

FEASIBILITY STUDY

Proposed New Interchange
at I-85 and SR 1221 (Old Beatty Ford Road)

Rowan County

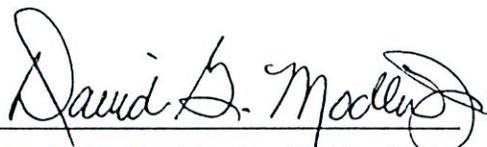
Division 9

I-3804

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 feasibility study investigates the potential of providing an additional interchange on I-85 at SR 1221 (Old Beatty Ford Road) in Rowan County. Bridge Number 65 currently carries SR 1221 over I-85. Due to the proximity of the Cold Water Creek which runs parallel to and west of I-85, and the need to realign SR 1221 for better sight distance at the ramp terminals, a half-cloverleaf design on the north side of the realignment would be the most practical alternate (See Figure 1). The existing Bridge Number 65 does not have adequate lateral underclearance to accommodate an acceleration lane; it should be replaced with a new structure approximately 270 feet (82.4 m) long with a 42-foot (12.8-m) deck width. Traffic would be maintained on the existing bridge during the construction of the interchange.

The desired cross section on the realignment of SR 1221 is a 3-lane shoulder section with 8-foot (2.4-m) shoulders. The ramps should be 16 feet (4.9 m) wide with 12-foot (3.7-m) inside shoulders and 14-foot (4.3-m) outside shoulders; the loops should be 21 feet (6.4 m) wide with 14-foot (4.3-m) inside shoulders and 12-foot (3.7-m) outside shoulders.

It is estimated that this project would require the relocation of 6 residences and no businesses. The estimated cost of the project is \$ 7,550,000, (\$ 550,000 for right-of-way and \$ 7,000,000 for construction).

This study is not a detailed planning/environmental investigation. A feasibility study presents studied cross-sections for improvements, general corridors of improvements, and estimated costs of construction and right-of-way. This study attempts to identify any potential environmental, permitting, or other observed issues that deserve consideration in the planning and construction stages.

II. NEED FOR PROJECT

The two nearby interchanges located on the north and south of SR 1221 are approximately 5 miles (8 km) apart. The proposed interchange would provide the residents of Southern Rowan County a direct access to I-85. This project is supported by Rowan County, the Towns of China Grove and Landis, and the City of Kannapolis.

I-85 is classified as an Interstate, and SR 1221 is classified as a Rural Local route on the North Carolina State Functional Classification System. On the Concord-Kannapolis-Landis-China Grove Thoroughfare Plan, I-85 is classified a freeway and SR 1221 is classified Major Thoroughfare.

Existing I-85 is a 4-lane median-divided, controlled-access facility. Existing SR 1221 is generally a 2-lane shoulder section. The existing land use in the project vicinity is residential.

Estimated 1997 Average Daily Traffic (ADT) along SR 1221 is 2,500 vehicles per day (vpd). With the proposed interchange, the estimated traffic volumes for the design year 2020 range from 4,200 to 5,600 vpd. Truck traffic is estimated to make up 10% of the daily traffic. Currently SR 1221 in the project vicinity is operating at Level of Service (LOS) B and would operate at LOS C in the design year 2020.

III. RECOMMENDATIONS

This feasibility study investigates the potential of providing an additional interchange on I-85 at SR 1221 (Old Beatty Ford Road) in Rowan County. Bridge Number 65 currently carries SR 1221 over I-85. Due to the proximity of Cold Water Creek which runs parallel to and west of I-85, and the need to realign SR 1221 for better sight distance at the ramp terminals, a half-cloverleaf design on the north side of the realignment would be the most practical alternate (See Figure 1). The existing Bridge Number 65 does not have adequate lateral underclearance to accommodate an acceleration lane; therefore, it should be replaced with a new structure approximately 270 feet (82.4 m) long with a 42-foot (12.8-m) deck width.

The desired cross section on the realignment of SR 1221 is a 3-lane shoulder section with 8-foot (2.4-m) shoulders. There would be one 12-foot (3.7-m) wide center turn-lane, and a 12-foot (3.7-m) wide travel lane in each direction with 2-foot (0.6-m) paved shoulders. The new alignment is approximately 0.5 mile (0.8 km) long. The ramps should be 16 feet (4.9 m) wide with 12-foot (3.7-m) inside shoulders and 14-foot (4.3 m) outside shoulders, 4-foot (1.2 m) of the shoulders should be paved. The loops should be 21 feet (6.4 m) wide with 14-foot (4.3 m) inside shoulders and 12-foot (3.7-m) outside shoulders. The ramp terminals at SR 1221 would be signalized.

During construction, it is anticipated that traffic will be maintained on the existing roadway.

Low utility conflicts are expected.

New right-of-way in the interchange proper area would be full control of access.

The estimated project costs are as follows:

Right-of-Way	\$ 550,000
Construction	<u>\$7,000,000</u>
Total Cost	\$7,550,000

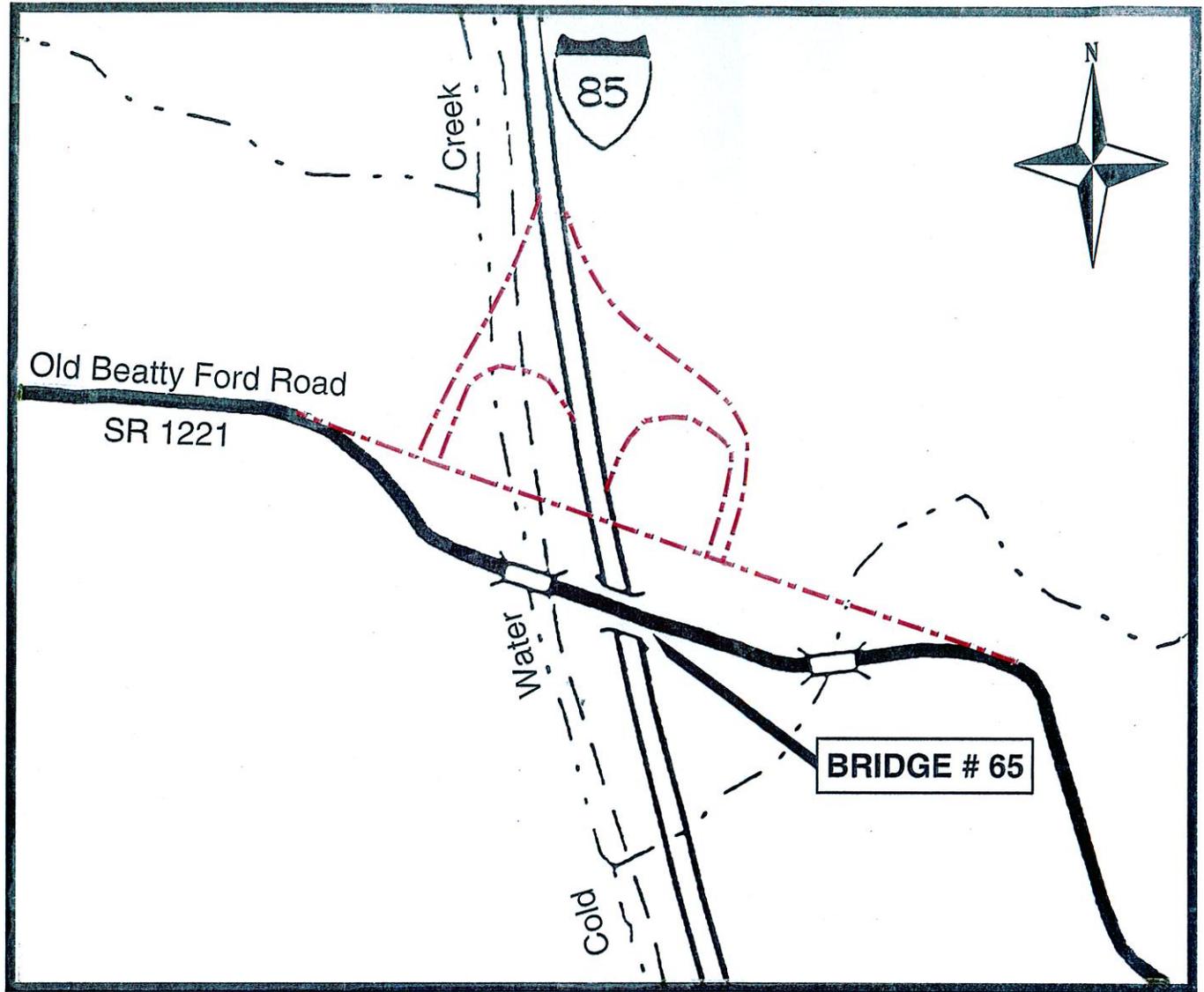
IV. OTHER COMMENTS AND CONCERNS

No historical or architecturally significant sites have been identified in the project corridor.

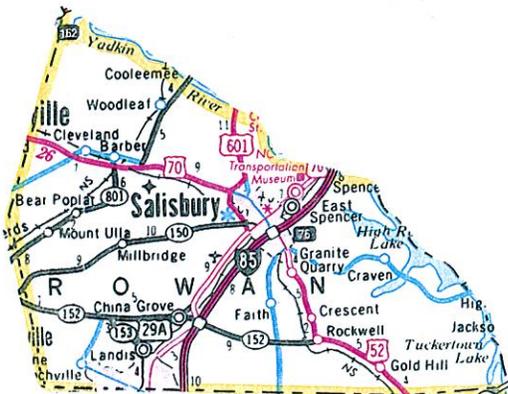
Cold Water Creek runs parallel to and west of I-85. The stream class is WS-IV. Based on a GIS screening, the project area is within a water supply watershed.

Based on maps at the Department of Environment, Health & Natural Resources - Natural Heritage Section, no threatened or endangered species were identified in the project corridor.

In order to minimize construction impacts, this project should be coordinated with Project Number I-3802, the widening of I-85 in Rowan County, which is programmed in the current TIP for feasibility study.



600 FT 0 600 FT



NC DEPARTMENT OF TRANSPORTATION FEASIBILITY STUDIES UNIT	
<h1 style="margin: 0;">I-3804</h1> <h2 style="margin: 0;">Proposed New Interchange</h2> <h3 style="margin: 0;">At I-85 and SR 1221 (Old Beatty Ford Road)</h3> <h3 style="margin: 0;">Rowan County</h3>	
DIVISION 9	FIGURE 1