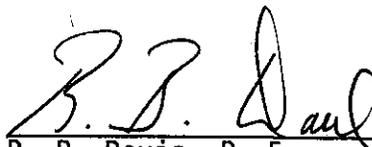


FEASIBILITY STUDY

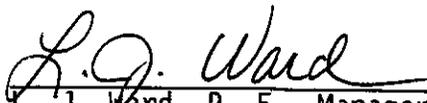
Surry County
SR 1815 (Holly Springs Road)
Alignment Change in Vicinity of
Mount Airy/Surry County Airport
FS-90006

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



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3-13-91
Date



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I. GENERAL DESCRIPTION

This feasibility study covers the proposed realignment of Holly Springs Road (SR 1815) to allow for extension of the runway at the Mount Airy/Surry County Airport. This study was prepared at the request of the Mount Airy/Surry County Airport Authority through Secretary of Transportation Thomas J. Harrelson. The project was coordinated with the Aeronautics Branch of the North Carolina Department of Transportation.

II. PURPOSE OF PROJECT

Background of Project

The Mount Airy/Surry County Airport has an existing runway length of 3500 feet. In order to accommodate larger aircraft, the airport authority desires to extend the current runway. The extension of the runway is restricted on the south by the close proximity of US 52 (see Figure 1).

Existing Route Characteristics

Holly Springs Road is included in the Mount Airy Thoroughfare Plan as a Minor Thoroughfare. This road is classified as Minor Collector in the North Carolina Functional Classification System.

The existing cross section on SR 1815 consists of a 24-foot paved roadway with 5-foot unpaved shoulders. The existing horizontal alignment on SR 1815 is good in the project area. The vertical alignment is generally good with an approximate 6% grade just east of the airport property. All intersections along the project are at grade and are stop sign controlled.

Roadside development in the project area consists of a mixture of industrial, commercial, residential, agricultural, and airport development.

Traffic Volumes, Capacity, and Accident Record

The current traffic volume on SR 1815 is 2500 vehicles per day (vpd) in the project area. This volume is expected to increase to approximately 4900 vpd by the year 2010. A two-lane, shoulder cross section will be sufficient to handle the anticipated traffic volume.

During the three year period from July 1, 1987 through June 30, 1990, a total of 10 accidents were reported on the subject portion of SR 1815. This resulted in an accident rate of 675.7 accidents per 100 million vehicle miles (ACC/100 MVM) compared to a statewide average of 364.8 ACC/100 MVM for all rural secondary roads over a similar period. The primary accident type was the angle accident at intersections and driveways along the project. These accounted for 70% of the accidents.

Need for Project

The realignment of SR 1815 is needed to allow for the extension of the Mount Airy/Surry County's runway.

III. AIRPORT EXPANSION ALTERNATIVES

There are two runway extension alternatives under consideration. The first is an extension of the current runway to a length of 4300 feet. This extension could be built without any modifications to Holly Springs Road. However, if the roadway is not relocated out of the runway's clear zone, the airport will be unable to utilize the full length of the extension, and the runway will have to be marked for a displaced threshold. In order to allow full use of the extended runway, Holly Springs Road will either need to be lowered or relocated northward to provide required clearances.

The second alternative is the extension of the runway to a 5000-foot length. This length will allow the airport to be used by corporate jets. However; at this length, the runway will physically cross the existing roadway, requiring the relocation of Holly Springs Road. If the 5000-foot runway length is selected, it will put the Mount Airy/Surry County Airport in a higher classification requiring wider side clearances. To get the needed clearances, extensive relocation of existing development would be required, including the adjacent industry on Holly Springs Road and at least one row of homes from neighborhood located to the east of the airport. The high cost associated with acquiring these properties would likely make the expansion of this airport to a 5000-foot runway length more costly than constructing a new airport with a 5000-foot runway elsewhere. However; due to the heavily rolling terrain in Surry County, finding another site convenient to Mount Airy would be difficult.

IV. ROADWAY ALTERNATIVES

Two alternatives were investigated to provide the necessary clearances for the expansion of the airport (see Figure 2). The first alternative is to lower the grade of the roadway along the present alignment. In order to provide the necessary clearance, Holly Springs Road would need to be lowered 25 feet. This lowering coupled with the existing grade at the eastern end of the project would result in a long adverse grade on the new roadway. This deep cut would not drain naturally and would need a pumping station to handle storm water runoff. The deep cut would also make maintaining driveway access to some properties difficult. During construction traffic would have to be detoured over SR 1773 and SR 1774 (see Figure 1). This alternative would be compatible with the 4300-foot runway only. It could not be utilized for a future lengthening of the runway to 5000 feet.

The second alternative is the relocation of Holly Springs Road approximately 800 feet to the north. The location of this alternative provides sufficient clearance for either runway alternative. This

alignment lies beyond the crest of the hill north of the runway and will not require the extensive cutting needed with Alternative 1. A detour of traffic during the construction phase will not be needed with this alternative.

A cost comparison between the two alternatives is shown below:

	Construction	Right-of-Way	TOTAL
Alternative 1	\$950,000	\$ 700,000	\$1,650,000
Alternative 2	\$900,000	\$1,000,000	\$1,900,000

V. RECOMMENDATIONS

The realignment of SR 1815 (Holly Springs Road) is recommended to be along Alternative 2. This alternative does not have the grade problems associated with the deep cut needed on Alternative 1, and traffic will not need to be detoured during construction. The recommended alignment is shown on Figure 2. This alignment will accommodate the extension of the runway to 5000 feet either now or in the future if the airport expansion is staged. The recommended cross section is a 24-foot paved roadway with 10-foot unpaved shoulders.

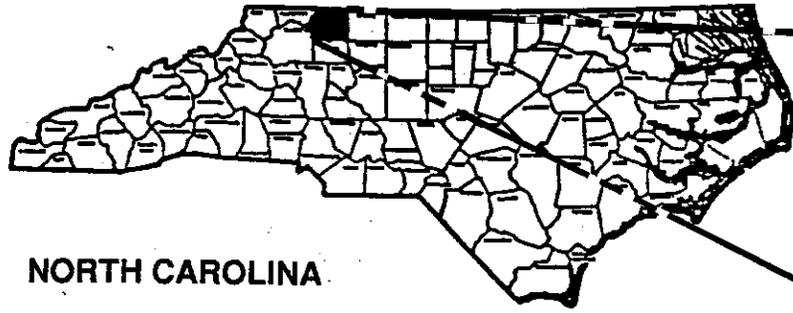
VI. ENVIRONMENTAL EFFECTS

The implementation of the proposed project is not expected to result in any significant impact on the environment. It is estimated the construction of the project will require the relocation of two residences and two businesses. Other impacts will be primarily related to the actual construction of the project and will cease upon completion of the project. These include minor erosion and siltation, increased noise levels from construction machinery, and delay and inconvenience to motorists and area residents.

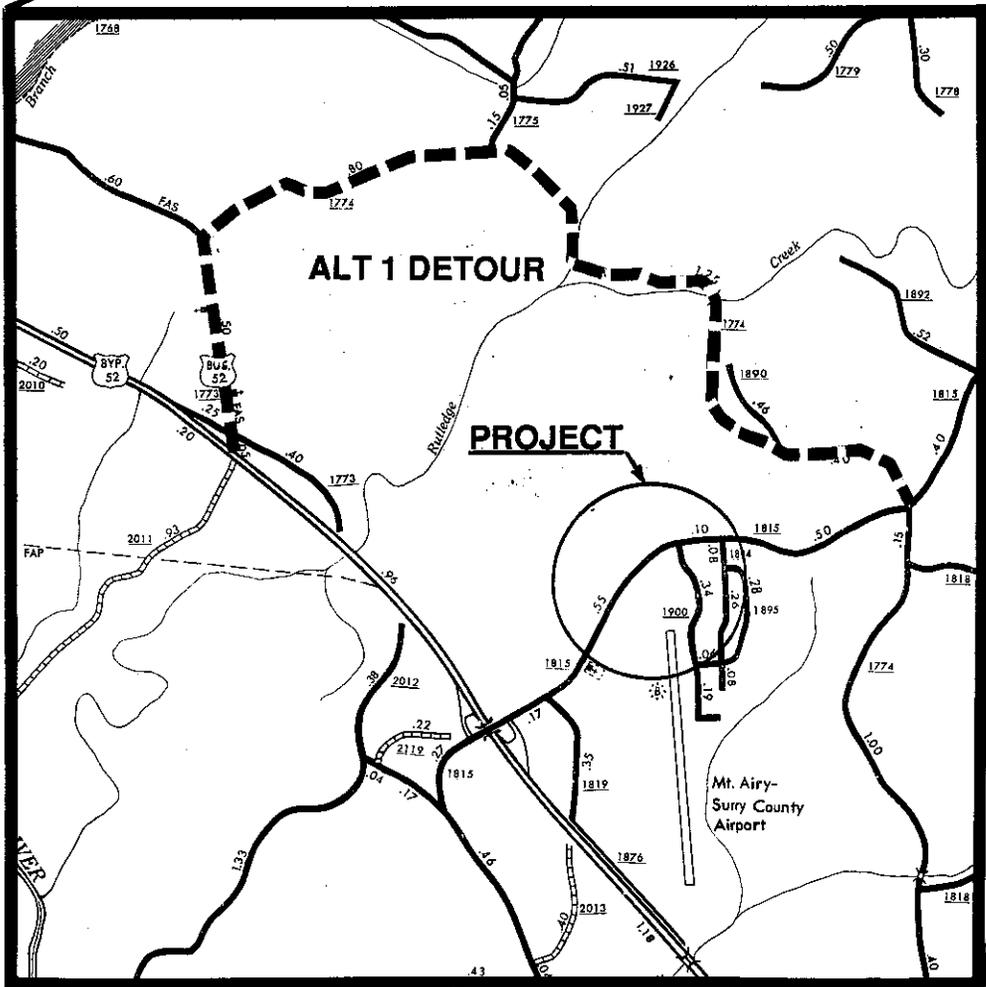
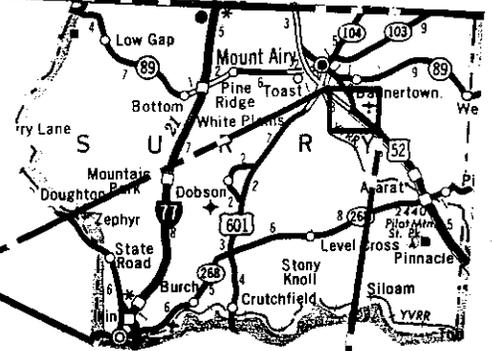
VII. FUTURE ACTIVITIES

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

RBD/plr



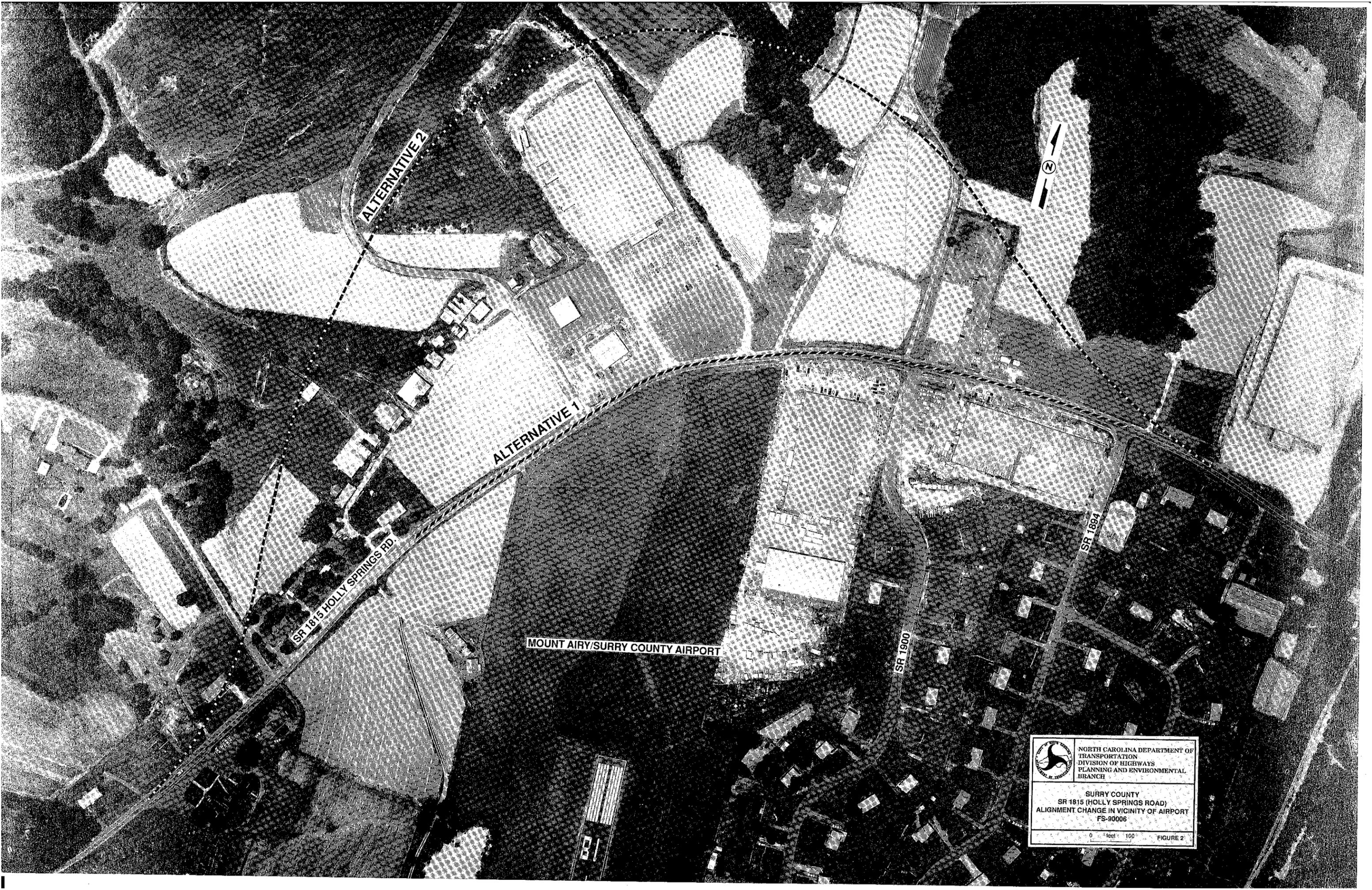
NORTH CAROLINA



NORTH CAROLINA DEPARTMENT OF
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FIG. 1



ALTERNATIVE 2

ALTERNATIVE 1

SR 1815 HOLLY SPRINGS RD

MOUNT AIRY/SURRY COUNTY AIRPORT

SR 1900

SR 1894



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0 100 feet FIGURE 2