

R-2605

location

FEASIBILITY STUDY

NC 308  
FROM WATSON STREET IN WINDSOR  
TO NC 11-42 AT LEWISTON-WOODVILLE  
BERTIE COUNTY  
R-2605

PREPARED BY  
CONSTRUCTION UNIT - DIVISION ONE  
DIVISION OF HIGHWAYS  
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NC 308 From Watson Steet in Windsor  
To NC 11-42 at Lewiston-Woodville  
Bertie County  
T.I.P. # R-2605

I. DESCRIPTION OF PROJECT

A. GENERAL DESCRIPTION

This project is included in the 1988-1996 Transportation Improvement Program for a feasibility study by the Division. The TIP had the eastern terminus at US 13 Bypass at Windsor. Based on findings of the preliminary study, it is recommended that the eastern terminus be the existing curb and gutter section at Watson Street in Windsor. The study has been prepared accordingly. The following report summarizes the findings of a preliminary study to determine appropriate improvements to the 15.6 mile segment of NC 308 from Watson Street in Windsor to NC 11-42 at Lewiston-Woodville. Location of the project is shown in Figure 1. The proposed improvements include widening the existing 20-foot pavement to a 24-foot pavement with 6-foot to 8-foot unpaved shoulders and resurfacing the entire roadway. From Watson Street to the Windsor City Limits, a forty-four foot face to face curb and gutter section will be used. A three lane section is proposed in the area of Southwestern Elementary School and the Hope Plantation to accommodate left turning traffic in this area. One section of the roadway will be realigned to improve curvature.

B. EXISTING ROADWAY INVENTORY

1. Length of Studied Section

The length of the project is approximately 15.6 miles.

2. Functional Classification

NC 308 is classified as a rural major collector in the Statewide Functional Classification System, and is part of the Federal Aid System (FAS 1637).

3. Existing Cross Section

The studied section of NC 308 consists of a 20-foot pavement with 6-foot to 7-foot shoulders.

4. Right of Way

The existing right of way is as follows:

100-foot - Watson Street to 0.5 mile east of SR 1219.  
60-foot - 0.5 mile east of SR 1219 to NC 11-42.

Right of way was acquired under state projects 1086 and 1087.

5. Type of Roadside Development

Roadside development mainly consists of farms, woodlands, and light density rural residences; however, Whitehead Grain Co. is located just west of Windsor and Southwestern Elementary School is located approximately four miles west of Windsor. Hope Plantation, a State historic attraction, is also located four miles west of Windsor.

6. Structures

There are no existing bridges on this route. Two 4' x 4' box culverts and two 60" triple barrel concrete pipe culverts exist on this route.

7. Intersecting Roads and Type of Control

All intersecting roads contact NC 308 at grade and are stop-sign controlled with two exceptions. The intersection of NC 308 and US 13 Bypass is a signalized intersection and the intersection of NC 308 and NC 11-42 has a flashing yellow/red beacon. The intersection of SR 1257 and NC 308 is located approximately 200 yards west of the Southwestern Elementary School. SR 1257 was constructed in order to provide better access to Bertie High School and Southwestern Elementary School. This intersection should receive detailed study during the design phase of this project. A three lane section is recommended for this section of NC 308.

8. Speed Zones

The speed limit on the existing roadway is posted at 55 MPH with the exception of speed limit reduction to 35 MPH within and around the corporate limits of Lewiston-Woodville and Windsor.

9. Access Control

There is no access control along the project.

10. Utilities

Electric and telephone lines exist along the project. Water and sewer lines exist within the corporate limits of Lewiston-Woodville and of Windsor. No county-wide water system exists in Bertie County, but, this idea is to be presented in a bond referendum for the upcoming election scheduled for November 1990.

11. School Buses

Twenty-two school buses in Bertie County use NC 308. Eighteen buses make two trips per day from SR 1257 east and four buses make two trips per day from SR 1257 west along NC 308.

C. SUMMARY OF PROPOSED IMPROVEMENTS

1. Project Termini

The project's eastern terminus is proposed to be the intersection with Watson Street in Windsor, and the western terminus is at the intersection with NC 11-42, at Lewiston-Woodville.

2. Project Length

The project is approximately 15.6 miles long.

3. Traffic Volumes

The 1989 Average Daily Traffic (ADT) varied from a high of 3300 vehicles per day (VPD) just east of US 13 Bypass in Windsor to a low of 2000 VPD near Lewiston-Woodville. In 2010, The ADT is expected to vary from 6000 VPD to 4000 VPD at the same locations as above. These estimates of the average daily traffic include 5% truck-tractor semi-trailers, and 7% dual tired vehicles. (See Figure 2, 2-A)

4. Proposed Cross Section

A 24-foot pavement with 6-foot to 8-foot grassed shoulders is proposed. The roadway will be marked as two lanes at 11-foot each with a one foot paved shoulder on either side. All the existing roadway will be retained where feasible; however, two curves will be realigned to enhance safety. (See Figure 3, 3-R) In Windsor a forty-four foot curb and gutter section is recommended from Watson Street to Bazemore Street.

5. Proposed Right of Way Width

The proposed right of way width will remain as the existing claimed right of way. New right of way will be acquired to match existing right of way at the proposed curve realignment.

6. Structures

No major structures will be required for this project.

7. Design Speed

The proposed roadway section will have a design speed of 60 MPH.

8. Proposed Intersection Treatment and Access Control

All roadway intersections will be at-grade, and stop sign controlled, unless signalization is recommended by the Traffic Engineer. No access control to abutting properties is proposed.

## 9. Estimate of Cost

The estimated cost (1995 dollars) of the proposed improvement is as follows:

Roadway Construction	\$ 3,500,000.00
Right of Way	\$ 20,000.00
	<hr/>
	\$ 3,520,000.00

## II. NEED FOR IMPROVEMENT

### A. ALIGNMENT

The studied portion of NC 308 is a narrow two-lane facility serving the northwestern portion of Bertie County. It links Windsor and US 13 Bypass to Lewiston-Woodville and NC 11-42. The middle portion of NC 308, from 4.5 miles west of Windsor to three miles east of Lewiston, was reconstructed in the late 1940's. This portion of NC 308 has horizontal and vertical alignment suitable for 60 MPH design speed. Elsewhere, two curves now exist approximately 1.1 miles east of NC 11-42 which have curvatures of 6 and 10 degrees resulting in a design speed of 45 MPH. (See Figure 3). This existing curvature has contributed to a high accident rate in this area. This rate would likely increase with increasing traffic volumes and traffic flow rates.

The two curves mentioned above will be replaced with one 3-degree and 00 minute curve which will enhance traffic flow and serve as a positive factor in reducing the accident rate.

### B. Traffic Volumes and Capacity

The 1989 Average Daily Traffic (ADT) varied from a high of 3300 vehicles per day (VPD) in Windsor to a low of 2000 vehicles per day near Lewiston-Woodville. (See Figure 2) The projected ADT in the year 2010 for the same locations are expected to vary from 6000 VPD to 4000 VPD. The estimated traffic volumes include 5% truck tractors semi-trailers and 7% dual tired vehicles. The appropriate design hourly volume is estimated at 10% of the ADT.

The maximum traffic carrying capacity at the existing roadway is 2100 VPH at level of service E. The design hourly traffic volumes vary from 195 VPH to 295 VPH. Presently, with a DHV of 295 VPH, the facility operates at a level of service B.

The proposed improvements will permit a maximum traffic carrying capacity of 2500 VPH at level of service E. The design traffic flow for the year 2010 is estimated to be 390 VPH to 590 VPH. Given a DHV of 590 VPH, the improved facility will operate at a level of service C.

### C. Accident History

A total of 79 reported accidents including three fatalities occurred on the studied portion of NC 308 during the period from January of 1986 and November of 1989. Twenty-five of these accidents involved vehicles that ran off the road. The following is a summary of accidents along the studied roadway:

Run off road	31.6%
Angle, sideswipe, backing up and head-on	26.6%
Left/right turning traffic	16.5%
Rear-end collisions	10.1%
Vehicles that struck fixed objects, animals, pedestrians, or parked vehicles	14.0%
No collision - overturned	1.2%

The total accident rate for the studied section of NC 308 was 194.01 accidents per 100 million vehicle miles (acc/100 mvm). This value does not exceed the average total accident rate of 221.2 acc/100 mvm for similar routes in the state. The accident record yielded a fatal accident rate of 7.37 acc/100 mvm compared to the statewide average of 2.23 acc/100 mvm. Running off the road accidents were responsible for approximately one-third of the total accidents.

Widening of the roadway and the realignment of the two curve sections will likely decrease the number and severity of the accidents.

### III. RECOMMENDED IMPROVEMENTS

It is recommended that the existing 20-foot pavement be widened to 24 feet with 6-foot to 7-foot grassed shoulders, and the existing pavement be resurfaced. It is recommended that the two curves located approximately 1.1 miles east of NC 11-42 be replaced with one curve with a reduced degree of curvature to improve safety. (See Figure 3-R). It is recommended that a forty-four foot curb and gutter section be constructed from Watson Street to Bazemore Street in Windsor. It is recommended that a three lane section be constructed in the area of Southwestern Elementary School and the Hope Plantation. The above recommended improvements should be implemented at the earliest possible date.

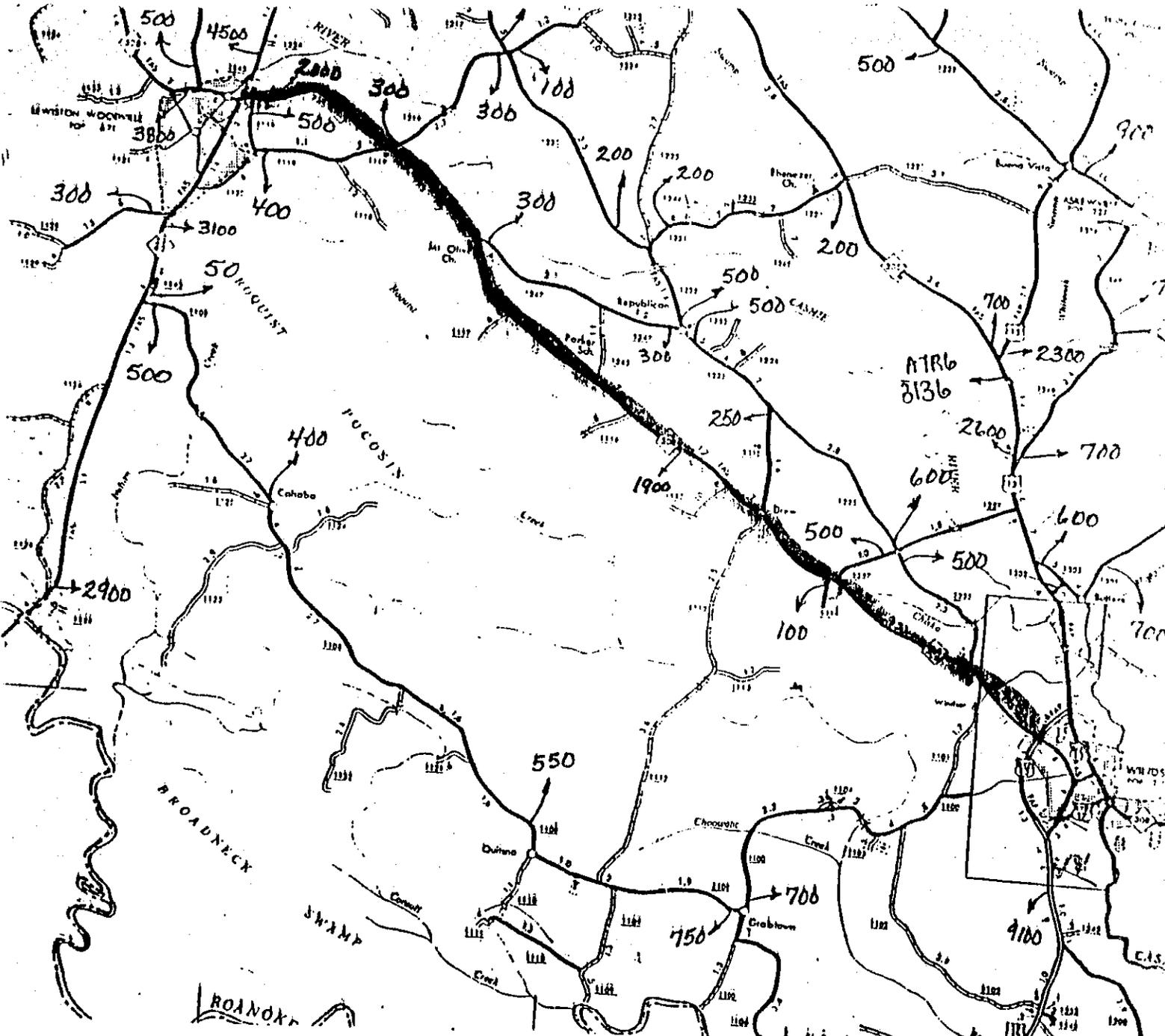


# BERTIE COUNTY



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

**NC 308  
FROM WATSON STREET IN WINDSOR  
TO NC 11-42 AT LEWISTON-WOODVILLE  
BERTIE COUNTY  
R-2606**



# BERTIE COUNTY



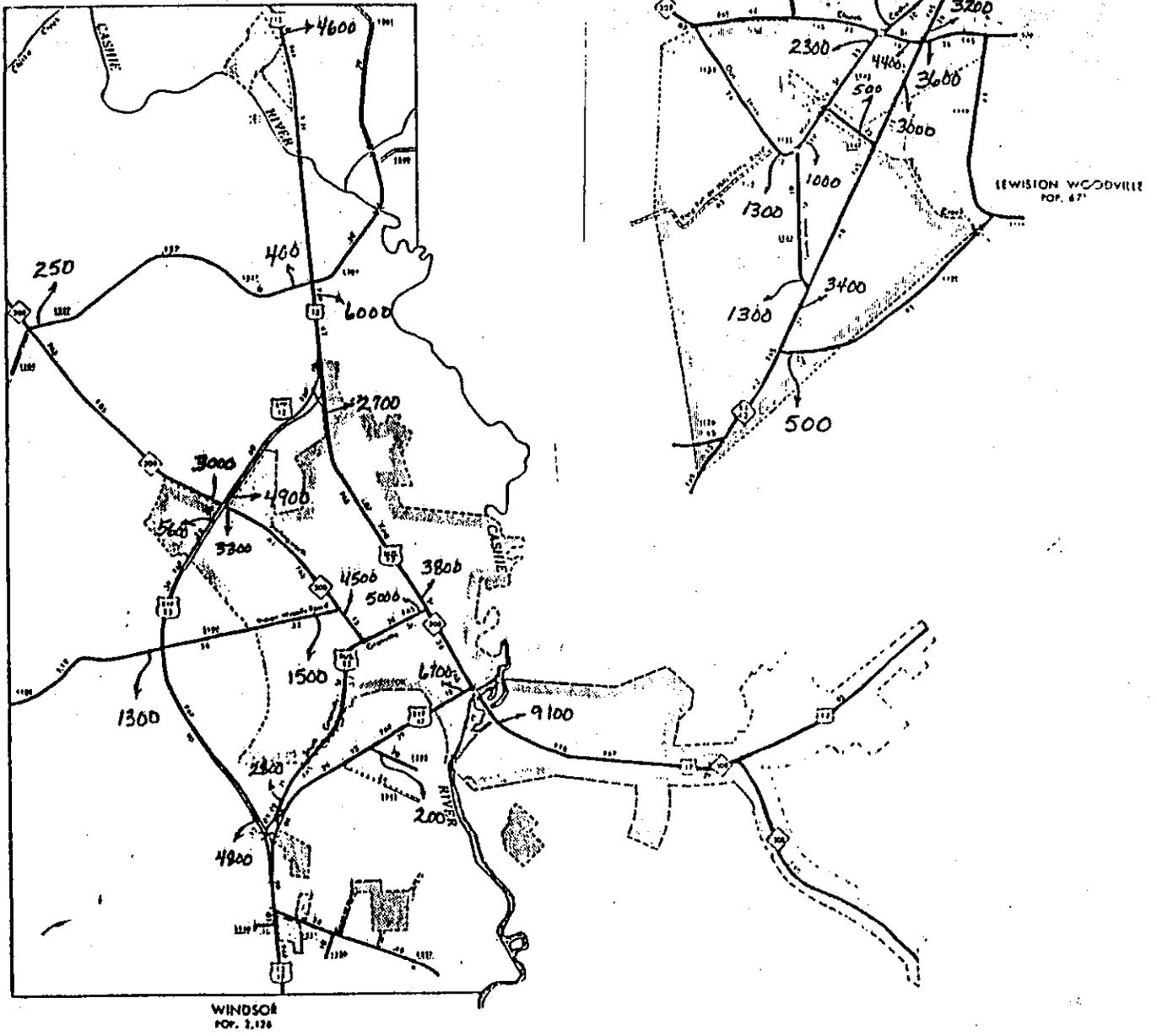
NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
DIVISION OF HIGHWAYS  
PLANNING AND RESEARCH BRANCH

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1989 ADT

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0 miles 2 100. 2



# BERTIE COUNTY



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

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1989 ADT

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Q miles S FIG. 2-A

# ORTHOPHOTO MAP OF BERTIE COUNTY, NORTH CAROLINA

E2,542,000

E2,544,000

MATCH MAP  
5847

E2,546,000

E2



NORTH CAROLINA DEPARTMENT OF  
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PLANNING AND RESEARCH BRANCH

FIGURE 3

CURVES TO BE RELOCATED

# ORTHOPHOTO MAP OF BERTIE COUNTY, NORTH CAROLINA

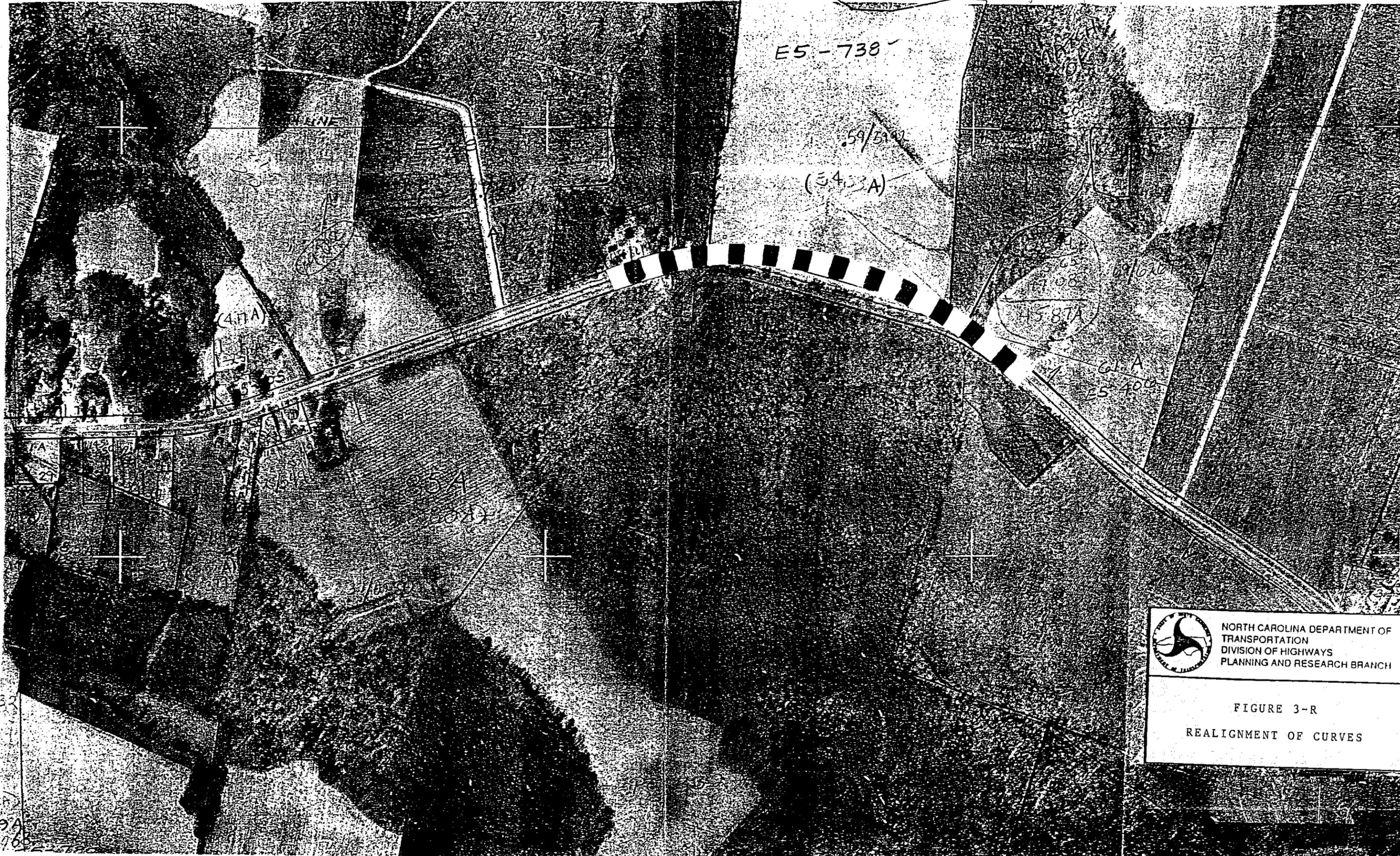
E2,542,000

E2,544,000

MATCH MAP  
5847

E2,546,000

E2,548,000



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FIGURE 3-R  
REALIGNMENT OF CURVES