



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

W. LYNDO TIPPETT  
SECRETARY

January 27, 2003

MEMORANDUM

TO: File

FROM: Mr. Derrick W. Lewis, P.E.  
Feasibility Studies Unit Head

SUBJECT: R-2540, NC 55 from US 421 to US 401, Harnett and Wake Counties.

The Feasibility Studies Unit has completed a re-evaluation of R-2540, NC 55 from US 421 to US 401. Based on this review, we do not recommend any major revisions to the section breaks of this project. However, we have updated the construction cost estimates for this project to reflect the current thinking of our Roadway Design Unit. Therefore, this cost estimate update has been expanded to include both four-lane divided raised grass median sections (Alternate 2) as well as the previously recommended five lane sections (Alternate 1). The updated construction cost for each alternative and section are provided below:

Section	Alternate 1 (Five Lanes)	Alternate 2 (Four lane Divided)
A	\$12,800,000	\$15,900,000
B	\$ 6,200,000	\$ 9,600,000
C	\$18,700,000	\$25,100,000
D	\$ 5,800,000	\$ 8,700,000
E	\$13,800,000	\$17,200,000
F	\$ 3,200,000	\$ 4,000,000
<b>Total</b>	<b>\$60,500,000</b>	<b>\$80,500,000</b>

(Note: The map attached indicates the section locations.)

Based on the limited information available, we have concerns with the previously recommended 75-foot right of way width for Sections B and D as indicated on the attached map. We recommend that the right of way width be at least 100 feet. Considering this, the revised right of way cost for Section B would be \$7,000,000 and Section D would be \$7,000,000. A reduced right of way width maybe considered during later planning and design studies when additional information is available.

As you are aware, this work is preliminary and is not the product of comprehensive environmental or design evaluations. If you have any additional questions concerning this project, please call me at 733-2039.

DWL/dl

Calvin Leggett, P.E.

July 9, 2015

Page 2

cc: Mr. Calvin W. Leggett, P.E., Manager, Program Development Branch  
Mr. Al Avant, P.E., Assistant Manager, Program Development Branch  
Mr. Ray McIntyre, P.E., TIP Squad Leader – Eastern Region

FEASIBILITY STUDY

NC 55  
From US 421 to US 401  
Harnett-Wake Counties  
R-2540

Prepared by:

Planning and Environmental Branch  
Division of Highways  
N. C. Department of Transportation

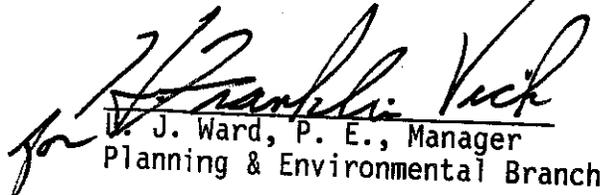


R. J. Booker III  
Project Planning Engineer



R. B. Davis, P.E.  
Unit Head, Project Planning

3/15/91  
Date



for W. J. Ward, P. E., Manager  
Planning & Environmental Branch

NC 55  
From US 421 to US 401  
Harnett-Wake Counties  
R-2540

I. DESCRIPTION

This report covers a preliminary study of a proposed improvement of a 20 mile section of NC 55 from US 421 to US 401 near Fuquay Varina (See Figure 1). This project is included in the 1990-1996 Transportation Improvement Program for feasibility study and/or right-of-way and is not currently funded.

II. PURPOSE OF PROJECT

Existing Route Characteristics

NC 55 is classified as a rural major collector on the North Carolina Functional Classification Plan. It is a major north-south route connecting the towns of Fuquay Varina, Angier, Coats and Erwin.

NC 55 is basically a 2-lane, 24-foot paved facility with variable 7 to 8-foot unpaved shoulders, except in Coats where a 40-foot curbed section extends through downtown and in Angier where a 48-foot curbed section exists through the downtown area. The existing right-of-way is generally 60 feet in the rural areas, 50 feet through Coats and 56 feet through the town of Angier. The horizontal alignment of the roadway is generally good with curves ranging from 3 to 5 degrees. The vertical alignment is good, with maximum grades of 5% following the rolling terrain of the area. With the exception of one grade separation over the D&S railroad north of Angier, all intersections on the project are at grade, and controlled by stop signs on the minor routes. The existing speed limit is 55 mph throughout most of the project length. The speed limit is reduced to 35 mph through the towns of Angier and Coats.

Roadside development is primarily rural in character with agricultural, woodland and light scattered residential being the dominate type of development. A golf course, the Fuquay-Angier Airport and various institutional and commercial uses are interspersed along the project.

Traffic Volumes, Capacity and Accident Record

The current traffic volumes on NC 55 range from a low of 4700 vehicles per day (VPD) to a high of 8100 VPD along the project. These volumes are projected to increase to 7800 VPD and 14,800 VPD respectively, by the year 2010. With the current traffic volumes, NC 55 is operating at Level of Service D throughout most of the project length. As traffic volumes continue to grow, the level of traffic service will deteriorate in the future if no improvements are made to NC 55. With the proposed

widening, the highway should operate at Level of Service C or better throughout the planning period.

During the period from January 1, 1986 to September 30, 1989, 422 accidents were reported along the subject portion of NC 55. This resulted in an accident rate of 214.0 accidents per 100 million vehicle miles (ACC/100 MVM) compared to a statewide average of 207.2 ACC/100 MVM for all two-lane, rural North Carolina routes over a similar time period. The primary accident types involved vehicles in angle and rear-end collisions. These types of accidents accounted for 49% of the accidents. The widening of the road along with the provision of a continuous left-turn lane should reduce the potential for these types of accidents.

#### Need for Project

The widening of NC 55 in Wake and Harnett Counties is needed to provide adequate capacity for existing and future traffic volumes. The proposed improvements will also enhance safety and improve traffic operations in the area.

### III. SUMMARY OF RECOMMENDATIONS

For purposes of recommendations and possible staging, the project has been divided into sections (see Figure 1). The recommended plan is to widen NC 55 to a 5-lane cross section. It is recommended NC 55 be widened to a 5-lane shoulder section in the more undeveloped areas, and to a 5-lane curb and gutter facility through areas with concentrated development.

The improvements for Sections A, B, C, D, E, and F are described in detail in the following:

Section A: A 4.1 mile section from US 421 in the town of Erwin, to SR 2011 near the town of Coats. It is recommended that NC 55 be widened symmetrically to a 5-lane, 60-foot pavement with 10-foot shoulders (2 feet of which are paved), on an estimated 140 feet of right-of-way.

Section B: A 2.2 mile section from SR 2011, through the town of Coats, to SR 1547. A 59-foot curb and gutter section is recommended on 75 feet of right-of-way plus easements. Widening is recommended to be symmetrical with the exception between Parrish Street and Dooley Street which should be to the west and between Dooley Street and the north city limits of Coats which should be widened to the east to reduce property damage.

Section C: A 6.3 mile section between Coats and Angier from SR 1547 to SR 1542. A 5-lane 60-foot pavement with 10-foot shoulders (2 feet of which are paved), on an estimated 140-foot of right-of-way is recommended. Widening should be symmetrical about the center line of NC 55.

Section D: A 2.3-mile section between SR 1542 through the town of Angier to the north city limits. A 59-foot curb and gutter section is recommended on 75 feet of right-of-way plus easements. Widening should be symmetrical about the center line to reduce property damage.

Section E: A 4.1 mile section from the north city limits of Angier to SR 2765. A 5-lane, 60-foot pavement with 10-foot shoulders (2 feet of which are paved) on an estimated 140 foot right-of-way is recommended. Widening should be symmetrical about the center line of NC 55. The bridge across the abandoned Durham and Southern Railroad is recommended to be removed and the alignment of NC 55 shifted slightly to obtain a better horizontal alignment.

Section F: A 1.0 mile section from SR 2765 to US 401. A 5-lane 64-foot curb and gutter section is recommended on a 100-foot right-of-way symmetrical about the center line of NC 55. The section would tie into a proposed 5-lane curb and gutter section on US 401 as recommended in project R-2026. The project is in the right-of-way acquisition stage, with construction scheduled for FY 1991.

### Cost

The total cost of the recommended improvements is \$54,000,000. The estimated costs of the recommended improvements to the various sections are as follows:

	<u>Cross Section</u>	<u>Construction Cost \$</u>	<u>Right-of-Way Cost \$</u>	<u>Total Cost \$</u>
Section A	5-lane Shoulder	5,500,000	6,900,000	12,400,000
Section B	5-lane Curbed	2,700,000	4,000,000	6,700,000
Section C	5-lane Shoulder	8,900,000	8,000,000	16,900,000
Section D	5-lane Curbed	2,200,000	3,800,000	6,000,000
Section E	5-lane Shoulder	6,200,000	3,700,000	9,900,000
Section F	5-lane Curbed	1,200,000	900,000	<u>2,100,000</u>
				54,000,000

The construction cost includes engineering and contingencies, and the right-of-way cost includes acquisition, relocation, and utility costs.

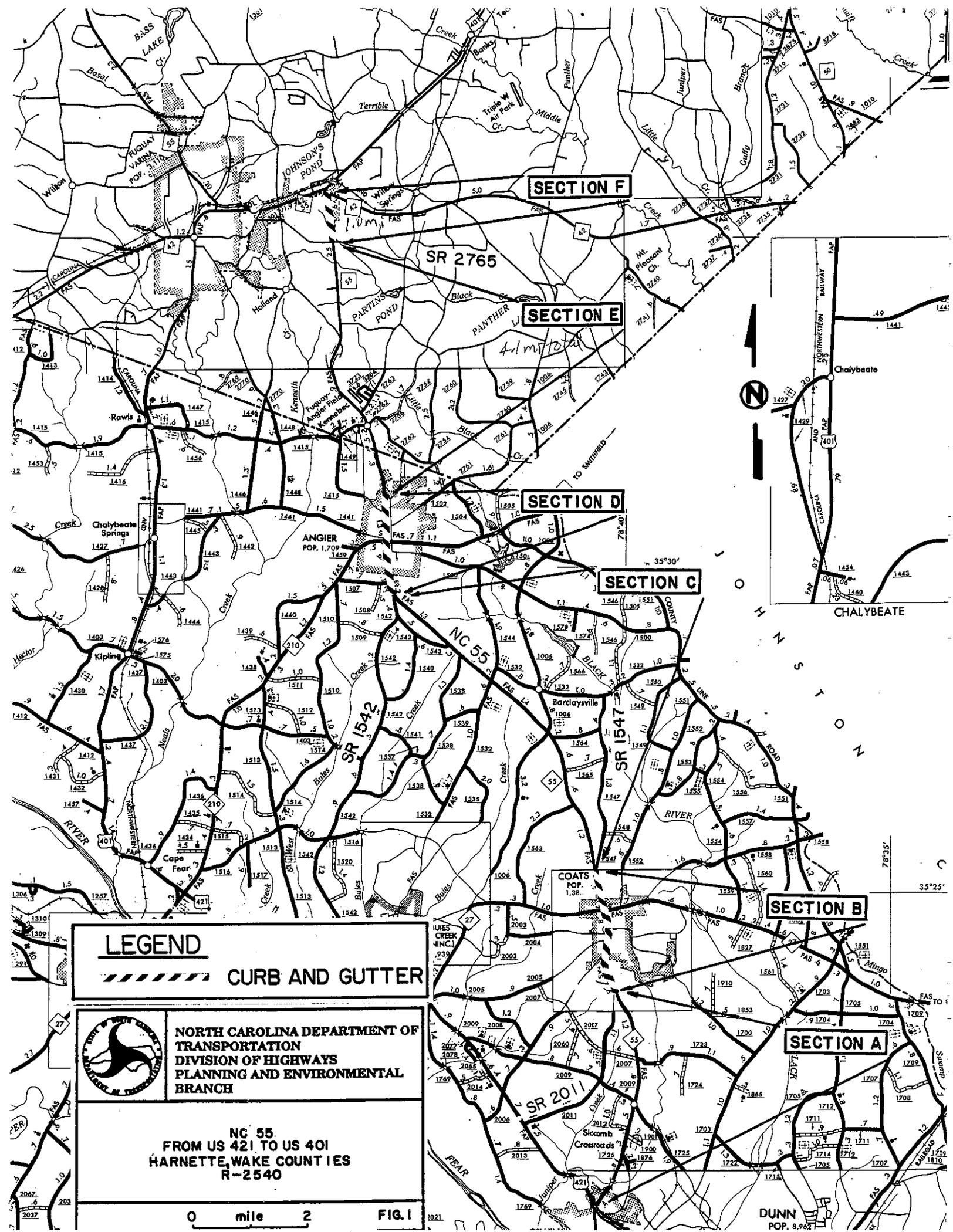
### IV. OTHER COMMENTS

No other locations were considered for this project except for a 5-lane bypass around the town of Coats. The bypass would be on the west side of Coats and extend from SR 2011 to SR 1547, (see Figure 2). The cost of the bypass would be \$9,400,000, which is 2.7 million dollars more than the route through town. For this reason the bypass is not recommended.

The most significant impact to the environment is the relocation of 160 residences and 43 businesses. Other impacts will be primarily related to the actual construction of the project and will cease upon completion of the project. These include minor erosion and siltation, increased noised levels from construction machinery, and delay and inconvenience to motorists.

If the project is to be implemented at a future date, all feasible alternatives and their associated impacts will need to be evaluated in a planning/environmental/document prior to the time and a final decision made as to the made appropriate improvement.

RJB/rm



**SECTION F**

**SECTION E**

**SECTION D**

**SECTION C**

**SECTION B**

**SECTION A**

**LEGEND**

 CURB AND GUTTER

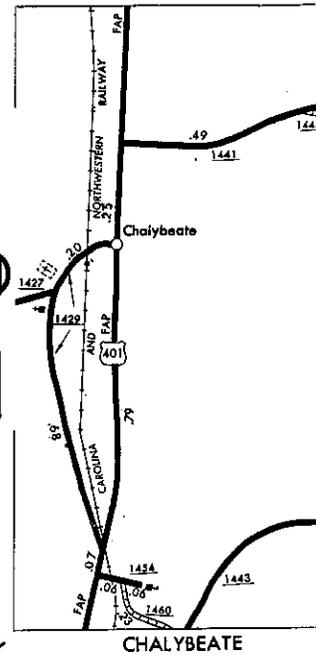


**NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
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PLANNING AND ENVIRONMENTAL  
BRANCH**

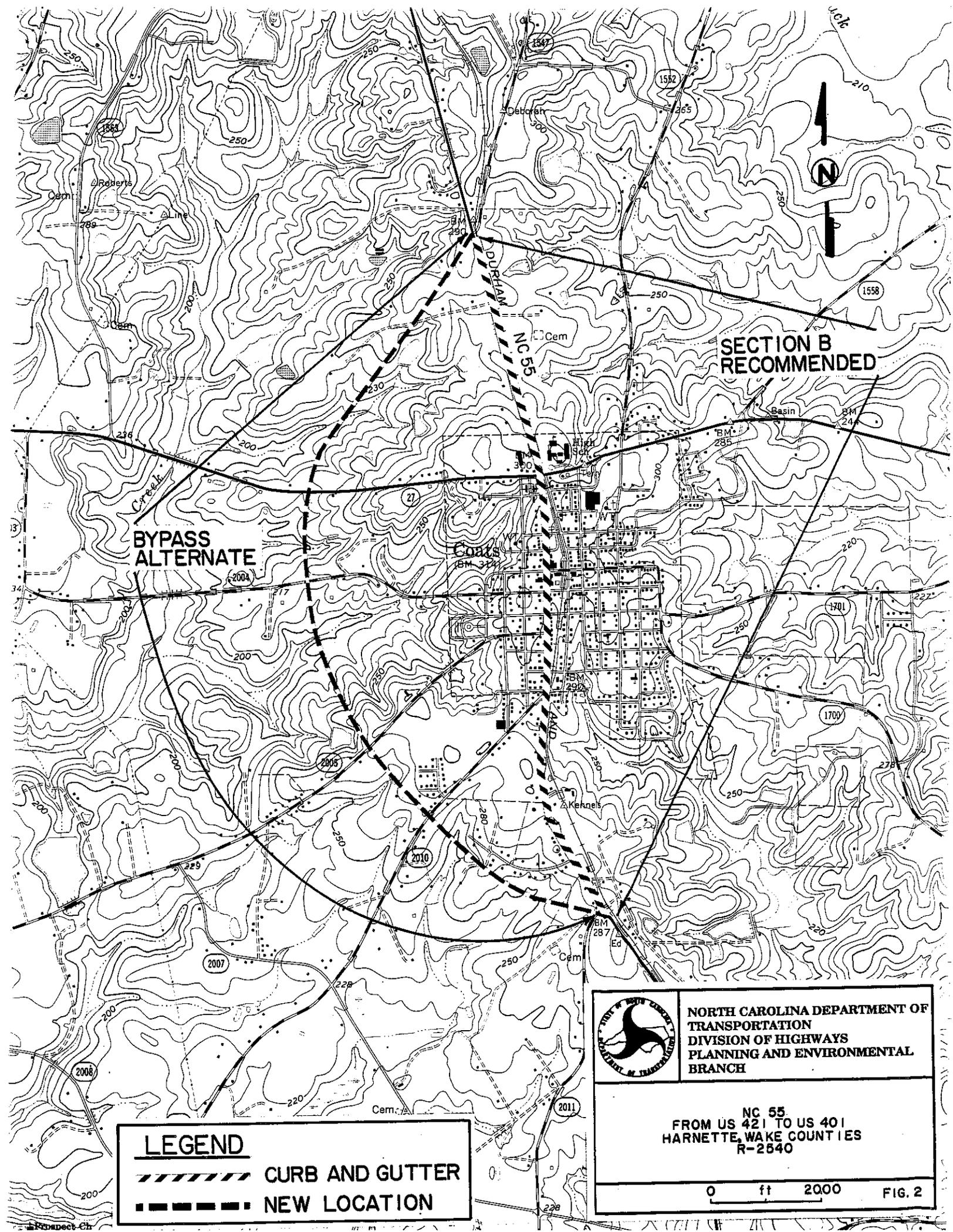
**NC 55  
FROM US 421 TO US 401  
HARNETTE, WAKE COUNTIES  
R-2540**

0 mile 2

**FIG. 1**



**DUNN  
POP. 8,962**



**SECTION B  
RECOMMENDED**

**BYPASS  
ALTERNATE**

**LEGEND**

 CURB AND GUTTER

 NEW LOCATION



**NORTH CAROLINA DEPARTMENT OF  
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**NC 55  
FROM US 421 TO US 401  
HARNETTE, WAKE COUNTIES  
R-2540**

0 ft 2000

**FIG. 2**