FEASIBILITY STUDY

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US 1, Rockingham
From Proposed US 74 Bypass of Rockingham
To SR 1974 (Forest Street)
Richmond County
U-2583

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

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9/28/90
Date

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I. DESCRIPTION

This report covers a preliminary study of the proposed widening of US 1 to a multi-lane facility from the proposed US 74 Bypass of Rockingham to SR 1974 (Forest Street). General project location is shown on Figure 1. This project is included in the 1990-1996 Transportation Improvement Program for feasibility study and/or right-of-way protection, and is not currently funded.

II. PURPOSE OF PROJECT

Existing Route Characteristics

US 1 is classified as a major thoroughfare on the Rockingham/Hamlet Thoroughfare Plan, adopted in 1980 (shown in Figure 2), and as a Rural Principal Arterial on the County Functional Classification Plan. US 1 is part of the North Carolina Intrastate System and acts as a major north-south connector between Raleigh and the South Carolina state line.

The studied section of US 1 is basically a 2-lane, 24-foot paved facility with 4-foot shoulders (1 foot of which is paved). The existing right-of-way is 60 feet throughout the project length. The adjoining cross section of US 1 at SR 1974 consists of 3 lanes heading south (one acts as an exclusive left turn lane onto SR 1974 and the other two merge into one) and 3 lanes heading north (with one lane designated for the diverging movement onto US 220). This multi-lane width extends on through the central part of town.

The posted speed limit is 50 mph. Development along US 1 in the project area is predominantly moderate density residential with some commercial uses at the northern end of the project. Several churches are also located along the project.

A US 1 bypass of Rockingham is proposed on the eastern side of Rockingham (R-2501, planning scheduled to begin in 1991). The approximate location is shown on Figure 1. It is not anticipated to interfere with the studied project, but would reduce the traffic demand on existing US 1.

Traffic Volumes, Capacity, and Accident Record

The current volume of traffic that utilizes this route ranges from approximately 5,000 to 6,000 vehicles per day (vpd). Without the proposed US 1 Bypass, estimated year 2016 traffic volumes are 9,500 to 11,000 vpd, respectively. However, with the proposed US 1 Bypass, estimated year 2016 traffic would range from approximately 5,700 to 6,600 vpd.

The capacity of the existing road at level of service C is approximately 10,000 vpd. The capacity should adequately accommodate the increasing traffic demands for most of the planning period, even without the proposed US 1 relocation. With the proposed relocation, no capacity problems would be expected on the studied section of road through and beyond the planning period.

Accident data for a recent 3-year period shows a total of 71 accidents on the studied section of US 1. This yields an accident rate of 282 accidents per hundred million vehicle miles, which is significantly greater than the statewide average of 188 accidents per hundred million vehicle miles for comparable 2-lane urban US routes. Angle (32%) collisions and rear-end slow or stop (24%) were predominant accident types. These types of accidents are indicative of numerous turns being made on the roadway.

Need for Project

The improvement of this section of US 1 is desirable to provide improved access and safety for existing and future traffic volumes. It would provide multi-lane continuity to the proposed US 74 Bypass from the Rockingham central area.

II. RECOMMENDATIONS AND COSTS

The recommended cross section for US 1 is a 5-lane, 64-foot face to face curb and gutter section throughout the project length. This cross section is consistent with the anticipated traffic volumes, the concentration of roadside development, and ultimate function of the existing road. In general, widening should be accomplished symmetrically about the existing centerline of US 1.

Although Federal Highway Administration Standards require a maximum speed of 45 mph on a curb and gutter section, the posted speed limit of 50 mph is considered borderline and therefore acceptable for allowing use of curb and gutter in this project. The recommended cross section would lessen impacts to existing development due to less right-of-way acquisition.

Because the exact location of the proposed US 74 Bypass of Rockingham (R-512, with ongoing planning to be completed by 1992 and construction to begin in 1996) is not known, two alternative project lengths are given depending on a northern location or a southern location of the proposed bypass now under consideration for the planning/environmental document by Maniktala Associates.

Alternate A, a 1.1-mile section, extending from the alternative northern location of the proposed US 74 Bypass to SR 1974 (see Figure 3).

Alternate B, a 2.5-mile section, extending from the alternative southern location to SR 1974 (see Figure 3).

Estimated right-of-way width used for cost estimating purposes is 90 feet.

The estimated costs of the recommended improvements for US 1, taking into account both of the studied alternatives for the US 74 bypass, are as follows:

	Length miles	Construction Cost	Right-of-Way Cost	Total Cost
Alternate A	1.1	$ 1,500,000	$ 1,000,000	$ 2,500,000
Alternate B	2.5	$ 3,200,000	$ 1,700,000	$ 4,900,000

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

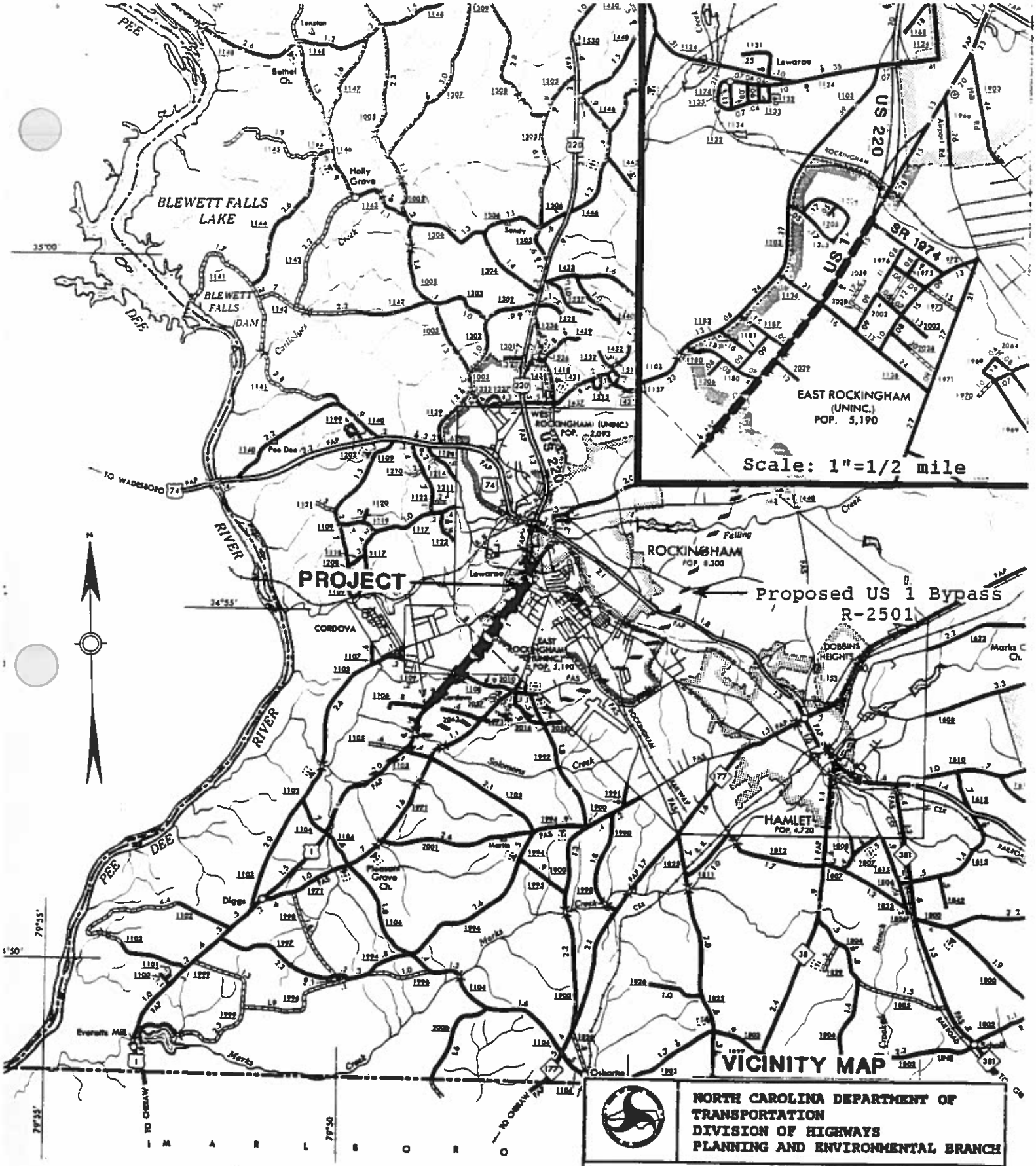
IV. OTHER COMMENTS

Possible negative environmental impacts of the proposed widening of US 1 include the relocation of 7 residences and 2 businesses for Alternate A and the relocation of 9 residences and 2 businesses for Alternate B, land damage, and increased noise levels for remaining businesses and residences.

Conversion of a partial interchange into a full interchange is planned on US 220 at SR 1124 under T.I.P. project U-2217 (see Figure 3), and planning is scheduled to begin in 1993. It is not anticipated that the interchange improvements will extend into the studied project area.

If the project is to be implemented in the future, 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 make as to the most appropriate improvement.

AS/plr

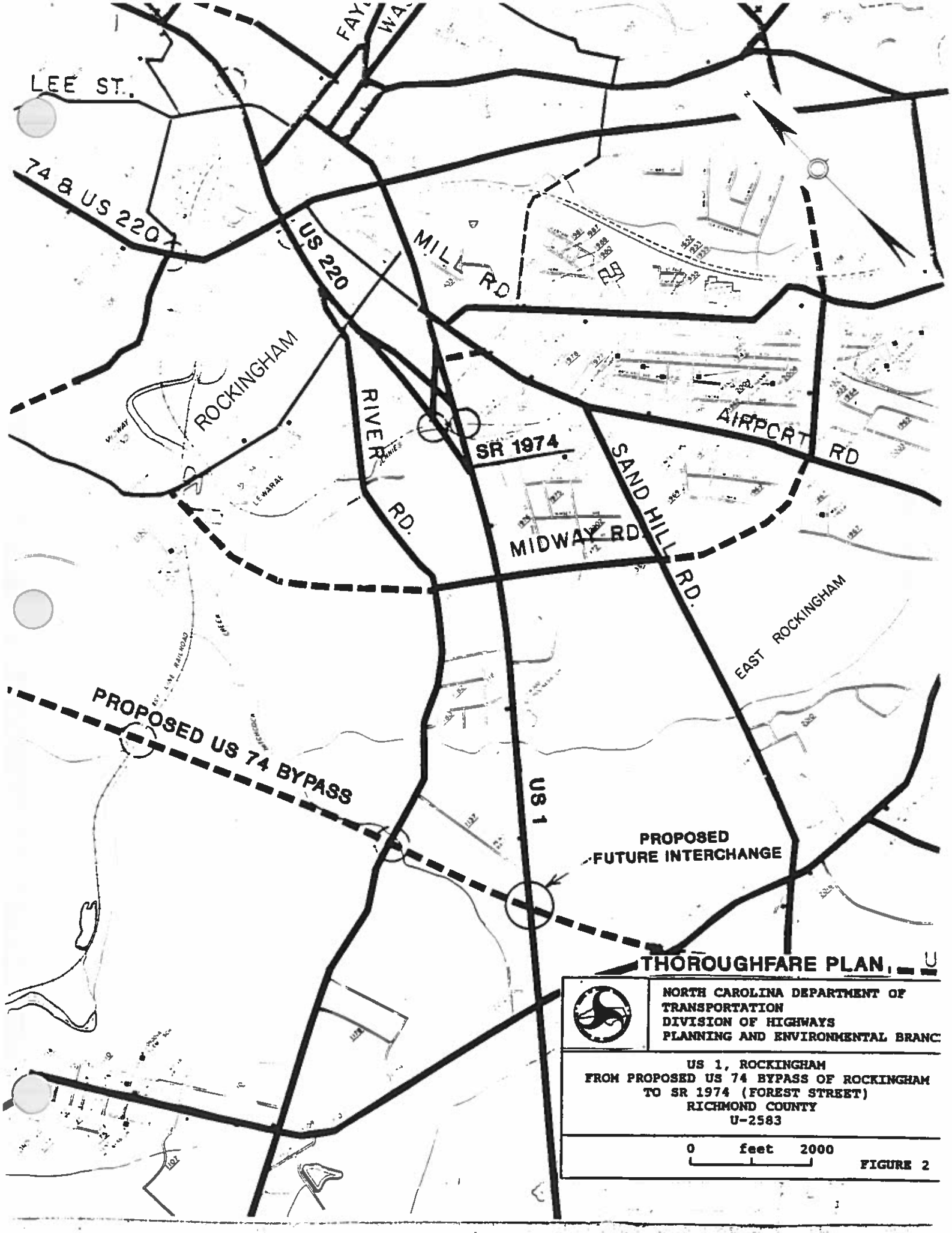


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL BRANCH

US 1, ROCKINGHAM
FROM PROPOSED US 74 BYPASS OF ROCKINGHAM
TO SR 1974 (FOREST STREET)
RICHMOND COUNTY
U-2583

0 miles 2

FIGURE 1


LEE ST.
74 & US 220
US 220
MILL RD
ROCKINGHAM
RIVER RD.
SR 1974
AIRPORT RD
SAND HILL RD.
MIDWAY RD
EAST ROCKINGHAM
PROPOSED US 74 BYPASS
US 1
PROPOSED
FUTURE INTERCHANGE
THOROUGHFARE PLAN
NORTH CAROLINA DEPARTMENT OF
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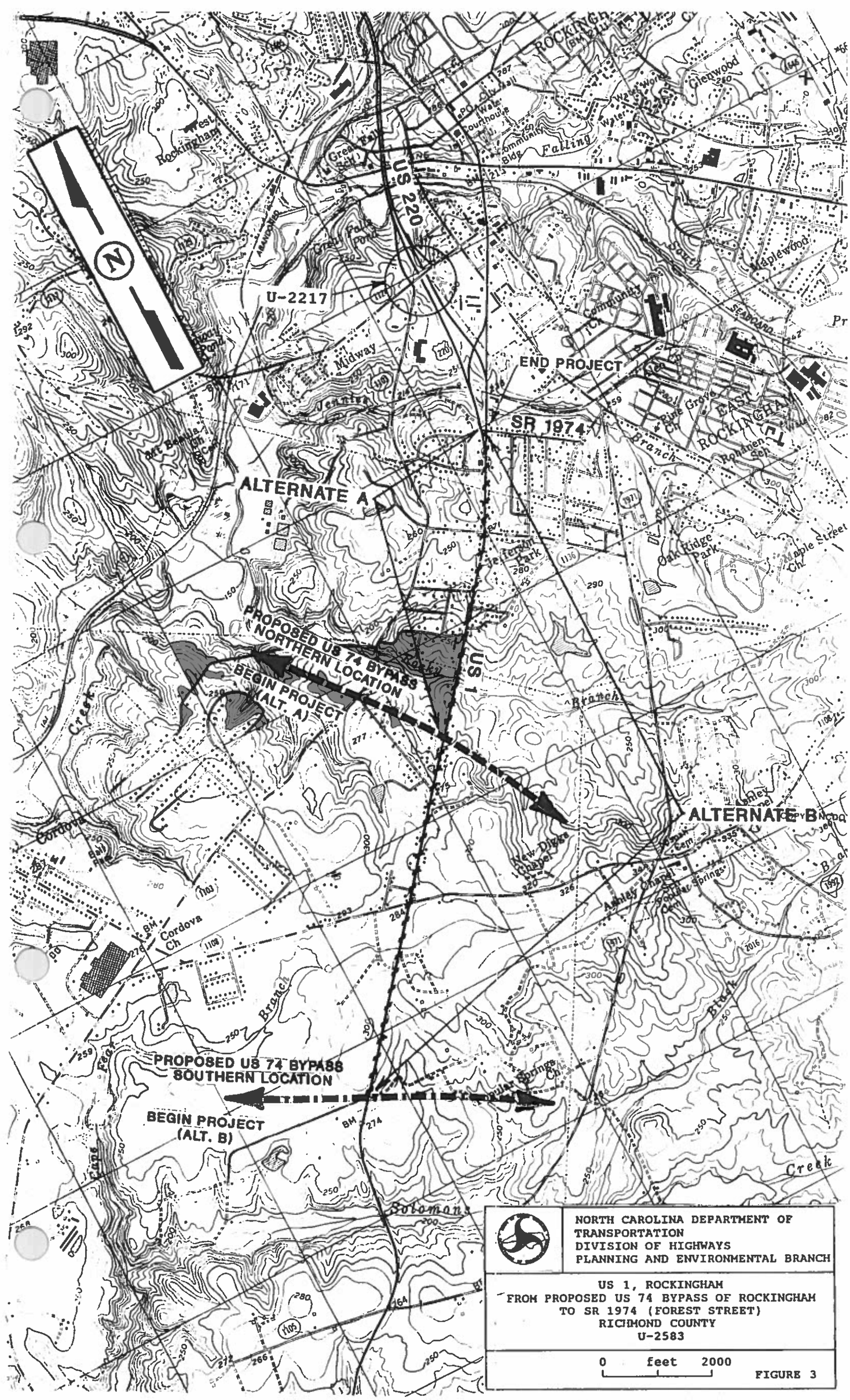
0 feet 2000
FIGURE 2



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0 feet 2000

FIGURE 3