

FEASIBILITY STUDY

US 1, Moore-Lee Counties
From Lakeview to Four Lanes
South of Sanford
R-210

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



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Date

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I. DESCRIPTION

This report covers a preliminary study of the proposed improvement of US 1 from the end of the existing 4-lane divided section at Lakeview northward to the beginning of the existing 4-lane divided section at SR 1180 south of Sanford, a distance of approximately 11.9 miles. Project location is shown on Figure 1. This project is included in the 1988-1996 Transportation Improvement Program for feasibility study and/or right of way protection. No funds have been appropriated for this project.

II. PURPOSE OF PROJECT

Existing Road Characteristics

This section of US 1 is classified as a principal arterial route in the statewide highway system. It has regional importance by providing north-south access through the entire state and to many towns and cities of various populations. Two noticeable communities directly served by the studied section are Cameron and Vass.

The existing roadway within the study limits consist of a basic 22-foot pavement with 10-foot shoulders constructed within a claimed 100-foot right of way width except through the Vass area where it reduces to 60 feet. The existing horizontal alignment is good, with no curves exceeding 4 degrees (60 mph design speed). However, the vertical alignment is undulating at many locations and has grades ranging up to 8 percent. Due to the alignment, safe passing sight distance is rarely available.

With the exception of NC 24-27, all crossroads intersect US 1 at grade. NC 24-27 passes over US 1 with a tight half clover configuration on its north side. Only one intersection, which is at SR 1805 in Vass, has a signal.

Five concrete bridges, all in Moore County, are located along the subject road. They are as follows:

<u>Bridge No.</u>	<u>Location</u>	<u>Date Built</u>	<u>Length</u>	<u>Width</u>	<u>V.C.</u>	<u>H.C.</u>	<u>Suffic. Rating</u>
55	NC 24-27 (Overpass)	1945	142'	26'	14.0'	40'	71.9
74	Little River	1964	176'	34	-	-	67.1
75	CSX RR (Overpass)			-	13.5'	34'	
79	Gains Creek	1964	71'	28'	-	-	83.0
83	Little Crane Creek	1964	50'	26'	-	-	81.5

Roadside development is primarily rural woodland and agricultural with light to median density residential and commercial uses. Development through the Vass area increases to medium to heavy density, consisting of a variety of uses such as service stations, residences, lumber yard, churches, and a park. The speed limit through Vass is to 45 MPH. Elsewhere along the project, the speed limit is 55 mph.

Traffic Volumes, Capacity, and Accident History

Current traffic volumes on US 1 range from approximately 6500 vehicles per day at Cameron to 7500 vpd at SR-1180 to 9000 vpd at Lakeview. Approximately 20 percent of the traffic volume is composed of trucks.

At desirable level of service C, capacity along the existing two-lane facility is approximately 4000 vpd. Thus, capacity is exceeded by existing traffic volumes at all points along the studied road.

Some 170 accidents occurred on the 12-mile studied portion of US 1 during a recent 3½-year period. The accident record yielded an accident rate of 1.7 accidents per million vehicle miles. This rate compares equally with the statewide average rate of 1.74 acc/mvm for two-lane US routes. Major patterns of accidents were run-off-road types (30%) and rear-end collisions (25%).

Need for Project

The existing two-lane width along US 1 is not sufficient to adequately handle the increasing traffic demands. To correct the capacity deficiency, additional lanes are immediately warranted. Also, providing additional lanes would eliminate the two-lane gap between adjoining multi-lane sections of US 1.

III. RECOMMENDATIONS AND COSTS

The recommended plan is complete relocation of US 1 between the existing four-lane divided sections. Provision of a four-lane roadway on new location is more desirable than along the existing alignment of US 1. Widening the existing route to four lanes is not a suitable alternative, because it would involve revision to much of the vertical alignment to satisfy arterial route standards, require reconstruction of obsolete overpasses and stream crossings, and result in considerable property damages, particularly through the Town of Vass. Also upgrading the existing road would not be in keeping with the mutually adopted Moore County Thoroughfare Plan which recommends relocation.

The preferred location for a new highway is east of existing US 1 along an approximate alignment shown on Figure 3. This is based on consideration of overall existing development; environment, and relationship to the ultimate thoroughfare system. The eastern corridor follows the proposed location shown on the Moore County Thoroughfare Plan (see Figure 3). (No thoroughfare plan for Lee County is available.)

Initial traffic volumes that would use the relocation are estimated to range from 4500 to 6000 vpd. These volumes would increase to 8000 and

11,000 vpd, respectively, by year 2010. Based on these volumes, a four-lane width is needed initially to provide the desirable level of service.

The recommended route is approximately 12.1 miles between its terminals at Lakeview to the south and SR 1180 in Lee County to the north. Travel distance along the new route, which would be no more than one mile away from the existing route, would be approximately the same as the existing route.

Estimated costs are based on provision of a 2 @ 24-foot pavements divided by a 46-foot grassed median with 12-foot shoulders on an estimated 250-foot right of way width. Right of way should have full control of access. Although desirable, no interchanges are recommended to be constructed initially due to substantial higher cost and moderate volumes of traffic that would use the new facility. However, right of way should be acquired for the future interchanges.

Costs for the recommended improvements are itemized as follows:

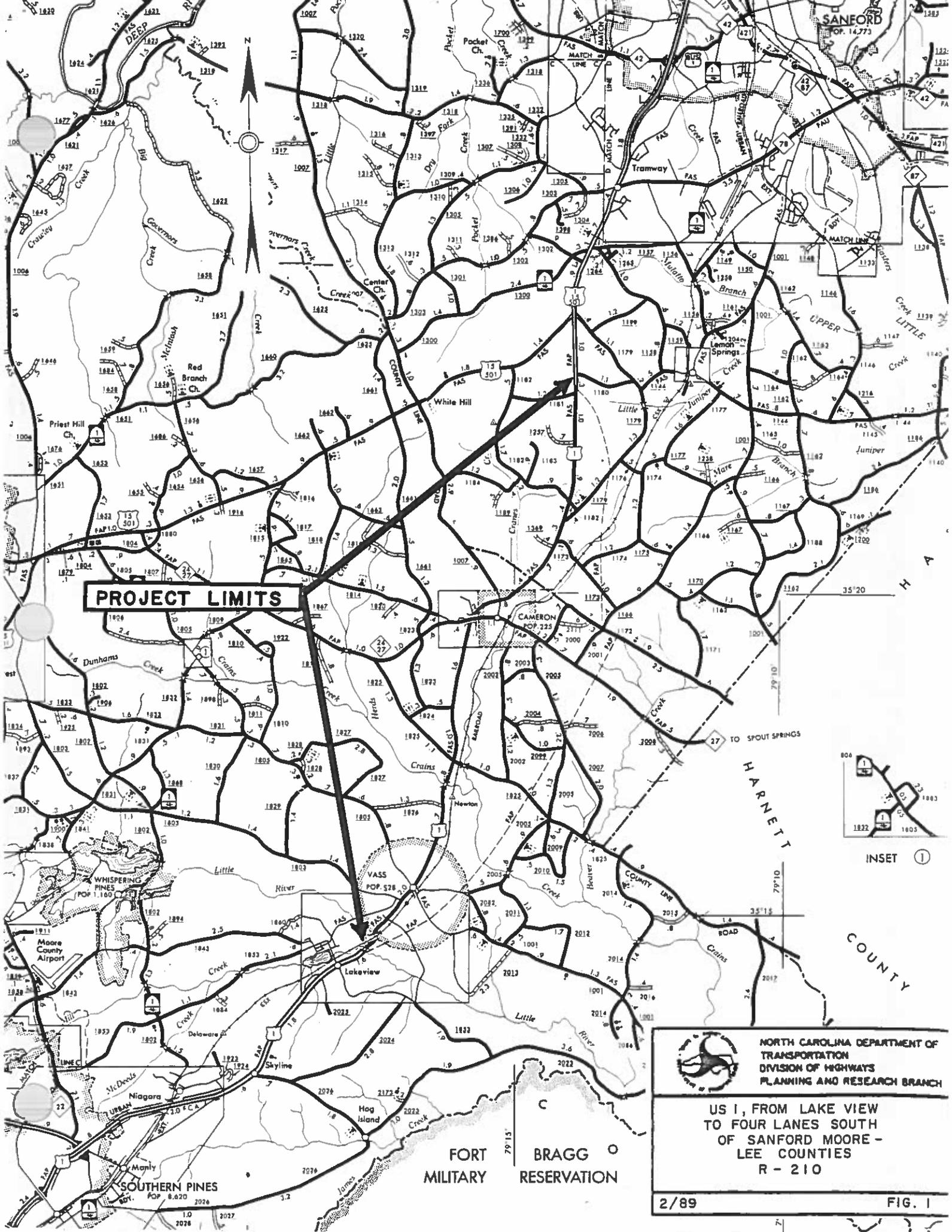
Roadway Construction	\$19,650,000
Grade Separations	6,400,000
Bridges Over Two Streams & One Railroad	2,250,000
Right of Way	7,200,000
Total cost	<u>\$35,500,000</u>

Constructing five interchanges initially would cost approximately \$18,000,000.

IV. OTHER COMMENTS

No other corridor was found to be more feasible or desirable for the relocation of US 1. However, if the project is to be implemented at a future date, all feasible alternatives and their associated impacts must be evaluated in detail and incorporated in a planning and environmental document prior to that date and a final decision will be made on the most appropriate.

Possible negative environmental impacts of the project are: (1) loss of wildlife habitat; (2) filling of wetlands in the Little River area; (3) loss of prime forested and farmland; and (4) displacement of approximately 24 residences.



PROJECT LIMITS

SANFORD
OP. 14,773

CAMERON
POP. 225

VASS
POP. 528

WHISPERING PINES
POP. 1,100

SOUTHERN PINES
POP. 8,820

**FORT BRAGG
MILITARY RESERVATION**

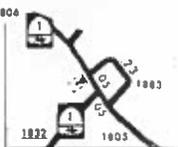


**NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH**

**US 1, FROM LAKE VIEW
TO FOUR LANES SOUTH
OF SANFORD MOORE -
LEE COUNTIES
R - 210**

2/89

FIG. 1



INSET ①



RECOMMENDED

Crane

Creek

River

Lakeview

Little

River

Crystal Lake

A-LANE

SEWARD

Vass

Vass

Wass-Lakeview Br.

Johnson Grove Cam

Chiffin Lake

COAST

SEWARD

Branch

Big

Creek

Crane Creek Cem

Shelton

Newton

Branch

Piney W. Cr.

Creek

