

FEASIBILITY STUDY

Salisbury

**Grade Separation over Southern Railroad
from SR 1002 (Bringle Ferry Road) to US 29/70 (Main Street)**

Rowan County

U-3460

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 for the construction of a grade separation over the Southern Railroad in Salisbury (See Figure 1). Four alternates were studied (See Figure 2). The Twelfth Street Alternate is recommended. A five-lane, 68-foot (20.7-m) face-to-face curb section with sidewalks on both sides on a 120-foot (36.6-m) wide right-of-way with partial control of access is the recommended typical section. A retaining wall structure, approximately 79 feet (24.1-m) wide, will be used to carry the roadway over the railroad. The table below is a summary of the estimated cost for each alternate.

	Right-of-Way	Construction	Total
Lafayette St. Alternate	\$ 2,600,000	\$12,900,000	\$15,500,000
Henderson St. Alternate	\$ 3,200,000	\$ 8,100,000	\$11,300,000
Eleventh St. Alternate	\$ 1,600,000	\$11,800,000	\$13,400,000
Twelfth St. Alternate	\$ 2,600,000	\$11,700,000	\$14,300,000

II. NEED FOR PROJECT

Hobbs, Upchurch and Associates, a consultant, prepared "Traffic Study and Railroad Crossing Analysis for the City of Salisbury, N.C. and North Carolina Department of Transportation" in June 1994. They found that Salisbury had the highest concentration of at-grade railroad crossings along the Southern Railroad (17 crossings in a 3-mile stretch). The results of the study recommended closing eleven at-grade railroad crossings and constructing grade separations at three crossings. The crossing at Henderson Street was recommended for construction of a grade separation. It was recommended that the crossing at Eleventh Street be closed.

The North Carolina Railroad has multiple tracks crossing the project corridor. These tracks carry a total of 34 trains per day at an average speed of 79 miles per hour (127 kmh). The exposure index, a product of the design year traffic and the number of trains per day, is 481,100 at this location. This exposure index greatly exceeds the threshold of 30,000 that warrants a grade separation.

The existing studied routes are mainly two-lane roads with curb and gutter. Land use along the study corridor is industrial and residential.

The Office of Bicycle and Pedestrian Transportation and the City of Salisbury has requested that sidewalks and bike accommodations be provided along the studied project.

Based on information from the State Historic Preservation Office (SHPO), the North Main Street Historic District which parallels the railroad, is listed in the National Register (Folder# 1065). A map in the North Main Historic District file, identified the following sites in the study corridor:

Map Ref. #	Owner	Street Address	Alternate
140	C. M. Barger House	703 N. Main St.	Lafayette St.
141	W. A. Blackwell House	127 E. Henderson St.	Henderson St.
142	Mahaley-Lentz House	125 E. Henderson St.	Henderson St.
143	Hanes-Clark-Rufty House	123 E. Henderson St.	Henderson St.
144	Small-Rose House	115 E. Henderson St.	Henderson St.
145	Vacant	112-22 E. Henderson St.	Henderson St.
146	Brown-Brock House	126 E. Henderson St.	Henderson St.
147	Rufus-Lentz-Shield House	128 E. Henderson St.	Henderson St.
133	James Lyons House	801 N. Main St.	Henderson St.
134	R. L. Mahaley Rental House	729-31 N. Main St.	Henderson St.
108	Patterson-Brown-Ervin House	129 E. Eleventh St.	Eleventh St.
109	Vernon Yount House	127 E. Eleventh St.	Eleventh St.
110	Melchor-Cauble-Young House	121 E. Eleventh St.	Eleventh St.
111	Parker-Seamon House	117-119 E. Eleventh St.	Eleventh St.
112	Qwen-Kepely House	115 E. Eleventh St.	Eleventh St.
107	N. Main Street School	1201 North Main St.	Eleventh & Twelfth St.
104	Rowan Rentals	1301-03 N. Main St.	Twelfth St.
106	Farrington-Jones-Johnson House	106 E. Twelfth St.	Twelfth St.

During the period from April, 1992, through March, 1995, there were 43 accidents reported along the existing corridor. This resulted in an accident rate of 654.5 accidents per 100 million vehicle miles (acc/100mvm) compared to a statewide average of 267.9 acc/100mvm for this type of facility. Two accidents involving fatalities were reported. Four accidents involving trains were reported. The recommended improvements are expected to reduce the accident rate.

III. ALTERNATES STUDIED

Four alternates were evaluated during this study (See Figure 1). A five-lane, 68-foot (20.7-m) face-to-face curb section with sidewalks on both sides on a 120-foot (36.6-m) wide right-of-way with partial control of access was studied for each alternate. A retaining wall structure, approximately 79 feet (24.1-m) wide carrying the roadway over the railroad was utilized for each section. Also, an

access route on new location to provide access from Long Street to the grade separation was studied for the Eleventh Street and Twelfth Street Alternates. The studied typical section for the access road is a three-lane, 36-foot (11.0-m) roadway with 8-foot (2.4-m) shoulders, including 2-foot (0.6-m) paved shoulders, on a 100-foot (30.5-m) wide right-of-way with no access control. The following table summarizes the findings of this study.

Alternate	Lafayette	Henderson	Eleventh	Twelfth
Right-of-Way Cost	\$ 1,750,000	\$ 2,350,000	\$ 1,400,000	\$ 2,400,000
Utilities Cost	\$ 850,000	\$ 850,000	\$ 200,000	\$ 200,000
Construction Cost	\$ 12,900,000	\$ 8,100,000	\$ 11,800,000	\$ 11,700,000
Total Cost	\$ 15,500,000	\$ 11,300,000	\$ 13,400,000	\$ 14,300,000
Residential Relocations	9	19	4	3
Business Relocations	2	2	3	4
National Register Sites Impacted or Relocated	1	9	6	3
Max. Height of Retaining Wall (approx.)	48 feet	29 feet	31 feet	33 feet
Length of Retaining Wall Structure	0.34 mile	0.29 mile	0.36 mile	0.34 mile
Length of Main Line	0.45 mile	0.45 mile	0.66 mile	0.71 mile
Length of Access Road	na	na	0.12 mile	0.12 mile
Total Project Length	0.45 mile	0.45 mile	0.78 mile	0.83 mile
1995 Average Daily Traffic	6,800 vpd	6,800 vpd	9,400 vpd	9,400 vpd
1995 Level-of-Service	A	A	A	A
2015 Average Daily Traffic	8,600 vpd	8,600 vpd	11,600 vpd	11,600 vpd
2015 Level-of-Service	A	A	A	A
Proposed Cul-de-sacs	Shaver St. Long St. Railroad St. Lee St.	Shaver St. Long St. Railroad St. Lee St.	Richard St. Lexington Ave.	Richard St. Lexington Ave.
Railroad Tracks Crossed	6	6	4	4

Notes:

1. The Lafayette Street Alternate and Henderson Street Alternate will cause severe impacts to a telephone communications tower.
2. The North Main Street School is impacted by the Eleventh Street Alternate and the Twelfth Street Alternate. The school campus is composed of several buildings. The main building would not be impacted. Some of the new additions may have to be relocated.

IV. RECOMMENDATIONS

The Twelfth Street Alternate is recommended for the construction of the grade separation over the Southern Railroad. The Lafayette Street Alternate was rejected because special design methods would have to be used to construct a wall 48 feet (14.6 m) high. The telephone communications tower would have to be relocated. The Town of Salisbury would like to maintain access on Long Street, between Salisbury and Spencer, as well as, providing access from Long Street over the railroad tracks. The Lafayette Street Alternate and Henderson Street Alternate, would cause Long Street to be cul-de-saced

and construction of a access road would be difficult. Although the Henderson Street Alternate is least expensive, it was rejected because it would involve the relocation of nine historic houses. This alternate would also impact the operation of the telephone communications tower. The Eleventh Street Alternate was rejected because it would impact the second highest number of National Register Sites. In addition, impacts to the North Main Street School would be greater, if this alternate were chosen.

The Twelfth Street Alternate is recommended for the following reasons:

- Travel between Salisbury and Spencer, along Long Street, will be maintained.
- The access road will allow vehicles to use the grade separation over the railroad tracks to get between Main Street and Long Street.
- There are fewer relocations (Two of the business relocations are no longer in operation).
- There are fewer impacts to National Register sites.

Major utility conflicts are expected.

Total project cost is estimated as follows:

Right-of-way	\$ 2,600,000
Construction	\$ 11,700,000
Total	\$ 14,300,000

V. OTHER COMMENTS AND CONCERNS

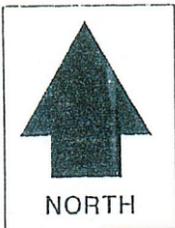
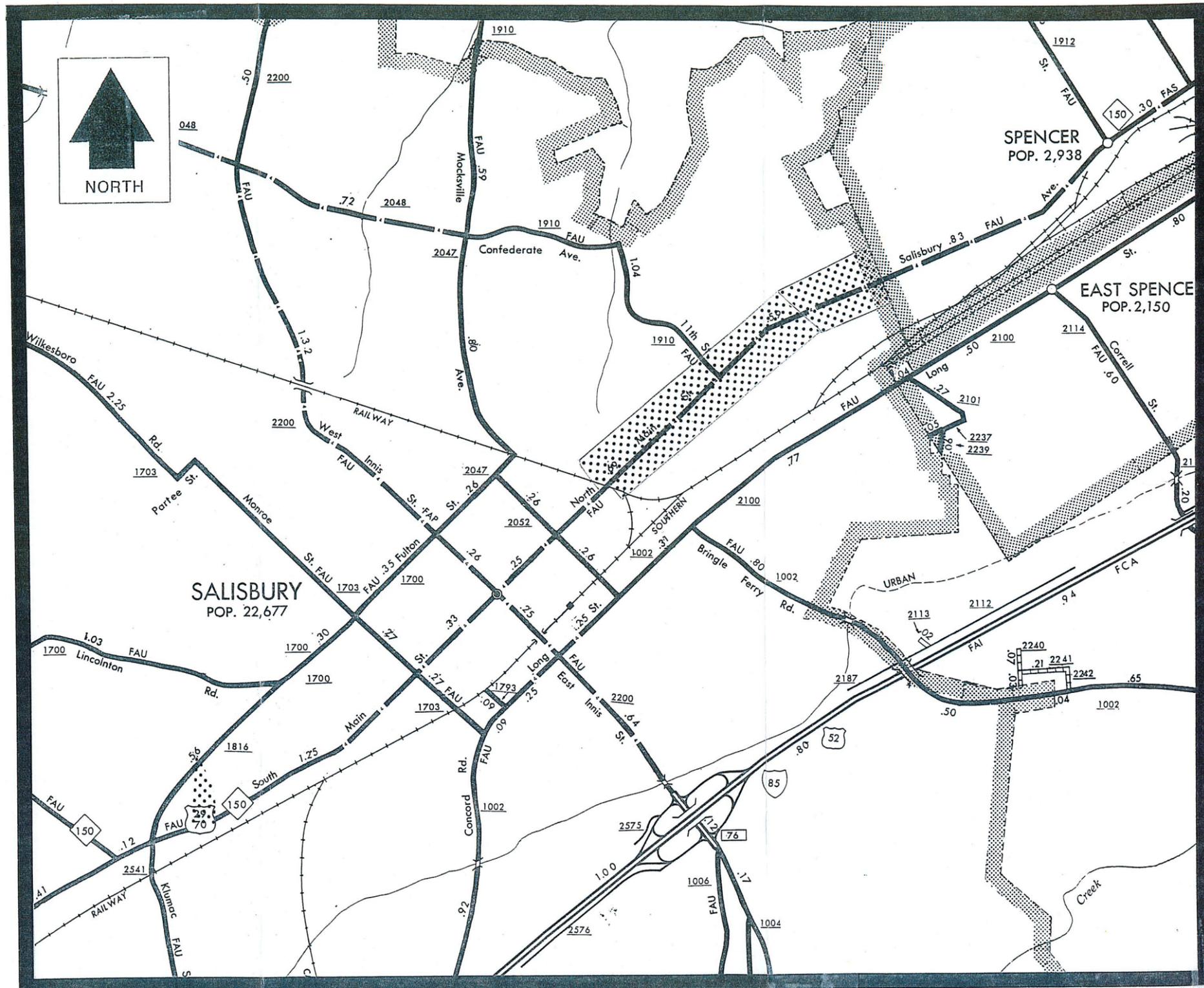
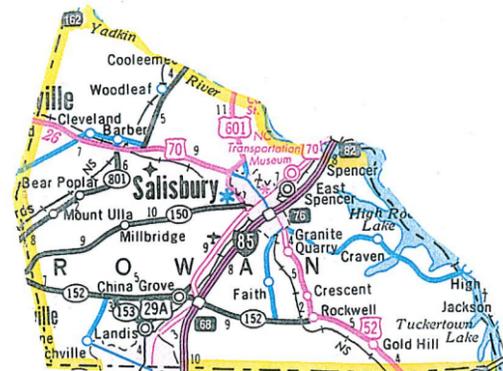
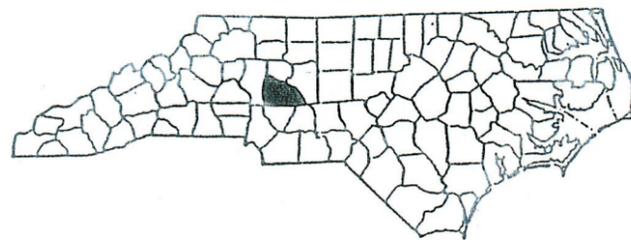
It is estimated that this project would require the relocation of 3 residences and 4 businesses.

This study is not a detailed planning/environmental investigation. A feasibility study presents studied typical 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.

Based on information from the State Historic Preservation Office (SHPO), the North Main Street Historic District is located in the project corridor. Section 106 of the National Historic Preservation Act of 1966 is applicable to this project.

VI. OTHER ALTERNATES STUDIED

A three-lane typical section was evaluated. This typical section was rejected. Due to the method used to construct the retaining wall, the structure would have to be completely reconstructed, if additional lanes were needed in the future.

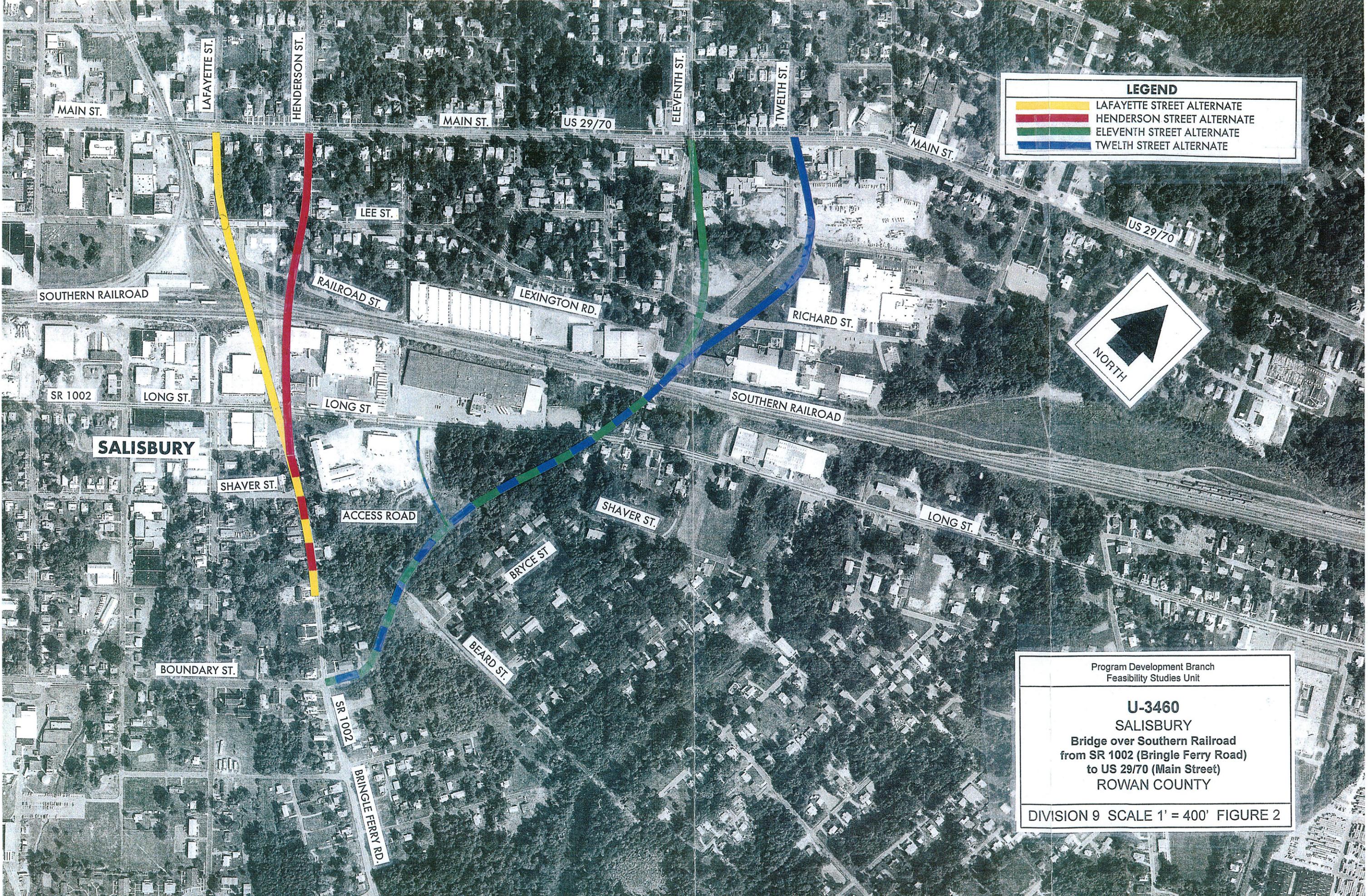


**NORTH MAIN STREET
HISTORIC DISTRICT**

Program Development Branch
Feasibility Studies Unit

U-3460
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DIVISION 9 FIGURE 1



LEGEND

- LAFAYETTE STREET ALTERNATE
- HENDERSON STREET ALTERNATE
- ELEVENTH STREET ALTERNATE
- TWELTH STREET ALTERNATE



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DIVISION 9 SCALE 1' = 400' FIGURE 2