

FEASIBILITY STUDY

FILE COPY
DO NOT REMOVE
FROM FILE

Chapel Hill
NC 86 between SR 1777 and I-40
Orange County
U-2302

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

March, 1988

Chapel Hill
NC 86 between SR 1777 and I-40
Orange County
U-2302

The subject project is included in the 1988-1996 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 portion of NC 86 studied in this report is located on the north side of Chapel Hill in Orange County (see Figure 1). The project extends from I-40 to SR 1777, a distance of 1.5 miles. The studied improvement is a five lane, 64-foot curbed roadway.

II. PURPOSE OF PROJECT

NC 86 is designated a major thoroughfare in the Chapel Hill Urban Area Thoroughfare Plan and functions as a major radial route into the town from the north. The current traffic volumes range from 9700 to 13,000 VPD. These volumes are expected to increase to approximately 17,500 to 20,800 VPD by the end of the planning period (year 2008). The current volumes exceed the capacity of the existing two-lane roadway. The provision of additional lanes will alleviate congestion in a rapidly developing area.

III. EXISTING CONDITIONS

Existing pavement width throughout the studied project is 20 feet. Horizontal and vertical alignment are fair to good. Existing right-of-way appears to be 60 feet. Speed limit in the studied area is 45 MPH. Traffic signals exist at SR 1733 and SR 1777. Development along the project is primarily medium density residential. A transition from residential to commercial development appears likely in the near future. The adjoining segment of NC 86 (south of SR 1777) consists of a 60-foot pavement with shoulders. This portion of NC 86 provides five lanes of travel.

A strip accident analysis of the studied section of NC 86 from SR 1777 to I-40 was provided by the Traffic Engineering Branch. This study covers the period from September 1, 1984 through August 31, 1987. The following table provides a comparison between the accident rates for NC 86 from SR 1777 to I-40 and the statewide accident rates for NC urban highways:

Accident Rates

	<u>NC 86</u>	<u>Statewide Average NC Urban Routes</u>
Total Accident Rate (accidents per 100 million vehicle miles)	119.04	336.2
Fatal Accidents (Accidents per 100 million vehicle miles)	1.02	1.4
Non-Fatal Injury Rate (Accidents per 100 mvm)	43.75	134.5
Night Accident Rate (Accident per 100 mvm)	33.57	74.4
Wet Accident Rate	31.54	70.6

Nearly 200 accidents were reported on the 1.55 mile section of NC 86 during a recent 3-year period. Major patterns of accidents were rear-end collisions (20.5%), ran off road (right) (17.1%), and angle collision (17.1%).

IV. RECOMMENDED IMPROVEMENTS

Widening NC 86 to a multi-lane facility is desirable. Provision of a five-lane (64-foot) curbed roadway is recommended. Acquisition of a 100-foot right-of-way will be necessary to contain construction. The recommended cross section is in agreement with the Thoroughfare Plan.

The estimated cost of recommended improvements is \$3,025,000 including \$2,330,000 for construction and \$695,000 for right-of-way and utilities.

V. ALTERNATIVES

There are no feasible alternatives to widening the existing roadway. Symmetrical widening is the most feasible method of improvement. During the design stage consideration should be given to shifting the center-line slightly to the inside of existing curves at two locations. The Town of Chapel Hill concurs in the recommended five-lane cross section but recommends that bicycle traffic be accommodated in some manner. No studies have been made to determine the best type of bicycle facility. However, one method would be to provide wide outside travel lanes (14 feet as opposed to 12 feet). This would result in a 68 foot curbed roadway. The additional construction cost of providing 4 feet of extra width is \$170,000. The Town of Chapel Hill will consider funding this additional cost.

VI. POSSIBLE ENVIRONMENTAL IMPACTS

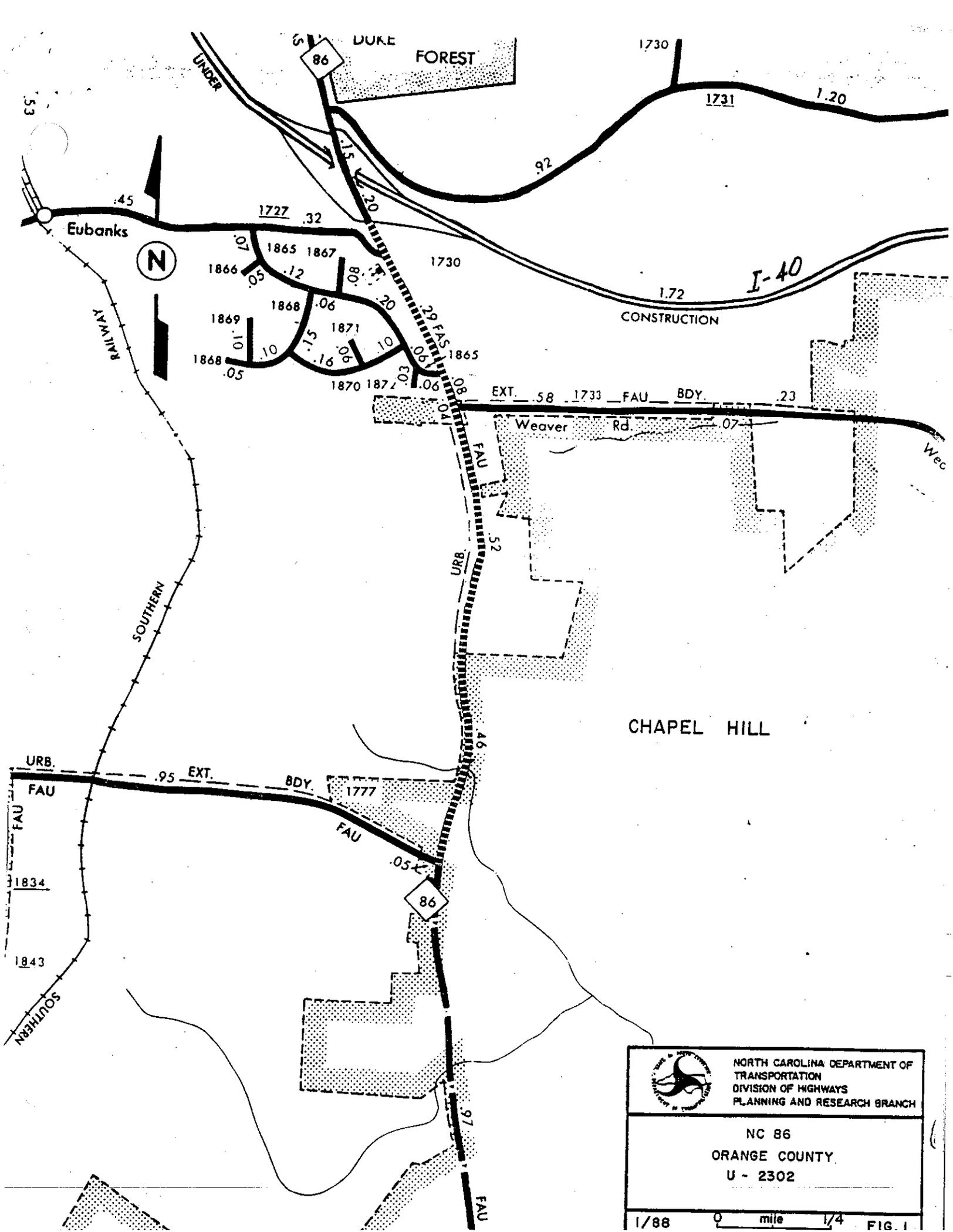
No significant adverse environmental impacts are anticipated if the recommended improvements are implemented. The displacement of one residence may be necessary. During construction of the project some minor erosion and siltation of drainage ditches could occur. No special permits or coordination are likely to be required. Some increase in noise levels may result from construction of the project.

VII. FUTURE ACTIVITIES

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-environmental document prior to that time, and a final decision made as to the most appropriate improvement.

The Town of Chapel Hill should coordinate with developers to accomplish right-of-way dedication and curb and gutter installation.

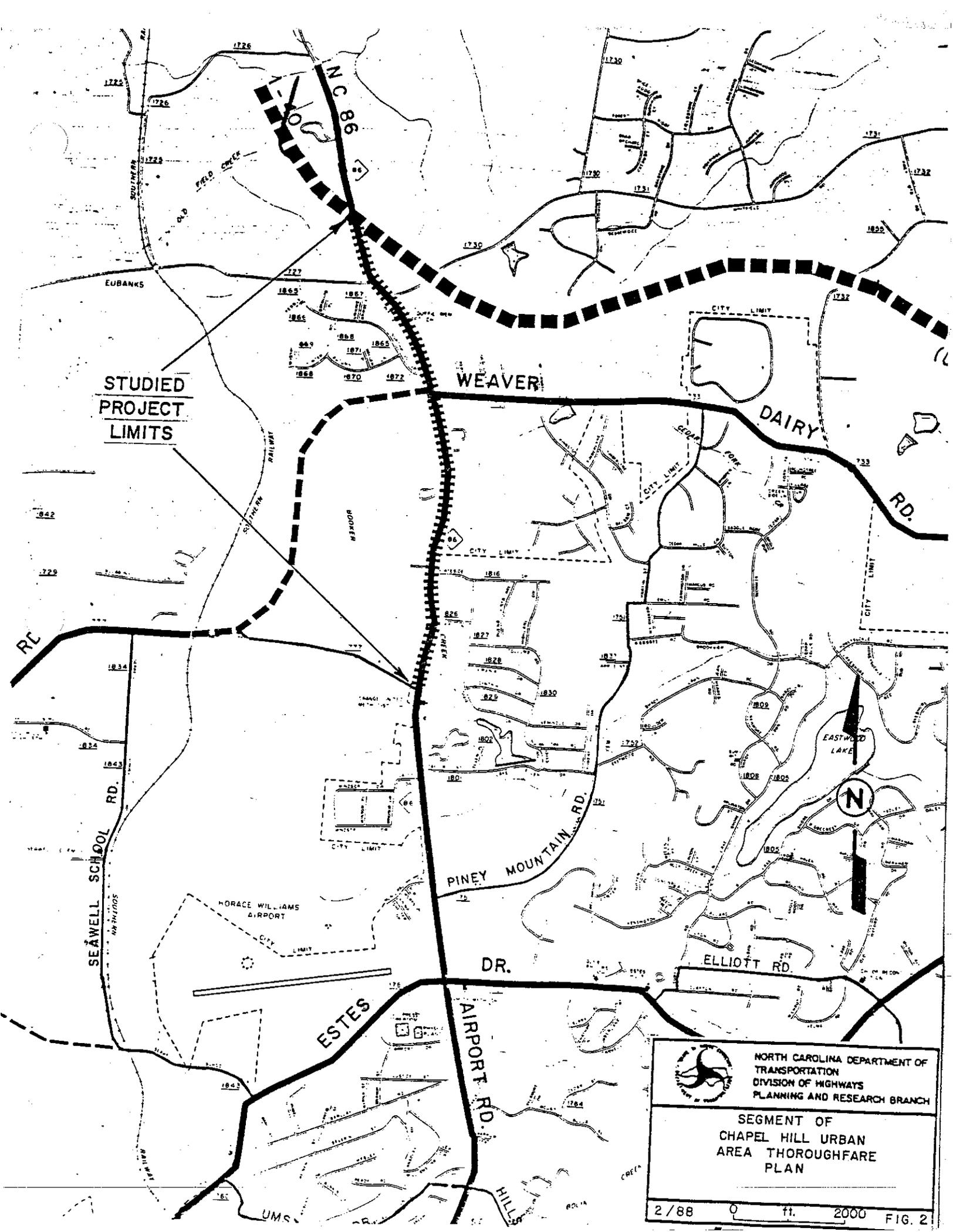
LC/sdt




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

NC 86
 ORANGE COUNTY
 U - 2302

1/88 0 mile 1/4 FIG. 1



STUDIED
PROJECT
LIMITS

WEAVER

DAIRY

RD.

RD

SEAWELL SCHOOL RD.

HORACE WILLIAMS AIRPORT

PINEY MOUNTAIN RD.

N

EASTWOOD LAKE

DR.

ELLIOTT RD.

ESTES

AIRPORT RD.



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

SEGMENT OF
CHAPEL HILL URBAN
AREA THOROUGHFARE
PLAN

2/88 0 ft. 2000 FIG. 2