

FEASIBILITY STUDY

**Town Of Wilkesboro
Widen SR 1001 (Oakwoods Road)
From US 421 Bypass
To NC 18-268 (Main Street)**

Wilkes County

Division 11

FS-0711B



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

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**R. N. Prince
Feasibility Studies Engineer**

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**Derrick W. Lewis. P.E.
Feasibility Studies Unit Head**

11-22-2010

Date

Town of Wilkesboro
Widen SR 1001 (Oakwoods Road)
From US 421 Bypass
To NC 18-268 (Main Street),
Wilkes County.

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I. General Description

This feasibility study describes the operational and safety improvements to SR 1001 (Oakwoods Road) from US 421 to NC 18/268/SR 2510 (East Main Street), a distance of approximately 1.3-miles. The project location is shown on the Location Map. As part of the study, two (2) different cross-sections were considered, the details of which are as follows:

- ◆ **Alternative 1:** Two-lane section constructed asymmetrically on 130-feet of right of way sufficient for an ultimate 4-lane section. The proposed facility is approximately 32-foot wide with a 14-foot wide travel lane, sidewalks and curb and gutter on the western side, while the eastern side is a shoulder section with a 12-foot travel lane with a 4-foot paved shoulder. (Please see Figure 1).

- ◆ **Alternative 2:** Four-lane divided curb and gutter section, 79 feet wide face-to-face of curbs with a 23-foot raised grass median, consisting of 12-foot inside lanes and 14-foot outside lanes on 130-feet of right-of-way. The alignment will be symmetrical about the centerline except for some proposed realignments and bridge replacement with sidewalk on both sides. (Please see Figure 2).

This 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 cost, and to identify potential problems that may require consideration in the planning and design phases.

II. Background

The purpose of this project is to improve the safety carrying capacity as well as provide accommodations for pedestrian and bicyclist connectivity in the area including the Wilkesboro Cub Creek Park located within the project corridor.

SR 1001 (Oakwoods Road) is classified as an Urban local route in the North Carolina functional classification system and a Major Thoroughfare in the city Municipal Thoroughfare Plan.

The development along SR 1001 (Oakwoods Road) is primarily residential with some commercial property and Cub Creek Park.

There is one bridge located on this project, Bridge No. 29. TIP Project B-4676 proposes to replace bridge no. 29 over Cub Creek in Wilkes County; however, due to this feasibility request for the widening of SR 1001, with some realignment, it was put on hold.

The Town of Wilkesboro and Division 11 Engineer support this project.

TIP project B-4676 proposes to replace Bridge No. 29 over Cub Creek. We recommend this project be coordinated in such a matter as not to preclude the future widening of SR 1001 as proposed in this study.

III. Traffic and Safety

There is one existing traffic signal within the project limits, located at the intersection of SR 1001 (Oakwoods Road) and US 18/268/SR 2510 (E. Main Street).

The current year Average Daily Traffic (ADT) along SR 1001 (Oakwoods Road) between US 421 and NC 18/268 is 11,300 vehicles per day (vpd) in 2010 and is projected to be 17,400 vpd in the 2035 Design Year (DY). Truck traffic along Oakwood Road is estimated to be up to 3% of the ADT.

The existing two-lane sections on Oakwood Road currently operate at a LOS D or better. If no improvements are made, Oakwood Road will degrade to an Level of Service (LOS) F by the 2035 design year. However, if the recommended 4-lane improvements are implemented, Oakwood Road will operate at a LOS C or better in the 2035 design year.

Between July, 2007 and June, 2010, 19 accidents occurred within the project limits. There were 3 injury accidents, 16 property damage only accidents and no fatalities as a result of these incidents. The accident rate for this 1.3-mile portion of roadway is 238.35 crashes per 100 million vehicle miles of travel (acc/100mvm), which is lower than the 2005-2007 statewide rate of 369.89 crashes/100mvm for two-lane undivided rural secondary routes. However, of the 19 crashes, 6 of these were recorded under wet conditions. This resulted in a wet crash rate in the project area of 74.32 crashes per 100 million vehicle miles of travel (acc/100mvm), which is higher than the statewide wet crash rate of 56.05 acc/100mvm, but still less than the wet Critical Crash rate of 105.60 acc/100mvm.

The above average wet accident rate suggest there might be safety and operational deficiencies along this particular section; however, with the proposed improvements it is anticipated the number and severity of these types of crashes will be reduced.

IV. Description of Alternatives

It is proposed to improve Oakwoods Road (SR 1001) from US 421 Bypass to East Main Street (NC 18/268/SR 2510), a distance of approximately 1.3-miles. The project location is shown on Location Map. There are two (2) alternatives in this study.

The cost estimates below include removal and replacement of Bridge No.29 and the extension of Call Street on the eastern side of the project.

The details of the proposed Alternatives are as follows:

- ◆ **Alternative 1:** Widening of SR 1001 (Oakwoods Road) from US 421 Bypass to NC 18/268/SR 2510 (East Main Street) to a two-lane section asymmetrically placed within 130-foot of right of way for an ultimate 4 lane divided curb and gutter section. The proposed cross section is approximately 32-foot of pavement with a 14-foot wide travel lane, sidewalk and curb and gutter on the western side, while the eastern side is a shoulder section with a 12-foot travel lane with a 4-foot paved shoulder.

Turn-lanes:

- Left-turn-lane from SR 1001 traveling west onto Call Street.
- Left-turn-lane from SR 1001 traveling east onto Call Street Extension.
- Right-turn-lane from Forest Hill Drive (South of Stratford Road) onto SR 1001.
- Right-turn-lane from Edgewood Drive onto SR 1001.
- Left-turn-lane from SR 1001 onto Edgewood Drive.
- Left-turn-lane from SR1001 onto US 18/268.
- Right-turn-lane from SR1001 onto SR 2510.
- Right-turn-lane from NC 18/268 onto SR 1001.
- Extension of Call Street eastward.

Under the proposed improvements for Alternative 1 it is anticipated there will be three (3) residential and six (6) business relocations. The total cost of this alternative is estimated to be \$13,700,000.

Construction	\$8,100,000
Right-of-Way	\$4,800,000
Utilities	\$800,000
Estimated Project Cost	\$13,700,000

- ◆ **Alternative 2:** Widening of SR 1001 (Oakwood Road) from US 421 Byp. to NC 18/268/SR 2510 (East Main Street) to a four-lane divided curb and gutter section, 79-feet wide face-to-face of curbs with a 23-foot raised grass median, consisting of 12-foot inside lanes and 14-foot outside lanes on 130-feet of right-of-way, with sidewalks on both sides.

Turn-lanes:

- Left-turn-lane from SR 1001 traveling west onto Call Street.
- Right-turn-lane from SR 1001 traveling east onto Call Street extension.
- Left-turn-lane southward from SR 1001 onto Call Street extension.
- Left-turn-lane from Forest Hill Drive (South of Stratford Road) onto SR 1001.
- Right-turn-lane from SR 1001 onto Forest Hill Drive (South of Stratford Road).
- Left-turn-lane from SR 1001 onto Forest Hill Drive (South of Stratford Road).
- Left-turn-lane from Edgewood Drive onto SR 1001.
- Left-turn-lane traveling south from SR 1001 onto Edgewood Drive.
- Right-turn-lane from SR1001 onto SR 2510.
- Extension of Call Street eastward.

Under the Alternative 2 proposal, it is anticipated there will be three (3) residences and six (6) businesses relocated. The total cost of this alternative is estimated to be \$16,300,000.

Construction	\$10,700,000
Right-of-Way	\$4,800,000
Utilities	\$800,000
Estimated Project Cost	\$16,300,000

V. Community Issues

A detailed investigation of community issues was not conducted for this feasibility study. However; minimum impacts to schools, parks, recreation areas (Club Creek Park) and community facilities are anticipated with this project.

There is a significant pedestrian population that uses the Oakwoods Road corridor due to the Cub Creek Park were 2-feet added to the outside lanes to accommodate bicyclist.

Lutheran Church of the Atonement is located between Sunset Drive and Forest Hill Drive south of Edgewood Drive on SR 1001.

VI. Natural and Environmental Issues

A detailed environmental study was not conducted for this feasibility study. However, existing information available for this project area has been screened for environmental and historic concerns. Minimum environmental and historic impacts are anticipated.

There is no indication of threatened or endangered species in the area based on available GIS data maintained by the National Heritage program.

VII. Summary

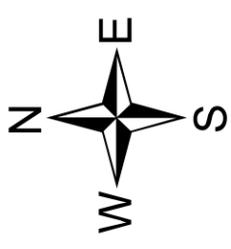
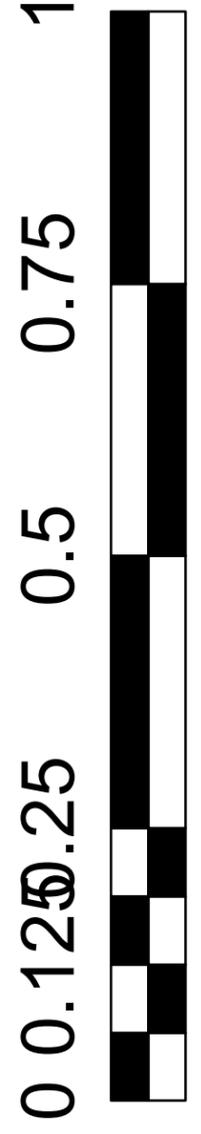
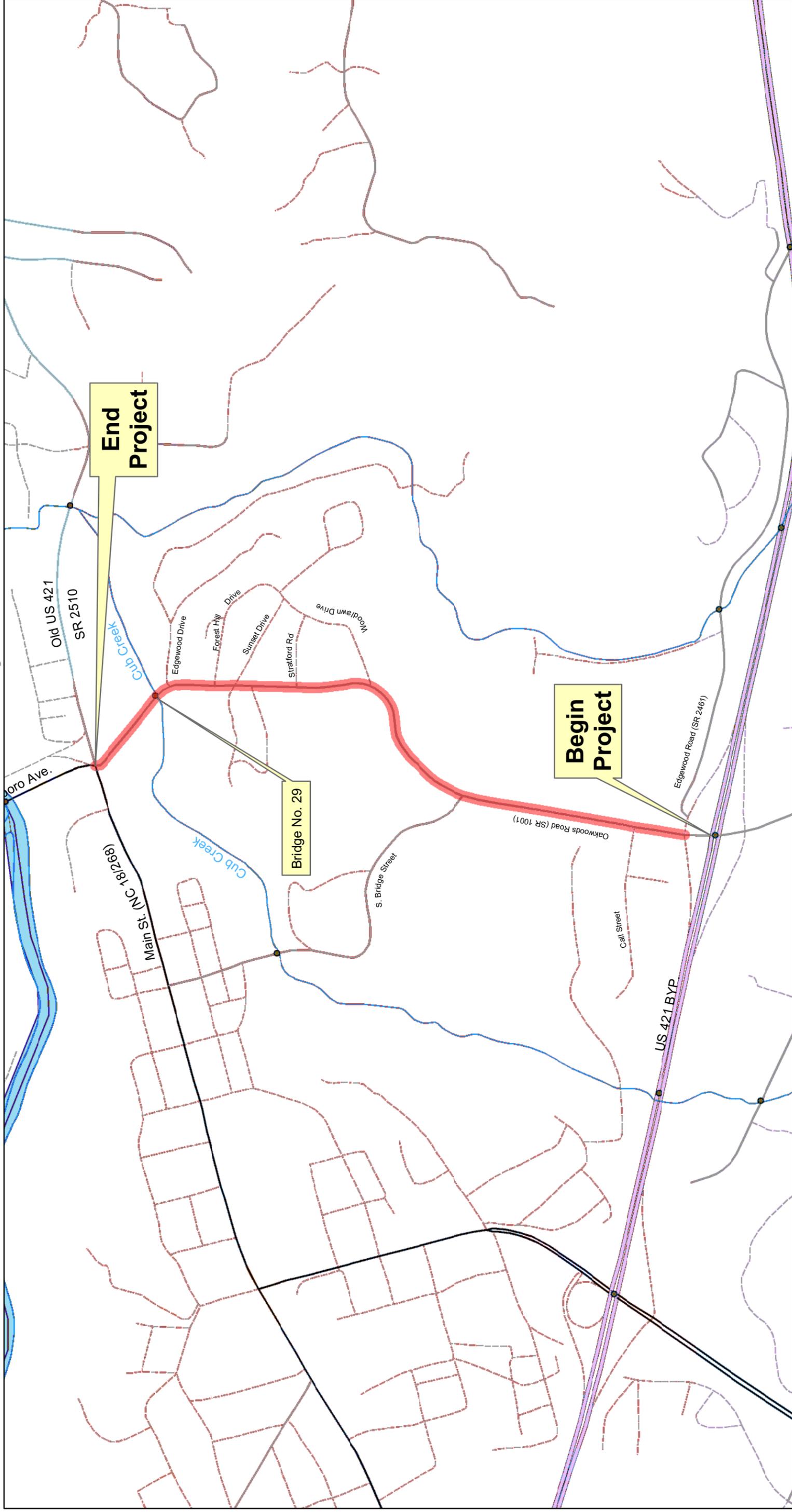
Alternative 1: It was determined the two-lane would be operating at a LOS “D” in the current year and not able to accommodate the project’s traffic volumes in the 2035 design year. Therefore, a two-lane section on a four-lane right-of-way is not considered a long term solution. The appropriate auxiliary turn lanes should be provided as well as improvements to the horizontal alignment along some sections of SR 1001 and the replacement of Bridge No. 29 (B-4676), also the extension of Call Street from the existing Call Street to Edgewood Road. Because of these factors, Alternative #1 would be considered an interim solution for the proposed SR 1001 widening.

Alternative 2: This section is recommended because it will accommodate the growing traffic demands of the areas projected traffic volume in the 2035 design year. It would also accommodate the anticipated growth of residential and commercial development as well as provide infrastructure for pedestrian and bicycles to the Cub Creek Park. This alternative proposes to upgrade Oakwood Road from US 421 Byp. to US 18/268/SR 2510 to a four-lane divided curb and gutter section, 79-foot wide face-to-face of curbs with a 23-foot raised grass median, consisting of 12-foot inside lanes and 14-foot outside lanes on 130-foot of right-of-way. This alternative also improves the horizontal alignment along some sections of SR 1001. In addition to providing a positive separation between traffic, the raised grass median will provide a refuge for pedestrians. The estimated cost of the recommended alignment is \$16,300,000.

VIII. Additional Comments

There is a church (Lutheran Church, The Atonement) located at the intersection of Oakwood Road and Forest Hill Drive, however minimum impact is anticipated.

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SR 1001 (Oakwoods Road), Wilkesboro
Wilkes County



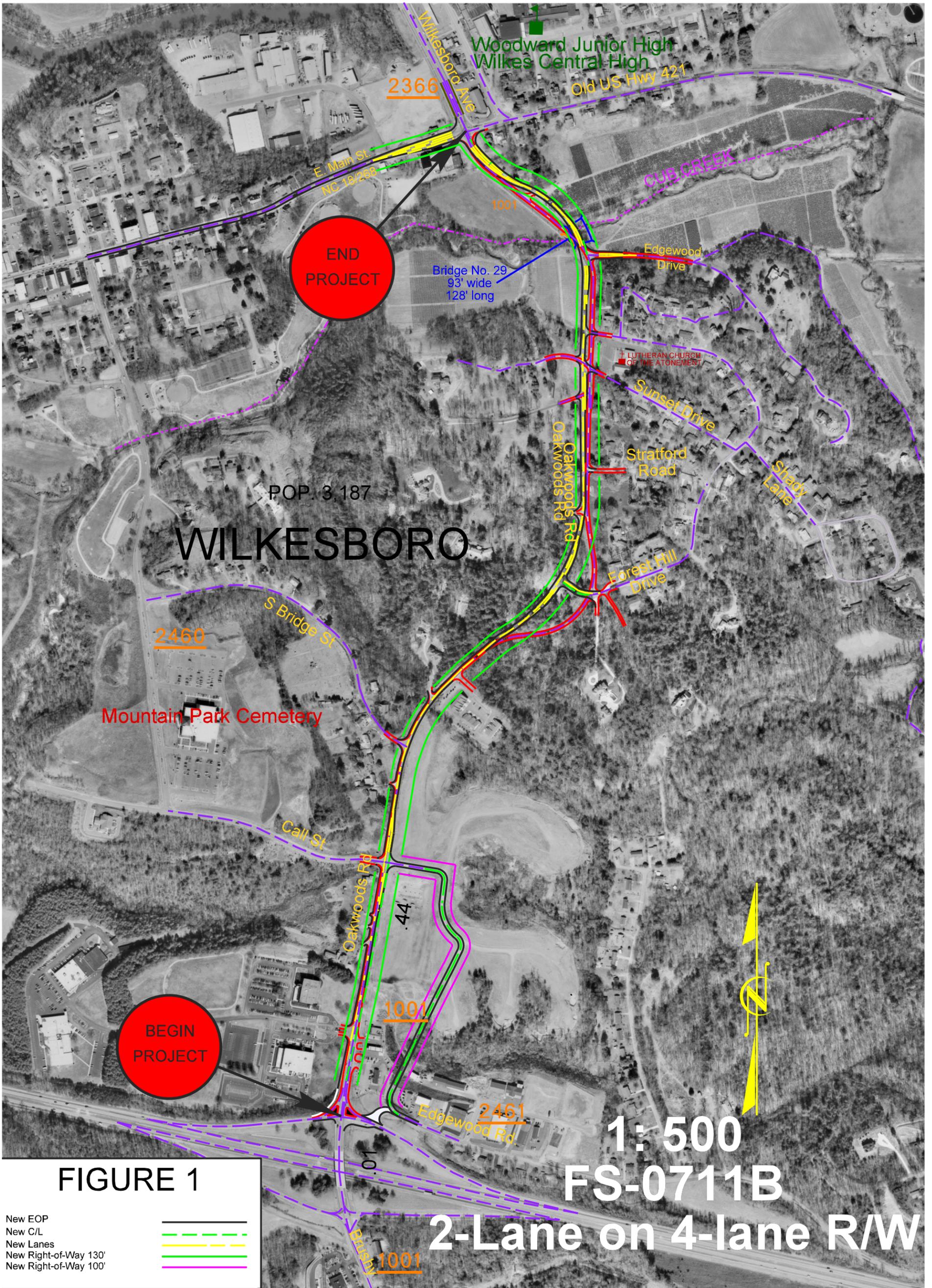
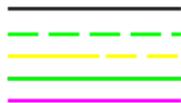


FIGURE 1

New EOP
 New C/L
 New Lanes
 New Right-of-Way 130'
 New Right-of-Way 100'



1: 500
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2-Lane on 4-lane R/W

