

FEASIBILITY STUDY

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NC 55, Holly Springs Bypass,
Wake County
FS-890017

R-2541

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

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9/28/89
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I. DESCRIPTION

This report covers a preliminary study of a NC 55 bypass/western loop for Holly Springs southwest of Raleigh in Wake County. The general project location is as shown on Figure 1. The request for the project was made by the Town of Holly Springs through the State Highway Administrator's office for consideration of possible inclusion in the T.I.P. The town has also voiced strong support for the project.

II. PURPOSE OF PROJECT

Existing Conditions

Outside of the limits of Holly Springs, NC 55 is classified as a rural major collector in the statewide highway network. It appears as a major existing thoroughfare on the Holly Springs Thoroughfare Plan. NC 55 serves as a major north-south route from the Research Triangle south to Fuquay-Varina and US 401.

Through Holly Springs, NC 55 is basically a 2-lane, 24-foot paved facility. The shoulders are 6 feet wide and unpaved. Short sections of curb and gutter exist at commercial properties in the business district. Roadside development is a mix of high density residential and commercial within the corporate limits of Holly Springs, with sparse residential and commercial development outside the town.

Current traffic volumes on the route range from a low of 8100 vehicles per day (vpd) south of the project to a high of 12,900 vpd to the north. The volume in town is approximately 11,700 vehicles per day. A traffic signal has been recently installed at SR 1152 (Holly Springs-New Hill Road). Speed limits along NC 55 are 45 and 55 mph outside and 35 mph inside the corporate limits of Holly Springs.

Secondary roads which intersect or correspond with the proposed bypass alignment are listed and described as follows:

<u>SR Number</u>	<u>Name</u>	<u>Pvmt. Width</u> (Ft.)	<u>Shoulder Width</u> (Ft.)
1301	Sunset Lake Rd. (East of NC 55)	22 (gravel)	Minimal
1152	Holly Springs-New Hill Road	18	6

1101	Piney Grove-Wilbon Rd.	18	6
1115	Avent Ferry Road	18	6
1114	Ralph Stephens Road	18	6

Need for Project

Justification for a NC 55 bypass of Holly Springs stems from a need to provide better operation for through traffic, remove a heavy volume of trucks from town, and provide access to numerous proposed facilities west of Holly Springs.

As shown on Figure 1, near Holly Springs are two quarry sites, the Wake County Firing Range, and the Wake South Regional Airport in various stages of planning. The bypass would serve these facilities as well as through traffic and future growth.

III. RECOMMENDATIONS AND COSTS

The approved 1985 thoroughfare plan for Holly Springs (see Figure 3) includes a proposed loop, the western half of which would serve as an NC 55 bypass. The western segment of this loop alignment is substantially as recommended in this study.

Due to proposed industrial and commercial development north of town, the alignment for the section of the loop from SR 1152 to NC 55 is recommended to be shifted northward from the thoroughfare plan's recommended location (see Figure 3).

Estimated traffic volume for the year 2010 that would use the bypass is approximately 25,000 vehicles per day. This volume would substantially relieve traffic problems in Holly Springs.

The recommended route (as shown on Figure 2) is mainly on new location and is divided into two sections:

<u>Section</u>	<u>From</u>	<u>To</u>	<u>Length (miles)</u>
A	NC 55(N)	SR 1115	3.4
B	SR 1115	NC 55(S)	1.1

The proposed cross section is a two-lane shoulder section (24-foot pavement with 10-foot minimum shoulders) offset on a 200-foot right-of-way that will accommodate a desirable future 4-lane divided parkway with a 30-foot median.

<u>Section</u>	<u>Construction Cost</u>	<u>Right-of-Way Cost</u>	<u>Total Cost</u>
A	\$4,300,000	\$850,000	\$5,150,000
B	\$1,100,000	\$550,000	<u>\$1,650,000</u>
		TOTAL	\$6,800,000

The Town of Holly Springs is presently securing, or has secured agreements for the donation of approximately 100 feet of right-of-way for Section A of this project. Right-of-way costs listed above were prepared assuming no donation of right-of-way. These costs are also based on acquiring partial control of access (generally one access per property).

The above estimates were prepared by the Preliminary Estimate Engineer and the Right-of-Way Branch.

IV. ALTERNATIVES

No other alignment was found to be more feasible from the standpoint of traffic service, environmental impacts, and overall costs.

A studied alternative to the recommended alignment involves extending the recommended loop connections to NC 55 farther to the north and south. To the north, the alternative intersection would be located approximately 0.5 mile north of the Feltonville community. South of Holly Springs, the alternative southern portion of the bypass would tie into the existing SR 1113 (Wade Nash Road) at NC 55 (see Figure 1).

As seen on Figure 2, it is not feasible to extend the bypass northward due to the proposed location for the Wake Southern Loop. Also, a possible extension of the recommended alignment allows for utilization of Sunset Lake Road (SR 1301) in the future as a segment of a possible eastern Holly Springs Loop.

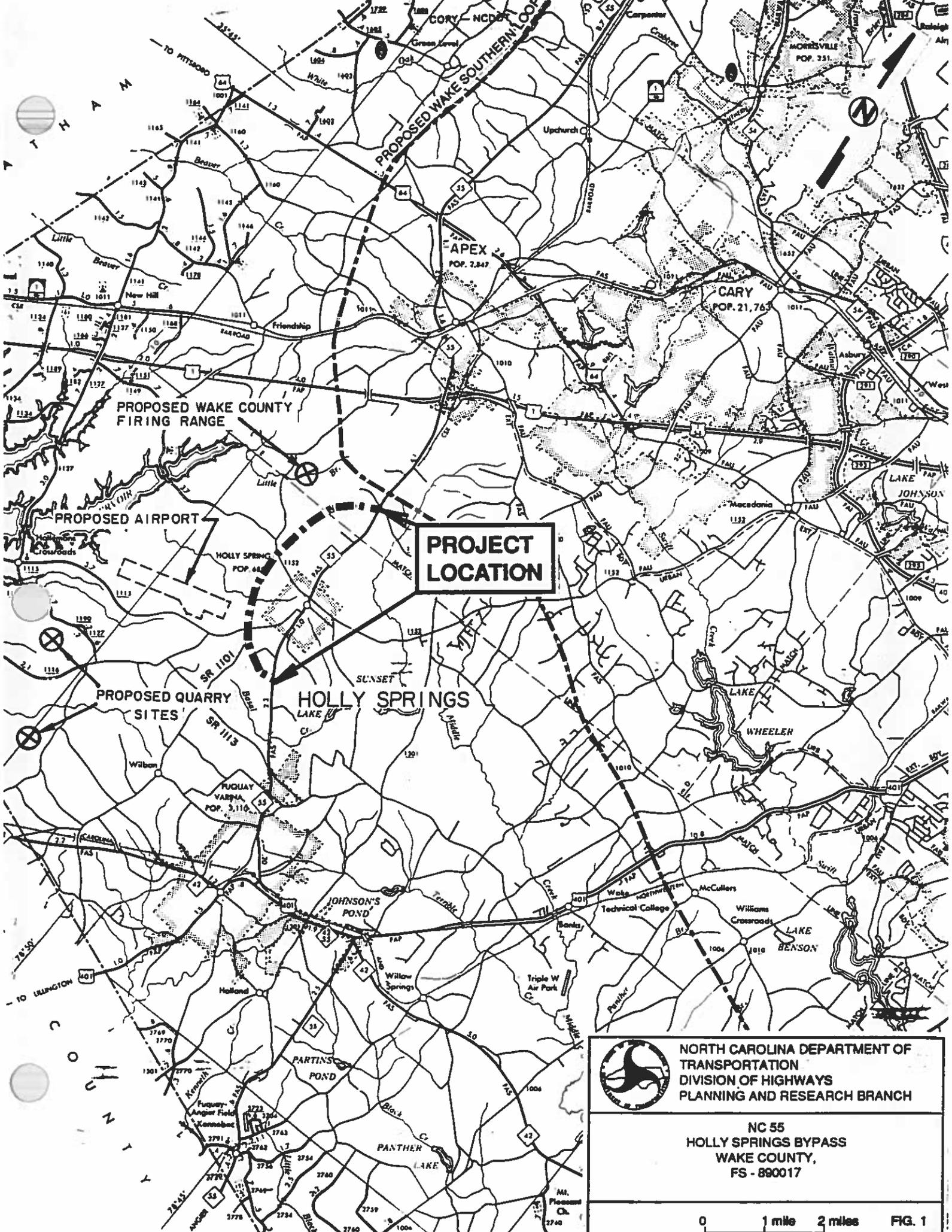
The alternative extension of the bypass to the south is likewise not recommended. This alternative would increase construction and right-of-way costs with no improvement in service over the recommended route.

OTHER COMMENTS

No sensitive areas of environmental concern are anticipated to be crossed by the proposed bypass. Possible negative impacts include loss of forested land and wildlife habitat and displacement of some residences. A total of approximately 45 parcels will be affected by right-of-way acquisition on the project, with relocation of 4 residences on Section A and 2 residences on Section B.

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

MH/wp



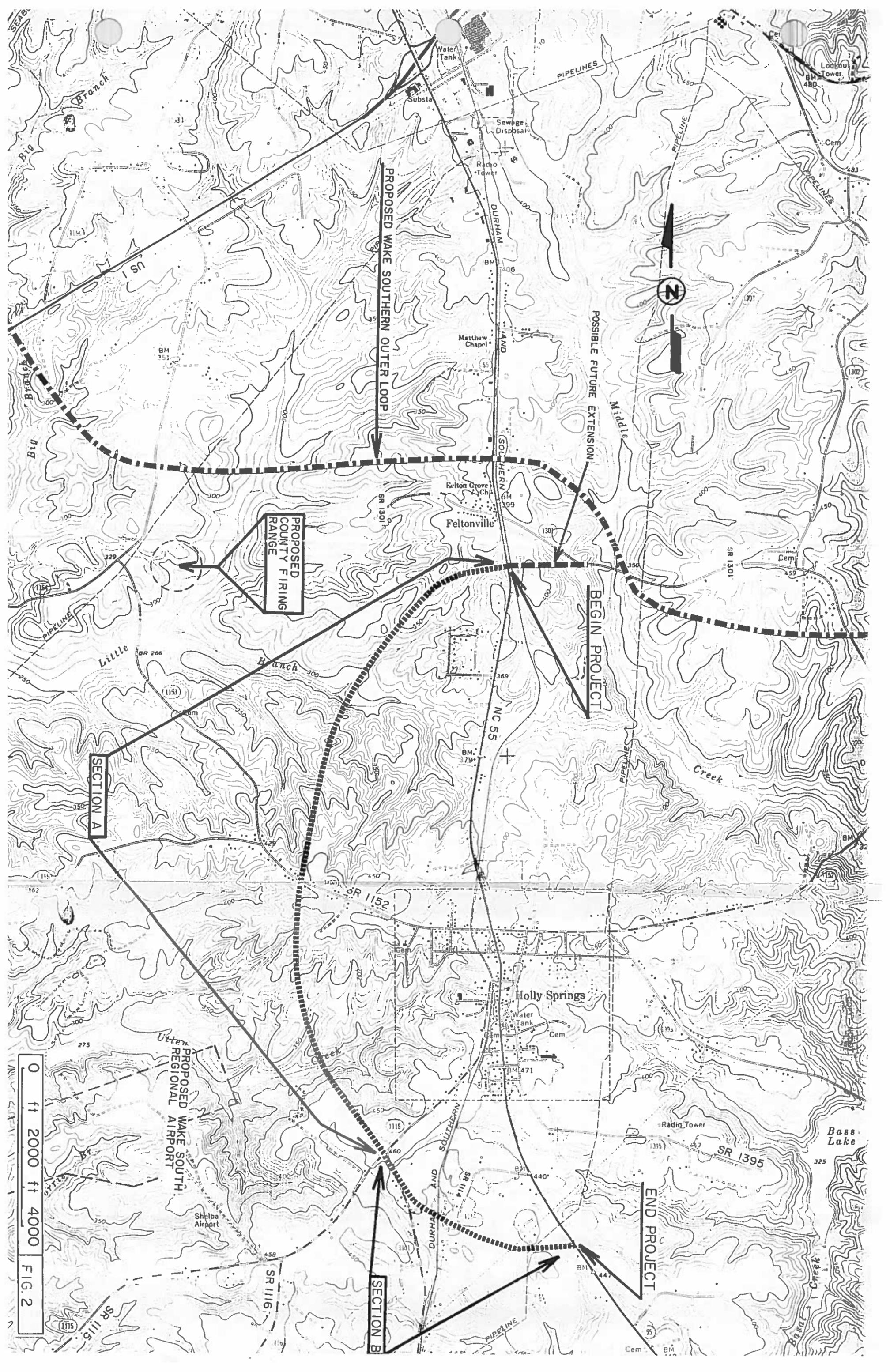
**PROJECT
LOCATION**



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

**NC 55
HOLLY SPRINGS BYPASS
WAKE COUNTY,
FS - 890017**

0 1 mile 2 miles FIG. 1



PROPOSED WAKE SOUTHERN OUTER LOOP

PROPOSED COUNTY FIRING RANGE

SECTION A

SECTION B

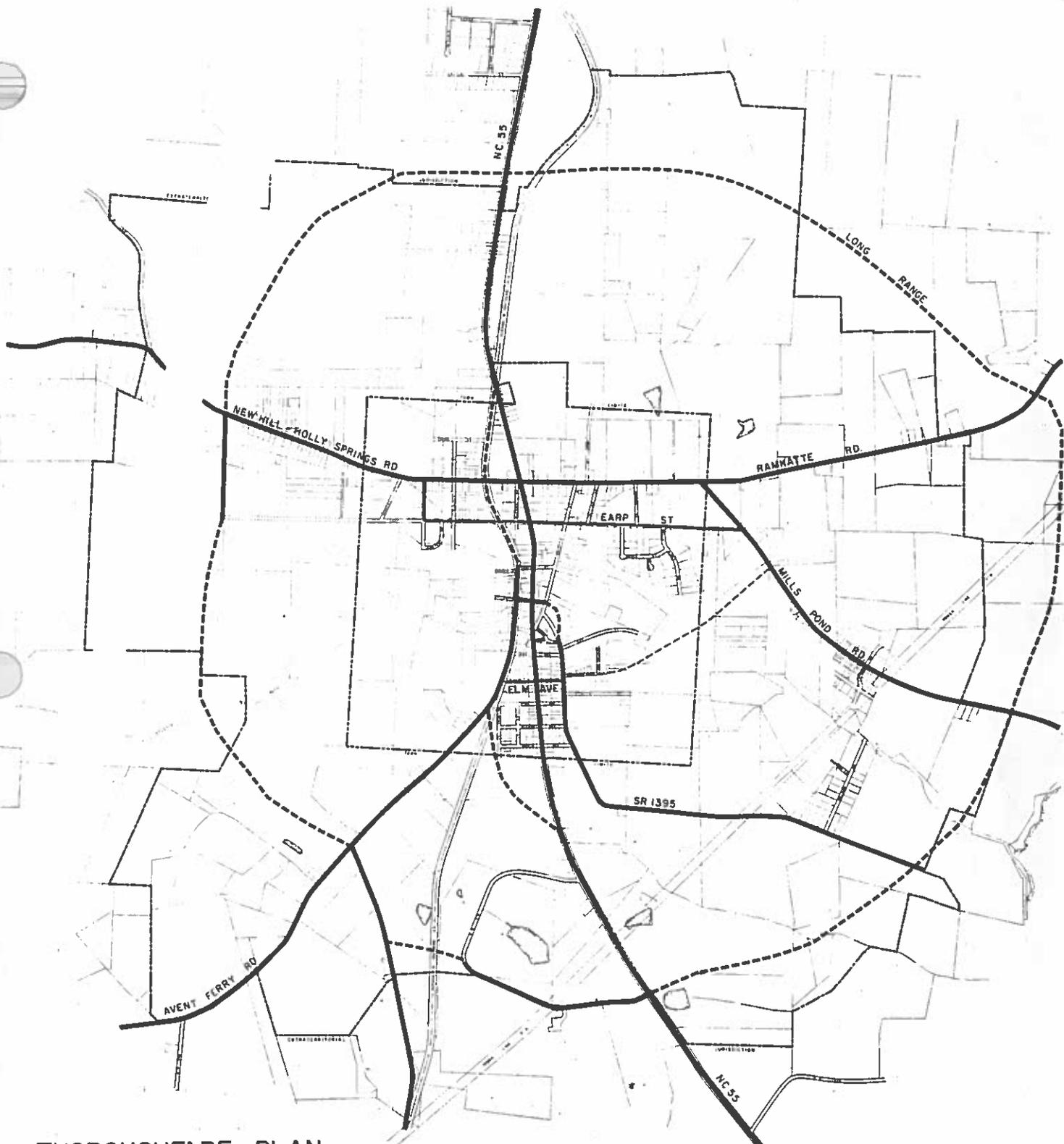
POSSIBLE FUTURE EXTENSION

BEGIN PROJECT

END PROJECT



0 ft 2000 ft 4000 ft FIG. 2



**THOROUGHFARE PLAN
 HOLLY SPRINGS
 NORTH CAROLINA**
 MARCH 20, 1985

This map was prepared by the Planning & Research Branch
 for the use of Holly Springs, North Carolina
 May 1985 10000 1000
 Revised: Holly Springs, NC 27540

LEGEND

Major Thoroughfare
 Minor Thoroughfare

EXISTING	PROPOSED

ADOPTED BY:
 HOLLY SPRINGS JUNE 4, 1985
 RECOMMENDED FOR APPROVAL BY
 PLANNING & RESEARCH BRANCH JUNE 12, 1985
 ADOPTED BY BOARD OF TRANSPORTATION JULY 12, 1985

FIGURE 3