

FEASIBILITY STUDY

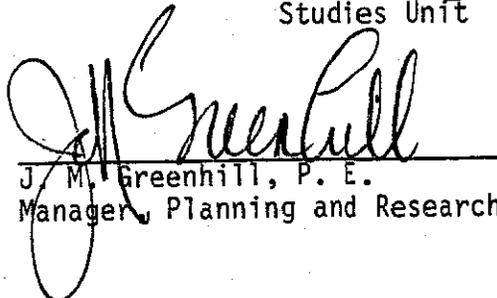
NC 72-711 Through I-95 Interchange
At Lumberton, Robeson County
U-2416

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



R. G. Dawson, Jr., P. E.
Head of Feasibility & Special
Studies Unit

3.10.89
Date



J. M. Greenhill, P. E.
Manager, Planning and Research

NC 72-711 Through I-95 Interchange
At Lumberton, Robeson County
U-2416

I. DESCRIPTION

This report covers a preliminary study of the proposed improvement of a portion of NC-72-711 through the interchange area of I-95 at Lumberton. General location of the project is shown on Figure 1. The project is included in the 1988-1996 Transportation Improvement Program for feasibility study and/or right of way protection. No funds have been appropriated for this project.

II. NEED FOR PROJECT

The existing roadway along NC 72-711 through the I-95 interchange has a continuous three-lane width to facilitate through and left turn traffic. However, the current volume of over 16,000 vehicles per day using this section of road presents severe capacity problems. In addition, traffic flow is hindered by signals at the intersection with the southbound off ramp of I-95. Just east of the interchange, NC 72-711 terminates at its channelized but confusing signalized intersection with NC 72/SR 2499.

The accident history at this location showed a significant safety problem. Some 90 accidents were reported throughout the interchange area during a recent 3½ year period. Also, potential safety problems are encountered at the interchange where three of the four diamond ramps are connected by the Interstate frontage roads.

III. RECOMMENDATIONS AND COSTS

Improvements to NC 72-711 are warranted to provide additional lanes to adequately accommodate the existing and future traffic volumes and improve safety. Any major improvement should conform with the mutually adopted Lumberton Thoroughfare Plan. As shown on Figure 3, the thoroughfare plan proposes realignment of NC 72-711 to tie in with SR 2501 which forms part of a circumferential route through southern Lumberton.

Figure 2 shows the recommended realignment that differs slightly from the thoroughfare plan location but substantially reduces the impact on existing development along SR 2499 and high quality wetlands just west of I-95. The alignment revision would necessitate additional construction of approximately 0.3 mile to connect with existing SR 2501. A new and wider bridge would be provided over I-95, allowing the use of the existing bridge to maintain traffic flow during construction. The existing bridge was constructed in 1955 and, because of its age and condition, is not suitable for widening. The new bridge should be of sufficient length to accommodate future widening of I-95 to six lanes. Adjustments to the existing ramp connections to NC 72-711 would be required for proper ties with the realigned roadway.

Due to significant volumes of left turns at the intersections with the northbound on ramp to I-95 and with NC 72/SR 2499 (see Figure 4) and close spacing of intersections along NC 72-711, a six-lane curb and gutter section (72 feet face to face of curbs) is the minimum recommended cross section, extending from the SR 2499 intersection across the new bridge over I-95. This cross section would allow provision of double left turn lanes as well as two through lanes in each direction. Beyond the bridge to the west, the new cross section would taper to a five-lane curbed width. East of SR 2499, the proposed cross section would be reduced to five lanes with curb and gutter on the intersection approach and transitioned to a two-lane, 24-foot shoulder section from the approach to the tie-in with existing SR 2501. The relocated portion of SR 2501 would have no access (cul-de-saced) to SR 2499 but would be connected with the new road at the south end. Along SR 2499, the existing 4-lane curbed roadway should be widened to provide southbound right turn lane from NC 72 to NC 72-711 west and left turn lanes at the intersection with the new road.

In conjunction with the recommended realignment of NC 72-711, improvements are recommended on the existing road from the interchange with I-95 westward to the intersection of NC 72 and NC 711, a distance of approximately 0.4 mile. Widening of the existing two and three-lane section on the north side (see Figure 2) to five lanes with curb and gutter is recommended to adequately accommodate the existing and future traffic demands. The current volume of over 14,000 vehicles per day warrant immediate addition of lanes on this section of road. Beyond the intersection of NC 72 and NC 711, the traffic volume is evenly split between the two highways. In addition to the widening, replacement of the existing 300-foot long bridge across Lumber River is recommended. Retention of the bridge for widening is not desirable because of its age (34 years) and condition. The replacement bridge would be constructed in stages by width.

Other improvements recommended as part of this project are the removal of the frontage road connections to the existing ramps for safety reasons. SR 1588 should be relocated to intersect directly with NC 72-711. SR 1593 can be rerouted to a city street (former State road) that connects to SR 2499. SR 1592 should be relocated to connect with existing NC 72-711 as shown on Figure 2.

Estimated costs of the recommended improvements are as follows:

NC 72-711

| | |
|----------------------|--------------------|
| Roadway ¹ | \$1,900,000 |
| Bridges | 2,500,000 |
| Right of Way | 690,000 |
| Subtotal | <u>\$4,090,000</u> |

¹ Includes ramp adjustments

Frontage Roads

| | |
|---------------------------|--------------------|
| Roadway | \$ 150,000 |
| Right of Way ² | <u>1,060,000</u> |
| Subtotal | <u>\$1,210,000</u> |
| Total | \$5,300,000 |

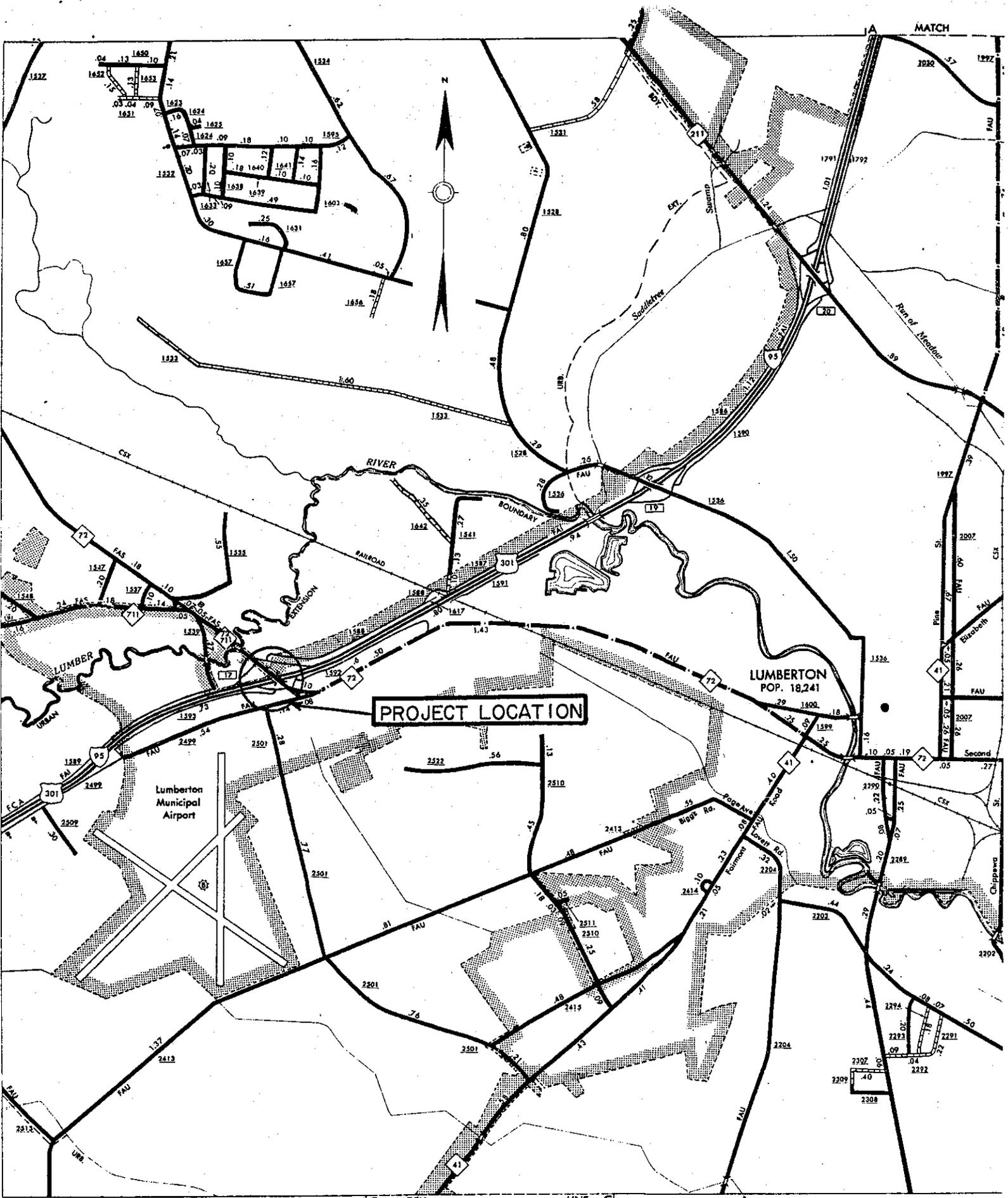
² High cost attributed to damages to access rights.

IV. OTHER COMMENTS

No other alternatives were considered for this project. The project is confined to the alignment shown on Figure 3 to minimize the impact on the environment and at the same time accomplish the objectives of the approved Lumberton Thoroughfare Plan. However, if the project is funded for construction, it would have to undergo evaluation of all feasible alternatives and their associated impacts in a planning/environmental document, and a final decision must be made on the most appropriate improvements.

Major negative environmental impacts of the project would be: (a) loss of property required for right of way to accommodate the improvement; (b) possible siltation of the river; (c) possible use of some wetlands, and (d) disruption of traffic flow during construction. No displacement of any residence or business would be expected. Right of way requirements for the realignment and widening of NC 72-711 are estimated to range from 100 to 150 feet wide plus construction easements.

GD/rm



PROJECT LOCATION

LUMBERTON
POP. 18,241

Lumberton
Municipal
Airport

C MATCH

LINE C

LUMBERTON AND VICINITY

FIGURE 1

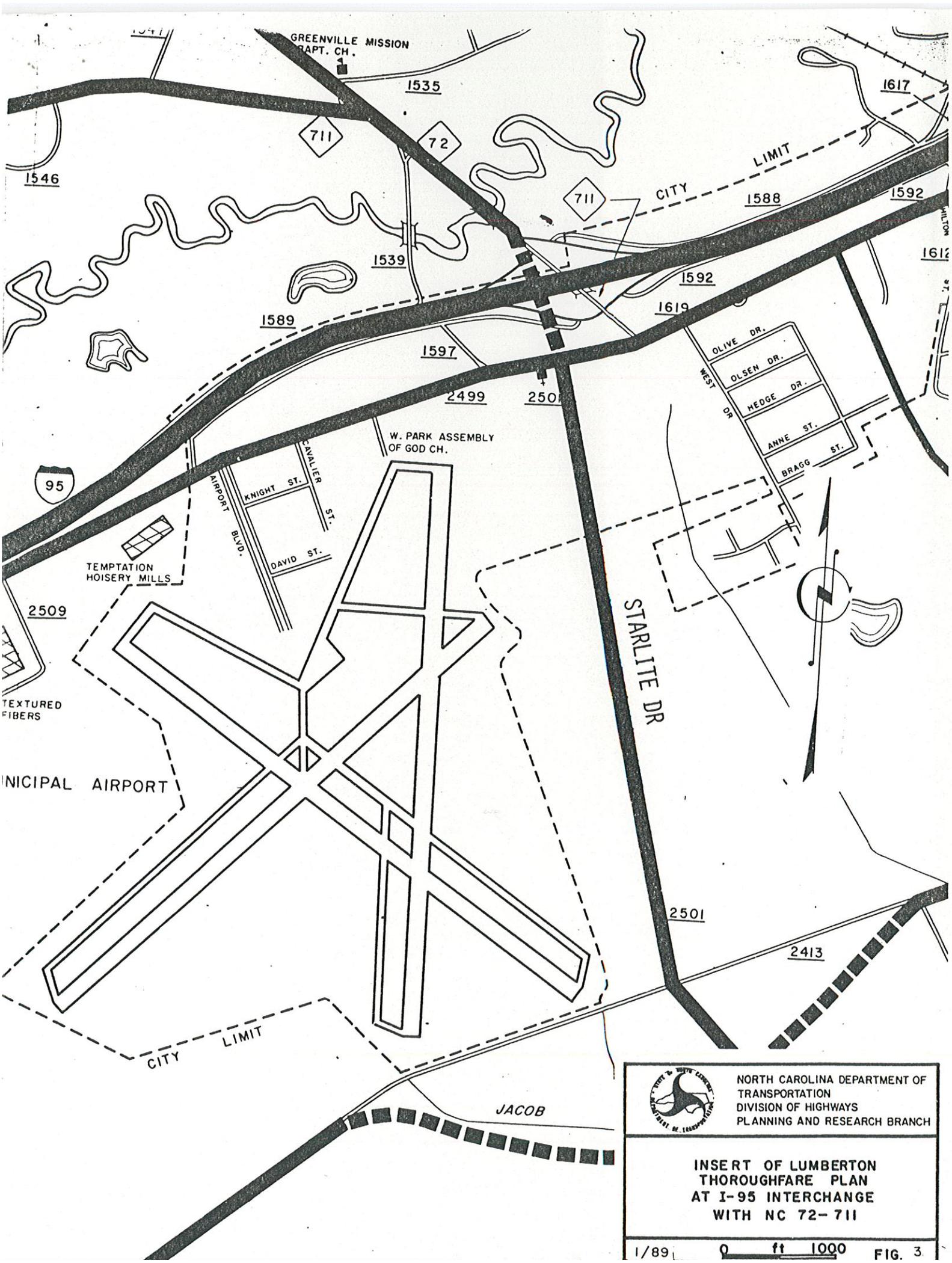


LEGEND

| | |
|----------------------------|------------|
| NEW STRUCTURE | |
| NEW OR RESURFACED PAVEMENT | |
| EXISTING PAVEMENT REMOVAL | XXXXXXXXXX |


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

NC 72 - 711 THROUGH I - 95
 INTERCHANGE, ROBESON COUNTY
 U - 2416



INSERT OF LUMBERTON
 THOROUGHFARE PLAN
 AT I-95 INTERCHANGE
 WITH NC 72-711

1/89 0 ft 1000 FIG. 3

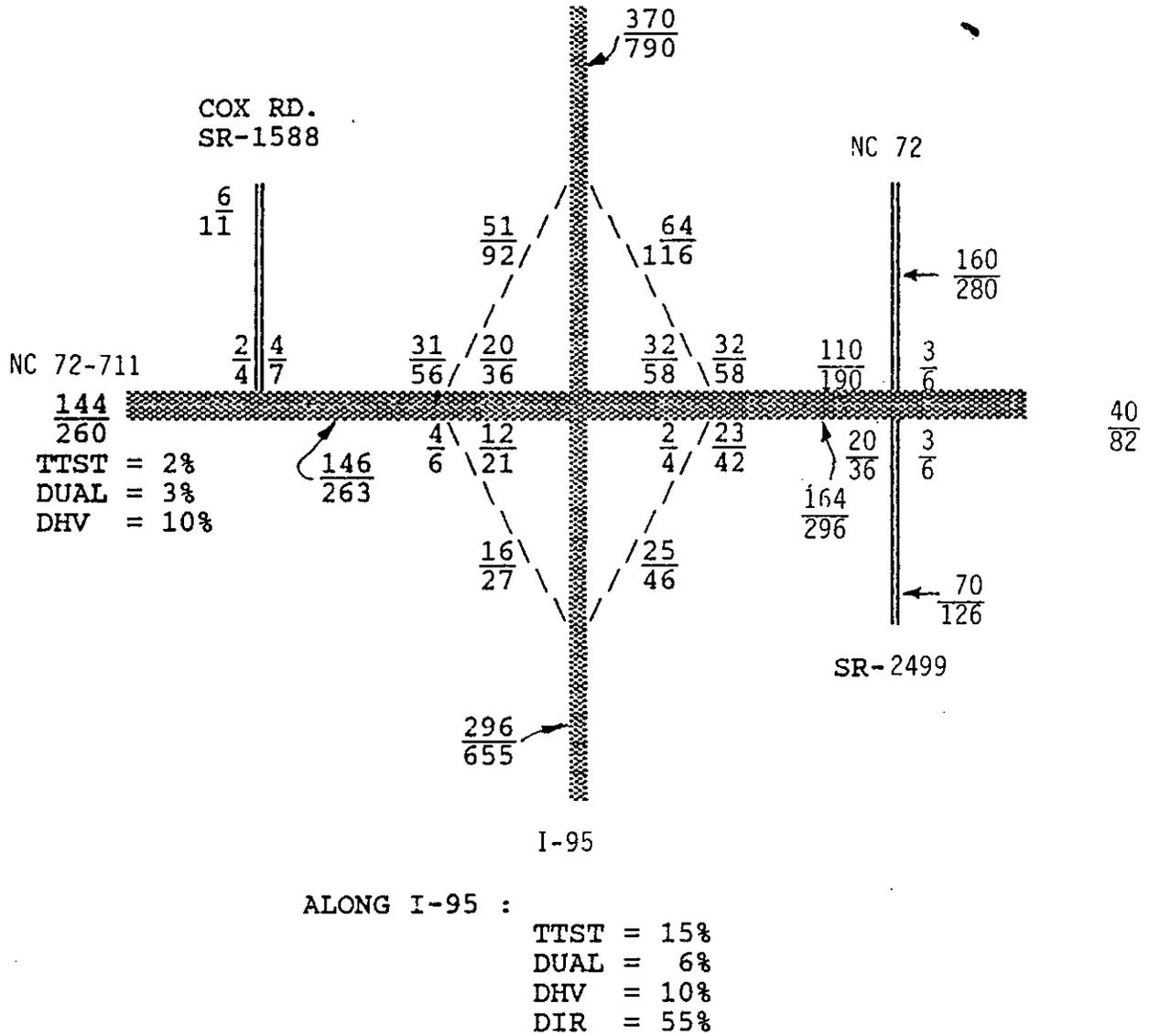


FIGURE 4