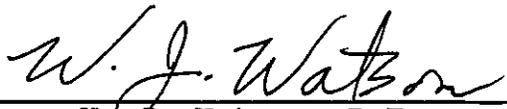


FEASIBILITY STUDY

US 15 - 501  
From Mount Moriah Church Road (SR 2294)  
To Westgate Drive (NS)  
Durham County  
U-2807

Prepared by  
Program Development Branch  
Division of Highways  
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11/6/92

Date

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I. GENERAL DESCRIPTION

This preliminary study describes proposed improvements to US 15 - 501 in Durham County. It is proposed to widen US 15 - 501 from Mount Moriah Church Road to Westgate Drive, a distance of approximately 2.2 miles. A location map is shown as Figure 1. It is proposed to add one through lane in each direction of travel. The bridges over New Hope Creek are to be removed and replaced with new structures. Minor revisions will be required in the traffic signals at Mount Moriah Church Road and at Garrett Drive. The service road (SR 1333) on the north side of US 15 - 501 will be relocated where it intersects Garrett Drive, as shown on Figure 2. The exit loop from westbound US 15 - 501 Bypass to eastbound US 15 - 501 Business will be revised to accommodate the additional eastbound lane on US 15 - 501, and the exit ramp from westbound US 15 - 501 Bypass to westbound US 15 - 501 will be revised to accommodate the additional westbound lane.

Acquisition of an undeveloped parcel of land, approximately 7,700 square feet in size will be required in order to relocate the service road where it intersects Garrett Drive; however no business or residential relocations are expected.

The total cost of these improvements is estimated to be \$6,000,000.

This study is the initial step in the planning and design process for this project and is not to be considered the product of exhaustive environmental or design investigations. The purpose of the study is to describe the problem, recommend a treatment including costs, and identify potential problem areas that deserve consideration in the planning and design phases.

II. NEED FOR PROJECT

The purpose of these improvements is to provide an interim improvement to the traffic carrying capacity of US 15 - 501. The project was requested by the City of Durham and has strong local support. The proposed improvements are not a long-term solution to the intense congestion on this corridor. A satisfactory long-term solution can only be found through a comprehensive corridor study which includes the interests of the City of Durham, Town of Chapel Hill, Durham County, Orange County, and NCDOT. The study should encompass future land use and transportation plans for the area. Such a corridor investigation is beyond the scope of this study.

US 15 - 501 is designated a Major Thoroughfare on the Durham Thoroughfare Plan. Within the study limits US 15 - 501 is classified as a Freeway in the North Carolina Statewide Functional Classification System. Development on US 15 - 501, within the project limits is predominantly commercial with a mix of retail shopping centers, motels, restaurants, and new car sales and service facilities. Also, there is a significant amount of prime undeveloped property in the vicinity.

US 15 - 501 is generally a four lane, median divided roadway with two 12 foot travel lanes in each direction. At the signalized intersections with Mount Moriah Church Road and Garrett Road, US 15 - 501 has been widened to provide left turn lanes.

The 1992 Average Daily Traffic (ADT) on US 15 - 501 is estimated to be 47,000 vehicles per day (vpd). The estimated ADT in the design year (2015) is 96,000 vpd.

The current level of service (LOS) on US 15 - 501 is estimated to be level E and approaching level F. With the proposed improvements it is estimated that the LOS will improve to level D, and in the design year (2015) a LOS E will be provided.

During the period from January 1, 1989 through December 31, 1991 there were 107 accidents reported on US 15 - 501 within the project limits. This resulted in an accident rate of 107 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 243 Acc/100 MVM for all urban US routes during 1991. There were no fatalities reported during the period, but 36 of the accidents resulted in injuries. The most prevalent accident types were rear-end (55%), and left-turn (16%). The additional travel lane in each direction proposed for US 15 - 501 will reduce the potential for these types of accidents.

### III. RECOMMENDATIONS

It is recommended to widen US 15 - 501 from Mount Moriah Church Road to Westgate Drive, a distance of approximately 2.2 miles. A location map is shown as Figure 1. It is proposed to add one through lane in each direction of travel. The bridges over New Hope Creek will be removed and replaced with new structures. Minor revisions will be required in the traffic signals at Mount Moriah Church Road and at Garrett Drive. The service road (SR 1333) on the north side of US 15 - 501 will be relocated approximately 150 feet north where it intersects Garrett Drive, as shown on Figure 2. The exit loop from westbound US 15 - 501 Bypass to eastbound US 15 - 501 Business will be revised to accommodate the additional eastbound lane on US 15 - 501, and the exit ramp from westbound US 15 - 501 Bypass to westbound US 15 - 501 will be revised to accommodate the additional westbound lane.

Acquisition of an undeveloped parcel of land, approximately 7,700 square feet in size will be required in order to relocate the service road where it intersects Garrett Drive; however no business or residential relocatees are expected.

At the western project terminal the proposed additional travel lane in each direction will be compatible with the existing cross section on US 15 - 501 west of Mount Moriah Church Road. West of Mt. Moriah Church Road there are three existing westbound lanes. For eastbound traffic there are two through lanes, an exclusive left turn lane, and an exclusive right turn lane. The exclusive right turn lane will be remarked as a combination thru-right turn lane and will feed into the new eastbound lane.

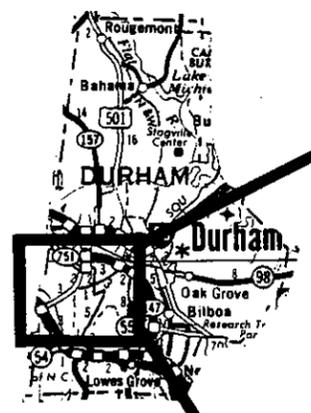
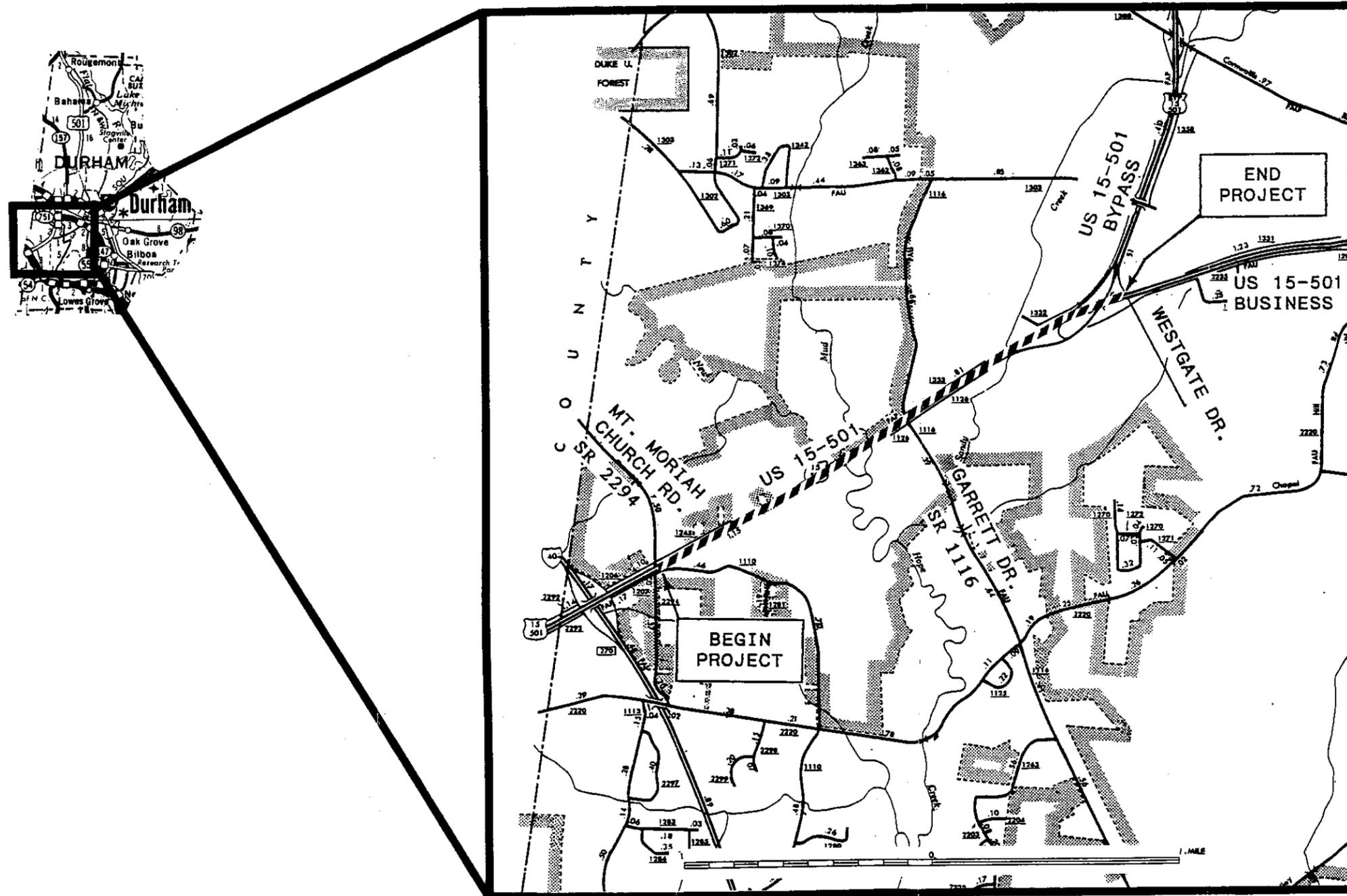
At the eastern project terminal the proposed additional eastbound travel lane will tie into the existing eastbound approach approximately 800 feet west of Westgate Drive. This approach provides three through lanes, an exclusive left turn lane, and an exclusive right turn lane. The new westbound lane will be compatible with the existing westbound approach at Westgate Drive. The existing exclusive right turn lane on the westbound approach will be remarked as a combination thru-right lane and will feed into the proposed new westbound lane.

The total cost of construction and right of way is estimated to be \$6,000,000 as follows:

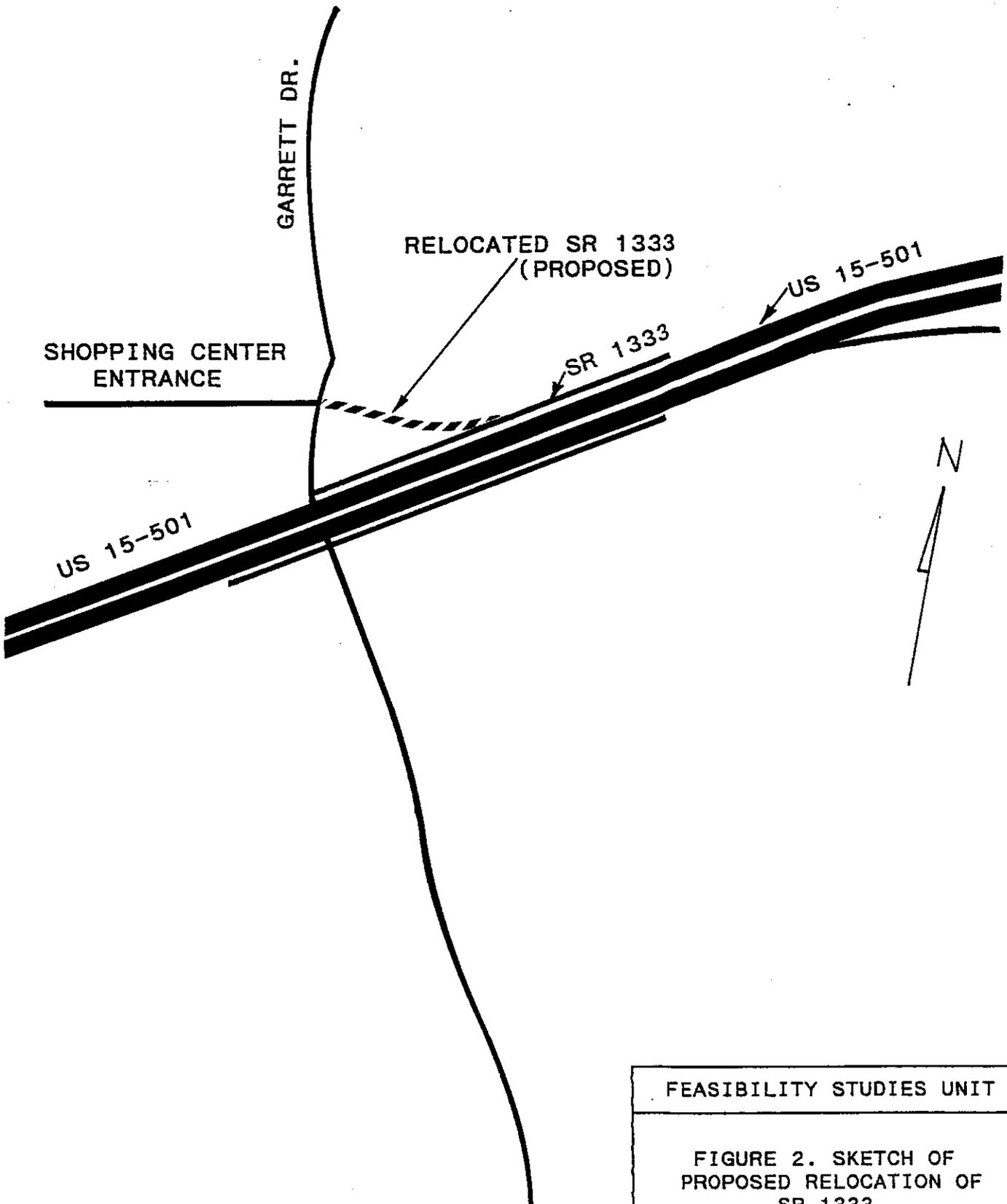
Construction.....	\$ 5,900,000
Right of Way.....	100,000
Total Cost .....	\$ 6,000,000

#### V. OTHER COMMENTS

An environmental screening was not conducted for this study, however, it is felt that there are no significant environmental problems on this project.



FEASIBILITY STUDIES UNIT		
FIGURE 1. LOCATION MAP		
US 15-501 MT. MORIAH CHURCH RD. TO US 15-501 BYPASS		
DURHAM COUNTY		
U-2807	DIV. 5	FIGURE 1



FEASIBILITY STUDIES UNIT
FIGURE 2. SKETCH OF PROPOSED RELOCATION OF SR 1333
U-2807 DIV.5 FIGURE 2