



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT, JR.
GOVERNOR

DIVISION OF HIGHWAYS
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

SAM HUNT
SECRETARY

April 23, 1993

MEMORANDUM TO: Mr. Gorman Gilbert, Member, Board of Transportation
Mr. J. W. Watkins, Division Engineer, Division 7
Dr. L. R. Goode, P.E.
Mr. C. W. Leggett, P.E.
Mr. J. M. Lynch, P.E.
Mr. A. D. Allison, II
Mr. L. J. Ward, P.E. (2)
Mr. D. R. Morton, P.E.
Mr. G. T. Shearin, P.E.
Mr. M. R. Poole, P.E.
Mr. A. L. Avant (2)
Mr. J. D. Lane
Mr. T. A. Peoples, P.E.

FROM: Whitmel H. Webb, P.E. *Whitmel H. Webb*
Head, Feasibility Studies Unit

SUBJECT: Addendum to Feasibility Study, U-2805, Carrboro,
Homestead Road (SR 1777) From SR 1009 to NC 86,
Orange County

Please find attached, an addendum to the subject Feasibility Study. This addendum, which was prepared to correct errors in the original study, should be attached to and made a part of the previous study transmitted to you.

WHW/dwc/joa

Attachment

cc: Mr. W. G. Marley, Jr., P.E.
Mr. J. T. Peacock, Jr., P.E.
Mr. W. J. Watson, P.E.



ADDENDUM TO FEASIBILITY STUDY

Carrboro
Homestead Road (SR 1777)
From SR 1009 to NC 86
Orange County
U-2805

Section II, paragraph 1 of the subject study includes the following statement: "This project was requested by the Town of Carrboro"

This statement is in error. The project as defined in the feasibility study was not requested by the Town of Carrboro. The Town of Carrboro 1991-1992 Transportation Improvements Program, as submitted at the 1991 Public Transportation Meeting, contained requests to "Widen Homestead Road to a three lane section between Seawell School Road and High School Road" and "Redesign and improve the intersection of Homestead Road (SR 1777), Dairyland Road (SR 1112), and Old NC 86 (SR 1009)" and "Widen and mark shoulders of Homestead Road to provide 4-foot bikelanes."

The Town of Chapel Hill made a request to "Widen and improve Homestead Road from High School Road to N.C. 86, to include safety and bicycle improvements;".

In consideration of future projected traffic volumes on Homestead Road, the NC Department of Transportation staff recommended that the project limits be expanded to include Homestead Road from SR 1009 to NC 86.

FEASIBILITY STUDY

Carrboro
Homestead Road (SR 1777)
From SR 1009 to NC 86
Orange County
U-2805

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation

W. J. Watson

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Whitm H. Webb, III, P.E.
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12/23/92

Date

Carrboro
Homestead Road (SR 1777)
From SR 1009 to NC 86
Orange County
U-2805

I. GENERAL DESCRIPTION

This preliminary study describes proposed improvements to Homestead Road (SR 1777) in Orange County. For a location map please see Figure 1. It is proposed to widen Homestead Road from SR 1009 to NC 86, a distance of approximately 3.4 miles. Also, the bridge over Bolin Creek (Bridge No. 94) on SR 1009 will be widened.

The proposed cross section, for the entire project length, is a 5 lane curb and gutter section (68 feet wide from face to face of curbs) providing two travel lanes in each direction and a center turn lane. Wide outside lanes are recommended to accommodate bicycle traffic.

The proposed right of way width is 100 feet. One business relocatee and nine residential relocatees are expected on this project. The total estimated cost including construction and right of way is \$ 8,700,000.

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, identify a feasible solution including costs, and identify potential problem areas that require consideration in the planning and construction stages.

II. NEED FOR PROJECT

The purpose of these improvements is to improve the traffic carrying capacity and accident experience of Homestead Road. This project was requested by the Town of Carrboro and should improve traffic flow and congestion on Homestead Road while reducing the accident potential on Homestead Road.

Homestead Road is designated an Urban Collector on the North Carolina Statewide Functional Classification System. East of SR 1843 Homestead Road is classified a minor thoroughfare on the Durham-Chapel Hill-Carrboro Urban Area Thoroughfare Plan. West of SR 1843 Homestead Road is classified a major thoroughfare. Development on Homestead Road is primarily residential, with higher density development east of SR 1843 and less dense development west of SR 1843. Although development is currently less dense west of SR 1843, there is a 95 home subdivision under construction west of SR 1843 and the undeveloped land along this segment is considered prime residential development property. Growth in this area is expected to take place at a rapid pace.

Homestead Road, between SR 1009 and Brookstone Road is generally a two lane roadway with a pavement width of approximately 22 feet and soil shoulders approximately 2 feet in width. There is one bridge on Homestead Road (Bridge #94), located approximately 0.5 mile west of SR 1009. Bridge #94 has a clear deck width of 30 feet and was constructed in 1992.

Homestead Road, between Brookstone Road and NC 86, has curb and gutter on the south side and pavement that varies from approximately 32 feet to 47 feet in width. The intersections at each project terminal are signalized.

The 1992 Average Daily Traffic (ADT) on Homestead Road is estimated to be approximately 3000 vehicles per day (vpd), and the ADT for the design year (2012) is estimated to be approximately 12,000 vpd.

The Level of Service (LOS) on Homestead Road is estimated to currently be level C and without the proposed improvements will deteriorate to level E by the year 2012. With the proposed improvements the LOS is estimated to improve to level A, and remain at level A through the 2012 design year.

During the period from September 1, 1989 through August 31, 1992, there were 46 accidents reported on Homestead Road. This resulted in an accident rate of 467 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a state wide average of 295.0 Acc/100 MVM for all urban secondary routes during 1991. There were no fatalities reported during the period; however, 14 of the accidents resulted in injuries. The most prevalent accident types were ran of road (43%), rear end (28%), and angle (13%). The proposed wider cross section should reduce the potential for these types of accidents.

III. RECOMMENDATIONS

It is recommended to widen Homestead Road from SR 1009 to NC 86 including the bridge over Bolin Creek (Bridge No. 94). The total project length is approximately 3.4 miles.

The proposed cross section, for the entire project length, is a 5 lane curb and gutter section (68 feet wide from face to face of curbs) providing two travel lanes in each direction and a center turn lane. Wide outside lanes are recommended to accommodate bicycle traffic.

Between Brookstone Road and NC 86 the existing curb and gutter on the south side of Homestead Road should be utilized to the extent possible.

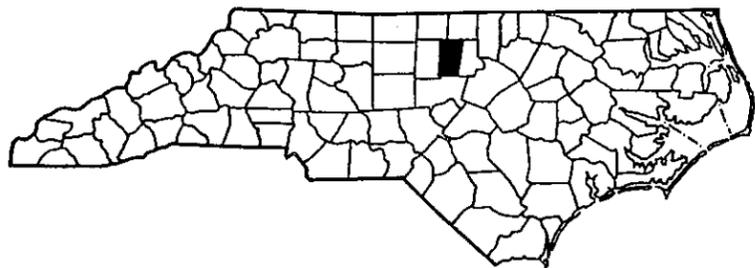
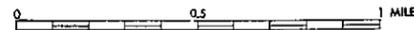
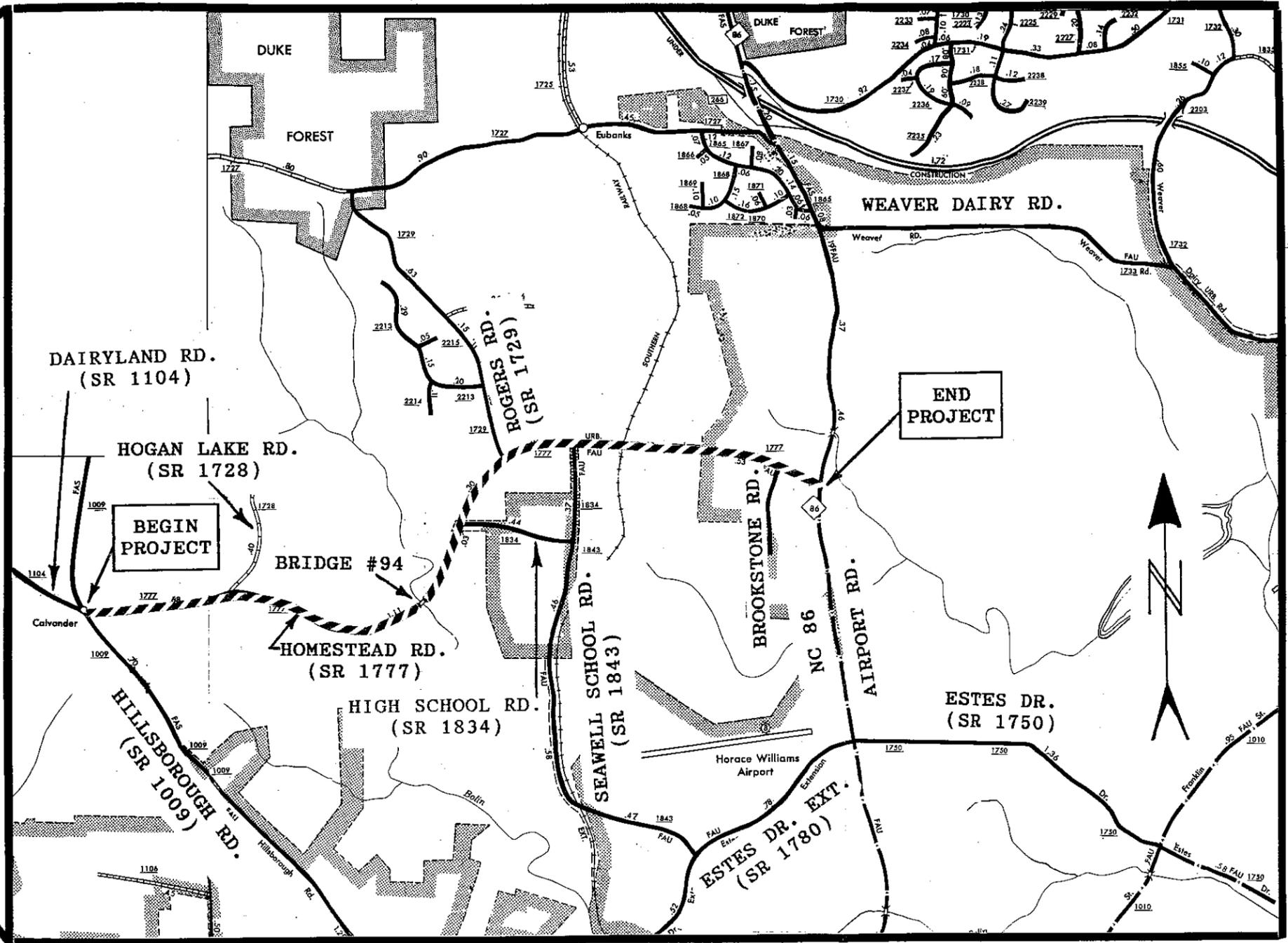
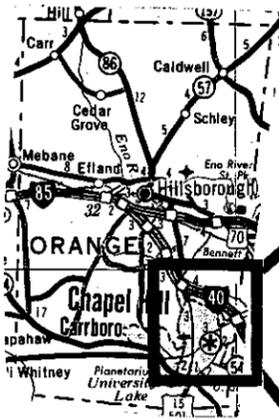
Minor revisions will be required to the traffic signals at each project terminal.

The proposed right of way width is 100 feet. One business and nine residential relocatees are expected on this project. The total estimated cost including construction and right of way is \$ 8,700,000 as follows:

Construction	\$ 5,500,000
Right of Way	3,200,000
Total Cost	8,700,000

IV. OTHER COMMENTS

An environmental screening was not conducted for this project.



FEASIBILITY STUDIES UNIT		
FIGURE 1 LOCATION MAP		
CHAPEL HILL/CARRBORO HOMESTEAD RD. (SR 1777) FROM SR 1009 TO NC 86		
ORANGE COUNTY		
U-2805	DIV. 7	FIGURE 1