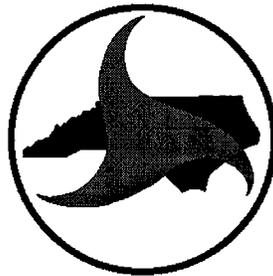


DRAFT

**FEASIBILITY STUDY**

**High Point  
Interchange Improvements  
SR 1619 (Prospect St.) at I-85 Business / US 29-70  
Randolph County  
U-3434**



Prepared by the  
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 describes improvements to the interchange at SR 1619 (Prospect St.) and I-85 Business / US 29-70 in High Point. The project location is shown on Figure 1. The recommended improvements include replacing the existing bridges carrying SR 1619 and the High Point-Thomasville-Denton Railroad over I-85 Business, raising the grades on all approaches and realigning the existing access ramps and service roads. It is anticipated that there will be one business relocated due to this project. The total cost of the project, including construction and right-of-way, is estimated to be \$6,900,000.

This study is the initial step in the planning and design process for this project and is not the product of exhaustive environmental or design investigations. The purpose of this study is to describe the proposed project including costs, and to identify potential problems that may require consideration in the planning and design phases.

### **II. Need for Project**

The primary purpose of this project is to replace the structures at this interchange. This project will also improve the safety conditions and the traffic flow associated with the intersections at this interchange. The replacement of these bridges was originally funded under TIP Project B-2856. This project is supported by the High Point Urban Area Transportation Coordinating Committee.

SR 1619 is designated as a minor thoroughfare and I-85 Business is designated as a major freeway in the High Point Urban Area Thoroughfare Plan. SR 1619 is listed as a minor urban arterial and I-85 Business is listed as a freeway in the North Carolina Statewide Functional Classification System.

Development in the area of the project is mostly industrial. There is a service station and an Amerigas fuel storage facility on the north side of the interchange on SR 1619. High Point Chemical Corporation (Hipochem) and several other businesses are serviced by SR 1623 (Belmar St.). There is a welding supply warehouse and a salvage yard immediately to the south of the

interchange. There are two automobile auction facilities adjacent to the project on SR 1663 (Auction St.).

SR 1619 is currently a two-lane, two-way roadway with a pavement width of 22 feet (6.7 m) and soil shoulders on approximately 50 feet (15.2 m) of right-of-way. I-85 Business is a four-lane divided section with 12-foot (3.6-m) travel lanes, 8-foot (2.4-m) paved shoulders and a 32-foot (9.7-m) median.

SR 1623 intersects SR 1621 (Bethel Rd.) across the railroad tracks from SR 1619. Due to the lack of channelization, this intersection operates as a five-leg intersection.

The High Point-Thomasville-Denton (HPTD) Railroad runs parallel to SR 1619 in the vicinity of I-85 Business. This track supports two trains per day at an average speed of 25 mph (40 kph). The grade crossings for this project have exposure indexes less than or equal to 10,000.

Bridge No. 136 carries <sup>SR</sup> 1619 over I-85 Business. This bridge consists of a reinforced concrete deck on I-beams and is 241 feet (73.5 m) long. This bridge has a clear deck width of 25.3 feet (7.7 m) and has an existing under vertical clearance of 13.8 feet (4.2 m). Built in 1953, this bridge currently has a sufficiency rating of 34.0. Bridge No. 118 carries the HPTD Railroad over I-85 Business. This bridge is located to the west of Bridge No. 136 and is composed of thru-plate girders. This bridge is 248 feet (75.6 m) long and has an existing under vertical clearance of 13.8 feet (4.2 m). Built in 1953, this bridge is maintained by the HPTD and is not evaluated by a roadway sufficiency rating. Both of these bridges offer 48 feet (14.6 m) of horizontal clearance from face-to-face of the bridge bents.

Label

East of this project, TIP Project R-2808A will make mainline improvements along I-85 Business and replace bridge No. 74. The new bridge will have an under vertical clearance of 15.5 feet (4.7 m). This project is scheduled for right-of-way acquisition in FY 1997 and construction in FY 1999.

The 1994 Average Daily Traffic (ADT) along SR 1619 is 7,000 vehicles per day (vpd). For the design year 2020, the estimated traffic volume on SR 1619 is 15,800 vpd. Truck traffic is estimated to make up 5% of daily traffic. SR 1619 is operating at Level of Service (LOS) D. It is projected that the roadway will operate at LOS E in the design year 2020. Capacity related improvements along SR 1619 are beyond the scope of this project.

During the three-year period from May 1992 to April 1995, there were 21 accidents reported within the project area. Twelve injuries were reported as a result of these accidents, including no fatalities. The accident rate along within the project area is 66.12 accidents per 100 million vehicle miles (acc/100mvm).

The proposed improvements should increase the safety of the interchange and its intersections.

### III. Recommendations

It is recommended to improve the interchange at SR 1619 (Prospect St.) and I-85 Business / US 29-70 in High Point. The project location is shown on Figure 1. The following improvements are recommended:

Bridge Replacement - It is recommended to replace roadway Bridge No. 136 and railway Bridge No. 118 over I-85 Business with new structures. Bridge No. 136 will have a clear deck width of 40 feet (12.2 m). These structures should have an under vertical clearance of 15.5 feet (4.7 m), matching the specifications of the replacement bridge under TIP Project R-2808A. This ~~raise~~ <sup>change</sup> in elevation will minimize the amount of grade revisions required to the surrounding roadways. There are adequate detour routes in the area that will allow total closure of the roadway. Closure of the railway will require coordination with the High Point-Thomasville-Denton Railroad.

Ramp improvements - It is recommended to realign the access ramps to and from I-85 Business. The proposed cross-section is 14-foot (4.2-m) ramps with 12-foot (3.7-m) shoulders. Curb and gutter will be required on the inside of the loops. These new ramps will allow for adequate acceleration and deceleration along I-85 Business. Auxiliary lanes will be required underneath both bridges for the southbound acceleration ramp and the northbound deceleration ramp (see Figure 2). The northern ramp terminus will remain unchanged, while the southern ramp terminus will be shifted 100 feet (30.5 m) southward to improve sight distance.

Area safety improvements - It is recommended to remove the existing access of SR 1623 (Belmar St.) to SR 1621 (Bethel Rd.) in order to improve traffic flow and safety at the intersection with SR 1619. Access to SR 1619 will be maintained by creating a new access point 400 feet (122.0 m) north of the intersection with SR 1622 (Gable St.) (see Figure 2). This will create a new railroad crossing with an exposure index of 2000. This new access will provide adequate sight distance along SR 1619.

It is anticipated that one business will be relocated due to the project. The total cost is as follows:

Construction.....	\$ 6,200,000
Right-of-way.....	\$ 700,000
<hr/>	
Total Cost .....	\$ 6,900,000

#### IV. Alternates

A second alternative would include most of the same improvements as the recommended alternate, with the exception of jacking the existing railroad bridge instead of replacing it. According to the Rail Division, the deck of the existing bridge is suitable for jacking. This option would cause the least disruption of train traffic by reducing the length of time of track closure.

This option creates a problem with lateral clearance along I-85 Business. The new bridge bents would be placed in the same position as the existing bridge bents, which currently offer an under lateral clearance of 48 feet (14.6 m). This is the minimum width allowed for freeways with auxiliary lanes. This option will require additional safety provisions along the face of these bridge bents. This will also require a shift in the alignment of I-85 Business toward the median to accommodate the auxiliary lane from the new ramps. The total cost of this option is as follows:

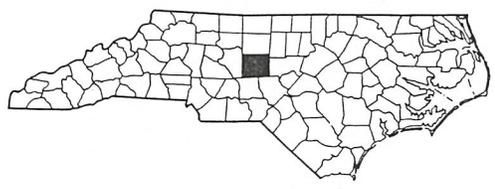
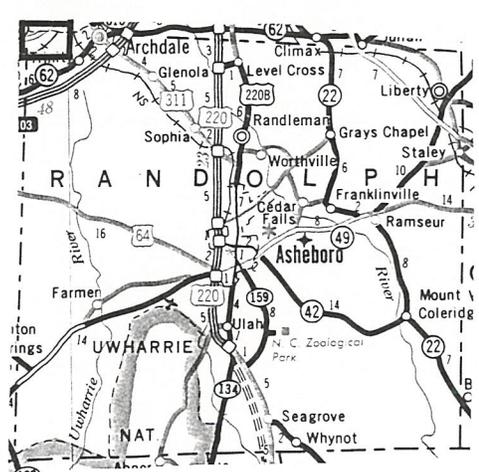
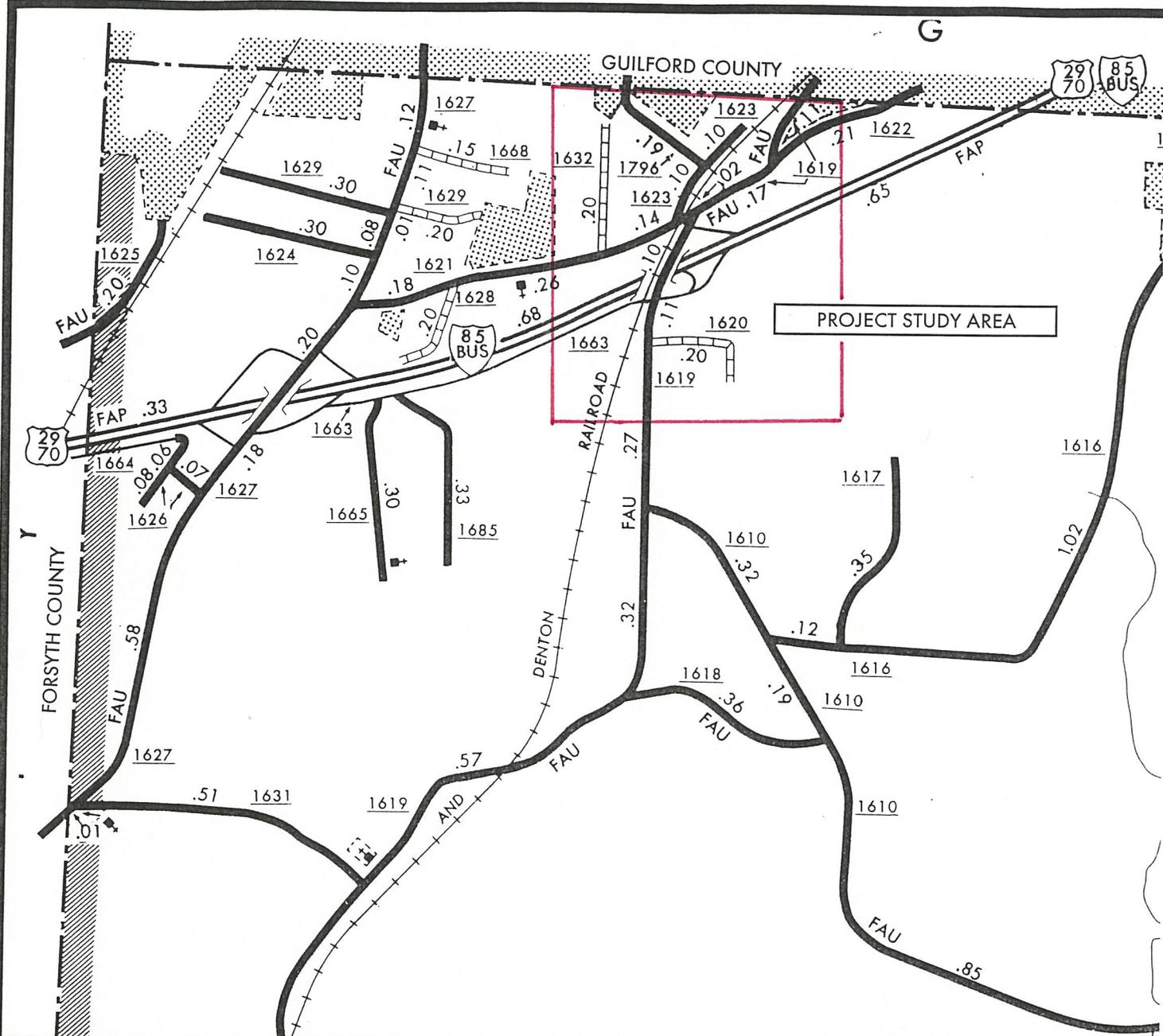
Construction.....	\$ 5,300,000
Right-of-way.....	\$ 700,000
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Total Cost	\$ 6,000,000

#### V. Other Comments

An environmental screening was not conducted for this study. However, no impacts to historic properties or wetlands are anticipated. This project is located in a protected watersupply 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.

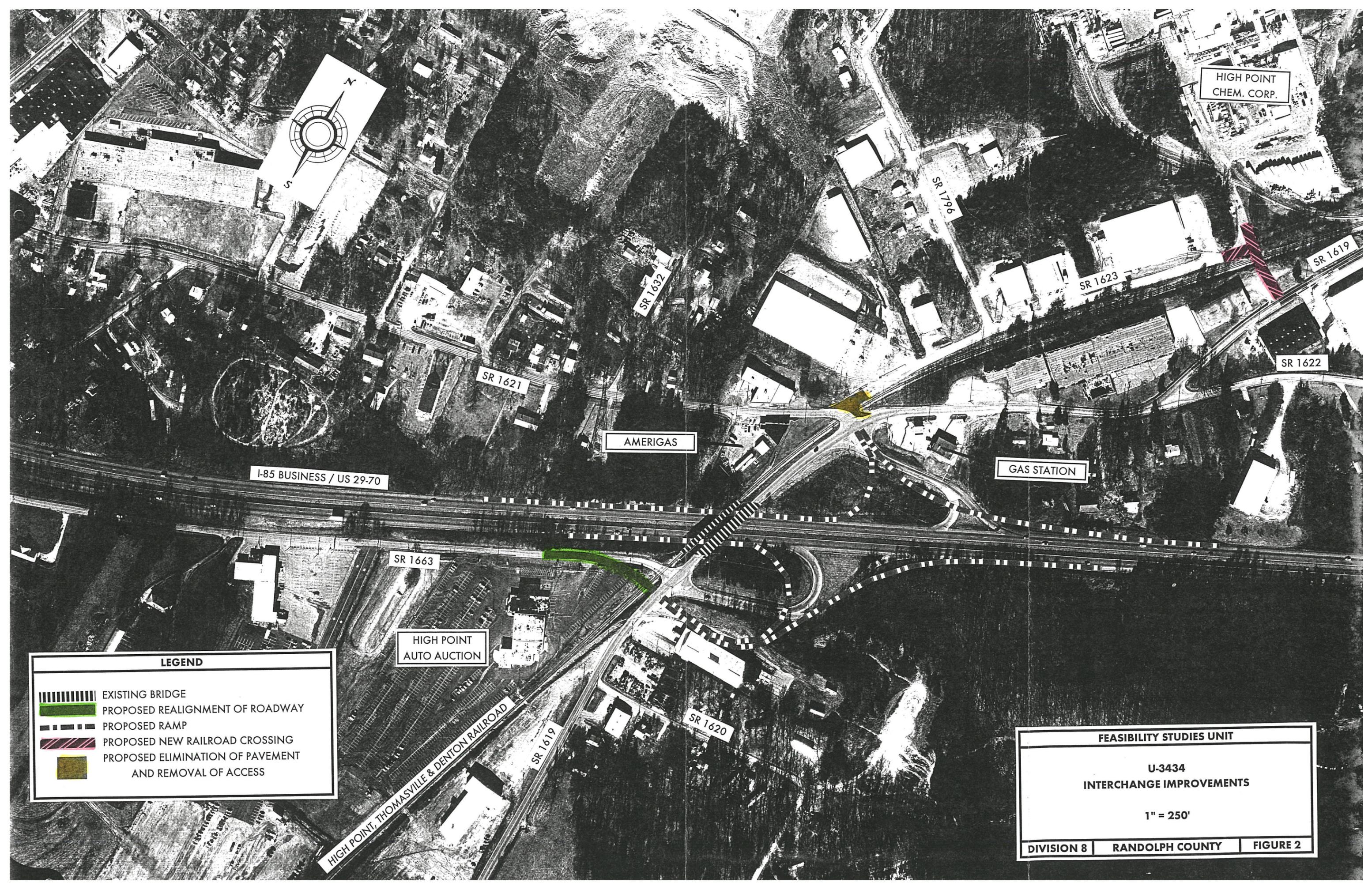
No special accommodation for bicycles is recommended on this project.



**FEASIBILITY STUDIES UNIT**

**U-3434**  
**INTERCHANGE IMPROVEMENTS**  
**SR 1619 (PROSPECT ST.) AT I-85 BUSINESS / US 29-70**  
**HIGH POINT**

DIVISION 8	RANDOLPH COUNTY	FIGURE 1
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HIGH POINT CHEM. CORP.

SR 1796

SR 1623

SR 1619

SR 1622

GAS STATION

AMERIGAS

SR 1632

SR 1621

I-85 BUSINESS / US 29-70

SR 1663

HIGH POINT AUTO AUCTION

HIGH POINT, THOMASVILLE & DENTON RAILROAD

SR 1619

SR 1620

**LEGEND**

-  EXISTING BRIDGE
-  PROPOSED REALIGNMENT OF ROADWAY
-  PROPOSED RAMP
-  PROPOSED NEW RAILROAD CROSSING
-  PROPOSED ELIMINATION OF PAVEMENT AND REMOVAL OF ACCESS

**FEASIBILITY STUDIES UNIT**

**U-3434  
INTERCHANGE IMPROVEMENTS**

1" = 250'