996

MEMORANDUM TO: Ms. Mary Hayes Holmes, Member, Board of Transportation
Mr. F. E. Whitesell, P.E., Division Engineer, Division 8
Mr. C. W. Leggett, P.E.
Mr. W. H. Webb, P.E.
Mr. J. M. Lynch, P.E. (6) Attention: Roberto Canales, P.E.
Congestion Management Engineer
Mr. J. B. Williamson
Mr. H. F. Vick, P.E. (2)
Mr. D. R. Morton, P.E.
Mr. G. T. Shearin, P.E.
Mr. M. R. Poole, P.E.
Mr. A. L. Avant (2)
Mr. J. D. Lane
Mr. T. A. Peoples, P.E.
Mr. L. K. Barger, P.E.

FROM:

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

SUBJECT:

Feasibility Study # U-3461, Sanford, Fields Drive (SR 1107)
from Carthage Street (SR 1237) to Woodland Avenue, Lee
County.

Our staff has completed a feasibility study for the subject proposed project. This brief analysis suggests improvements that would be logical if the project were to be funded. A copy of our report is attached for your information.

DGM/joa

Attachment

cc: Dr. L. R. Goode, P.E.
Mr. B. G. Jenkins, P.E.
Mr. David W. Conner

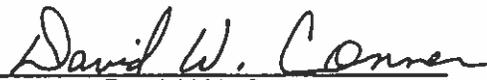


FEASIBILITY STUDY

Sanford
Fields Drive (SR 1107)
From Carthage Street (SR 1237)
to Woodland Avenue
Lee County

U-3461

Prepared by
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



Date

U-3461

Sanford
Fields Drive (SR 1107)
From Carthage Street (SR 1237)
to Woodland Avenue
Lee County

. i. General Description

This feasibility study describes proposed improvements to Fields Drive (SR 1107) in Sanford. It is proposed to widen Fields Drive (SR 1107) from Carthage Street (SR 1237) to Vance Street (SR 1226), realign the roadway from Vance Street to Evergreen Street (SR 1267), and widen Evergreen Street from existing Fields Drive to Woodland Avenue (a non-system, city street). The total project length is 1.1 miles (1.8 km). The location of the recommended improvements is shown on Figure 1.

The recommended cross section is a 5-lane, 64-foot (19.5-m) wide (face-to-face), curb-and-gutter section, with 8-foot (2.4-m) wide berms, throughout the project length. The required right-of-way width is 100 feet (30.5 m).

The total cost, including right-of-way and construction, is estimated to be \$7,800,000 as follows:

Right-of-Way	.....	\$2,900,000
Construction	.....	<u>4,900,000</u>
Total	.....	\$7,800,000

It is anticipated that 2 businesses and 24 residences will be relocated as a result of this project.

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 this study is to describe the alternative treatments including costs, and identify potential problem areas that deserve consideration in the planning and design phases.

II. Existing Conditions

This project was requested by the City of Sanford and the concept, cross section, and alignment are as recommended by the North Carolina Department of Transportation, Division 8 office.

The purpose of this project is to increase the capacity of Fields Drive and to provide a connecting thoroughfare from the southeast section of Sanford to the Lee County Hospital area. The realignment should also remediate operational and traffic concerns at the existing 5-leg intersection of Horner Boulevard (US 421/NC 42-87), Fields Drive, and Woodland Avenue.

Fields Drive is designated as a minor thoroughfare on the Sanford Thoroughfare Plan and as an urban collector in the North Carolina Statewide Functional Classification System.

The existing roadway is generally a 2-lane shoulder section with 24-foot (7.3-m) wide pavement and soil shoulders.

Development along the project corridor includes institutional and commercial development at the project terminals and medium density residential development along both sides of the roadway in the intermediate area. At the western project terminal, Lee County Hospital is located on the north side of the roadway and medical office buildings are located on the south side. At the eastern terminal of existing Fields Drive, the roadway is developed on both sides with industrial and storage facilities. Also, along the project route, a large church and the American Legion Hall are located on the south side of the roadway.

At the western terminal, Fields Drive intersects Carthage street which is a 3-lane, rural shoulder facility at the intersection.

At the eastern terminal, Fields Drive intersects Horner Boulevard. Woodland Avenue also intersects Horner Boulevard at this location creating a 5-leg intersection. Both Fields Drive and Woodland Avenue are 2-lane roadways at the intersection. Horner Boulevard is a 7-lane curb-and-gutter facility on the east side of the intersection and a 6-lane curb-and-gutter facility on the west side. The intersection is controlled by a traffic signal.

Existing Evergreen Street is a 2-lane roadway with a 22-foot (6.7-m) wide pavement, soil shoulders, and soil ditches on both sides. It is moderately developed with residences along both sides.

Existing Woodland Avenue is a 2-lane, 44-foot (13.4-m) wide (face to face), curb-and-gutter section which is commercially developed.

There is one railroad crossing along the project route. Fields Drive crosses CSX Railroad between Hudson Avenue (a non-system, city street) and Evergreen Street. Six trains per day utilize these tracks with speeds ranging from 50 miles per hour to 70 miles per hour. The crossing has gates and flashers.

The current (1995) Average Daily Traffic (ADT) volume on Fields Drive is estimated to be approximately 7,100 vehicles per day. The projected design year (2020) volumes are expected to reach approximately 14,000 vehicles per day.

Based on traffic projections, it is estimated that between Carthage Street and Horner Boulevard, Fields Drive is currently operating at a Level of Service D. Without upgrading, it is anticipated that Fields Drive will be operating at a Level of Service E by the design year. Construction of a 5-lane facility will improve the operation to a Level of Service A which should prevail through the design year.

During the three-year period from May 1, 1992 to April 30, 1995, there were 48 accidents reported on Fields Drive within the project limits. There was 1 death and 33 non-fatal injuries reported. These accidents resulted in an accident rate of 584.7 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 347.8 Acc/100MVM for all urban secondary routes in North Carolina. The most prevalent accident types were rear-end (31%), angle (27%), and left-turn (24%). The recommended cross sections will offer the potential for reduction of these types of accidents.

III. Recommendations

It is proposed to widen Fields Drive (SR 1107) from Carthage Street (SR 1237) to Vance Street (SR 1226), realign the roadway from Vance Street (SR 1226) to Evergreen Street (SR 1267), and widen Evergreen Street from existing Fields Drive to Woodland Avenue (a non-system, city street) at Marketplace Street (a non-system, city street). The total project length is 1.1 miles (1.8 km). The location of the recommended improvements is shown on Figure 1.

The recommended cross section is a 5-lane, 64-foot (19.5-m) wide (face-to-face), curb-and-gutter section, with 8-foot (2.4-m) wide berms, throughout the project length. The required right-of-way width is 100 feet (30.5 m).

New connectors are recommended from existing Fields Drive and existing Woodland Avenue to the realigned and widened facility. A cul-de-sac is proposed at the existing intersection of Woodland Avenue and Horner Boulevard (US 421/NC 42-87) with Woodland Avenue to be closed at this location. Also, Woodland should dead-end on the northwest side of the intersection of the new roadway and Marketplace Street.

The northern segment of Evergreen Street between the new roadway and Woodland Avenue should be removed.

In the area of Tin Street, existing Fields Drive should be dead-ended both north and south of the new roadway. Existing Fields Drive should also be dead-ended on the southeastern side of the new roadway in the area of Vance Street.

Existing Boykin Avenue should be dead-ended at the new roadway on the south side of the new roadway.

Except as noted above, all other intersections should be at grade and stop sign controlled.

A new traffic signal should be installed at the intersection of Fields Drive and Carthage Street.

At the western project terminal, Fields Drive should include a left-turn lane, a through lane, a right-turn lane, and two lanes exiting the intersection.

At the eastern project terminal, Fields Drive should initially taper to a 3-lane section to meet the 44-foot (13.4-m) wide (face-to-face) Woodland Avenue and then taper to 2 lanes to match Woodland Avenue.

Also proposed is a new bridge over the CSX Railroad to create a grade separation. The bridge should have a clear deck width of 64 feet (19.5 m) and a length of approximately 165 feet (50.3 m).

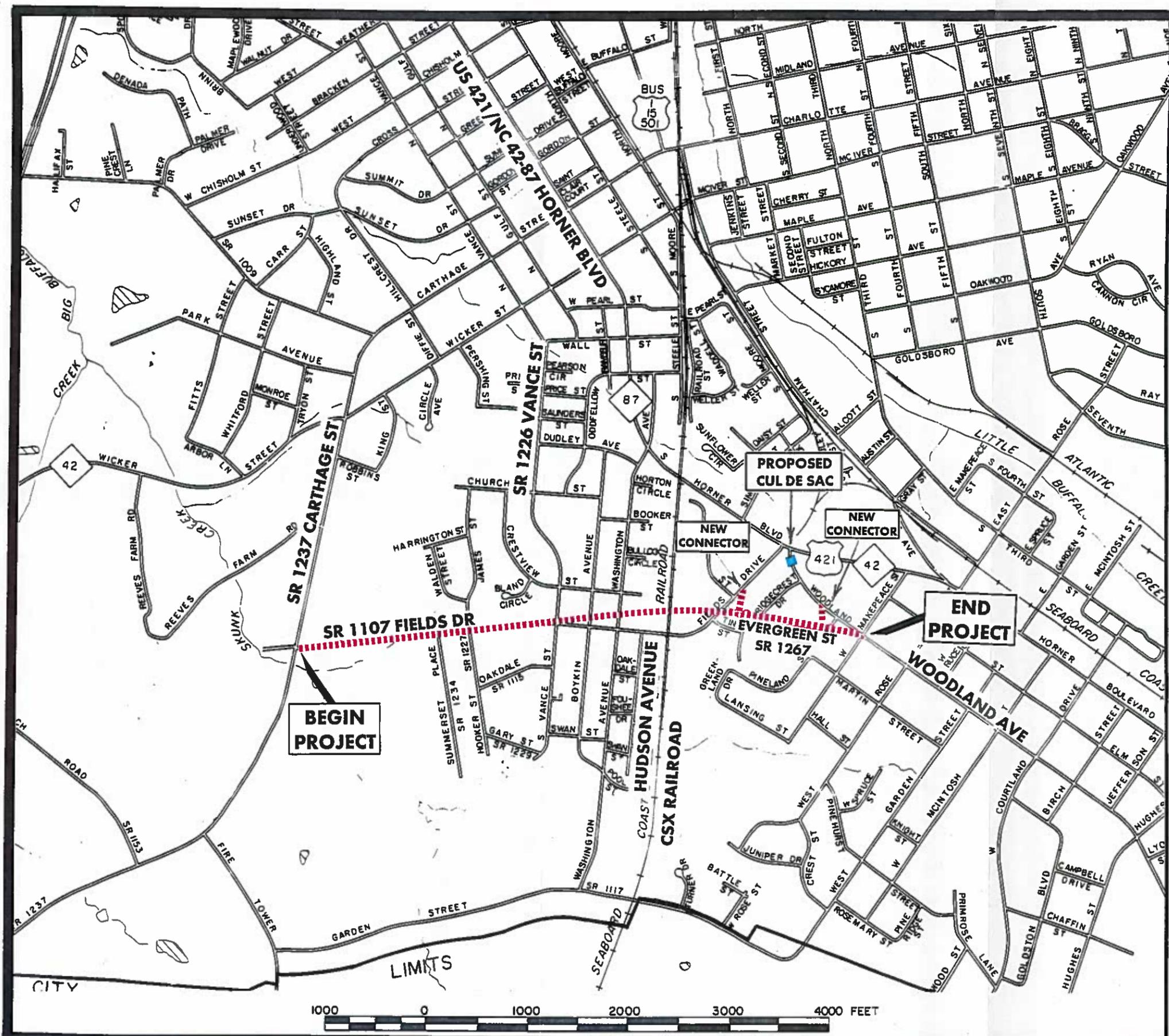
The total project cost, including right-of-way and construction, is estimated to be \$7,800,000 as follows:

Right-of-Way	.....	\$2,900,000
Construction	.....	<u>4,900,000</u>
Total	.....	\$7,800,000

It is anticipated that 2 businesses and 24 residences will be relocated as a result of this project.

IV. Other Comments

No wetlands or historic properties are anticipated on this project; however, an environmental screening was not conducted.



FEASIBILITY STUDIES UNIT

U-3461
SANFORD
SR 1107 (Fields Drive)
from SR 1237 (Carthage Street)
to Woodland Avenue
LEE COUNTY

Division 8 Figure 1