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FEASIBILITY STUDY

US 321, Newton
From NC 10 North to US 64-70
Catawba County
U-2215

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

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I. DESCRIPTION

This report covers a preliminary study of the proposed widening of the subject road to a multi-lane facility for a distance of approximately 2.7 miles. This project is included in the 1987-1995 Transportation Improvement Program for feasibility study and/or right of way protection. It is not currently funded. Location of the studied road segment is shown on Figure 1.

II. PURPOSE OF PROJECT

Existing Road Characteristics

Designated as a major thoroughfare in the Newton-Conover Thoroughfare Plan, US 321 functions as an essential crosstown route on the west side of Newton's central business district. As noted on Figure 2, the facility is intersected by numerous cross streets affording accessibility to the central area of the city. Also, its location as a bypass provides important service to through traffic destined for the I-40 and US 64-70 corridors from US 321, NC 16, and NC 10.

The studied section of road was constructed on good alignment in 1949 and basically consists of a 22-foot pavement with 8-foot shoulders. In recent years, the roadway has been widened to provide left turn lanes at NC 10, SR 1154, W. 6th Street, SR 1155, SR 1780, and US 64-70. Right turn lanes have been installed at SR 1780 and US 64-70. Total length of these turn lanes approximate one-third of the studied project length. Because of the alignment and frequency of intersecting streets, safe passing opportunities are practically non-existent.

From original roadway plans, the right of way width on US 321 is 150 feet symmetrical about the road s centerline. However, not all of the project length has valid and properly recorded 150-foot rights of way. There are numerous evidences of a 150-foot right of way along the studied section via subdivision maps and other plats, building setbacks, right of way markers, and utility setbacks. Nevertheless, city officials, seeing that this project is critically needed, have taken on the responsibility of acquiring and recording written agreements from those properties that do not have recorded 150-foot rights of way. According to local staff, the city government is committed to ensuring that the entire length of the project has the necessary recorded right of way by July, 1987.

Roadside development consists of a wide variety of uses - residences churches, and governmental, commercial, and industrial establishments. Density of development ranges from light to heavy, with the heaviest occurring in the area between SR 1156 and US 64-70.

Present speed limit along this section of road is 45 MPH. Signal control exists at NC 10, SR 1154, SR 1780, and US 64-70.

Traffic Volumes, Capacity, and Accident Record

Current traffic volumes on US 321 range from approximately 16,000 to 22,000 vehicles per day (see Figure 2). South of NC 10, the traffic volume drops to approximately 11,000 vpd. A significant aspect of the traffic volume is the relatively high percentage of trucks - nearly 13 percent of the total daily traffic volume.

The projected traffic range in twenty years is 19,000 to 29,000 vpd. These volumes reflect the traffic effect of the planned relocation of US 321 between Lincolnton and Hickory. The relocation is anticipated to be open to traffic by mid 1990s.

Present capacity along the two-lane facility operating under signalized conditions is approximately 8000 vpd at level of service C (operating speeds of 35 MPH). Thus, capacity is greatly exceeded by traffic volumes by at least two to one at all points along the studied section of US 321. The substantial traffic overload has reduced the level of service to its lowest level E (operating speeds of approximately 25 MPH).

A total of 275 accidents were reported for this section of road in a recent four-year period. This yielded an accident rate of 5.52 accidents per million vehicles miles, more than the 1985 statewide average of 3.52 acc/mvm for urban two-lane US routes. The predominant pattern of the accident history involved rear-end collisions - they constituted 55 percent of the total accidents.

Need for Project

Purpose of the project is to provide additional lanes to alleviate capacity and safety deficiencies along this section of US 321. The highway is carrying traffic volumes far beyond its capacity to handle adequately. The over-capacity conditions are intensified by a significant volume of truck traffic that use US 321. Other factors contributing to extreme congestion along the road are increasing numbers of major driveways and intersections which generate disruptive left turning traffic. In addition, the studied facility is experiencing a relatively high number of accidents. The need for additional lanes will not be eliminated by the future relocation of US 321.

III. RECOMMENDATIONS AND COST

Improvement of the entire studied road segment to a multi-lane facility is feasible and immediately warranted. A five-lane shoulder section (60-foot pavement with adequate shoulders) is the recommended and logical cross section to adequately handle the current and estimated future traffic demands. This improvement can be constructed within the 150-foot right of way.

Estimated cost of the recommended improvements is as follows:

Roadway Construction	$2,350,000
Engineering and Contingencies	350,000
Utility Adjustment	60,000
Total	$2,760,000

IV. ALTERNATIVES

The only alternative considered to the recommended cross section is a five-lane curb and gutter roadway (64 feet face to face of curbs). Total estimated cost of this improvement is $3,200,000, including $2,730,000 for roadway construction, $410,000 for engineering and contingencies, and $60,000 for utility adjustments.

V. OTHER COMMENTS

No significant environmental impacts are foreseen for this project. There are no sensitive environmental areas along this road. Some increase in noise levels may result from the widening which would bring the new roadway closer to development.

City officials consider the recommended improvement to be an urgent and top priority need in their area. They have shown much longstanding interest for the proposed project and are committed to seeing that the necessary right of way for the widening will be made available at no cost to the State.

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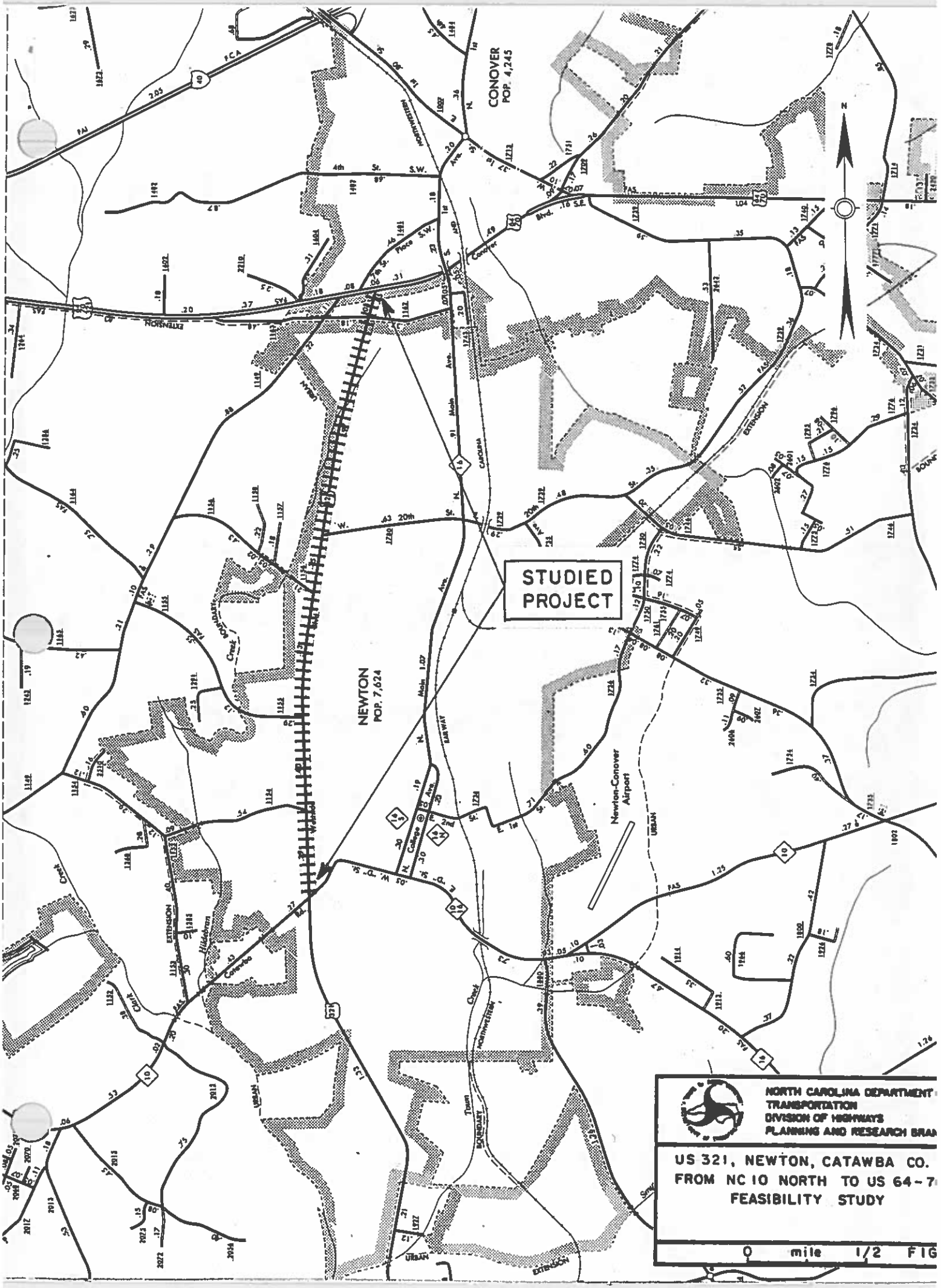
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NORTH CAROLINA DEPARTMENT
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DIVISION OF HIGHWAYS
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US 321, NEWTON, CATAWBA CO.
FROM NC 10 NORTH TO US 64-7
FEASIBILITY STUDY
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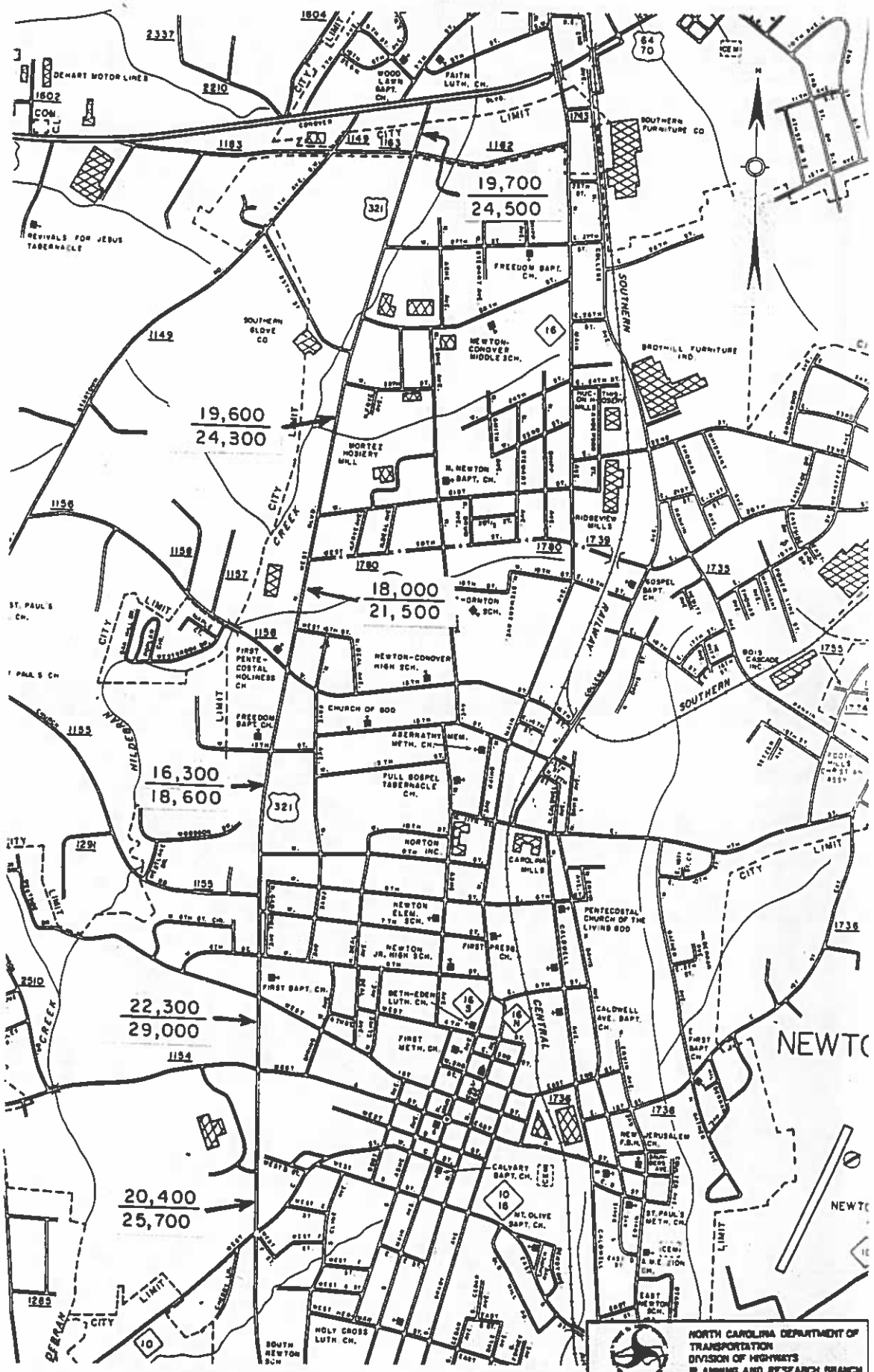

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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND RESEARCH BRANCH

US 321, NEWTON, CATAWBA CO.
FROM NC 10 NORTH TO US 64-70
FEASIBILITY STUDY

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