

FEASIBILITY STUDY

NC 65
(Bethania-Rural Hall Road)
from US 52 to NC 66 at Rural Hall
Forsyth County

U-2730

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



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Date

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I. GENERAL DESCRIPTION

This is a Feasibility Study recommending the widening of NC 65 (Bethania-Rural Hall Road) from US 52 to SR 3983 (Northridge Park Drive), a distance of approximately 1.4 mile (identified as section 1 on the attached map). The studied roadway is located in north Forsyth County. The recommended typical cross-section is a five-lane, 64-foot curb and gutter section. The recommended right-of-way width is 90 feet, with no control of access. The estimated cost of the recommended improvements is \$ 8,300,000 (\$5,310,000 for right-of-way, and \$2,990,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents recommended typical cross sections, general alignments, and estimated cost of the improvement. The study also attempts to provide an early identification of potential environmental, permitting, or other issues which deserve consideration in the planning and construction stages.

II. EXISTING CONDITIONS & NEED FOR PROJECT

This project was requested by Division 9. NC 65 (Bethania-Rural Hall Rd.) is classified as a Rural Major Collector in the statewide functional classification system, and is a part of the federal-aid secondary system. This improvement is not included in the current Winston-Salem and Forsyth County mutually adopted thoroughfare plan.

The southern terminal of the recommended improvements (Section 1) is at the south approach to bridge #36 which carries NC 65 over US 52. At this location NC 65 consists of a two lane, 24-foot pavement with 10-foot shoulders.

The north terminal of the recommended improvements (Section 1) is at the signalized intersection with SR 3983 (Northridge Park Drive). NC 65 at this location consists of a 36-foot pavement (one 12-foot lane per direction of travel, plus one 12-foot left-turn lane), with 10-foot usable shoulders. Just north and south of this location, NC 65 tapers down to a two-lane 20-foot pavement, with 10-foot usable shoulders.

Between the project terminals, NC 65 contains two typical sections. From US 52 to SR 1826 (approximately 0.6 mile) the studied roadway consists of a three-lane, 36-foot pavement (one 12-foot lane per travel direction, plus a 12-foot continuous center left-turn lane) and 10-foot usable shoulders. From SR 1826 to just south of SR 3989, NC 65 consists of a two-lane, 20-foot pavement (one 10-foot lane per direction) and 10-foot shoulders.

Right-of-way width along the studied section of NC 65 is 60 feet, without access control. Utilities parallel both sides of the roadway, including water, electric power, and buried telephone cable.

At the south terminal of the project, bridge #36 is a part of a diamond interchange with US 52. The bridge is 247 feet long, with a 28-foot clear roadway width, and a sufficiency rating of 79 (compared to a sufficiency rating of 100 for a newly constructed bridge). The bridge carries a two-lane NC 65 over US 52 with a minimum vertical clearance of 15 feet and 1 inch. Both immediate approaches to the bridge contain a short, center, left-turn lane, and are signalized at the ramp terminals.

SR 1663 (Montroyal Road) intersects the northeast ramp of the interchange just east of the ramp terminal at NC 65. Development adjacent to SR 1663 is residential. However, SR 1663 is connected to SR 3957 which serves a small industrial park. Therefore, a large portion of the industrial park\US 52 traffic utilize the northeast ramp, which create potentially hazardous traffic conflicts.

Land development in the project area is commercial and industrial at the south end, near US 52. Development along the remainder of NC 65 to Rural Hall is residential, interspersed by fields and pastures. The exception is Northridge Business Park, a large office\industrial park located at SR 3983 (Northridge Park Drive). It is expected that this site will grow to become the major traffic generator in the project's vicinity.

Detailed traffic estimates, and turn-movement counts were unavailable for this study. However, based on earlier traffic counts, it is estimated that the average daily traffic (ADT) currently using NC 65 is 9,000 vehicles per day (vpd).

Under current conditions, and estimated traffic demand, the studied portion of NC 65 is operating at level-of-service (LOS) D during the peak hour. With the recommended widening to five lanes, and an estimated 2011 ADT of 16,000 vpd, the roadway would operate at LOS C in the peak hour. The recommended five-lane section would reach its traffic carrying capacity during peak periods at approximately 28,000 vpd.

During the period from January 1988 to April 1991, a total of 60 accidents were reported on the studied portion of NC 65. Of these 60 accidents, 17 accidents involved angle collisions, 16 involved turning vehicles, and 13 involved rear-end collisions. The total accident rate for the studied roadway was 255.0 accidents per 100 million vehicle-miles, compared to a statewide accident rate for similar facilities of 287.9 accidents per 100 million vehicle-miles. The recommended improvements should lower the accident rate for the roadway.

The recommended widening is needed to accommodate current traffic demand, and the anticipated growth due to increasing commercial and industrial land development. NC 65 also carries traffic from US 52 to Rural Hall and two existing commercial\industrial parks.

III. RECOMMENDATIONS

It is recommended that the 1.4 mile of NC 65, from US 52 to SR 3983 (identified as Section 1 on the attached map) be widened to a five-lane, 64-foot curb and gutter section with 8-foot berms. The widening is to be carried out symmetrically, and asymmetrically about the existing roadway to minimize adverse impacts. The recommended right-of-way width is 90 feet to accommodate the curb and gutter section, without control of access.

The recommended improvements also include the widening of bridge #36 to a clear roadway width of 76 feet, to accommodate six lanes (two lanes per travel direction, one left-turn, and one right-turn lane). The bridge widening would necessitate the partial realignment of the interchange ramps, to provide adequate stopping distances.

Additionally, it is recommended that SR 1663 (Montroyal Road) be partially realigned off the northeast ramp, and extended on a new location to intersect with NC 65. This would eliminate the potentially hazardous intersection of SR 1663 with the ramp.

The estimated cost of the recommended improvements (Section 1 on the attached map) is:

	Interchange Revisions	Roadway Widening
Right-of-way and Utilities	\$2,630,000	\$2,680,000
Construction	\$1,690,000	\$1,300,000
Total	\$4,320,000	\$3,980,000
Project Total		\$8,300,000

V. OTHER COMMENTS & CONCERNS

In addition to the recommended improvements (Section 1 on the attached map), the widening of NC 65 from SR 3983 to NC 66 in Rural Hall was also considered, but is not recommended at this time, since it is anticipated that the majority of the anticipated growth in traffic demand will be along Section 1. This portion of the studied roadway was divided into the following two sections:

Section 2: From just north of SR 3983 to SR 1632. This section is approximately 0.6 mile in length. Widening this section may be considered a second priority to the recommended improvements. This section carries commercial traffic between Northridge Business Park and US 52 via SR 1632, in addition to traffic between Rural Hall and US 52. The recommended improvements for Section 2 include widening the 20-foot, two-lane roadway to a 38-foot, three-lane (one 12-foot lane per travel direction plus a 2-foot paved shoulder, and a 12-foot continuous, middle, left-turn lane) with 10-foot usable shoulders. The recommended right-of-way width is 90 feet, to accommodate a future 5-lane section. No control of access is recommended. The estimated total cost of improving Section 2 is \$1,270,000 (\$870,000 for right-of-way, and \$400,000 for construction).

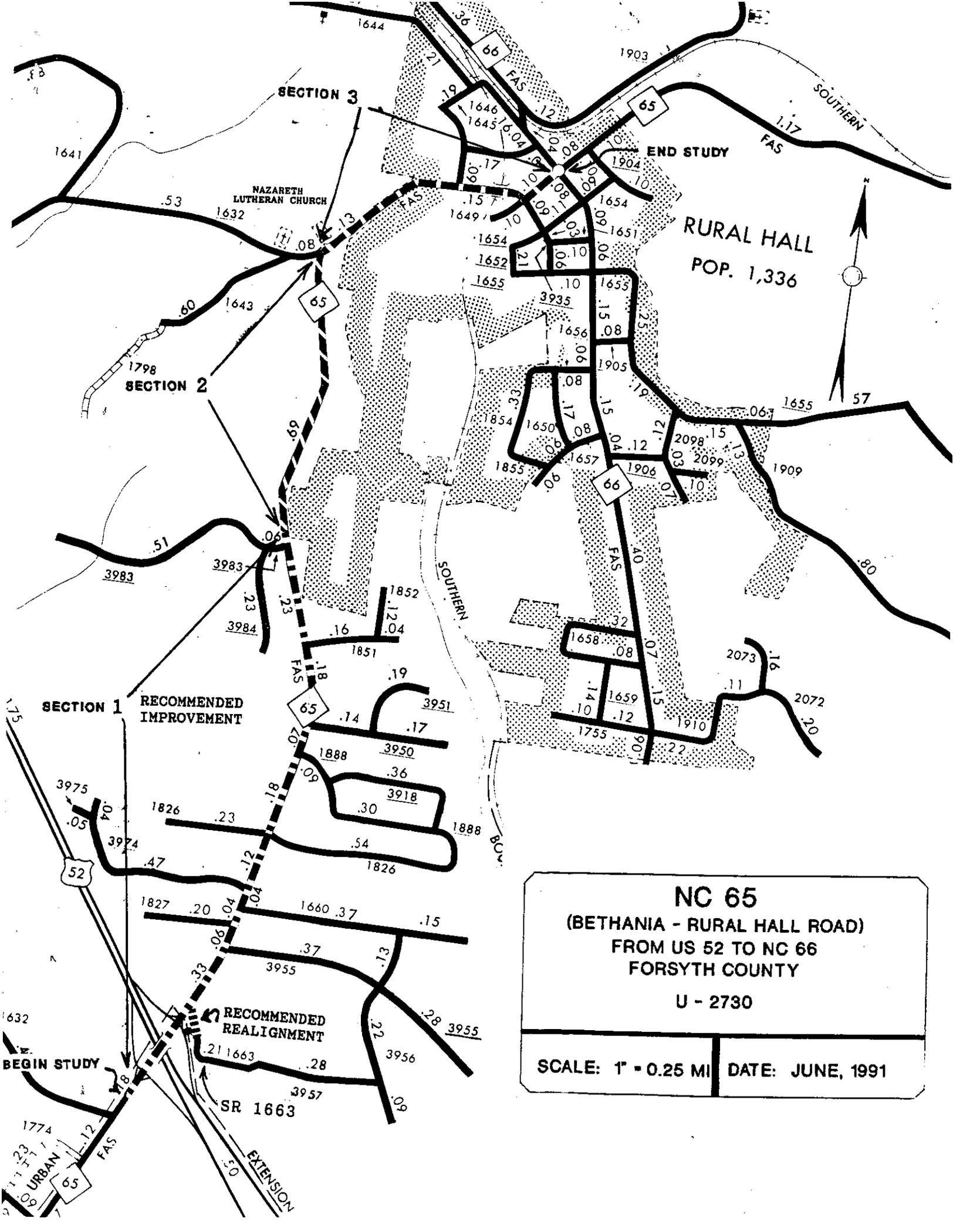
Section 3: From SR 1632 to NC 66 in Rural Hall, a distance of approximately 0.4 mile. Widening this section would provide a continuity to the improvement of NC 65, and improve access between Rural Hall and US 52. The recommended improvements include widening the two-lane, 18-foot pavement to a three-lane, 40-foot curb and gutter section. Right-of-way width is to be 60 feet without access control. The estimated total cost for widening section 3 is \$980,000 (\$500,000 for right-of-way, and \$480,000 for construction).

It is estimated that the recommended improvements (Section 1) would result in relocating 6 residences, and 2 businesses. No special permits or concerns are anticipated.

It should be noted that there are two areas of concern in connection with Sections 2 and 3:

Nazareth Lutheran Church and cemetery, located at the intersection of NC 65 and SR 1632. The church is eligible for listing in the National Register of Historic Places. The cemetery has some particularly fine examples of German stonecutters art on the stones inscribed in German.

The Town of Rural Hall appears to have a historic district that is eligible for the National Register.



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SCALE: 1" = 0.25 MI **DATE: JUNE, 1991**