

FEASIBILITY STUDY

NC 210
Spring Lake to Lillington
Cumberland-Harnett Counties
R-2230

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

July, 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. GENERAL DESCRIPTION

The proposed project consists of widening NC 210 from Spring Lake to Lillington, a distance of 17.8 miles. Provision of a five-lane curbed roadway is recommended from Holland Drive in Spring Lake to a point just north of the Cumberland-Harnett County line (see Figure 1). This segment is designated as Section A in this report. Provision of an adequate two-lane roadway is desirable for the remainder of the route.

II. PURPOSE OF PROJECT

The purpose of the project is to improve traffic flow along NC 210 by providing additional pavement width. The project would alleviate congestion and would improve safety along the studied route.

III. EXISTING CONDITIONS

For analysis purposes, the existing roadway was divided into the following sections (see Figure 1):

- Section A - From Holland Drive in Spring Lake to SR 1121, a distance of 3.9 miles.
- Section B - From SR 1121 to 0.4 miles north of SR 1144, a distance of 3.4 miles.
- Section C - From 0.4 miles north of SR 1144 to SR 1132, a distance of 4.9 miles.
- Section D - From SR 1132 to US 401 at Lillington, a distance of 5.6 miles.

The existing roadway has the following characteristics:

Sections	A	B	C	D
Pavement Width (ft.)	24	22	24	24
Shoulder Width (ft.)	8	12	8	8
Right-of-Way Width (ft.)	100-157	60	60-100	60

Horizontal Curves over 3°	0	0	3 @ 5°	1 @ 4° 1 @ 8.5°
Vertical grades over 3%	0	1 @ 5% 1 @ 7%	1 @ 4% 1 @ 8%	1 @ 7%
%Passing Sight Distance (1500 ft.)	80%	15%	30%	20%
Speed Zones (MPH)	35-45	45-55	55	55
Number of Accidents (1-1-84 thru 12-31-86)	102	103	48	34
Total Accident Rate (acc/100 mvm)	220	628	304	142

Development along Section A is generally urban in nature. Near Spring Lake, abutting development is medium-to-full-density, primarily commercial. This segment of NC 210 adjoins a 64-foot curbed roadway in Spring Lake.

Development along Sections B, C, and D is generally rural in nature. Horizontal alignment is adequate in these sections; however, vertical alignment is less than desirable.

A total of 287 accidents were reported in a recent 3-year period. This resulted in an accident rate of 324 accidents per 100 million vehicle miles, which is somewhat higher than the statewide average of 236 accidents per 100 million vehicle miles for two-lane NC routes.

Current traffic volumes on NC 210 range from 3,900 VPD (low) to 14,000 VPD (high) (see Figure 2). By the year 2007, these volumes are expected to increase to 7,000 VPD (low) to 25,000 VPD (high). The present capacity of the existing roadway is currently being exceeded along Section A. Section B operates at Level of Service D, while the remainder of the route provides Level of Service C.

IV. RECOMMENDED IMPROVEMENTS

The most feasible method of improving NC 210 is to widen the existing roadway. Provision of a five-lane (64 feet face to face of curbs) width is recommended along Section A (Holland Drive to SR 1121), a distance of 3.9 miles. Widening to an adequate two-lane facility (28-foot pavement with shoulders) is desirable for the remaining 13.9 mile segment of NC 210.

Acquisition of 100 feet of right-of-way will be necessary throughout the project.

It will be necessary to widen or replace two existing bridges.

The estimated cost of recommended improvements is as follows:

	<u>Construction</u>	<u>Right-of-Way</u>	<u>Total</u>
Section A	\$4,550,000	\$1,070,000	\$5,620,000
Section B	675,000	950,000	1,625,000
Section C	775,000	1,080,000	1,855,000
Section D	975,000	1,000,000	1,975,000
Total	<u>\$6,975,000</u>	<u>\$4,100,000</u>	<u>\$11,075,000</u>

Cost estimates were prepared by the Roadway Design Unit and the Right-of-Way Branch. Estimates were based on a county map and a field review.

V. ALTERNATIVES

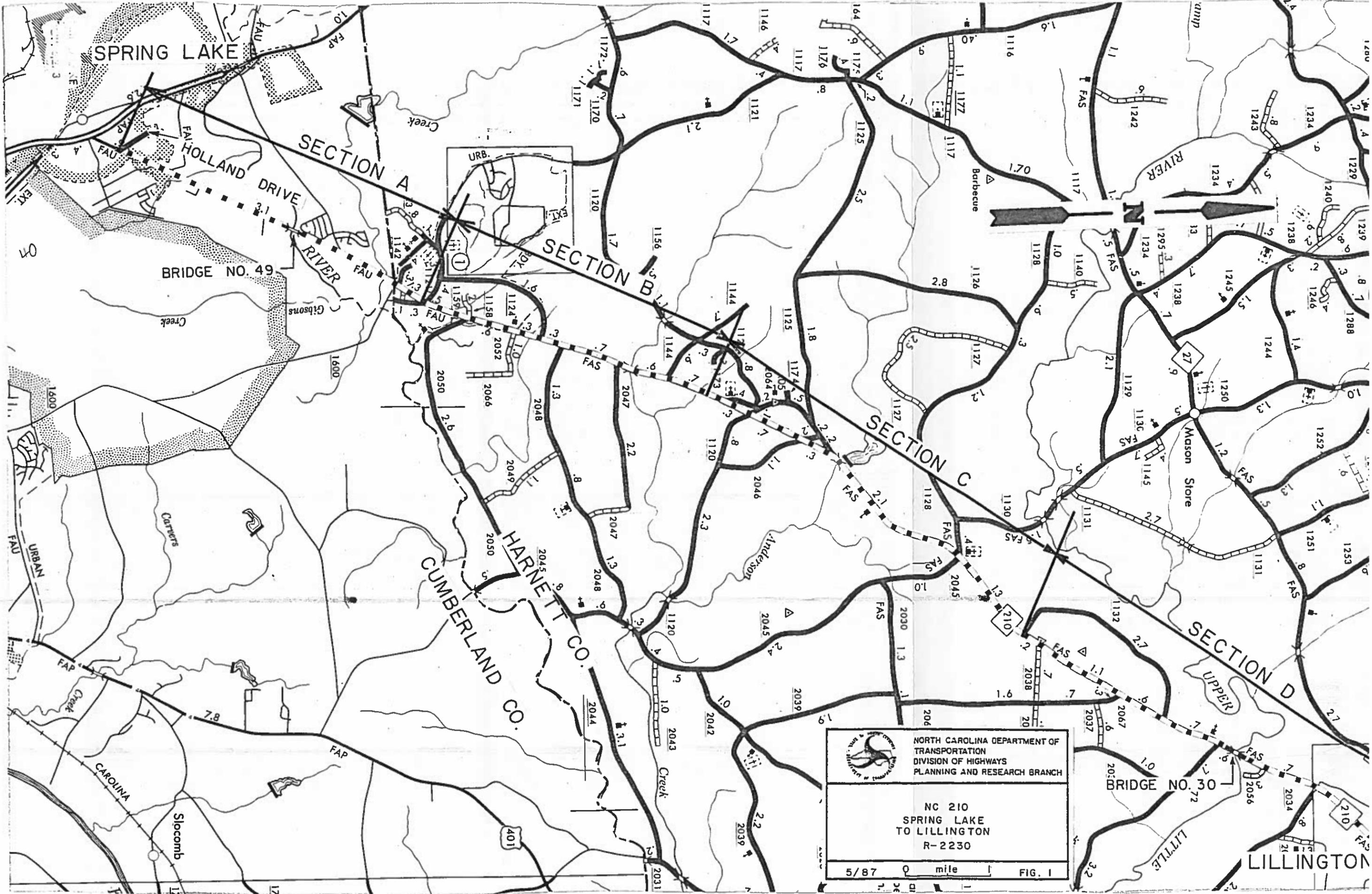
The improvements proposed in this report assume no changes in the alignment of NC 210. Ideally, the vertical alignment should be improved at several locations in Sections B, C, and D in order to provide adequate vertical sight distance. It appears this treatment would be desirable at 25 to 30 locations. It is roughly estimated that construction costs would be \$4,000,000 greater than estimated in this report. No attempt was made to estimate right-of-way damages. Further study of this proposal would be necessary to determine if traffic could be accommodated during construction. No reasonable detour routes exist.

VI. ENVIRONMENTAL IMPACTS

The environmental consequences of the project are not expected to be significant. Possible negative impacts include some increase in noise levels and the loss of some wetlands at stream crossings. It does not appear that relocation of families or businesses would be necessary.

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning and environmental document prior to that time, and a final decision made as to the most appropriate improvement.

PWE/wp



SPRING LAKE

HOLLAND DRIVE

BRIDGE NO. 49

SECTION A

SECTION B

SECTION C

SECTION D

HARNETT CO.
CUMBERLAND CO.

BRIDGE NO. 30

LILLINGTON

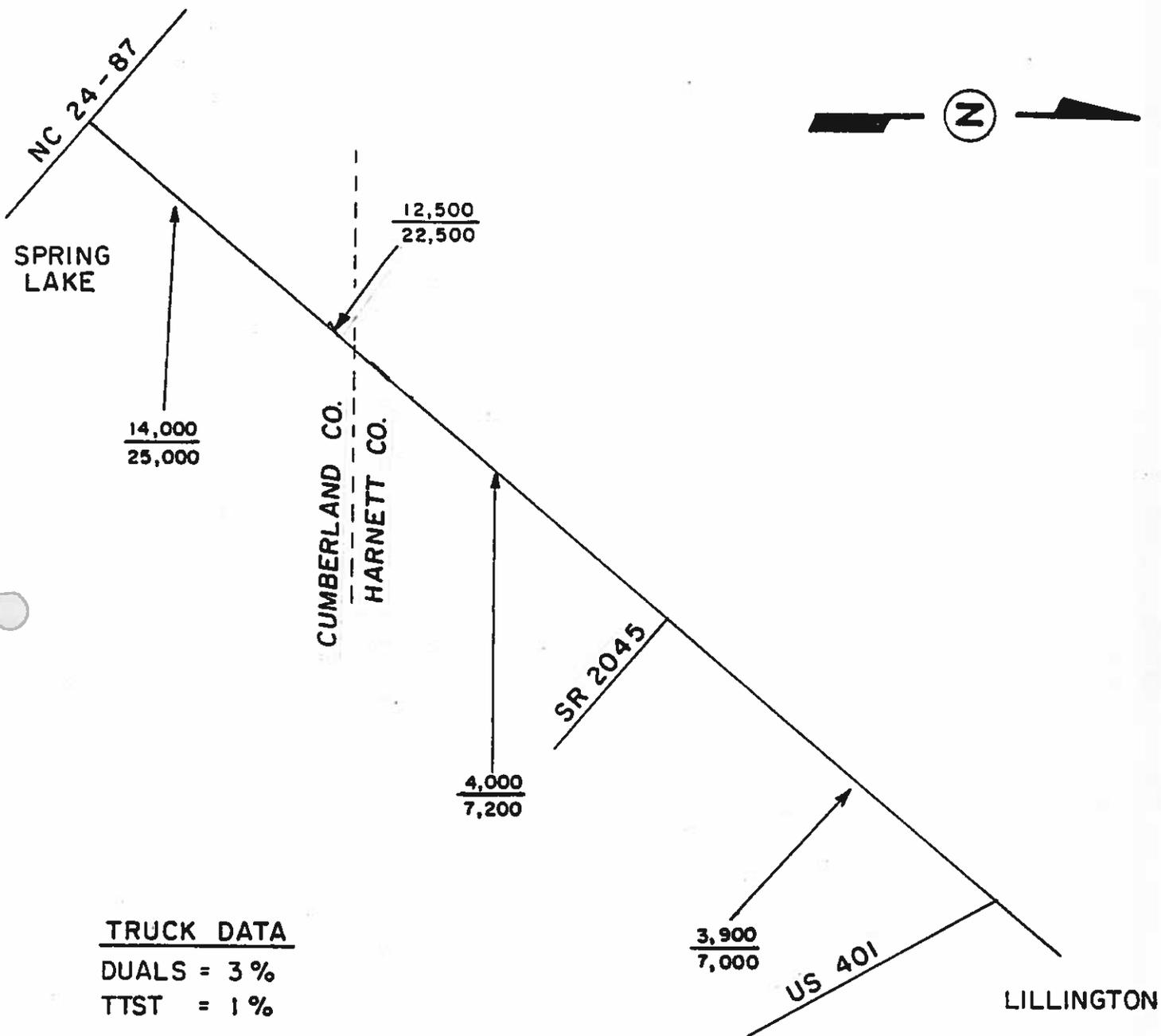

 NORTH CAROLINA DEPARTMENT OF
 TRANSPORTATION
 DIVISION OF HIGHWAYS
 PLANNING AND RESEARCH BRANCH

NC 210
 SPRING LAKE
 TO LILLINGTON
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5/87 0 mile 1 FIG. 1

ESTIMATED TRAFFIC VOLUMES

$$\frac{1987 \text{ ADT}}{2007 \text{ ADT}} = \frac{00}{00}$$



TRUCK DATA
 DUALS = 3 %
 TTST = 1 %

FIGURE 2