

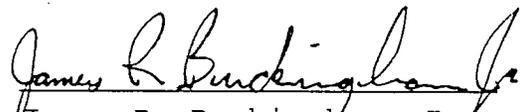
FEASIBILITY STUDY

Chapel Hill
Weaver Dairy Road (SR 1733)
From NC 86 to Erwin Road (SR 1734)
and
Widening on Sage Road
Orange County
U-3306

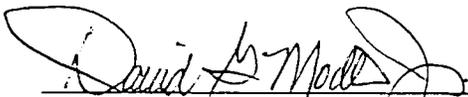
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I. GENERAL DESCRIPTION

This preliminary study describes recommended improvements to Weaver Dairy Road (SR 1733) in Chapel Hill. It is recommended to widen Weaver Dairy Road from near NC 86 to Erwin Road (SR 1734), a distance of approximately 2.6 miles (4.1 km). Also included in this project is 750 feet (228.7 m) of widening on Sage Road, near the US 15/501 intersection.

From the west project terminal, the project will follow the existing alignment of Weaver Dairy Road for approximately 2.2 miles (3.5 km) and will be built on new location for approximately 0.4 miles (0.6 km), as shown on Figure 2. Please see Figure 1 for the project location and surrounding area, and Figure 2 for the project location shown to a larger scale.

Generally, the recommended cross-section for the project is a five-lane, curb and gutter section, 68 feet (20.7 m) wide, with 8-foot (2.4 m) berms, on right-of-way 100 feet (30.5 m) wide. A right-of-way width of 90 feet (27.4 m) is recommended for a distance of approximately 1000 feet (305 m) immediately west of Erwin Road.

A 64-foot (19.5-m) wide curb and gutter cross-section with 8-foot (2.4 m) berms, on right-of-way 90 feet (27.4 m) wide, is recommended for the widening on Sage Road.

The widening of Weaver Dairy Road will generally be symmetrical to the existing center line, however, existing curb and gutter sections should be used where possible. No residential or businesses relocations are anticipated due to this project.

The total cost for right-of-way and construction is estimated to be \$ 9,700,000.

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, recommend a treatment including costs, and identify potential problem areas that require consideration in the planning and design phases.

II. NEED FOR PROJECT

The purpose of this project is to increase the capacity of Weaver Dairy Road (SR 1733) in Chapel Hill. The Durham-Chapel Hill-Carrboro Transportation Advisory Committee, and the Town of Chapel Hill have requested that the Weaver Dairy Road - Sage Road Corridor be improved.

The Weaver Dairy Road - Sage Road Corridor is designated a major thoroughfare on the Chapel Hill - Carrboro Thoroughfare Plan.

Within the study limits, Weaver Dairy Road and Sage Road are classified as Urban Minor Arterials in the North Carolina Statewide Functional Classification System.

Land use on Weaver Dairy Road is light to medium residential throughout the project. There is a shopping center located near the western end of the project, and a new high school is being built just east of SR 1732. A new residential subdivision is under construction where this project will intersect Erwin Road (SR 1734). Generally, the area appears to be one of expanding residential development, both in single-family and multi-family development.

Weaver Dairy Road is basically a two-lane, 24-foot (7.3-meter) wide, shoulder section between NC 86 and Erwin Road, except at some intersections where it has been widened to provide turn lanes. At several of these intersections, curb and gutter has been installed on one side of Weaver Dairy Road in connection with property development.

Sage Road is a 5-lane, 64-foot (19.5-m) wide, curb and gutter facility, except for approximately 750 feet (229 m) near the intersection with US 15/501, where it is a 2-lane shoulder section. Sage Road is not on the state highway system at this time. Negotiations are underway between the Town of Chapel Hill and the Division Engineer to have Sage Road added to the state system in the near future.

Land use on Sage Road is mostly undeveloped, except at the intersection with US 15/501, where there is some commercial development.

The estimated Average Daily Traffic (ADT) on Weaver Dairy Road for 1994 and 2020 is 8,200 vehicles per day (vpd) and 28,100 vpd respectively.

The Level of Service (LOS) on Weaver Dairy Road based on 1994 traffic volumes, and without improvements, is estimated to be Level D, and with the recommended improvements, Level A is projected.

The LOS on Weaver Dairy Road, based on 2020 traffic volumes, without the improvements, is estimated to be Level F. With the recommended improvements, Level C will prevail until shortly before the 2020 Design Year, when the LOS will reach Level D.

During the period from April 1, 1991, through March 31, 1994, there were 75 accidents reported on Weaver Dairy Road between NC 86 and Erwin Road. This resulted in an accident rate of 284 accidents per 100 million vehicle miles (Acc/100MVM), compared to a statewide average of 311 Acc/100 MVM for all rural secondary routes during 1993. There was one fatality, and 33 non-fatal injury accidents reported. The most prevalent accident types were left-turn (36%), rear-end (31%), and ran-off-road (13%). The wider cross-section with center turn lane recommended for Weaver Dairy Road will reduce the potential for these type accidents.

III. RECOMMENDATIONS

It is recommended to widen Weaver Dairy Road (SR 1733) from approximately 800 feet (244 m) east of NC 86 to Erwin Road (SR 1734), a distance of approximately 2.6 miles (4.1 km). Also included in this project is 750 feet (228.7 m) of widening on Sage Road, near the US 15/501 intersection.

The project will follow the existing alignment of Weaver Dairy Road for approximately 2.2 miles (3.5 km) and will be built on new location for approximately 0.4 miles (0.6 km), as shown on Figure 2. Please see Figure 1 for the project location and surrounding area, and Figure 2 for the project location shown to a larger scale.

Generally, the recommended cross-section for the project is a five-lane, curb and gutter section, 68 feet (20.7 m) wide, with 8-foot (2.4 m) berms, on right-of-way 100 feet (30.5 m) wide. A right-of-way width of 90 feet (27.4 m) is recommended for a distance of approximately 1000 feet (305 m) immediately west of Erwin Road.

A 64-foot (19.5-m) wide curb and gutter cross-section with 8-foot (2.4 m) berms, on right-of-way 90 feet (27.4 m) wide, is recommended for the widening on Sage Road.

The widening of Weaver Dairy Road will generally be symmetrical to the existing center line, however, existing curb and gutter sections should be used where possible.

Three residential and no business relocations are anticipated due to this project.

The total cost for right-of-way and construction is estimated to be \$ 9,700,000.

Construction	\$ 5,900,000
Right of Way	<u>\$ 3,800,000</u>
Total	\$ 9,700,000

IV. OTHER COMMENTS

An environmental screening was not conducted for this study, however, based on maps at the Department of Environment, Health, and Natural Resources, *Liatris squarrulosa*, a threatened plant species, may be found in the project corridor. No historic sites were identified in the project corridor.

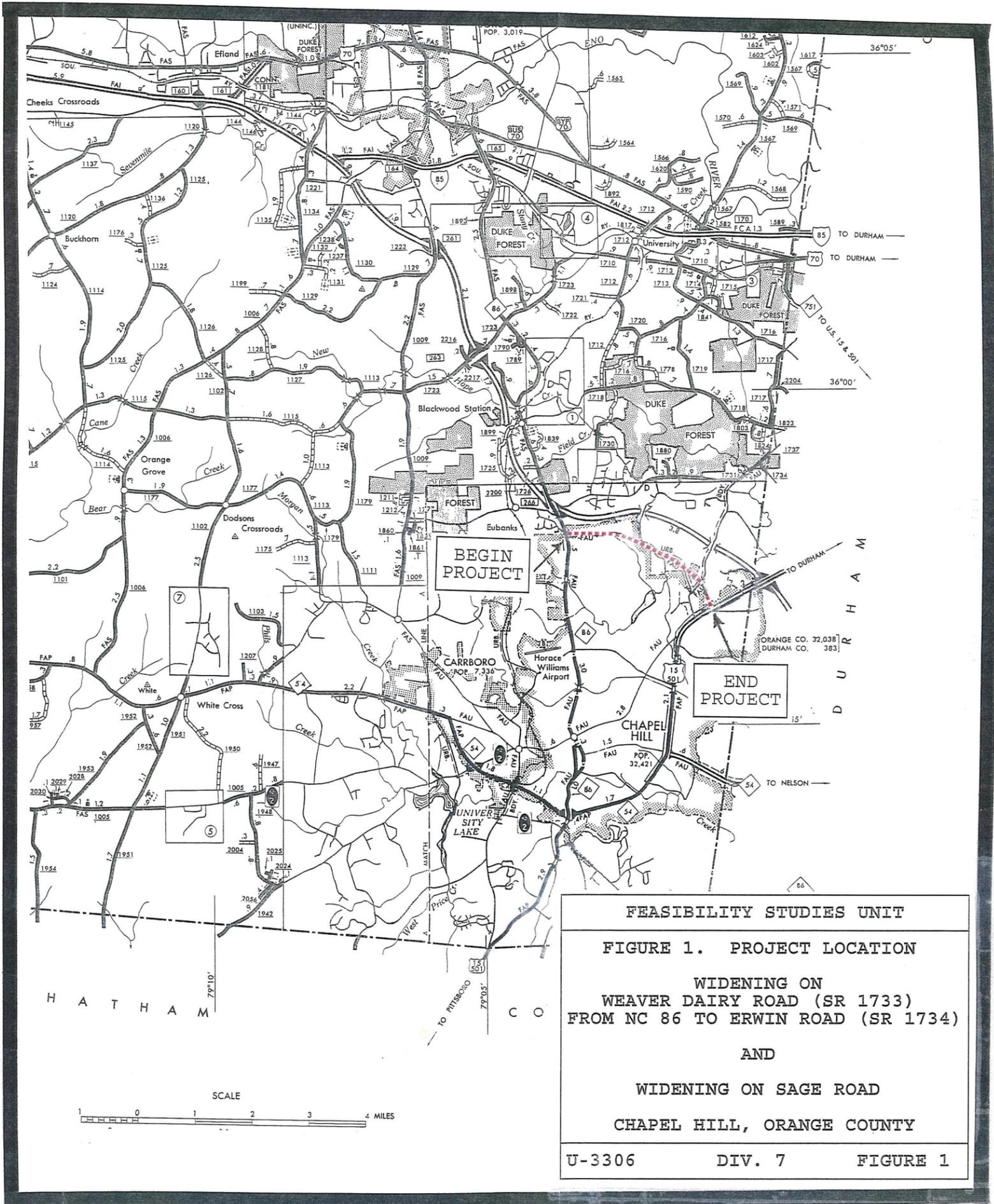
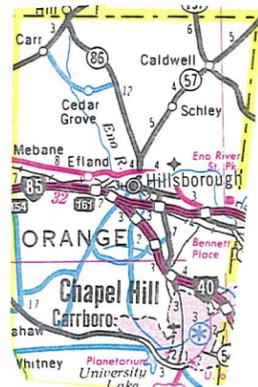
The 68-foot (20.7-m) wide cross-section recommended will allow wide outside travel lanes for the accommodation of bicycles. Weaver Dairy Road is included in the Regional Bicycle Plan for Durham and Orange Counties prepared for the Transportation Advisory Committee for the Durham - Chapel Hill - Carrboro Urban Areas.

A 64-foot (19.5 m) wide curb and gutter cross-section, with 8-foot (2.4 m) berms is recommended for the widening on Sage Road to match the existing curb and gutter section.

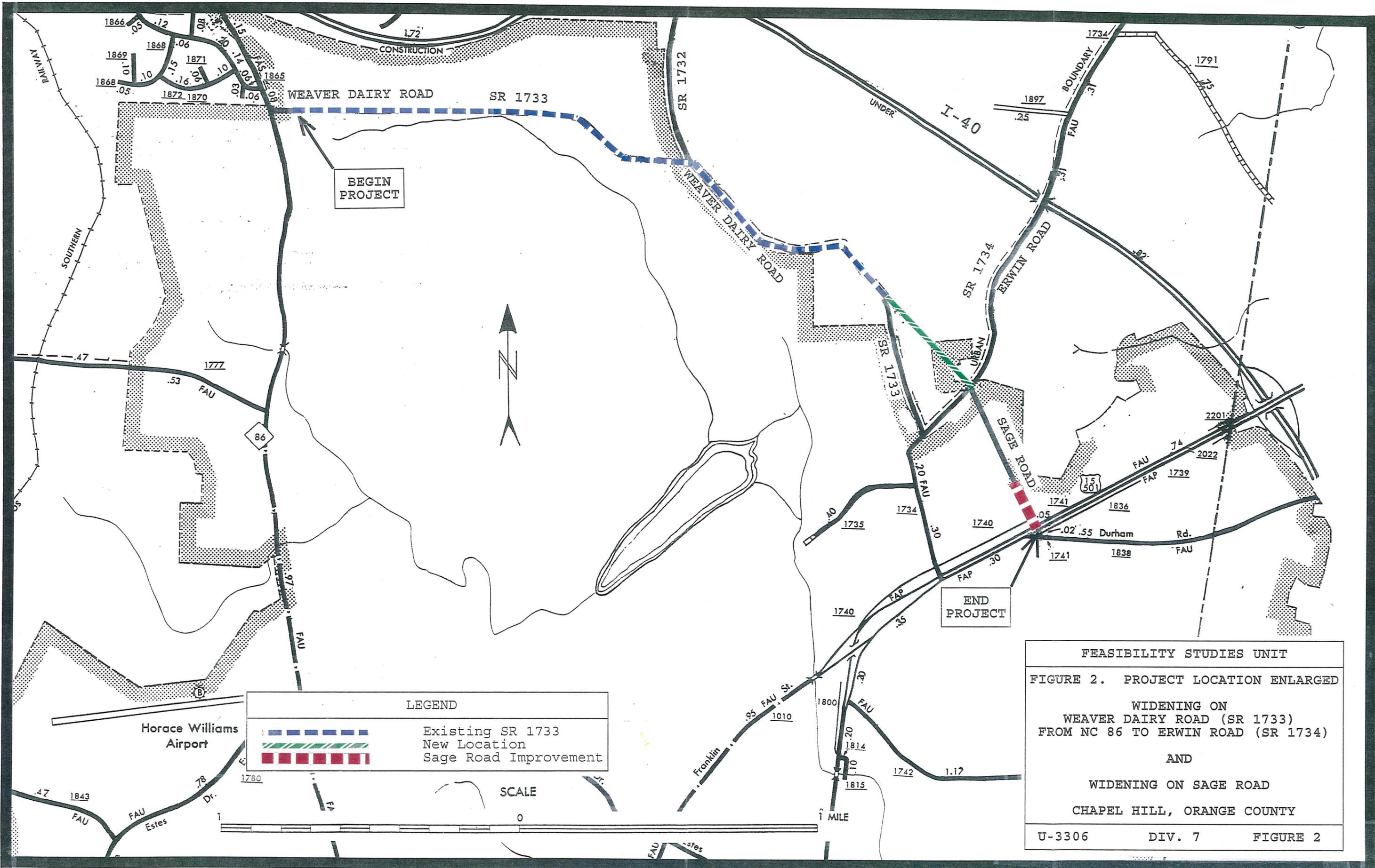
A right-of way width of 90 feet (27.4 m) is recommended for the project on new location near the Erwin Road intersection because of possible right-of-way constraints.

The cost of sidewalks is not included in the project cost shown above. The estimated cost for sidewalks, on both sides of existing Weaver Dairy Road, within the project limits is \$350,000.

The Town of Chapel Hill has requested a curb and gutter cross-section 69 feet (21.0 m) wide, with travel lanes and center turn lane 11 feet (3.3 m) wide and striped bike lanes 5 feet (1.5 m) wide. Although this cross section is not in accordance with current NCDOT policy, it may be evaluated in the planning and design phase.



FEASIBILITY STUDIES UNIT
FIGURE 1. PROJECT LOCATION
WIDENING ON
WEAVER DAIRY ROAD (SR 1733)
FROM NC 86 TO ERWIN ROAD (SR 1734)
AND
WIDENING ON SAGE ROAD
CHAPEL HILL, ORANGE COUNTY
U-3306 DIV. 7 FIGURE 1

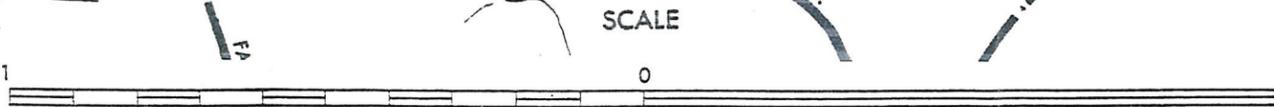


BEGIN PROJECT

END PROJECT

LEGEND

- Existing SR 1733
- New Location
- Sage Road Improvement



FEASIBILITY STUDIES UNIT

FIGURE 2. PROJECT LOCATION ENLARGED

WIDENING ON
WEAVER DAIRY ROAD (SR 1733)
FROM NC 86 TO ERWIN ROAD (SR 1734)

AND

WIDENING ON SAGE ROAD

CHAPEL HILL, ORANGE COUNTY

U-3306 DIV. 7 FIGURE 2