

FEASIBILITY STUDY

Cramerton
Bridge No. R-299 on Southern Railroad
over SR 2490 (Eighth Avenue)
Gaston County
U-2205

Prepared by
Planning and Research Branch
Division of Highways
N. C. Department of Transportation

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over SR 2490 (Eighth Avenue)
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The captioned project is included in the 1987-1995 Transportation Improvement Program for a feasibility study and/or right-of-way protection but is not currently funded. This report provides a brief analysis of possible improvements.

EXISTING CONDITIONS

Following is a description of Bridge No. R 299 which is located adjacent to the Cramerton downtown area:

Year constructed - 1918
Type - reinforced concrete
Length - 39 feet (2 spans at 10 feet 6 inches each over sidewalks adjacent to each side of SR 2490 and one span at 18 feet over SR 2490)
Vertical clearance - 10 feet over SR 2490
Horizontal clearance - 15 feet 8 inches between piers adjacent to SR 2490
Tracks carried - 2 (main and siding track)
Train traffic over bridge - 18 per day
Posted speed limit - 20 mph on SR 2490

SR 2490 has two-way traffic operation and a 30-foot face to face of curbs width on approaches to the underpass but narrows to a 15-foot 8-inch horizontal clearance and operates as one-way at the underpass. A sidewalk adjoins each side of the road and is elevated beneath the underpass. Bridge No. 9 on SR 2490 over Duhart Creek about 1000 feet southwest of the underpass was recently replaced with a 30-foot clear roadway width structure.

TRAFFIC ESTIMATES

Estimated 1987 average daily traffic of 2800 vehicles on SR 2490 at the underpass is predicted to increase to a minimum of 5100 during the year 2007. The 2007 estimate includes about 25 TTST and 100 dual tire vehicles.

NEED FOR THE PROJECT

SR 2490 is designated a major thoroughfare and is the only direct connector between the downtown area of Cramerton and developing areas located southwest. There is an obvious need for improving operating conditions due to restriction to traffic resulting from the one-way operation and 10-foot vertical clearance at the existing underpass.

OPTIONS FOR IMPROVEMENT

There are several conceivable options for alleviating operational restrictions at the underpass, ranging from redirecting much of the SR 2490 traffic via SR 2505 to providing a new underpass having adequate vertical and horizontal clearance for two-way operation.

Extension of SR 2505 southeastward from the vicinity of Bridge No. R 303 over 10th Street to tie directly to SR 2490 in the vicinity of Bridge No. 9 over Duhart Creek would be the least expensive proposal. This would direct the majority of SR 2490 traffic along SR 2505 to SR 2209 and along SR 2209 to US 74 north of town. However, it would only relieve traffic demand at the existing one-way underpass and introduce additional traffic in front of the Burlington Mills plant and along the somewhat restrictive cross-sections and alignment of existing SR 2505 north of the plant.

Replacement of the existing bridge to provide standard horizontal and vertical clearances for a minimum 2-lane operation along SR 2490 under the structure requires consideration of either relocation of SR 2490 to underpass the railroad, relocation of the railroad at a raised elevation, or raising the existing railroad grade. Significant lowering of the grade of existing SR 2490 at the underpass is not considered practical due to resulting damages to fronting developments in the area. Also, raising the grade of the road to meet the railroad at grade is impractical due to resulting damages to fronting developments and the 18 trains per day carried by the railroad.

At present there appears to be two reasonable options for the project (see Figure 2):

- Option 1 - Relocation of the Southern Railway tracks immediately southwest of their present alignment in the area of the existing underpass.
- Option 2 - Raise the railroad grade along its present alignment.

A third option (Option 3) of relocating SR 2490 about 175 feet southwest of its present alignment is not considered reasonable due to resulting extensive property damages (displacement of the Cramerton Town Hall adjacent to the SR 2490-SR 2014 intersection and about 4 residences adjacent to the southeast side of SR 2490 southwest of the present underpass). Other disadvantages of Option 3 include difficulty in adjusting the grade of SR 2014 to intersect the SR 2490 relocation at grade and maintenance of rail traffic.

ESTIMATED COSTS

Either Option 1 or Option 2 would involve significant costs and property damages due to development proximity in the area and the apparent need to maintain train traffic during construction. Preliminary estimated costs are as follows:

	<u>Option 1</u>	<u>Option 2</u>
Construction	\$ 1,580,000	\$ 2,700,000
Right of Way	257,000	99,000
TOTAL	\$ 1,837,000	\$ 2,799,000

These costs include engineering and contingencies plus a temporary railroad detour in conjunction with Option 2. Although very doubtful, total cost of Option 2 would be reduced to an estimated \$1,242,000 if Southern trains could be detoured via other tracks in the area (possibly via Seaboard System tracks located north of I-85) during the construction period. Costs do not include replacement of Bridge No. R 303 on the railroad over SR 2505 (10th St.) about 1600 feet northwest of the subject underpass but investigation of such replacement in conjunction with each of the above options should be made during future planning.

Further evaluation of these options and associated environmental impacts will be required in a planning/environmental document in order to establish a final decision in regard to the appropriate improvement.

POTENTIAL ENVIRONMENTAL IMPACTS

The primary potential consequence on the natural environment resulting from construction of the project would be the impact on any wetlands and other ecological resources located in the area. Potential impacts on the human environment include displacement of businesses and/or residences, increases in ambient noise levels, and effects on existing air quality. These impacts must be compared to the resulting significant improvement of vehicular access between the central area of town and developing areas along SR 2490 in the town's southwestern section.

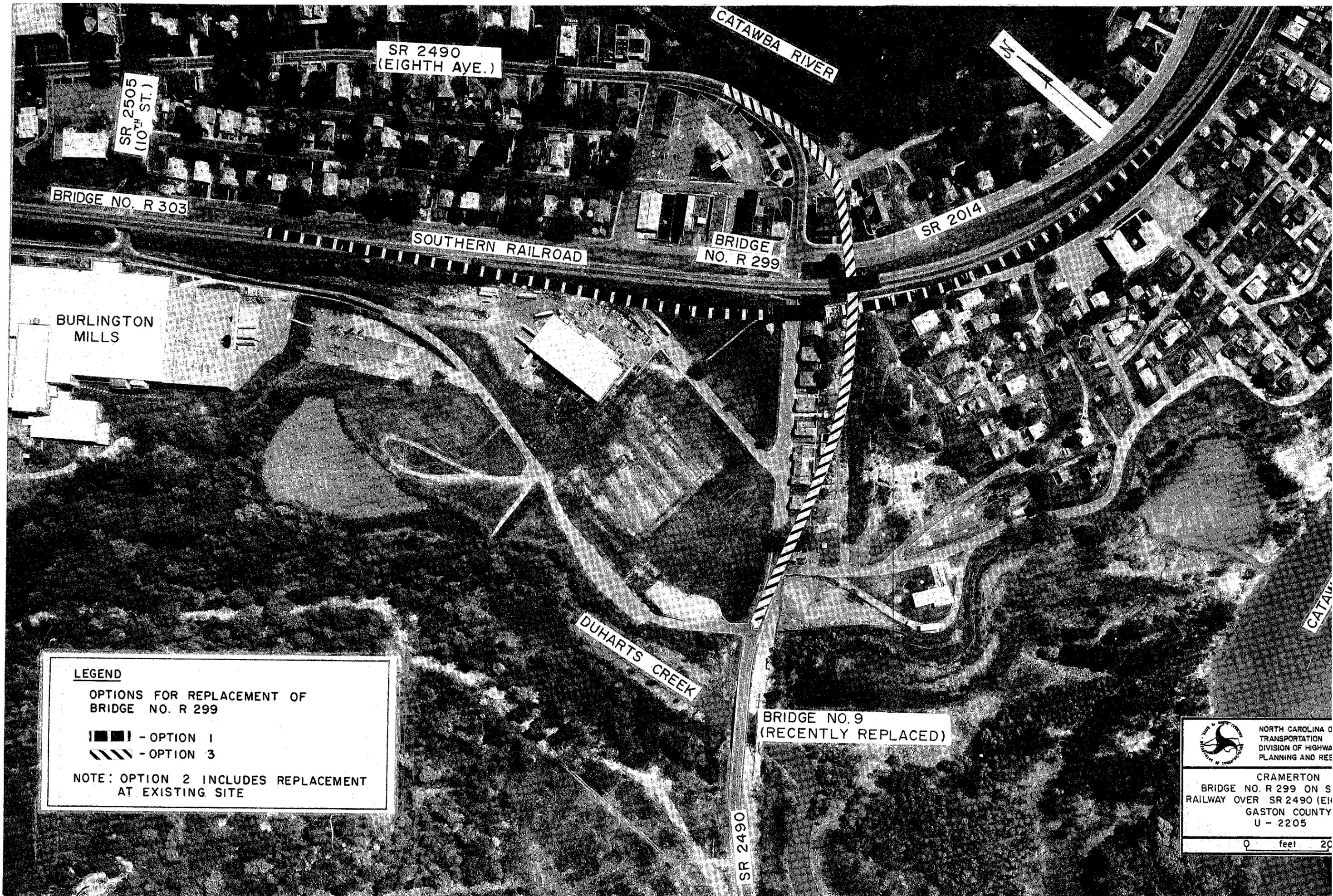
BASIS OF FINDINGS

Options contained in this study were based on the following:

- Aerial photography
- Field investigation
- Contacts with the Division 12 Area Traffic Engineer and a representative of the Gastonia Transportation Planning Department
- The thoroughfare plan for the greater Gastonia urban area

Construction cost estimates were based on aerial photography and furnished by the Roadway Design Unit. Right of way estimates were made by the Right of Way Branch following a field review.

ONB/sdt



SR 2490
(EIGHTH AVE.)

SR 2505
(10TH ST.)

BRIDGE NO. R 303

SOUTHERN RAILROAD

BRIDGE
NO. R 299

SR 2014

BURLINGTON
MILLS

DUHARTS CREEK

BRIDGE NO. 9
(RECENTLY REPLACED)

SR 2490

LEGEND

OPTIONS FOR REPLACEMENT OF
BRIDGE NO. R 299

▬ - OPTION 1

▨ - OPTION 3

NOTE: OPTION 2 INCLUDES REPLACEMENT
AT EXISTING SITE

 NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAY
PLANNING AND RECONSTRUCTION

CRAMERTON
BRIDGE NO. R 299 ON SOUTHERN
RAILWAY OVER SR 2490 (EIGHTH AVE.)
GASTON COUNTY
U - 2205

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