I-85
North of SR 2120 (Exit 81) in Rowan County to
US 29-52-70/I-85 Business (Exit 87) in Davidson County
Rowan-Davidson Counties
Federal Aid Project No. NHF-85-3(164)80
State Project No. 8.1631403
T.I.P. Project No. I-2304A

ADMINISTRATIVE ACTION

ENVIRONMENTAL ASSESSMENT

U. S. Department of Transportation
Federal Highway Administration

and

N. C. Department of Transportation

Submitted Pursuant to 42 U.S.C. 4332(2) (c)

APPROVED:

11-2-00
Date

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11-6-00
Date

for Nicholas L. Graf, P. E.
Division Administrator, FHWA

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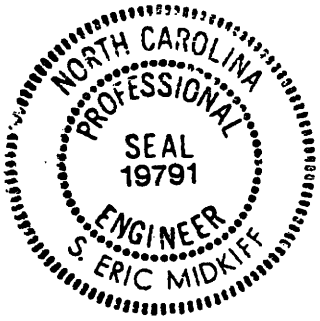

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SUMMARY

1. Type of Action

This is a Federal Highway Administration (FHWA) administrative action, Environmental Assessment.

2. Additional Information

The following persons can be contacted for additional information:

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3. Description of Action

The North Carolina Department of Transportation, Division of Highways, proposes to improve I-85 from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County. The proposed improvements consist of widening the subject section of I-85 to an 8-lane facility with a 46ft (14.0m) median. Interchanges and service roads along the project will be designed and revised as needed to accommodate the proposed mainline widening, and inadequate structures will be replaced. This 6.8 mile (10.9km) long project has an estimated cost of $143,728,500, including $138,310,000 for construction and $5,418,500 for right of way acquisition. The 2002-2008 Transportation Improvement Program (TIP) has allocated $146,680,000

for the proposed project including $5,419,000 for right of way acquisition, $138,240,000 for construction, and $3,021,000 spent in prior years.

4. Summary of Environmental Impacts

This project is driven by the need to relieve congestion and improve traffic flow along I-85 within the subject project area. Safety will also be improved with the removal and reconstruction of interchanges and service roads.

It is anticipated that 24 residences and 4 businesses will be relocated as a result of the proposed project. The total anticipated wetland impacts (Palustrine Emergent and Palustrine Forested Wetlands) are 3.62 acres (14,649.68m^2). The anticipated total length of streams impacted for the I-85 widening study corridor is 3,050ft (929.8m). The anticipated surface water impact for the bridge replacement on SR 1147 over South Potts Creek is 120.0ft (36.6m). No federally protected threatened or endangered species will be impacted. No sites listed in the National Register of Historic Places will be involved. No prime farmland impacts are expected. The proposed improvements will not cause significant negative impacts to air quality. No significant impacts to plant and animal life are expected.

The following table shows the predicted maximum extent of the 72 and 67 dBA noise level contours, the maximum predicted noise levels, and the approximate number of impacted receptors along the project.

Description		Leq Noise Levels (dBa)			Maximum Contour Distances		Approximate # of Impacted Receptors According to Title 23 CFR Part 772				
		15m	30m	60m	72 dBA	67 dBA	A	B	C	D	E
From SR 2120 to NC 150	I-85 widening (8-lanes)	82.4	78.3	72.8	84.6	126.8	0	34	1	0	0
	I-85 widening (6-lanes)	82.1	77.9	72.5	82.6	122.8	0	32	1	0	0
From NC 150 to US 29/70	I-85 widening (8-lanes)	83.8	79.7	74.2	94.4	142.5	0	26	7	0	0
	I-85 widening (6-lanes)	83.4	79.2	73.8	91.4	138.1	0	26	7	0	0

Note: - 15m, 30m, and 60m distances are measured from the center of the nearest travel lane.
- 72 dBA and 67 dBA contour distances are measured from the center of the proposed roadway.

Traffic noise abatement is not recommended, and no noise abatement measures are proposed, however the project will be re-evaluated for noise abatement measures once more detailed designs are complete.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/State governments are no longer responsible for providing noise abatement measures for new development for which building permits are issued within the noise impact area of a proposed highway after the Date of Public Knowledge. The Date of Public Knowledge of the location of a proposed highway project will be the approval date of CEs, FONSIs, RODs, or the Design Public Hearing, whichever comes later. For development occurring after this public knowledge date, local governing bodies are responsible for insuring that noise compatible designs are utilized along the proposed facility.

5. Summary of Special Project Commitments

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Project Development and Environmental Analysis Branch
Because the subject project lies within a Federal Energy Regulatory Commission (FERC)-licensed hydroplant project boundary (the Yadkin Project), approval for land transfer must be obtained by NCDOT in the form of a FERC license revision. Coordination with the proper FERC officials shall take place, and the process to obtain a FERC permit will be followed.

Geotechnical Unit
It is anticipated that the proposed widening of I-85 and interchange reconstruction along I-85 will encroach on one property identified as an underground storage tank (UST) site. The project has been designed to minimize impacts to this UST site to prevent the possibility of long-term, costly remediation. This impacted site will be further evaluated before the project's construction.

NCDOT Rail Division
NCDOT will coordinate with the Southern Railway concerning highway improvements which involve the railroad. NCDOT will also coordinate with Railroad officials regarding the North Carolina Railroad Charlotte to Raleigh Corridor.

Project Development and Environmental Analysis Branch
Due to its historical significance, Bridge # 46, which carries US 29-70 over the Yadkin River in the southbound direction, will remain in place but will be closed to vehicular traffic. The bridge will remain in place to serve pedestrian and bicycle traffic. Ownership, liability, and maintenance responsibilities are currently being discussed by the Rowan and Davidson County Commissioners, the Transportation Museum, and the State Historic Preservation Office (SHPO). It is anticipated that these issues will be resolved by the completion of the final environmental document.

Right of Way Branch
It is anticipated that thirteen Geodetic Survey markers will be impacted by this project. The North Carolina Geodetic Survey will be contacted prior to construction regarding the relocation of survey markers along the project.

Structure Design Unit
Removal of Bridge #137, which spans the Yadkin River, results in potentially 1,254 cubic yards of temporary fill. NCDOT will implement Best Management Practices for Bridge Demolition and Removal.

Project Development and Environmental Analysis Branch
The project may have an impact on a low income community in the Williams Trailer Park area located along I-85 south of SR 2124 (Hackett Road). During the project development process, no concerns have been raised by the public or local government officials concerning environmental justice issues. NCDOT will aggressively seek participation of this low-income community in the public involvement process.

Project Development and Environmental Analysis Branch / Roadway Design Branch
Based on preliminary studies, five areas were identified as possible noise barrier locations. These noise barriers were determined to be unreasonable, due to the cost of the noise reduction benefits versus the cost of the abatement measures. However, the project will be re-evaluated for noise abatement measures once more detailed designs are complete.

6. Alternatives Considered

a. Capacity Alternatives

1. 6-lane Widening

The 6-lane widening alternative consists of widening existing I-85 [4-lane roadway with a 30ft (9.0m) median] to a 6-lane roadway with a 70ft (21.3m) median. In addition, existing interchanges would be revised to accommodate the widening as explained below in the 8-lane Widening alternative.

2. 8-lane Widening (Recommended)

The 8-lane widening alternative consists of widening I-85 to an 8-lane facility with a 46ft (14.0m) median. Because widening to eight lanes alone will not provide an acceptable LOS through the congested merge/diverge area in the vicinity of US 29/70, NC 150, and Clark Road; interchange and service road reconfigurations are also proposed as part of this alternative. This alternative would replace the three partial movement interchanges of US 29/70, NC 150, and Clark Road with one full-movement interchange in the vicinity of NC 150.

The Belmont Boulevard Interchange, a diamond type interchange, would be reconstructed to a partial cloverleaf interchange. Service road reconstruction will also be performed in this area.

b. Structural alternatives

1. Relocation of Yadkin River Bridge (# 137) East of Existing Location (Recommended)

Bridge # 137 carries I-85 over the Yadkin River. This bridge will be replaced by dual structures that will span the Yadkin River, its adjacent wetlands, and the Southern Railroad. The dual structures would be approximately 3000ft (914.4m) in length and would be located approximately 500ft (152.4m) east of Bridge # 137's existing location. By constructing these dual structures to the east of the existing bridge, traffic can be maintained along the existing bridge until construction is complete. The existing bridge will be removed after the project's construction.

2. Reconstruction of Yadkin River Bridge Near Existing Location

NCDOT investigated the alternative of reconstructing the Yadkin River Bridge (Bridge # 137) near its existing location. This alternative would not allow for the maintenance of traffic during construction of the project. An alignment located near existing I-85 in the vicinity of the Yadkin River will require grade

changes to meet minimum vertical curve criteria. Grade changes in this area would impact existing I-85, eliminating its use for maintaining traffic during construction.

c. "No Build" Alternative

This alternative would avoid the environmental impacts that are anticipated as a result of the project; however, this alternative would result in no positive effect on the traffic capacity and safety of the highway. This alternative is not recommended, however, it does serve as a basis for comparison of other alternatives.

7. Coordination

The following federal, state, and local officials were contacted regarding this project:

U.S. Fish & Wildlife Service - Asheville
Federal Energy Regulatory Commission - Atlanta
N.C. Department of Administration - State Clearinghouse
N.C. Department of Environment, Health, and Natural Resources (DEHNR)
N.C. DEHNR – Division of Land Resources
N.C. DEHNR – Division of Forest Resources
N.C. Department of Environment and Natural Resources
N.C. DENR – Division of Water Quality
N.C. DENR – Division of Soil and Water Conservation
N.C. Wildlife Resources Commission
N.C. Department of Cultural Resources – Division of Archives and History
Public Schools of North Carolina – Department of Public Instruction
FineTex, Inc.

TABLE OF CONTENTS

		Page
I.	**BASIS FOR PROPOSED ACTION**	1
A.	Purpose of the Project	1
B.	Existing Conditions	1
1.	Length of Studied Section	1
2.	Functional Classification	1
3.	Existing Cross Section	1
4.	Project Termini	2
5.	Right of Way	2
6	Alignment	2
7.	Structures	2
8.	Interchanges	4
9.	Major Drainage Structures	5
10.	Access Control	5
11.	Utilities	5
12.	Speed Limit	5
13.	Railroad Crossings	5
14.	School Bus Data	6
C.	Traffic Data and Capacity Analysis	6
D.	Accident Analysis	7
II.	**DESCRIPTION OF PROPOSED ACTION**	9
A.	General Description	9
B.	Project Status	9
C.	Recommended Improvements	9
1.	Length of Project	9
2.	Proposed Typical Section	9
3.	Proposed Right of Way Width and Access Control	9
4.	Interchange and Service Road Revisions	10
5.	Structures	12
6.	Design Speed	14
7.	Permits	14
8.	Railroad Involvement	14
9.	Pedestrian and Bicycle Accommodations	14

III. ALTERNATIVES CONSIDERED 15

A. Capacity Alternatives 15
1. 6-lane Widening 15
2. 8-lane Widening (Recommended) 15

B. Structural Alternatives 17
1. Relocation of Yadkin River Bridge East of Existing Location (Recommended) 17
2. Reconstruction of Yadkin River Bridge Near Existing Location 17

C. "No Build" Alternative 18

IV. SOCIAL, ECONOMIC, AND ENVIRONMENTAL EFFECTS 19

A. Social Effects 19
1. Land Use 19
2. Neighborhood Characteristics 20
3. Social Impacts 22
4. Title VI and Environmental Justice 23
5. Historic and Cultural Resources 25
6. Section 4(f) Resources 27

B. Economic Effects 27
1. Income Measures and Persons Living Below the Poverty Level. 27
2. Business Activity/Employment Centers 27
3. Secondary/Cumulative Impacts 28

C. Environmental Effects 28
1. Methodology 28
2. Physical Resources 29
3. Biotic Resources 35
4. Jurisdictional Topics 43
5. Flood Hazard Evaluation 51
6. Highway Traffic Noise / Construction Noise Analysis 52
7. Air Quality Analysis 58
8. Hazardous Materials and UST Involvement 61
9. Federal Energy Regulatory Commission (FERC) 62
10. Construction Impacts 62

V. **COMMENTS AND COORDINATION** 64

A. Comments Received from Federal, State, and Local Agencies 64
B. Citizens Informational Workshop 64
C. Public Hearing 65
D. NEPA/404 Merger Team Meeting 65

TABLES

Page

Table 1 - Bridge Data 3
Table 2 - Ramp Analysis – Existing Conditions 7
Table 3 - Accident Rates Along Studied Segment 8
Table 4 - Ramp Analysis – Proposed Improvements 16
Table 5 - Intersection Analysis with Proposed Improvements 16
Table 6 - Population by Race (Rowan/Davidson Counties) 20
Table 7 - Population by Age (Rowan/Davidson Counties) 21
Table 8 - Persons Living Below Poverty Level 27
Table 9 - Descriptions and hydric listings of soil phases found in the project study corridor 31
Table 10 - Streams Impacted in the Project Study Corridor 32
Table 11 - NPDES Permit-Holders in the Project Vicinity 34
Table 12 – Anticipated Impacts to Terrestrial Communities 42
Table 13 – Anticipated Impacts to Wetland Areas in the Project Study Corridor 45
Table 14 – Federally-Protected Species for Rowan/Davidson Counties 48
Table 15 – Federal Species of Concern for Rowan/Davidson Counties 51

MAPS AND ILLUSTRATIONS

Figure 1 - Vicinity Map
Figure 2 - Aerial Mosaic Showing Project
Figure 3A – Davidson County Thoroughfare Plan
Figure 3B – Salisbury (Rowan County) Thoroughfare Plan
Figure 4A – 8-Lane Typical Section
Figure 4B – Proposed Bridges - Typical Sections
Figure 5A – 1997 Existing Conditions – Projected Traffic Volumes
Figure 5B – 2025 Existing Conditions - Projected Traffic Volumes
Figure 5C – 1998 Proposed Improvements – Projected Traffic Volumes
Figure 5D – 2025 Proposed Improvements - Projected Traffic Volumes
Figure 6A – Proposed NC 150 Interchange Intersection Lane Configurations
Figure 6B – Proposed Belmont Blvd Interchange Intersection Lane Configurations
Figure 7 - Environmental Justice Map
Figure 8 – Area of Potential Effect
Figure 9 – Project Quadrangle Map
Figure 10 – Pictures of Wil Cox Bridge (Bridge # 46)
Figure 11 – Surface Water Resources that Will Be Impacted
Figure 12A – Floodplain – Site 2
Figure 12B – Floodplain - Site 3
Figure 12C – Floodplain – Site 4
Figure 13 – Approximate Delineation of 100-yr Floodplain

APPENDICES

Appendix 1 - NCDOT Relocation Programs and Relocatee Reports
Appendix 2 - Traffic Noise and Air Quality Analysis Tables and Figures
Appendix 3 - Comments Received from Federal, State, and Local Agencies
Appendix 4 - Citizens Informational Workshop News Release and Informational Handout
Appendix 5 – NEPA/404 Merger Team Concurrence Forms

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I. BASIS FOR PROPOSED ACTION

A. Purpose of the Project

It is the purpose of the project to provide an acceptable level of service along the subject section of I-85 through the design year of 2025. It is also the intent of the project to improve traffic flow while providing adequate access and connectivity for area residents and businesses. Improvements to this section of I-85 are needed to effectively accommodate increased traffic demand along I-85 on a regional level as well as to establish congruency among the regional system.

It is also the purpose of the project to address the structural deficiencies of the bridges, pipes, and culverts along the project while maintaining traffic along I-85. Two bridges along the project have been targeted for replacement because of structural and capacity inadequacies. Bridge # 137, which carries I-85 over the Yadkin River, was built in 1955. It has 10 years of remaining life and a sufficiency rating of 64.2. Bridge # 404, which carries SR 1147 over South Potts Creek, is a one-lane bridge built in 1921. It has a sufficiency rating of 52.3 and a remaining life of 15 years. Bridge #404 is scheduled to be replaced under TIP Project B-4334. (See Figure 1 for project location and Figure 2 for bridge locations).

B. Existing Conditions

1. Length of Studied Section

The studied portion of I-85 is 6.8 miles (10.9km) in length. The project vicinity is shown in Figure 1.

2. Functional Classification

The studied portion of I-85 is classified as a Rural Principal Arterial-Interstate.

3. Existing Cross Section

The subject section of I-85 consists of four 12ft (3.6m) travel lanes separated by a 30ft (9.0m) median.

4. Project Termini

The project's southern terminus is located just north of Long Ferry Road (SR 2120). At this location I-85 consists of a four-lane facility with 10ft (3.0m) paved shoulders and a 30ft (9.0m) median. TIP Project I-2511, for which right of way acquisition and construction are in progress, will widen this section of I-85 to an eight-lane facility with a 46ft (14.0m) median. The project's northern terminal is located at US 29/70-/I-85 Business. At this location I-85 consists of six lanes with a 30ft (9.1m) median.

5. Right of Way

The existing right of way along the subject project is 200ft (61.0m) throughout with varying right of way limits on proposed bridges, at intersections, and interchanges. Right of way width is symmetrical about the median of the existing facility.

6. Alignment

Broken back curves (two curves turning in the same direction separated by a relatively short tangent) exist on the mainline approaching the bridge over the Yadkin River. Also, the existing curves approaching the Yadkin River do not meet Roadway Design Standard guidelines for the minimum length of curve.

7. Structures

Existing structures are described in Table 1.

Table 1. Bridge Data

Bridge #	Facility Carried	Feature Intersection	Year Built	Vertical Clearance	Remaining Life	Deck Width	Bridge Roadway width	Sufficiency Rating
Rowan County								
135	I-85 NB	SR 2124 and Duke Power RR	1955	20'-11" (6.38m)	10 years	31.4' (9.6m)	28.0' (8.5m)	41.7
136	I-85 SB	SR 2124 and Duke Power RR	1955	20'-09" (6.32m)	14 years	31.4' (9.6m)	28.0' (8.5m)	69.9
137	I-85	Yadkin River	1955	NA	10 years	59.5' (18.1m)	54.2' (16.5m)	64.2
46	US 29 SB	Yadkin River	1922	NA	10 years	23' (7.0m)	20.0' (6.1m)	30.8
392	US 29 NB	Yadkin River	1951	NA	10 years	31.3' (9.5m)	28.0' (8.5m)	67.2
Davidson County								
22*	I-85 SB	Southern RR	1955	22'-07" (6.58m)	6 years	31.5' (9.6m)	28.0' (8.5m)	41.5
18	I-85 NB	Southern RR	1955	22'-07" (6.58m)	6 years	31.5' (9.6m)	28.0' (8.5m)	40.9
41	I-85 SB	US 29/70 & NC 150	1955	15'-00" (4.57m)	10 years	31.5' (9.6m)	28.0' (8.5m)	48.2
20	NC 150 NB	I-85 & US 29, US 52 & US 70	1961	16'04" (4.98m)	15 years	31.3' (9.5m)	28.7' (8.8m)	66.0
111	SR 1295	I-85	1961	16'04" (4.98m)	20 years	31.3' (9.5m)	28.0' (8.5m)	91.5
1	SR 1133	I-85	1961	16'01" (4.90m)	15 years	31.3' (9.5m)	28.0' (8.5m)	77.5
404**	SR 1147	South Potts Creek	1921	N/A	15 years	20.4' (6.2m)	17.0' (5.2m)	52.3
137	US 29-52-70/I-85 Bus. LP.	I-85	1977	16'-00" (4.88m)	35 years	42.0' (12.8m)	40.0' (12.2m)	99

* Bridge # 22, which carries the southbound lanes of I-85 over the Southern Railroad, is scheduled to be replaced under TIP Project B-3833. The replacement of this bridge will be addressed, however, under the subject project I-2304A.

** Bridge #404, which carries SR 1147 over South Potts Creek, is scheduled to be replaced under TIP Project B-4334 and will be addressed in a separate environmental document. Right of way acquisition is scheduled for fiscal year 2001 and construction in fiscal year 2002.

8. Interchanges

a. US 29/70 Interchange

The US 29/70 interchange, located just north of the Yadkin River, incorporates left hand entrance and exit ramps at I-85, and only accommodates exit movements from I-85 southbound and entrance movements from US 29/70 northbound. In addition, the alignment in this area of I-85 is poor. The existing US 29/70 interchange consists of two lanes in the north and south direction. The lanes are carried over the Yadkin River by two bridges. One of those bridges, # 46, was built in 1922 and is in need of replacement.

b. NC 150 Interchange

The NC 150 flyover type interchange is located just to the north of the US 29-70 interchange. The interchange accommodates northbound I-85 exit traffic and southbound I-85 entrance traffic. The closeness of this interchange to the US 29/70 interchange creates traffic flow problems for merging and diverging vehicles.

c. Clark Road Interchange

The Clark Road interchange is a diamond-type interchange located just north of the NC 150 interchange. This interchange is not a standard diamond configuration. The ramps terminate at service roads which are parallel to I-85 instead of at Clark Road, which crosses I-85. These service roads allow access to these high-speed ramp terminals. The closeness of this interchange to the NC 150 Interchange and the Belmont Boulevard Interchange creates traffic flow problems.

d. Belmont Boulevard Interchange

The existing Belmont Boulevard interchange is a diamond type interchange. The ramps terminate at service roads which are parallel to I-85 instead of at Belmont Boulevard, which crosses I-85. These service roads allow access to these high-speed ramp terminals. The closeness of this interchange to the Clark Road Interchange creates traffic flow problems.

e. U.S. 29/70/I-85Business Interchange

This interchange is a flyover type interchange accommodating northbound I-85 exit and southbound I-85 entrance movements. Highway alignment and structural integrity of bridges are adequate at this interchange.

9. Major Drainage Structures

The following is a list of major drainage structures along the project:

- 8ft x 8ft (2.4m x 2.4m) reinforced concrete box culvert (RCBC) located just north of SR 2120
- 4 – 11ft x 11ft (3.4m x 3.4m) RCBC located just south of SR 1147
- 4 – 10ft x 10ft (3.0m x 3.0m) RCBC located just south of US 29-52-70

10. Access Control

I-85 is a fully controlled access facility in accordance with interstate design standards; however, there are breaks in the control of access at several of the interchange ramps.

11. Utilities

The proposed improvements could possibly impact water, sewer, gas, power, television, and telephone lines. Impacts to utilities due to the proposed improvements are considered to be medium to high in severity. The appropriate utilities or local government officials will be consulted concerning possible relocation of utilities.

The following is a list of underground utility owners in the vicinity of the project:

City of Salisbury
Piedmont Natural Gas Company
Duke Power
Southern Bell
Vision Cable
MCI

12. Speed Limit

The posted speed limit along the studied section of I-85 is 65mph (104.6km/hr).

13. Railroad Crossings

Four bridges carry I-85 traffic over the railroad. Duke Power Siding of Southern Railway passes underneath I-85 and runs parallel to Hackett Road (SR 2124). Just east of the grade separation with I-85, Hackett road makes a 90 degree turn and crosses the Norfolk Southern Railroad at grade. Bridges # 135 and # 136 are 135ft in length (41.15m) and carry I-85 over the Duke Power spur line of the Southern Railway. Bridge # 22 is 209ft in length (63.70m) and Bridge # 18 is 230ft in length (70.10m). They carry I-85 over the Norfolk Southern Railway.

14. School Bus Data

No buses use I-85 as a route in Davidson or Rowan counties, therefore, no buses will be affected by the project.

C. Traffic Data and Capacity Analysis

Traffic volumes along I-85 for 1997 range from 31,000 vehicles per day (vpd) south of SR 1224 to 50,100 vpd south of NC 150. Traffic along I-85 is expected to increase to 62,000 vpd and 99,400 vpd by the year 2025 at these same locations. Truck traffic will comprise up to 24 percent of these volumes (6 percent Duals and 18 percent TTST). Proposed and existing traffic volumes, major turning movements, truck data, and design hour data are shown in Figures 5A through 5D.

The concept of level-of-service is defined as a qualitative measure describing operational conditions within a traffic stream and how these conditions are perceived by motorists and/or passengers. A level-of-service definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. Six levels are defined for each type of facility for which analysis procedures are available. They are given letter designations from A to F, with level-of-service A representing the best operation conditions and level-of-service F representing the worst.

1. Ramp Analysis

A ramp analysis was performed for the existing and proposed interchanges along I-85. The results are summarized below in Table 2.

Table 2. Ramp Analysis – Existing Conditions

		Existing Conditions	
		1998	2025
I-85, US 29/70, and Existing NC 150 Interchange Ramps	SB Merge	F	F
(Existing Conditions)	SB Diverge	F	F
	NB Merge	F	F
	NB Diverge	F	F
I-85 and Clark Road (SR 1295) Interchange Ramps	SB Merge	C	F
(Existing Conditions)	SB Diverge	C	F
	NB Merge	D	F
	NB Diverge	D	F
I-85 and Belmont Boulevard (SR 1133) Interchange Ramps	SB Merge	C	F
(Existing Conditions)	SB Diverge	D	F
	NB Merge	D	F
	NB Diverge	C	F

Currently, the subject section of I-85 is operating at a LOS D using a mainline capacity analysis approach. By the design year 2025, the facility will be operating at LOS F. However, the merge operations in the vicinity of US 29/70 and NC 150 control the level of service in this area. Currently, ramp analyses in this area already indicate LOS F. The ramp analyses indicate that the interchange configurations as well as the closeness of the interchanges and high traffic volumes through this area have a negative effect on capacity.

D. Accident Analysis

Table 3 represents a comparison of accident rates along the studied segment of I-85 and the statewide rates for similar rural principal arterial interstate facilities. The rates shown for I-85 were obtained from studies conducted June 1, 1996 to May 31, 1999. The statewide rates were obtained from studies conducted from 1996 to 1998. (Crash rate per 100 Million Vehicle Miles Traveled)

Table 3. Accident Rates Along Studied Segment

Accident Type	I-85	Statewide Rural Principal Arterial Interstate
All Accidents	58.7	67.42
Fatal	1.37	0.81
Non-Fatal	23.21	24.48
Night	18.88	20.85
Wet	12.06	14.63

This data indicates that the accident rates along the studied section of I-85 were similar to the corresponding average statewide rates for rural principal arterial interstate facilities. Only fatal accident types rated above the statewide average.

Further review of the accident data reveals that several of the accidents were concentrated in and around the interchange areas along the subject project. Rear-end collisions and vehicles running off the road constitute the largest percentage of the accidents. The proposed improvements will help reduce the number of these types of accidents as well as improve the overall safety of the highway.

II. DESCRIPTION OF PROPOSED ACTION

A. General Description

The North Carolina Department of Transportation proposes to improve I-85 from north of SR 2120 (Exit 81) in Rowan County to US 29/70/I-85 Business (Exit 87) in Davidson County. The existing four-lane facility is to be widened to an 8-lane interstate facility with a 46ft (14.0m) median. The interchanges and service roads along the project will be revised to accommodate the proposed widening. Inadequate structures along the project will be replaced to conform to current design standards. The proposed improvements are shown in Figure 2. The project has an estimated cost of $143,728,500, including $5,418,500 for right of way acquisition and $138,310,000 for construction.

B. Project Status

The project is included in the 2002-2008 Draft Transportation Improvement Program (TIP). The TIP recommends constructing additional lanes as well as bridge reconstruction. The TIP also recommends including TIP Project B-3833 which is the replacement of bridge # 22 carrying I-85 over the Southern Railway. The proposed improvements are to be federally-funded. The TIP has allocated $5,419,000 for right of way acquisition and $138,240,000 for construction. The total amount of allocated funds for the project is $146,680,000, including $ 3,021,000 spent in prior years. Right of way acquisition is scheduled to begin in Fiscal Year 2003 and construction in Fiscal Year 2007.

C. Recommended Improvements

1. Length of Project

The studied portion of I-85 is 6.8 miles (10.9km) in length.

2. Proposed Typical Section

The proposed typical section consists of eight 12ft (3.6m) lanes, four in each direction, separated by a 46ft (14.0m) median. 12ft (3.6m) median paved shoulders and 12ft (3.6m) outside paved shoulders are proposed. The proposed typical section is shown in Figure 4.

3. Proposed Right of Way Width and Access Control

The acquisition of additional right of way will be necessary to contain the proposed improvements. Between intersections approximately 150 ft (45.7m) of right of way will be required along I-85. In the vicinity of the interchanges, variable amounts of right of way will be required.

In keeping with Federal Highway Administration policies regarding Interstate routes, the NCDOT will maintain full control of access along the subject section of I-85. Access will also be controlled along those roads crossing I-85 in the immediate vicinity of the ramp terminals. All service road access to I-85 ramps will be eliminated. Service road extensions will be provided where necessary to allow access to roads crossing I-85.

4. Interchange and Service Road Revisions

The following is a description of the proposed interchange and service road revisions along the project.

a. Willow Creek Drive (SR 2180)/Hackett Road (SR 2124) Underpass

Willow Creek Drive is a service road originating at Long Ferry Road (SR 2120) on the east side of I-85. The road parallels I-85 northward intersecting Hackett Road, which crosses under I-85 at bridges # 135 and # 136. The intersection is awkward, involving a railroad crossing and a very narrow turning radius. The proposed project would eliminate this intersection by ending Hackett Road to the west of I-85. Willow Creek Drive would be reconstructed to the east of its existing location throughout its length, but will not connect to Hackett Road to provide access under I-85.

b. Hinkle Lane (SR 2181)

Hinkle Lane is a service road beginning at SR 2120 on the west side of I-85. The proposed project would reconstruct Hinkle Lane to the west and extend that road approximately 1500 feet to the north to improve access to Finetex.

c. US 29/70, NC 150, and Clark Road

The existing configuration and closeness of these three interchanges negatively affect traffic flow as well as add to driver confusion. The US 29/70 interchange incorporates left hand entrance and exit ramps at I-85, and only accommodates exit movements from I-85 southbound and entrance movements from US 29/70 northbound. In addition the poor existing horizontal alignment of I-85 in this area further complicates its use. Just to the north of this interchange is located the NC 150 flyover type interchange. The closeness of this interchange to the US 29/70 interchange creates traffic flow problems for merging and diverging vehicles. Similarly, the Clark Road interchange located just north of the NC 150 interchange negatively affects traffic flow in this complicated merge area.

In order to provide an adequate level of traffic service, improve traffic flow, and simplify this confusing interchange area, the proposed project would replace these 3 interchanges with one full movement interchange. The proposed

interchange would be located in the vicinity of the existing NC 150 interchange and would be a partial cloverleaf with loops and ramps in the southeast and northwest quadrants (See Figure 2 for interchange configuration and Figure 6A for Intersection Treatment). Access to US 29/70 will be accommodated through a 2-lane, 2-way service road from the new interchange on the west side of I-85. The new interchange would also provide direct access to 7 Oaks Drive (SR 1285) to the east and NC 150 to the west. Also along the east side of I-85, a service road would be provided parallel to I-85 and would continue to north of the existing Clark Road interchange. Due to environmental constraints, it is not recommended that this service road connect to the Belmont Boulevard Interchange. Therefore, this service road will be a cul-de-sac just north of the existing Clark Road interchange.

The existing US 29/70 interchange consists of two lanes in the north and south direction. The lanes are carried over the Yadkin River by two bridges. One of those bridges, # 46, was built in 1922 and is in need of replacement. It is projected that 7,600 vehicles per day will use this interchange in the design year 2025. Four lanes are not needed to adequately accommodate this amount of traffic. Therefore, the proposed project would remove vehicular traffic from Bridge # 46 and leave that bridge in place to accommodate bicycle and pedestrian traffic, which would save the cost for its replacement. The parallel bridge which currently carries northbound US 29/70 traffic (bridge # 392) would be re-striped to accommodate north and southbound traffic within its existing two lanes. A new service road would be provided to connect bridge # 392 to the proposed new interchange to the north. Bridge #392 may require rehabilitation work.

Also, along the west side of I-85, Old Salisbury Road (SR 1138 and SR 1147) intersects NC 150 in a skewed alignment creating substandard sight distance. In order to improve safety in this intersection area, Old Salisbury Road will be terminated in a cul-de-sac on the south side of NC 150. South of this proposed cul-de-sac, Old Salisbury Road forms a y-intersection with Hilltop Drive. Hilltop Drive will be terminated into a cul-de-sac prior to reaching the proposed service road. Access to NC 150 from the neighborhoods adjacent to Old Salisbury Road will be provided by the proposed service road connecting the new interchange with existing US 29/70. In order to improve access for area residents to the proposed new service road, a new connecting road between Old Salisbury Road and the new service road is proposed. This is accomplished by extending Sowers Road (SR 1139) towards the new service road.

As stated above, the Clark Road interchange's close proximity to the NC 150 and US 29/70 merge area is having a negative impact on traffic flow and level of service along I-85. Additionally, the bridge which carries Clark Road over I-85 is in need of replacement. Also, the interchange is not expected to have a significant traffic demand. It is anticipated that the interchange will provide access to and from I-85 to 6,600 vehicles per day in the design year 2025. Therefore, the

proposed project would remove the Clark Road interchange and bridge with out replacement. Area motorists would be required to access I-85 at the proposed new interchange near NC 150 or at the Belmont Boulevard interchange.

d. Belmont Boulevard Interchange

This existing diamond type interchange will be reconstructed into a partial cloverleaf interchange. The ramps and loops of the interchange will be located on the south side. The new interchange will be constructed slightly to the south of the existing configuration (See Figure 2 for proposed interchange configuration and Figure 6B for Intersection Treatment).

The existing service roads along the west side of I-85 currently intersect the interchange ramps. These service roads will be relocated to the west to tie into Belmont Boulevard outside the interchange area. To the east of the interchange Belmont Boulevard would be extended to tie into Belmont Road (SR 3159)/NC 47. This extension would eliminate the existing poor horizontal alignment along Belmont Road. Belmont Road (SR 3159)/NC 47 will be a cul-de-sac east of the proposed Belmont Boulevard interchange. Also on the east side of I-85, Belmont Road (SR 1286) would be reconstructed westward to the north of the interchange.

e. U.S. 29/70/I-85Business Interchange

No improvements are proposed at this interchange.

5. Structures

Nine bridges along the project will be replace or removed without replacement. The following bridge improvements are proposed:

a. Bridge #'s 135 and # 136

These bridges carry I-85 over Hackett Road (SR 2124). They will be replaced by dual structures, approximately 150 ft (45.7m) in length, just to the east of their existing location (see Figure 4B for proposed typical section).

b. Bridge # 137 (Rowan County), # 22, and # 18

Bridge # 137 carries I-85 over the Yadkin River. Bridges # 22 and # 18 carry I-85 over the Southern Railroad. These bridges will be replaced by dual structures which will span the Yadkin River, its adjacent wetlands, and the Southern Railroad. The dual structures would be approximately 3000ft (914.4m) in length and would be located approximately 500ft (152.4m) east of Bridge # 137's existing location (see Figure 4B for proposed typical section).

Because the removal of Bridge #137 over the Yadkin River will raise sediment concerns, a turbidity curtain is recommended. The superstructure for Bridge # 137 is composed of a reinforced concrete deck on I-beams. The substructure contains end bents that are composed of reinforced concrete caps with steel piles, and the interior bents consist of reinforced concrete posts and beams. The concrete from the deck, beams and posts will contribute to the temporary fill resulting from bridge demolition debris. The resulting temporary fill will be approximately 1,254 cubic yards. NCDOT will implement the Best Management Practices for Bridge Demolition and Removal.

c. Bridge # 41

Bridge # 41 carries I-85 over US 29/70. Due to the proposed interchange revisions in this area, this bridge will no longer be needed and will be removed without replacement.

d. Bridges # 392 and # 46

These bridges carry US 29/70 over the Yadkin River. Bridge # 392, which currently accommodates 2 lanes in the northbound direction, will be retained and converted to accommodate north and southbound US 29/70 traffic. Bridge # 46, which carries 2 lanes of US 29-70 over the Yadkin River in the southbound direction, will remain in place but will be closed to vehicular traffic. The bridge will remain in place to serve pedestrian and bicycle traffic. Ownership, liability, and maintenance responsibilities for Bridge # 46 are currently being discussed by the Rowan and Davidson County Commissioners, the Transportation Museum, and the State Historic Preservation Office (SHPO). It is anticipated that these issues will be resolved by the completion of the final environmental document.

e. Bridge # 20

Bridge # 20 carries NC 150 over I-85. This bridge will be removed. A new interchange (and new bridge over I-85) is proposed in this area which will serve NC 150 and US 29/70 traffic. The new bridge length is approximately 275ft (83.8m) (See Figure 4B for proposed typical section).

f. Bridge # 111

Bridge # 111 carries Clark Road (SR 1295) over I-85. This bridge will be removed without replacement.

g. Bridge # 1

Bridge # 1 carries Belmont Road (SR 1133) over I-85. The bridge will be removed and replaced by new structure, approximately 200ft (61.0m) in length,

just south of its existing location (See Figure 4B for proposed typical section).

h. Bridge # 137 (Davidson County)

Bridge # 137 carries US 29/70/I-85 Business over I-85. This bridge will remain in place with no improvements.

6. Design Speed

The proposed design speed is 70mph (112.7km/hr).

7. Permits

Impacts to jurisdictional surface waters and wetlands are anticipated. In accordance with provisions of section 404 of the Clean Water Act (33 U.S.C. 1344), a permit will be required from the COE for the discharge of dredged or fill material into "Waters of the United States." Due to the scope of the proposed project, a Section 404 Individual Permit will be necessary.

A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality Certification is required prior to the issuance of the Section 404. Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulations, and ensures that the state's water quality standards will not be violated.

8. Railroad Involvement

Bridges # 135 and # 136 carry I-85 over a spur line of the Southern Railway. Those bridges would be replaced with dual structures just to the east of their existing location. Bridges # 22 and # 18 carry I-85 over the Southern Railway. Those bridges would be replaced by dual structures which would also span the Yadkin River. NCDOT will coordinate with the Southern Railway concerning highway improvements which involve the railroad. NCDOT will also coordinate with Railroad officials regarding the North Carolina Railroad Charlotte to Raleigh Corridor.

9. Pedestrian and Bicycle Accommodations

The project involves the reconstruction of an interstate facility. Pedestrian or bicycle accommodations are not included in the proposed improvements. Additionally, the need for bicycle and pedestrian accommodations along roads that cross I-85 has not been identified. However, local governments have expressed interest in retaining Bridge #46, which carries southbound US 29-70 over the Yadkin River, to accommodate pedestrian and bicycle traffic. NCDOT will coordinate with the local authorities to accomplish this.

III. ALTERNATIVES CONSIDERED

A. Capacity Alternatives

1. 6-lane Widening

The 6-lane widening alternative consists of widening existing I-85 [4-lane roadway with a 30ft (48.3m) median] to a 6-lane roadway with a 70ft (21.3m) median along with interchange reconstruction. This alternative would improve the LOS along I-85 for a few years. However, by design year 2025, a 6-lane facility would be operating at LOS F and would require additional lanes. Therefore, this alternative is not recommended.

2. 8-lane Widening (Recommended)

This alternative would widen the subject section of I-85 to an 8-lane facility with a 46ft (14.0m) median. Because widening to eight lanes alone will not provide an acceptable LOS through the congested merge/diverge area in the vicinity of US 29/70, NC 150, and Clark Road, interchange and service road reconfigurations are also proposed. The existing configuration of these three interchanges and complicated merge areas throughout the project area negatively affect traffic flow, as well as add to driver confusion. This alternative would replace the three partial movement interchanges of US 29/70, NC 150, and Clark Road with one full-movement interchange in the vicinity of NC 150. This would provide a LOS D along the entire project through the design year 2025, while the ramp connections of the new interchange would operate at LOS C (See Table 4).

The Belmont Boulevard Interchange would also be reconstructed. The existing diamond type interchange will be reconstructed into a partial cloverleaf interchange. Service road reconstruction will also be performed in this area.

a. Ramp Analysis

A ramp analysis was performed at the proposed intersections of the project. The results are summarized below in Table 4.

Table 4. Ramp Analysis - Proposed Improvements

		Proposed
		2025
I-85 and Proposed NC 150 Interchange Ramps	SB Merge	C
	SB Diverge	B
	NB Merge	C
	NB Diverge	C
I-85 and SR 1133 Interchange Ramps	SB Merge	C
	SB Diverge	C
	NB Merge	C
	NB Diverge	B

Acceptable levels of service result from the ramp analyses of the proposed I-85/NC 150 interchange and the I-85/SR 1133 interchange.

b. Intersection Analysis

Analyses were performed on the proposed ramp terminal intersections throughout the project. The analyses were performed using storage lane recommendations for an unsignalized, two-way stop condition. The following table summarizes the intersection analyses.

Table 5. Intersection Analysis with Proposed Improvements

	2025
I-85 SB Exit & Entry, NC 150 & SRB2	C
I-85 NB Exit & Entry, NC 150 & SR 1285	B
I-85 SB Exit & Entry, SR 1133 & SRA	B
I-85 NB Exit & Entry, SR 1133 & SRD2	A

The above data shows that with the proposed improvements, acceptable levels of service will be reached at the ramp terminal intersections.

B. Structural Alternatives

1. Relocation of Yadkin River Bridge (#137) East of Existing Location (Recommended)

Bridge # 137 carries I-85 over the Yadkin River. This bridge will be replaced by dual structures which will span the Yadkin River, its adjacent wetlands, and the Southern Railroad. The dual structures would be approximately 3,000ft (914.4m) in length and would be located approximately 500ft (152.4m) east of Bridge # 137's existing location (see Figure 4B for proposed typical section). By constructing these dual structures to the east of the existing bridge, traffic can be maintained along the existing bridge until construction is complete. Additionally, locating the new bridges to the east of the existing location would correct horizontal and vertical alignment deficiencies in this area. The existing bridge, along with the existing I-85 roadway south of the Yadkin River, will be removed after the project's construction.

2. Reconstruction of Yadkin River Bridge near Existing Location

Reconstructing the Yadkin River Bridge near its existing location and widening I-85 symmetrically about its existing centerline in the vicinity of the Yadkin River was investigated. Existing I-85 in the vicinity of the Yadkin River Bridge has vertical and horizontal alignment deficiencies. Correcting these deficiencies and providing an alignment closer to the existing bridge (than is proposed in Structural Alternative 1) could not be accomplished while maintaining traffic along I-85 during construction of the project. The existing vertical curvature of I-85 in the vicinity of the bridge does not meet minimum design standards for the design speed of the project. In order to correct this vertical curve problem and maintain traffic during construction, the new alignment must be located far enough away from existing I-85 so that its new fill slopes do not impact the existing travel way during construction. Any alignment located closer to the existing Yadkin River Bridge than Structural Alternative 1 would impact existing I-85 with the new fill slopes. Therefore, traffic could not be maintained during the construction of the new bridges.

Additionally, while the horizontal curvature of I-85 in the vicinity of the Yadkin River just meets the design speed standards, it is not desirable to have a horizontal curve of this magnitude on a high-speed facility in close proximity to structures. Rebuilding the new bridges near the existing location would not offer the opportunity to improve the horizontal curvature of I-85 in this area.

Due to the construction problems associated with this alternative, and in order to provide acceptable vertical and horizontal alignment and maintain traffic, this alternative is not recommended.

C. "No Build" Alternative

Portions of the existing facility are already operating at LOS F in the vicinity of US 29/70. By the design year 2025, the entire project length will be operating at LOS F.

This alternative would avoid the environmental impacts that are anticipated as a result of the project; however, this alternative does not meet the purpose of the project to improve the level of traffic service and traffic flow in the project area. Therefore, there would be no positive effect on the traffic capacity and safety of the highway. This alternative is not recommended, however, it does serve as a basis for comparison of other alternatives.

IV. SOCIAL, ECONOMIC, AND ENVIRONMENTAL EFFECTS

A. Social Effects

1. Land Use

a. Status of Planning

Davidson County has a General Land Use Plan that provides some basic recommendations for land use in the county, but Rowan County has no such plan.

b. Existing Zoning/Land Use

Agricultural/residential, industrial, and highway commercial zoning characterize the section of the project in Davidson Co. The Kimberly Clark plant and the Sopona Business Park are located in the industrially zoned area at the eastern end of the project. Highway commercial zoning is located at several points along the project's length. Truck stops, motels, and a mobile home factory occupy these locations. The remainder of the area along the project in Davidson County is zoned for agricultural/residential use. Areas with this classification are characterized by residences, woodlands, and cultivated fields. As the project enters Rowan County, it falls into that county's zoning jurisdiction. Land on both sides of I-85 is zoned for industrial use or for rural agricultural use. Both classifications allow a variety of industrial and business uses. Two large textile plants, the North Carolina Finishing Co. and Cannon/Fieldcrest Mills, are located in this area.

c. Future Land Use

Davidson County planners believe that the completion of the project might generate requests to rezone some property along the highway from agricultural/residential to highway commercial use. These requests are most likely to come from owners of undeveloped land around the three interchanges planned for the Davidson Co. section of the project.

d. Farmland Impacts

The project is located in an area that is zoned for urban development; therefore, analysis for the project's impact on prime or important agricultural lands and soils is required.

The Farmland Protection Policy Act requires all federal agencies, or their representatives, to consider the impact of land acquisition and construction projects on the prime and important farmland soils. North Carolina Executive Order Number 96, Preservation of Prime Agricultural and Forest Lands, requires

all state agencies to consider the impact of land acquisition and construction projects on prime farmland soils, as designated by the U.S. Natural Resources Conservation Service (NRCS). The soils are determined by the NRCS based on criteria such as crop yield and level of input of economic resources. Land which is planned or zoned for urban development is not subject to the same level of preservation afforded to other rural agricultural areas.

2. Neighborhood Characteristics

a. Geographic and Political Location

The project passes through two of the most urbanized of all the state's 100 counties, each possessing strong local economies. Over the past seven years, the population of this two-county area grew at a rate of 10.9%, just below the 12% rate for the entire state. Davidson Co. is the state's 11th most populous county, and Rowan Co. is the 13th most populous county. Rowan County had the 34th highest per capita income and the 11th highest average wage per worker. Davidson Co. ranked 29th in these same categories. Most workers in the two-county area are employed in manufacturing jobs, but retail businesses also employ a large share.

b. Race, Ethnicity, and Age

According to the 1990 Census, the population of Rowan/Davidson County was 127,002. During the period of 1990-1997, the population grew by 10.9%. Population by race is summarized in Table 6.

Table 6. Population by Race (Rowan/Davidson Counties)

Race	Project Area		County		State	
	Number	%	Number	%	Number	%
White	19,505	83.4%	113,387	89.3%	5,011,248	75.6%
Black	3,679	15.7%	12,178	9.6%	1,455,340	22.0%
American Indian	109	0.5%	449	0.4%	82,606	1.2%
Asian/Pacific Islander	38	0.2%	514	0.4%	50,395	0.8%
Hispanic	47	0.2%	474	0.4%	69,020	1.0%
TOTAL	**23,378**	**100.0%**	**127,002**	**100.0%**	**6,628,637**	**100.0%**

In 1990, the number of white county residents was 113,387 (89.3%) and 10.7% are non-white.

Table 7 summarizes the population by age. The median age for Rowan/Davidson Counties is 34.6 in comparison with the state average of 33.2.

Table 7. Population by Age (Rowan/Davidson Counties)

Age Value	Project Area	County	State
Median Age	33.4	34.6	33.2
% Under 18	25.0%	23.8%	24.3%
% Over 65	12.1%	12.0%	12.1%

c. Public Facilities, Schools and Institutions

- Schools, Libraries, Post Offices, Churches, Etc.

  Greer's Chapel Methodist Church is located just north of the project's corridor in the vicinity of Clark Road. The New Zion Baptist Church is located south of the project along SR 1136. The Hilltop Living Center, an elderly care facility, is located within the project corridor just east of the point where US 29/70 leaves I-85. The facilities mentioned above should not be affected by this project.

- Police, Fire, Emergency Services

  No such services are located along or adjacent to the project.

d. Business Activity/Employment Centers

A wide variety of small businesses and large employment centers are located along the project's route. A heavy concentration of manufacturing and commercial activity is located around the eastern end of project in Davidson County. Kimberly Clark, an international paper products company employing over 100 workers is located at this end. Also located at this end of the project is Sopona Business Park. Included among the park's tenants are a fitness gym, construction companies, an automobile racing firm, and others. Other businesses located along the project's route in Davidson Co. include a metal fabricator, a furniture store, and Southern Manufactured Homes, a large mobile home producer. In Rowan Co., FineTex, a textile firm employing 50-100 workers is located beside the project. The NC Finishing Co. and Cannon/Fieldcrest Mills, two other large textile plants employing large numbers of workers, are located nearby along NC 29/70.

e. Relocations

Additional right of way will be needed to construct the project. Temporary construction easements will also be required. A relocation report for the recommended alternative was prepared. Under this alternative, it is anticipated

that 24 residences and 4 businesses will be relocated. This relocation report is included in Appendix A of this report.

For all relocations, it is the policy of the NCDOT to ensure that comparable replacement housing will be available prior to construction of State and Federally assisted projects. Furthermore, the North Carolina Board of Transportation has the following three programs to minimize the inconvenience of relocation:

*Relocation Assistance
*Relocation Moving Payments, and
*Relocation replacement housing payments or rent

3. Social Impacts

a. Community Stability and Neighborhood Cohesion

While the proposed improvements to the I-85 corridor will improve existing traffic flow and ease problems with congestion, there will likely be some project-related impacts to various dwellings which are located along the existing highway.

The land use conflicts associated with widening projects generally come at the edges of existing properties and development, not by splitting and isolating existing properties and developments. As such, some existing properties lying along the boundary with the highway may lose a portion or all of the dwellings or businesses which are in a particular neighborhood or commercial development. The conflicts and relocations associated with this project are primarily along the edges of those properties adjoining the highway right-of-way boundary. However, these impacts are generally not of the sort which create a barrier that separates or isolates residents from jobs, family and neighbors or services. Existing access to jobs, transportation and other aspects of the remaining community may be retained or may in fact be enhanced due to the proposed project. Furthermore, as the project improvements and impacts are felt by all properties lying along the length of the existing highway, the impacts upon particular areas generally would not be described as disproportionate or highly adverse, as these impacts fall only upon those portions of properties adjoining the highway which run along the entire length of the project.

b. Tax Base Changes

As noted above, the recommended alternative may cause the relocation of 24 residences and 4 businesses. These potential relocations may have an impact on the county's tax base or business and employment patterns in the area.

4. Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964, and related statutes, requires there be no discrimination in Federally-assisted programs on the basis of race, color, national origin, age, sex, or disability. Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provides that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high[1] and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations." The Executive Order makes clear that its provisions apply fully to American Indian populations and Indian tribes. Environmental justice refers to the equitable treatment of people of all races, cultures, and income with respect to the development, implementation and enforcement of environmental laws, regulations and policies.

NDOT's Right of Way Branch investigated the project area for suitable replacement housing. It was determined that there will be adequate Decent, Safe and Sanitary (DSS) housing available during the relocation period. Last Resort Housing should be considered for the project relocatees. For mobile home owners or tenants, eligible displaced occupants are generally entitled to the same type moving and replacement housing payments as the occupant of a conventional home. Last resort housing is designed to assist displacees whose housing supplement exceeds $22,500 for 180 day owners and $5,250 for tenants and 90 day owners, who cannot otherwise be offered comparable housing. Any amounts exceeding above the limits will be handled on an individual basis and in the case of a tenant are usually paid to a third party over a 42-month period.

Several low-income areas were found within the study corridor of the project. These areas are summarized below.

a. Low-Income Areas Along Project

Potential locations for Environmental Justice Issues exist along the project area. These areas are shown in Figure 7 and their locations are summarized below:

1. Area # 1 (Low-Income Concentration)
This area consists of a cluster of mobile homes located along the southern side I-85 in Davidson Co. just east of SR 1134, or Sam Sharpe

[1] **Disproprtionately High** adverse effect (see foot note 2 for adverse effect) on minority and low-income populations means an adverse effect that: (1) is predominately borne by a minority population and/or a low-income population, or (2) will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population [adopted from the Final DOT Order on Environmental Justice].

Rd. The population percentages of this census block do not qualify it as an area of minority concentration. The income and demographic characteristics of its block group would normally not qualify it as an area of low-income concentration. However, it is assumed that low-income residents occupy mobile homes. It, therefore, is considered an area of low-income concentration.

2. Area # 4 (Low-Income Concentration)

This area does not qualify as an area of minority concentration. It is, however, populated with a number of mobile homes. Demographic characteristics indicate that it should be considered an area of low-income concentration. There are fourteen potential relocatees in this low-income area. Thirteen of the fourteen potential relocatees are located in the Williams Trailer Park. Because of the closeness of the trailers to I-85 in this area, any improvements to the interstate would necessitate substantial relocations. An alternative was analyzed which would reduce the number of potential relocations in this area from 14 to 9. This alternative is described in Section III.B.2 of this report as the "Reconstruction of Yadkin River Bridge Near Existing Location". As stated earlier, this alternative is not feasible because it would not allow maintenance of traffic along I-85 during construction of the project due to the grade changes required in this area. The "No Build" alternative is the only alternative that would avoid substantial impacts to the trailer park.

3. Area # 6 (Low-Income Concentration)

This area consists of census blocks that run along the northern side of the project in Davidson County. It extends eastward from NC 150 to the eastern end of the project. It does not qualify as an area of minority concentration, but demographic statistics indicate that it too should be considered an area of low-income concentration. Its block group had an MHI of $21,214, which was 24% less than Davidson County's. The MHV of the block group was slightly less than the MHV of Davidson County. Also, 36% of the housing units in the block group were mobile homes.

b. Project Effects on Low-Income Area

During the development of this project, no concerns have been raised by the public or local government officials regarding the projects' impact on minority or low-income populations. The proposed improvements have been presented to the public at a Citizen's Informational Workshop and at separate Local Officials Meetings. Following the circulation of the Environmental Assessment, a public hearing will be held offering further public participation opportunities. The following describes the project's potential effect on the designated low-income areas.

1. Area #1

There are three potential relocatees in this low-income area. These potential relocatees are trailers located along SR 1287 (Clyde Fitzgerald Road). Because of the closeness of these trailers to I-85, any improvements to that facility would impact those properties. It was required that the alignment of SR 1287 be shifted to the east in order to accommodate widening and maintain service road access in this area. This causes three house trailers to be considered potential relocatees.

2. Area # 4

There are fourteen potential relocatees in this low-income area. Thirteen of the fourteen potential relocatees are located in the Williams Trailer Park. Because of the closeness of the trailers to I-85 in this area, any improvements to the interstate would necessitate substantial relocations. An alternative was analyzed which would reduce the number of potential relocations in this area from 14 to 9. This alternative is described in Section III.B.2 of this report as the "Reconstruction of Yadkin River Bridge at Existing Location". As stated earlier, this alternative is not feasible because it would not allow maintenance of traffic along I-85 during construction of the project due to the grade changes required in this area. The "No Build" alternative is the only alternative which would avoid substantial impacts to the trailer park.

3. Area #6

There are six potential relocatees in this low-income area. These potential relocatees are located along I-85 and in the vicinity of the Belmont Boulevard Interchange. Impacts are due to the widening of I-85 and the reconstruction of the Belmont Boulevard Interchange. Only the "No Build" alternative would avoid impacts to these homes, due to their closeness to I-85.

5. Historic and Cultural Resources

a. Historic Architectural Resources

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, implemented by the by the Advisory Council on Historic Preservation's Regulations for compliance with Section 106, codified at 36 CFR Part 800. Section 106 requires that if a federally funded, licensed or permitted project has an effect on a property listed on or eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation will be given an opportunity to comment.

To comply with Section 106, the area of potential effect (APE) of the project was surveyed by NCDOT and reviewed with the State Historic Preservation

Office (SHPO). The site was surveyed in November and December of 1998 by NCDOT staff architectural historians, and determined one structure eligible for the National Register of Historic Places. The eligible structure is Bridge # 46, the "Wil Cox Bridge", located on US 29/70, which spans the Yadkin River at the Davidson/Rowan County line. Figure 8 is a map detailing the area of the potential effect. This eligible structure is identified on Figure 9.

Bridge # 46, the "Wil Cox Bridge," constructed in 1922, is a concrete arch bridge, 1299ft (395.9m) long with a maximum span of 160ft (48.8m). There are eleven spans total. The 4 approach spans are reinforced concrete deck girders. The seven main spans are open spandrel reinforced concrete deck arches. An open spandrel bridge is an unfilled spandrel where the arch ring receives its loads through interior spandrel walls, ports, columns, or traverse walls. There are twenty-nine concrete arch bridges in North Carolina. Of these twenty-nine, five are open spandrels. Bridge # 46 embodies the distinctive characteristics of an open spandrel concrete bridge and for that reason is considered eligible for listing on the National Register. (See Figure 10 for pictures).

Due to the proposed improvements of TIP Project No. I-2304A, the "Wil Cox Bridge" Bridge # 46, which accommodates 2 lanes in the southbound direction, will remain in place, but will be closed to vehicular traffic. The bridge will remain in place to serve pedestrian and bicycle traffic.

Because this bridge will be preserved in place, it has been determined that there will be no adverse effect[2].

b. Archaeological Resources

The State Historic Preservation Officer (SHPO) reviewed the proposed project regarding the identification of archaeological sites. The SHPO stated in a letter that "Fort York was determined to be potentially eligible for the National Register of Historic Places under Criteria A (association with events that have made a significant contribution to the broad patterns of history) and D (likely to yield information important in prehistory or history). Further work at Fort York, which will not be adversely impacted by the proposed project, should consist of the production of a detailed map of the surface features. It is recommended that as much mapping of the site as possible be done during the survey for the final roadway design."

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[2] **Adverse effects** means significant cumulative human health or environmental effects, including social and economic effects, which may include, but are not limited to: bodily impairment, infirmity, illness or death; air, noise, and water pollution and soil contamination; vibration; destruction or diminution of aesthetic values; destruction or disruption of man-made or natural resources, of community cohesion or a community's economic vitality, or of the availability of public and private facilities and services; adverse employment effects; displacement of persons, businesses, farms, or nonprofit organizations; increased traffic congestion; isolation, exclusion or separation of minority or low-income individuals within a given community or from the broader community; and the denial of, reduction in, or significant delay in the receipt of, benefits of DOT programs, policies, or activities.

6. Section 4(f) Resources

Section 4(f) of the U.S. Department of Transportation Act of 1966 specifies that publicly owned land from a park, recreation area, or wildlife or waterfowl refuge or land from historic resources of national, state, or local significance may be used for Federal-Aid projects only if:

(1) There is no feasible and prudent alternative to the use of such land.
(2) Such highway program or project includes all possible planning to minimize harm to 4(f) lands resulting from such use.

The "Wil Cox Bridge" Bridge # 46, and the Fort York property are considered a 4(f) properties in the vicinity of the project. Because the "Wil Cox Bridge" will remain in place to serve pedestrian and bicycle traffic, it will not be affected by the project. Because the proposed roadway will be moved further away from the Fort York Archaeological Site, the project will have no direct or indirect effects on the site.

B. Economic Effects

1. Income Measures and Persons Living Below the Poverty Level

Table 8 summarizes persons living below poverty level. The 1990 median household income for Rowan/Davidson Counties was $27,913. Per capita income was $12,597. Rowan/Davidson Counties had 9.8% of the population living below poverty level, of whom 5.2% live at or below 50% of the poverty level.

Table 8. Persons Living Below Poverty Level (Rowan/Davidson Counties)

Income Value	Project Area	County	State
Median Household Income	$24,399	$27,913	$26,647
Per Capita Income	$11,065	$12,597	$12,885
Households Below Poverty Level	13.1%	9.8%	13.0%
Households Below 50% Poverty Level	5.0%	3.8%	5.2%
Unemployment Rate	-------	2.3%	-------

2. Business Activity/Employment Centers

A wide variety of small businesses and large employment centers are located along the project's route. A heavy concentration of manufacturing and commercial

activity is located around the eastern end of project in Davidson County. Kimberly Clark, an international paper products company employing over 100 workers is located at this end. Also located at this end of the project is Sopona Business Park. Included among the park's tenants are a fitness gym, construction companies, an automobile racing firm, and others. Other business located along the project's route in Davidson Co. include a metal fabricator, a furniture store, and Southern Manufactured Homes, a large mobile home producer. In Rowan Co., FineTex, a textile firm employing 50-100 workers is located beside the project. The NC Finishing Co. and Cannon/Fieldcrest Mills, two other large textile plants employing large numbers of workers, are located nearby along NC 29/70.

3. Secondary/Cumulative Impacts

The project will not directly stimulate any particular development, however, it may indirectly encourage commercial and industrial development on land along its length.

Over the past several years, some large industrial plants as well as some highway commercial businesses, such as truck stops, restaurants, and furniture stores have developed along the Davidson Co. section of the project.

Large industrial plants have also developed along the Rowan Co. section. The land along the project is zoned for such development and local infrastructure can support it. By relieving congestion along I-85 and creating access to adjacent undeveloped areas, the project may enhance the development potential of land along the interstate and continue these development trends.

C. Environmental Effects

1. Methodology

Information sources used in the pre-field investigation of the study area include: U.S. Geological Survey (USGS) quadrangle maps (Lexington West, Salisbury, Southmont), U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Maps (Lexington West, Salisbury, Southmont), Department of Agriculture (Soil Conservation Service) soil surveys (Rowan County-1990, Davidson County-1994), and NCDOT aerial photographs of project area (1:10,000). Water resource information was obtained from publications of the Department of Environment and Natural Resources (DEHNR-DWQ, 1997, 1998) and from the NC Center for Geographic Information and Analysis (Environmental Sensitivity Base Map of Rowan and Davidson Counties, 1995). Information concerning the occurrence of federal and state protected species in the study area was gathered from the Fish and Wildlife Service (FWS) list of protected species and species of concern (15 January 1999), and the N.C. Natural Heritage Program (NHP) database of rare species and unique habitats (checked 24 February 1999).

General field surveys were conducted along the proposed alignment by NCDOT biologists Susan Brady and Chris Murray on 3-4 February 1999 and Susan Brady and Teryn Smith on 2-4 March 1999. Plant communities and their associated wildlife were identified and recorded. Wildlife identification involved using one or more of the following observation techniques: active searching and capture, visual observations (binoculars), and identifying characteristic signs of wildlife (sounds, scat, tracks and burrows). Jurisdictional wetland determinations were performed utilizing delineation criteria prescribed in the "Corps of Engineers Wetland Delineation Manual" (Environmental Laboratory, 1987).

Definitions for aerial descriptions used in this report are as follows: Project Study Corridor denotes a corridor approximately 1100ft (335m) wide, variable around interchanges; Project Study Area denotes the area bounded by proposed construction limits; Project Vicinity describes an area extending 0.5miles (0.8 km) on all sides of the project study area; and Project Region is equivalent to an area represented by a 7.5 minute USGS quadrangle map with the project occupying the central position.

a. Qualifications of Principal Investigator

Investigator:	Susan G. Brady, Natural Systems Specialist, NCDOT.
Education:	B.S. Environmental Studies, University of Maine at Machias.
	M.S. Marine Biology, University of North Carolina at Wilmington.
Experience:	Research Technician, UNC-Wilmington, Jan. 1995- Dec. 1995
	Contract Biologist, NC Wildlife Resources Commission/ Nongame and Endangered Species Division, May 1998-Sept. 1998.
	NC Department of Transportation/ Project Development and Environmental Analysis Branch, Oct. 1998-present.

2. Physical Resources

Soil and water resources occurring in the study area are discussed below. Soils and availability of water directly influence composition and distribution of flora and fauna in any biotic community.

The project study area lies within the Piedmont physiographic province. The topography in this section of Rowan and Davidson Counties is characterized as gently rolling to hilly. The project area has rolling topography, and crosses the floodplain of the Yadkin River. Project elevation ranges between approximately 650ft (198.1 m) and 700ft (213.3m) above mean sea level.

a. Soils

There are twenty soil phases occurring within the project boundaries: Armenia silt loam (occasionally flooded), Cecil clay loam (8-15% slope, eroded), Cecil sandy clay loam (2-8% slope), Cecil sandy clay loam (8-15% slope), Cecil sandy loam (2-8% slope), Cecil sandy loam (8-15% slope), Chewacla loam (frequently flooded), Davidson loam (2-8% slope), Davidson loam (8-15% slope), Davidson loam (15-25% slope), Enon fine sandy loam (2-8% slope), Helena sandy loam (1-6% slope), Iredell loam (1-6% slope), Mecklenburg loam (2-8% slope), Pacolet sandy loam (15-25% slope), Pacolet sandy loam (25-45% slope), Udorthents (loamy), Vance sandy clay loam (2-8% slope), Vance sandy loam (2-8% slope), and Vance sandy loam (8-15% slope).

Most of these soils are listed as non-hydric, with the exception of Armenia silt loam (occasionally flooded), which is hydric. Chewacla loam (frequently flooded), Helena sandy loam (1-6% slope), and Iredell loam (1-6% slope) are listed as possibly containing inclusions of hydric soils. Descriptions of all the soils found in the project boundaries and their hydric listings are presented in Table 9.

Soil core samples taken throughout the project area revealed soils with a sandy clay texture and predominantly non-hydric characteristics. There were, however, areas where the soils did show hydric characteristics, such as low chroma colors, oxidized rhizospheres, mottling, inundation, and saturation. Therefore, hydric soil indicators, as defined in the "Corps of Engineers Wetland Delineation Manual", 1987, were observed within the project study area.

Table 9. Descriptions and hydric listings of soil phases found in the project study corridor.

Soil Phase	Location	Drainage	Permeability	High Water Table m (ft)	Main use	Limitations	Hydric Listing
Armenia silt loam, occasionally flooded	broad flats, upland depressions	poor	slow	0.1-0.5 (0.5-1.5)	woodland, pasture	wetness	Hydric
Cecil clay loam, 8-15% slope, eroded	ridges	good	moderate	>1.8 (>6.0)	cropland, pasture	erosion, slope	Non-hydri
Cecil sandy clay loam, 2-8% slope	ridges	good	moderate	>1.8 (>6.0)	cropland, pasture	erosion	Non-hydri
Cecil sandy clay loam, 8-15% slope	side slopes	good	moderate	>1.8 (>6.0)	cropland, pasture	erosion, slope	Non-hydri
Cecil sandy loam, 2-8% slope	ridges	good	moderate	>1.8 (>6.0)	cropland, pasture	erosion	Non-hydri
Cecil sandy loam, 8-15% slope	side slopes	good	moderate	>1.8 (>6.0)	cropland, pasture	erosion, slope	Non-hydri
Chewacla loam, frequently flooded	river and creek bottoms	somewhat poor	moderate	0.1-0.5 (0.5-1.5)	woodland	wetness, flooding	Inclusions
Davidson loam, 2-8% slope	broad ridges	good	moderate	>1.8 (>6.0)	cropland, pasture	erosion	Non-hydri
Davidson loam, 8-15% slope	side slopes	good	moderate	>1.8 (>6.0)	woodland	erosion	Non-hydri
Davidson loam, 15-25% slope	side slopes	good	moderate	>1.8 (>6.0)	woodland	slope, erosion	Non-hydri
Enon fine sandy loam, 2-8% slope	ridges	good	slow	>1.8 (>6.0)	woodland	erosion	Non-hydri
Helena sandy loam, 1-6% slope	ridges, toe slopes	moderately good	slow		cropland, pasture	erosion	Inclusions
Iredell loam, 1-6% slope	ridges, side slopes	moderately good	slow	0.3-0.6 (1.0-2.0)	cropland, pasture	wetness, slope	Inclusions
Mecklenburg loam, 2-8% slope	ridges	good	slow	>1.8 (>6.0)	cropland, pasture	erosion	Non-hydri
Pacolet sandy loam, 15-25% slope	upland side slopes adjacent to drainageways	good	moderate	>1.8 (>6.0)	woodland	slope, erosion	Non-hydri
Pacolet sandy loam, 25-45% slope	upland side slopes adjacent to drainageways	good	moderate	>1.8 (>6.0)	woodland	slope, erosion	Non-hydri
Udorthents, loamy	areas altered by cutting, filling or shaping	variable	variable	variable	borrow pits, cut and fill land, sanitary landfills	erosion	Non-hydri
Vance sandy clay loam, 2-8% slope	ridges	good	slow	>1.8 (>6.0)	cropland, pasture	erosion, slope	Non-hydr
Vance sandy loam, 2-8% slope	ridges	good	slow	>1.8 (>6.0)	cropland, pasture	erosion, slope	Non-hydr
Vance sandy loam, 8-15% slope	ridges, side slopes	good	slow	>1.8 (>6.0)	woodland	erosion	Non-hydr

b. Water Resources

This section contains information concerning those water resources likely to be impacted by the project and the environmental screening corridor. Water resource information encompasses physical aspects of the resource, its relationship to major water systems, Best Usage Standards and water quality of the resources. Probable impacts to these water bodies are also discussed, as are means to minimize impacts.

1. Waters Impacted and Characteristics

North Potts Creek, South Potts Creek, the Yadkin River, and 16 unnamed tributaries to these streams are the surface water resources that will be directly impacted by the proposed project (Figure 11). These streams are located in sub-basin 030704 of the Yadkin River Basin. Table 10 describes the physical characteristics of these streams at the time of the site visit.

Table 10. Streams Impacted in the Project Study Corridor from I-85 Widening.

Stream	Tributary to	Type	Width ft (m)	Depth ft (m)	Substrate	Comments	Length Impacted ft (m)
UT 1	N.PottsCr.	Perennial	3.0 (0.9)	0.5 (0.1)	sand/gravel	some flow, impounded	50.0 (15.2)
UT 2	N.PottsCr.	Perennial	2.0 (0.6)	0.5 (0.1)	sand/silt	impounded	200.0 (61.0)
UT 3	S.Potts Cr.	perennial	3.0 (0.9)	0.5 (0.1)	sand/gravel	some erosion	500.0 (152.4)
UT 4	S.Potts Cr.	perennial	1.0 (0.3)	0.5 (0.1)	clay/gravel	some erosion	300.0 (91.5)
South Potts Creek	Yadkin R.	perennial	8.0 (2.4)	1.0 (0.3)	sand	good flow, some erosion	200.0 (61.0)
UT 6	S.Potts Cr.	intermittent	2.0 (0.6)	0.5 (0.1)	sand/clay	some flow	125.0 (38.1)
UT 7	S.Potts Cr.	perennial	2.0 (0.6)	0.5 (0.1)	sand	some flow	100.0 (30.5)
UT 8	S.Potts Cr.	perennial	2.0 (0.6)	0.5 (0.1)	sand	2 channels, good flow	100.0 (30.5)
UT 9	Yadkin R.	perennial	2.0 (0.6)	0.5 (0.1)	sand/clay	some flow	125.0 (38.1)
UT 10	UT 9	perennial	3.0 (0.9)	0.5 (0.1)	sand	good flow	250.0 (76.2)
UT 11	UT 9	perennial	2.0 (0.6)	0.5 (0.1)	sand	some flow	500.0 (152.4)
UT 12	UT 9	I/P*	2.0 (0.6)	0.5 (0.1)	sand	little flow	150.0 (45.7)
UT 13	Yadkin R.	intermittent	2.0 (0.6)	0.5 (0.1)	sand	little flow	150.0 (45.7)
UT 14	UT 13	intermittent	2.0 (0.6)	0.5 (0.1)	sand	only pools	100.0 (30.5)
UT 16	Yadkin R.	perennial	6.0 (1.8)	1.0 (0.3)	sand/gravel	good flow	200.0 (61.0)
						Total Impacts – 3,050 ft (929.8m)	

I/P* – This stream changes from intermittent to perennial approximately 2500ft (762m) from SR 1285 (Seven Oaks Drive).

2. Best Usage Classification

The Division of Water Quality (DWQ) has assigned streams a best usage classification. The classification of the Yadkin River at this location is WS-V. The classification of WS-V denotes waters protected as water supplies, which are generally upstream of and draining to Class WS-IV waters. The classifications of South Potts Creek and North Potts Creek are C. The C classification denotes fresh water suitable for aquatic life propagation and survival, fishing, wildlife, and secondary recreation and agriculture. Unnamed tributaries carry the best usage classification of the stream to which they are a tributary.

No High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds) or Outstanding Resource Waters (ORW) occur within 1.0 mile (1.6 km) of the project study area.

3. Water Quality

The DWQ has initiated a basin-wide approach to water quality management for the 17 river basins within the state. This approach allows for more intensive sampling of biological, chemical and physical data that can be used in basin-wide assessment and planning. Likewise, benthic macroinvertebrates are intensively sampled for specific river basins. Benthic macroinvertebrates have proven to be a good indicator of water quality because they are sensitive to subtle changes in water quality, have a relatively long life cycle, are non-mobile (compared to fish) and are extremely diverse. The overall species richness and presence of indicator organisms help to assess the health of streams and rivers. River basins are reassessed every five years to detect changes in water quality and to facilitate National Pollutant Discharge Elimination System (NPDES) permit review.

The closest benthic macroinvertebrate monitoring site is located on Grants Creek at SR 1910, approximately 6.0 mi (9.7 km stream distance) upstream of the I-85/Yadkin River bridge. This site was sampled in Aug. 1996 and received a taxa richness value of 20, a Biotic Index value of 6.14, and a bioclassification of Good-Fair.

Fish community structure was assessed in Town Creek at SR 1526, approximately 8.2 mile (13.2 km stream distance) from the Yadkin River, 13.5 mile (21.7 km stream distance) downstream of the subject project. Sampling was done in April 1996 and the stream received a rating of Good. There was evidence of impairment (decreased number of species, few intolerant species), and the most abundant species collected was the rosyside dace.

Fish tissue analysis was done in 1981 and 1996 for the Yadkin River/High Rock Lake at I-85. These studies showed no samples exceeding the criteria for metals.

The Ambient Monitoring System (AMS) is a network of stream, lake and estuarine water quality monitoring stations strategically located for the collection of physical and chemical water quality data. The water body's freshwater or saltwater classification and corresponding water quality standards determine the type of water quality data or parameters that are collected. An AMS station on the Yadkin River at NC 150 [approximately 0.2 mile (0.3 km) upstream of I-85] was sampled between April 1995 and Nov. 1996. Parameters exceeding the criteria were fecal coliform, turbidity, copper, iron, manganese, and zinc. These and previous studies indicate that water quality has been a problem in this area, especially in the more urban parts, but the trend in recent years has been toward improved water quality. This is due in part to improvements in wastewater treatment and control of urban runoff.

Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) Program. All dischargers are required to register for permits. There are one general, two minor, and two major NPDES permits registered within 1.0 mile (1.6 km) of the project area, as listed in Table 11.

Table 11. NPDES Permit-Holders in the Project Vicinity.

Permit Holder	Permit No.	Stream	Classification	Discharge
Kimberly Clark Corp./Lexington Hill	NCG500098	UT N. Potts Cr.	General permit	Minor
Bill's Truck Stop	NC0040045	S. Potts Creek	Minor non-municipal	0.006
Hill Top Living Center	NC0059536	UT Yadkin R.	Minor non-municipal	0.003
Color-Tex Finishing Corp.	NC0005487	Yadkin River	Major non-municipal	4.25
Duke Power Co./Buck Steam Station	NC0004774	Yadkin River	Major non-municipal	N/A*

*. This discharger's primary discharge type is non-contact cooling water.
Note: Allowed discharge is in million gallons/ day (MGD)

The proposed roadway is not located within a water supply watershed. Erosion and sedimentation will be controlled through the appropriate specification, installation, and maintenance of standard erosion and sedimentation control measures. Existing drainage patterns will be maintained and improved to the extent practicable. Groundwater resources should be assessed in final hydraulics design to ensure that measures are taken, if necessary, to prevent groundwater contamination.

4. Summary of Anticipated Impacts

Anticipated impacts to South Potts Creek, North Potts Creek, the Yadkin River, and the 16 unnamed tributaries are presented in Table 10, calculated using the entire project study corridor. Project construction will not require the entire study corridor; therefore actual impacts may be considerably less.

Project construction may result in the following impacts to surface waters:

1. Increased sedimentation and siltation from construction and/or erosion.
2. Changes in light incidence and water clarity due to increased sedimentation and vegetation removal.
3. Alteration of water levels and flows due to interruptions or additions to surface and ground water flow from construction.
4. Changes in water temperature due to streamside vegetation removal.
5. Increased nutrient loading during construction via runoff from exposed areas.
6. Increased concentration of toxic compounds from highway runoff, construction, toxic spills and increased traffic.

Precautions will be taken to minimize impacts to water resources in the study area. NCDOT's Best Management Practices (BMP) for the Protection of Surface Waters and Sedimentation Control guidelines will be strictly enforced during the construction stage of the project. Provisions to preclude contamination by toxic substances during the construction interval should also be strictly enforced.

The Best Management Practices for Bridge Demolition and Removal (BMPBDR) will be followed for the removal of Bridge # 137. The superstructure for Bridge # 137 is composed of a reinforced concrete deck on I-beams. The substructure contains end bents that are composed of reinforced concrete caps with steel piles, and the interior bents consist of reinforced concrete posts and beams. The concrete from the deck, beams and posts will contribute to the temporary fill resulting from bridge demolition debris. The resulting temporary fill will be approximately 1,254 cubic yards. Conditions in the Yadkin River will raise sediment concerns and therefore a turbidity curtain is recommended.

3. Biotic Resources

Biotic resources include aquatic and terrestrial ecosystems. This section describes those ecosystems encountered in the study area, as well as the relationships between fauna and flora within these ecosystems. Composition and distribution of biotic communities throughout the project area are reflective of topography, hydrologic influences and past and present land uses in the study area. Descriptions of the

terrestrial systems are presented in the context of plant community classifications and follow descriptions presented by Schafale and Weakley (1990) where possible. Dominant flora and fauna observed, or likely to occur, in each community are described and discussed.

Scientific nomenclature and common names (when applicable) are provided for each animal and plant species described. Plant taxonomy generally follows Radford, et al. (1968). Animal taxonomy follows Martof, et al. (1980), Menhinick (1991), Potter, et al. (1980), and Webster, et al. (1985). Subsequent references to the same organism will include the common name only. Published range distributions and habitat analysis are used in estimating fauna expected to be present within the project area.

a. Biotic Communities

Eight communities are identified in the project study area: Mesic Mixed Hardwood Forest, Mixed Pine/Hardwood Forest, Dry-Mesic Oak/Hickory Forest, Palustrine Emergent Wetland, Palustrine Forested Wetland, Maintained/Disturbed, Piedmont Intermittent Stream and Piedmont Perennial Stream. Community boundaries within the study area are fairly well defined, although the forest types tend to grade together somewhat. Terrestrial fauna species likely to occur within the study area will exploit all communities for shelter and foraging opportunities or as movement corridors.

1. Mesic Mixed Hardwood Forest

This community type occurs throughout the project study corridor, and is primarily located in the stream bottomlands and adjacent slopes.

The canopy is composed of southern red oak (Quercus falcata), American elm (Ulmus americana), tulip tree (Liriodendron tulipifera), sweetgum (Liquidambar styraciflua), mockernut hickory (Carya tomentosa), pignut hickory (C. glabra), beech (Fagus grandifolia), and red maple (Acer rubrum). The understory is composed of red maple, boxelder (Acer negundo), flowering dogwood (Cornus florida), American holly (Ilex opaca), ironwood (Carpinus caroliniana), spicebush (Lindera benzion), pawpaw (Asimina triloba), and Chinese privet (Ligustrum sinense). The vine layer is composed of grapes (Vitis spp.), poison ivy (Toxicodendron radicans), Japanese honeysuckle (Lonicera japonica), and kudzu (Pueria lobata). Herbs in this community include field garlic (Allium vineale), heartleaf (Hexastylis spp.), Christmas fern (Polystichum acrostichoides), violets (Viola spp.), and goldenrod (Solidago spp.). The herb layer is probably more varied during the growing season.

2. Mixed Pine/Hardwood Forest

This community is found throughout the project study corridor, generally on slopes above stream channels and in disturbed areas. There are several successional stages of this community in the study corridor, ranging from dense, young pine plantations to older forests where hardwoods predominate; therefore not all the species mentioned below are present at every location.

The canopy is composed of shortleaf pine (Pinus echinata), loblolly pine (P. taeda), white pine (P. strobus), sweetgum, tulip tree, boxelder, southern red oak, white oak (Quercus alba), mockernut hickory, and black gum (Nyssa sylvatica). The understory is composed of eastern redcedar (Juniperus virginiana), elderberry (Sambucus canadensis), winged elm (Ulmus alata), black cherry (Prunus serotina), redbud (Cercis canadensis), honey locust (Gleditsia triacanthos), tree of heaven (Ailanthus altissima), sassafrass (Sassafras albidum), and flowering dogwood. The vine layer is composed of greenbrier (Smilax rotundifolia, Smilax bona-nox), Japanese honeysuckle, grapes, and poison ivy. Herbs in this community include goldenrod, broomsedge (Andropogon spp.), foxtail grass (Setaria spp.), Christmas fern, ebony spleenwort (Asplenium platyneuron) and bush-clover (Lespedeza spp.). The herb layer is probably more varied during the growing season.

3. Dry-Mesic Oak/Hickory Forest

This community is common on uplands throughout the project study corridor. It is found on ridges and slopes above streams. This was probably the dominant upland community type in the area in the past, but much of it has been cleared for farmland or otherwise disturbed.

The canopy is composed of white oak, southern red oak, northern red oak (Quercus rubra), rock chestnut oak (Q. prinus), mockernut hickory, pignut hickory, shagbark hickory (Carya ovata), beech, and sweetgum. The understory is composed of eastern redcedar, black cherry, flowering dogwood, viburnum (Viburnum spp.), hearts-a-burstin' (Euonymus americanus), and blueberries (Vaccinium spp.). The vine layer is composed of greenbriers, Japanese honeysuckle, and poison ivy. Herbs that are present include heartleaf, cranefly orchid (Tipularia discolor), puttyroot (Aplectrum hyemale), downy rattlesnake plantain (Goodyera pubescens), spotted wintergreen (Chimaphila maculata), goldenrod, and St.-John's-wort (Hypericum spp.). The herb layer is probably more varied during the growing season.

4. Palustrine Emergent Wetland

This community is found in small patches throughout the study corridor, usually associated with the streams. In many cases, these wetlands are located

in the headwater regions of the streams, and there was often standing water present at the time of the site visit.

The vegetation consists of mainly herbaceous species, including rushes (Juncus spp.), sedges (Carex spp.), wool grass (Scirpus cyperinus), panic grass (Panicum spp.), tearthumb (Polygonum sagittatum), smartweed (Polygonum spp.), bushy seedbox (Ludwigia alternifolia), goldenrod, broad-leaved cattail (Typha latifolia), Japanese grass (Microstegium vimineum), asters (Aster spp.), milkweed (Asclepias spp.), water horehound (Lycopus virginicus), jewelweed (Impatiens capensis), yellow jessamine (Gelsemium sempervirens), Japanese honeysuckle, and giant cane (Arundinaria gigantea). Other vegetation that may occur in these areas includes woodier species such as black willow (Salix nigra), sweetgum, swamp rose (Rosa palustris), red maple (Acer rubrum), tag alder (Alnus serrulata), and blackberries (Rubus spp.), although these species are not dominant.

5. Palustrine Forested Wetland

This community is also found in small patches near streams throughout the study corridor, as well as in a large area around the Yadkin River. This community consists mainly of woody vegetation, including tag alder, sweetgum, black willow, red maple, tulip tree, American elm, green ash (Fraxinus pennsylvanica), silky dogwood (Cornus amomum), sycamore (Platanus occidentalis), elderberry, water oak (Quercus nigra), Chinese privet, American holly, grapes, poison ivy, and greenbrier. Herbaceous species such as rushes, sedges, Japanese grass, swamp rose mallow (Hibiscus moscheutos), field garlic, St.-John's-wort, trumpet creeper (Campsis radicans), climbing hempweed (Mikania scandens), and Japanese honeysuckle are frequently present, although they are not dominant.

6. Maintained/Disturbed

This community is found throughout the project, and occurs in four main forms: maintained shoulder, powerline easement, clearcut, and agricultural field/pasture. The composition of these communities is created and maintained by disturbance of some sort, and the frequency of this disturbance determines the successional stage seen in the community.

The maintained shoulder community is a frequently mowed, highly disturbed habitat that is found on the edge of the roads and in the median of the highway. Vegetation includes fescue, foxtail grass, English plantain (Plantago lanceolata), dock (Rumex crispus), henbit (Lamium amplexicaule, Lamium purpurea), thistle (Circium spp.), geranium (Geranium spp.), dandelion (Taraxacum offininale), vetch (Vicia spp.), field garlic, rabbit

tobacco (Gnaphalium obtusifolium), goldenrod, horse nettle (Solanum carolinense), Japanese grass, and Japanese honeysuckle.

The powerline easement community is an infrequently maintained area, which supports many of the same species found in the roadside shoulder community. In addition to these species, saplings of trees such as smooth sumac (Rhus glabra), winged sumac (R. copallina), black walnut (Juglans nigra), honey locust, elderberry, boxelder, privet, sycamore, sweetgum, and red maple are often common. Other vegetation that is found in this community includes taller herbaceous species such as blackberries, milkweed, asters, broomsedge, pokeweed (Phytolacca americana), Queen Anne's lace (Daucus carota), common mullein (Verbascum thapsus), and Jimsonweed (Datura stramonium). Vines such as greenbrier, kudzu, Japanese honeysuckle, and trumpet creeper can also be quite common.

Clearcuts are found in two areas of the project study corridor: around Wetland A and east of I-85 near the overflow channel of the Yadkin River. Both clearcuts appeared to originally fall under the Mixed Pine/Hardwood Forest community type, and are included in the Maintained/Disturbed community because they have been heavily disturbed recently, and will regenerate from an early successional stage. Vegetation in this community includes saplings of the original trees present on the site, as well as weedy herbaceous species such as fescue, henbit, mullein, broomsedge, thistle, dock, blackberries, dandelion, Japanese honeysuckle, and trumpet creeper.

Agricultural fields and pastureland are quite common in the project study corridor. These areas are mainly used as cattle pastures, although many appear to be fallow or unused at this time and may be planted in the spring. Vegetation in the pasture areas includes fescue or other forage vegetation, with small amounts of many of the species mentioned in the roadside shoulder community as well. Stubble in some of the fields indicated that corn is one of the crops planted during the growing season.

7. Piedmont Intermittent Stream

There are four streams which are entirely or partially intermittent within the project study corridor. These streams are all small, and most had little or no flow at the time of the site visit. All had a distinct, meandering channel, and no submerged aquatic vegetation was observed.

8. Piedmont Perennial Stream

Most of the streams in the project study corridor are perennial, ranging in size from very small to very large (the Yadkin River). The banks are well developed, often very steep, and the channels are usually well developed and

meandering. Several of the streams appear to have been altered, either by damming or erosion pressure from cattle, but no major channelization was observed. No submerged aquatic vegetation was observed at the time of the site visit.

b. Wildlife

The physical characteristics of the terrestrial and aquatic communities in an area will affect the fauna that are present and use the area. This section addresses the fauna likely to be found in the project study area. Fauna observed during the site visit are denoted by an asterisk (*).

1. Terrestrial Fauna

Terrestrial fauna likely to be found in the project study corridor includes mammals such as the Virginia opossum* (Didelphis virginiana), least shrew (Cryptotis parva), eastern cottontail* (Sylvilagus floridanus), gray squirrel* (Sciurus carolinensis), white-footed mouse (Peromyscus leucopus), muskrat* (Ondatra zibethicus), red fox (Vulpes vulpes), raccoon* (Procyon lotor), striped skunk* (Mephitis mephitis), bobcat* (Felis rufus), and white-tailed deer* (Odocoileus virginianus). Amphibians such as the slimy salamander (Plethodon glutinosus), spotted salamander (Ambystoma maculatum), upland chorus frog* (Pseudacris triseriata), and American toad (Bufo americanus) may be found in the area. Reptiles likely to be found in the study corridor include eastern box turtle (Terrapene carolina), eastern fence lizard (Sceloporus undulatus), five-lined skink (Eumeces fasciatus), ringneck snake (Diadophis punctatus), and copperhead (Agkistrodon contortrix).

Avian species utilizing the habitats in this area include Carolina chickadee* (Parus carolinensis), American robin* (Turdus migratorius), Carolina wren* (Thryothorus ludovicianus), song sparrow* (Melospiza melodia), red-tailed hawk* (Buteo jamaicensis), red-shouldered hawk* (B. lineatus), Northern cardinal* (Cardinalis cardinalis), white-throated sparrow* (Zonotrichia albicollis), rufous-sided towhee* (Pipilo erythrophthalmus), American crow* (Corvus brachyrhynchos), yellow-bellied sapsucker* (Sphyrapicus varius), bluejay* (Cyanocitta cristata), European starling* (Sturnus vulgaris), meadowlark* (Sturnella magna), belted kingfisher* (Ceryle alcyon), Canada goose* (Branta canadensis), red-winged blackbird* (Agelaius phoeniceus), killdeer* (Charadrius vociferus), and barred owl* (Strix varia). Muscovy ducks (Cairina moschata) and domestic geese (Anser "domesticus") were observed in the pond on UT 2.

2. Aquatic Fauna

Fauna associated with the aquatic community includes various invertebrate and vertebrate species. Fish such as common carp (Cyprinus carpio), rosyside dace (Clinostomus funduloides), highback chub (Hybopsis hypsinotus), bluehead chub (Nocomis leptocephalus), whitefin shiner (Notropis niveus), creek chub (Semotilus atromaculatus), channel catfish (Ictalurus punctatus), brown bullhead (Ictalurus nebulosus), redbreast sunfish (Lepomis auritus), pumpkinseed (Lepomis gibbosus), and tessellated darter (Etheosoma olmstedi) would be found in this area; the larger species such as the carp and catfish would probably be found only in the river.

Amphibians such as cricket frogs (Acris crepitans) and green frogs (Rana clemitans), and reptiles such as yellowbelly sliders (Chrysemys scripta) and Northern water snake (Nerodia sipedon) would be found in this area, especially in the river. In addition to the permanent aquatic residents, many species of amphibians will use the streams and wetland areas with open water for breeding. Upland chorus frogs could be heard calling from pools during the site visits.

Invertebrates that would be present include: crayfish* (family Cambaridae), phantom cranefly larvae* (family Ptychopteridae), snails* (Campeloma spp.), nymphal stages of dragonflies and damselflies (Order Odonata), and caddisfly larvae (Order Trichoptera).

c. Summary of Anticipated Impacts

Construction of the proposed project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies impacts to the natural resources in terms of area impacted and ecosystems affected.

Calculated impacts to terrestrial resources reflect the relative abundance of each community present within the study area. Project construction will result in clearing and degradation of portions of these communities. Table 12 summarizes potential quantitative losses to these biotic communities. Estimated impacts are derived using the entire project study corridor. Project construction will not require the entire study corridor; therefore, actual impacts may be considerably less.

Table 12. Anticipated Impacts to Terrestrial Communities.

Community	I-85 Widening Hectares(acres)
Mesic Mixed Hardwood Forest	28.54 (70.52)
Mixed Pine/Hardwood Forest	136.31 (336.83)
Dry-Mesic Oak/Hickory Forest	156.43 (386.55)
Palustrine Emergent Wetland	20.66 (51.05)
Palustrine Forested Wetland	84.62 (209.10)
Maintained/Disturbed	600.86 (1484.75)
Total	**1,027.42 (2538.80)**

Plant communities found within the proposed project area serve as nesting and sheltering habitat for various wildlife. Widening I-85 and the associated improvements will reduce habitat for faunal species, thereby diminishing faunal numbers.

Areas modified by construction (but not paved) will become road shoulders and early successional habitat. Reduced habitat will displace some wildlife further from the roadway while attracting other wildlife by the creation of more early successional habitat. Animals temporarily displaced by construction activities will repopulate areas suitable for the species.

Aquatic communities are sensitive to even small changes in their environment. Stream channelization, scouring, siltation, sedimentation and erosion from construction-related work will affect water quality and biological constituents. Although direct impacts may be temporary, environmental impacts from these construction processes may result in long term or irreversible effects. In addition, the widening of I-85 may require extending several culverts. Culverted streams are more susceptible to scouring than those that are bridged, and loss of benthic habitat can adversely affect the fauna of a stream.

Impacts often associated with in-stream construction include increased channelization and scouring of the streambed. In-stream construction alters the

stream substrate and may remove streamside vegetation at the site, and should therefore be kept to a minimum. Disturbances to the substrate will produce siltation, which clogs the gills and/or feeding mechanisms of benthic organisms (sessile filter-feeders and deposit-feeders), fish and amphibian species. Benthic organisms can also be covered by excessive amounts of sediment, and are slow to recover or repopulate a stream.

The removal of streamside vegetation and placement of fill material at the construction site alters the terrain. Alteration of the streambank enhances the likelihood of erosion and sedimentation. Revegetation stabilizes and holds the soil thus mitigating these processes. Erosion and sedimentation carry soils, toxic compounds and other materials into aquatic communities at the construction site. These processes magnify turbidity and can cause the formation of sandbars at the site and downstream, thereby altering water flow and the growth of vegetation. Streamside alterations also lead to more direct sunlight penetration and to elevation of water temperatures, which may impact many species.

4. Jurisdictional Topics

This section provides descriptions, inventories and impact analysis pertinent to two important issues--Waters of the United States and rare and protected species.

a. Waters of the United States

Surface waters and wetlands fall under the broad category of "Waters of the United States," as defined in Section 33 of the Code of Federal Register (CFR) Part 328.3. Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Any action that proposes to place fill into these areas falls under the jurisdiction of the U.S. Army Corps of Engineers (COE) under Section 404 of the Clean Water Act (33 U.S.C. 1344).

1. Characteristics of Wetlands and Surface Waters

Potential wetland communities were investigated pursuant to the 1987 "Corps of Engineers Wetland Delineation Manual". The three parameter approach is used where hydric soils, hydrophytic vegetation and prescribed hydrologic characteristics must all be present for an area to be considered a wetland.

The wetlands in the project study corridor are characterized as either Palustrine Emergent or Palustrine Forested, as described in Sections 3.a.4 and 3.a.5 above. Soil core samples taken in these areas revealed soils in the top 16 inches with Munsell color notations ranging from 5/N (gley)

with mottles to 10YR 5/2 with mottles. Vegetation in these areas included rushes, sedges, wool grass, panic grass, tearthumb, smartweed, bushy seedbox, broad-leaved cattail, Japanese grass, asters, water horehound, jewelweed, giant cane, black willow, swamp rose, red maple, tag alder, American elm, green ash, silky dogwood, sycamore, water oak, swamp rose mallow, and climbing hempweed. Hydrologic characteristics that were present include inundation, saturation, oxidized rhizospheres, buttressing, watermarks on trees, and wrack lines. Therefore, jurisdictional wetlands are present within the project study corridor.

The Yadkin River, South Potts Creek, North Potts Creek, and the 16 unnamed tributaries are jurisdictional surface waters under Section 404 of the Clean Water Act (33 U.S.C. 1344). Discussion of the biological, physical and water quality aspects of these streams are presented in previous sections of this report.

2. Summary of Anticipated Impacts

Table 13 presents the DWQ Wetland Rating Scale value for each wetland area and summarizes anticipated impacts to wetland areas in the project study corridor. The DWQ scale gauges wetland quality using a numerical rating system (1-100 with 100 being the highest value) that emphasizes water storage, bank stabilization, pollutant removal, wildlife habitat, aquatic life value, and recreation/education potential. Project construction will not require the entire study corridor; therefore, actual wetland impacts may be considerably less.

Table 13. Anticipated Impacts to Wetland Areas in the Project Study Corridor.

	DWQ Rating	Impact in ft^2 (m^2)
Total PEM Wetlands1		**85,895 (7,979.9)**
Wetland A	37	105 (9.8)
Wetland B	38	1,900 (176.5)
Wetland D	39	110 (10.2)
Wetland J	47	73,600 (6,837.7)
Wetland R	34	10,180 (945.8)
Total PFO Wetlands2		**71,800 (6,670.4)**
Wetland C	36	11,500 (1,068.4)
Wetland I	47	1,700 (157.9)
Wetland K	47	3,790 (352.1)
Wetland M	36	1,250 (116.1)
Wetland P	36	53,560 (4,975.9)
Total Wetlands		**157,695ft^2 = 14,650.3 m^2 = 3.62 Acres**

1PEM Wetlands= Palustrine Emergent Wetlands.
2PFO Wetlands= Palustrine Forested Wetlands.

The total anticipated surface water impact for the I-85 widening study corridor is 3,050ft (929.8m). The individual impacts for each stream are presented in Table 10. Project construction will not require the entire study corridor; therefore, actual surface water impacts may be considerably less.

3. Permits

Impacts to jurisdictional surface waters and wetlands are anticipated. In accordance with provisions of section 404 of the Clean Water Act (33 U.S.C. 1344), a permit will be required from the COE for the discharge of dredged or fill material into "Waters of the United States." Due to the scope of the proposed project, a Section 404 Individual Permit will be necessary.

A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality Certification is required prior to the issuance of the Section 404. Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulations, and ensures that the state's water quality standards will not be violated.

4. Mitigation

The COE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy which embraces the concept of "no net loss" of wetlands and surface waters, and sequencing. The purpose of this policy is to restore and maintain the chemical, biological and physical integrity of Waters of the United States, specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoiding impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization and compensatory mitigation) must be considered sequentially.

a. Avoidance

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to Waters of the United States. A 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the COE states that in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology and logistics in light of overall project purposes. There are several areas of the project area where the alignment of the road can be positioned such that impacts to wetlands can be avoided.

The following avoidance measures have been undertaken so far as a result of coordination through the NEPA/404 merger meetings:

- The proposed bridges over the Yadkin River will span the river and the wetlands associated with the river. This will result in the avoidance of approximately 7.35 acres (2.97 hectares) of wetlands.
- The 7 Oaks Drive (SR 1285) service road extension was shortened per the resource agencies' comments. Approximately 1.84 acres (0.74 hectares) of wetlands were avoided.

b. Minimization

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to Waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, ROW widths, fill slopes and/or road shoulder widths. Other practical mechanisms to minimize impacts to

Waters of the United States crossed by the proposed project include: strict enforcement of sedimentation control BMP's for the protection of surface waters during the entire life of the project; reduction of clearing and grubbing activity; reduction/elimination of direct discharge into streams; reduction of runoff velocity; re-establishment of vegetation on exposed areas, judicious pesticide and herbicide usage; minimization of "in-stream" activity; and litter/debris control.

c. Compensatory Mitigation

Compensatory mitigation is not normally considered until anticipated impacts to Waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States. Such actions should be undertaken in areas adjacent to or contiguous to the discharge site. Some compensatory mitigation may be necessary for this project, although the precise amount will be uncertain until the design is finalized.

b. Rare and Protected Species

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human activities. Federal law (under the provisions of the Endangered Species Act of 1973, as amended) requires that any action likely to adversely affect a species classified as federally protected be subject to review by the Fish and Wildlife (FWS). Other species may receive additional protection under separate state laws.

1. Federally-Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act (ESA) of 1973, as amended. As of June 16, 2000, the FWS lists the following federally-protected species for Rowan and Davidson Counties (Table 14). A brief description of each species' characteristics and habitat follows.

Table 14. Federally-Protected Species for Rowan and Davidson Counties.

Scientific Name	Common Name	County	Status
Clemmys muhlenbergii	Bog turtle	Davidson	T(S/A)
Haliaeetus leucocephalus	Bald eagle	Rowan/Davidson	T*
Helianthus schweinitzii	Schweinitz's sunflower	Rowan/Davidson	E

"E" denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).
"T" denotes Threatened (a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range).
* - this species is proposed for delisting

Clemmys muhlenbergii (bog turtle)
Threatened Due to Similarity of Appearance
Family: Emydidae
Federally listed: 5/2/97

Clemmys muhlenbergii is a small semi-aquatic turtle, with a bright orange or yellow blotch on the side of head; carapace elongated, brown to black, often with a low median keel and concentric furrows or traces of them. The bog turtle measures 7-10 cm (3-4 in) in length. It is found in damp grassy fields, bogs, and marshes in the mountains and western piedmont.

The bog turtle is shy and will burrow rapidly in mud or debris when disturbed. The bog turtle forages on insects, worms, snails, amphibians, and seeds. In June or July, three to five eggs are laid in shallow nest in moss or loose soil. The eggs hatch in about fifty-five days (Martof, et. al., 1980).

Individual bog turtles in the southern population closely resemble individuals in the northern population, causing problems in enforcing prohibitions protecting the northern population. As a result, the bog turtle is designated Threatened due to similarity of appearance. This designation prohibits collecting individual turtles from this population and bans interstate and international commercial trade. They are listed for their protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation (Endangered Species Act); therefore, a survey is not required. There is potential habitat for the bog turtle within the project study corridor, in several of the wetland areas, but no individuals were seen during either of the site visits.

Haliaeetus leucocephalus (bald eagle) Threatened
Animal Family: Accipitridae
Date Listed: 3/11/67

Adult bald eagles can be identified by their large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. In flight bald eagles can be identified by their flat wing soar.

Eagle nests are found in close proximity to water (within a half mile) with a clear flight path to the water, in the largest living tree in an area, and having an open view of the surrounding land. Human disturbance can cause an eagle to abandon otherwise suitable habitat. The breeding season for the bald eagle begins in December or January. Fish are the major food source for bald eagles. Other sources include coots, herons, and wounded ducks. Food may be live or carrion.

BIOLOGICAL CONCLUSION **NO EFFECT**

There is habitat suitable for the bald eagle in the project study corridor, in the forests bordering the Yadkin River, and the NC Natural Heritage Program database of rare species and unique habitats does have records of bald eagle sightings from High Rock Lake, downstream of the I-85 crossing, with the last sighting in September 1996. However, since no eagles or nests were seen during either site visit, project construction will not affect the bald eagle.

Helianthus schweinitzii (Schweinitz's sunflower) Endangered
Plant Family: Asteraceae
Federally Listed: 6/6/91
Flowers Present: mid September-early October

Schweinitz's sunflower is a rhizomatous perennial herb that grows 1-2 m tall from a cluster of carrot-like tuberous roots. The stems are deep red, solitary and only branch above mid-stem. The leaves are rough feeling above and resin-dotted and loosely soft-white-hairy beneath. Leaves of the sunflower are opposite on the lower part of the stem and usually become alternate on the upper stem. The broad flowers are borne from September until frost. These flowers are yellow in color and arranged in an open system of upwardly arching heads. The fruit is a smooth, gray-black achene.

Schweinitz's sunflower is endemic to North and South Carolina. These sunflowers grow best in full sunlight or light shade in clearings and along the edges of open stands of oak-pine-hickory upland woods. Common soils that this species is found in are moist to dryish clays, clay-loams, or sandy clay-loams, often with a high gravel content and always moderately podzolized. Natural fires and large herbivores are considered to be historically important in maintaining open habitat for these sunflowers.

BIOLOGICAL CONCLUSION *** NO EFFECT**

Habitat in the form of disturbed edges of oak-pine-hickory woods with sandy clay soil is present within the boundaries of the project study corridor. No Schweinitz's sunflower was observed during the site visits, and the NC Natural Heritage Program database of rare species and unique habitats has no records for this species near the project area; however, a survey of the project study corridor should be conducted in September to determine if this species occurs in the project study corridor.

** The NCDOT Project Development and Environmental Analysis Branch biologists submitted a memo on October 8, 1999 that stated the change in the biological conclusion for the Schweinitz's sunflower. It stated that the biological conclusion for Schweinitz's sunflower (Helianthus schweinitzii) was listed as "unresolved" in the Natural Resources Technical Report, pending a survey during the flowering season. On 23 September 1999 and 7 October 1999, NCDOT biologists Susan Brady and Dale Suiter performed a search for this species in areas of appropriate habitat within the project study area. No individuals of Schweinitz's sunflower were observed during this survey;* ***therefore the biological conclusion of "unresolved" has been changed to "no effect".***

2. Federal Species of Concern and State Listed Species

As of June 16, 2000, there are three Federal Species of Concern (FSC) and one Federal Candidate (C1) species listed for Rowan and Davidson Counties. Federal Species of Concern and Federal Candidate species are not afforded federal protection under the ESA and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Federal Species of Concern are defined as those species that may or may not be listed in the future. These species were formerly candidate species, or species under consideration for listing for which there was insufficient information to support a listing of Endangered, Threatened, Proposed Endangered and Proposed Threatened. Federal Candidate species are those under consideration for official listing, for which there is sufficient information to support listing. Organisms which are listed as Endangered, Threatened, or Special Concern by the North Carolina Natural Heritage Program (NHP) list of rare plant and animal species are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979.

Table 15 lists Federal Species of Concern and Federal Candidate species, the species state status, and the presence of suitable habitat for each species in the study area. This species list is provided for information purposes as the status of these species may be upgraded in the future.

Table 15. Federal Species of Concern for Rowan and Davidson Counties.

Scientific Name	Common Name	County	Federal Status	State Status	Habitat
Aster georgianus	Georgia aster	Rowan/Davidson	C1	T	Yes
Isoetes virginica	Virginia quillwort	Rowan	FSC	C	Yes
Etheostoma collis collis	Carolina Darter	Rowan/Davidson	FSC	SC	Yes
Lotus helleri	Heller's trefoil	Rowan/Davidson	FSC	C	Yes

"T"--A Threatened species is one which is likely to become endangered species within the foreseeable future throughout all or a significant portion of its range.

"SC"--A Special Concern species is one which requires monitoring but may be taken or collected and sold under regulations adopted under the provisions of Article 25 of Chapter 113 of the General Statutes (animals) and the Plant Protection and Conservation Act (plants). Only propagated material may be sold of Special Concern plants that are also listed as Threatened or Endangered.

"C"--A Candidate species is defined as one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction (and sometimes also by direct exploitation or disease). The species is also either rare throughout its range or disjunct in North Carolina from a main range in a different part of the country or the world.

Surveys for these species were not conducted during the site visit, nor were any of these species observed. A review of the NC Natural Heritage Program (NHP) database of rare species and unique habitats revealed two records of Heller's trefoil near the project area. One population is located 0.2 km (0.1 mi) east of I-85 near the railroad tracks north of the river, and the other is located is located near the I-85/NC150 interchange. Additionally, there is a record of Piedmont indigo-bush (Amorpha schwerinii) located 0.2 km (0.1 mi) west of I-85 on the south bank of the river. This species is listed as Significantly Rare in North Carolina, and is not protected by federal law.

5. Flood Hazard Evaluation

Both Rowan and Davison Counties are currently participating in the National Flood Insurance Program. Site 2 (Figure 12A) is in a designated flood hazard zone, but not included in a detailed flood study for Davidson or Rowan Counties. Both Sites 3 and 4 are in a designated flood hazard zone (Figures 12B and 12C) in which a detailed flood study has been done on these streams for Davidson County. Figures 12A through 12C are the Flood Insurance Rate Maps, on which are delineated the established limits of the 100-year floodplain and floodway in the vicinity of those stream crossings. For the remaining stream crossings which are not in a designated flood hazard zone, Figure 12A through 12C are USGS Quad Maps showing an approximate delineation of the 100-year floodplain in the vicinity of those stream crossings. Most of the floodplain areas at the major stream crossings are wooded, or cleared pasture and cultivated areas.

6. Highway Traffic Noise/Construction Noise Analysis

Traffic noise impacts are determined from the current procedures for the abatement of highway traffic noise and construction noise, appearing as Part 772 of Title 23 of the Code of Federal Regulations. If traffic noise impacts are predicted, examination and evaluation of the alternative noise abatement measures for reducing or eliminating noise abatement measures for reducing or eliminating the noise impacts must be considered.

a. Characteristics of Noise

Noise is basically defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, power generation plants, and highway vehicles. Highway noise, or traffic noise, is usually a composite of noises from engine exhaust, drive train, and tire-roadway interaction.

The magnitude of noise is usually described by its sound pressure. Since the range of sound pressure varies greatly, a logarithmic scale is used to relate sound pressures to some common reference level, usually the decibel (dB). Sound pressures described in decibels are called sound pressure levels and are often defined in terms of frequency weighted scales (A, B, C, or D).

The weighted-A decibel scale is used almost exclusively in vehicle noise measurements because it places the most emphasis on the frequency range to which the human ear is most sensitive (1,000-6,000 Hertz). Sound levels measured using a weighted-A decibel scale are often expressed as dBA. Throughout this report, all noise levels will be expressed in dBA's. Several examples of noise pressure levels in dBA are listed in Table N1 in Appendix 2.

Review of Table N1 indicates that most individuals in urbanized areas are exposed to fairly high noise levels from many sources as they go about their daily activities. The degree of disturbance or annoyance of unwanted sound depends essentially on three things:

1) The amount and nature of the intruding noise.
2) The relationship between the background noise and the intruding noise.
3) The type of activity occurring when the noise is heard.

In considering the first of these three factors, it is important to note that individuals have different sensitivity to noise. Loud noises bother some more than others, and some individuals become upset if an unwanted noise persists. The time patterns of noise also enter into an individual's judgement of whether or not a noise is offensive. For example, noises that occur during sleeping hours are usually considered to be more offensive than the same noises in the daytime.

With regard to the second factor, individuals tend to judge the annoyance of an unwanted noise in terms of its relationship to noise from other sources (background noise). The blowing of a car horn at night when background noise levels are approximately 45 dBA would generally be more objectionable than the blowing of a car horn in the afternoon when background noises might be 55 dBA.

The third factor is related to the interference of noise with activities of individuals. In a 60 dBA environment, normal conversation would be possible while sleep might be difficult. Work activities requiring high levels of concentration may be interrupted by loud noises while activities requiring manual effort may not be interrupted to the same degree.

Over time, particularly if the noises occur at predicted intervals and are expected, individuals tend to accept the noises that intrude into their lives. Attempts have been made to regulate many of these types of noises including airplane noise, factory noise, railroad noise, and highway traffic noise. In relation to highway traffic noise, methods of analysis and control have developed rapidly over the past few years.

b. Noise Abatement Criteria

The Federal Highway Administration (FHWA) has developed Noise Abatement Criteria (NAC) and procedures to be used in the planning and design of highways to determine whether highway noise levels are or are not compatible with various land uses. These abatement criteria and procedures are set forth in the aforementioned Federal reference (Title 23 CFR Part 772). A summary of the noise abatement criteria for various land uses is presented in Table N2 in Appendix 2. The Leq, or equivalent sound level, is the level of constant sound which in a given situation and time period has the same energy as does time varying sound. In other words, the fluctuating sound levels of traffic noise are represented in terms of a steady noise level with the same energy content.

c. Ambient Noise Levels

Ambient noise measurements were taken in the vicinity of the project to determine ambient (existing) noise levels for the identified land uses. The purpose of this noise level information was to quantify the existing acoustic environment and to provide a base for assessing the impact of noise level increases. The existing Leq noise levels in the project area as measured at 15 meters from the nearest roadway ranged from 77.4 to 78.6 dBA. The ambient measurement locations and measured exterior Leq noise levels are presented in Appendix 2 in Tables N1 and N3, respectively. In areas where noise was not the predominate noise source, a background noise level of 45 dBA was determined.

The existing roadway and traffic conditions were used with the most current traffic noise prediction model in order to calculate existing noise levels for

comparison with noise levels actually measured. The calculated existing noise levels averaged 1.2 dBA higher than the measured noise levels for the locations where noise measurement were obtained. Hence, the computer model is a reliable tool in the prediction of noise levels. Differences in dBA levels can be attributed to "bunching" of vehicles, low traffic volumes, and actual vehicle speeds versus the computer's "evenly-spaced" vehicles and single vehicular speed.

d. Procedures for Predicting Future Noise Levels

In general, the traffic situation is composed of a large number of variables that describe different cars driving at different speeds through a continual changing highway configuration and surrounding terrain. Due to the complexity of the problem, certain assumptions and simplifications must be made to predict highway traffic noise. The procedure used to predict future noise levels in this study was the Noise Barrier Cost Reduction Procedure, STAMINA 2.0 and OPTIMA (revised March 1983). The BCR (Barrier Cost Reduction) procedure is based upon the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108). The BCR traffic noise prediction model uses the number and type of vehicles on the planned roadway, their speeds, the physical characteristics of the road (curves, hills, depressed, elevated, etc.), receptor location and height, and, if applicable, barrier type, barrier ground elevation, and barrier top elevation.

In this regard, it is noted that only preliminary alignment was available for use in this noise analysis. The project proposes to widen I-85 to a multi-lane facility. The two cross-sections considered that would provide the needed improvements to the existing 4-lane roadway were an 8-lane section divided by a 46ft (14.0m) median, and a 6-lane section divided by a 46ft (14.0m) median. Only those existing natural or man-made barriers were included in setting up the model. The roadway sections and proposed intersections were assumed to be flat and at-grade. Thus, this analysis represents the "worst-case" topographical conditions. The noise predictions made in this report are highway-related noise predictions for the traffic conditions during the year being analyzed.

Peak hour design and level-of-service (LOS) C volumes were compared, and the volumes resulting in the noisiest conditions were used with the proposed posted speed limits. Hence, during all other time periods, the noise levels will be no greater than those indicated in this report. The STAMINA 2.0 computer model was utilized in order to determine the number of land uses (by type) which would be impacted during the peak hour of the year 2025. A land use is considered to be impacted when exposed to noise levels approaching or exceeding the FHWA noise abatement criteria and/or predicted to sustain a substantial noise increase.

The Leq traffic noise exposures associated with this project are listed in Table N4. Information included in these tables consists of listings of all receptors in

close proximity to the project, their ambient and predicted noise levels, and the estimated noise level increase for each.

e. Traffic Noise Impacts and Noise Contours

Traffic noise impacts occur when the predicted traffic noise levels either: [a] approach or exceed the FHWA noise abatement criteria (with "approach" meaning within 1 dBA of the Table N2 value), or [b] substantially exceed the existing noise levels. The NCDOT definition of substantial increase is shown in the lower portion of Table N2. Consideration for noise abatement measures must be given to receptors that fall in either category.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/State governments are not responsible for providing noise abatement measures for new development which building permits are issued within the noise impact area of a proposed highway after the Date of Public Knowledge. The Date of Public Knowledge of the location of a proposed highway project will be the approval date of CEs, FONSIs, RODs, or the Design Public Hearing, whichever comes later. For development occurring after this public knowledge date, local governing bodies are responsible to insure that noise compatible designs are utilized along the proposed facility.

The maximum number of receptors in each activity category that are predicted to become impacted by future traffic noise is shown in Table N5 in Appendix 2. These are noted in terms of those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA NAC or by a substantial increase in exterior noise levels. Under Title 23 CFR Part 772, the maximum number of impacts are 60 residential receptors and 8 commercial receptors due to highway traffic noise in the project area. The maximum extent of the 72 and 67 dBA noise level contours are 94.4 and 142.5 meters, respectively, from the center of the proposed roadway. This information should assist local authorities in exercising land use control over the remaining undeveloped lands adjacent to the roadway within local jurisdiction. For example, with the proper information on noise, the local authorities can prevent further development of incompatible activities and land uses with the predicted noise levels of an adjacent highway.

Table N6 in Appendix 2 exhibits the exterior traffic noise level increases for the identified receptors in each roadway section. The predicted noise level increases for this project range from +4 to +9 dBA. When real-life noises are heard, it is possible barely to detect noise level changes of 2-3 dBA. A 5-dBA change is more readily noticeable. A 10-dBA change is judged by most people as a doubling or a halving of the loudness of the sound.

f. Traffic Noise Abatement Measures

If traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures for reducing or eliminating the noise impacts must be considered. Consideration for noise abatement measures must be given to all impacted receptors.

1. Highway Alignment

Highway alignment selection involves the horizontal or vertical orientation of the proposed improvements in such a way as to minimize impacts and costs. The selection of alternative alignments for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. For noise abatement, horizontal alignment selection is primarily a matter of siting the roadway at a sufficient distance from noise sensitive areas. Changing the highway alignment is not a viable alternative for noise abatement.

2. Traffic System Management Measures

Traffic management measures that limit vehicle type, speed, volume and time of operations are often effective noise abatement measures. For this project, traffic management measures are not considered appropriate for noise abatement due to their effect on the capacity and level-of-service on the proposed roadway.

3. Noise Barriers

Physical measures to abate anticipated traffic noise levels are often applied with a measurable degree of success by the application of solid mass, attenuable measures to effectively diffract, absorb, and reflect highway traffic noise emissions. Solid mass, attenuable measures may include earth berms or artificial abatement walls. However, these mitigating measures may not be feasible or reasonable in all cases, particularly for receptors with frontage along primary or secondary roads which cross the proposed project. Reduction of traffic noise levels from the proposed roadway may not necessarily lower the noise levels at these receptors to within the recommended noise abatement criteria and/or below a substantial noise level increase.

For a noise barrier to provide sufficient noise reduction it must be high enough and long enough to shield the receptor from significant sections of the highway. Access openings in the barrier severely reduce the noise reduction provided by the barrier. It then becomes economically unreasonable to construct a barrier for a small noise reduction. Safety at access openings

(driveways, crossing streets, etc.) due to restricted sight distance is also a concern. Furthermore, to provide a sufficient reduction, a barrier's length would normally be 8 times the distance from the barrier to the receptor. For example, a receptor located 49ft (15.0m) from the barrier would normally require a barrier 394ft (120m) long. An access opening of 40ft (12.0m) [10 percent of the area] would limit its noise reduction to approximately 4 dBA (FUNDAMENTAL AND ABATEMENT OF HIGHWAY TRAFFIC NOISE, Report No. FHWA-HHI-HEV-73-7976-1, USDOT, chapter 5, section 3.2, page 5-27).

Based on past project experience, isolated receptors and/or scattered receptors generally require noise barriers which are too costly because of the length and height required for a reasonable noise level reduction. For this reason, no isolated receptors or areas where there are scattered receptors were analyzed in detail for this report. In addition, businesses, churches, and other related establishments located along a particular highway normally require accessibility and high visibility. Solid mass, attenuable measures for traffic noise abatement would tend to disallow these two qualities, and thus, would not be acceptable abatement measures in this case.

All impacted receptors were considered for noise mitigation. The evaluation was accomplished in two steps. First, a qualitative barrier evaluation was performed for each impacted receptor which considered each receptor's FHWA NAC activity category, source-receptor relationships, impacted site densities, and the ability to have continuous barriers. For many impacted receptors, noise mitigation measures were deemed not feasible, reasonable or cost effective due to the aforementioned discussion concerning noise abatement. However, the qualitative evaluation resulted in five potential locations.

The second step of the barrier evaluation involved the computer modeling of noise barriers at these five potential locations using the FHWA's noise barrier simulation model OPTIMA. The analyses were accomplished by developing barriers which would meet minimum noise reduction goals at the impacted sites. The cost of the barrier and the cost per benefited receptor were then calculated. Table N7 in Appendix 2 contains the result of the abatement analysis for each potential barrier site. NCDOT defines a benefited receptor as any receptor, impacted or non-impacted, receiving a minimum noise level reduction of 5 dBA with the placement of a noise mitigation measure.

All the noise barriers were determined to be unreasonable, due to the cost of the noise reduction benefits versus the cost of the abatement measures. However, the project will be re-evaluated for noise abatement measures once more detailed designs are complete.

g. "Do Nothing" Alternative

The traffic noise impacts for the "do nothing" or "no-build" alternative were also considered. If the proposed widening did not occur, 57 impacted residential receptors, and 7 impacted commercial receptors would experience traffic noise impacts by approaching or exceeding the FHWA NAC. Also, the receptors could anticipate experiencing an increase in exterior noise levels +4 dBA and +6 dBA. This small increase to present noise levels would be barely noticeable to the people working and living in the area.

h. Construction Noise

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passers-by and those individuals living or working near the project, can be expected particularly from paving operations and from the earth moving equipment during grading operations. However, considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours, these impacts are not expected to be substantial. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

i. Summary

Based on these preliminary studies, traffic noise abatement is not recommended, and no noise abatement measures are proposed. However, the project will be re-evaluated for noise abatement measures once more detailed designs are complete.

7. Air Quality Analysis

Air pollution originates from various sources. Emissions from industrial and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air conditions. Highway traffic is the center of concern when determining the impact of a new highway facility or the improvement of an existing facility. Motor vehicles emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), particulate matter, sulfur dioxide (SO2), and lead (Pb) (listed in order of decreasing emission rate). Automobiles are considered to be the major source of CO in the project area. For this reason, most of the analysis presented is concerned with determining expected carbon monoxide levels in the vicinity of the project due to traffic flow.

In order to determine the ambient CO concentration for the receptor closest to the highway project, two concentration components must be used: local and background. The local concentration is defined as the CO emissions from cars operating on highways in the near vicinity (i.e., distances within 100 meters) of the receptor location. The background concentration is defined by the North Carolina Department of Environment, Health and Natural Resources as "the concentration of a pollutant at a point that is the result of emissions outside the local vicinity; that is, the concentration at the upwind edge of the local sources."

In this study, the local concentration was determined by the NCDOT Traffic Noise/Air Quality Staff using line source computer modeling and the background concentration was obtained from the North Carolina Department of Environment, Health and Natural Resources (DEHNR). Once the two concentration components were resolved, they were added together to determine the ambient CO concentration for the receptor in question and to compare to the National Ambient Air Quality Standards (NAAQS).

Automobiles are regarded as sources of hydrocarbons and nitrogen oxides. Hydrocarbons and nitrogen oxides emitted from cars are carried into the atmosphere where they react with sunlight to form ozone and nitrogen dioxide. Automotive emissions of HC and NO are expected to decrease in the future due to the continued installation and maintenance of pollution control devices on new cars. However, regarding area-wide emissions, these technological improvements may be offset by the increasing number of cars on the transportation facilities of the area.

The photochemical reactions that form ozone and nitrogen dioxide require several hours to occur. For this reason, the peak levels of ozone generally occur 6.2 to 12.4 miles (10 to 20 kilometers) downwind of the source of hydrocarbon emissions. Urban areas as a whole are regarded as sources of hydrocarbons, not individual streets and highways. The emissions of all sources in an urban area mix together in the atmosphere, and in the presence of sunlight, the mixture reacts to form ozone, nitrogen dioxide, and other photochemical oxidants. The best example of this type of air pollution is the smog which forms in Los Angeles, California.

Automobiles are not regarded as significant sources of particulate matter and sulfur dioxide. Nationwide, highway sources account for less than 7 percent of particulate matter emissions and less than 2 percent of sulfur dioxide emissions. Particulate matter and sulfur dioxide emissions are predominantly the result of non-highway sources (e.g., industrial, commercial, and agricultural). Because emissions of particulate matter and sulfur dioxide from automobiles are very low, there is no reason to suspect that traffic on the project will cause air quality standards for particulate matter and sulfur dioxide to be exceeded.

Automobiles without catalytic converters can burn regular gasoline. The burning of regular gasoline emits lead as a result of regular gasoline containing tetraethyl lead

which is added by refineries to increase the octane rating of the fuel. Newer cars with catalytic converters burn unleaded gasoline eliminating lead emissions. Also, the United States Environmental Protection Agency (EPA) has required the reduction in the lead content of leaded gasolines. The overall average lead content of gasoline in 1974 was 0.5 grams per liter. By 1989, this composite average had dropped to 0.0025 grams per liter. In the future, lead emissions are expected to decrease as more cars use unleaded fuels and as the lead content of leaded gasoline is reduced. The Clean Air Act Amendments of 1990 make the sale, supply, or transport of leaded gasoline or lead additives unlawful after December 31, 1995. Because of these reasons, it is not expected that traffic on the proposed project will cause the NAAQS for lead to be exceeded.

A microscale air quality analysis was performed to determine future CO concentrations resulting from the proposed highway improvements. "CAL3QHC - A Modeling Methodology For Predicting Pollutant Concentrations Near Roadway Intersections" was used to predict the CO concentration near sensitive receptors.

Inputs into the mathematical model to estimate hourly CO concentrations consisted of a level roadway under normal conditions with predicted traffic volumes, vehicle emission factors, and worst-case meteorological parameters. The traffic volumes are based on the annual average daily traffic projections. The traffic volume used for the CAL3QHC model was the highest volume within any alternative. Carbon monoxide vehicle emission factors were calculated for the completion year of 1998 and the design year of 2018 using the EPA publication "Mobile Source Emission Factors" and the MOBILE 5A mobile source emissions computer model.

The background CO concentration for the project area was estimated to be 1.8 parts per million (ppm). Consultation with the Air Quality Section, Division of Environmental Management, North Carolina Department of Environment, Health, and Natural Resources indicated that an ambient CO concentration of 1.8 ppm is suitable for most suburban and rural areas.

The worst-case air quality scenario was determined to be located along the limits of the right-of-way at 151ft (46.0m) from the centerline of the roadway. The predicted 1-hour average CO concentrations for the evaluation build years of 2005 and 2025 are 3.2 and 3.8 ppm, respectively.

Comparison of the predicted CO concentrations with the NAAQS (maximum permitted for 1-hour averaging period = 35 ppm; 8-hour averaging period = 9 ppm) indicates no violation of these standards. Since the results of the worst-case 1-hour CO analysis is less than 9 ppm for the build alternative, it can be concluded that the 8-hour CO level would not exceed the standard. See Appendix 2, tables A1 through A3 for input data and output.

The project is located in Davidson and Rowan Counties, which is within the Greensboro/Winston-Salem/High Point nonattainment area for ozone (O3) as defined by the EPA. The 1990 Clean Air Act Amendments (CAAA) designated these areas as "moderate" nonattainment areas for O3. However, due to improved monitoring data, these areas were redesignated as "maintenance" for O3 on November 7, 1993. Section 176 (c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Davidson County. The High Point Urban Area 1996 Transportation Improvement Program (TIP) has been determined to conform to the intent of the SIP. The MPO approval date for the TIP is June 13, 1995. The USDOT approval date of the TIP is September 20, 1995. The current conformity determination is consistent with the final conformity rule found in 40 CFR Part 51. There has been no significant changes in the project's design concept or scope, as used in the conformity analyses.

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project, burned or otherwise disposed of by the contractor. Any burning will be done in accordance with applicable local laws and ordinances and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. Care will be taken to insure that burning will be done at the greatest practical distance from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will only be utilized under constant surveillance. Also during construction, measures will be taken to reduce the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents. This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the NEPA process, and no additional reports are necessary.

8. Hazardous Materials and UST Involvement

A field reconnaissance survey was conducted by Environmental Investigations (EI) for this project. One UST facility, Bill's Truck Stop, was identified along the project corridor which could potentially impact this proposed project. It is recommended by EI that NCDOT should avoid or limit the proposed right-of-way encroachment at this site due to potential environmental liabilities associated with possible cleanup and remediation. If alternate corridors cannot be utilized, a Preliminary Site Assessment (PSA) should be performed prior to right of way acquisition to determine the presence and extent of any existing contamination, as well as to estimate associated clean up costs. After the preferred corridor has been selected and the public hearing has been held, PSA's will be performed on the site within the proposed right of way. An effort will be made to minimize impacts to this facility. If this UST facility is to be impacted, this site will be further investigated for possible fuel leakages during the right of way acquisition phase of the project.

No landfills or other potentially contaminated sites were found within the NCDOT's proposed scope of work.

9. Federal Energy Regulatory Commission (FERC)

Because the subject project lies within a FERC-licensed hydroplant project boundary (the Yadkin Project), approval for land transfer must be obtained by NCDOT in the form of a FERC license revision. Coordination with the proper FERC officials shall take place, and the process to obtain a FERC permit will be followed.

10. Construction Impacts

To minimize potential adverse effects caused by construction, the following measures, along with those already mentioned, will be implemented during the construction phase:

a. Waste and debris shall be disposed of in areas that are outside of the right-of way and provided by the Contractor, unless otherwise required by the plans or special provision by the Engineer. Disposal of waste and debris in active public waste or disposal areas will not be permitted without prior approval by the Engineer. Such approval will not be permitted when, in the opinion of the Engineer, it will result in excessive siltation or pollution. In addition, disposal will not be done in wetland areas.

b. Borrow pits and all ditches will be drained insofar as possible to alleviate breeding areas for mosquitoes.

c. Care will be taken not to block existing drainage ditches.

d. An extensive rodent control program will be established if structures are to be removed or demolished.

e. Telephone, water, sewer, and electric utilities exist along the project. The Department of Transportation will hold a preconstruction conference between the Department, the Contractor, representatives of the involved utility companies, and pertinent local officials. Methods to coordinate utility adjustments will be discussed at this conference. The contractor will prepare a work schedule that minimizes possible damage to these utilities and interruption of service.

f. During construction of the proposed project, all materials resulting from clearing and grubbing, demolition or other operations will be removed from the project and burned or otherwise disposed of by the Contractor. Any burning done will be done in accordance with applicable local laws and ordinances and regulations of the North Carolina State Implementation Plan

for air quality. Care will be taken to insure burning will be done at the greatest distance practicable from dwellings and not when atmospheric conditions are such as to create a hazard to the public. Burning will be performed under constant surveillance.

g. An erosion control schedule will be developed by the contractor before starting work. The schedule will show the time relationship between phases of the work that must be coordinated to reduce erosion and describe construction practices and temporary erosion control measures that will be used to minimize erosion. In conjunction with this schedule, the contractor will be required to follow those provisions of the plans and specifications pertaining to erosion and siltation. Temporary erosion control measures such as berms, dikes, dams, silt basins, and others will be used as needed.

h. Prior to the approval of any borrow source developed for the use on this project, the contractor shall obtain a certification from the State Historic Preservation Officer of the State Department of Cultural Resources certifying that the removal of the material from the borrow source will have no effect on any known district, site, building, structure, or object that is listed on the National Register of Historic Places. A copy of this certification shall be furnished to the Engineer prior to performing any work on the proposed borrow source.

i. Measures will be taken in allaying the dust generated by construction when the control of dust is necessary for the protection and comfort of motorists or area residents.

j. Traffic service in the immediate project area may be briefly disrupted during construction. Efforts will be made to ensure the transportation needs of the public will be met during and after construction.

k. Measures will be taken to ensure that sediment and erosion control devices will not be placed in wetland areas, except for devices such as silt fences and rock check dams in drainage areas which limit sediment getting into the wetland.

V. COMMENTS AND COORDINATION

A. Comments Received from Federal, State, and Local Agencies

Comments were received from the following Federal, State, and local agencies. These comments have been taken into consideration in the planning of this project and the preparation of this document.

U.S Department of the Interior (Fish and Wildlife Service)
Federal Energy Regulatory Commission
State Clearinghouse
N.C. Department of Administration
N.C. Department of Cultural Resources
N.C. Department of Environment and Natural Resources
N.C. Wildlife Resources Commission
Public Schools of North Carolina
State of North Carolina Department of Environment and Natural Resources
Finetex, Inc.

Copies of the comments received are included in Appendix 3 (See pages A3-1 through A3-25)

B. Citizens Informational Workshop

The Division of Highways held an informal Citizens Informational Workshop for the project on September 9, 1998. This workshop was held at the Spencer Town Hall in Spencer from 4:30 p.m. to 7:30 p.m. Prior to the workshop, a Local Officials Meeting was held at 2:00 p.m. Representatives of the Project Development and Environmental Analysis Branch, the Roadway Design Unit, the Division Engineer, and Right of Way Branch of the NCDOT were available to explain the project, answer questions, and receive comments. Approximately 20 citizens attended the meeting.

During the workshop, the Division of Highways displayed an aerial photograph of the project area, vicinity maps, and a thoroughfare plan map showing the proposed project. In addition, the Division of Highways supplied each participant with an information packet containing general project information, a vicinity map, and a comment sheet. A copy of this packet is included in Appendix 4 (see pages A4-1 through A4-13). Each participant had the opportunity to review the aerial photograph and maps and ask questions or give comments.

Two typical sections were presented to the public at the workshop; an eight-lane divided roadway with a 46ft (14.0m) median or a ten-lane divided roadway with a 46ft (14.0m) median. New bridges were proposed to be constructed in the vicinity of the

Yadkin River and the Southern Railroad. Also, major interchange and service road revisions were proposed to accommodate the proposed widening of I-85 and to improve traffic flow and safety in the project area.

Comments received from those in attendance include suggesting that the proposed extension of Hinkle lane be extended to Hackett Road along I-85 in front of Finetex. Another comment addressed that Bridge # 46 needs to be upgraded and maintained due to heavy truck traffic.

A copy of a local newspaper article can also be found in the appendix on page A4-13.

C. Public Hearing

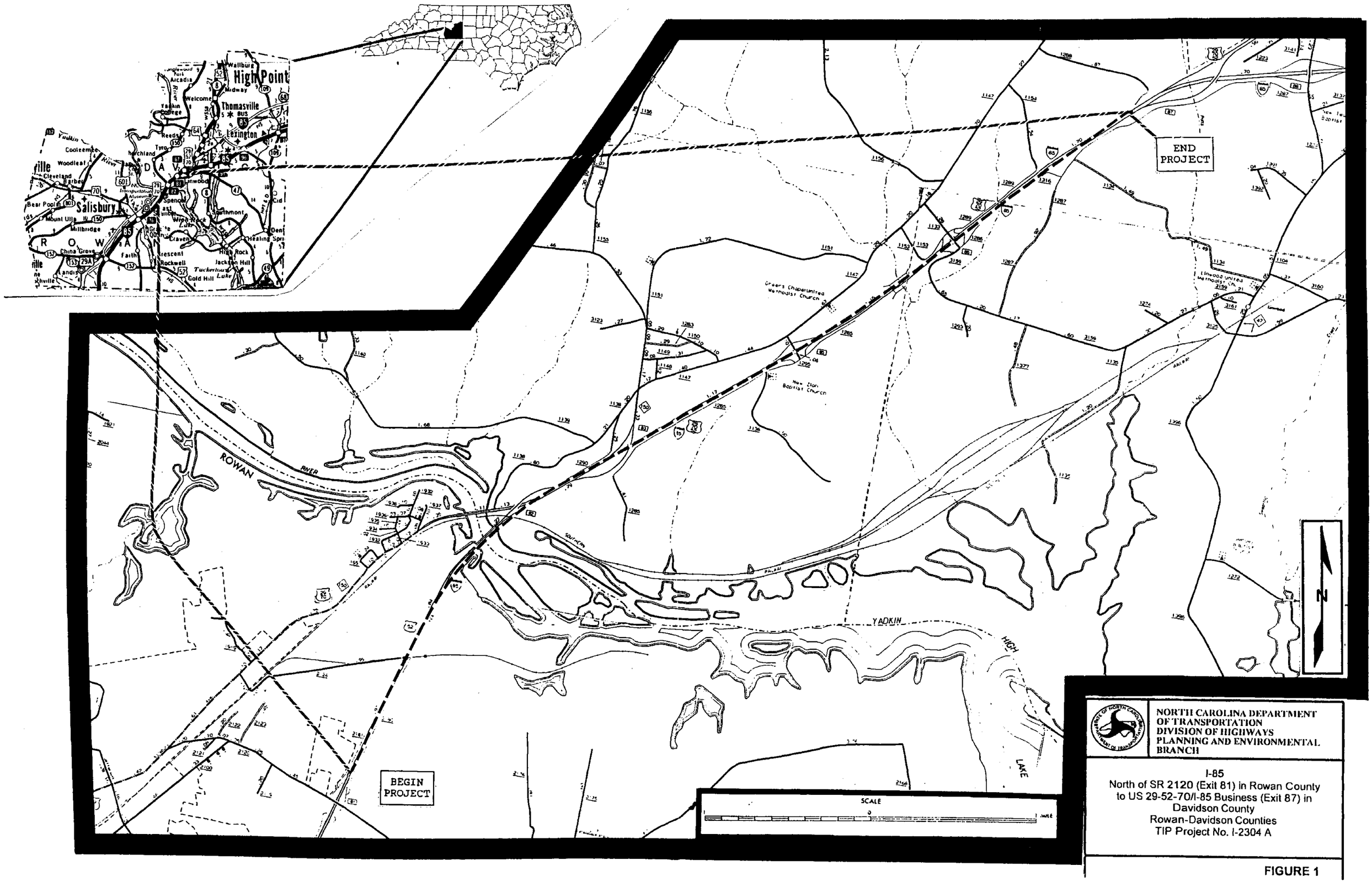
A public hearing will be held following circulation of this report to provide more detailed information on the project to local citizens and to receive additional comments on the project.

D. NEPA/404 Merger Team Meeting

The NEPA/404 Merger Team met on July 19, 2000 to discuss the purpose and need of the project and alternatives to be studied. The NEPA/404 Merger Team is an interagency group that works together throughout the project development process to identify key issues related to the project, minimize impacts on the environment, and achieve consensus on certain key decision points. The Team has concurred with the purpose of the project as described in Section I.A. of this report as well as the alternatives to be studied as described in Section III. The concurrence forms are included in Appendix 5.

The third concurrence point, selection of the least environmentally-damaging practicable alternative, will be discussed at the next Team meeting which will be held after the public hearing.

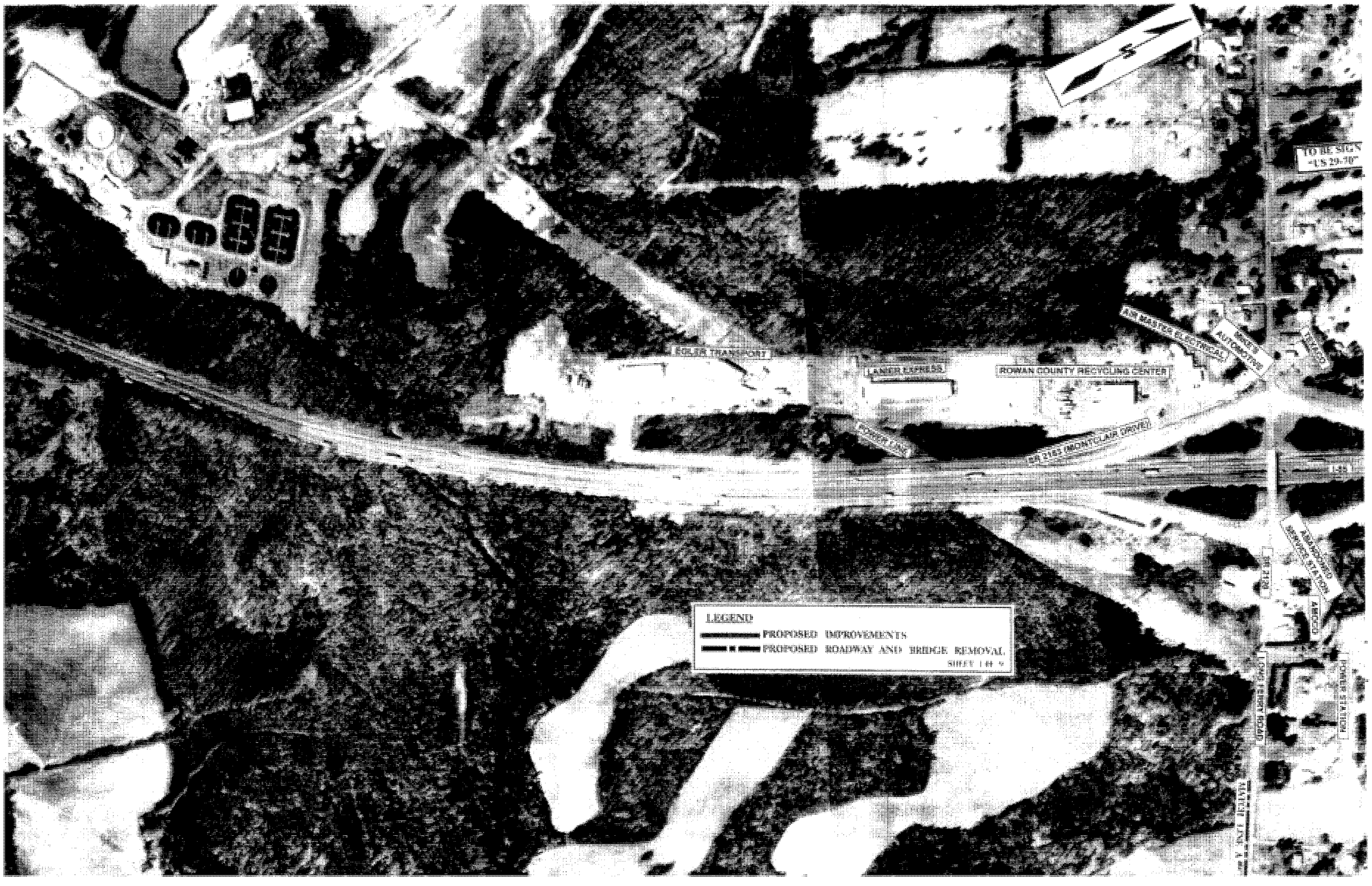
Maps and Illustrations

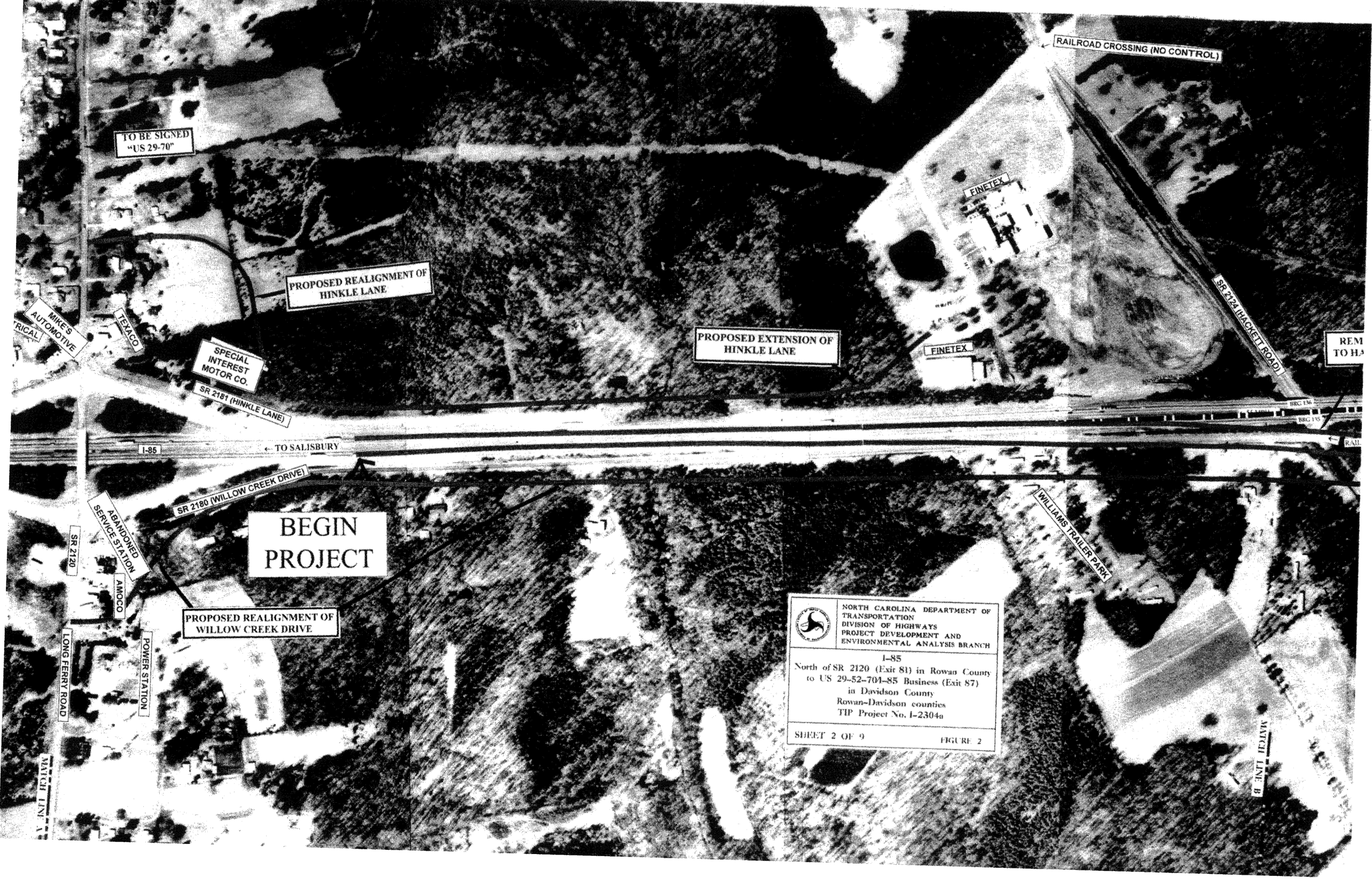


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANNING AND ENVIRONMENTAL BRANCH

I-85
North of SR 2120 (Exit 81) in Rowan County
to US 29-52-70/I-85 Business (Exit 87) in
Davidson County
Rowan-Davidson Counties
TIP Project No. I-2304 A

FIGURE 1


N
TO BE SIGNED "US 29-70"
SOLER TRANSPORT
LANIER EXPRESS
ROWAN COUNTY RECYCLING CENTER
POWER LINE
SR 2163 (MONTCLAIR DRIVE)
I-85
SR 2120
LONG FERRY ROAD
AMOCO
POWER STATION
LEGEND
PROPOSED IMPROVEMENTS
PROPOSED ROADWAY AND BRIDGE REMOVAL
SHEET 1 OF 9

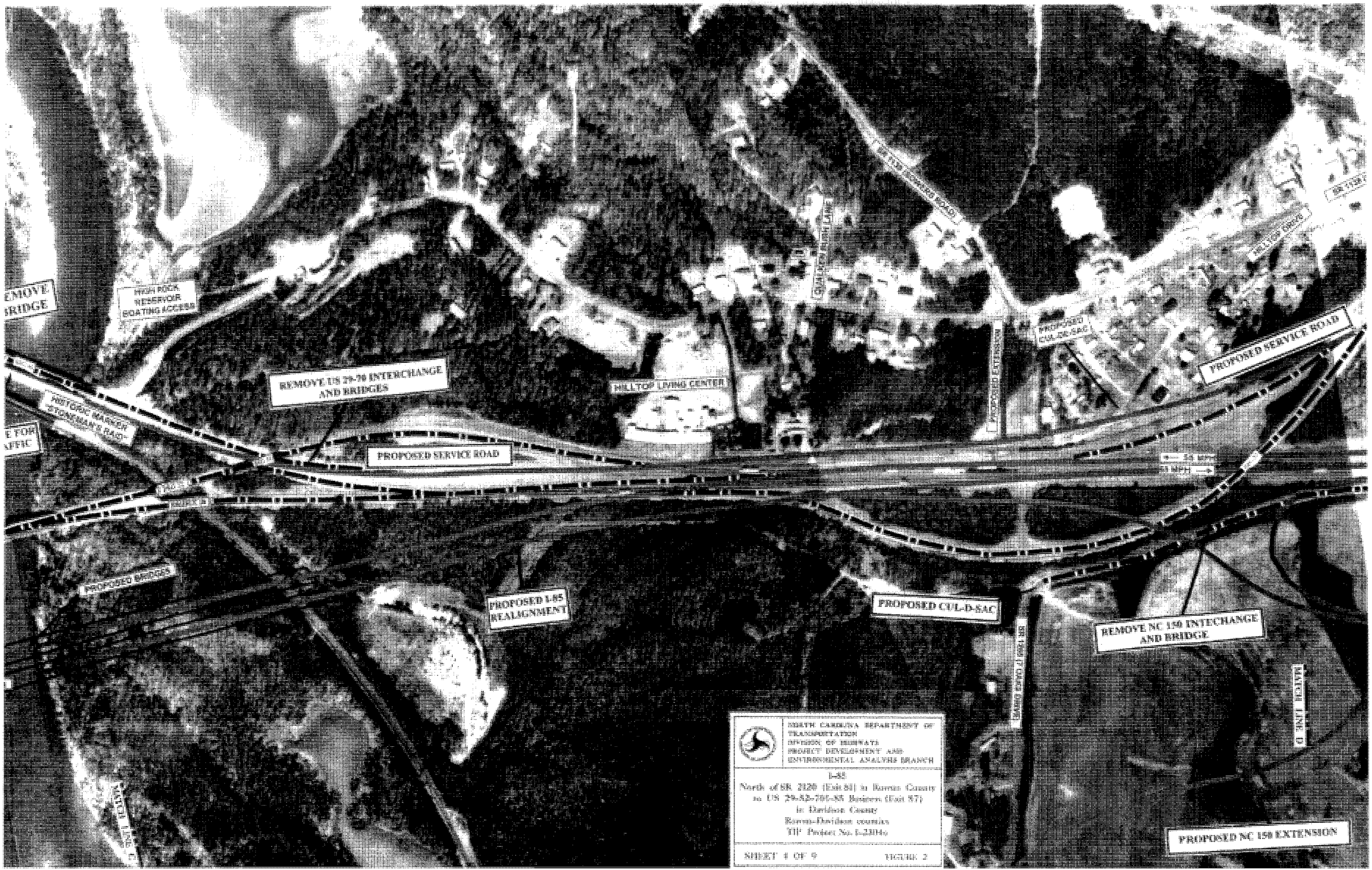


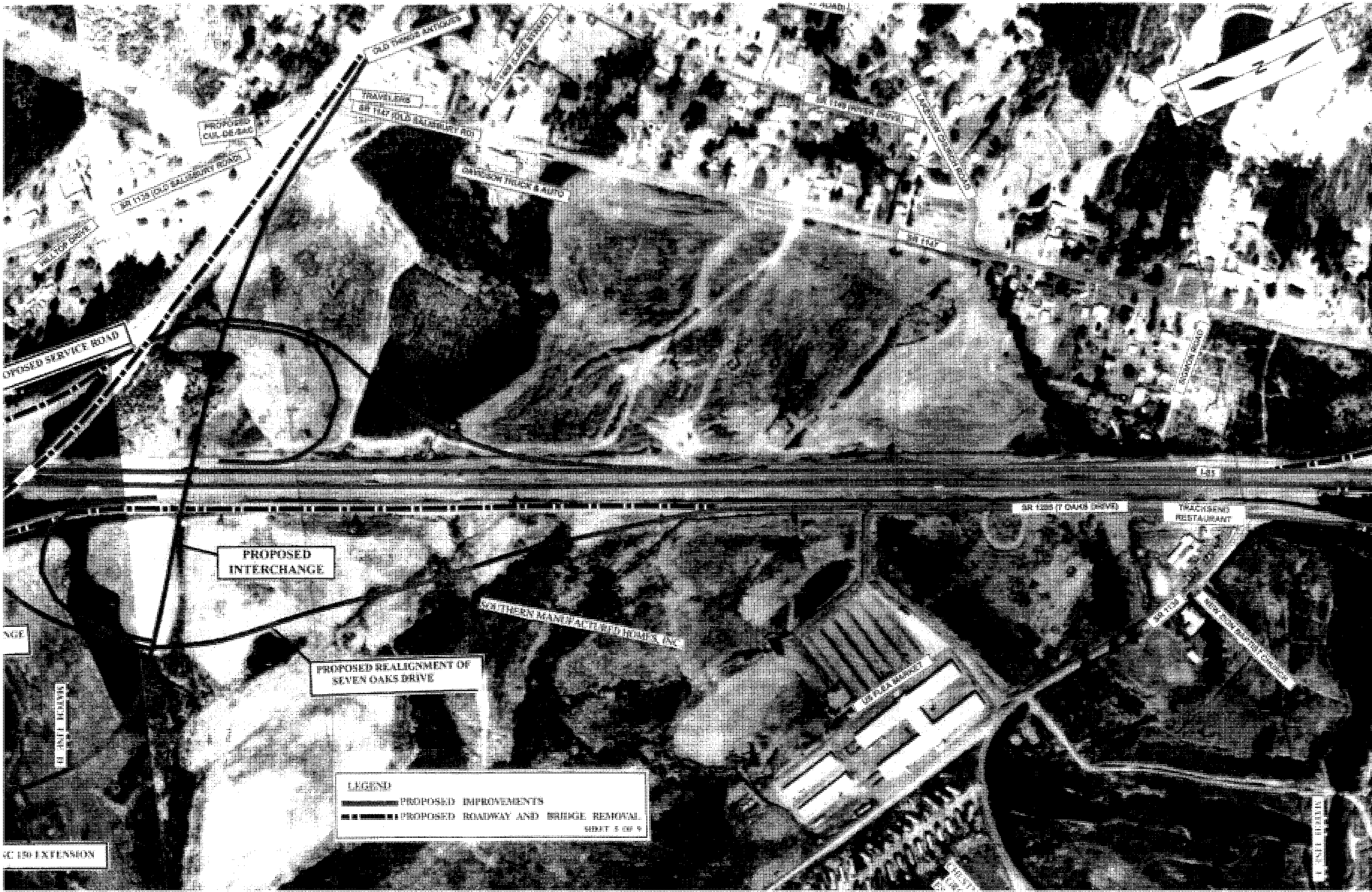
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

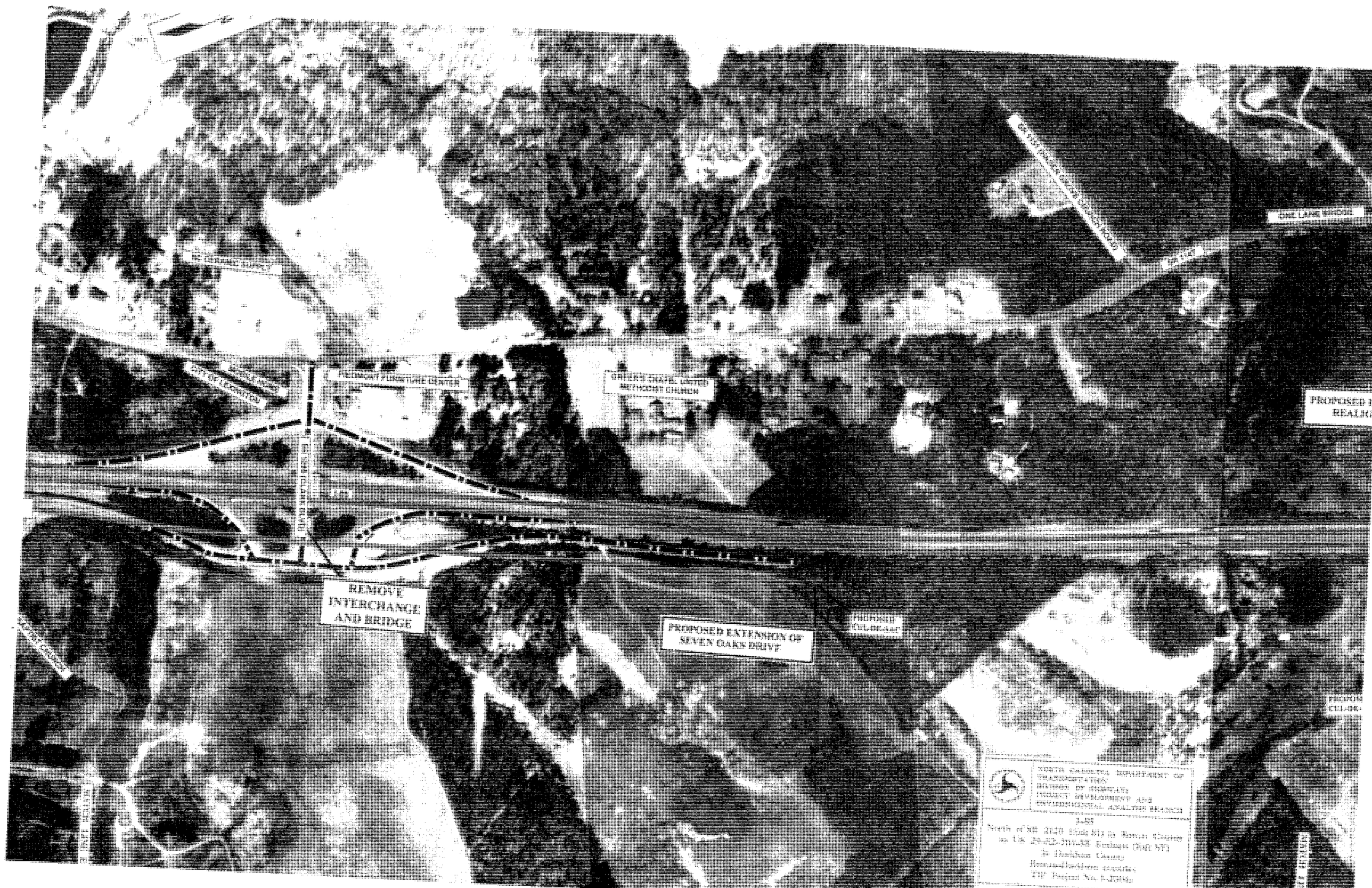
I-85
North of SR 2120 (Exit 81) in Rowan County
to US 29-52-70-85 Business (Exit 87)
in Davidson County
Rowan-Davidson counties
TIP Project No. I-2304a

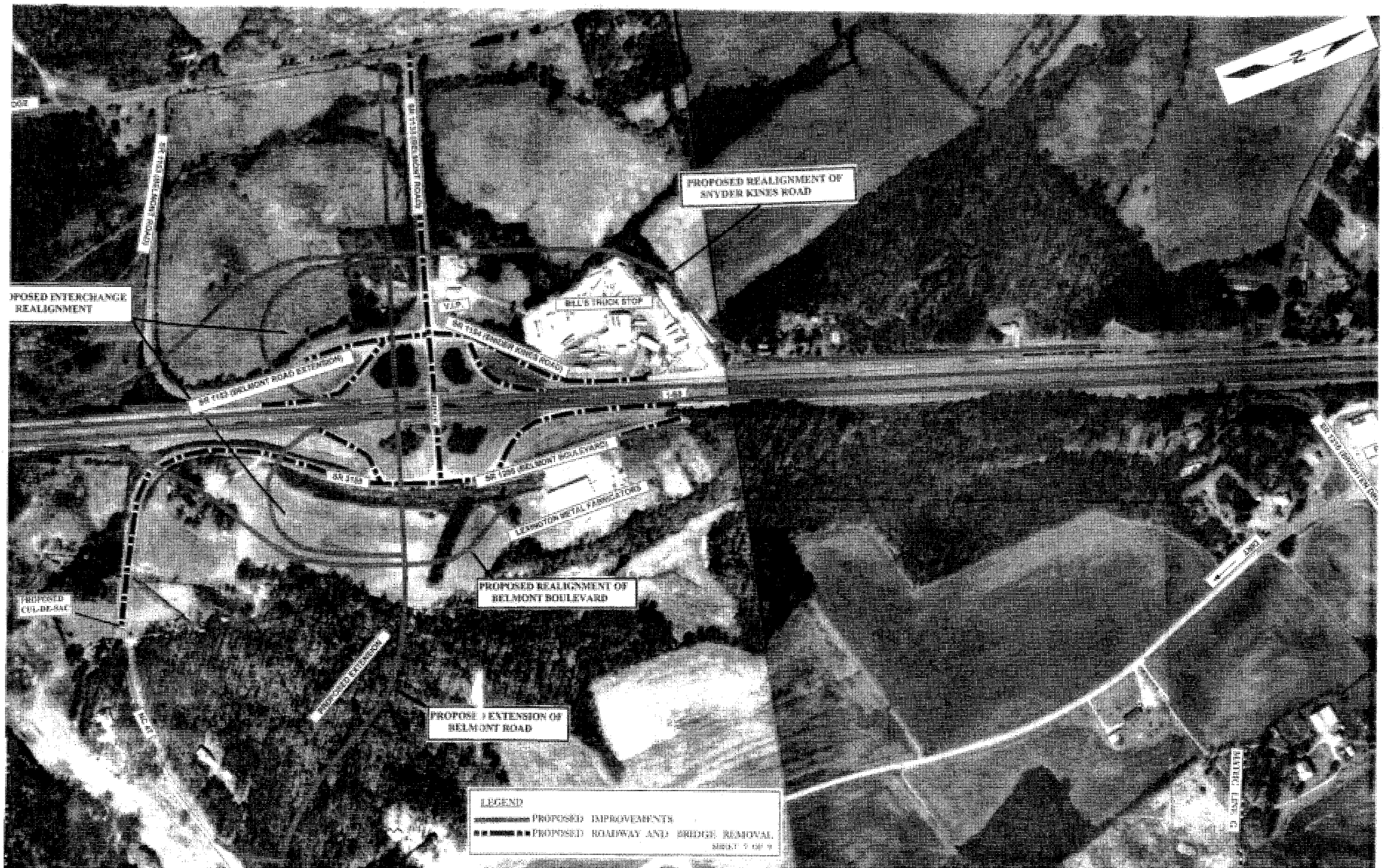
SHEET 2 OF 9 FIGURE 2

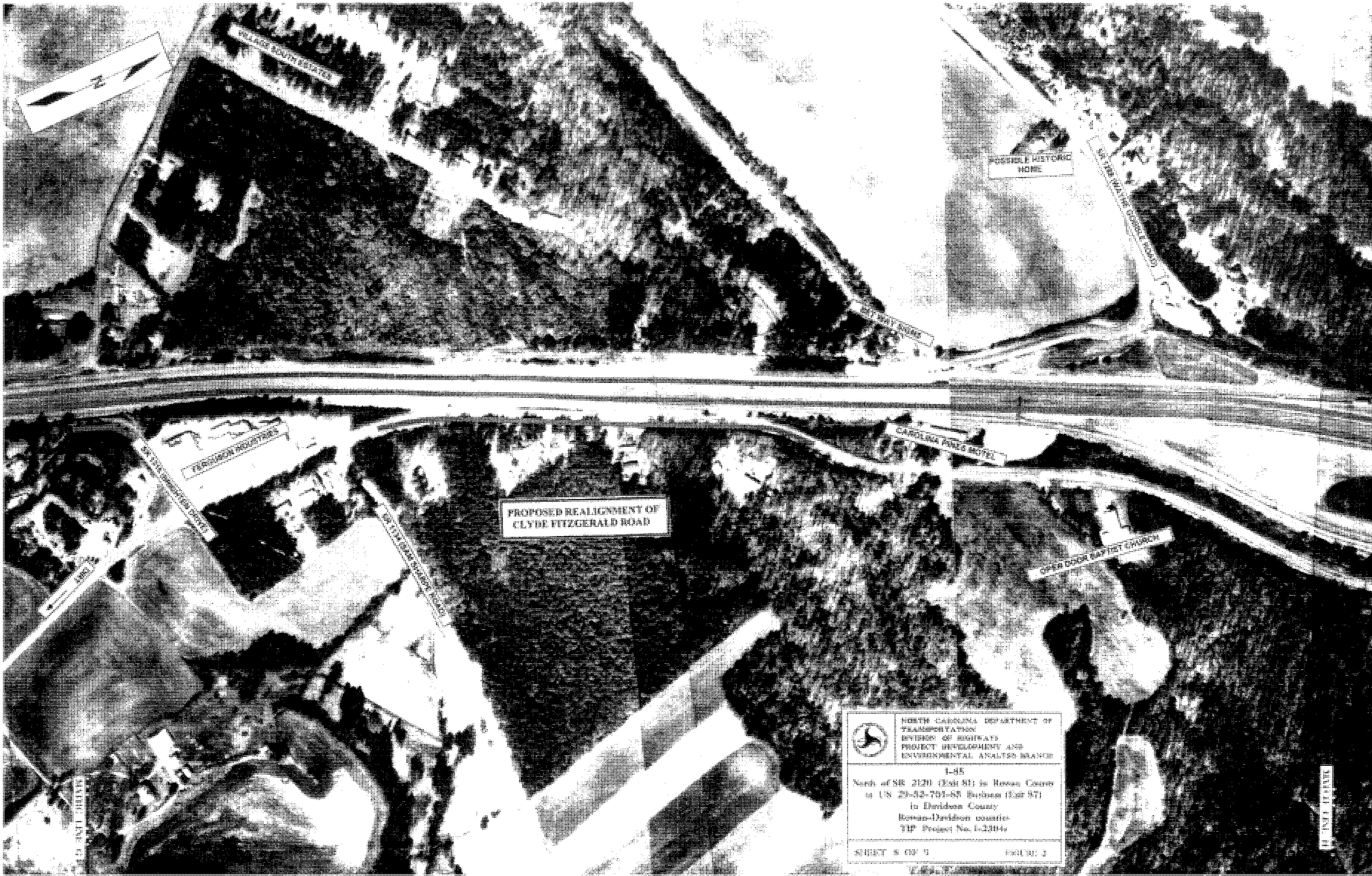
SR 1937 (FIELDCREST CANNON
N.C. FINISHING COMPANY
HISTORICAL MARKER "TRADING FORD"
FIELDCREST CANNON INC.
US 29/70
RETAIN BRIDGE FOR TWO-WAY TRAFFIC
I-85
REMOVE ACCESS TO HACKETT ROAD
(HACKETT ROAD)
YADKIN RIVER
TERMINATE WILLOW CREEK DRIVE
PROPOSED I-85 REALIGNMENT
MATCH LINE C
LEGEND
PROPOSED IMPROVEMENTS
PROPOSED ROADWAY AND BRIDGE REMOVAL
SHEET 3 OF 9

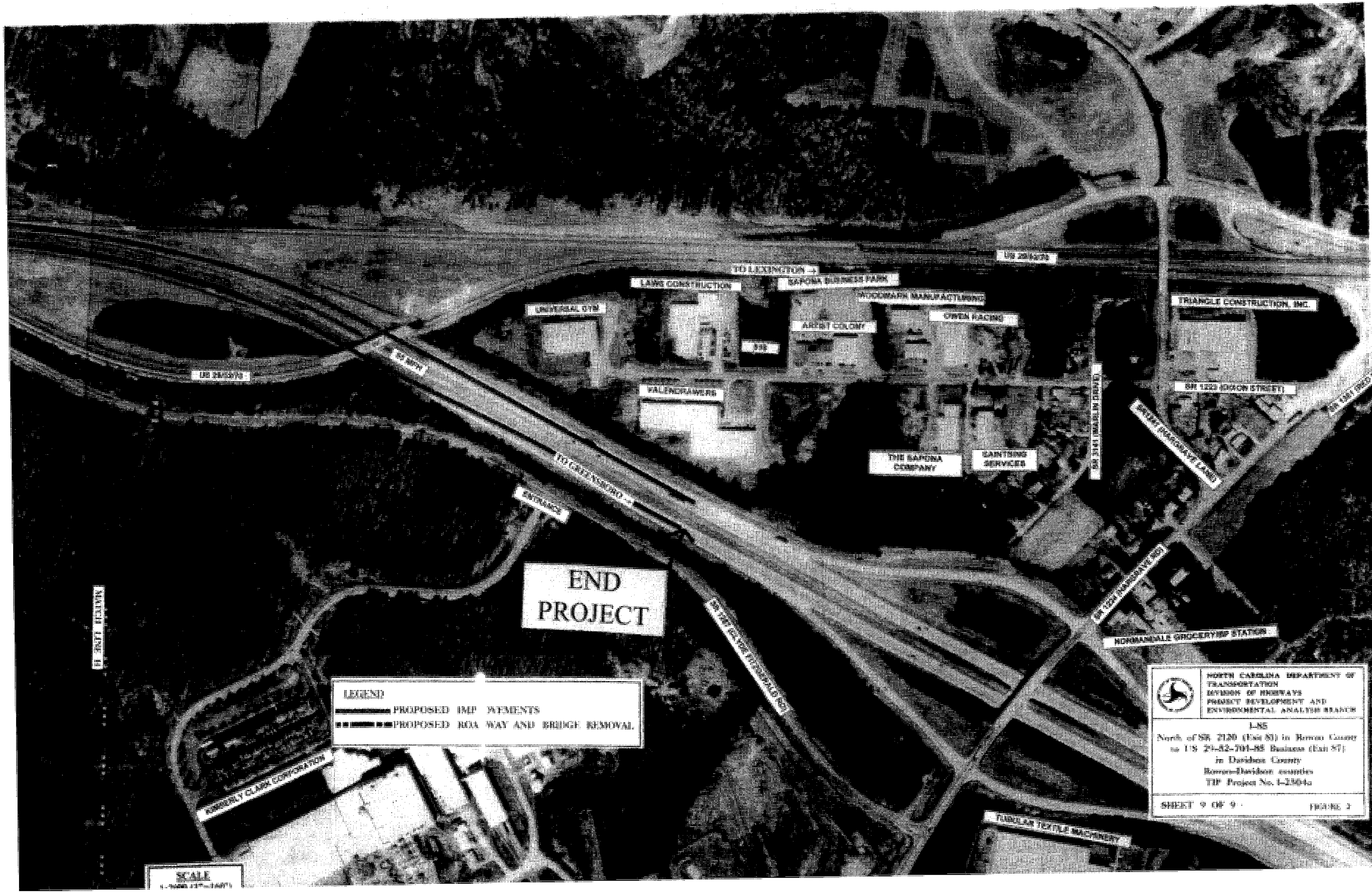

REMOVE
BRIDGE
HIGH ROCK
RESERVOIR
BOATING ACCESS
REMOVE US 29-70 INTERCHANGE
AND BRIDGES
HILLTOP LIVING CENTER
PROPOSED SERVICE ROAD
PROPOSED L-85
REALIGNMENT
PROPOSED CUL-D-SAC
REMOVE NC 150 INTECHANGE
AND BRIDGE
PROPOSED SERVICE ROAD
PROPOSED NC 150 EXTENSION
NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH
I-85
North of SR 2120 (Exit 91) in Rowan County
to US 29-52-70-85 Business (Exit 97)
in Davidson County
Rowan-Davidson counties
TIP Project No. I-2304A
SHEET 4 OF 9
FIGURE 2


PROPOSED INTERCHANGE
PROPOSED REALIGNMENT OF SEVEN OAKS DRIVE
PROPOSED SERVICE ROAD
SR 1205 (7 OAKS DRIVE)
TRACKSIDE RESTAURANT
SC 150 EXTENSION
LEGEND
PROPOSED IMPROVEMENTS
PROPOSED ROADWAY AND BRIDGE REMOVAL
SHEET 3 OF 9


REMOVE INTERCHANGE AND BRIDGE
PROPOSED EXTENSION OF SEVEN OAKS DRIVE
REMOVE
INTERCHANGE
AND BRIDGE
PROPOSED EXTENSION OF
SEVEN OAKS DRIVE


PROPOSED REALIGNMENT OF
SNYDER KINES ROAD
POSED INTERCHANGE
REALIGNMENT
BILL'S TRUCK STOP
PROPOSED REALIGNMENT OF
BELMONT BOULEVARD
PROPOSED
CUL-DE-SAC
PROPOSED EXTENSION OF
BELMONT ROAD
LEGEND
PROPOSED IMPROVEMENTS
PROPOSED ROADWAY AND BRIDGE REMOVAL
SHEET 7 OF 9


POSSIBLE HISTORIC HOME
PROPOSED REALIGNMENT OF CLYDE FITZGERALD ROAD
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
I-85
North of SR 2120 (Exit 81) in Rowan County
to US 29-52-70-I-85 Business (Exit 87)
in Davidson County
Rowan-Davidson counties
TIP Project No. I-2304a
SHEET 8 OF 9
FIGURE 2



TO LEXINGTON →
US 29/52/70
LANE CONSTRUCTION
SAPONA BUSINESS PARK
WOODMARK MANUFACTURING
TRIANGLE CONSTRUCTION, INC.
UNIVERSAL GYM
OWEN RACING
VALENDRAWERS
THE SAPONA COMPANY
SERVICES
SR 1223 (DIXON STREET)
TO GREENSBORO →
END PROJECT
HOMANDALE GROCERY/BP STATION
KIMBERLY CLARK CORPORATION
LEGEND
PROPOSED IMP VEMENTS
PROPOSED ROA WAY AND BRIDGE REMOVAL
SCALE
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH
I-85
North of SR 2120 (Exit 81) in Rowan County to US 29-52-70-I-85 Business (Exit 87) in Davidson County
Rowan-Davidson counties
TIP Project No. I-2304a
SHEET 9 OF 9
FIGURE 2

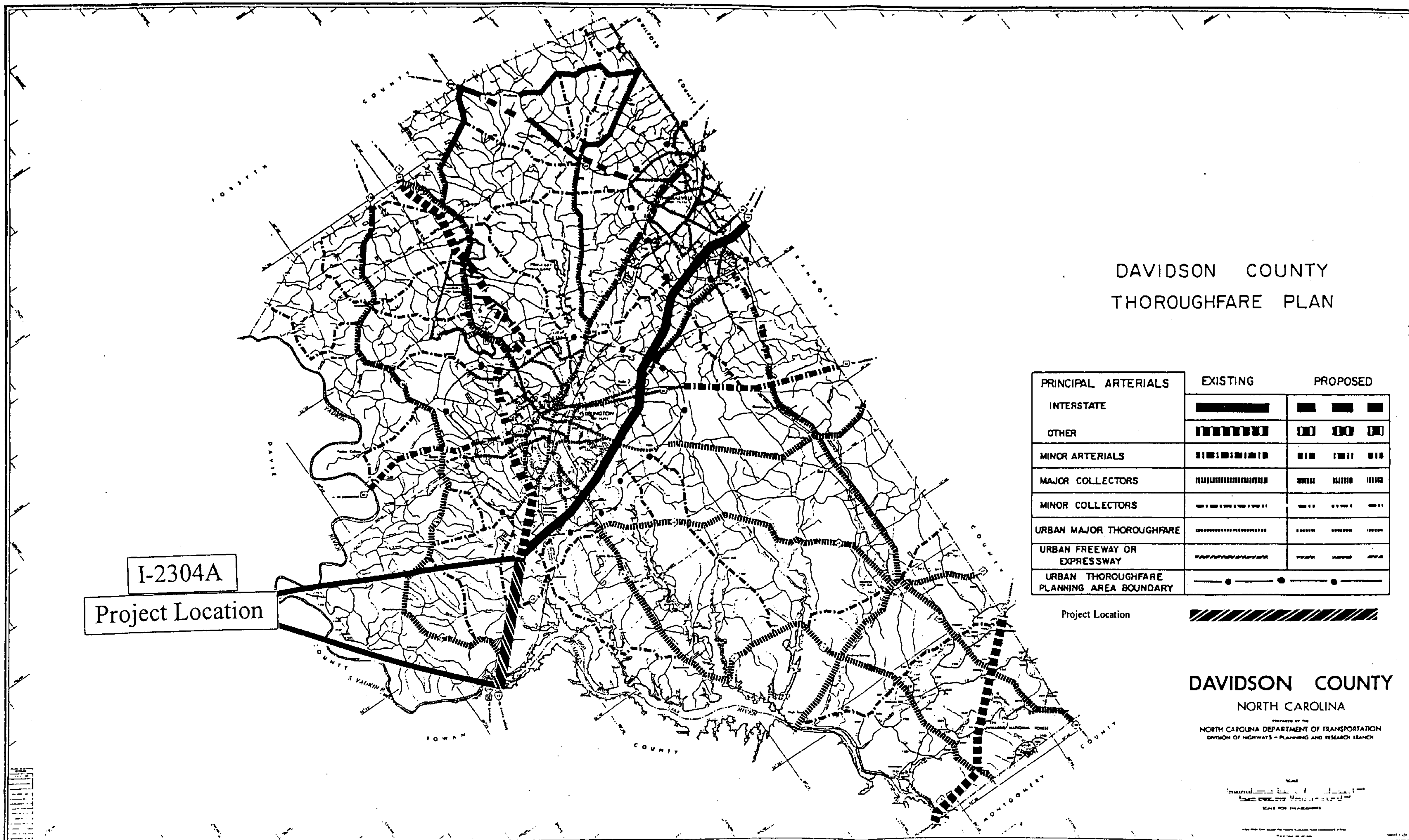

DAVIDSON COUNTY
THOROUGHFARE PLAN
PRINCIPAL ARTERIALS
EXISTING
PROPOSED
INTERSTATE
OTHER
MINOR ARTERIALS
MAJOR COLLECTORS
MINOR COLLECTORS
URBAN MAJOR THOROUGHFARE
URBAN FREEWAY OR EXPRESSWAY
URBAN THOROUGHFARE PLANNING AREA BOUNDARY
Project Location
I-2304A
Project Location
DAVIDSON COUNTY
NORTH CAROLINA
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
COUNTY
RIVER

Figure 3A


I-2304A
Project Location
YADKIN RIVER
NORTHERN LOOP
US 70
I-85
NC 150
MOORESVILLE RD
STATESVILLE BLVD
OLD CONCORD RD
FAITH RD
US 52
US 52 RELOCATION
JAKE ALEXANDER BLVD EXTENSION
FERRY RD
BROWN AVE
FIGURE B-1
LEGEND
Existing
Proposed
Project Location
THOROUGHFARE PLAN
SALISBURY
SPENCER
EAST SPENCER
GRANITE QUARRY
FAITH
Rowan County
North Carolina
November 20, 1995

Figure 3B

Proposed Cross Section for Interstate 85
8-lane Section

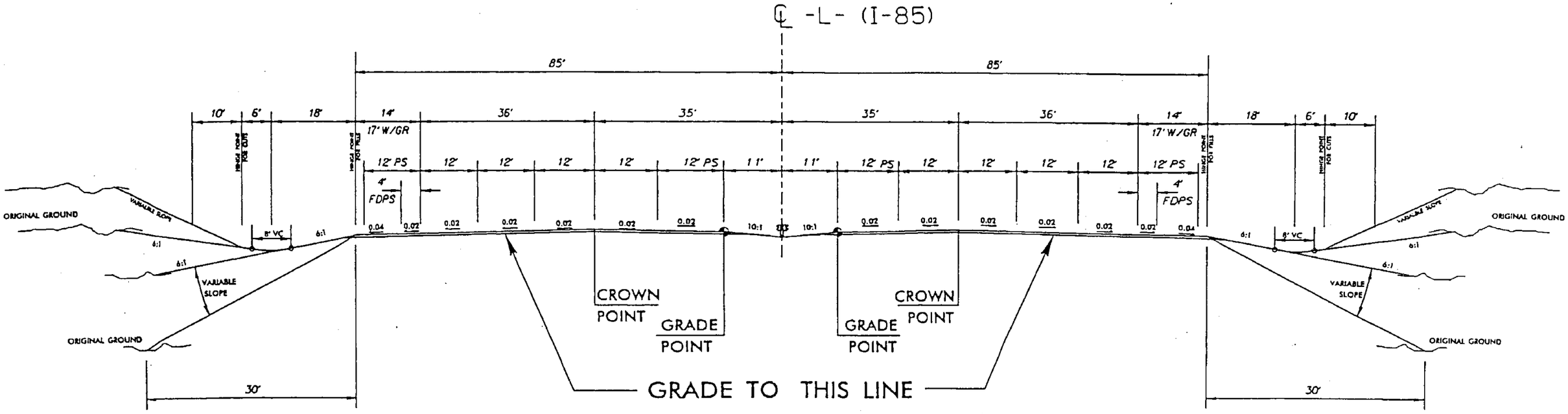
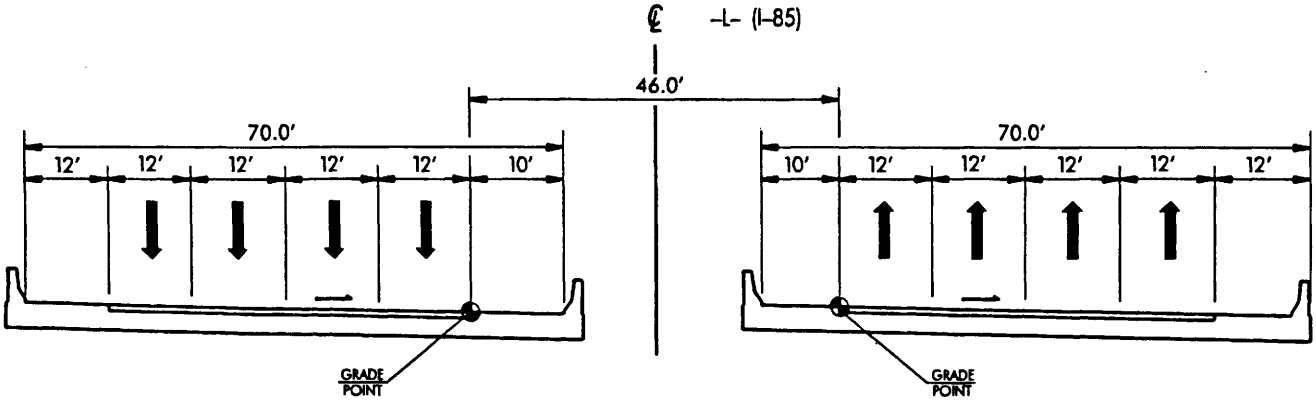
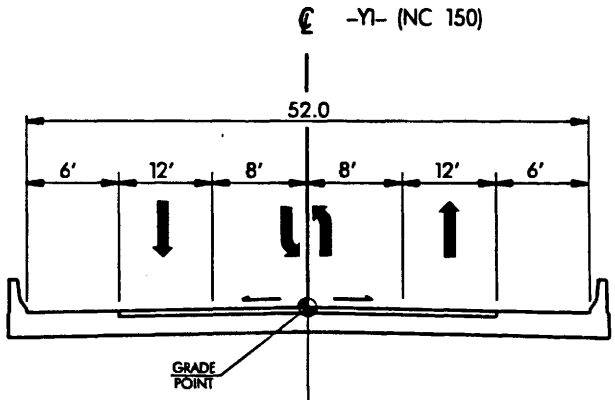


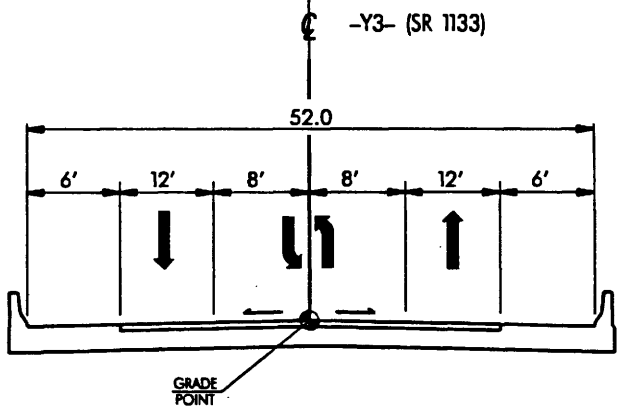
Figure 4A



TYPICAL SECTION ON PROPOSED BRIDGE OVER YADKIN RIVER
AND BRIDGES OVER HACKETT ROAD (CARRYING I-85)



TYPICAL SECTION ON PROPOSED BRIDGE
CARRYING NC 150



TYPICAL SECTION ON PROPOSED BRIDGE
CARRYING SR 1133

FIGURE 4B

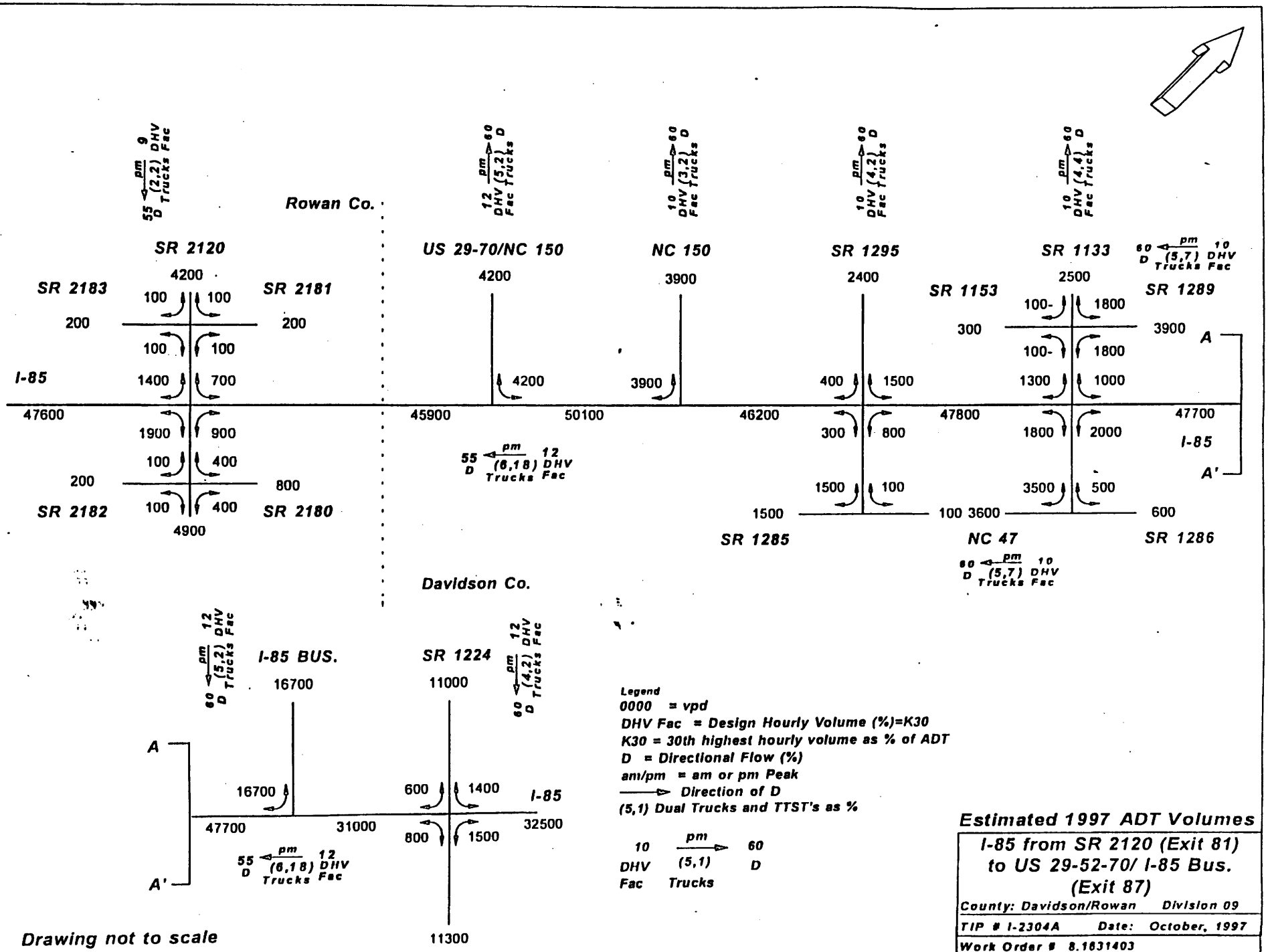

Rowan Co.
Davidson Co.
SR 2120
SR 2183
SR 2181
SR 2182
SR 2180
I-85
US 29-70/NC 150
NC 150
SR 1295
SR 1133
SR 1153
SR 1289
SR 1285
NC 47
SR 1286
I-85 BUS.
SR 1224
I-85
A
A'
4200
100
100
200
200
100
100
1400
700
47600
1900
900
100
400
200
800
100
400
4900
4200
4200
3900
3900
45900
50100
55 D pm (6,18) 12 DHV Trucks Fac
2400
400
1500
46200
300
800
1500
100
1500
100 3600
2500
100-
1800
300
3900
100-
1800
1300
1000
47800
1800
2000
3500
500
600
47700
60 D pm (5,7) 10 DHV Trucks Fac
16700
16700
47700
31000
55 D pm (6,18) 12 DHV Trucks Fac
11000
600
1400
800
1500
32500
11300
Legend
0000 = vpd
DHV Fac = Design Hourly Volume (%)=K30
K30 = 30th highest hourly volume as % of ADT
D = Directional Flow (%)
am/pm = am or pm Peak
Direction of D
(5,1) Dual Trucks and TTST's as %
10 DHV Fac
pm (5,1) Trucks
60 D
Drawing not to scale
Estimated 1997 ADT Volumes
I-85 from SR 2120 (Exit 81)
to US 29-52-70/ I-85 Bus.
(Exit 87)
County: Davidson/Rowan
Division 09
TIP # I-2304A
Date: October, 1997
Work Order # 8.1631403

Figure 5A

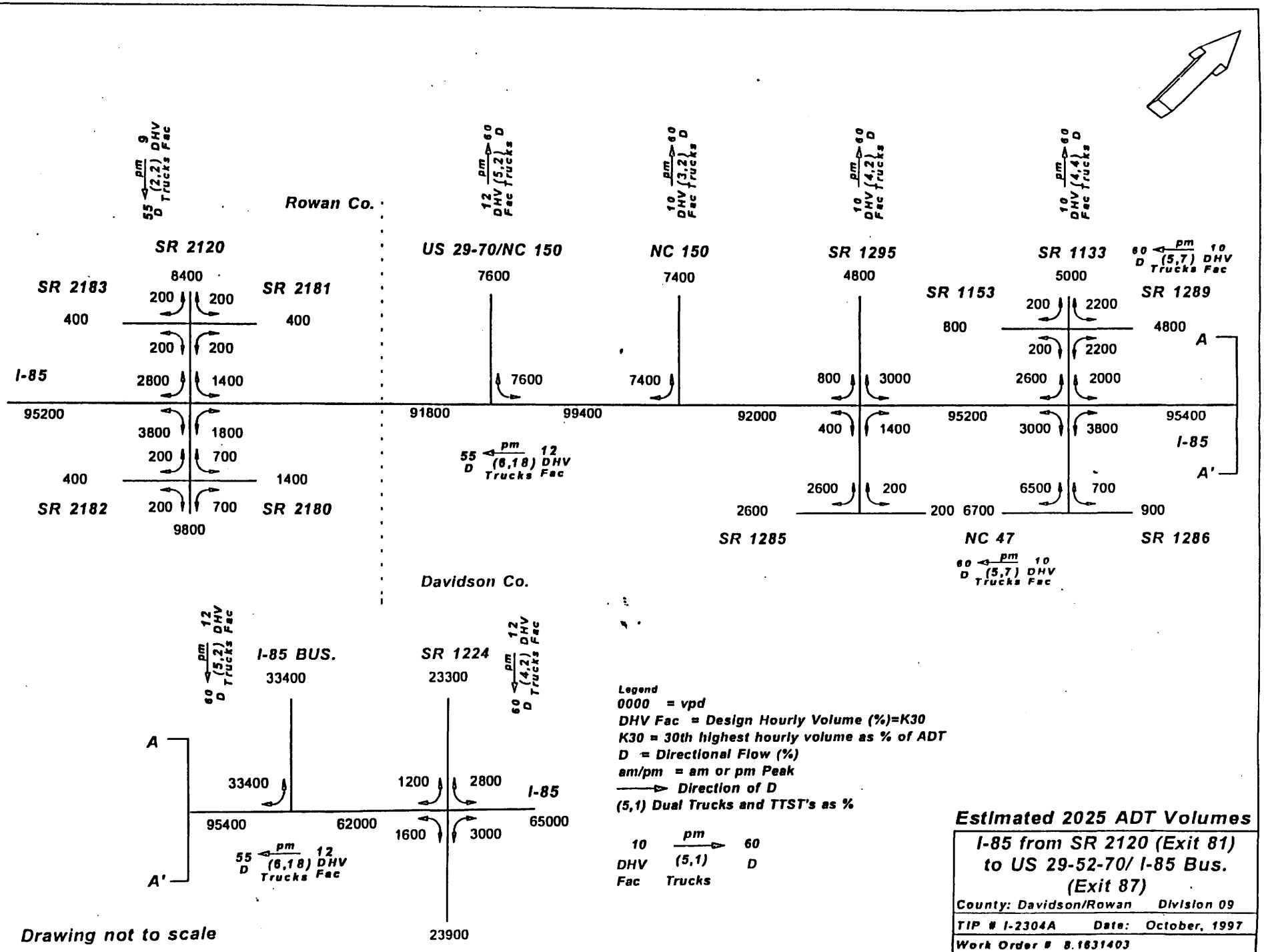
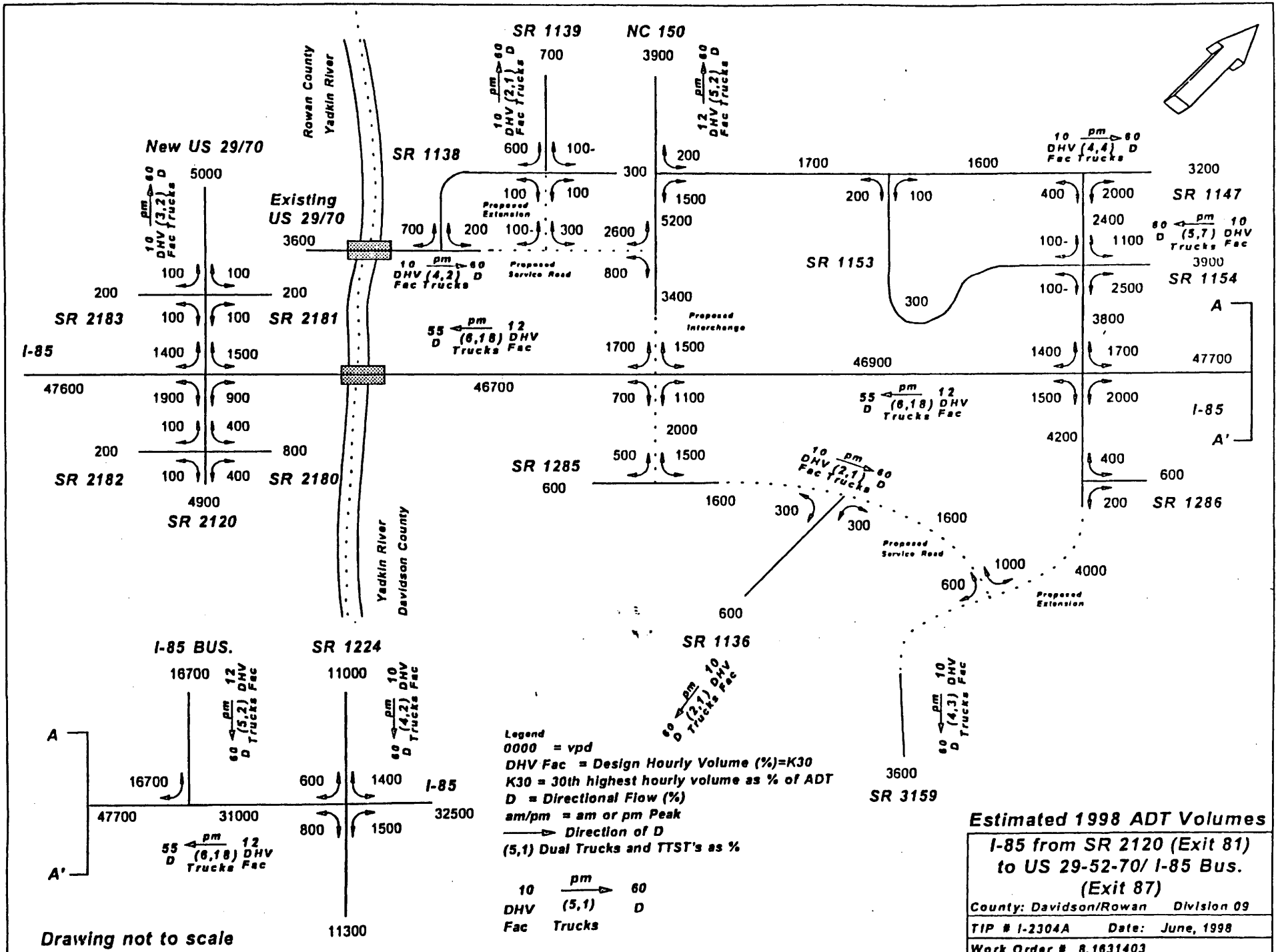

Rowan Co.
Davidson Co.
SR 2120
SR 2183
SR 2181
SR 2182
SR 2180
I-85
US 29-70/NC 150
NC 150
SR 1295
SR 1133
SR 1153
SR 1289
SR 1285
NC 47
SR 1286
I-85 BUS.
SR 1224
I-85
A
A'
8400
200
200
400
400
200
200
2800
1400
95200
3800
1800
200
700
400
1400
200
700
9800
7600
7400
91800
99400
7600
7400
55 pm D (6,18) 12 DHV Trucks Fac
55 pm D (2,2) 9 DHV Trucks Fac
12 pm DHV (5,2) 60 D Trucks Fac
10 pm DHV (3,2) 60 D Trucks Fac
10 pm DHV (4,2) 60 D Trucks Fac
10 pm DHV (4,4) 60 D Trucks Fac
4800
5000
800
200
2200
200
2200
2600
2000
95200
3000
3800
95400
400
1400
2600
200
6700
6500
700
900
2600
200
60 pm D (5,7) 10 DHV Trucks Fac
60 pm D (5,7) 10 DHV Trucks Fac
33400
23300
60 pm D (5,2) 12 DHV Trucks Fac
60 pm D (4,2) 12 DHV Trucks Fac
33400
1200
2800
95400
62000
1600
3000
65000
55 pm D (6,18) 12 DHV Trucks Fac
23900
Drawing not to scale
Legend
0000 = vpd
DHV Fac = Design Hourly Volume (%)=K30
K30 = 30th highest hourly volume as % of ADT
D = Directional Flow (%)
am/pm = am or pm Peak
Direction of D
(5,1) Dual Trucks and TTST's as %
10 DHV Fac
pm (5,1) Trucks
60 D
Estimated 2025 ADT Volumes
I-85 from SR 2120 (Exit 81) to US 29-52-70/ I-85 Bus. (Exit 87)
County: Davidson/Rowan Division 09
TIP # I-2304A Date: October, 1997
Work Order # 8.1631403

Figure 5B



Estimated 1998 ADT Volumes

I-85 from SR 2120 (Exit 81) to US 29-52-70/ I-85 Bus. (Exit 87)
County: Davidson/Rowan Division 09
TIP # I-2304A Date: June, 1998
Work Order # 8.1631403

Figure 5C

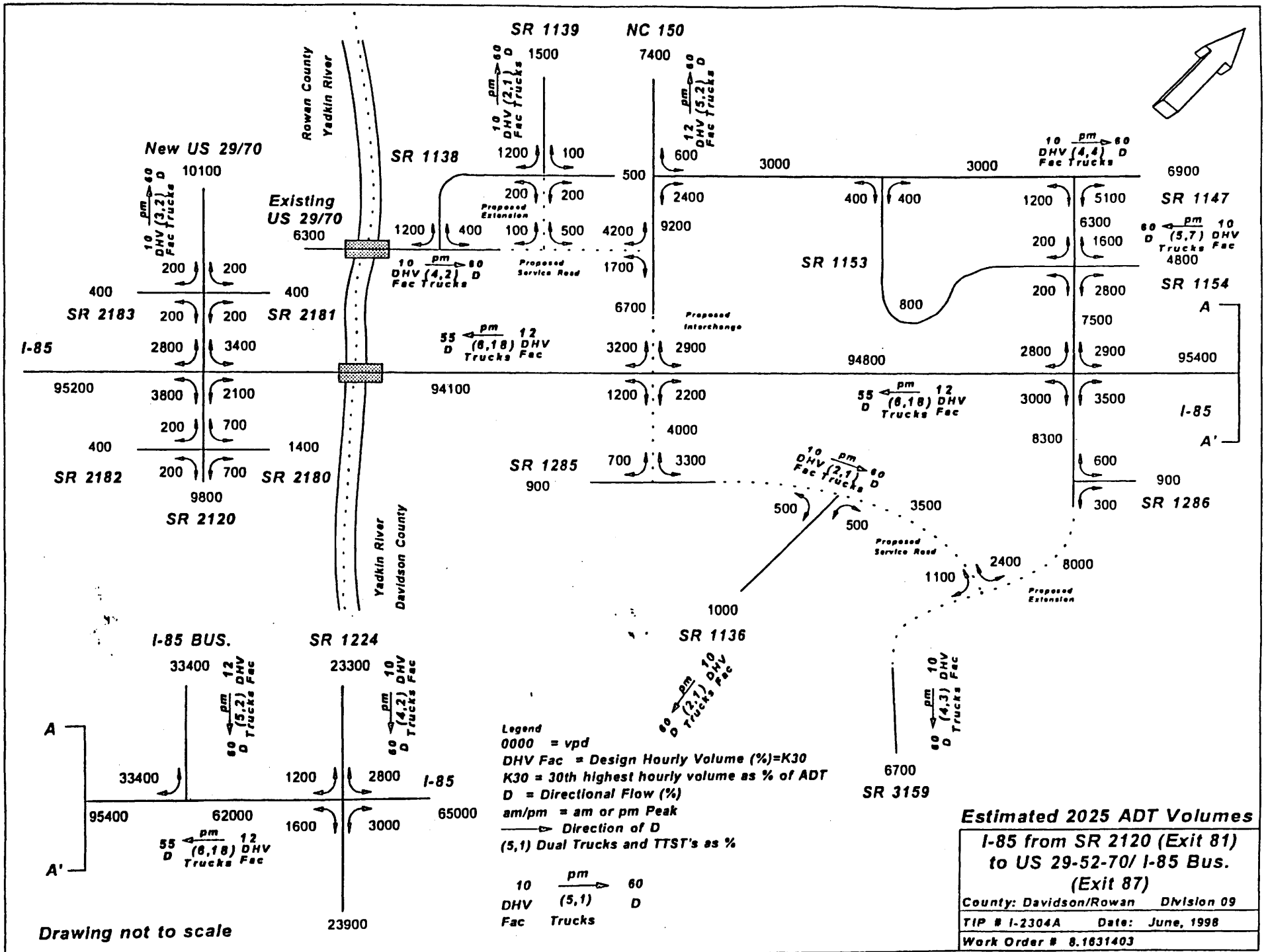

SR 1139
NC 150
Rowan County
Yadkin River
New US 29/70
SR 1138
Existing US 29/70
SR 1147
SR 1153
SR 1154
SR 2183
SR 2181
I-85
SR 2182
SR 2180
SR 2120
SR 1285
SR 1286
SR 1136
SR 3159
Yadkin River
Davidson County
I-85 BUS.
SR 1224
Proposed Extension
Proposed Service Road
Proposed Interchange
Legend
0000 = vpd
DHV Fac = Design Hourly Volume (%)=K30
K30 = 30th highest hourly volume as % of ADT
D = Directional Flow (%)
am/pm = am or pm Peak
Direction of D
(5,1) Dual Trucks and TTST's as %
Drawing not to scale
Estimated 2025 ADT Volumes
I-85 from SR 2120 (Exit 81)
to US 29-52-70/ I-85 Bus.
(Exit 87)
County: Davidson/Rowan Division 09
TIP # I-2304A Date: June, 1998
Work Order # 8.1631403

Figure 5D

Proposed NC 150 Interchange
Intersections

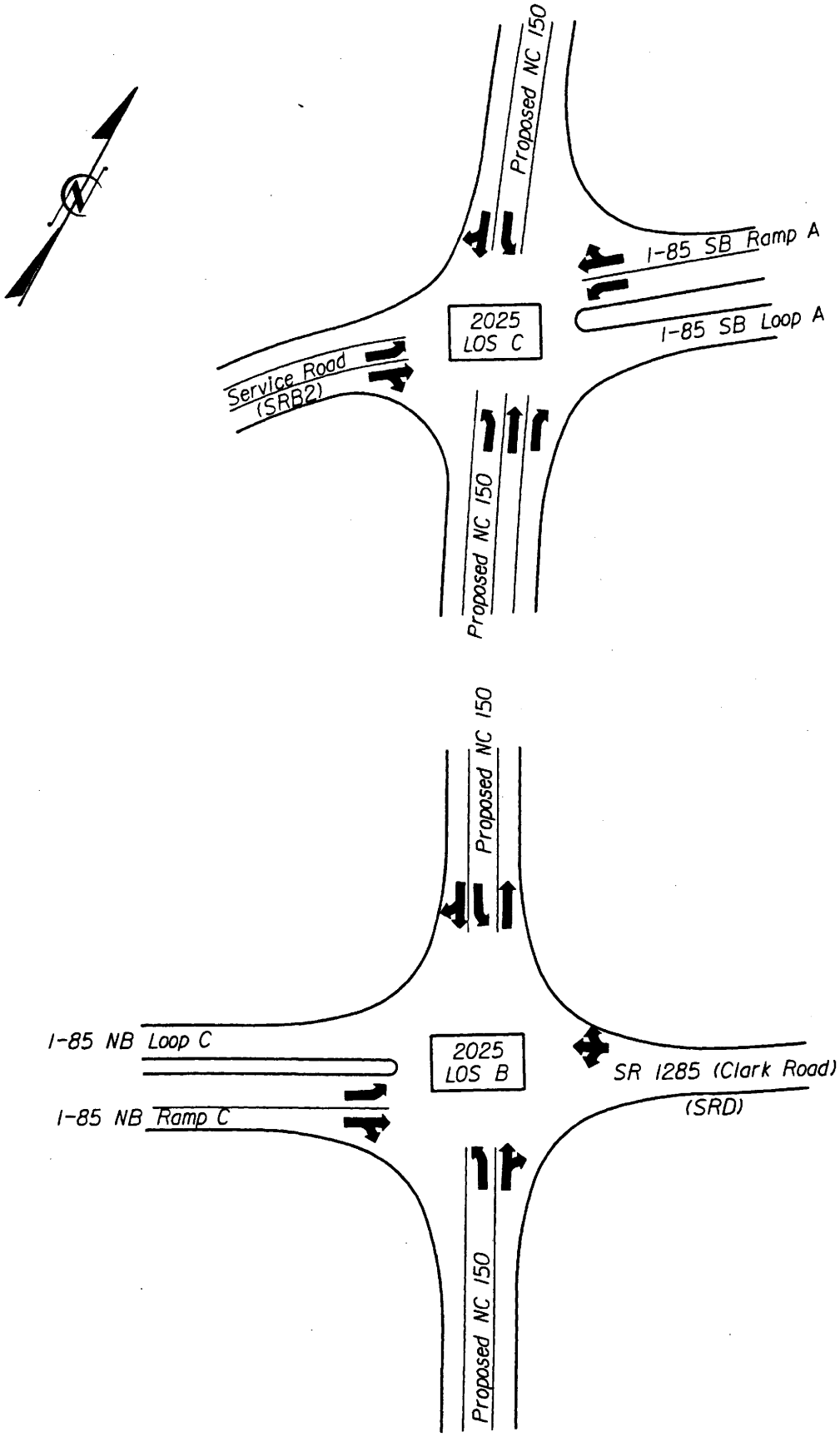
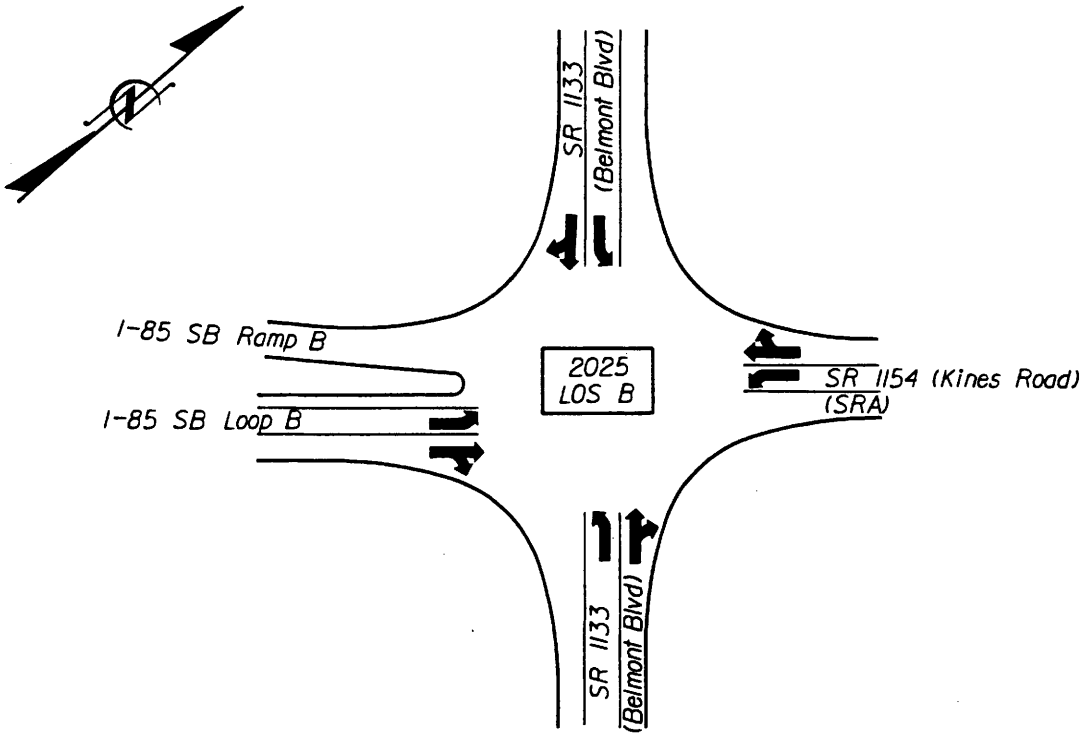


Figure 6A

Proposed Belmont Blvd Interchange
Intersections



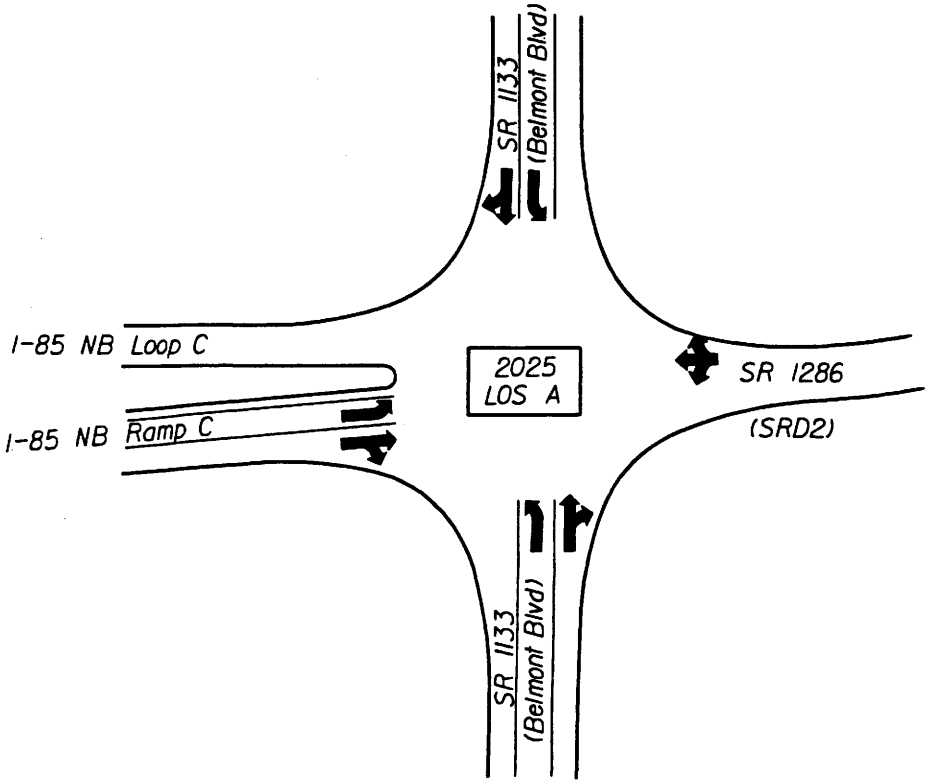
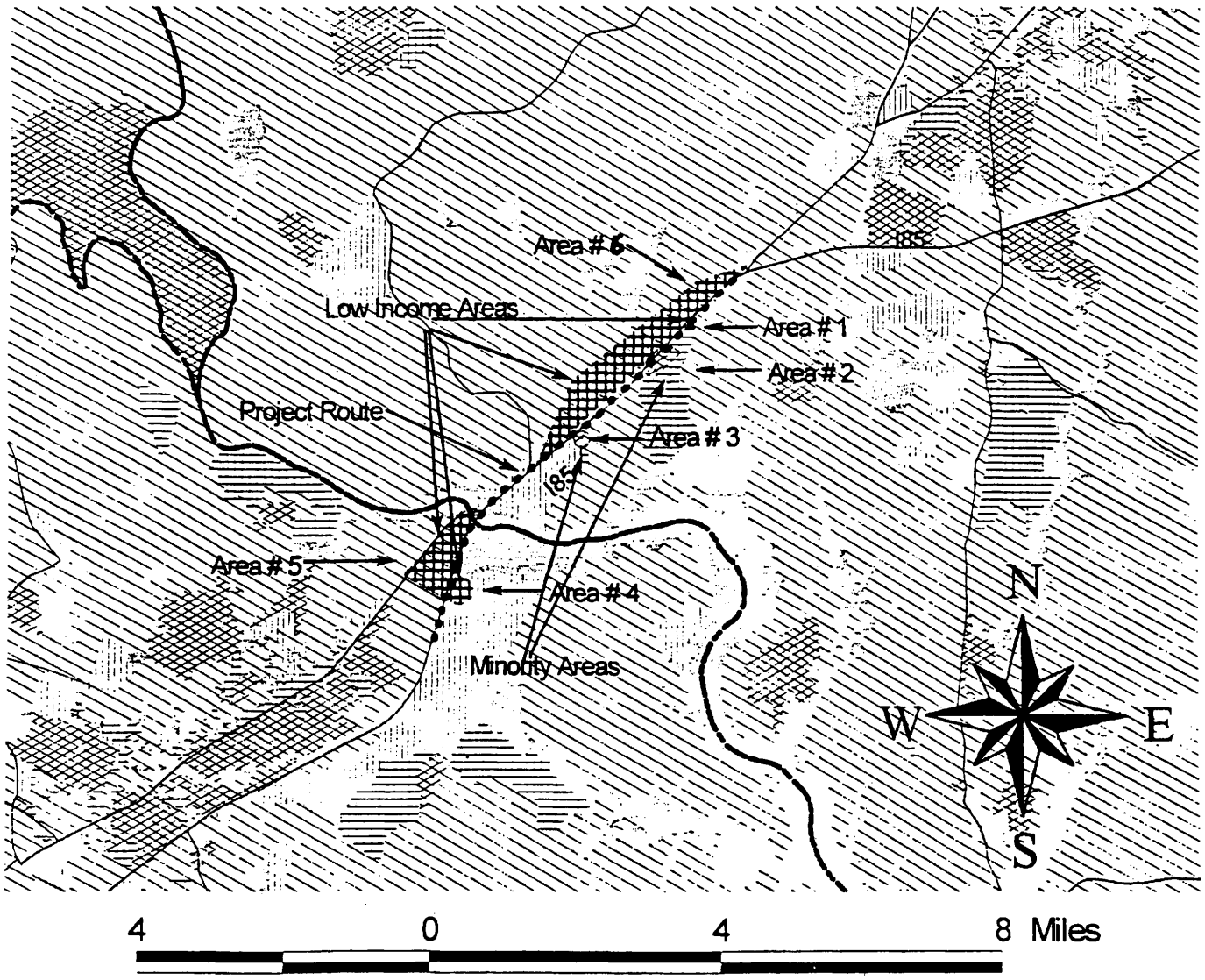


Figure 6B

I-2304 A
Environmental Justice

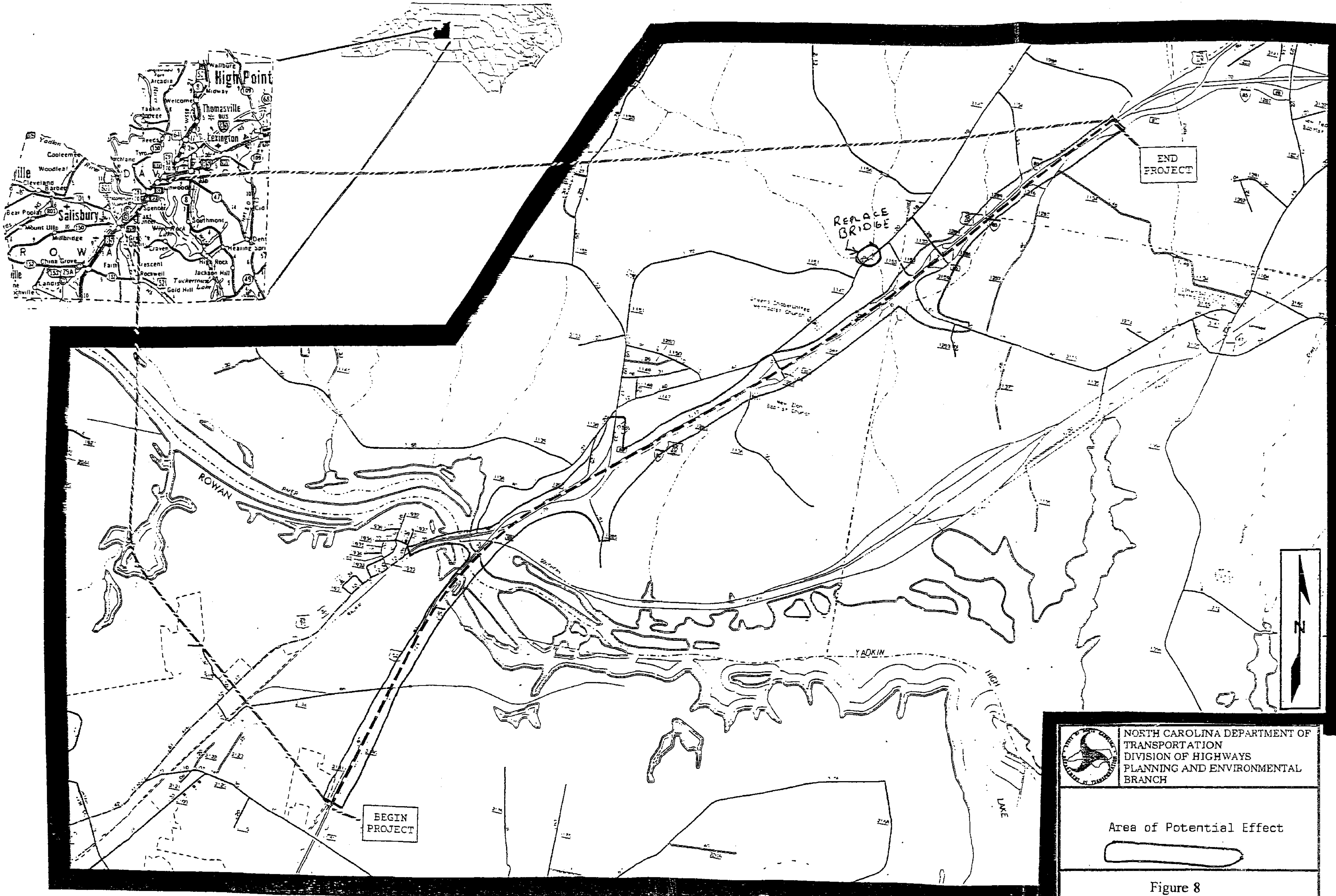


Natl. Hwy. Sys.
Interstate
US
NC
SR
City
Other
Proposed
Environmental Justice
No Persons in Block
0% to Co.Ave.
Co.Ave. to 2xCo.Ave.
2xCo.Ave. to 3xCo.Ave.
3xCo.Ave. to 100%

"County Average" refers to the non-white population percentage by census block. The 1990 non-white population percentage for Davidson and Rowan Counties was 10.5%.

Environmental Justice is the equitable treatment of people and communities by identifying and avoiding any intentional disproportionate health and environmental impacts to minority or low-income populations. NC DOT's efforts include proactive planning and analysis to ensure equitable treatment of all people and communities regarding transportation systems

Figure 7



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

Area of Potential Effect

Figure 8

AREA OF POTENTIAL EFFECT OF WIL COX BRIDGE

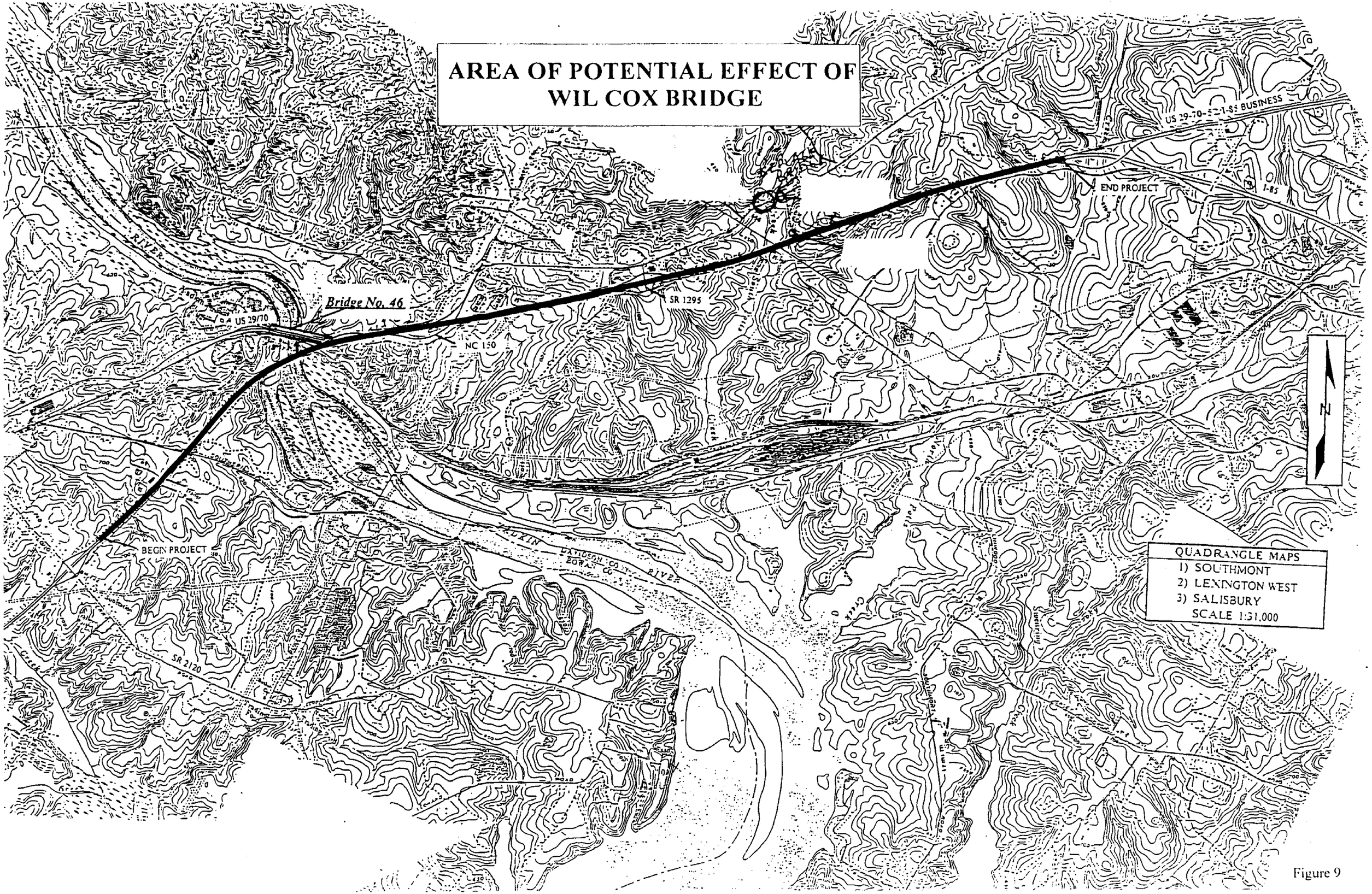


Figure 9

Bridge No. 46

Bridge No. 46

Figure 10

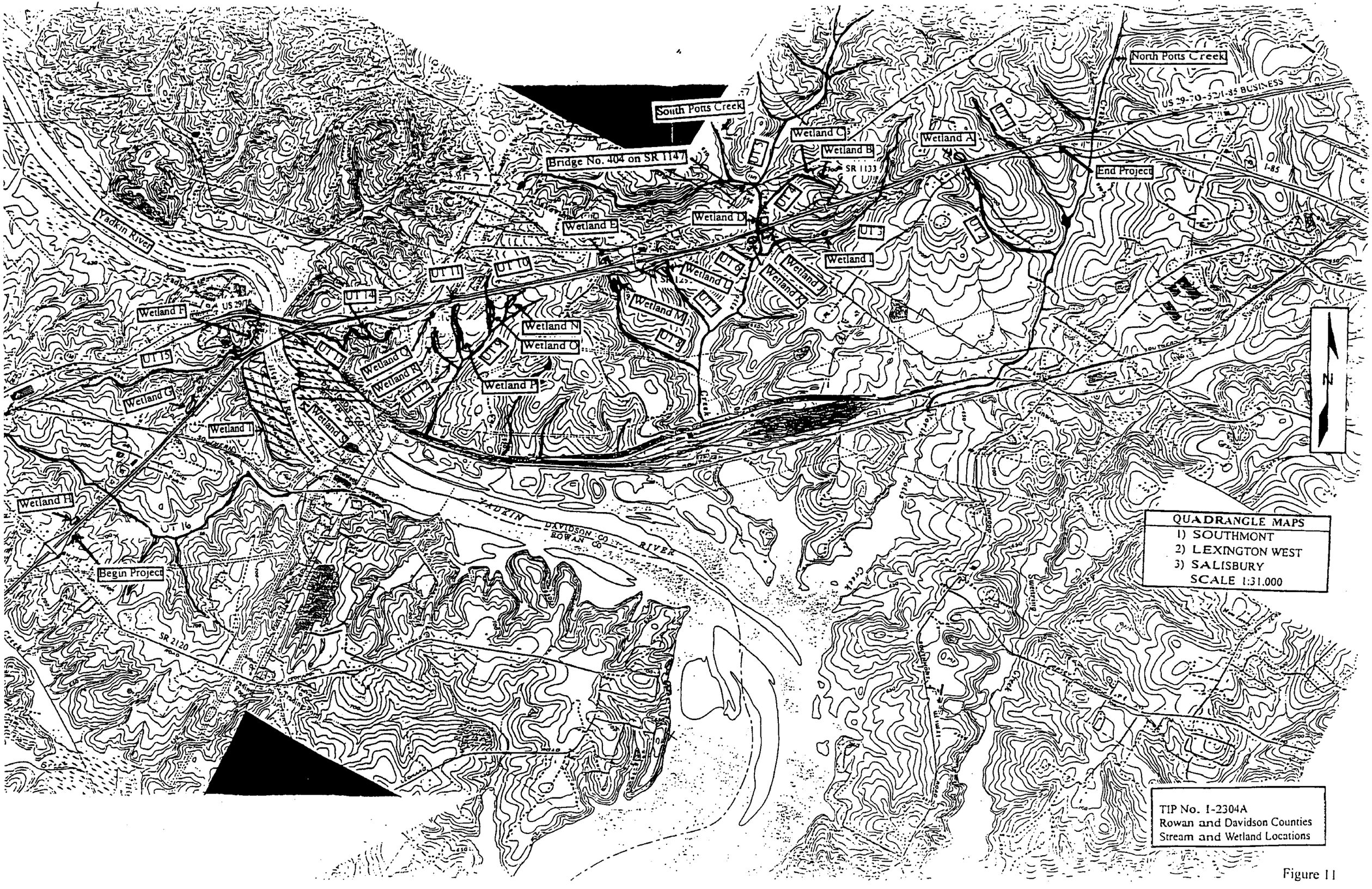

South Potts Creek
North Potts Creek
Bridge No. 404 on SR 1147
US 29-70-52/1-85 BUSINESS
I-85
SR 1133
End Project
Begin Project
Yadkin River
Wetland A
Wetland B
Wetland C
Wetland D
Wetland E
Wetland F
Wetland G
Wetland H
Wetland I
Wetland J
Wetland K
Wetland L
Wetland M
Wetland N
Wetland O
Wetland P
Wetland Q
Wetland R
Wetland S
UT 1
UT 2
UT 3
UT 4
UT 5
UT 6
UT 7
UT 8
UT 9
UT 10
UT 11
UT 12
UT 13
UT 14
UT 15
UT 16
US 29/70
SR 2120
YADKIN
DAVIDSON CO
ROWAN CO
RIVER
N
QUADRANGLE MAPS
1) SOUTHMONT
2) LEXINGTON WEST
3) SALISBURY
SCALE 1:31,000
TIP No. I-2304A
Rowan and Davidson Counties
Stream and Wetland Locations

Figure 11

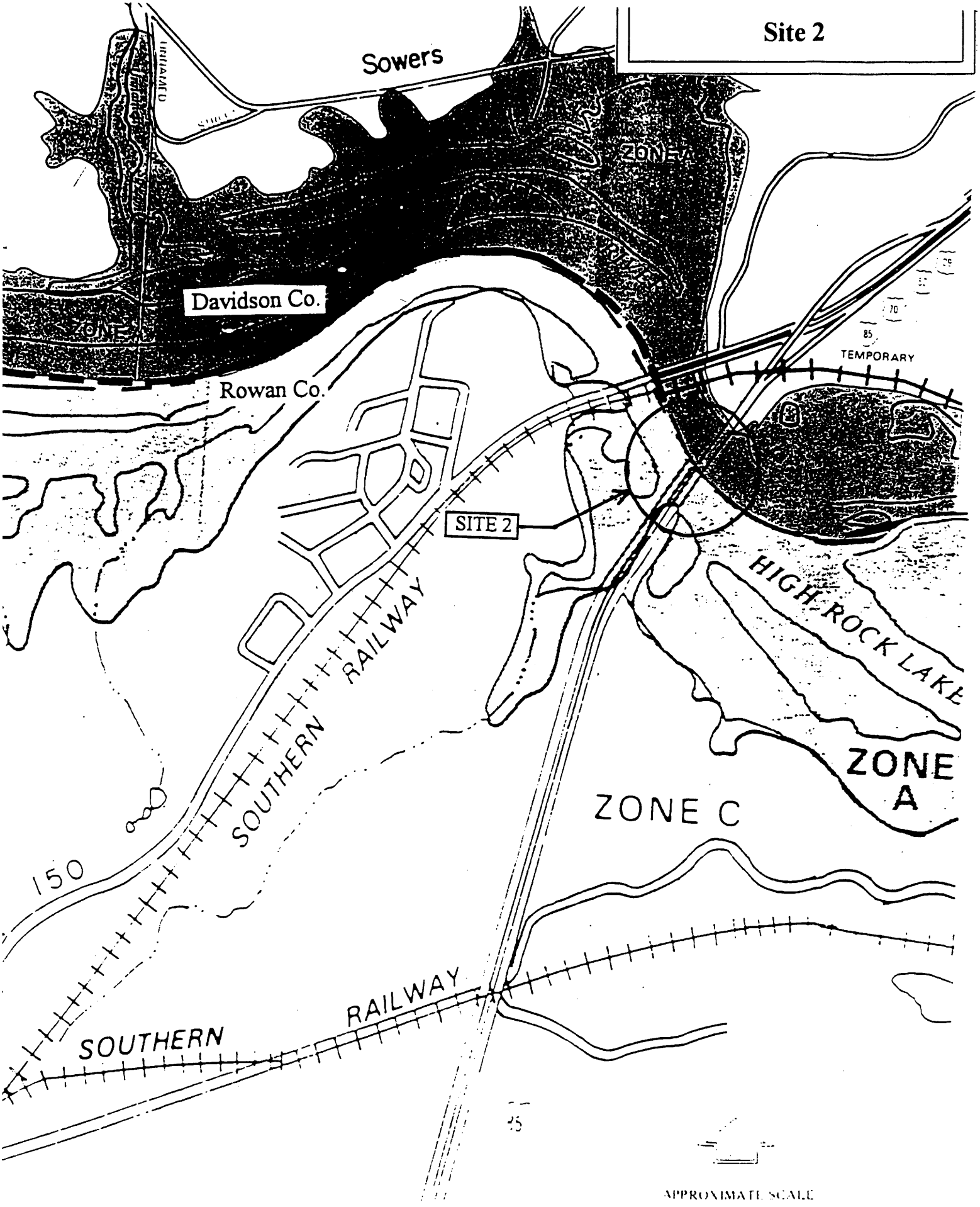

Site 2
Sowers
ZONE A
Davidson Co.
ZONE A
Rowan Co.
TEMPORARY
SITE 2
SOUTHERN RAILWAY
HIGH ROCK LAKE
ZONE A
ZONE C
150
SOUTHERN RAILWAY
APPROXIMATE SCALE
1000
0

Figure 12A

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

DAVIDSON COUNTY, NORTH CAROLINA

(UNINCORPORATED AREAS)

PANEL 105 OF 175

SITE 2

COMMUNITY-PANEL NUMBER

370307 0105 B

EFFECTIVE DATE:

MAY 1, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

FEDERAL INSURANCE ADMINISTRATION

100-Year Flood Boundary	
Zone Designations* With Date of Identification e.g., 12/2/74	ZONE B
100-Year Flood Boundary	
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:

JUNE 17, 1977

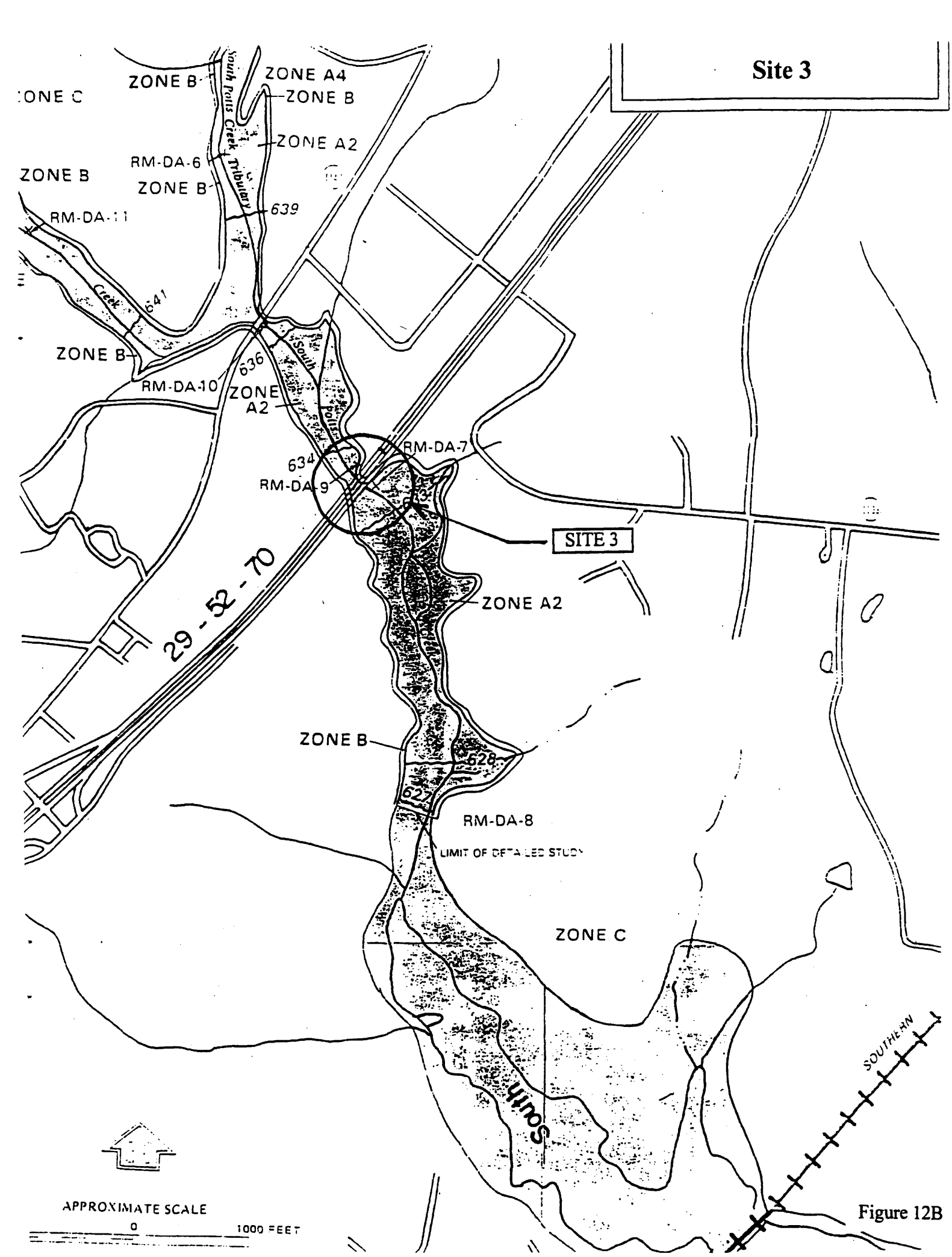

Site 3
ZONE B
ZONE A4
ZONE B
ZONE A2
RM-DA-6
ZONE B
ZONE B
RM-DA-11
639
South Prong Creek Tributary
641
Creek
ZONE B
636
RM-DA-10
ZONE A2
South Prong
RM-DA-7
634
RM-DA-9
SITE 3
29-52-70
ZONE A2
ZONE B
628
627
RM-DA-8
LIMIT OF DETAILED STUDY
ZONE C
South
SOUTHERN
APPROXIMATE SCALE
0
1000 FEET

Figure 12B

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

DAVIDSON COUNTY, NORTH CAROLINA

(UNINCORPORATED AREAS)

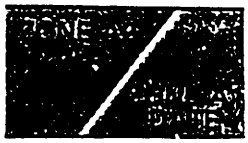
PANEL 105 OF 175

SITE 3

COMMUNITY-PANEL NUMBER
370307 0105 B

EFFECTIVE DATE:
MAY 1, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

100-Year Flood Boundary	
Zone Designations* With Date of Identification e.g., 12/2/74	 ZONE B
100-Year Flood Boundary	
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
JUNE 17, 1977

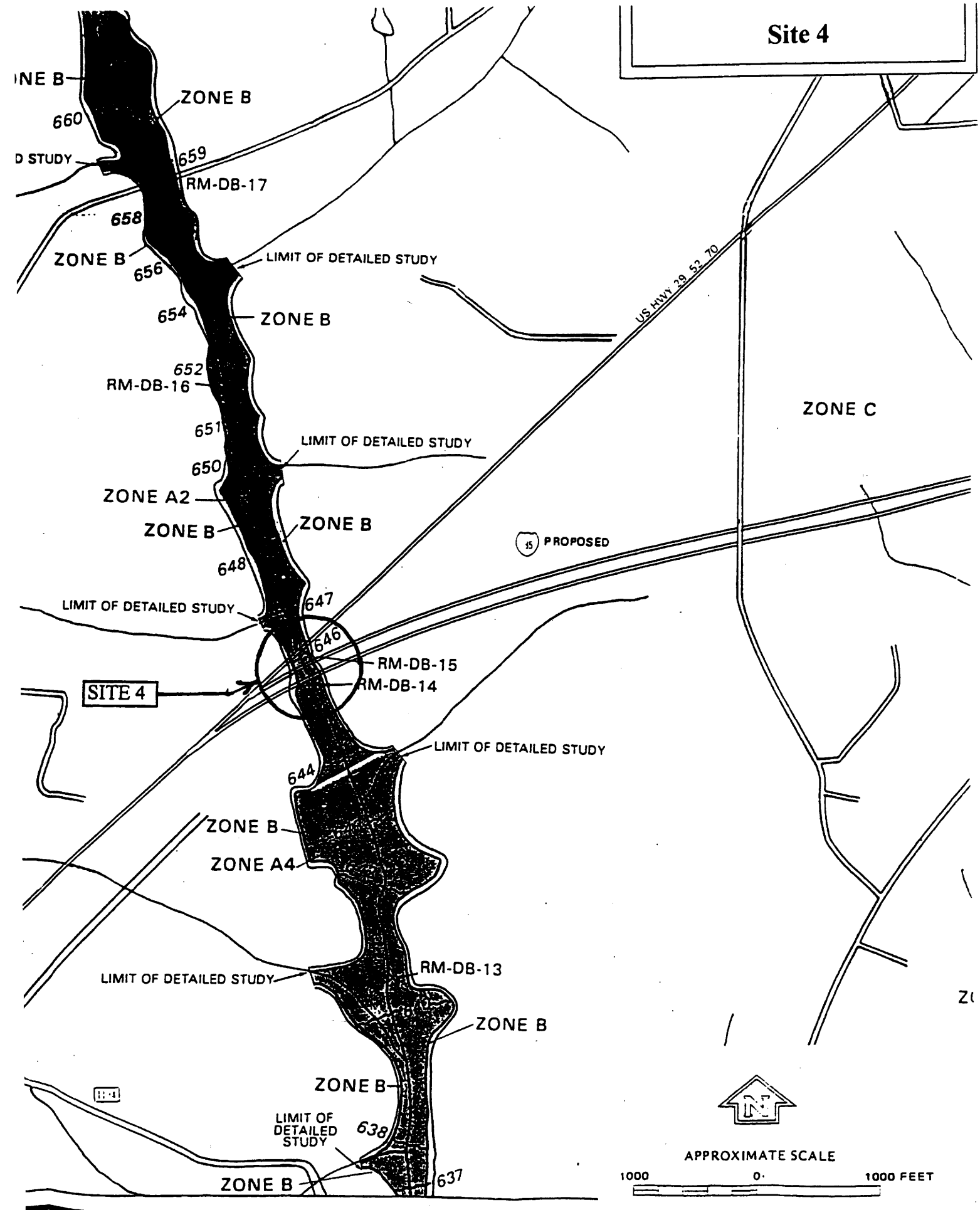

Site 4
ZONE B
660
659
D STUDY
RM-DB-17
658
ZONE B
656
LIMIT OF DETAILED STUDY
654
ZONE B
US HWY 29, 52, 70
652
RM-DB-16
ZONE C
651
LIMIT OF DETAILED STUDY
650
ZONE A2
ZONE B
ZONE B
PROPOSED
648
LIMIT OF DETAILED STUDY
647
646
RM-DB-15
RM-DB-14
SITE 4
LIMIT OF DETAILED STUDY
644
ZONE B
ZONE A4
RM-DB-13
LIMIT OF DETAILED STUDY
ZONE B
ZONE B
LIMIT OF DETAILED STUDY
638
ZONE B
637
APPROXIMATE SCALE
1000
0
1000 FEET

Figure 12C

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.

APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

DAVIDSON COUNTY, NORTH CAROLINA

(UNINCORPORATED AREAS)

PANEL 70 OF 175

SITE 4

COMMUNITY-PANEL NUMBER
370307 0070 B

EFFECTIVE DATE:
MAY 1, 1980

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

Zone Designations* With Date of Identification e.g., 12/2/74	 ZONE B
100-Year Flood Boundary	
500-Year Flood Boundary	
Base Flood Elevation Line With Elevation In Feet**	513
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 987)
Elevation Reference Mark	RM7 ×
River Mile	• M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood-hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION:
JUNE 17 1977

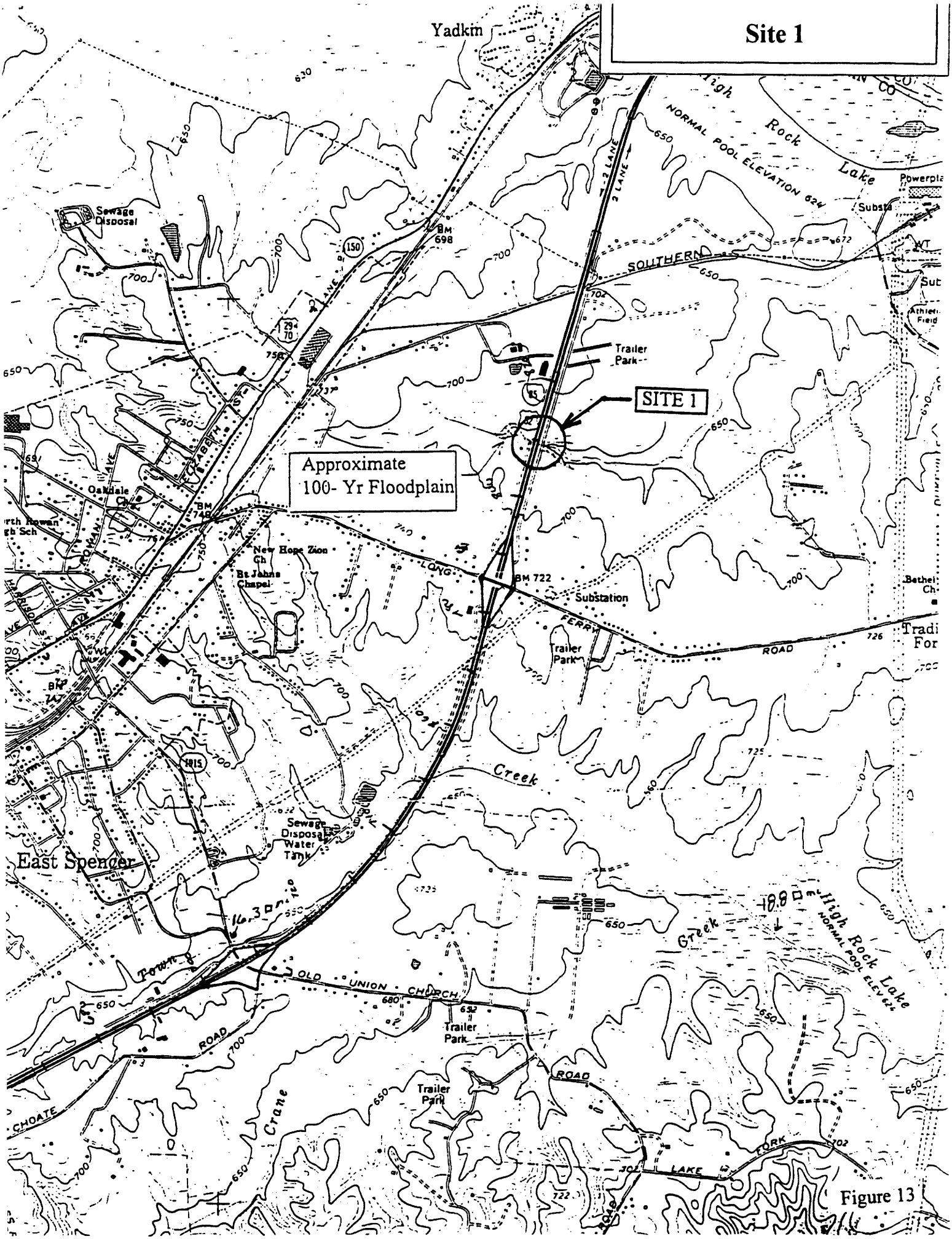

Site 1
Yadkin
Sewage Disposal
BM 698
SOUTHERN
Trailer Park
SITE 1
Approximate
100- Yr Floodplain
Oakdale Ch
New Hope Zion Ch
St Johns Chapel
BM 722
Substation
LONG
FERRY
ROAD
Trailer Park
Creek
Sewage Disposal
Water Tank
East Spencer
Town
OLD UNION CHURCH
ROAD
Trailer Park
Trailer Park
ROAD
CHOATE
Crane
Creek
High Rock Lake
NORMAL POOL ELEVATION 624
LAKE
FORK

Figure 13

Appendix 1

MANAGER OF
RIGHT OF WAY BRANCH

AUG 31 2000

N.C. DEPT. OF TRANSPORTATION

RELOCATION REPORT

North Carolina Department of Transportation
AREA RELOCATION OFFICE

[X] E.I.S. [ ] CORRIDOR [ ] DESIGN

PROJECT:	8.1631403	COUNTY	Rowan/Davidson	Alternate 1 of 1 Alternate	
I.D. NO.:	I-2304A	F.A. PROJECT	NHF-85-3 (164) 80		
DESCRIPTION OF PROJECT:	Widening and interchange improvements of I-85 North of Sr 2120 (Exit 81) to US 29-52-70/I-85 Business (Exit 87)				

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	6	18	24	8
Businesses	1	3	4	1
Farms	0	0	0	0
Non-Profit	0	0	0	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
0	20	2	1	1

VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Owners		Tenants		For Sale		For Rent	
0-20M	1	$ 0-150	17	0-20M	0	$ 0-150	0
20-40M	1	150-250	1	20-40M	1	150-250	2
40-70M	2	250-400	0	40-70M	4	250-400	23
70-100M	1	400-600	0	70-100M	8	400-600	16
100 UP	1	600 UP	0	100 UP	23	600 UP	24
TOTAL	6		18		36		65

ANSWER ALL QUESTIONS

Yes	No	Explain all "YES" answers.
	X	1. Will special relocation services be necessary?
	X	2. Will schools or churches be affect by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
	X	9. Are there large, disabled, elderly, etc. families?
	X	10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? 16

REMARKS (Respond by Number)

3. General Business Services will still be available in the area.

4. a) White Hat Social Club- Abandoned –no longer in business.
b) Hugh H. Sheppard Property- Abandoned Business
c) Briggs Furniture- 6000 SF Meatal building- 3 Full time/ 3 Part-time employess.
d) Robert E. Walser – CB Shop- 1 Full-time employee- Business Trailer.
e) Carolina Pines Motel- 12 Units – 15 Brick Motel – 1 Full-time/ 1 Part- time employee.

8. Many of the dwellings are dilapidated and not DSS. Last resort housing may be implemented to find comparable DSS housing.

11. Rowan County Housing Authority and Davidson County Housing Authority

12. DSS Housing should be located and there should be sufficient housing for the relocatees.

14. Salisbury Post, Lexington Dispatch, Internet, Coldwell Bankers Realtors

-Approximately 25 billboards will be considered relocatees
-18 trailers will be considered relocatees and 3 trailer parks will be affected
-Plans show 2 trailers on Grubbs Oil Co. property, but cannot be found on the ground
-3 abandoned houses, 1 abandoned trailer, and 2 abandoned businesses on project

Heather Tuley	8-30-00	D. R. Clark	8/31/00
Right of Way Agent	Date	Approved by	Date

orm 15.4 Revised 02/95 d

Original & 1 Copy: State Relocation Agent
2 Copy Area Relocation Office

Appendix 2

TABLE A1

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0, JANUARY 1992

JOB: I-2304: I-85 , ROWAN & DAVIDSON CO'S YOS RUN: I-2304 I-85 ROWAN & DAVID. CO'S YR 05

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 1.8 PPM

LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VE
1. Far Lane Lin	28.2	-805.0	28.2	805.0	1610.	360.	AG	3604.	10.9	.0	16.		
2. Near Lane Link	28.2	805.0	28.2	-805.0	1610.	180.	AG	3604.	10.9	.0	16.8		

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. R/W, 45.8 m From CL	-29.9	.0	1.8

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC1
MAX	3.2
DEGR.	10

THE HIGHEST CONCENTRATION IS 3.20 PPM AT 10 DEGREES FROM REC1 .

TABLE A2

CAL3QHC: LINE SOURCE DISPERSION MODEL - VERSION 2.0, JANUARY 1992

JOB: I-2304: I-85 , ROWAN & DAVIDSON CO'S Y25 RUN: I-2304 I-85 ROWAN & DAVID. CO'S YR 25

SITE & METEOROLOGICAL VARIABLES

VS = .0 CM/S VD = .0 CM/S Z0 = 108. CM
U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 1.8 PPM

LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M)				*	LENGTH (M)	BRG (DEG)	TYPE	VPH	EF (G/MI)	H (M)	W (M)	V/C	QUEUE (VEH)
	*	X1	Y1	X2	Y2	*									
1. Far Lane Link	*	28.2	-805.0	28.2	805.0	*	1610.	360.	AG	5724.	9.8	.0	16.8		
2. Near Lane Link	*	28.2	805.0	28.2	-805.0	*	1610.	180.	AG	5724.	9.8	.0	16.8		

RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*
1. R/W, 45.8 m From CL	*	-29.9	.0	1.8	*

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	* CONCENTRATION (PPM) REC1
MAX	3.8
DEGR.	10

THE HIGHEST CONCENTRATION IS 3.80 PPM AT 10 DEGREES FROM REC1 .

TABLE N1

HEARING: SOUNDS BOMBARDING US DAILY

DECIBELS		
	140	Shotgun blast, jet 30m away at takeoff — PAIN
		Motor test chamber — HUMAN EAR PAIN THRESHOLD
	130	
		Firecrackers
	120	Severe thunder, pneumatic jackhammer
		Hockey crowd
		Amplified rock music — UNCOMFORTABLY LOUD
	110	
		Textile loom
	100	Subway train, elevated train, farm tractor
		Power lawn mower, newspaper press
		Heavy city traffic, noisy factory — LOUD
	90	
D		Diesel truck 65 km/h at 15m away
E	80	Crowded restaurant, garbage disposal
C		Average factory, vacuum cleaner
I		Passenger car 80 km/h at 15m away — MODERATELY LOUD
B	70	
E		Quiet typewriter
L	60	Singing birds, window air-conditioner
S		Quiet automobile
		Normal conversation, average office — QUIET
	50	
		Household refrigerator
		Quiet office — VERY QUIET
	40	
		Average home
	30	Dripping faucet
		Whisper at 1.5m away
	20	Light rainfall, rustle of leaves
		AVERAGE PERSON'S THRESHOLD OF HEARING
		Whisper — JUST AUDIBLE
	10	
	0	THRESHOLD FOR ACUTE HEARING

Sources: World Book, Rand McNally Atlas of the Human Body, Encyclopedia America, "Industrial Noise and Hearing Conversation" by J. B. Olishifski and E. R. Harford (Researched by N. Jane Hunt and published in the Chicago Tribune in an illustrated graphic by Tom Heinz.)

TABLE N2

NOISE ABATEMENT CRITERIA

CRITERIA FOR EACH FHWA ACTIVITY CATEGORY HOURLY A-WEIGHTED SOUND LEVEL - DECIBELS (dBA)		
Activity Category	Leq(h)	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities are essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Title 23 Code of Federal Regulations (CFR) Part 772, U. S. Department of Transportation, Federal Highway Administration.

CRITERIA FOR SUBSTANTIAL INCREASE HOURLY A-WEIGHTED SOUND LEVEL - DECIBELS (dBA)	
Existing Noise Level in Leq(h)	Increase in dBA from Existing Noise Levels to Future Noise Levels
< 50	>= 15
>= 50	>= 10

Source: North Carolina Department of Transportation Noise Abatement Policy.

TABLE N3
AMBIENT NOISE LEVELS (Leq)
I-85 Widening Davidson-Rowan Counties, TIP # I-2304A

SITE	LOCATION	DESCRIPTION	NOISE LEVEL (dBA)
1	I-85 @ Hilltop Living Center (Service Road)	Grassy	78.6
2	I-85 @ Furgeson Industries (Service Road)	Grassy	77.4

NOTE: The ambient noise level sites were measured at 15 meters from the center of the nearest lane of traffic.

TABLE N4
TRAFFIC NOISE EXPOSURES
I-85 Widening (6-Lanes), Rowan/Davidson County, TIP # I-2304A

RECEPTOR INFORMATION			NEAREST EXISTING	AMBIENT NOISE	NEAREST PROPOSED ROADWAY		PREDICTED NOISE LEVELS			NOISE LEVEL
ID#	LAND USE	CATEGORY	ROADWAY	LEVEL	NAME	CL DIST(m)	-L-	-Y-	MAXIMUM	INCREASE
	From SR 2120 to NC 150 (6-Lanes) 70' median									
1	Residence	B	I-85	65	-L-	100.0 R	-	-	* 69	+ 4
2	Residence	B	"	65	"	95.0 R	-	-	* 70	+ 5
3	Residence	B	"	62	"	130.0 R	-	-	* 66	+ 4
4	Residence	B	"	67	"	78.0 L	-	-	* 72	+ 5
5	Business	C	"	71	"	53.0 L	-	-	* 77	+ 6
6	Residence	B	"	71	"	56.0 R	-	-	* 76	+ 5
7	Residence	B	"	68	"	77.0 R	-	-	* 72	+ 4
8	Residence	B	"	65	"	100.0 R	-	-	* 69	+ 4
9	Residence	B	"	68	"	76.2 R	-	-	* 72	+ 4
9a	Residence	B	"	66	"	91.4 R	-	-	* 70	+ 4
9b	Residence	B	"	64	"	106.7 R	-	-	* 68	+ 4
9c	Residence	B	"	62	"	121.9 R	-	-	* 67	+ 5
9d	Residence	B	"	60	"	143.3 R	-	-	65	+ 5
10	Residence	B	"	70	"	60.0 R	-	-	* 75	+ 5
11	Residence	B	"	67	"	84.0 R	-	-	* 71	+ 4
12	Residence	B	"	64	"	102.0 R	-	-	* 69	+ 5
12a	Residence	B	"	68	"	76.2 R	-	-	* 72	+ 4
12b	Residence	B	"	63	"	115.8 R	-	-	* 67	+ 4
12c	Residence	B	"	61	"	134.1 R	-	-	65	+ 4
12d	Residence	B	"	60	"	149.4 R	-	-	64	+ 4
13	Residence	B	"	70	"	58.0 R	-	-	* 75	+ 5
14	Residence	B	"	67	"	80.0 R	-	-	* 72	+ 5
15	Residence	B	"	65	"	98.0 R	-	-	* 69	+ 4
16	Residence	B	"	70	"	60.0 R	-	-	* 75	+ 5
16a	Residence	B	"	63	"	115.8 R	-	-	* 67	+ 4
16b	Residence	B	"	62	"	131.1 R	-	-	* 66	+ 4
17	Residence	B	"	66	"	91.0 R	-	-	* 70	+ 4
18	Residence	B	"	64	"	110.0 R	-	-	* 68	+ 4

-L- Denotes proposed roadways's noise level contribution and -Y- denotes contributions from other roadways.
"*" Denotes a noise impact per 23 CFR Part 772 and Category E noise levels shown as exterior/interior (68/48).

TABLE N4
TRAFFIC NOISE EXPOSURES
I-85 Widening (6-Lanes), Rowan/Davidson County, TIP # I-2304A

RECEPTOR INFORMATION			NEAREST EXISTING	AMBIENT NOISE	NEAREST PROPOSED ROADWAY		PREDICTED NOISE LEVELS			NOISE LEVEL
ID#	LAND USE CATEGORY		ROADWAY	LEVEL	NAME	CL DIST(m)	-L-	-Y-	MAXIMUM	INCREASE
	From SR 2120 to NC 150 (6-Lanes) 70' median (Cont'd)									
19	Residence	B	I-85	61	-L-	134.0 R	-	-	65	+ 4
19a	Residence	B	"	67	"	79.2 R	-	-	* 72	+ 5
20	Residence	B	"	63	"	119.0 R	-	-	* 67	+ 4
21	Rest Home	E	"	70/45	"	60.0 L	-	-	75/50	+ 5/5
22	Residence	B	"	67	"	83.0 L	-	-	* 71	+ 4
23	Residence	B	"	67	"	83.0 L	-	-	* 71	+ 4
24	Residence	B	"	67	"	79.2 L	-	-	* 72	+ 5
25	Residence	B	"	64	"	106.6 L	-	-	* 68	+ 4
26	Residence	B	"	63	"	118.8 L	-	-	* 67	+ 4
27	Residence	B	"	62	"	131.0 L	-	-	* 66	+ 4
	From NC 150 to US 29-70 (6-Lanes) 70' median									
28	Business	C	I-85	62	-L-	110.0 R	-	-	69	+ 7
29	Business	C	"	60	"	130.0 R	-	-	67	+ 7
30	Business	C	"	67	"	70.0 R	-	-	* 75	+ 8
31	Business	C	"	64	"	89.0 R	-	-	* 72	+ 8
32	Church	E	"	55/<40	"	195.0 R	-	-	62/<40	+ 7/0
33	Residence	B	"	64	"	89.0 L	-	-	* 72	+ 8
34	Residence	B	"	69	"	60.0 L	-	-	* 76	+ 7
35	Residence	B	"	70	"	52.0 L	-	-	* 78	+ 8
36	Business	C	"	61	"	126.0 L	-	-	68	+ 7
37	Church	E	"	58/<40	"	152.0 L	-	-	65/40	+ 7/0
38	Business	C	"	62	"	113.0 L	-	-	69	+ 7
39	Residence	B	"	68	"	76.2 L	-	-	* 72	+ 4
40	Residence	B	"	66	"	91.4 L	-	-	* 70	+ 4
41	Residence	B	"	60	"	130.0 R	-	-	* 67	+ 7
42	Business	C	"	61	"	122.0 R	-	-	68	+ 7
43	Business	C	"	66	"	79.0 L	-	-	* 73	+ 7
44	Residence	B	"	68	"	66.0 L	-	-	* 75	+ 7

-L- Denotes proposed roadways's noise level contribution and -Y- denotes contributions from other roadways.
"*" Denotes a noise impact per 23 CFR Part 772 and Category E noise levels shown as exterior/interior (68/48).

TABLE N4
TRAFFIC NOISE EXPOSURES
I-85 Widening (8-Lanes), Rowan/Davidson County, TIP # I-2304A

RECEPTOR INFORMATION			NEAREST EXISTING	AMBIENT NOISE	NEAREST PROPOSED ROADWAY		PREDICTED NOISE LEVELS			NOISE LEVEL
ID#	LAND USE CATEGORY		ROADWAY	LEVEL	NAME	CL DIST(m)	-L-	-Y-	MAXIMUM	INCREASE
	From SR 2120 to NC 150 (8-Lanes) 46' median (Cont'd)									
19	Residence	B	I-85	61	-L-	134.0 R	-	-	* 66	+ 5
19a	Residence	B	"	67	"	79.2 R	-	-	* 72	+ 5
20	Residence	B	"	63	"	119.0 R	-	-	* 67	+ 4
21	Rest Home	E	"	70/45	"	60.0 L	-	-	75/50	+ 5/5
22	Residence	B	"	67	"	83.0 L	-	-	* 72	+ 5
23	Residence	B	"	67	"	83.0 L	-	-	* 72	+ 5
24	Residence	B	"	67	"	79.2 L	-	-	* 72	+ 5
25	Residence	B	"	64	"	106.6 L	-	-	* 69	+ 5
26	Residence	B	"	63	"	118.8 L	-	-	* 67	+ 4
27	Residence	B	"	62	"	131.0 L	-	-	* 66	+ 4
	From NC 150 to US 29-70 (8-Lanes) 46' median									
28	Business	C	I-85	62	-L-	110.0 R	-	-	70	+ 8
29	Business	C	"	60	"	130.0 R	-	-	68	+ 8
30	Business	C	"	67	"	70.0 R	-	-	* 75	+ 8
31	Business	C	"	64	"	89.0 R	-	-	* 72	+ 8
32	Church	E	"	55/<40	"	195.0 R	-	-	62/<40	+ 7/0
33	Residence	B	"	64	"	89.0 L	-	-	* 72	+ 8
34	Residence	B	"	69	"	60.0 L	-	-	* 77	+ 8
35	Residence	B	"	70	"	52.0 L	-	-	* 79	+ 9
36	Business	C	"	61	"	126.0 L	-	-	68	+ 7
37	Church	E	"	58/<40	"	152.0 L	-	-	66/41	+ 8/1
38	Business	C	"	62	"	113.0 L	-	-	69	+ 7
39	Residence	B	"	64	"	90.0 R	-	-	* 72	+ 8
40	Residence	B	"	63	"	105.0 R	-	-	* 70	+ 7
41	Residence	B	"	60	"	130.0 R	-	-	* 68	+ 8
42	Business	C	"	61	"	122.0 R	-	-	68	+ 7
43	Business	C	"	66	"	79.0 L	-	-	* 74	+ 8
44	Residence	B	"	68	"	66.0 L	-	-	* 76	+ 8

-L- Denotes proposed roadways's noise level contribution and -Y- denotes contributions from other roadways.
"*" Denotes a noise impact per 23 CFR Part 772 and Category E noise levels shown as exterior/interior (68/48).

TABLE N4
TRAFFIC NOISE EXPOSURES
I-85 Widening (8-Lanes), Rowan/Davidson County, TIP # I-2304A

RECEPTOR INFORMATION			NEAREST EXISTING	AMBIENT NOISE	NEAREST PROPOSED ROADWAY		PREDICTED NOISE LEVELS			NOISE LEVEL
ID#	LAND USE	CATEGORY	ROADWAY	LEVEL	NAME	CL DIST(m)	-L-	-Y-	MAXIMUM	INCREASE
	From NC 150 to US 29-70 (8-Lanes) 46' median (Cont.d)									
45	Residence	B	I-85	67	-L-	73.0 L	-	-	* 75	+ 8
46	Residence	B	"	64	"	95.0 L	-	-	* 71	+ 7
47	Residence	B	"	68	"	65.0 L	-	-	* 76	+ 8
48	Residence	B	"	65	"	82.0 R	-	-	* 73	+ 8
49	Business	C	"	69	"	57.0 R	-	-	* 77	+ 8
50	Residence	B	"	57	"	161.0 R	-	-	65	+ 8
51	Residence	B	"	59	"	140.0 R	-	-	* 67	+ 8
52	Residence	B	"	60	"	130.0 R	-	-	* 68	+ 8
53	Residence	B	"	60	"	130.0 R	-	-	* 68	+ 8
54	Residence	B	"	64	"	93.0 R	-	-	* 72	+ 8
55	Residence	B	"	66	"	80.0 R	-	-	* 74	+ 8
56	Residence	B	"	65	"	83.0 R	-	-	* 73	+ 8
57	Residence	B	"	65	"	87.0 R	-	-	* 73	+ 8
58	Residence	B	"	62	"	113.0 R	-	-	* 69	+ 7
59	Residence	B	"	60	"	130.0 R	-	-	* 68	+ 8
60	Residence	B	"	66	"	79.0 L	-	-	* 74	+ 8
61	Residence	B	"	67	"	70.0 L	-	-	* 75	+ 8
62	Business	C	"	66	"	78.0 L	-	-	* 74	+ 8
63	Residence	B	"	60	"	134.0 R	-	-	* 67	+ 7
64	Residence	B	"	67	"	70.0 R	-	-	* 75	+ 8
65	Residence	B	"	70	"	50.0 R	-	-	* 79	+ 9
66	Business	C	"	71	"	48.0 R	-	-	* 80	+ 9
67	Residence	B	"	60	"	130.0 L	-	-	* 68	+ 8
68	Residence	E	"	57	"	170.0 R	-	-	64	+ 7
69	Business	C	"	62	"	114.0 L	-	-	69	+ 7
70	Business	C	"	65	"	86.0 L	-	-	* 73	+ 8

-L- Denotes proposed roadways's noise level contribution and -Y- denotes contributions from other roadways.
"*" Denotes a noise impact per 23 CFR Part 772 and Category E noise levels shown as exterior/interior (68/48).

TABLE N5
FHWA NOISE ABATEMENT CRITERIA SUMMARY
I-85 Widening (8-Lanes), Rowan/Davidson Counties, TIP # I-2304A

DESCRIPTION	Leq NOISE LEVELS (dBA)			MAXIMUM CONTOUR DISTANCES		APPROXIMATE # OF IMPACTED RECEPTORS ACCORDING TO TITLE 23 CFR PART 772				
	15m	30m	60m	72 dBA	67 dBA	A	B	C	D	E
1. From SR 2120 to NC 150	82.4	78.3	72.8	84.6	126.8	0	34	1	0	0
2. From NC 150 to US 29-70	83.8	79.7	74.2	94.4	142.5	0	26	7	0	0
					TOTALS --->	0	60	8	0	0

1. 15m, 30m, and 60m distances are measured from the center of nearest travel lane.
2. 72 dBA and 67 dBA contour distances are measured from the center of proposed roadway.

TABLE N5
FHWA NOISE ABATEMENT CRITERIA SUMMARY
I-85 Widening (6-Lanes), Rowan/Davidson Counties, TIP # I-2304A

DESCRIPTION	Leq NOISE LEVELS (dBA)			MAXIMUM CONTOUR DISTANCES		APPROXIMATE # OF IMPACTED RECEPTORS ACCORDING TO TITLE 23 CFR PART 772				
	15m	30m	60m	72 dBA	67 dBA	A	B	C	D	E
1. From SR 2120 to NC 150	82.1	77.9	72.5	82.6	122.8	0	32	1	0	0
2. From NC 150 to US 29-70	83.4	79.2	73.8	91.4	138.1	0	26	7	0	0
					TOTALS --->	0	58	8	0	0

1. 15m, 30m, and 60m distances are measured from the center of nearest travel lane.
2. 72 dBA and 67 dBA contour distances are measured from the center of proposed roadway.

TABLE N6
TRAFFIC NOISE LEVEL INCREASE SUMMARY
I-85 Widening (6-Lanes), Rowan/Davidson Counties, TIP # I-2304A

DESCRIPTION	RECEPTOR EXTERIOR NOISE LEVEL INCREASES							SUBSTANTIAL NOISE LEVEL INCREASE "1"	IMPACTS DUE TO BOTH CRITERIA "2"
	<=0	1-4	5-9	10-14	15-19	20-24	>=25		
1. From SR 2120 to NC 150	0	24	14	0	0	0	0	0	0
2. From NC 150 to US 29-70	0	4	39	0	0	0	0	0	0
TOTALS --->	0	28	53	0	0	0	0	0	0

"1" As defined by only a substantial increase (See bottom of TABLE N2).
"2" As defined by both criteria in TABLE N2.

TABLE N6
TRAFFIC NOISE LEVEL INCREASE SUMMARY
I-85 Widening (8-Lanes), Rowan/Davidson Counties, TIP # I-2304A

DESCRIPTION	RECEPTOR EXTERIOR NOISE LEVEL INCREASES							SUBSTANTIAL NOISE LEVEL INCREASE "1"	IMPACTS DUE TO BOTH CRITERIA "2"
	<=0	1-4	5-9	10-14	15-19	20-24	>=25		
1. From SR 2120 to NC 150	0	9	29	0	0	0	0	0	0
2. From NC 150 to US 29-70	0	0	43	0	0	0	0	0	0
TOTALS --->	0	9	72	0	0	0	0	0	0

"1" As defined by only a substantial increase (See bottom of TABLE N2).
"2" As defined by both criteria in TABLE N2.

TABLE N7
TRAFFIC NOISE BARRIER SUMMARY
I-85 Widening, Rowan/Davidson Counties, TIP # I-2304 A

Site	Description	Receptor #'s	Average Reduction	Benefitted Receptors	Barrier Length (m)	Barrier Height (m)	Approximate Cost	Cost per Receptor
1	From SR 2120 to NC 150 North	9-19A	7.1	8	353	6.5	$370,400	46,300
2	From SR 2120 to NC 150 South	24-27	5.5	3	314	7.5	$399,800	133,267
3	From NC 150 to US 29/US 70 South	33-35	8.5	2	156	3	$83,700	41,850
4	From NC 150 to US 29/US 70 North	53-58	6.6	3	376	4	$218,900	72,367

Appendix 3

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

October 28, 1998

Mr. William D. Gilmore, P.E., Manager
Planning and Environmental Branch
Division of Highways
North Carolina Department of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

Subject: Interstate 85, from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County, North Carolina, Federal Aid Project No. NHF-85-3(164)80, State Project No. 8.1631403, TIP No. I-2304A

In your letter of August 7, 1998, you requested our comments on the subject project. The following comments are provided in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

According to the information provided with your letter, the North Carolina Department of Transportation's Division of Highways is proposing to construct additional lanes along the subject section of Interstate 85. Enclosed is a list of species from Davidson and Rowan Counties that are on the *Federal List of Endangered and Threatened Wildlife and Plants* and species of Federal concern that may occur in the project impact area. We recommend surveying the project area for these species prior to any further planning or on-the-ground activities to ensure that no adverse impacts occur to these species. We do have records from the project area of the bald eagle (*Haliaeetus leucocephalus*), a threatened species, and Georgia aster (*Aster georgianus*) and Heller's trefoil (*Lotus helleri*), both of which are species of Federal concern. There is also a wading bird rookery at Town Creek. Species of Federal concern are not legally protected under the Act and are not subject to any of its provisions, including Section 7, unless they are formally proposed or listed as endangered or threatened. We are including these species

in our response to give you advance notification. The presence or absence of these species in the project impact area should be addressed in any environmental document prepared for this project.

The environmental document should contain the following information, if pertinent:

(1) A complete analysis and comparison of the available alternatives (the build and no-build alternatives).

(2) A description of the fishery and wildlife resources within existing and required additional rights-of-way and any areas, such as borrow areas, that may be affected directly or indirectly by the proposed road improvements.

(3) Acreage and description of wetlands that will be filled as a result of the proposed road improvements. Wetlands affected by the proposed project should be mapped in accordance with the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. We recommend contacting the U.S. Army Corps of Engineers to determine the need for a Section 404 Clean Water Act permit.

(4) Extent (linear feet as well as discharge) of any water courses that will be impacted as a result of the proposed project. A description of any streams should include the classification (Rosgen 1995, 1996) and a description of the biotic resources. The format and information in the stream assessment report prepared for R-529 BA and BB were very helpful.

(5) Acreage of upland habitat, by cover type, that will be eliminated because of the proposed project.

(6) Description of all expected secondary and cumulative environmental impacts associated with this proposed work.

(7) An analysis of the crossing structures considered (i.e., spanning structure, culvert) and the rationale for choosing the preferred structure(s).

(8) A discussion about the extent to which the project will result in the loss, degradation, or fragmentation of wildlife habitat from direct construction impacts and from secondary development impacts.

(9) Mitigation measures that will be employed to avoid, eliminate, reduce, or compensate for habitat value losses (wetland, riverine, and upland) associated with any phase of the proposed project.

We appreciate the opportunity to provide these scoping comments and request that you continue to keep us informed as to the progress of this project. In any future correspondence concerning the project, please reference our Log Number 4-2-98-243.

Sincerely,

Brian P. Cole

Brian P. Cole
State Supervisor

Enclosure

cc:
Ms. Linda Pearsall, Director, North Carolina Natural Heritage Program, P.O. Box 27687, Raleigh, NC 27611
Mr. David Cox, Highway Projects Coordinator, North Carolina Wildlife Resources Commission, 1142 I-85 Service Road, Creedmoor, NC 27522

ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND FEDERAL SPECIES OF CONCERN IN DAVIDSON AND ROWAN COUNTIES, NORTH CAROLINA

This list was adapted from the North Carolina Natural Heritage Program's County Species List. It is a listing, for Davidson and Rowan Counties, of North Carolina's federally listed and proposed endangered, threatened, and candidate species and Federal species of concern (for a complete list of rare species in the state, please contact the North Carolina Natural Heritage Program). Wherever critical habitat has been designated, a description of its location and constituent essential elements is also listed, by county. The information on this list is compiled from a variety of sources, including field surveys, museums and herbariums, literature, and personal communications. The North Carolina Natural Heritage Program's database is dynamic, with new records being added and old records being revised as new information is received. Please note that this list cannot be considered a definitive record of listed species and Federal species of concern, and it should not be considered a substitute for field surveys.

COMMON NAME	SCIENTIFIC NAME	STATUS
DAVIDSON COUNTY		
Vertebrates		
Bog turtle	*Clemmys muhlenbergii*	T(S/A)[1]
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Vascular Plants		
Georgia aster	*Aster georgianus*	FSC*
Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered
Heller's trefoil	*Lotus helleri*	FSC
ROWAN COUNTY		
Vertebrates		
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Vascular Plants		
Georgia aster	*Aster georgianus*	FSC
Schweinitz's sunflower	*Helianthus schweinitzii*	Endangered
Virginia quillwort	*Isoetes virginica*	FSC
Heller's trefoil	*Lotus helleri*	FSC

KEY:

Status	Definition
Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
Threatened	A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
FSC	A Federal species of concern--a species that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing).

T(S/A) Threatened due to similarity of appearance (e.g., American alligator)--a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.

Species with 1, 2, 3, or 4 asterisks behind them indicate historic, obscure, or incidental records.

*Historic record - the species was last observed in the county more than 50 years ago.
**Obscure record - the date and/or location of observation is uncertain.
***Incidental/migrant record - the species was observed outside of its normal range or habitat.
****Historic record - obscure and incidental record.

[1]In the November 4, 1997, *Federal Register* (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia) was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land-management activities by private landowners in North Carolina, part of the southern population of the species.

FEDERAL ENERGY REGULATORY COMMISSION
ATLANTA REGIONAL OFFICE
Parkridge 85 North Building
3125 Presidential Parkway - Suite 300
Atlanta, Georgia 30340
(770) 452-2360

SEP 15 1998

In reply refer to:
P-2197 - NC
NATDAM No. NC00388

Mr. William D. Gilmore, Manager
Planning and Environmental Branch
State of North Carolina
Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

This acknowledges your letter dated August 7, 1998, soliciting comments on the improvements to Interstate Route 85 in Davidson and Rowan counties, North Carolina. It appears that the improvements may impact the High Rock development of the Yadkin Project No. 2197, which is under the jurisdiction of the Federal Energy Regulatory Commission. Major bridge construction may impact a nearby recreation area and bridge pier design may impact riverflows and flooding in the area. More information on the designs are needed to evaluate potential impacts of the proposed improvements.

Please contact Mr. Randy Yates at (770) 452-2363, extension 33, if you have questions.

Sincerely,

Jerrold W. Gotzmer

Jerrold W. Gotzmer, P.E.
Director

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

September 16, 1998

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook Renee Gledhill-Earley for
Deputy State Historic Preservation Officer

SUBJECT: I-85 from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County, Rowan and Davidson Counties, Federal Aid Project NHF-85-3(164)80, State Project 8.1631403, TIP I-2304A, 99-E-4220-0121

We have received information concerning the above project from the State Clearinghouse.

We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area. However, since the surveys of historic architectural resources in Davidson and Rowan Counties were conducted over fifteen years ago, there may be properties of which we are unaware within the planning area. Therefore, we recommend that an architectural historian with the North Carolina Department of Transportation survey the project's area of potential effect and report the findings to us.

There are no known recorded archaeological sites within the project boundaries. However, the project area has never been systematically surveyed to determine the location or significance of archaeological resources. Earthen fortifications identified with the location of Fort York, a Civil War fortification, lie just northwest of the Yadkin River bridge. The nature, condition, and significance of these remains are unknown. Associated sites might be encountered by the proposed project. Prehistoric campsites are also considered likely to exist within this area.

We recommend that a comprehensive survey be conducted by an experienced archaeologist to identify the presence and significance of archaeological remains that may be damaged or destroyed by the proposed project. Potential effects on unknown resources should be assessed prior to the initiation of construction activities.

109 East Jones Street • Raleigh, North Carolina 27601-2807

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: State Clearinghouse
N. Graf
B. Church
T. Padgett

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 99-E-4220-0121 F02
DATE RECEIVED: 08/12/1998
AGENCY RESPONSE: 10/05/1998 due 10/1
REVIEW CLOSED: 10/09/1998

Ms. Renee Gledhill-Earley
Clearinghouse Coordinator
Dept. of Cultural Resources
Archives-History Bldg.
Raleigh NC

SEP 1998 RECEIVED SECRETARY'S OFFICE DOA

AUG 1 - 1998 DKB 9/3/98

HISTORIC PRESERVATION OFFICE BJD 9/10/98 BJS

REVIEW DISTRIBUTION
Centralina Council of Governments
Dept. of Agriculture
Dept. of Crime Cont./ Public Safety
Dept. of Cultural Resources
Dept. of Environment & Natural Res
Piedmont Triad COG

PROJECT INFORMATION
APPLICANT: N.C. Department of Transportation
TYPE: National Environmental Policy Act
ERD: Scoping
DESC: Proposed Improvements to I-85, from North of SR 2121 (Exit 81) in Rowan County to US 29-52-70/i-85 Business (Exit 87) in Davidson County; TIP #I-2304A

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date. If additional review time is needed, please contact this office at (919)733-7232.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☐ NO COMMENT

☑ COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley

DATE: 9/16/98

AUG 14 1998

SEP 03 1998

State of North Carolina
Department of Environment,
Health and Natural Resources
Division of Land Resources

James B. Hunt, Jr., Governor
Jonathan B. Howes, Secretary
Charles H. Gardner, P.G., P.E.
Director and State Geologist

DEHNR

PROJECT REVIEW COMMENTS

Project Number: 98E0121 **County:** ROWAN / DAVIDSON

Project Name: I-85 IMPROVEMENTS IN ROWAN & DAVIDSON CO.

NC Office of State Planning - Geodetic Survey

✓ This project will impact 13 geodetic survey markers. N.C. Geodetic Survey should be contacted prior to construction at P.O. Box 27687, Raleigh, N.C. 27611 (919) 733-3836. Intentional destruction of a geodetic monument is a violation of N.C. General Statute 102-4.

_____ This project will have no impact on geodetic survey markers.

_____ Other (comments attached)

For more information contact the N.C. Office of State Planning, Geodetic Survey Office at 919/733-3836.

Steven Kaufman
Reviewer

8/14/98
Date

Erosion and Sedimentation Control

_____ No comment

_____ This project will require approval of an erosion and sedimentation control plan prior to beginning any land-disturbing activity if more than one (1) acre will be disturbed.

_____ If an environmental document is required to satisfy Environmental Policy Act (SEPA) requirements, the document must be submitted as part of the erosion and sedimentation control plan.

_____ If any portion of the project is located within a High Quality Water Zone (HQW), as classified by the Division of Environmental Management, increased design standards for sediment and erosion control will apply.

✓ The erosion and sedimentation control plan required for this project should be prepared by the Department of Transportation under the erosion control program delegation to the Division of Highways from the North Carolina Sedimentation Control Commission.

_____ Other (comments attached)

For more information contact the Land Quality Section at 919/733-4574.

David Ward
Reviewer

8/19/98
Date

Geological Survey Section
(919) 733-2423
FAX: (919) 733-0900

Land Quality Section
(919) 733-4574
FAX: 733-2876

Geodetic Survey Section
(919) 733-3836
FAX: 733-4407

P.O. Box 27687, Raleigh, North Carolina 27611-7 A3-9 ephone 919-733-3833 FAX 919-733-4407

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days (N/A)
☐	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days (N/A)
☐	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days (N/A)
☐	401 Water Quality Certification	N/A	60 days (130 days)
☐	CAMA Permit for MAJOR development	$250.00 fee must accompany application	55 days (150 days)
☐	CAMA Permit for MINOR development	$50.00 fee must accompany application	22 days (25 days)
☐	Several geodetic monuments are located in or near the project area. If any monuments need to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687, Raleigh, NC 27611		
☑	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
☑	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
•	Other comments (attach additional pages as necessary, being certain to cite comment authority) AQ - any open burning of land clearing debris must be performed in compliance with the open burning regulation MR 8-17-98 EW - No comments except as noted. DLC 8-17-98 WQ - No objection. DJC LR - No Comments		

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

☐ Asheville Regional Office
59 Woodfin Place
Asheville, NC 28801
(704) 251-6208

☐ Fayetteville Regional Office
Suite 714 Wachovia Building
Fayetteville, NC 28301
(919) 486-1541

☑ Mooresville Regional Office
919 North Main Street, P.O. Box 950
Mooresville, NC 28115
(704) 663-1699

☐ Raleigh Regional Office
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 571-4700

☐ Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
919) 946-6481

☐ Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(919) 395-3900

☐ Winston-Salem Regional Office
585 Waughtown St.
Winston-Salem, NC 27107
(910) 771-4600

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

STANFORD M. ADAMS
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF FOREST RESOURCES

2411 Old US 70 West
Clayton, NC 27520
August 18, 1998

Mr. Kenneth E. Baker
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, Virginia 23060

Dear Mr. Baker:

The North Carolina Division of Forest Resources has reviewed the Draft Applicant Prepared Environmental Assessment for FERC #2009 and have no further comments at this time. Our concerns have been addressed in the referenced document.

We have no objection to the selection of Alternative # 7 as the preferred alternative. The proposed cooperative management and research program involving the Corp of Engineers, resource agencies, and The Nature Conservancy will aid our understanding of the floodplain ecosystem and the relationship of the hydroperiod to species composition. We support NCP participation in a cooperative management program. The North Carolina Division of Forest Resources would welcome the opportunity to work with this program.

Thank you for the opportunity to comment on this project. I have assumed the position responsibilities of Don Robbins who recently retired. I look forward to further correspondence on this project.

Sincerely,

Bill Pickens
Staff Forester- Environmental Documentation

Cc: Warren Boyette
Melba McGee

P.O. BOX 29581, RALEIGH, NC 27626-0581
PHONE 919-733-2162 FAX 919-715-4350

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Wayne McDevitt, Secretary
A. Preston Howard, Jr., P.E., Director

August 21, 1998

MEMORANDUM

To: Melba McGee, DENR SEPA Coordinator

From: Ed Buchner, DWQ SEPA Coordinator

Subject: Comments on EA Scoping #99-0121; I-85 Improvements From North of SR2120 in Rowan County to US 29-52-70/I-85 Business in Davidson Co.

The Division of Water Quality (DWQ) requests that the following topics be discussed in the EA/EIS document:

A. Identify the streams potentially impacted by the project. The current stream classifications and use support ratings for these streams should be included. This information is available from DWQ through the following contacts:

Liz Kovasckitz - Classifications - 919-733-5083, ext. 572
Carol Metz - Use Support Ratings - 919-733-5083, ext. 562

B. Identify the linear feet of stream channelization/relocations. If the original stream banks were vegetated, it is requested that the channelized/relocated stream banks be revegetated.

C. Identify the number of stream crossings.

D. Will permanent spill catch basins be utilized? DWQ requests that these catch basins be placed at all water supply stream crossings. Identify the responsible party for maintenance.

E. Identify the stormwater controls (permanent and temporary) that will be used

F. Please ensure that sediment and erosion control measures are not placed in wetlands.

G. Wetland Impacts

i) Identify the federal manual used for identifying and delineating jurisdictional wetlands.
ii) Have wetlands been avoided as much as possible?
iii) Have wetland impacts been minimized?
iv) Mitigation measures to compensate for habitat losses.
v) Wetland impacts by plant communities affected.

P.O. Box 29535, Raleigh, North Carolina 27626-0535 Telephone 919-733-5083 FAX 919-715-6048

vi) Quality of wetlands impacted.
vii) Total wetland impacts.
viii) List the 401 General Certification numbers requested from DWQ.

H. Borrow/waste areas should avoid wetlands to the maximum extent practicable. Prior to the approval of any borrow/waste site in a wetland, the contractor shall obtain a 401 Certification from DWQ.

I. Please provide a conceptual wetland mitigation plan to help the environmental review. The mitigation plan may state the following:

1. Compensatory mitigation will be considered only after wetland impacts have been avoided and minimized to the maximum extent possible.
2. On-site, in-kind mitigation is the preferred method of mitigation. In-kind mitigation within the same watershed is preferred over out-of-kind mitigation.
3. Mitigation should be in the following order: restoration, creation, enhancement, and lastly preservation.

J. The EA should discuss in detail project alternatives.

DWQ is also concerned about secondary and cumulative impacts that may be caused by construction, development or any significant change made to the environment. For example, a project may cause or increase stormwater runoff or induce further development of an area. The EA/EIS should give particular attention to secondary and cumulative impacts.

Written concurrence of 401 Water Quality Certification may be required for this project. Applications requesting coverage under our General Certification 14 or General Permit 31 (with wetland impact) will require written concurrence. Please be aware that 401 Certification may be denied if wetland or water impacts have not been avoided and minimized to the maximum extent practicable.

efb:\#99-0121, Scoping

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE McDEVITT
SECRETARY

C. DEWEY BOTTS
DIRECTOR

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF SOIL AND WATER CONSERVATION

September 1, 1998

MEMORANDUM

TO: Melba McGee

FROM: David Harrison DEH

SUBJECT: Proposal Improvements to I-85 from North of SR 2120 in Rowan County to US 29-52-70/I-85 Business in Davidson County. Project No. 99-E-0121.

The proposed improvements to Interstate 85 will involve acquisition of additional property.

The Environmental Assessment should include information on the amount and location of Prime or Important Farmland that will be impacted. Alternatives that reduce impacts to Prime or Important Farmland soils are preferred. A listing of these soils in North Carolina is available through the MLRA Team Leader, North Carolina State Office, Natural Resources Conservation Service, USDA, 4405 Bland Road, Suite 205, Raleigh, N.C. 27609, (919) 873-2905.

The Prime Farmland designation is not limited to land currently being cultivated. It is intended to identify the best soils that can be used as farmland without regard to the present vegetative cover. Only areas that are already built-up or within city limits are exempted from consideration.

DH/tl

A3-15 27687, RALEIGH, NORTH CAROLINA 27611-7687
PHONE 919-733-2302 FAX 919-715-3559

Department of Environment and Natural Resources — Reviewing Office: WIRO

INTERGOVERNMENTAL REVIEW – PROJECT COMMENTS Project Number: 99-E-0171 Due Date: 9/11/98

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
☐	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
☐	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit–whichever is later.	90-120 days (N/A)
☐	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
☐	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	
☐	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.		60 days (90 days)
☐	Complex Source Permit required under 15 A NCAC 2D.0800		
☐	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (land Quality Sect.) At least 30 days before beginning activity. A fee of $30 for the first acre and $2000 for each additional acre or part must accompany the plan.		20 days (30 days)
☐	The Sedimentation Pollution control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		(30 days)
☐	Mining Permit	On-site inspection usual. Surety bond filed with ENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
☐	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
☐	Oil Refining Facilities	N/A	90-120 days (N/A)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Melba McGee
Office of Legislative and Intergovernmental Affairs, DENR

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program

DATE: September 3, 1998

SUBJECT: Request for information from the N. C. Department of Transportation (NCDOT) regarding fish and wildlife concerns for I -85 improvements, from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 (Exit 87) in Davidson County, Davidson and Rowan counties. North Carolina. TIP No. I-2304A, SCH Project No. 99-E-0121.

This memorandum responds to a request from Mr. William D. Gilmore of the NCDOT for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. Biologists on the staff of the N. C. Wildlife Resources Commission (NCWRC) have reviewed the proposed improvements, and our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

At this time the NCWRC has no specific recommendations or concerns regarding the subject project. However, to help facilitate document preparation and the review process, our general informational needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with:

   The Natural Heritage Program
   N. C. Division of Parks and Recreation
   P. O. Box 27687
   Raleigh, N. C. 27611
   (919) 733-7795

and,

NCDA Plant Conservation Program
P. O. Box 27647
Raleigh, N. C. 27611
(919) 733-3610

2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities.

3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (COE). If the COE is not consulted, the person delineating wetlands should be identified and criteria listed.

4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included.

5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).

6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.

7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation.

8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access.

9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages for this project. If we can further assist your office, please contact me at (919) 528-9886.

cc: U. S. Fish and Wildlife Service, Raleigh

Steve

North Carolina
Department of Administration

James B. Hunt, Jr., Governor

Katie G. Dorsett, Secretary

October 12, 1998

Mr. William Gilmore
N.C. Department of Transportation
Planning and Environmental Branch
Transportation Building
Raleigh, NC 27611

Dear Mr. Gilmore:

SCH File # 99-E-4220-0121; Scoping Proposed Improvements to I-85, from North of SR 2121 (Exit 81) in Rowan County to US 29-52-70/i-85 Business (Exit 87) in Davidson County; TIP #I-2304A

The above referenced project has been reviewed through the State Clearinghouse Intergovernmental Review Process. Attached to this letter are comments made by agencies reviewing this document.

Should you have any questions, please do not hesitate to call me at (919) 733-7232.

Sincerely,

Chrys Baggett

Mrs. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region F
Region G
Melba McGee, DEHNR

NCDENR

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee
Environmental Review Coordinator

RE: 99-0121 I-85 Improvements, Rowan County

DATE: September 16, 1998

The Department of Environment and Natural Resources has reviewed the proposed information. The attached comments are for the applicant's information and consideration.

Thank you for the opportunity to review.

attachments

P.O. Box 27687, Raleigh NC 27611-7687 / 512 North Salisbury Street, Raleigh NC 27604
Phone 919-733-4984 FAX 919-715-3060 www.ehnr.state.nc.us/EHNR/

North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

September 16, 1998

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook
Deputy State Historic Preservation Officer

SUBJECT: I-85 from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County, Rowan and Davidson Counties, Federal Aid Project NHF-85-3(164)80, State Project 8.1631403, TIP I-2304A, 99-E-4220-0121

We have received information concerning the above project from the State Clearinghouse.

We have conducted a search of our files and are aware of no structures of historical or architectural importance located within the planning area. However, since the surveys of historic architectural resources in Davidson and Rowan Counties were conducted over fifteen years ago, there may be properties of which we are unaware within the planning area. Therefore, we recommend that an architectural historian with the North Carolina Department of Transportation survey the project's area of potential effect and report the findings to us.

There are no known recorded archaeological sites within the project boundaries. However, the project area has never been systematically surveyed to determine the location or significance of archaeological resources. Earthen fortifications identified with the location of Fort York, a Civil War fortification, lie just northwest of the Yadkin River bridge. The nature, condition, and significance of these remains are unknown. Associated sites might be encountered by the proposed project. Prehistoric campsites are also considered likely to exist within this area.

We recommend that a comprehensive survey be conducted by an experienced archaeologist to identify the presence and significance of archaeological remains that may be damaged or destroyed by the proposed project. Potential effects on unknown resources should be assessed prior to the initiation of construction activities.

109 East Jones Street • Raleigh, North Carolina 27601-2807

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: State Clearinghouse
N. Graf
B. Church
T. Padgett

Public Schools of North Carolina

State Board of Education
Phillip J. Kirk, Jr., Chairman

http://www.dpi.state.nc.us

Department of Public Instruction
Michael E. Ward, State Superintendent

August 27, 1998

MEMORANDUM

TO: William D. Gilmore, P.E., NC Department of Transportation

FROM: Gerald H. Knott, Section Chief, School Planning

SUBJECT: Interstate 85, from north of SR 2120 (Exit 81 in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County, Rowan and Davidson Counties, Federal Aid Project No. NHF-85-3(164)80, State Project No. 8.1631403, TIP Project No. I-2304A

Enclosed is the response from Davidson County Schools to our impact inquiry.

/ed
Enclosure

301 N. Wilmington Street, Raleigh, North Carolina 27601-2825

Davidson County Schools

Office of Superintendent

FACSIMILE TRANSMISSION

PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME: Mr. Gerald H. Knott, AIA

TELEFAX NUMBER: (919) 715-1063

FROM: A. Ray Murphy, Jr.

DATE: 8-27-98

TOTAL NUMBER OF PAGES INCLUDING THIS COVER SHEET: Four (4)

PLEASE DELIVER THE ATTACHED DOCUMENT TO THE ABOVE NAMED PARTY. IFYOU DO NOT RECEIVE ALL THE PAGES INDICATED, PLEASE CALL: (336) 249-8181

SPECIAL INSTRUCTIONS:

Gerald,
Just received the following 3 pages from your dept. regarding a highway project in our county.
To our knowledge, there is no problem for our school bus transportation with TIP Project # I-2304A.

A. Ray Murphy, Jr.
Ass't Supt.

Finetex®

October 21, 1998

To: Eric Midkiff
North Carolina Department of Transportation
Planning and Environmental Branch
PO Box 25201
Raleigh, NC 27611

From: Kirby Atwood, Compliance Coordinator
Finetex Inc.
PO Box 164
Spencer, NC 28159

Sir,

Finetex Inc. is a two generation family owned and operated processor of chemical intermediates used in the cosmetic and pharmaceutical industry. The Finetex Spencer plant has been at the Hackett St. location for over 20 years and has more than 40 full-time employees. Our safety/compliance department has won awards and produced great results. The Spencer facility has gone over 700 days without a lost time accident. Finetex management and employees consider safety as a priority in all our operations.

Safety is also our concern in the changes being made to I-85 and Hackett St. Trucks transport all our raw materials and finished products. Due to the nature of our chemical processes, safe and secure access to the facility is a must for the operations to continue.

Trucks presently have access to the facility from Willow Creek Dr. and Hackett Street. The closing of the railroad crossing on Hackett St. and the closing of the Willow Creek under pass will eliminate the two access routes for the facility. The proposed access to the Finetex facility by extending Hinkle Dr. to the southern edge of the Finetex property and upgrading Five Row Rd. for truck traffic would meet all the transportation and security requirements for the facility.

Alternative plans such as extending Hinkle Dr. along the facility property to connect with Hackett St. would create security concerns for the Finetex facility. This would eliminate the trees as a natural barrier on that side of the facility. The other sides of the facility presently have other important security barriers such additional trees, railroad tracks, embankments, etc. Limiting access to the property and providing security for our employees is required by Federal regulations. Finetex is covered by 40 CFR 264.14 security requirements for Large Quantity Hazardous Waste Generators, 40 CFR 112.7 security requirements for our Spill Prevention Control and Countermeasure Plan, and 29 CFR 1910 for providing a safe and secure work environment for our employees. These requirements are the reason for our concern with connecting Hinkle Dr. to Hackett St. and exposing a side of the facility to uncontrolled access.

We would like to encourage your office to maintain the present plans of connecting Hinkle Dr. to the southern edge of the Finetex property and upgrading Five Row Rd. for truck traffic. Please call me if you have any questions or concerns at (704)633-8028.

Thank you.

Kirby Atwood

Kirby Atwood

cc: J. Roger Porter, President
Bob Scala, Vice President

FINETEX INC., P.O. BOX 216, ELMWOOD PARK, NEW JERSEY 07407 (201) 797-4686 FAX: (201) 797-6558
P.O. BOX 164, SPENCER, NORTH CAROLINA 28159 (704) 633-8028 FAX: (704) 633-3746

Appendix 4

Enclosure

Mr. Bill Gilmore, PE
Planning & Environmental Branch
Transportation Building

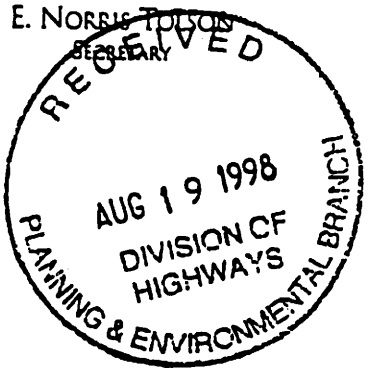
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

P.O. BOX 25201. RALEIGH. N.C. 27611-5201

August 18, 1998

E. NORRIS TOLSON
SECRETARY



MEMORANDUM

TO: Secretary Norris Tolson

FROM: L. Todd Dudley, PE
Public Hearing Officer
Citizens Participation Unit

RE: Notice of a Citizens Informational Workshop for the Proposed Improvements to Interstate 85

The following Notice is furnished for your information:

I-2304A The project proposes to improve Interstate 85 by constructing additional travel lanes from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County.

LTD:plt
Attachment
cc: Mr. Dalton D. Ruffin, Board of Transportation Member
Ms. Margaret H. Kluttz, Board of Transportation Member
Mr. Len A. Sanderson, PE
Mr. J. D. Goins, PE
Mr. D. R. Morton, PE
Mr. J. B. Williamson, Jr.
Mr. R. L. Hill, PE
Mr. C. W. Leggett, PE
Mr. Whit Webb, PE
Mr. C. W. Brown, PE, RLS
Mr. Bill Gilmore, PE
Mr. G. T. Shearin, PE
Mr. W. R. Brown, PE
Mr. J. M. Lynch, PE
Mr. C. H. Casey, PE
Mr. Robert Mathes
Mr. Danny Rogers
Ms. Rosy Goode
Mr. Everett Ward
Mr. Ron Poole, PE
Mr. Wayne Patterson, Right of Way Agent
FHWA

NOTICE OF A CITIZENS INFORMATIONAL WORKSHOP
FOR THE PROPOSED IMPROVEMENTS TO INTERSTATE 85

Project 8.1631403 I-2304A Rowan and Davidson Counties

The North Carolina Department of Transportation (NCDOT) will hold the above informal Citizens Informational Workshop on September 9, 1998 between the hours of 4:30 PM and 7:30 PM in the Spencer Town Hall located at 600 South Salisbury Avenue.

Under this project it is proposed to improve Interstate 85 by constructing additional travel lanes from north of SR 2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County. Major bridge, median, and interchange reconstruction is also anticipated to accommodate the proposed widening and to improved traffic flow.

NCDOT representatives will be available at the workshop to answer questions and receive comments relative to the proposed project. Information at the workshop will be general in nature, no detailed designs are available. Interested individuals may attend at their convenience during the above stated hours. Anyone desiring additional information may contact Mr. Eric Midkiff, Project Planning Engineer, at P.O. Box 25201, Raleigh, NC 27611, or at (919) 733-7844, ext. 242.

In order to comply with the Americans with Disabilities Act, NCDOT will provide auxiliary aids and services for disabled persons who wish to attend the workshop. To receive special services, please contact Mr. Midkiff at the above address, phone number, or fax (919) 733-9794 prior to the date of the workshop.

North Carolina Department of Transportation
Planning and Environmental Branch

Interstate 85
From North of SR 2120 (Exit 81) To US 29-52-70/I-85 Business (Exit 87)
Rowan and Davidson Counties
TIP Project No. I-2304 A

September 9, 1998

CITIZENS INFORMATIONAL WORKSHOP

CITIZENS INFORMATIONAL WORKSHOP

Interstate 85
From North of SR 2120 (Exit 81) To
US 29-52-70/I-85 Business (Exit 87)
Rowan and Davidson Counties
TIP Project No. I-2304 A

Purpose of the Citizens Informational Workshop

The purpose of the Citizens Informational Workshop is to involve the public in the project planning process. If you have comments or suggestions about the proposed improvements described in this handout, please let a representative of the North Carolina Department of Transportation (NCDOT) know. We have provided a comment sheet on which you can write your questions or concerns so that we can document and fully consider your ideas, comments, and suggestions.

The NCDOT realizes individuals living close to a proposed project want to be informed of the possible effects of the project on their homes and businesses. However, exact information is not available at this stage of the planning process. Additional design work is necessary before the actual right-of-way limits can be established. More detailed information will be available at a later date.

You may leave your written comments with NCDOT representatives at the Citizens Informational Workshop or you may mail them. If additional information is needed or you would like to submit comments after the Citizens Informational Workshop, please address your requests and comments to:

Mr. William D. Gilmore, P. E., Manager
Planning and Environmental Branch
Division of Highways
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611

A discussion of NCDOT's public involvement opportunities in NCDOT's project planning process is attached for your information. Persons who sign the workshop attendance sheet or submit comments during or after the workshop will be added to the project's mailing list and will be notified of future workshops or hearings.

Description and Purpose of the Project

The NCDOT's 1998-2004 Transportation Improvement Program (TIP) proposes to construct additional travel lanes along Interstate 85 from just north of SR 2120 (Exit 81) to US 29-52-70/I-85 Business (Exit 87) in Rowan and Davidson Counties. Major bridge, median, and interchange reconstruction is also proposed to accommodate the proposed widening and to improve traffic flow. The project is scheduled for right of way acquisition in fiscal year 2002 and construction in fiscal year 2004. See Figure 1 for the project's location.

At the current level of traffic growth in the project area the existing I-85 facility will not be able to adquately accommodate projected traffic volumes in the next 20 years. In fact, some portions of I-85 are already operating at an unacceptable level of traffic service during peak hour conditions. In order to accommodate the projected traffic volumes along this facility, NCDOT proposes constructing additional travel lanes along I-85. Also, in order to improve traffic flow and provide adequate access to I-85 for area residents and businesses, the Department proposes to realign, remove, and construct new interchanges and service roads in the area.

Proposed Interstate 85 Mainline Improvements

NCDOT proposes to widen the subject section of I-85 to an 8- or 10-lane facility with a 46-foot median. See Figure 2 for the proposed typical cross section. In the vicinity of the Yadkin River, the Department proposes realigning a portion of I-85 just to the east of its existing location. New bridges will be constructed to span the Yadkin River and the Southern Railroad. The proposed highway and bridge relocation will allow traffic service to continue across the Yadkin River along the old bridge during the construction of the new bridges. The acquisition of additional right of way will be necessary to accommodate the proposed improvements.

Proposed Interchange and Service Road Improvements

Major interchange and service road revisions will be necessary to accommodate the proposed widening of Interstate 85 and to improve traffic flow and safety in the project area. The acquisition of additional right of way will be necessary to accommodate the proposed interchange and service road improvements. The following interchange and service road revisions are proposed at this time:

Long Ferry Road (SR 2120) Interchange (Exit 81)

The proposed project actually begins just north of this interchange. However, the realignment of two service roads (Hinkle Lane and Willow Creek Drive), which intersect the Long Ferry Road interchange, will be necessary in order to accommodate the proposed I-85 widening and to improve safety. It is proposed that Hinkle Lane (SR 2181) be relocated to the west of its existing location to intersect Long Ferry Road approximately 575 feet west of the existing ramp terminals. Hinkle Lane will also be extended northward and will terminate at Finetex. Willow Creek Drive (SR 2180) will also be relocated to the east of its existing location to intersect Long Ferry Road approximately 500 feet east of the existing ramp terminals.

Relocating the two service roads away from the Long Ferry Road interchange will improve safety by eliminating the conflict of service road and interchange traffic.

Hackett Road (SR 2124)

Currently, Hackett Road crosses under I-85, parallel to the Southern Railroad, and intersects Willow Creek Drive just east of I-85. The two roads meet at an awkward at-grade railroad crossing. The Department proposes closing off the existing underpass at this location to remove turning vehicles from this potentially dangerous at-grade railroad crossing. Delivery trucks and employees of Finetex will be able to access Long Ferry Road via the proposed Hinkle Road extension.

US 29-70 and NC 150 Interchange Area (Exits 82 and 83)

This very awkward interchange area is located just north of the Yadkin River. The two partial movement interchanges are located very close to each other. The US 29-70 interchange provides left-side exit ramps and right-side entrance ramps at I-85. The closeness of the NC 150 interchange along with the rare ramp configurations for US 29-70 necessitates difficult traffic merging maneuvers. Anticipated increases in traffic will continue to make this interchange area difficult and dangerous to maneuver. Therefore, the Department proposes removing both interchanges and constructing a new full movement interchange just north of NC 150. The new interchange and the Long Ferry Road interchange will absorb the US 29-70 and NC 150 traffic. It is also proposed that Long Ferry Road be signed US 29-70 to encourage its use to access Spencer and East Spencer. However, a new service road will be provided from the proposed new interchange southward, which will provide access to existing US 29-70 at the Yadkin River.

The Department also proposes to remove bridge # 46 which accommodates southbound US 29-70 traffic across the Yadkin River. The bridge is extremely old and in need of repair. Also, four lanes are not necessary to accommodate the amount of traffic along this portion of US 29-70. Therefore, it is proposed that the older bridge be removed, and its parallel bridge (# 392, which carries northbound US 29-70 traffic) be retained and converted to accommodate two-way traffic. The proposed new service road mentioned above will tie into bridge # 392 to allow two way traffic between the proposed new interchange and the south side of the Yadkin River.

Proposed New Interchange

A new full movement interchange is proposed just north of the existing NC 150 interchange. The new interchange will replace the US 29-70 and NC 150 partial movement interchanges, eliminating this hazardous and awkward merging area. A new service road will be provided along the west side of I-85 from the new interchange southward in order to access existing US 29-70. Existing NC 150 will be realigned to tie into the proposed new interchange. NC 150 will also be extended eastward to tie into Seven Oaks Drive (SR 1285).

In the vicinity of the new interchange, the Department proposes closing the intersection of Old Salisbury Road (SR 1137) and NC 150 on the south side of NC 150. The two roads currently intersect at a hazardous offset intersection. Therefore, it is proposed that Old Salisbury

Road be terminated in a cul-d-sac at the south side of NC 150 at this intersection. The proposed new service road between the new interchange and US 29-70 will provide access to US 29-70 and to the new interchange in this area. Also, in order to improve access from Old Salisbury Road to the proposed new service road, Hilltop Drive will be realigned to provide acceptable intersections with the proposed service road and Old Salisbury Road.

The proposed new interchange will require the realignment of Seven Oaks Drive (SR 1285) along the east side of I-85. It is also proposed that Seven Oaks Drive be extended northward, passed the Clark Boulevard Interchange (SR 1295), to tie into NC 47 near the Belmont Road Interchange (Exit 86). The extension of Seven Oaks Drive will connect the proposed new interchange to the Belmont Road interchange.

Clark Boulevard (SR 1295) Interchange (Exit 85)

The Department proposes removing the Clark Boulevard interchange and bridge. The interchange is located very close to the proposed new interchange to the south. The closeness of the interchanges would create difficult and hazardous merging conditions for traffic. Also, the reconstruction of this interchange, which would be required to accommodate the proposed I-85 widening, would require the relocation of Old Salisbury Road (SR 1147) causing major impacts to homes and businesses along that road. Therefore, the Department proposes removing the interchange and bridge instead of replacing it. Access to I-85 in this area will continue to be provided at the proposed new interchange or at the Belmont Road (SR 1133) interchange via the extension of Seven Oaks Drive (described above) or by Old Salisbury Road.

Belmont Road (SR 1133) Interchange (Exit 86)

The Department proposes to reconstruct the Belmont Road interchange as a partial cloverleaf interchange. The reconstructed interchange will be relocated just south of the existing Belmont Road interchange, thus requiring the relocation of Belmont Road to the south. Belmont Road will also be extended eastward to tie into NC 47 near its intersection with Redwine Road (SR 1293) to provide better access to NC 47 and Linwood.

The interchange reconstruction will require the realignment of Snider Kines Road (SR 1154) along the west side of I-85. It is proposed that Snider Kines Road be relocated to the west of its existing location and intersect Belmont Road 650 feet west of I-85. Relocating Snider Kines Road away from the Belmont Road interchange will improve safety by separating service road and interchange traffic. The interchange reconstruction will also require the relocation of Belmont Boulevard (SR 1286) to the east of its existing location to intersect Belmont Road 650 feet east of I-85. It is also proposed that Belmont Boulevard be extended northward to tie into Brighten Drive (SR 1316). This service road extension will connect the Belmont Road interchange to Clyde Fitzgerald Road (SR 1287). The proposed widening of I-85 will also require the relocation of a portion of Clyde Fitzgerald Road, located along the east side of I-85, to the east of its existing location.

US 29-52-70/I-85 Business Interchange (Exit 87)

No roadway or structural improvements are proposed for this interchange.

Project Schedule and Cost

Currently, planning and environmental studies for the proposed project are being conducted. The Citizens Informational Workshop is a part of this process. A pubic hearing is anticipated for the project in the summer of 1999. Right of way acquisition is scheduled for January, 2002 and construction is scheduled for January, 2004. The current cost estimates are as follows:

Right of way:	$ 5,000,000
Construction:	$ 70,900,000
Total:	$ 75,900,000

Current Status

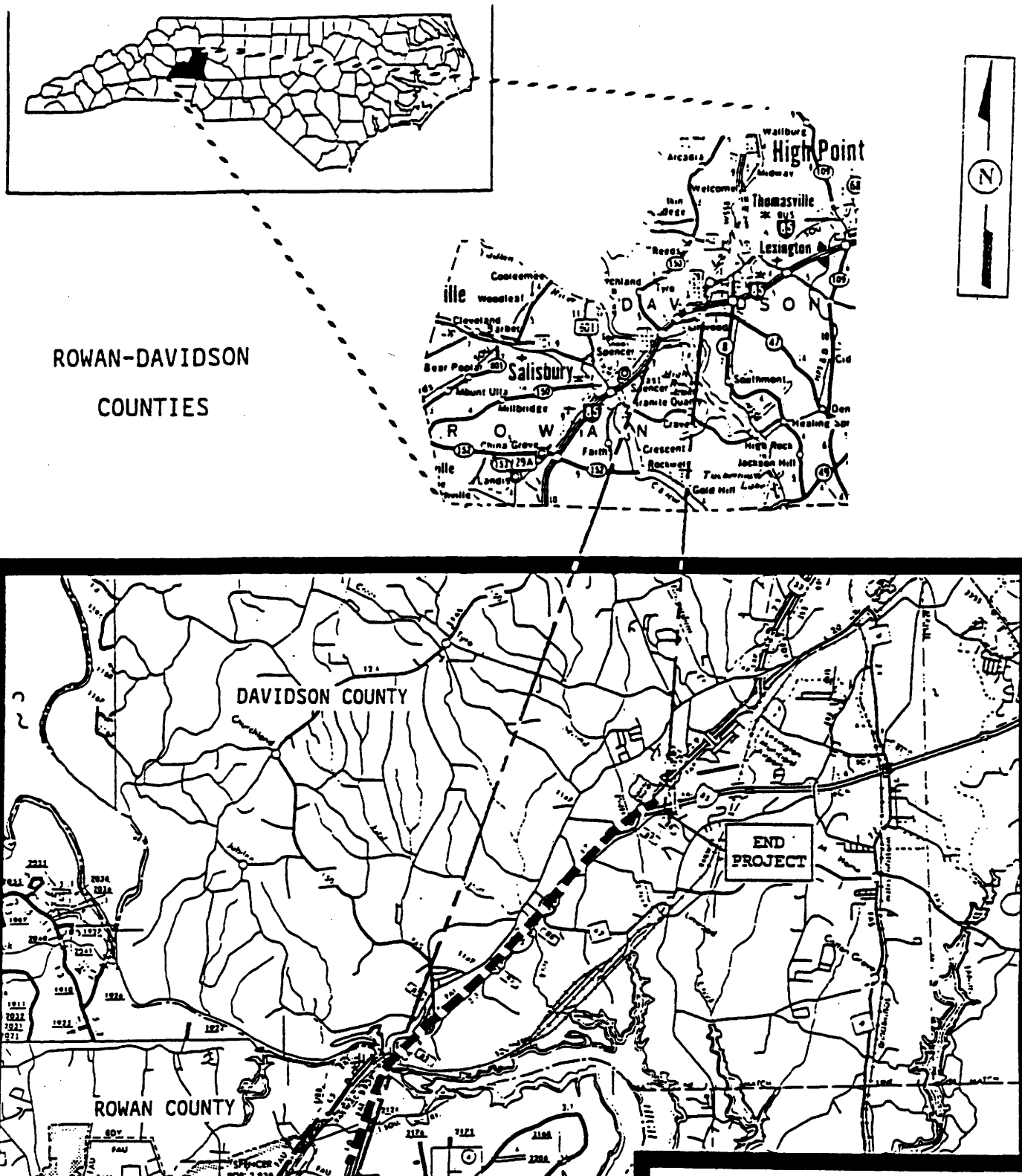
Currently, planning, environmental, and engineering studies for the proposed improvements are in progress. An Environmental Assessment, which will address the impacts that the proposed project may have on the natural and human environment, will be prepared to document these planning studies and our conclusions and recommendations. The Environmental Assessment is scheduled to be completed in March, 1999.

After completion of the Environmental Assessment, a public hearing will be held at which the recommended alternative will be presented to the public. At that time, individuals living close to the project will see how the proposed improvements would affect their properties, and again have the opportunity to comment and make suggestions. NCDOT will take into account comments and suggestions received at the public hearing while making final decisions on the project. A public hearing for the project is anticipated to be held in the summer of 1999.

In the coming months NCDOT environmental specialists and survey crews will be studying the project area. During this period, these NCDOT personnel may be on citizens' properties in order to complete their studies. The purpose of these studies is to gather background information that will be used in making recommendations on the proposed project. No decisions on the final design of this project have been made.

For More Information

For additional information concerning this project, please contact Mr. Eric Midkiff, P. E., Project Planning Engineer, at (919) 733-7844 (Ext. 242).
email: Emidkiff@mail.dot.nc.state.us



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

I-85, North of SR 2120 (Exit 81) in Rowan County
to US 29-52-70/I-85 Business (Exit 87),
Rowan-Davidson Counties
F.A. Project No. NHF-85-3(164)80,
State Project No. 8.1631403,
T.I.P. Project No. I-2304A

FIGURE 1

PROPOSED CROSS SECTION FOR INTERSTATE 85

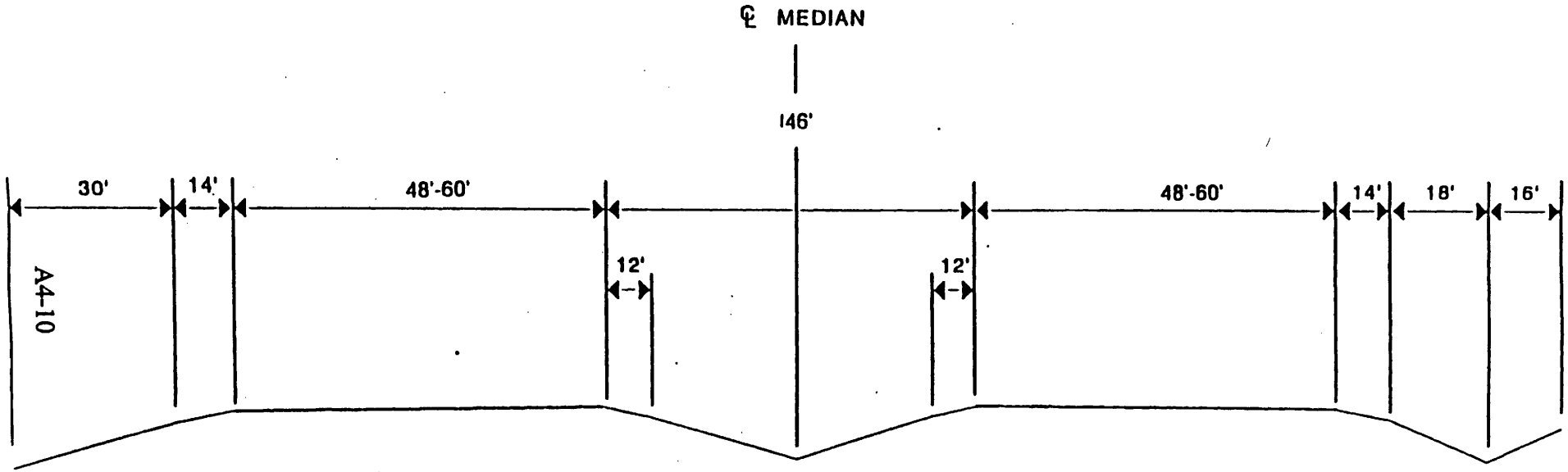


FIGURE 2

PUBLIC INVOLVEMENT AND THE PROJECT PLANNING PROCESS

PROJECT PLANNING

Planning and environmental studies for highway projects are conducted in order to comply with either the National Environmental Policy Act (NEPA) or the North Carolina State Environmental Policy Act (SEPA). The type of document published following the planning study depends on the magnitude of the project and its expected environmental impact. These documents may be one of the following types:

EIS	Environmental Impact Statement
EA	Environmental Assessment
CE	Categorical Exclusion

These documents discuss the purpose and need for the proposed improvements, evaluate alternatives, and analyze the project's impact on both the human and natural environment. Areas of concern which these documents address include:

- Efficiency and safety of travel
- Neighborhoods and communities
- Relocation of homes and businesses
- Economy of project area
- Historic properties and sites
- Wetlands
- Endangered species
- Wildlife and plant communities
- Water quality
- Floodplains
- Farmland and land use plans of project area
- Hazardous materials involvement
- Traffic noise and air quality

PUBLIC INVOLVEMENT IN THE PROJECT PLANNING PROCESS

As stated above, project planning and environmental studies are conducted in order to comply with NEPA or SEPA. NEPA requires that "agencies make diligent efforts to involve the public in preparing and implementing their NEPA procedures."

Public Involvement is an integral part of NCDOT's project planning process. The concerns of citizens and interest groups are always considered during project planning studies. Additional alternatives are often studied for projects, or recommended alternatives changed, based on comments received from the public.

OPPORTUNITIES FOR PUBLIC INVOLVEMENT

NCDOT provides a number of opportunities for citizen and interest group participation during project planning. Some of these opportunities are listed below:

SCOPING LETTER	Published in N. C. Environmental Bulletin. This letter notifies agencies and groups on the State Clearinghouse mailing list that a project study has been initiated and solicits comments from them.
CITIZENS INFORMATIONAL WORKSHOP	Informal meeting with the public. NCDOT staff conduct these workshops to speak one-on-one with citizens about projects. Comment sheets are provided for citizens to write down their questions, comments, and concerns. The number of workshops scheduled for a project depends on the scope and anticipated impact of the project.
NEWSLETTERS	On some projects, newsletters are sent to area residents and interest groups. Newsletters describe the project, discuss the project's status, and outline the alternatives being studied.
DOCUMENT DISTRIBUTION	Copies of environmental documents are submitted to the State Clearinghouse for distribution and a notice is published in the N.C. Environmental Bulletin. Upon request, NCDOT will provide copies of the document to the public. Copies are available for public viewing at NCDOT Raleigh and Division offices; the State Clearinghouse office; local government offices, including the local council of government office; and local public libraries.
SMALL GROUP MEETINGS	Presentations are given at the request of neighborhood associations or other interest groups.
PUBLIC HEARING	One or more formal public hearings for the public record are held. Format typically involves a short presentation followed by an opportunity for citizens to comment.
CITIZENS LETTERS	Citizens are encouraged to write NCDOT and provide information and express their concerns regarding proposed improvements. Correspondence from citizens and interest groups is considered during the course of the planning study and are included in the project file.

Engineer: Eric Midkiff

COMMENT SHEET

Interstate 85
From North of SR 2120 (Exit 81) To
US 29-52-70/I-85 Business (Exit 87)
Rowan and Davidson Counties
TIP Project No. I-2304 A

Please take the time to give us your comments and concerns regarding this project. Please continue any responses on the back of this sheet.

NAME: _____
(PLEASE PRINT)

ADDRESS: _____

_____
(PLEASE PRINT)

COMMENTS, CONCERNS AND/ OR QUESTIONS REGARDING T.I.P. PROJECT I-2304A:

Additional comments can be sent to Mr. William D. Gilmore, P. E., Manager of the Planning and Environmental Branch, North Carolina Department of Transportation, P. O. Box 25201, Raleigh, North Carolina 27611.

8-3-97 N&O I-2511, I-2304

Troopers crack down on speeders on dangerous 15-mile stretch of I-85

THE ASSOCIATED PRESS

HIGH POINT — The state Highway Patrol is handing out speeding tickets in batches along a deadly 15-mile stretch of Interstate 85, and the numbers are expected to rise in coming weeks.

Since the end of June, troopers have written an average of nearly 960 tickets a week along the section of I-85 where the speed limit is 55 mph. The stretch begins in southern Davidson County, just above the Yadkin River, and extends through most of Rowan County to China Grove.

It's a narrow, four-lane stretch where four motorists have been killed this year.

The crackdown by the Highway Patrol is the result of a special interstate enforcement project where 12 troopers are brought in from adjoining counties and assigned to patrol only the interstate.

"We've received a lot of compliments from the locals," said Capt. Michael Overcash, commander of the Highway Patrol's Troop E that includes Rowan County. "They'd gotten to where they were afraid to come out here on the interstate because everyone was driving so fast. They say we've slowed them down a lot."

Construction to improve the stretch is scheduled to begin this month.

Appendix 5

I-85 Widening and Improvements, between Spencer and Lexington, Rowan and Davidson Counties, TIP Project I-2304A, AID 199821203

Purpose and Need (August 22, 2000)

It is the purpose of the project to provide an acceptable level of service along the subject section of I-85 through the design year 2025. It is also the intent of the project to improve traffic flow while providing adequate access and connectivity for area residents and businesses. Improvements to this section of I-85 are needed to effectively accommodate increased traffic demand along I-85 on a regional level, as well as establishing congruency among the regional system.

It is also the purpose of the project to address the structural deficiencies of the bridges, pipes and culverts along the project while maintaining traffic along I-85. Two bridges along the project have been targeted for replacement because of structural and capacity inadequacies. Bridge # 137, which carries I-85 over the Yadkin River, was built in 1955. It has 10 years of remaining life and a sufficiency rating of 64.2. Bridge # 404, which carries SR 1147 over South Potts Creek, is a lone-lane bridge built in 1921. It has a sufficiency rating of 52.3 and a remaining life of 15 years.

Alternatives To Be Studied (August 22, 2000)

A. Capacity Alternatives

1. 6-lane widening with interchange modification and bridge replacements
2. 8-lane widening with interchange modification and bridge replacements

B. Service Road Alternatives

1. Provide a continuous service road from the proposed new interchange to the Belmont Road interchange along the east side of I-85.
2. Rebuild and extend service roads between the proposed new interchange and the Belmont Road interchange along the east side of I-85, but do not provide a service road connection across South Potts Creek and the wetlands adjacent to the creek, located just to the south of the Belmont Road interchange.

C. Structural Alternatives

1. Replace Bridge # 137 over the Yadkin River with dual structures on new location to the east of the existing structure.
2. Replace Bridge # 137 over the Yadkin River with dual structures at the location of the existing structure.
3. Replace Bridge # 404, which is a one-lane bridge over South Potts Creek, with a 2-lane structure at its existing location.

D. No Build

COPY

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 1. Purpose and need.
Concurrence Point No. 2. Alternatives to be carried forward in the NEPA study.

Project Name/Description: I-85 Widening and Improvements, between Spencer and Lexington, Rowan and Davidson Counties, TIP Project I-2304A, AID 199821203.

The Project Team has concurred on this date of February 25, 2000 with the purpose and need, and the "alternatives to be carried forward in the NEPA study", as stated on the attached dated August 22, 2000.

USACE _____ NCDOT _____

USEPA _____ USFWS _____

NCDWQ _____ NCWRC _____

NCDCR _____ FHWA Filip Dale 8/23/2000

COPY

Section 404/NEPA Merger Project Team Meeting Agreement

Concurrence Point No. 1. Purpose and need.
Concurrence Point No. 2. Alternatives to be carried forward in the NEPA study.

Project Name/Description: I-85 Widening and Improvements, between Spencer and Lexington, Rowan and Davidson Counties, TIP Project I-2304A, AID 199821203.

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USACE _____ NCDOT _____

USEPA _____ USFWS _____

NCDWQ _____ NCWRC _____

NCDCR April Montgomery FHWA _____

COPY

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USACE _____ NCDOT _____

USEPA _____ USFWS _____

NCDWQ _____ NCWRC _____ 8/24/2000

NCDCR _____ FHWA _____

COPY

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The Project Team has concurred on this date of February 25, 2000 with the purpose and need, and the "alternatives to be carried forward in the NEPA study", as stated on the attached dated August 22, 2000.

USACE _____ NCDOT _____

USEPA _____ USFWS _____

NCDWQ Cynthia J. Van Der Wiele 8.25.00 NCWRC _____

NCDCR _____ FHWA _____

COPY

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USACE_____ NCDOT Eric Midkiff 8/22/00

USEPA_____ USFWS_____

NCDWQ_____ NCWRC_____

NCDCR_____ FHWA_____

COPY

Section 404/NEPA Merger Project Team Meeting Agreement

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Project Name/Description: I-85 Widening and Improvements, between Spencer and Lexington, Rowan and Davidson Counties, TIP Project I-2304A, AID 199821203.

The Project Team concurs with the purpose and need, and the "alternatives to be carried forward in the NEPA study", as stated on the attached dated August 22, 2000.

USACE Eric C. Alsmeyer 10/13/00 NCDOT_____

USEPA_____ USFWS_____

NCDWQ_____ NCWRC _____

NCDCR_____ FHWA_____

COPY 199821203

From: Bisterfeld.Ted@epamail.epa.gov on 10/06/2000 02:56 PM

To: Eric C Alsmeyer/CESAW/saw02@CESAW
cc: aalperin@ncsl.dcr.state.nc.us@SMTP@Exchange, coxdr@mail.wildlife.state.nc.us@SMTP@Exchange, cynthia.vanderwiele@ncmail.net@SMTP@Exchange, emidkiff@dot.state.nc.us@SMTP@Exchange, Marella_Buncick@fws.gov@SMTP@Exchange

Subject: Re: I-2304; I-85 Improvem.; Rowan/Davidson; AID 199821203; Concur .Form

Eric,

I have spoken to Eric Midkiff, NCDOT, about the I-85 improvement project in the vicinity of the Yadkin River. Apparently the only information about the project is what you transmitted to the team on 8/22/00, and material presented only at a project meeting. Given the nature of potential improvements, the stage of the project in the Merger Process, and EPA's inability to participate, EPA is declining Project Team membership. NCDOT is planning to complete a draft Environmental Assessment (EA) this month and begin internal review. EPA is requesting to be provided a review copy of the EA, when it is made available to agencies and the public.

Ted Bisterfeld
EPA Region 4, Office of Environmental Assessment
Atlanta, Ga
tel. 404/562-9621

Eric.C.Alsmeyer@saw02.usace.army.mil
08/22/2000 02:11 PM

To: emidkiff@dot.state.nc.us, coxdr@mail.wildlife.state.nc.us, aalperin@ncsl.dcr.state.nc.us, Ted Bisterfeld/R4/USEPA/US@EPA, Marella_Buncick@fws.gov, cynthia.vanderwiele@ncmail.net
cc:
Subject: I-2304; I-85 Improvem.; Rowan/Davidson; AID 199821203; Concur. Form