

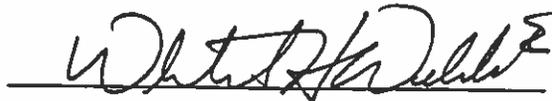
FEASIBILITY STUDY

Durham  
Briggs Avenue Extension  
From So-Hi Drive (SR 1951)  
To Existing Briggs Avenue (NS)  
U-2831

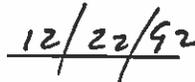
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I. GENERAL DESCRIPTION

This preliminary study describes two alternatives for the proposed extension of Briggs Avenue to So-Hi Drive (SR 1951) in Durham. The total length of the recommended alternative (Alternative A) is approximately 1.6 miles. A vicinity map is shown on Figure 1, the location of Alternative A is shown on Figure 2, and the location of Alternative B is shown on Figure 3. The proposed roadway cross-section includes a 24 foot wide pavement with two foot wide paved shoulders on each side. The proposed right of way width is 100 feet. The estimated cost, including right of way and construction for this project is \$ 3,800,000. It is estimated that there will be four residential and no business relocates due to this project.

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the problem, propose feasible alternative solutions including cost estimates, and identify potential problems that will require consideration in future planning and design phases.

II. NEED FOR PROJECT

The purpose of this project is to provide area motorists with improved access to Research Triangle Park from southeast Durham. The extension of Briggs Avenue will accommodate this need. This project is part of a major cross town thoroughfare system in the Durham Thoroughfare Plan. The projected Average Daily Traffic (ADT) volume on the proposed Briggs Avenue extension for the year 2011 is estimated to be 5200 vehicles per day (vpd).

Briggs Avenue, a 44-foot curb and gutter facility currently terminates just south of Person Street. Development along Briggs Avenue is primarily industrial. So-Hi Drive runs east-west and connects Alston Avenue to Ellis Road, which runs through Research Triangle Park. So-Hi Drive is a two-lane, two-way, 20 foot wide facility.

Currently, traffic from Durham bound for Research Triangle Park must use either Alston Avenue (SR 1945) or Buck Dean Freeway (NC 147). Alston Avenue runs through a dense residential area and is classified as a minor thoroughfare on the 1991 Durham Thoroughfare Plan. There are only two entrances to the Buck Dean Freeway in the vicinity of the project. One is at the intersection of NC 55 and the other is at Briggs Avenue.

The proposed extension crosses the CSX Railroad twice; just north of Riddle Road and again south of Riddle Road. The exposure index at both railroad crossings is 10,400. This index indicates flashing light signals are warranted at both crossings. Flashing light signals are warranted for an index greater than 3000.

### III. ALTERNATIVES CONSIDERED AND RECOMMENDATIONS

#### Alternative A (Recommended)

The proposed alignment for Alternative A is shown on Figure 2. The total length is approximately 1.6 miles. The project includes two segments on existing roadway alignment and two segments on new location.

The proposed roadway cross-section includes a 24 foot wide pavement with 2 foot wide paved shoulders on each side. The proposed right of way is 100 feet wide.

The southern terminal of the extension is at the intersection of Cook Road (SR 1950) and So-Hi Drive (SR 1951). The extension runs north on Cook Road's alignment for about 1800 feet to Rustica Drive and then runs northwest a distance of approximately 3600 feet on new location to Riddle Road (SR 1171). Within this segment the proposed project alignment will cross, at grade, the tracks of the CSX Railroad. From Riddle Road the project follows a 725 foot length of Briggs Avenue extension that has been completed on the eastern side. Within this segment there is an existing at grade crossing of Briggs Avenue with the tracks of the CSX Railroad. The proposed extension continues from there for approximately 2300 feet on new location to existing Briggs Avenue, this project's north terminal.

Further, it is recommended that the two railroad/highway grade crossings that will result from this project be protected with gates and flashing warning signals.

Alternative A will require four residential relocations and no business relocations. Telephone poles, power poles, and a sewer outfall line will require relocation. No control of access is proposed. The total estimated cost for the recommended improvements is \$3,800,000 as follows:

R/W Cost	:	\$ 1,400,000
Construction Cost	:	2,400,000
Total Cost (Alternative A)	:	\$ 3,800,000

## Alternative B

The proposed alignment for Alternative B is shown on Figure 3. The purpose of this alternative is to provide a grade separation where the project crosses the tracks of the CSX Railroad. The total length is approximately 1.6 miles. The project includes one segment on existing roadway alignment and one segment on new location.

The proposed roadway cross-section includes a 24 foot wide pavement with 2 foot wide paved shoulders on each side. The proposed right of way is 100 feet wide.

The southern terminal of the extension is at the intersection of Cook Road (SR 1950) and So-Hi Drive (SR 1951). The extension runs north on Cook Road's alignment for approximately 1.4 miles to approximately 400 feet south of Riddle Road and then runs northwest on new location crossing Riddle Road at grade, then crossing under two tracks of the CSX Railroad, then continuing on new location to existing Briggs Avenue, this project's north terminal. The total distance on new location is approximately 0.2 miles.

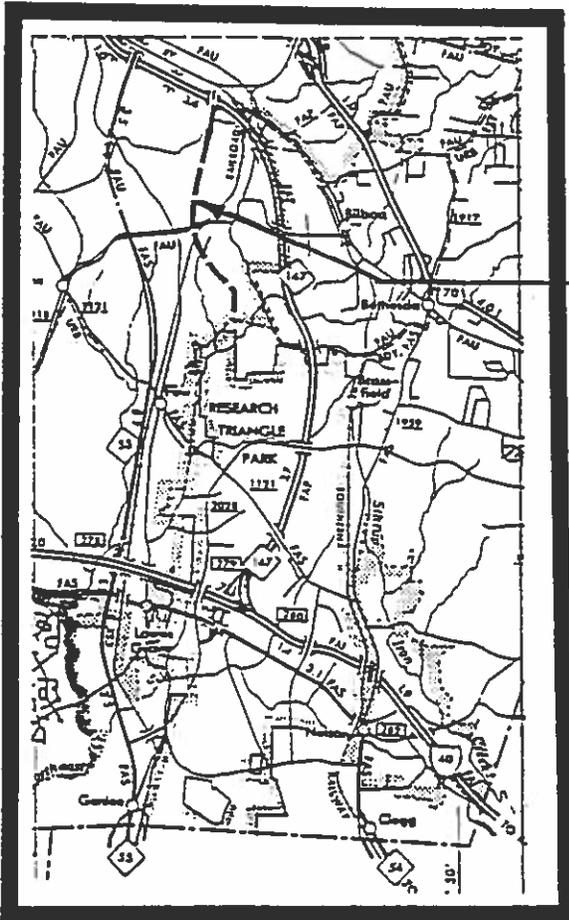
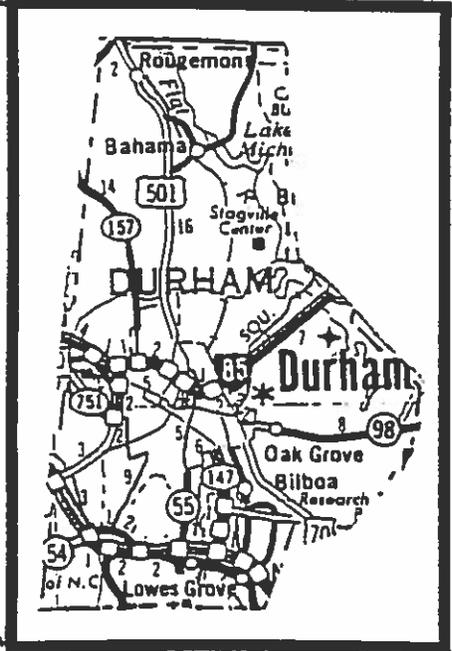
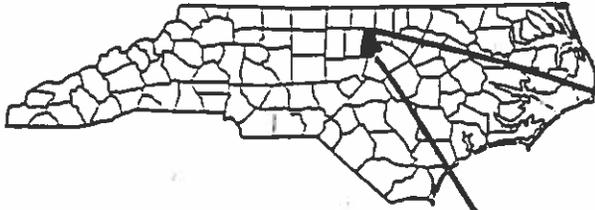
Alternative B will require seven residential relocations and no business relocations. Telephone poles, power poles, and a sewer outfall line will require relocation. The total estimated cost for the recommended improvements is \$ 5,700,000 as follows:

R/W Cost	:	\$ 2,400,000
Construction Cost	:	3,300,000
Total Cost (Alternative B)	:	\$ 5,700,000

## IV. OTHER COMMENTS

Alternative B provides a grade separation with the tracks of the CSX Railroad. It is not considered feasible to construct a railroad/highway grade separation on the Alternative A alignment, because the length of structure required would be excessive and would limit access to abutting property. Also, Alternative A, with at-grade railroad crossings, is approximately \$ 1,900,000 less expensive than Alternative B.

An environmental screening was not conducted for this project. However, a Corps of Engineer Section 404 Nationwide Permit will likely be required due to some wetland involvement that is encountered along the project's alignment.



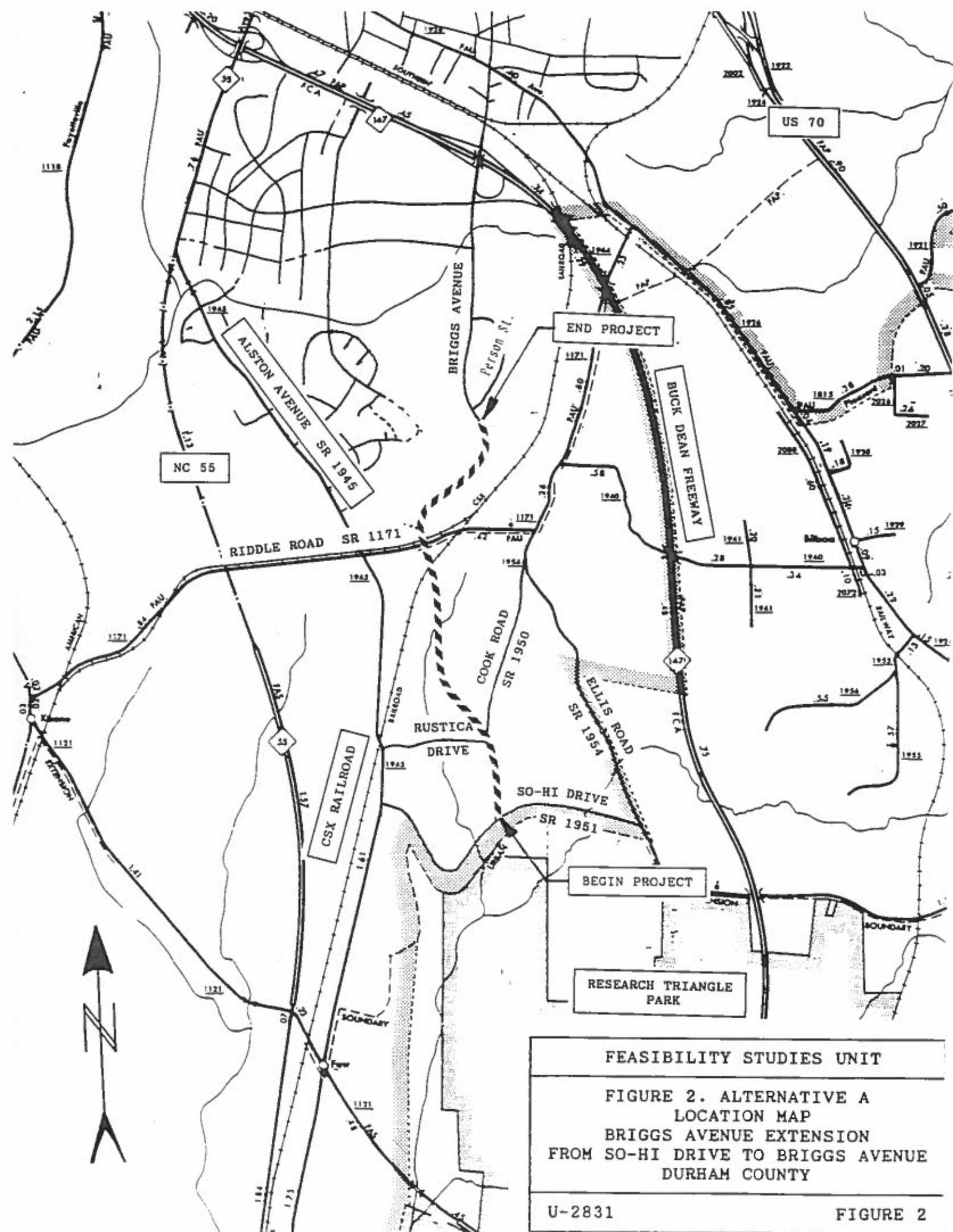
PROJECT LOCATION  
SEE FIGURE 2.



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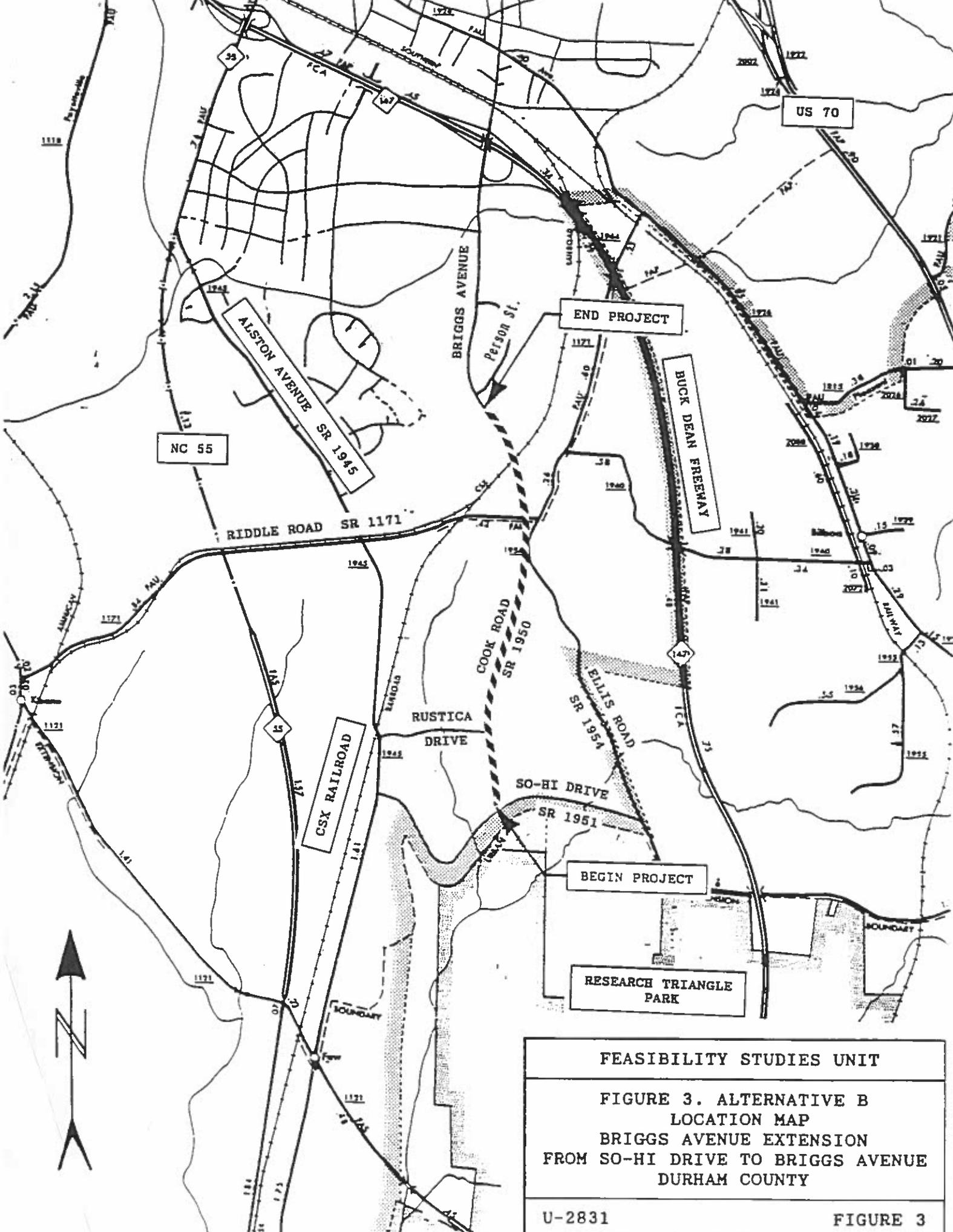
FIGURE 1. VICINITY MAP  
BRIGGS AVENUE EXTENSION  
FROM SO-HI DRIVE TO BRIGGS AVENUE

U-2831 DURHAM COUNTY



FEASIBILITY STUDIES UNIT

FIGURE 2. ALTERNATIVE A  
LOCATION MAP  
BRIGGS AVENUE EXTENSION  
FROM SO-HI DRIVE TO BRIGGS AVENUE  
DURHAM COUNTY



FEASIBILITY STUDIES UNIT

FIGURE 3. ALTERNATIVE B  
LOCATION MAP  
BRIGGS AVENUE EXTENSION  
FROM SO-HI DRIVE TO BRIGGS AVENUE  
DURHAM COUNTY

U-2831 FIGURE 3