FEASIBILITY STUDY

Garner
New Rand Road (SR 2562)
from Timber Drive (SR 2812)
to US 70
Wake County

Division 5

U-3607

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

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Date

U-3607

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I. General Description

This feasibility study describes recommended improvements to New Rand Road (SR 2562) in Garner. It is recommended that New Rand Road be widened from Timber Drive (SR 2812) to US 70, a distance of 1.1 miles (1.8 km). The project location is shown on Figure 1.

The recommended cross section is 3-lane curb-and-gutter with segments of 4-lane curb-and-gutter, at the termini, to set up lanes for turning movements. The locations and cross sections are: (1.) a 4-lane, 52-foot (15.8-m) wide (face-to-face), curb-and-gutter section with 10-foot (3.0-m) wide berms, from Timber Drive to Bournemouth Lane, (2.) a 3-lane, 40-foot (12.2-m) wide (face-to-face), curb-and-gutter section with 10-foot (3.0-m) wide berms, from Bournemouth Lane to approximately 400 feet (122.0 m) south of US 70, and (3.) a 4-lane, 52-foot (15.8-m) wide (face-to-face), curb-and-gutter section with 10-foot (3.0-m) wide berms, from approximately 400 feet (122.0 m) south of US 70 to US 70.

It is recommended that the project is to be constructed on 80 feet (24.4 m) of right-of-way.

It is anticipated that there will not be any residences or businesses relocated as a result of this project.

The total cost of the project, including construction and right-of-way, is estimated to be $5,250,000 as follows:

Right-of-way	$3,250,000
Construction	2,000,000
Total	$5,250,000

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 purpose of this project is to improve the traffic carrying capacity and accident experience of New Rand Road and to relieve traffic congestion in the heavily developed New Rand Road area. Presently there are numerous residential driveway connections on New Rand Road and the provision of a third full width lane will set up the roadway section with a center turn lane and two travel lanes, thereby relieving congestion and significant delays created by left-turn movements. This project was requested by the Capital Area Metropolitan Planning Organization.

New Rand Road is designated as a minor thoroughfare in the Garner Thoroughfare Plan and is not listed in the North Carolina Statewide Functional Classification System.

Development along the project is dense residential with light commercial at the project termini.

New Rand Road is currently a two-lane, rural shoulder section with a pavement width of 20 feet (6.1 m) and soil shoulders.

At the south project terminus, New Rand Road forms a T intersection with Timber Drive. Timber Drive is a 5-lane, curb-and-gutter facility which is stop sign controlled at New Rand Road. See Figure 2 for the existing intersection configuration.

At the north project terminus, New Rand Road intersects US 70. US 70 is a 4-lane, median divided, shoulder section. Both the existing northbound and southbound approaches of New Rand Road include a combination left-turn/right-turn/through lane and one lane exiting the intersection. The intersection is controlled by a traffic signal. See Figure 3 for the existing intersection configuration.

The 1996 estimated Average Daily Traffic (ADT) volume on New Rand Road was approximately 5,900 vehicles per day (vpd). The estimated design year (2020) ADT is 12,000 vpd. Truck traffic is estimated to make up 5% of daily traffic.

It is estimated that New Rand Road is currently operating at Level of Service C but will reach Level D in the very near future. If no improvements are made, it is projected that the roadway will approach a Level E by the design

year. If New Rand Road is widened to a 3-lane and 4-lane, curb-and-gutter section, as recommended, it is estimated that a Level D can be maintained through the design year.

During the three-year period from March 1993 thru February 1996, there were 33 accidents reported on New Rand Road within the project limits. There were no fatalities reported during this period, but 13 of the accidents resulted in injuries. The accident rate along New Rand Road is 265.70 accidents per 100 million vehicle miles (acc/100mvm). This compares with the 1994 statewide rate of 347.80 acc/100mvm for urban secondary roads.

III. Recommendations / Description of Project

It is recommended that New Rand Road in Garner, be widened from Timber Drive (SR 2812) to US 70, a distance of 1.1 miles (1.8 km). The project location is shown on Figure 1.

The recommended cross section is 3-lane curb-and-gutter with segments of 4-lane curb-and-gutter, at the termini, to set up lanes for turning movements. The locations and cross sections are: (1.) a 4-lane, 52-foot (15.8-m) wide (face-to-face), curb-and-gutter section with 10-foot (3.0-m) wide berms, from Timber Drive to Bournemouth Lane, (2.) a 3-lane, 40-foot (12.2-m) wide (face-to-face), curb-and-gutter section with 10-foot (3.0-m) wide berms, from Bournemouth Lane to approximately 400 feet (122.0 m) south of US 70, and (3.) a 4-lane, 52-foot (15.8-m) wide (face-to-face), curb-and-gutter section with 10-foot (3.0-m) wide berms, from approximately 400 feet (122.0 m) south of US 70 to US 70.

It is recommended that the project is to be constructed on 80 feet (24.4 m) of right-of-way.

At the southern project terminus, the widened roadway should connect to Timber Drive and create free-flow movements from along Timber Drive and New Rand Road. The southern section of New Rand Road should be stop sign controlled at the intersection and should be made one-way delivering traffic to the intersection from NC 50 (Benson Road). The outside northbound lane of the widened New Rand Road should end as a right-turn onto Bournemouth Lane. See Figure 2 for proposed intersection and lane configurations.

At the north project terminus, the northbound approach to US 70 should include a right-turn lane, a combination through/left-turn lane, and a left-turn lane. One southbound lane should exit the intersection. The southbound approach should include a right-turn lane, a combination through/left-turn lane, and one northbound lane exiting the intersection.

The existing traffic signals at the Timber Drive/NC 50 intersection and at the New Rand Road/US 70 intersection should be upgraded.

It is anticipated that there will not be any residences or businesses relocated as a result of this project.

The total cost of the project, including construction and right-of-way, is estimated to be $5,250,000 as follows:

Right-of-way	$3,250,000
Construction	2,000,000
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Total	$5,250,000

VI. Other Comments

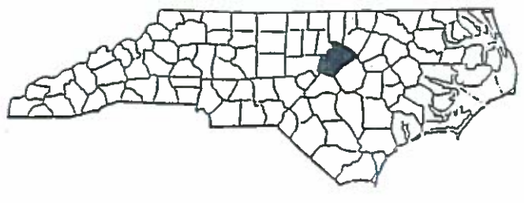
An environmental screening was not conducted for this study. However, no impacts to historic properties or wetlands are anticipated.

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.

The NCDOT Bicycle Program has identified New Rand Road as a roadway which does not have need for special accommodations for bicycles.

The project costs included in this report are based on using an 80-foot (24.4-m) wide right-of-way. It is estimated that a savings of approximately $2.25 million could be realized by constructing the 3-lane segment within the existing 60-foot (18.3-m) right-of-way. This however would make the construction limits very tight.

The ADT and LOS calculations included in this report are based on the assumption that Timber Drive will not be extended.



SCALE

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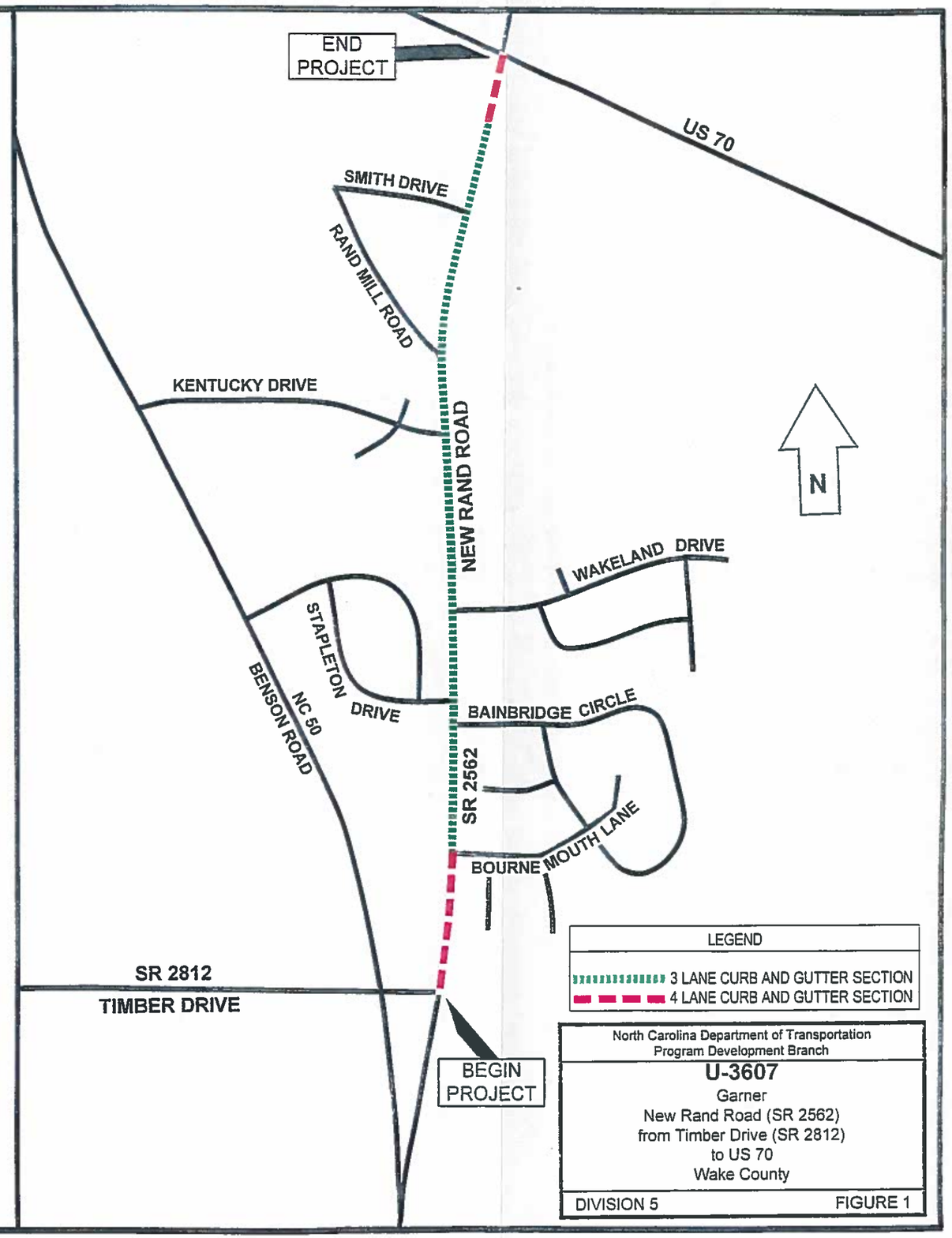

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U-3607

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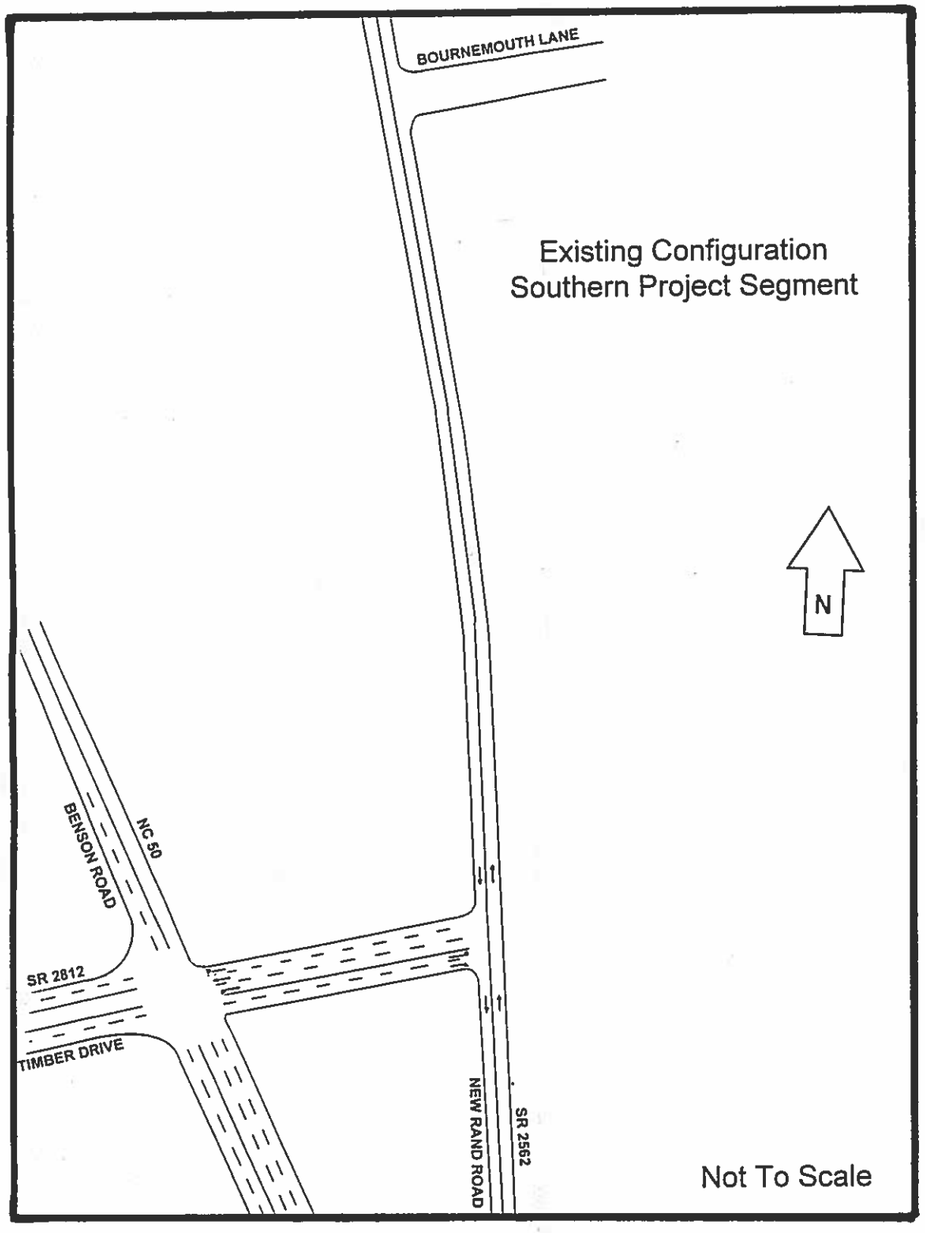
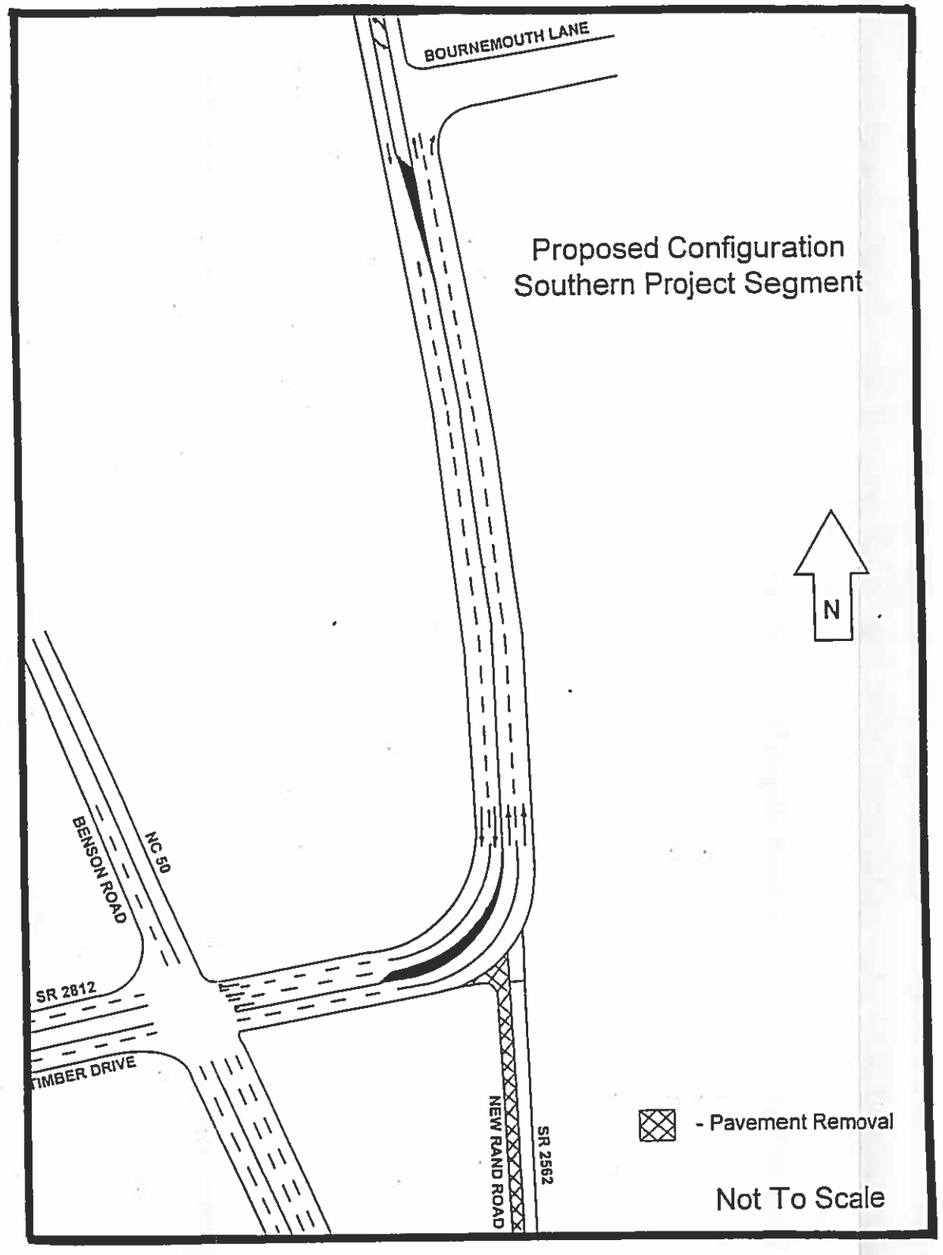
DIVISION 5 FIGURE 1





North Carolina Department of Transportation
Program Development Branch

U-3607

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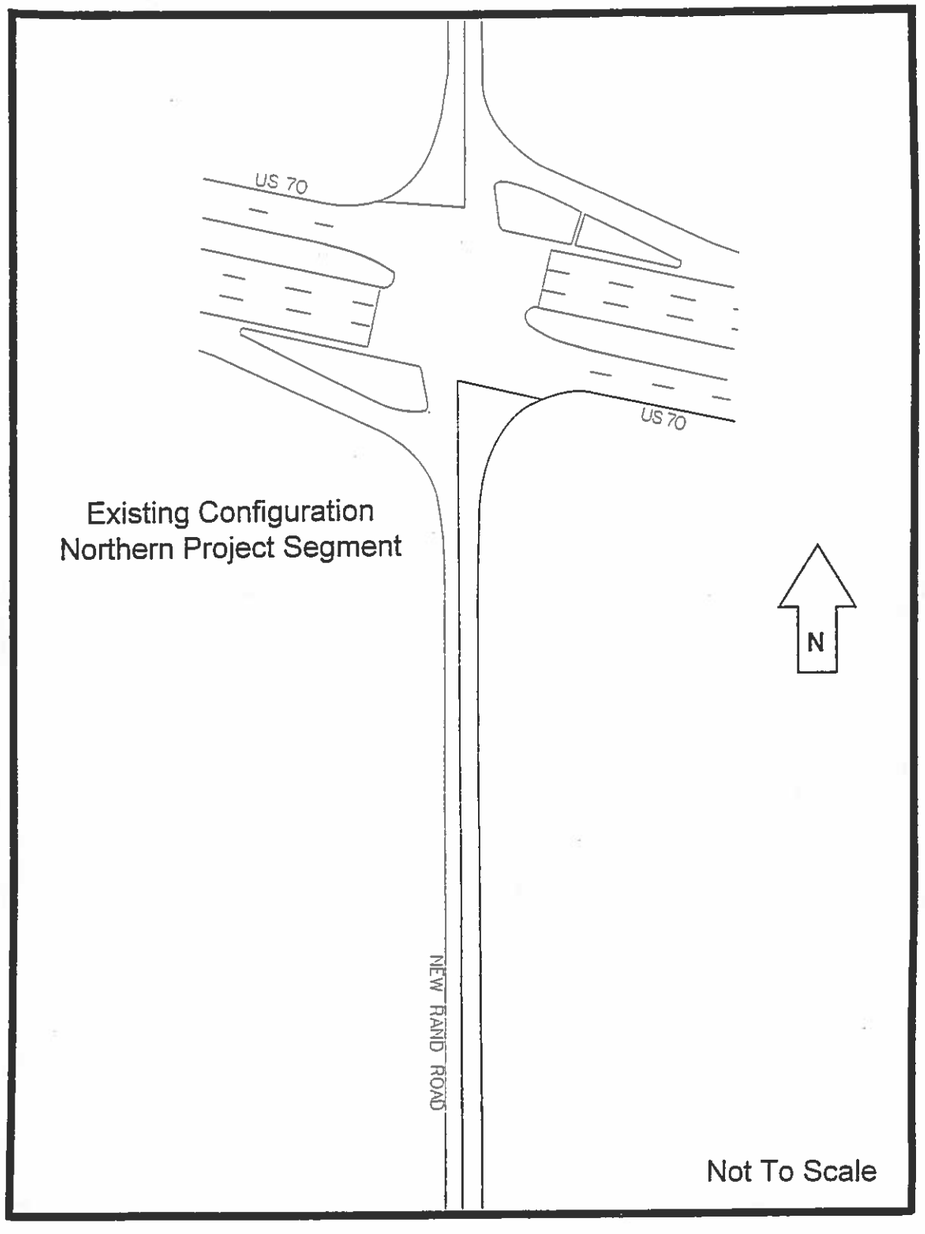

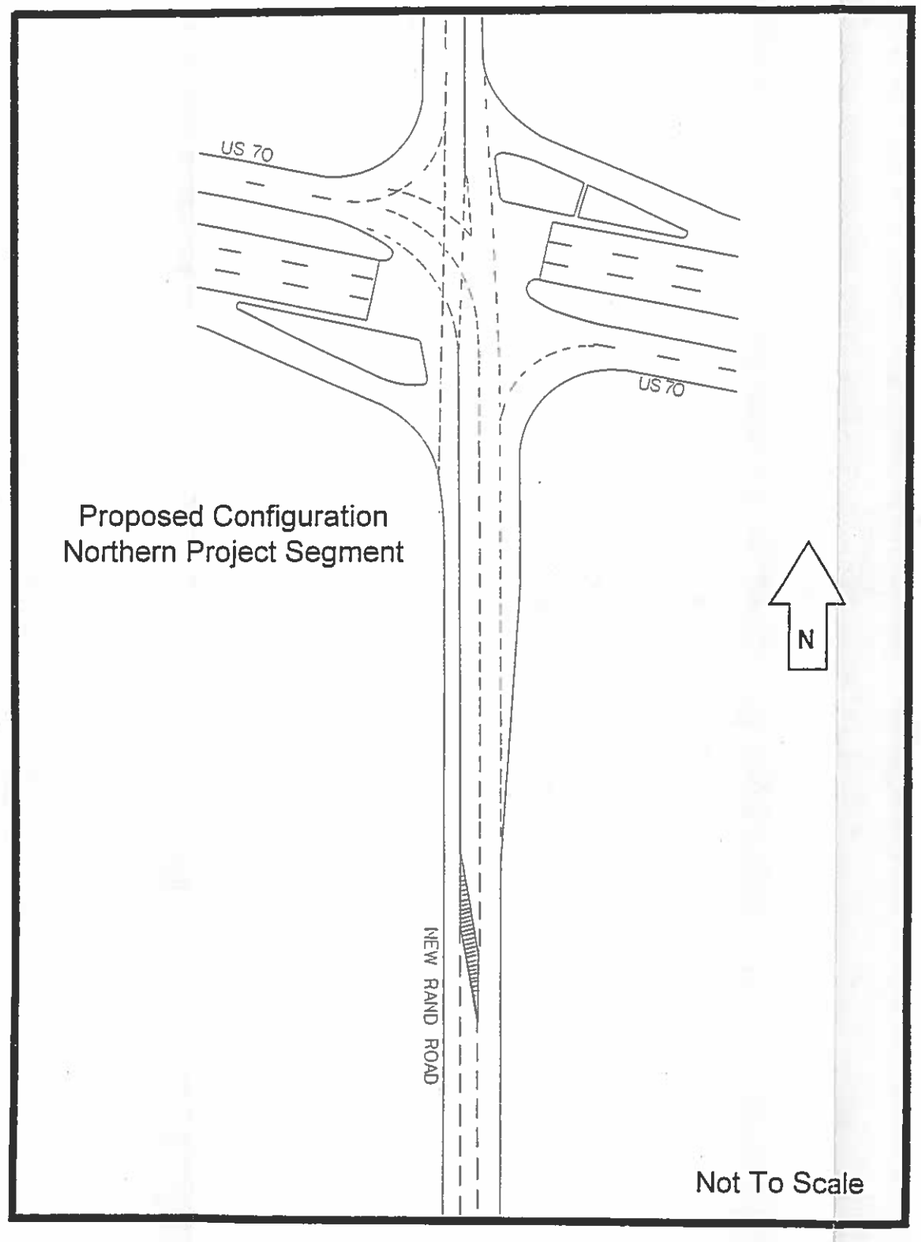

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U-3607

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