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FEASIBILITY STUDY

NC 87
From Manchester Rd. (SR 1001) to Sanford City Limits
Lee, Harnett, and Cumberland Counties
R-2238

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

June, 1987

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The subject project is included in the 1987-1995 Transportation Improvement Program for feasibility study and/or right of way protection. This report provides a brief, initial analysis of possible improvements. The project is not currently funded.

I. LOCATION AND TYPE OF FACILITY

The section of NC 87 covered in this study begins at Manchester Rd. (SR 1001), and terminates at the Sanford City Limits, a distance of 20.2 miles. This section of NC 87 consists of two lanes with 24 feet of pavement and 10-foot shoulders. The existing right of way width varies from 100 to 150 feet.

The subject section of NC 87 was constructed in 1956 and, with the exception of resurfacing, no major improvements have occurred since that time. NC 87 is classified as a Principal Arterial in the North Carolina Functional Classification System and is also designated as a Federal Aid Primary Route 67-1.

II. SUMMARY OF STUDIED IMPROVEMENTS

It is recommended that improvements to NC 87 be made along existing highway corridor.

Widening the existing roadway to a multi-lane facility is recommended as follows: (See Figure 1)

A. General

- Section 1 (From SR 1001 to Cumberland County Line) to be widen to the left with a five-lane curb & gutter facility, 1.3 miles;
- Section 2 (From Cumberland County Line to Spout Springs) to be widen to the left with a 30 foot median section, 5.5 miles;
- Section 3 (From Spout Springs northward to near Pineview) to be widen to the left with a five-lane shoulder section, 2.2 miles;
- Section 4 (From near Pineview northward to Carolina Trace) in this section widening will shift from left to right where necessary to miss development, 30 foot median section, 7.7 miles;
- Section 5 (From Carolina Trace to Sanford City Limits) to be widen to the left for 2.0 miles with a five-lane section, at bridge over Upper Little River widen symmetrically for 1.5 miles.

B. Intersection Treatment

All intersections will be at grade with stop sign or signal control with the exception of NC 24 and NC 27 interchanges.

C. Access Control

Full control of access is recommended at interchanges and no access control on remainder of project.

The recommended improvements are desirable to improve traffic flow and safety. The improvements are warranted to provide additional capacity for increasing volumes of traffic.

The estimated cost for the recommended improvements is \$25,060,000 including \$6,260,000 for right of way.

III. EXISTING CONDITIONS

A. General

The subject section of NC 87 lies within Cumberland, Harnett and Lee Counties. The section covered in this study begins at SR 1001 and terminates at the Sanford City Limits.

NC 87 is a two-lane facility throughout the studied area. The studied section has a 55 mph posted speed limit. The pavement condition is judged generally good. There are no curves greater than 3-degrees located along this section. Grades range from $\pm 3\%$ to -4% . Approximately 75% of the segment has unrestricted passing sight distance of 1500 feet or more.

B. Traffic Volumes and Capacity Analysis

Current (1987) average daily traffic (ADT) volumes range from a low of 6,200 vpd to a high of 11,000 vpd. Approximately 4-percent of these vehicles are truck tractor semitrailers (TTST) and 3-percent dual-tired trucks (DTT). The future ADT along this section is estimated to range from a low of 11,200 to a high of 19,800 vehicles per day in the year 2007 (See Figure 2).

C. Characteristics of Development

The density of development along the subject section of NC 87 is generally light with some areas moderate to heavy. The development is generally rural-residential in nature.

D. Accident Study

An accident study of the subject location was conducted by the Traffic Engineering Branch of the North Carolina Department of Transportation from January 1, 1984 to January 31, 1987. Summarized accident statistics are as follows:

	NC 87 From near SR 1101 To near Sanford C.L.	Statewide Average for Similar Primary Routes (1986)
Total Accidents	216.00	N/A
Fatal Accidents	3.00	N/A
Non-Fatal Injury Accidents	110.00	N/A
Total Accident Rate	139.60	197.70
Fatal Accident Rate	1.93	3.50
Non-Fatal Accident Rate	71.10	94.50

Although the Total Accident, Fatal Accident, and Non-Fatal Injury Accident Rate are lower than the Statewide Averages for similar routes, a further review of the accident data shows that vehicles running off the road constitutes the highest percentage of the total amount of accidents occurring on this segment of NC 87. The recommended improvements to NC 87 should help to alleviate this problem; and, also provide improved safety benefits to the increasing traffic volumes.

E. Structures

There are 6 structures located on the studied segment of NC 87. This includes two overhead bridges, two river crossings, and two culverts. Data on these structures are shown below:

	Width	Length	Clearance	
			Horiz.	Vert.
NC 24 Interchange	26'	153'	26.0'	16.06'
NC 27 Interchange	26'3"	126'	26.3'	14.09'
Bridge No. 23 over Lower Little River	28'2"	95'		
Bridge No. 11 over Upper Little River	28'2"	95'		
Culvert No. 25 over Barbecue Swamp Creek	Double 10' x 8' RCBC			
Culvert No. 38 over Barbecue Swamp Creek	Triple 8' x 8.5' RCBC			

IV. POSSIBLE ENVIRONMENTAL IMPACTS

The primary potential environmental consequence of constructing the proposed project would be its impact upon the wetlands of the Little River. Since a second structure is proposed to be built over the Little

River, it is anticipated that a Section 404 Permit will have to be obtained from the U. S. Army Corps of Engineers prior to the initiation of any work in this area. Any other possible environmental impacts of constructing the proposed improvements are not considered of major consequence.

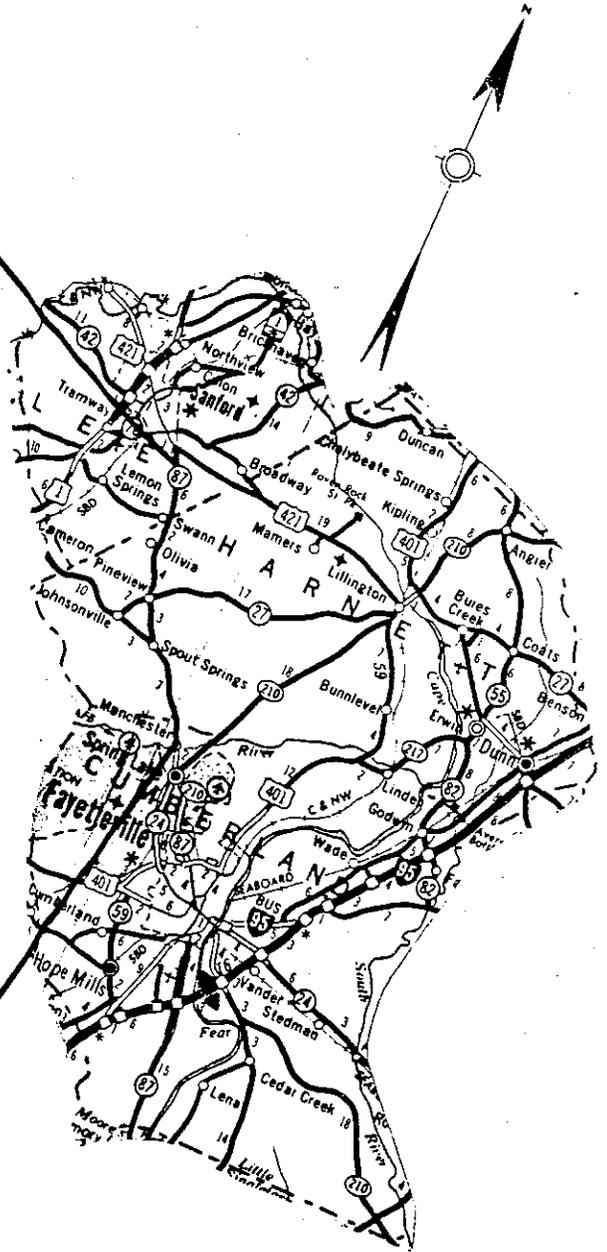
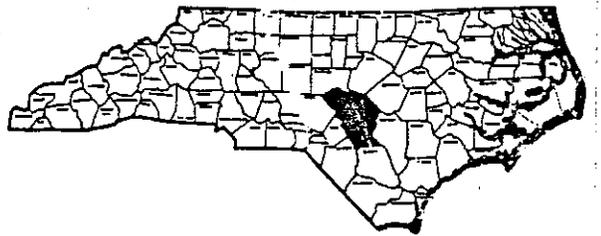
V. BASIS FOR FINDINGS

The recommendations contained in this document were based on the following:

1. Field investigation
2. Correspondence with the Division Engineer
3. Aerial Photography dated 12-29-86
4. Cost estimates provided by the Right of Way Branch and Roadway Design Service.

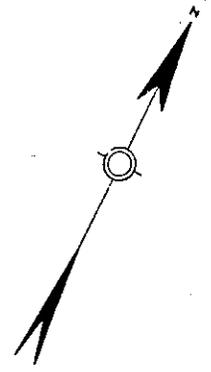
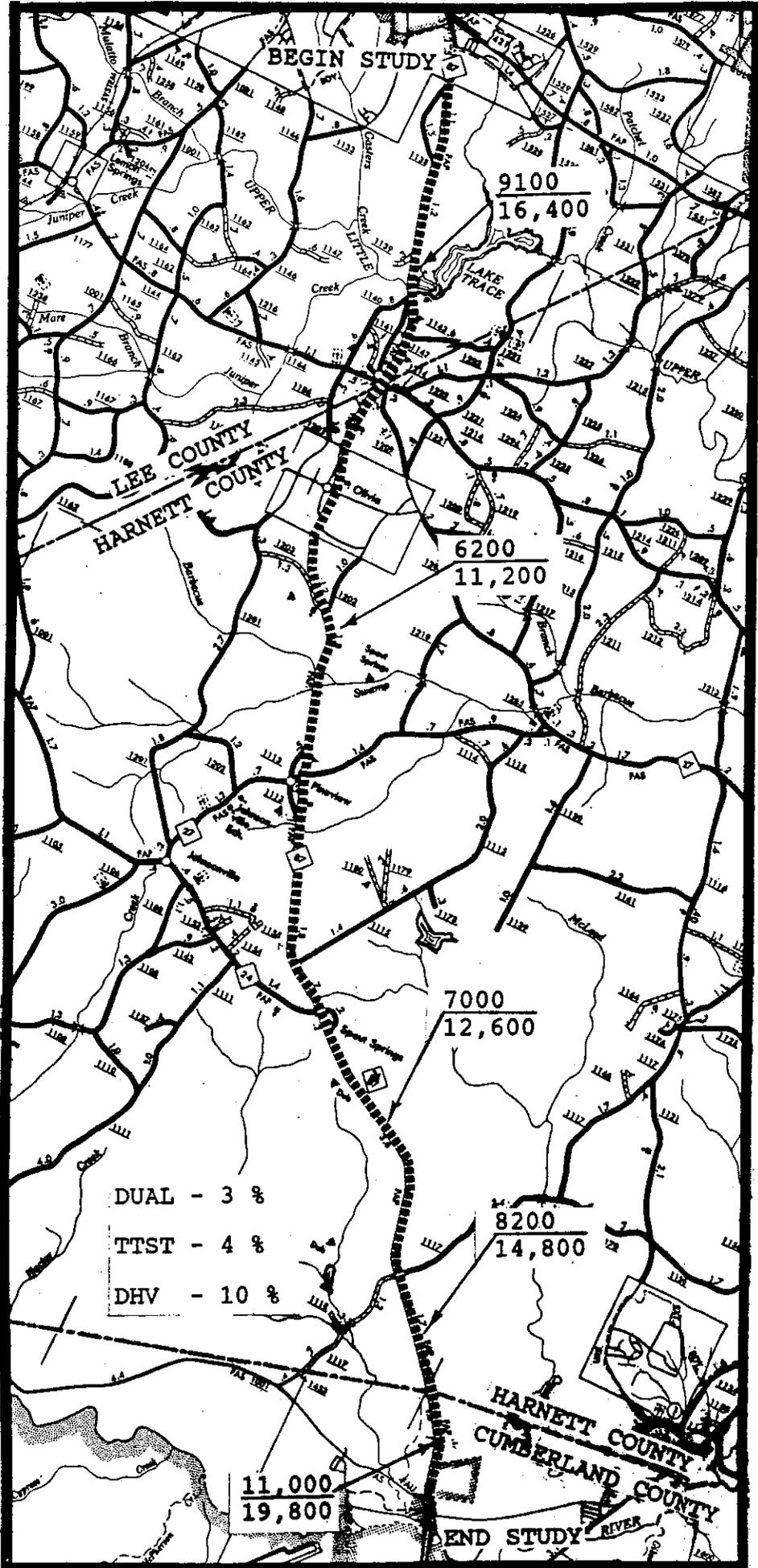
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GEOGRAPHIC LOCATION



	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PLANNING AND RESEARCH BRANCH
	WIDEN NC 87 FROM MANCHESTER RD. (SR 1001) TO SANFORD CITY LIMITS
6/87	FIG. 1

ESTIMATE 1987/2007 ADT



 NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

WIDEN NC 87
FROM
MANCHESTER RD.
(SR 1001)
TO
SANFORD CITY LIMITS

6/87 0 miles 3 FIG 2