I-85

I-85 Widening and Interchange Improvements from North of NC 73 to US 29-601 Connector

Cabarrus and Rowan Counties

Federal Aid Project No. FANHIMF-085-2(61)55
State Project No. 36780.1.2

T.I.P. Project Nos. I-3802/I-3610/B-5365

Administrative Action
Categorical Exclusion

Submitted by the
North Carolina Department of Transportation

In compliance with the National Environmental Policy Act

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12/20/13

Date of Approval

FOR Richard Hancock, P.E., Manager
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12-30-13

Date of Approval

for John F. Sullivan III, P.E., Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS

Roadway Design Unit, Hydraulics Unit, Structure Design Unit, Division 10 – Provisions for Greenway

The proposed new I-85 bridges over Irish Buffalo Creek will be designed with adequate vertical and horizontal clearance to accommodate the future Irish Buffalo Creek greenway crossing under I-85. Coordination with the local municipality will be performed during design of those bridges to ensure they are compatible with the future greenway crossing.

Project Development and Environmental Analysis Unit – NEPA/Section 404 Merger Process

NEPA/Section 404 Merger Concurrence Points 3 (Least Environmentally Damaging Practicable Alternative) and 4 (Avoidance and Minimization) will be completed for the project.

Project Development and Environmental Analysis Unit, Division 10, Roadway Design

Blake House, Goodman Farm, Caldwell House and Barrier House

Blake House, Goodman Farm, Caldwell House, and Barrier House are National Register-eligible properties. These properties are located within the project's Area of Potential Effects. Currently, the proposed project will have No Effect on the Blake House and Goodman Farm and No Adverse Effect on Caldwell House and Barrier House. If design plans change near any of the properties, impacts will be re-evaluated and appropriate coordination with the Department of Cultural Resources will be undertaken.

North Cabarrus Park

North Cabarrus Park, owned and managed by Cabarrus County, is located on the west side of I-85 near Irish Buffalo Creek. No additional right-of-way or easements are proposed along I-85 on park property; thus, the project will not impact North Cabarrus Park. If design plans change and result in impacts to North Cabarrus Park, a Section 4(f) evaluation will be prepared.

Hydraulics Unit – Floodplain Mapping Program Coordination

The NCDOT Hydraulics Unit will coordinate with the North Carolina Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood

Insurance Program, to determine the status of the project with regard to the applicability of NCDOT's Memorandum of Agreement with the FMP or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Divisions 9 and 10 – As-Built Construction Plans

The Divisions shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Division 10 and Roadside Environmental Unit- Landscaping

NCDOT will provide vegetative screening along the Dale Earnhardt Boulevard southbound off-ramp, which utilizes Jaycee Road.

Congestion Management Unit – Interchange Modification Report

Due to the proposed improvements at the I-85 interchanges in the study area, an interchange modification report is being prepared and will be submitted to the Federal Highway Administration for approval following completion of the final environmental document.

Design-Build Unit

During Final Design, NCDOT will investigate the feasibility of a roundabout at Vinehaven Drive and Copperfield Boulevard.

NCDOT will provide a leftover from northbound US 29-601 (Cannon Boulevard) to S. Ridge Avenue, and will provide access from Ridge Avenue to the Rider Transit Center. The proposed roundabout on S. Main Street will be removed from the design.

NCDOT will connect S. Ridge Avenue to US 29-601 with right-in/right-out access.

NCDOT will provide full access at the intersection of Old Earnhardt Road and Dale Earnhardt Boulevard.

NCDOT will coordinate with representatives of F&M Bank to minimize impacts.

NCDOT will modify the proposed service road at the Dale Earnhardt Boulevard interchange to provide improved access to F&M Bank, the Chamber of Commerce Building, and Lowe's Home Improvement store.

NCDOT will provide a leftover into the Pilot Truck Stop on Lane Street.

NCDOT will provide right-in/right-out access to Motel 6, Waffle House, and Brantley property on Lane Street. The proposed service road will be removed.

NCDOT will coordinate, on a case-by-case basis, the location of bus stops, sidewalks, and pedestrian controls with the City of Concord, City of Kannapolis, and Rider Transit.

NCDOT will coordinate with local officials regarding emergency access in the NC 152/US 29 interchange area.

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SUMMARY

Description of the Proposed Action

The North Carolina Department of Transportation (NCDOT) and Federal Highway Administration propose the reconstruction and widening of I-85 to an eight-lane freeway from NC 73 in Cabarrus County to US 29-601 Connector in Rowan County. The project is approximately 13.5 miles in length and is shown in Figure S-1.

Summary of Purpose and Need

The primary purpose of the proposed project is to improve level of service (LOS) on I-85 and its interchanges in the project area. The project is part of a multi-faceted solution to address congestion and capacity problems along the I-85 corridor in and near the Charlotte metropolitan area. Traffic analysis shows that traffic demand along I-85 for most of the study area either approaches or exceeds the roadway capacity limits. If no improvements are made the entire length of I-85 in the study area is expected to approach or exceed roadway capacity limits by 2035. In addition, the proposed project addresses a "bottleneck" created by the construction of TIP Project No. I-3803 to the south (currently under construction) and the eight-lane section to the north. The projects increase the number of travel lanes on I-85 to eight lanes in Mecklenburg County and Rowan County, respectively.

Reconstructing the interchange at US 29-601 Connector and NC 152, which connects the two US highways to I-85, will allow it to meet current design standards and replace a structurally deficient bridge. Modifications also would improve overall traffic operations at the interchange. The improvements would increase the distance between the interchange and local driveways and intersections, thereby reducing the number of conflict points and providing additional capacity for drivers in the interchange vicinity.

Alternatives Considered

In addition to the NCDOT-preferred improvements (Improve Existing Facility), the following alternatives to the proposed widening of I-85 were considered:

- No-Build Alternative
- Alternate Modes of Transportation
- Transportation Management Alternative
- New Location Alternatives

The No-Build Alternative would not reduce congestion along I-85 and would not provide lane continuity with the eight-lane cross sections south of US 29-601 in Concord and north of US 29-601 Connector in China Grove.

The Alternate Modes of Transportation Alternative could help reduce congestion along I-85 by providing options to automobile travel, but they alone will not provide a level of benefit comparable to the proposed interstate widening and interchange improvements. In addition, they will not provide the lane continuity between the existing eight-lane segments north and

south of the proposed projects. This alternative alone will not meet the purpose and need of the project and therefore it is not recommended for detailed study.

The Transportation Management Alternative could help reduce congestion on I-85 by reducing the number of single-occupant vehicles on the road and by making spot improvements along certain roads and at key intersections. However, these strategies alone will not provide the operational improvements needed to adequately address the project's purpose and need. In addition, they will not provide the lane continuity between the eight-lane sections north and south of the proposed project. The Transportation Management Alternative in lieu of the proposed I-85 improvements is therefore not recommended for further study.

The New Location Alternative would have substantial environmental impacts and would not be cost effective. In addition, it may not provide lane continuity with the eight- lane sections north and south of the proposed project.

For these reasons, the alternatives to the proposed action are not recommended.

Summary of Environmental Effects

The project is expected to result in the displacement of 36 homes, 20 businesses, and one church. These displacements occur across the five interchanges to be modified by this project. It will impact approximately 9,230 linear feet of streams and approximately 1.7 acres of wetlands. Two hundred sixty-six residences, 16 businesses and 26 churches/schools/ institutions will experience traffic noise impacts. No historic properties will be adversely affected by the proposed project. No archaeological sites were identified within the study area. Seventeen hazardous material sites were identified in the study area. The impact severity of potentially contaminated sites on the preferred alternative is low and little to no impacts to cost or schedule are anticipated.

Two federally protected species are listed for Cabarrus and Rowan Counties: Schweinitz's sunflower and Carolina heelsplitter. The project is expected to have No Effect on either species.

A summary of project impacts is presented in Table S-1.

Permits Required

It is expected that the proposed action will require an Individual Permit (IP) from the US Army Corps of Engineers. In addition, a Section 401 Water Quality Certification will be required from the North Carolina Division of Water Resources.

Coordination

Federal, state, and local government agencies were consulted at the beginning of the project development process. Written comments received from those agencies are included in Appendix B. Local officials meetings were held on January 8, 2008, November 27, 2012, February 26, 2013, and November 4, 2013.

A Citizens Informational Workshop was held was held on January 29, 2008. Design Public Meetings were held on November 27 and November 29, 2012. Additional Public Meetings were held on February 26, 2013 and November 4, 2013.

Concurrence was reached through the NEPA/404 Merger Process on Concurrence Point 1 (Purpose and Need and Study Area Defined) and Concurrence Point 2 (Design Options for Detailed Study) on December 16, 2010. A Concurrent Point 2 Update meeting was held and concurrence reached on January 16, 2013. A combined Concurrence Point 2A/3/4A meeting was held on March 13, 2013. Concurrence was reached on CP 2A on December 20, 2013. Merger coordination will continue throughout project studies for Concurrence Point 3 (Least Environmentally Damaging Practicable Alternative), Concurrence Point 4A (Avoidance and Minimization), Concurrence Point 4B (30 percent Hydraulic Review), and Concurrence Point 4C (Permit Drawing Review). This document will be sent to federal, state, and local agencies for review and comment, including agencies represented on the NEPA/404 Merger team.

Table S-1. Summary of Direct Project Impacts

Environmental Feature	Anticipated Impact
Residential Relocations	36
Commercial Relocations	20
Other Relocations	1 (church)
Historic Properties	Goodman Farm – No Effect Blake House – No Effect Barrier House – No Adverse Effect Caldwell House – No Adverse Effect
Archaeological Resources	0
Cemeteries (acres)	0.2 (Carolina Memorial Gardens)
Section 4(f) Resources	1 – No Impact
Streams (linear feet)	9,230
Wetlands (acres)	1.7
100-year floodplain (acres)	21.09
Water Supply Watershed Critical Area, WS-IV (acres)	132.19
Impacted Noise Receptors	308 (61 greater than under Existing Condition)
Federally-Protected Species	Carolina heelsplitter: No Effect Schweinitz's sunflower: No Effect
Hazardous Material Sites	17 – low impact
Railroad Crossings	2
Major Utility Crossings	3 – I-85 6 – Intersecting Roads

Note: Stream and wetland impacts include 25-foot clearing limits outside slope stake lines.

Contact Information

Additional information concerning this proposal and document can be obtained by contacting either of the following individuals:

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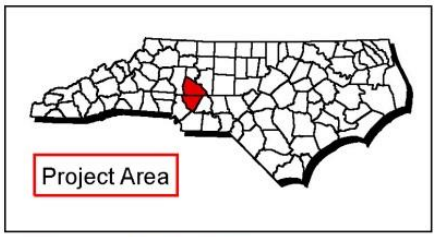


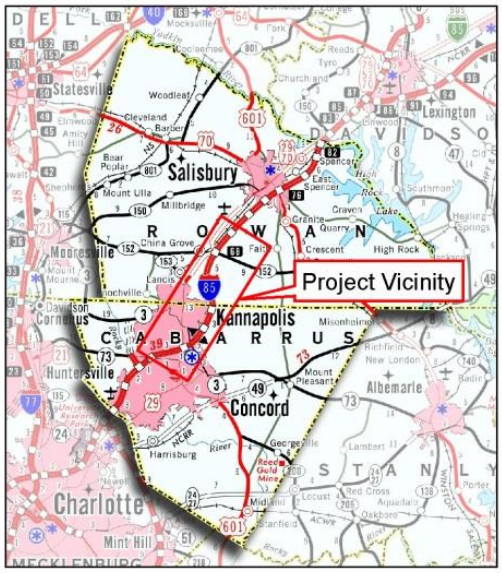
Figure S-1

Project Vicinity

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)

Rowan and Cabarrus Counties, North Carolina

North Carolina
Department of Transportation



1.0 DESCRIPTION OF PROPOSED ACTION

1.1 General Description

The proposed project is included in the North Carolina Department of Transportation (NCDOT) *2012-2018 State Transportation Improvement Program* (STIP) and the Draft 2013-2023 STIP as I-3802, I-3610, and B-5365. NCDOT has combined TIP Project Numbers I-3802, I-3610, and B-5365 into a single work effort because of the proximity and interrelationship between the projects.

For I-3802, NCDOT proposes to add four additional travel lanes (two in each direction) to I-85 from north of NC 73 in Cabarrus County to US 29-601 Connector in Rowan County. The project is approximately 13.5 miles long. The project involves widening the existing four-lane freeway to eight lanes, matching TIP project I-3803 at NC 73 to the south, and the recently widened freeway to the north. The majority of the I-85 widening will occur within the existing right-of-way. Interchange improvements, including reconstruction of existing structures to meet current design standards for vertical clearance, are proposed at US 29-601, SR 2126 (Dale Earnhardt Boulevard) and SR 2180 (Lane Street). In addition, a new bridge carrying Winecoff School Road over the railroad tracks, S. Ridge Avenue, and S. Main Street will be constructed. The existing at-grade crossing will be closed and the S. Ridge Avenue bridge over I-85 will be removed. Winecoff School Road is located near the US 29-601 interchange. The project is divided into two sections for construction phasing – Section A extends from NC 73 to Lane Street and Section B extends from Lane Street to US 29-601 Connector. Additional structures may need to be improved to meet current design standards.

For TIP Project Number I-3610, NCDOT proposes to reconstruct the existing cloverleaf interchange at NC 152 and US 29-601, reconstruct the interchange at NC 152 and I-85, and improve existing NC 152, which provides access to I-85 between the two interchanges.

For TIP Project Number B-5365, NCDOT proposes to replace Bridge No. 21 and Bridge No. 34 over the Norfolk Southern Railroad and US 29 in China Grove.

1.2 Project Schedule

The following schedule is based on the current STIP.

Right-of-way Acquisition	I-3802: Section A – Fiscal Year (FY) 2014
	Section B – FY 2018
	I-3610: included in I-3802 B
	B-5365: FY 2017
Construction	I-3802: Section A – FY 2014
	Section B – FY 2019
	I-3610: included in I-3802B
	B-5365: FY 2019

1.3 Cost Estimates

Construction (I-3802A)	$211,000,000
Construction (I-3802B)*	$124,000,000
Right-of-way	$ 37,780,000
Utilities	$ 3,300,000
TOTAL	$376,080,000

**NOTE: The construction cost estimate for I-3802B includes costs for projects I-3610 and B-5365.*

2.0 PURPOSE AND NEED FOR PROJECT

2.1 Purpose of Project

The primary purpose of the proposed project is to improve level of service (LOS) on I-85 and its interchanges in the project area. The project is part of a multi-faceted solution to address congestion and capacity problems along the I-85 corridor in and near the Charlotte metropolitan area. Another desirable outcome is to eliminate vertical clearance deficiencies for structures over I-85 within the project study area in order to meet current highway design standards.

An additional purpose is to reduce operational deficiencies at the interchange of US 29-601 Connector and NC 152. This interchange connects the two US Highways to I-85. The improvements would allow the interchange bridge to meet current standards for vertical clearance. In addition, the project will increase the distance between the interchange and local driveways and intersections, thereby reducing the number of conflict points for drivers in the interchange vicinity.

2.2 Need for Project

The primary need for the proposed project is a projected increase in traffic along I-85 to volumes that will exceed the roadway capacity by 2035, the project's design year. 2008 traffic volumes range from 64,400 vehicles per day (vpd) to 91,000 vpd. 2035 No-Build traffic volume projections range from 101,400 vpd to 140,000 vpd. As a result, nearly the entire length of I-85 in the project area would operate at LOS F conditions during one or both peak hours of the day by 2035. In fact, many segments of I-85 would reach these conditions prior to 2035, some as early as 2015.

In addition, the interchange at NC 152 and I-85 allows for only two movements: I-85 northbound to NC 152 and NC 152 to I-85 southbound. The other two movements to and from I-85 north of NC 152 are facilitated through the US 29-601 Connector, causing confusion for some motorists. The 2035 forecasted traffic indicates approximately 6,000 additional vehicles per day would use the I-85/NC 152 interchange.

The interchange bridge at US 29-601 Connector and NC 152 does not meet current design standards for vertical clearance. In addition, three of the seven ramps at this interchange intersect with local roads and/or driveways, creating a number of conflict points for drivers.

2.3 Project Setting

The project is located in Cabarrus and Rowan Counties in the southern Piedmont region of North Carolina. It passes through or near the Cities of Concord and Kannapolis, the Town of China Grove, and the Town of Landis (Figure 1). Land use surrounding the proposed project is a mixture of agricultural, business and residential uses. Land immediately adjacent to I-85 is predominantly agricultural or undeveloped. Small retail, gasoline, and other service-type businesses are common at interchanges. In some portions of the study area, there is dense development, including "big box" retail, particularly south of Dale Earnhardt Boulevard in Cabarrus County. Carolinas Medical Center NorthEast (Northeast Medical Center), Cabarrus County's largest employer is located near the US 29-601 interchange. It is outside the project study area, but its proximity is expected to generate a large number of

trips within the study area. North of Dale Earnhardt Boulevard, land adjacent to I-85 is predominantly undeveloped.

2.4 System Linkage

2.4.1 Existing Road Network

Principal arterials that serve the project area and vicinity include I-85, NC 73 at the southern end of the project, and US 29-601 at the northern end of the project. These roads are regionally significant, heavily traveled commuter routes.

I-85 traverses the state from north to south and connects several urban areas in the region including Charlotte, Concord, and Kannapolis. Within the study area, I-85 is a controlled access, four-lane freeway with 12-foot travel lanes, a 68-foot grassed median, four-foot inside paved shoulders, 10-foot outside paved shoulders, and a speed limit of 65 miles per hour (mph). The existing right-of-way is 292 feet. Just north of the proposed project, I-85 is eight lanes with a grassed median and paved shoulders. It transitions briefly to six lanes near NC 152 and then becomes a four-lane facility.

US 29-601 serves as the primary connector between Concord, Landis, and China Grove. For most of its length in the project area, US 29-601 runs in a north-south direction on the western side of and parallel to I-85.

Other important local roads include NC 152, which is a major east-west collector, SR 2126 (Dale Earnhardt Boulevard/Copperfield Boulevard), SR 2180 (Lane Street), and SR 1221 (Old Beatty Ford Road). All of these, except SR 1221 (Old Beatty Ford Road) have interchanges with I-85.

Table 1 lists and describes roads with interchanges in the project area.

Table 1. Intersecting Roads with Interchanges in the Project Area

Intersecting Road	Exit	Description	Interchange Type
US 29-601	58	Four lanes with grass shoulders and a speed limit of 45 mph.	Full Cloverleaf
SR 2126 (Dale Earnhardt Boulevard/Copperfield Boulevard)	60	Four-lane curb and gutter with a sidewalk on the south side west of I-85. The speed limit is 45 mph.	Half Diamond/Partial Cloverleaf
SR 2180 (Lane Street)	63	East of I-85, Lane Street is two lanes with grass shoulders and a speed limit of 35 mph. West of I-85, Lane Street is four lanes with curb and gutter.	Full Diamond
NC 152	68	Two lanes with a speed limit of 55 mph.	Partial Diamond with access/egress for I-85N to NC 152 and NC 152 to I-85S
US 29-601 Connector	68	Four lanes with turn lanes and a concrete median. The speed limit is 45 mph.	Partial Diamond with access/egress provided to and from I-85 to the north

2.4.2 Modal Interrelationships

Railroads

I-85 crosses a railroad with a bridge just west of the US 29-601 interchange. This rail corridor is owned by North Carolina Railroad. Norfolk Southern Railway leases and operates the two rail lines in this area. Norfolk Southern provides the major freight service within the Cabarrus-Rowan metropolitan area. Up to 30 freight trains per day travel through the project area at a maximum speed of 50 mph.

Two Amtrak trains, the Piedmont and the Carolinian, serve the project area along the same section of Norfolk Southern track. The Piedmont is based in Raleigh and operates between Raleigh and Charlotte. In addition to these two cities, it provides daily service to Cary, Durham, Burlington, Greensboro, High Point, Salisbury, and Kannapolis. The Carolinian travels the same route from Charlotte with extended daily service to New York City. Approximately six passenger trains per day travel through the project area at a maximum speed of 79 mph.

The State of North Carolina and the Commonwealth of Virginia are collaborating to complete an Environmental Impact Statement for the Southeast High Speed Rail Corridor. The corridor is designated from Washington, DC to Richmond, Virginia to Raleigh, North Carolina and on to Charlotte, North Carolina. A recommendation report for the corridor between Washington, DC and Raleigh, NC was completed in 2012. The maximum speed of the overall system is anticipated to be 110 mph, but the final design criteria are not yet determined.

Airports

The nearest commercial airport is Charlotte/Douglas International Airport, which is approximately 30 miles southwest of the project area. This airport serves domestic and international travelers, and in 2011 served more than 39 million passengers.

There are two other regional and local airports near the project area: Concord Regional Airport (CRA) and Rowan County Airport. The City of Concord owns CRA, which is North Carolina's fourth busiest airport. One hundred eighty-four privately owned aircraft, several corporations, and NASCAR Racing Teams are based at CRA. The airport is approximately seven miles south of the NC 73/I-85 interchange in Cabarrus County. The Rowan County Airport is a general aviation airport operated by Rowan County. More than 85 aircraft are housed there. It is located along US 29, approximately six miles north of the project area on the western side of I-85.

Transit

A number of transit providers serve the project area. The cities of Concord and Kannapolis have partnered to provide the RIDER Transit System, which is a fixed-route system operating ten buses on seven routes in or near the project area. According to the transit manager, the system is on pace to transport 460,000 passengers in 2012. A new, state of the art transit center opened in 2010 on S. Ridge Avenue, near US 29 and I-85. All seven routes arrive and depart from the transit center. Operational features of the Rider Transit Center include 10 covered bus bays, customer seating, on site customer service agent, employee break room, conference room, expansion space for Rider staff and restrooms.

The Rowan Transit System (RTS) provides public transportation services primarily to seniors 60 years of age and older, individuals with disabilities, and the rural general public. There are 28 vehicles in the RTS fleet providing approximately 75,000 trips per year.

The Cabarrus County Transportation System (CCTS) provides similar services as RTS. Public transportation is provided to numerous human service agencies and Cabarrus County-based non-profit organizations. Most trips provided remain within the county, although some medical trips are made out of the county. CCTS also provides paratransit services for the Concord/Kannapolis Area RIDER bus system. A fleet of more than 23 vans provides more than 100,000 trips annually.

The cities of Concord and Charlotte provide funding for the operation of the Commuter Express, which operates during peak hours between Concord and Charlotte. There are four trips provided in the morning and four trips in the afternoon, with the route operating primarily along US 29.

Commuter rail service is being studied in the project vicinity. Commuter rail for the area would likely include the Northeast Transit System and would connect to the Charlotte Transit System. The rail line would run from northeast to southwest through the Cabarrus-Rowan Urban Area, beginning in downtown Kannapolis at the Cannon Village Station. It would continue parallel to the Norfolk Southern railroad tracks to Concord, crossing I-85 and traveling along US 29.

2.5 Roadway Capacity

This section summarizes the results of the traffic operations analysis. The full report can be reviewed at the NCDOT Project Development and Environmental Analysis Unit, 1000 Birch Ridge Drive, Raleigh.

A traffic operations analysis was prepared to evaluate Existing and 2035 No-Build conditions along I-85 between NC 73 and Webb Road. The 2035 No-Build condition assumes that I-85 would not be widened and there would be no roadway improvements to the existing transportation system beyond those projects already programmed and incorporated in the 2035 roadway network. The following seven interchanges and rest area were included in the traffic analysis:

- I-85 at US 29-601
- I-85 at Rest Area north of US 29-601 interchange
- I-85 at Dale Earnhardt Boulevard
- I-85 at Lane Street
- I-85 at NC 152
- I-85 at US 29-601 Connector
- US 29-601 at NC 152

Traffic operations are described in terms of levels of service ranging from A to F, where level of service (LOS) A represents little to no delay and free-flow conditions and LOS F represents unacceptably long delays. LOS F indicates that the volume of traffic exceeds the capacity of the roadway.

2.5.1 Mainline Analysis

2008 Mainline Analysis

A mainline capacity analysis was performed for 38 freeway segments. These are the portions of I-85 between the interchanges. The analysis shows that 63 percent of the segments function at LOS D (acceptable delays) or better during both AM and PM peak hours. The remaining segments approach or exceed the roadway capacity (26 percent at LOS E and 11 percent at LOS F) during at least one peak hour of the day.

2035 No-Build Mainline Analysis

Under the 2035 No-Build condition, the mainline capacity analysis indicates that only 21 percent of segments in the study area operate at LOS D or better during both AM and PM peak hours. The remaining 79 percent of the segments will function at Level of Service F during at least one peak hour of the day.

Table 2 summarizes the mainline capacity analysis.

Table 2. Freeway Mainline Capacity Analysis

Performance Measurement	2008 Existing Conditions	2035 No-Build Condition
	38 Freeway Segments	
LOS D or Better	24 (63%)	8 (21%)
LOS E	10 (26%)	-
LOS F	4 (11%)	30 (79%)

2.5.2 Merge/Diverge Analysis

2008 Merge/Diverge Analysis

A merge/diverge analysis was performed for 35 ramp junctions associated with the interchanges and rest area along I-85, and with the US 29-601/NC 152 interchange. The analysis indicates that 71 percent of the merge/diverge junctions function at LOS D or better during both AM and PM peak hours; 9 percent and 20 percent of the merge/diverge junctions function at LOS E and LOS F, respectively, during at least one peak hour of the day.

2035 No-Build Merge/Diverge Analysis

For the 2035 No-Build condition, the study shows that traffic demand at 28 of the 35 ramp junctions (80 percent) would exceed the roadway capacity limits during both peak hours. The remaining seven segments (20 percent) will function at LOS D or better throughout the day.

Table 3 summarizes the 2008 and 2035 merge/diverge capacity analyses.

Table 3. Freeway Merge/Diverge Capacity Analysis

Performance Measurement	2008 Existing Conditions	2035 No-Build Condition
	35 Merge/Diverge Segments	
LOS D or Better	25 (71%)	7 (20%)
LOS E	3 (9%)	--
LOS F	7 (20%)	28 (80%)

2.5.3 Weaving Analysis

Weaving segments are formed when an on-ramp (merge junction) is closely followed by an off-ramp (diverge junction) and they are joined by an auxiliary lane less than 2,500 feet long. Seven freeway weaving segments were analyzed within the study area.

2008 Weaving Capacity Analysis

The existing conditions analysis shows that traffic in all seven weaving segments flows without any delay throughout the day.

2035 No-Build Weaving Section Capacity Analysis

For the 2035 No-Build condition, the analysis shows that traffic in four of the seven weaving segments (57 percent) operate at unacceptable conditions, with extremely long delays (LOS F) during at least one peak hour.

2.5.4 Traffic Operations Summary

The existing conditions capacity analysis indicates that traffic demand along I-85 for most of the study area either approaches or exceeds the roadway capacity limits. Between Dale Earnhardt Boulevard and the northern end of the study area, traffic flows at Level of Service D or better throughout the day, an acceptable rate of traffic flow.

Under the 2035 No-Build Condition, the freeway mainline capacity analysis indicates that traffic demand along the entire length of I-85 in the study area will either approach or exceed the roadway capacity limits during both peak hours of the day. These capacity deficiencies indicate a need for roadway improvements in the study area to serve the anticipated future development and related traffic demand in the study area.

2.6 Crash Analysis

A crash analysis was performed for I-85 from NC 73 to US 29-601 connector for the three year period ending May 31, 2010. A total of 1,085 crashes were reported along this section of I-85. The majority of these accidents (nearly 41percent) were rear end collisions. These types of collisions are often indicative of traffic congestion. Collisions with fixed objects, at nearly 30 percent, were the second most frequently occurring type of accident reported during this period. Table 4 shows the number and type of crashes for this section of roadway.

Table 5 compares the crash rates for the studied portion of I-85 to similar facilities statewide. NCDOT provides calculated rates for facility types, based on data collected statewide. The critical crash rate is a statistically derived number used as a screening measure to identify

locations where crashes occur more than should be expected for a given facility type. The overall accident rate for I-85 in the study area is slightly less than the statewide average for a comparable roadway. The accident rates for fatal, night, and wet crashes are higher than the statewide accident rate. However, none of the accident rates exceed the critical crash rate.

Table 4. Crash Summary

Crash Type	Number of Crashes	Percent of Total
Angle	9	0.83
Animal	25	2.3
Fixed Object	322	29.68
Head On	1	0.09
Jackknife	5	0.46
Left Turn, Same Roadway	3	0.28
Movable Object	50	4.61
Other Collision with Vehicle	12	1.11
Other Non-Collision	15	1.38
Overturn/Rollover	20	1.84
Parked Motor Vehicle	9	0.83
Pedestrian	1	0.09
Ran Off Road	20	1.84
Rear-End, Slow or Stop	443	40.83
Right Turn, Same Roadway	2	0.18
Sideswipe, Opposite Direction	2	0.18
Sideswipe, Same Direction	145	13.36
Unknown	1	0.09
Total	1,085	1

Note: Due to rounding, the total does not add up exactly to 100 percent.

Table 5. Crash Rate Comparison

	Crashes	Crash Rate[1]	Statewide Rate[2]	Critical Rate[3]	Does Accident Rate Exceed Critical Rate?
Total	1085	99.17	99.27	104.27	No
Fatal	5	0.46	0.37	0.72	No
Non-Fatal	273	24.95	29.07	31.8	No
Night	277	25.32	24.64	27.16	No
Wet	281	25.68	24.57	27.08	No

[1]Crashes per 100 million vehicle miles
[2]2007-2009 statewide crash rate for urban interstate routes
[3]Based on the statewide crash rate, 99.5 percent level of confidence

2.7 Transportation Plans

2.7.1 State Transportation Improvement Program

The *NCDOT 2012-2018 State Transportation Improvement Program* (TIP) and the *NCDOT Draft STIP 2013-2023* list the proposed project as I-3802 and I-3610. TIP Project B-5365 is listed in the *NCDOT Draft STIP 2013-2023*. Selected road improvement projects in the vicinity of the proposed project are shown in Table 6 and illustrated on Figure 2.

Two interstate projects that connect to I-3802 are either under construction or were recently completed. Project I-3803, south of the proposed project, is under construction. When complete, it will add four additional lanes to I-85 between US 29-NC 49 Connector in Mecklenburg County and NC 73 in Cabarrus County. Project I-2511, north of the proposed project, is complete. It added lanes and rehabilitated bridges along the I-85 corridor from US 29-601 Connector to north of SR 2120 in Rowan County.

2.7.2 NCDOT Strategic Highway Corridors

I-85 has been identified as a Strategic Highway Corridor (SHC) in the SHC Vision Plan, which was adopted by NCDOT in 2004. The subject project is located in SHC Corridor 16, I-85 from Spartanburg, South Carolina to Petersburg, Virginia. This corridor is designated as a freeway facility in the SHC Vision Plan. The purpose of the Strategic Highway Corridor initiative is to protect and maximize the mobility and connectivity on a core set of highway corridors throughout North Carolina. The vision seeks to promote environmental stewardship through the use of existing facilities to the extent possible and to foster economic prosperity through the quick and efficient movement of people and goods.

2.7.3 Other Transportation Plans

The proposed project is included in the Cabarrus-Rowan Metropolitan Planning Organization (CRMPO) 2035 Long Range Transportation Plan. The widening of I-85 is the top priority of CRMPO. Cabarrus County, Rowan County, Concord, Kannapolis, China Grove, and Landis are members of CRMPO and support the transportation plan.

2.8 Summary of Purpose and Need

The purpose of this project is to improve level of service on I-85 to accommodate the growth in traffic forecasted over the next 20 to 25 years. By matching the lane configurations of projects, the recently completed widening to the south and I-3803 to the north, the proposed project will provide a continuous eight-lane freeway from Mecklenburg County to Rowan County. Many of the existing bridges carrying roadways over I-85 were constructed in the 1960s and have substandard vertical clearances. These will require replacement or reconstruction to meet current standards. Similarly, some existing interchanges have ramps or loops that do not comply with current standards and require upgrading. Finally, some interchange configurations will not be able to accommodate the traffic forecasted at an adequate level of service and must be reconstructed.

Table 6. TIP Projects in the Vicinity of I-3802

TIP Project No.*	Description	Schedule
B-5365	US 29, NC 152, Rowan County. Norfolk Southern Railroad and US 29. Replace Bridge Nos. 21 and 34.	Right-of-way – 2017 Construction – 2019
B-5136	Southern Railroad. Cabarrus County. Replace Bridge Nos. 66 and 69.	Right-of-way – 2013 Construction – 2015
I-3803	I-85, Mecklenburg-Cabarrus Counties. US 29-NC 49 Connector in Mecklenburg County to NC 73 in Cabarrus County. Add additional lanes.	SR 2894 to NC 73-under construction; south of US 29-NC 49 connector to SR 2894 – complete
W-5146	SR 1221 (Old Beatty Ford Road), Rowan County. At SR 1006, convert intersection from four-legged crossroad to two T-intersections and improve sight distance.	Under construction (not shown on map because it is beyond the viewing extent)
W-5313	SR 1221 (Old Beatty Ford Road), Rowan County. Widen and install rumble strips from SR 2335 to SR 1337.	Right-of-way – 2014 Construction – 2015
U-3415	SR 1394 (Poplar Tent Road). Woodhaven Place/Gable Oaks Lane to US 29/601 Bypass in Concord. Widen to multi-lanes. Coordinated with I-3803.	Right-of-way A: 2017 B: 2020 Construction A: 2023 B: 2030
R-2246	New route, Cabarrus County. George Liles Parkway, NC 49 to south of I-85. Widen to four lanes divided, some on new location.	Right-of-way A: Unfunded B: 2011 Construction A: 2030 B: 2013
B-4809	Replace Bridge No. 221 on Moose Road (SR 1308) over Lake Fisher, Rowan County.	Right-of-way – 2011 Construction – 2013

*Included in the NCDOT Draft 2013-2023 STIP, "Policy to Projects"

3.0 ALTERNATIVES

3.1 No-Build Alternative

The No-Build Alternative assumes that no transportation improvements are made. This alternative will not meet the purpose of the project, as explained in Chapter 2.0. In fact, it could result in adverse social and economic impacts, given the increased congestion along I-85 and increased delay at local intersections. In addition, lane continuity would not be provided with the eight-lane cross sections on I-85 south of US 29-601 in Concord and north of US 29-601 Connector in China Grove. Therefore, the No-Build Alternative is not recommended.

3.2 Alternate Modes of Transportation

As discussed in Section 2.4.2, several agencies provide transit service in the project area, including the Charlotte Area Transit System (CATS), the Cities of Concord and Kannapolis, and Rowan County. In addition, Amtrak operates rail passenger service in the project area, with daily service offered by the Piedmont and Carolinian routes. Studies are underway for commuter rail service, including the Southeast High Speed Rail Corridor and the CATS Northeast Corridor Light Rail Transit Project. While these alternate modes of transportation could help reduce congestion along I-85, they alone will not meet the purposes identified in Section 2.0. They would not provide the level of benefit of the proposed I-85 improvements nor the lane continuity between the existing eight-lane segments north and south of the proposed project. Therefore, the Alternate Modes of Transportation Alternative in lieu of the proposed I-85 improvements is not recommended.

3.3 Transportation Management Alternative

Transportation Management Alternative improvements include Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies. TDM improvements focus on reducing the peak travel demand and involve programs to encourage travelers to use alternatives to driving alone, and in some cases, to encourage motorists to not travel at all. A major purpose of TDM is to reduce the number of single-occupant vehicles on the road during peak travel periods when the roads are most congested. These programs can include car/van pools, telecommuting, flexible work hours and park and ride lots served by transit.

TSM improvements focus on operational and physical improvements to roadways and intersections. A major purpose of TSM is to achieve the maximum efficiency, safety, productivity and utility of the existing transportation system. TDM programs do not typically require right-of-way or construction costs. Some TSM projects will require right-of-way acquisition and will incur construction costs. These projects will have the potential to disrupt existing roadways during construction. Some actions may have impacts on the natural, human and physical environment. Transportation Management Alternative strategies are an important component of efficient transportation; however, these strategies alone will not adequately address the needs of the proposed project. In addition, lane continuity would not be provided with the eight-lane cross sections, on I-85 south of US 29-

601 in Concord and north of US 29-601 Connector in China Grove. Therefore, the Transportation Management Alternative is not recommended.

3.4 New Location Alternative

The New Location Alternative would involve constructing a new freeway in another location. Given the amount of development in and near the I-85 corridor, this alternative would cause substantial environmental impacts. It would not be a cost-effective means of addressing the highway capacity deficiency. In addition, lane continuity may not be provided with the eight-lane cross sections north and south of the proposed project. Therefore, the New Location Alternative is not recommended.

3.5 Improve Existing Facility Alternative (NCDOT-Preferred Alternative)

The Improve Existing Facility Alternative assumes that existing I-85 between NC 73 and the US 29-601 Connector will be reconstructed and widened to four lanes in each direction. At least one auxiliary lane in each direction will be provided between NC 73 and Dale Earnhardt Boulevard and US 29-601 Connector and Webb Road. Interchange improvements are proposed at US 29-601, Dale Earnhardt Boulevard, Lane Street, and NC 152. Improvements are also proposed at the interchange of US 29-601 and NC 152 and at the Winecoff School Road railroad crossing.

With the proposed improvements in place, level of service on the mainline is improved, bridges, interchanges, and rail crossings will meet design standards, and lane continuity is provided between the eight-lane sections north and south of the proposed project. The Improve Existing Facility Alternative will meet the purpose and need of the proposed project.

The remainder of this chapter describes the proposed improvements associated with the preferred alternative (Figures 4, 5 and 6).

3.5.1 Reconstruction and Widening of Mainline

It is expected that four additional lanes (two in each direction) will be constructed in the existing 68-foot grassed median from NC 73 to just north of US 29-601 Connector. Minor widening, generally within NCDOT right-of-way, could also be required to the outside of the existing lanes and at interchange locations. Auxiliary lanes are proposed on I-85 between Dale Earnhardt Boulevard and US 29-601 and between Dale Earnhardt Boulevard and Lane Street. In these areas, widening could extend outside of the right-of-way.

Interchange improvements are proposed at US 29-601, Dale Earnhardt Boulevard, Lane Street, and NC 152. Improvements are also proposed at US 29-601 Connector and NC 152.

Roadway Cross Section (I-85)

The proposed typical section for I-85 is an eight-lane median-divided freeway with 12-foot travel lanes and 14-foot outside shoulders (12-foot paved). The proposed typical section is shown in Figure 3A. The northbound and southbound lanes will be divided by a 22-foot

median, which will include a concrete barrier and 10-foot paved shoulders on either side of the barrier.

Auxiliary Lanes

Auxiliary lanes are proposed on I-85 between US 29-601 and Lane Street. The auxiliary lanes will improve operating conditions by better accommodating vehicles entering and exiting I-85.

A single auxiliary lane in the southbound direction of I-85 is proposed from Lane Street to US 29-601, a distance of approximately 4.5 miles. This auxiliary lane, which will be constructed to the outside of existing I-85, will bring the total number of lanes in the southbound direction in this area to five (four through lanes and one auxiliary lane). Southbound motorists in the auxiliary lane will be required to exit at US 29-601.

An auxiliary lane is proposed in the northbound direction between the US 29-601 and Dale Earnhardt Boulevard interchanges (a distance of approximately 1.9 miles) and between the Dale Earnhardt Boulevard interchange and Lane Street interchange (approximately 2.6 miles). The auxiliary lane will be constructed to the outside of existing I-85 and will bring the total number of lanes in the northbound direction in these areas to five. Northbound motorists in the auxiliary lanes will be required to exit at Dale Earnhardt Boulevard or Lane Street, respectively.

Design Speed

The proposed design speed is 70 mph for I-85. The design speeds for intersecting roadways vary from 40 mph to 60 mph, depending on the roadway.

Speed Limit

It is anticipated the existing speed limit on I-85 (65 mph) will be maintained. Speed limits for intersecting roads, with the exception of Winecoff School Road, are also expected to be maintained. The design speed for Winecoff School Road is 30 mph.

Anticipated Design Exceptions

A design exception might be required on Brantley Road, as the vertical curves at the tie-ins do not meet the statutory speed limit. A lower design speed is proposed to avoid Fisher Lake. A design exception might also be required for Center Grove Road because of the proposed grade.

3.5.2 Interchange Alternatives

In addition to the improvements described in the previous section, this project also proposes improvements to five interchanges in the study area. The methodology for developing interchange configurations and selecting a preferred interchange configuration involved a four-tier approach. The tiered approach allows for the consideration of many alternatives while investing resources in practicable alternatives. For each tier, interchange configurations were screened to eliminate less feasible alternatives, narrowing the focus to one preferred interchange concept. The intent of this approach was to create a record of the options considered for each location. As an alternative moved down the screening "funnel," additional detailed analysis was performed. This analysis included a design sketch planning

exercise, an initial screening of environmental, right-of-way and construction impacts using aerial photography and GIS mapping, and a qualitative assessment of traffic operations (based on Synchro data). Based on the tier analysis, a recommended interchange configuration was selected for each location. With the selected interchange improvements in place, all of the ramp termini intersections, with the exception of the I-85 southbound ramp at Dale Earnhardt Boulevard, will operate at LOS C or better (Table 7). The following discussion highlights the qualitative screening process that was used to select each interchange configuration for detailed study. Quantitative impacts are discussed in Chapter 4.0.

Table 7. Interchange Ramp Capacity Analysis Summary (2035 Build Level of Service)

Intersection	AM Peak Hour	PM Peak Hour
US 29-601 at I-85 NB Ramps	C	C
US 29-601 at I-85 SB Ramps	C	C
Dale Earnhardt Blvd. at I-85 SB Ramps/Roxie St.	D	C
Dale Earnhardt Blvd. at I-85 NB Ramps	C	C
Lane St. at I-85 SB Ramps	C	C
Lane St. at I-85 NB Ramps	B	B
US 29 at US 29-601 SB Ramps	B	C
US 29 at US 29-601 NB Ramps	B	B
NC 152 at I-85 SB Ramps	C	C
NC 152 at I-85 NB Ramps	B	B

I-85 at US 29-601

Currently, at US 29-601, a cloverleaf interchange provides access to and from I-85. The 2035 No-Build Conditions capacity analysis indicates the traffic demand at this interchange would exceed the roadway capacity limits during both the AM and PM peak hours, resulting in a need for future roadway improvements. The capacity analysis also indicates that improvements are needed at the ramps (freeway merge and diverge areas) to accommodate the anticipated future growth in this area. Based on the design sketch planning exercise, the following five interchange configurations were developed for this location:

- Diamond
- Partial Cloverleaf Type A (ParClo A)
- Partial Cloverleaf Type B (ParClo B)
- Single Point Urban Interchange (SPUI)
- Diverging Diamond Interchange (DDI)

The tier analysis results indicate the peak hour traffic along the I-85 mainline would flow similarly under any of these five interchange configurations. The peak hour intersection capacity analysis indicates that the DDI configuration has the best traffic operations. Under the DDI configuration, the ramp termini intersections along US 29-601 would operate at LOS C or better throughout the day.

A key element of the DDI configuration is the crossing of the arterial street prior to the bridge, resulting in traffic traveling on the left side of the roadway, with opposing traffic on the right side. This travel pattern allows unopposed left-turn movements at the ramp termini beyond the bridge. With this configuration, the number of crossing conflict points is reduced from four to two, potentially reducing crashes by 50 percent. All associated traffic signals are two phases.

The area around the US 29-601 interchange is heavily developed with few remaining natural resources so impacts to the natural environment would be minor with the DDI configuration. Two unnamed tributaries to Threemile Branch may be affected by improvements to the interchange. Right-of-way impacts are comparable among the five options considered. Based on traffic operations and the minor environmental impacts, the DDI is recommended at this location.

Reconstruction will include removing the loops and ramps from each quadrant, removing the collector-distributor lanes along I-85, replacing the existing dual three-lane bridges over I-85 with a single, six-lane bridge, and building new ramps from the interstate to US 29-601 (Figure 4B and Figure 5). The new bridge will be located slightly west of the existing bridge so traffic can be maintained during construction.

I-85 at Dale Earnhardt Boulevard

The current interchange design at Dale Earnhardt Boulevard is a folded diamond. The 2035 No-Build Conditions capacity analysis shows the traffic demand at the ramp termini intersections would exceed the roadway capacity limits during both the AM and PM peak hours. The capacity analysis also indicates improvements are needed at the ramps (freeway merge and diverge areas) to accommodate the anticipated future growth in this area. The following five interchange concepts were developed for this location:

- Improved Folded Diamond
- Half Cloverleaf
- Improved Diamond with Slip Ramp in Roxie Street Quadrant
- Improved Diamond with Relocated, Elongated Loop
- Improved Diamond with Relocated, Elongated Loop across from Knowles Street

The tier analysis results indicate the peak hour traffic along the I-85 mainline would flow similarly under any of these interchange configurations. However, options that involve expanding the existing loop are not desirable because they would require replacing the interchange bridge. In addition, the existing loop is not large enough to accommodate an additional lane. In addition to the issues with the loop, the Improved Diamond with Slip Ramp option also experiences long queues, which could result in traffic backing up onto I-85. This option would also result in substantial impacts to four businesses in the area. In addition, there would be a short weave area where merging traffic from the slip ramp would interfere with I-85 southbound traffic exiting to the rest area.

The Improved Diamond with Relocated, Elongated Loop was recommended as the preferred configuration at this location because it offers the best traffic operations, does not

require a two-lane loop, requires a smaller, less expensive bridge over I-85, and has the least likelihood of needing additional improvements during the project's design life.

Based on public comment received at and after Design Public Meetings in November 2012 (Section 5.3), an additional configuration was developed that relocated the elongated loop across from Knowles Street instead of at Jaycee Road. It was determined the signalized ramp intersection was too close to the signalized Roxie Street intersection and the loop was too short to accommodate multiple turn lanes from Dale Earnhardt Boulevard. Traffic analyses indicated of the two elongated loop options, the one at Jaycee Road offers better traffic operations for the I-85 ramps and the Dale Earnhardt Boulevard corridor.

The Improved Diamond with Relocated, Elongated Loop involves modifying the ramp in the southeast quadrant, building a new loop and modifying the ramp configuration in the northeast quadrant, removing the existing loop and ramp in the northwest quadrant, and relocating the northwest ramp and loop to the existing Jaycee Road right-of-way (Figures 4F, 4G, and 6). The bridge on Dale Earnhardt Boulevard over I-85 could be retained with this option.

Additionally, Dale Earnhardt Boulevard will be widened from just north of Old Earnhardt Road to south of Vinehaven Drive to provide adequate turn lanes to accommodate existing and projected traffic. Dale Earnhardt Boulevard will become a median-divided roadway with curb and gutter. Shoulder sections will be provided in the interchange area. Roxie Street will also be widened as part of these improvements to allow for turn lanes at Dale Earnhardt Boulevard. The old ramp in the northwest quadrant will be modified to serve as the main access for the Lowe's Home Improvement store, gas station, Chamber of Commerce Building, and F&M Bank.

Impacts to the natural environment are expected to be minor with any of the configurations because the area is mostly built out. Two unnamed tributaries and a small associated wetland may be affected by the reconstruction of the interchange. Residential impacts are greater in the northwest quadrant with this option and commercial impacts are greater with the other options. Based on the analysis, the Improved Diamond with Relocated, Elongated Loop interchange configuration is recommended for this location.

I-85 at Lane Street

Currently at Lane Street, a diamond interchange provides access to and from I-85. The 2035 No-Build Conditions capacity analysis indicates the traffic demand at the ramp termini intersections would exceed the roadway capacity limits during both the AM and PM peak hours. The capacity analysis also indicates improvements are needed at the ramps (freeway merge and diverge areas) to accommodate the anticipated future growth in this area. Based on the design sketch planning exercise, the following four interchange concepts were developed for this location:

- Diamond
- Diamond with Loop in Northwest Quadrant
- Diamond with Roundabouts
- Diverging Diamond Interchange (DDI)

The tier analysis indicates the peak hour traffic demand along I-85 would flow similarly with any of these four interchange configurations. The peak hour intersection capacity analysis indicates the Diamond with Roundabouts concept would require the least number of lanes (four) across the I-85 overpass and would substantially improve traffic flow at the Lane Street interchange. This configuration and the Diamond with Loop in Northwest Quadrant configuration would have higher right-of-way impacts than the diamond or DDI. Natural resource impacts are comparable for all options. Based on the screening analysis, the Diamond with Roundabouts configuration is recommended at this location.

The recommended reconstruction of the Lane Street interchange includes reconstructing ramps in all four quadrants, providing roundabouts at the ramp terminals with Lane Street, providing allowance for a future loop in the northwest quadrant, replacing the existing three-lane bridge on Lane Street over I-85 with a four-lane, median-divided bridge, and widening Lane Street to accommodate a concrete median and turn lanes through the interchange area (Figure 4I). As part of these improvements, the new bridge over I-85 will be constructed to the north of the existing bridge in order to maintain traffic during construction. Lane Street will have curb and gutter outside the interchange area and shoulders and ditches within the interchange area. Additional improvements include a roundabout at the intersection of Lane Street and Royce Street/Turkey Road.

I-85 at NC 152

Currently at NC 152, a partial diamond interchange provides access from I-85 northbound to NC 152 and from NC 152 to I-85 southbound. NCDOT TIP Project I-3610 proposes to reconstruct this interchange with the addition of two ramps to serve NC 152 to I-85 northbound and I-85 southbound to NC 152. Therefore, the interchange alternatives for I-85 at NC 152 were analyzed as full movement interchanges. Based on the design sketch planning exercise, the following three interchange concepts were developed for this location:

- Diamond
- Diamond with Loop in Northeast Quadrant
- Diamond with Roundabouts

The tier analysis results indicate the peak hour traffic along the I-85 mainline would flow similarly under either of these three interchange configurations. The peak hour intersection capacity analysis shows the Diamond with Roundabouts configuration operates best. The peak hour traffic along the I-85 mainline would flow similarly under any of these three interchange configurations. The ramp termini intersections along NC 152 would operate at LOS C or better throughout the day under these configurations.

Reconstruction of the interchange would involve roundabouts at the ramp terminals and new ramps in each of the four quadrants (Figure 4P). The existing NC 152 bridge over I-85 will be retained. NC 152 will be widened to accommodate a concrete median and turn lanes. It will remain a shoulder and ditch section.

The tier analysis results indicate comparable impacts for the Diamond with Loop and Diamond with Roundabout. The Diamond with Roundabouts configuration is recommended at this location.

US 29-601 Connector at NC 152

Currently, at US 29-601 Connector, a cloverleaf interchange provides access to and from NC 152. TIP Project I-3610 proposes to reconstruct this interchange as a half-diamond interchange with ramps in the southeast and southwest quadrants and traffic signals at both ramp termini intersections. To accommodate projected traffic, NC 152 is proposed to be widened between its interchange with I-85 to the vicinity of Hitachi Metals Drive.

Proposed reconstruction at this interchange includes removing all three loops and both ramps. A five-lane bridge with a concrete median is proposed over US 29, west of the existing bridge. Yost Hill Road is proposed to be realigned to intersect with NC 152 across from the US 29 eastbound exit ramp. Madison Road will be realigned to intersect with NC 152 across from the US 29 westbound entrance ramp. These improvements are shown on Figure 4P.

With the half-diamond configuration, the ramp termini intersections at the US 29-601 Connector/NC 152 interchange would operate at LOS C or better throughout the day. Right-of-way and environmental impacts would be minor. Natural resources likely to be affected include tributaries to Town Creek, along with possible impacts to wetlands associated with these tributaries. A half-diamond configuration is recommended for this location.

3.5.3 Right-of-way and Access Control

Sufficient right-of-way and easements will be acquired to accommodate the proposed improvements. Most improvements will occur within the existing I-85 right-of-way. Minor amounts of additional right-of-way will be required at some sections along I-85 to accommodate the widening. Additional right-of-way will be required along some of the cross streets to accommodate widening or other improvements associated with interchange reconstruction.

Full control of access will be maintained along I-85. For intersecting streets, controlled access will be utilized at the following locations:

- US 29-601 from just south of Cloverleaf Plaza to just north of the new intersection with S. Main Street (Figure 4B, 4C, 4D, and Figure 5).
- Concord Lake Road/Lake Concord Road from just south of Cloverleaf Parkway to Country Club Drive (Figure 4E).
- S. Main Street/Kannapolis Highway from south of Stewart Street to north of Mills Avenue (Figure 4B, Figure 5).
- S. Ridge Avenue, approximately 200 feet on either side of the bridge over I-85 (Figure 4B, Figure 5).
- Dale Earnhardt Boulevard from north of Coldwater Ridge Drive to south of the Denwood Street, and from Roxie Street to Dickens Place (Figures 4F, 4G, and 6).
- Along both sides of Centergrove Road, approximately 150 feet on either side of the

proposed bridge (Figure 4H).

- Brantley Road, approximately 250 feet on either side of the proposed bridge (Figure 4I).
- From approximately 950 feet west of the proposed Lane Street bridge to approximately 1,300 feet east of the proposed bridge (Figure 4I).
- Pine Ridge Road, from approximately 200 feet west of the proposed bridge over I-85 to approximately 100 feet east of the bridge. On the east side of I-85, an additional 100 feet of controlled access will be purchased to maintain an existing driveway (Figure 4N).
- Approximately 300 feet west of the proposed bridge on Lentz Road over I-85 to approximately 150 feet east of the proposed bridge (Figure 4O).
- NC 152 from the intersection of the newly aligned Power Street to Hitachi Metals Drive. A break in the control of access is provided, just east of Ketchie Estates Road to maintain an existing driveway (Figure 4P).
- US 29/NC 152 from south of N. Main Street (US 29A) to west of realigned Power Street (through the current interchange area) (Figure 4P).

3.5.4 Intersecting Roadways

Improvements are proposed to some of the roadways that cross I-85 in the study area. These improvements are described below.

- S. Main Street is proposed to be realigned to the west. A new four-lane bridge over I-85 is proposed (Figure 5). Sidewalks are included on both sides of the bridge. The northbound inside through lane will become a left turn only lane at a point north of Stewart Street.
- The crossing over I-85 on S. Ridge Avenue is proposed to be removed (Figure 5). The south end will be tied to the newly realigned S. Main Street. Right-in/right out access is provided to address operational issues associated with eliminating left turns from the proximity of the intersection of S. Main Street and US 29.
- The existing at-grade railroad crossing on Winecoff School Road will be closed. Winecoff School Road will be realigned to the south and a bridge carrying it over the railroad, S. Main Street, and S. Ridge Avenue will be constructed (Figure 4D). A roundabout is proposed to provide a free flow connection from Winecoff School Road to S. Main Street. The new road will tie back into S. Ridge Avenue just south of Carolina Memorial Park.
- Country Club Drive is proposed to be widened from three to four lanes at its intersection with US 29-601 (Figure 4C). Curb and gutter and sidewalks will be provided along most of the widening, except where the improved road tapers back into the existing alignment.

- Concord Lake Road/Lake Concord Road is proposed to be widened to five lanes with curb and gutter from Cloverleaf Parkway to Country Club Drive (Figure 4E). The existing two-lane bridge over I-85 will be replaced with a five-lane bridge. Sidewalks are included on both sides of the bridge.

- A number of improvements are proposed to roads along Dale Earnhardt Boulevard as part of its interchange reconstruction. These are shown on Figures 4F, 4G, and 6 and include:

    - Minor intersection improvements on Vinehaven Drive.
    - A small, concrete island is proposed on Dickens Place at its intersection with Dale Earnhardt Boulevard. Dickens Place will become right-in/right-out access only.
    - Roxie Street will be widened to the north to provide two westbound through lanes, an exclusive left turn lane, a shared left/through lane, and dual right turn lanes at its intersection with Dale Earnhardt Boulevard.
    - The existing I-85 ramp in the northwest quadrant will become the main access for the Lowe's Home Improvement store with one eastbound through lane, an exclusive left turn lane, a shared left/through lane and a single right turn lane at its intersection with Dale Earnhardt Boulevard.
    - Jaycee Road is proposed to be widened to the west. This road is proposed to become the southbound I-85 exit ramp/entrance loop. No access to adjacent properties will be allowed from the ramp. Access to the bank and Lowe's will be provided from Dale Earnhardt Boulevard and the new service road. The exit ramp will have dual left turn lanes and a single right turn lane at its intersection with Dale Earnhardt Boulevard.

- A roundabout is proposed on Lane Street at Royce Street/Turkey Road (Figure 4I). Lane Street is proposed to be widened to four lanes with curb and gutter from east of Stadium Drive to west of Royce Street/Turkey Road. Access will be maintained at the Pilot Truck Stop, Waffle House, Motel 6, and Brantley property.

- N. Main Street is proposed to tie into US 29 with a five-lane shoulder section (Figure 4P). A tie-in west of NC 152 will provide dual left turn lanes and an exclusive right turn lane.

3.5.5 Railroads and Railroad Crossings

The North Carolina Railroad crosses I-85 with a bridge just west of the US 29-601 interchange. Proposed improvements include re-aligning the tracks and constructing a new bridge over I-85 west of the existing bridge to provide sufficient vertical clearance over I-85. The new bridge location affects the railroad tracks through the Winecoff School Road crossing. The existing crossing is badly humped, with little distance between S. Ridge Avenue and S. Main Street. This makes it impossible to raise the railroad grade and keep the crossing in operation.

A new bridge carrying Winecoff School Road over the railroad, S. Ridge Avenue and S. Main Street will be constructed to meet current standards. The existing at-grade crossing will be closed. The proposed bridge will maintain the connection the at-grade crossing now provides. In addition, the proposed bridge will allow for the elimination of the S. Ridge Avenue bridge over I-85, creating a cost-saving opportunity without substantially affecting local travel patterns.

Three design options were evaluated for the proposed crossing. The recommended design proposes to realign Winecoff School Road south of the existing road and tie back into S. Ridge Avenue just south of Carolina Memorial Park to minimize impacts to properties that are eligible for the National Register of Historic Places. It includes a roundabout that provides a free flow connection from Winecoff School Road to S. Main Street. This improvement is shown in Figure 4D.

The bridge on US 29 over the railroad is proposed to be replaced in its existing location.

The railroad crossings will allow for the addition of future tracks associated with the high speed rail project.

3.5.6 Structures

The project study area includes 25 bridges, including four on I-85 that cross streams, 13 on intersecting roadways, six interchange bridges, and two railroad bridges. The proposed treatment for each of these is shown in Table 8. Proposed bridge dimensions are based on preliminary design and could change slightly in final design. Proposed new structures over I-85 will provide an additional 16 feet on each side to accommodate two additional future lanes.

Table 8. Bridges in the Study Area

Bridge Number	Route	Across	Proposed Treatment	Figure Number
86	I-85 NB	Irish Buffalo Creek	Replace both bridges with a single bridge, approximately 145 feet wide and 175 feet long.	4A
88	I-85 SB	Irish Buffalo Creek		
107	Winecoff School Road	I-85	Retain	4B
39	S. Main Street/Kannapolis Highway	I-85	Replace with 4-lane curb and gutter bridge west of existing location. Proposed bridge will be approximately 65 feet wide and 330 feet long. Sidewalks are proposed on both sides.	4B
R-119	Railroad	I-85	Realign tracks to the west of existing alignment. Replace bridge over I-85 with bridge approximately 40 feet wide and 340 feet long.	4B
R-32	Railroad	S. Main Street	Realign tracks to the west of the existing alignment. Replace bridge over S. Main Street. Proposed bridge would be approximately 40 feet wide and 195 feet long.	4B
122	S. Ridge Avenue	I-85	Remove	4B
New Bridge	Winecoff School Road	Railroad, S. Main Street, S. Ridge Avenue	New Bridge, approximately 47 feet wide and 224 feet long.	4D

Table 8. Bridges in the Study Area *(continued)*

Bridge Number	Route	Across	Proposed Treatment	Figure Number
89	US 29-601 SB	I-85	Replace both bridges with a single bridge, approximately 110 feet wide and 300 feet long.	4B
87	US 29-601 NB	I-85		
40	Concord Lake Road/Lake Concord Road	I-85	Replace 2-lane bridge with 5-lane bridge, approximately 75 feet wide and 330 feet long.	4E
133	Dale Earnhardt Boulevard	I-85	Retain and widen approximately 12 feet to the west to accommodate additional lane.	4F
134	I-85 NB	Cold Water Creek	Replace both bridges with a single bridge, approximately 165 feet wide and 240 feet long.	4G
136	I-85 SB	Cold Water Creek		
139	Centergrove Road	I-85	Replace on existing location with bridge, approximately 30 feet wide and 305 feet long.	4H
144	Brantley Road	I-85	Replace north of existing location with bridge approximately 30 feet wide and 330 feet long.	4I
147	Lane Street	I-85	Replace north of existing location with bridge approximately 60 feet wide and 285 feet long.	4I
32	Moose Road	I-85	Retain	4J
65	Old Beatty Ford Road	I-85	Retain	4L

Table 8. Bridges in the Study Area *(continued)*

Bridge Number	Route	Across	Proposed Treatment	Figure Number
84	Daugherty Road	I-85	Retain	4M
87	Pine Ridge Road	I-85	Replace north of existing location with bridge approximately 30 feet wide and 335 feet long.	4N
91	Lentz Road	I-85	Replace north of existing location with bridge approximately 30 feet wide and 280 feet long.	4O
68	NC 152	I-85	Retain	4P
34	US 29/NC 152	US 29	Replace 3-lane bridge with 5-lane bridge west of existing alignment. Proposed bridge will be approximately 75 feet long and 290 feet wide.	4P
21	US 29/NC 152	Railroad	Replace 4-lane bridge with 4-lane, divided bridge in existing location. Proposed bridge would be approximately 75 feet wide and 300 feet long.	4P
94	Mt. Hope Church Road	I-85	Retain	4P

3.5.7 Bicycle and Pedestrian Facilities and Greenways

Bicycle Facilities

According to the Cabarrus-Rowan Metropolitan Planning Organization (CRMPO) Comprehensive Transportation Plan (CTP) Bicycle Map (August 2011), there are four bicycle routes in the study area. Route 1 is a loop route that extends along local roads east and west of I-85, crosses I-85 on Concord Lake Road, and crosses the interstate again on Moose Road (Figures 4D, 4E and 4J). Fourteen-foot outside lanes are proposed on Concord Lake Road. In addition, bicycle-safe rails will be provided on the new bridge. No work is proposed on Moose Road.

Route 2 crosses I-85 on Centergrove Road (Figure 4H). It extends east and west of I-85 along local roads. Four-foot paved shoulders and bicycle-safe rails are proposed on the Centergrove Road bridge replacement.

The bicycle map also shows an unnumbered, on-road bicycle route that follows Main Street and Shue Road in Rowan County (Figure 4P). No work is proposed on these streets.

An additional unnumbered route crosses I-85 on Mt. Hope Church Road (Figure 4Q). No work is proposed on Mt. Hope Church Road.

Pedestrian Facilities

Existing sidewalk information was obtained from field observations. There is a sidewalk along the south side of Dale Earnhardt Boulevard west of I-85 and another along US 29 (Cannon Boulevard) east of I-85. There is also a sidewalk along S. Main Street/Kannapolis Highway over I-85. Other sidewalks, primarily associated with shopping centers or strip developments, are scattered throughout the study area.

The proposed improvements include sidewalks primarily to replace those that will be removed for cross street improvements. In some instances, new sidewalk sections are included to complete existing sections. NCDOT will coordinate, on a case-by-case basis, with the Cities of Concord and Kannapolis and Rider Transit on the location of additional sidewalks. Currently, sidewalks are proposed along:

- Winecoff School Road (Figure 4D and Figure 5)
    - Sidewalk on one side of the bridge

- Cannon Boulevard/US 29-601 (Figure 4C and Figure 5)
    - South side from S. Main Street to Mall Drive (replace existing)
    - North side from Goodman Circle to Mall Drive (new)

- Country Club Drive (Figure 4C)
    - Both sides from Cannon Boulevard/US 29-601 to mall entrance (some existing)

- Kannapolis Highway (Figure 4D)
    - Both sides of the proposed bridge No. 39 (replace existing)

- Concord Lake Road (Figure 4E)
    - Both sides of the proposed bridge replacement

- Dale Earnhardt Boulevard (Figures 4F, 4G and 6)
    - Both sides from Old Earnhardt Boulevard to Roxie Street (some existing)
    - Both sides from ramps to Vinehaven Drive (some existing)

- Roxie Street (Figure 4F and Figure 6)
    - Both sides from just south of Wonder Drive to Dale Earnhardt Boulevard (replace existing)

NCDOT will continue to coordinate with local officials to address sidewalk accommodations on a case-by-case basis and determine cost-sharing arrangements.

Greenways

County GIS files, the City of Kannapolis Greenways brochure, and the Livable Community Blueprint for Cabarrus County (February 2002) indicate no existing greenways in the study area but two are proposed. The future Irish Buffalo Creek Greenway will cross under I-85 in the study area (Figure 4B). This portion of the greenway would extend on the east side of Irish Buffalo Creek from North Cabarrus Park, under I-85, and eventually to the Carolina Thread Trail. The proposed replacement of Bridge Numbers 86 and 88 over Irish Buffalo Creek will accommodate this future greenway crossing.

The Harold B. McEachern Greenway is currently outside of this project's study area. However, there are plans to extend the greenway along Three Mile Branch Creek, ending in the vicinity of Carolinas Medical Center NorthEast (Figure 4C and 4E). According to the Kannapolis Parks and Recreation Director, the greenway extension will cross I-85 on Lake Concord Road. The proposed improvements include sidewalks and wide outside lanes on both sides of the bridge on Lake Concord Road, which will accommodate this greenway crossing.

3.5.8 Noise Barriers

Five noise barriers are recommended as part of the proposed improvements. These recommendations are based on the preliminary design and are subject to change during final design. Additional public involvement will be conducted if noise mitigation measures are warranted. A summary of the traffic noise analysis is presented in Section 4.10.

3.5.9 Utilities

Numerous utility lines are within the study area. These include:

- Duke Energy (Distribution and Transmission, aerial and underground)
- AT&T of NC (Telephone, aerial and underground)
- Time Warner Cable (Cable television)
- Water and Sewer Authority of Concord (underground)
- PSNC (natural gas, underground)

There are three transmission crossings inside the project limits of I-85 and six major crossings along cross streets in the study area.

3.5.10 Work Zone, Traffic Control and Construction Phasing

The proposed project is within the Cabarrus-Rowan Metropolitan Planning Organization area, which has been designated a Transportation Management Area (TMA), and is considered "significant" with regard to the NCDOT Work Zone Safety and Mobility Policy. Significant projects require, at a minimum, the following measures to ensure the safety and mobility of workers and road users:

- A transportation management plan that provides detailed construction sequencing through a temporary traffic control plan, addresses transportation operations and direct impacts on the transportation network, and incorporates public information into the planning, design, and construction of the project;

- Consideration of possible alternative delivery techniques to minimize impacts and durations of those impacts; and

- Appropriate work zone strategies, such as enforcement and incident management techniques and technologies, to create a more efficient and effective work zone.

In addition, during construction of the project, the work zone strategies, practices, and procedures that were put into place for the project will be continuously monitored, assessed, and improved.

During project construction, four lanes of traffic on I-85 will be maintained as much as possible. Some lane closures and traffic shifts will be required. For the replacement of Bridge No. 139 on Centergrove Road, an offsite detour will be used (Figure 7). Construction for NC 152/I-85/US 601 is proposed to be done in four phases, some of which will require detouring some local traffic to other local roads (Figure 8). Construction of the Winecoff School Road is proposed to be done as much as possible while the current at-grade crossing remains open. Appropriate signing will be provided for the detours. Changeable message signs and dynamic message signs will be used to notify motorists of construction activities and lane shifts. Other methods to notify motorists of changing traffic conditions may also be used as part of the public information efforts. Efforts will be made to provide continuous access to businesses and residences, while ensuring work zone safety and efficiency.

4.0 ENVIRONMENTAL EFFECTS OF PROPOSED ACTION

4.1 Biotic Resources

4.1.1 Terrestrial Communities

Five terrestrial communities were identified in the study area: maintained/disturbed, mixed pine/hardwood forest, oak-hickory forest, Piedmont alluvial forest, and bamboo forest. Table 9 shows the coverage for each community within the study area and the anticipated impacts to each as a result of the proposed improvements. Impacts were determined using a 25-foot buffer outside the construction limits.

Table 9. Terrestrial Community Impacts

Community	Coverage in Study Area (acres)	Anticipated Impacts (acres)
Maintained/ Disturbed	912.4	11.0
Mixed Pine/Hardwood Forest	350.6	98.9
Oak-Hickory Forest	75.8	26.6
Piedmont Alluvial Forest	148.6	38.0
Bamboo Forest	0.5	-
Total	1,487.9	174.5

4.1.2 Aquatic Communities

Aquatic communities in the study area consist of both perennial and intermittent piedmont streams, as well as still water ponds and reservoir lakes. Perennial streams in the study area could support bluehead chub, redlip shiner, northern dusky salamander, and redbreast sunfish. Intermittent streams in the study area are relatively small in size and would support aquatic communities of spring peeper, various crayfish, and various benthic macroinvertebrates. Pond and lake habitats could support bluegill, channel catfish, green frog, and banded water snake. Stream impacts are detailed in Section 4.2.

4.2 Jurisdictional Topics

Eighty-nine jurisdictional streams were identified in the study area. These streams are shown on Figure 4. Stream characteristics and anticipated impacts are shown in Table 10. All streams are located within USGS Hydrologic Units 03040105 and 03040103. All jurisdictional streams in the study area have been designated as warm water streams for purposes of stream mitigation.

Forty-five jurisdictional wetlands were identified in the study area (Figure 4). Wetland classification and quality rating data, along with anticipated impacts, are presented in Table 11.

Table 10. Jurisdictional Streams in the Study Area

ID	Figure No.	Stream Name	Stream Type	Length (linear feet)	Impact (linear feet)		
					Within Slope Stakes	Within 25' Clearing Zone	Total (Slope stakes + 25 feet)
BC-Buffalo Crk	4A	Irish Buffalo Creek	Perennial	640	-	-	-
UTF	4A	UT Irish Buffalo Creek	Perennial	468		40	40
UTI	4A	UT Irish Buffalo Creek	Intermittent	467	18	44	62
UTJ1	4A	UT Irish Buffalo Creek	Perennial	1732	-	-	-
UTJ2	4A	UT Irish Buffalo Creek	Perennial	356	-	-	-
UTJA	4A	UT Irish Buffalo Creek	Intermittent	22	-	-	-
UTJB	4A	UT Irish Buffalo Creek	Intermittent	326	-	-	-
UTK	4A	UT Irish Buffalo Creek	Intermittent	131	-	12	12
SA	4B	UT Irish Buffalo Creek	Intermittent	311	-	79	79
SBA	4B	UT Irish Buffalo Creek	Intermittent	120	-	-	-
SBB	4B	UT Irish Buffalo Creek	Intermittent	605	118	116	234
SBC	4B	UT Irish Buffalo Creek	Intermittent	26	-	-	-
SCZ	4B	UT Irish Buffalo Creek	Perennial	137	35	45	80
SCZA	4B	UT Irish Buffalo Creek	Perennial	260	146	36	182
SC-2	4D	UT Threemile Branch	Perennial	745	318	101	419
SCA	4D	UT Threemile Branch	Intermittent	673	290	81	371

Table 10. Jurisdictional Streams in the Study Area *(continued)*

ID	Figure No.	Stream Name	Stream Type	Length (linear feet)	Impact (linear feet)		
					Within Slope Stakes	Within 25' Clearing Zone	Total (Slope stakes + 25 feet)
SC-R	4D	Threemile Branch	Perennial	1113	-	-	-
SD-2	4D	UT Threemile Branch	Intermittent	217	159	58	217
SG-2	4D	UT Irish Buffalo Creek	Intermittent	25	-	-	-
SCAA	4D/4E	UT Threemile Branch	Intermittent	102	102	-	102
SC-1	4E	Threemile Branch	Perennial	721	44	26	70
SCBA	4E	UT Threemile Branch	Intermittent	1258	11	62	73
SCC	4E	UT Threemile Branch	Intermittent	371	-	-	-
SCCA	4E	UT Threemile Branch	Intermittent	546	-	99	99
SDA	4E	UT Cold Water Creek	Perennial	457	95	66	161
SDAA	4E	UT Cold Water Creek	Intermittent	1150	-	545	545
SD-1	4F	UT Cold Water Creek	Perennial	304	57	51	108
SDBA	4F	UT Cold Water Creek	Intermittent	307	89	63	152
SDBBA	4F	UT Cold Water Creek	Intermittent	327	90	32	122
SCX	4G	UT Cold Water Creek	Intermittent	704	83	28	111
SE	4G	Cold Water Creek	Perennial	1280	18	110	128

Table 10. Jurisdictional Streams in the Study Area *(continued)*

ID	Figure No.	Stream Name	Stream Type	Length (linear feet)	Impact (linear feet)		
					Within Slope Stakes	Within 25' Clearing Zone	Total (Slope stakes + 25 feet)
SEA	4G	UT Cold Water Creek	Intermittent	575	136	57	193
SEAA	4G	UT Cold Water Creek	Intermittent	56	40	16	56
SEB	4G	UT Cold Water Creek	Perennial	876	208	102	310
SEC	4G	UT Cold Water Creek	Intermittent	654.83	-	-	-
SED	4G	UT Cold Water Creek	Perennial	279	104	35	139
SEF	4G	UT Cold Water Creek	Intermittent	634	263	73	336
SFB	4H	UT Cold Water Creek	Perennial	440	91	52	143
SFC	4H	UT Lake Fisher	Perennial	991	110	161	271
SFD	4I	UT Lake Fisher	Perennial	521	94	70	164
SFDA	4I	UT Lake Fisher	Intermittent	183	-	-	-
SFE	4I	UT Lake Fisher	Intermittent	555	34	93	127
SFEB	4I	UT Lake Fisher	Intermittent	17	-	-	-
SGA	4I	UT Lake Fisher	Int/Per	518	73	88	161
SGAC	4I	UT Lake Fisher	Intermittent	47	-	-	-
SGAD	4I	UT Lake Fisher	Intermittent	52	-	23	23
SGC	4I	UT Lake Fisher	Intermittent	372	163	25	188
SG-1	4J	UT Lake Fisher	Perennial	319	-	25	25

Table 10. Jurisdictional Streams in the Study Area *(continued)*

ID	Figure No.	Stream Name	Stream Type	Length (linear feet)	Impact (linear feet)		
					Within Slope Stakes	Within 25' Clearing Zone	Total (Slope stakes + 25 feet)
SGB	4J	UT Lake Fisher	Intermittent	54	-	50	50
SH	4J	UT Lake Fisher	Perennial	618	26	26	52
SHA	4J	UT Lake Fisher	Intermittent	828	-	439	439
SIA	4K	UT Cold Water Creek	Intermittent	207	-	16	16
SIC	4K	UT Cold Water Creek	Intermittent	514	19	53	72
SIE/SBF	4K	UT Cold Water Creek	Perennial	1577	41	326	367
SI	4K/4L	Cold Water Creek	Perennial	1407	-	-	-
SJC	4L	UT Cold Water Creek	Perennial	192	-	-	-
SZD	4L	UT Cold Water Creek	Perennial	779	-	-	-
SJ	4L/4M/4N	Cold Water Creek	Perennial	9392	-	-	-
SJA	4M	UT Cold Water Creek	Intermittent	187	-	8.53	8.53
SJAA	4M	UT Cold Water Creek	Intermittent	59	-		
SJB	4M	UT Cold Water Creek	Perennial	1166	34	148	182
SJBA	4M	UT Cold Water Creek	Intermittent	578	-	-	-
SJE	4M	UT Cold Water Creek	Intermittent	343	6	26	32
SJF	4M	UT Cold Water Creek	Perennial	555	-	-	-
SJFA	4M	UT Cold Water Creek	Intermittent	821	-	-	-

Table 10. Jurisdictional Streams in the Study Area *(continued)*

ID	Figure No.	Stream Name	Stream Type	Length (linear feet)	Impact (linear feet)		
					Within Slope Stakes	Within 25' Clearing Zone	Total (Slope stakes + 25 feet)
SJG	4M	UT Cold Water Creek	Perennial	236	-	-	-
SJH	4N	UT Cold Water Creek	Intermittent	260	-	40	40
SJI	4N	UT Cold Water Creek	Intermittent	90	-	-	-
SJJ	4N	UT Cold Water Creek	Intermittent	362	-	24	24
SKA	4N	UT Cold Water Creek	Perennial	380	197	36	233
SKB	4N	UT Cold Water Creek	Perennial	268	-	-	-
SK	4N/4O/4P	Cold Water Creek	Perennial	8827	219	879	1098
SKC	4O	UT Cold Water Creek	Intermittent	62	-	5	5
SKD	4O	UT Cold Water Creek	Intermittent	183	22	67	89
SKE	4O	UT Cold Water Creek	Intermittent	140	57	29	86
SKF	4O	UT Cold Water Creek	Perennial	311	9	53	62
SKG	4O	UT Cold Water Creek	Intermittent	232	-	23	3
SKH	4O	UT Cold Water Creek	Perennial	387	-	9	9
SKI	4P	UT Cold Water Creek	Intermittent	698	408	51	459
SKJ	4P	UT Cold Water Creek	Perennial	288	-	-	-
SKJA	4P	UT Cold Water Creek	Intermittent	166	-	-	-
SKL	4P	UT Cold Water Creek	Intermittent	831	202	137	339

Table 10. Jurisdictional Streams in the Study Area *(continued)*

ID	Figure No.	Stream Name	Stream Type	Length (linear feet)	Impact (linear feet)		
					Within Slope Stakes	Within 25' Clearing Zone	Total (Slope stakes + 25 feet)
SKLA	4P	UT Cold Water Creek	Intermittent	16	-	-	-
SKN	4P	UT Cold Water Creek	Intermittent	185	-	-	-
SKO	4P	UT Cold Water Creek	Intermittent	188	28	14	42
SZG	4P	UT Cold Water Creek	Perennial	14	-	-	-
SKM	4P/4Q	Cold Water Creek	Intermittent	519	-	-	-
SL	4Q	Town Creek	Perennial	1957	-	-	-
SLA	4Q	UT Town Creek	Intermittent	496	-	-	-
			Total	59,367	4,257	4,973	9,230
			Total Intermittent	19,370	2,411	2,576	4,987
			Total Perennial	39,997	1,846	2,397	4,243

Table 11. Wetlands in the Project Area

Name	Figure No.	NCWAM Classification	Classification	DWQ Rating	Acres in Study Area	Impacts		
						Within Slope Stakes	Within 25' clearing zone	Total (Slope stakes + 25 feet)
WBL	4A	Headwater Forest	Riparian	39	<0.1	-	-	-
WBK	4A	Headwater Forest	Riparian	58	0.1	-	-	-
WA-1	4A	Bottomland Hardwood Forest	Riparian	67	0.7	-	-	-
WG-R	4B	Headwater Forest	Riparian	26	-	-	-	-
WH-1	4B	Headwater Forest	Riparian	58	0.1	-	-	-
WA-2	4D	Bottomland Hardwood Forest	Riparian	33	0.6	-	-	-
WC	4D	Headwater Forest	Riparian	10	0.1	-	-	-
WB	4D	Headwater Forest	Riparian	10	-	-	-	-
WG	4D	Headwater Forest	Riparian	19	0.1	-	-	-

Table 11. Wetlands in the Study Area *(continued)*

Name	Figure No.	NCWAM Classification	Classification	DWQ Rating	Acres in Study Area	Impacts		
						Within Slope Stakes	Within 25' clearing zone	Total (Slope stakes + 25 feet)
WCX	4F	Headwater Forest	Riparian	8	-	-	-	-
WP	4F	Headwater Forest	Riparian	63	0.5	<0.1	<0.1	<0.1
WQ	4F	Headwater Forest	Riparian	50	0.1	<0.1	0.1	0.1
WR	4F	Headwater Forest	Non-Riparian	0	<0.1	<0.1	-	<0.1
WV	4G	Headwater Forest	Riparian	34	0.1	-	-	-
WU	4G	Headwater Forest	Non-Riparian	40	<0.1	-	<0.1	<0.1
WW	4G	Headwater Forest	Riparian	35	<0.1	-	<0.1	<0.1
WBB	4H	Headwater Forest	Riparian	57	0.3	-	<0.1	<0.1
WLZA	4I	Bottomland Hardwood Forest	Riparian	76	0.1	-	-	-
WY	4I	Headwater Forest	Riparian	39	0.1	-	-	-
WAE	4J	Bottomland Hardwood Forest	Riparian	70	0.3	-	-	-

Table 11. Wetlands in the Study Area *(continued)*

Name	Figure No.	NCWAM Classification	Classification	DWQ Rating	Acres in Study Area	Impacts		
						Within Slope Stakes	Within 25' clearing zone	Total (Slope stakes + 25 feet)
WAK	4J	Small Basin	Non-Riparian	22	<0.1	-	-	-
WAL	4J	Headwater Forest	Riparian	41	0.2	<0.1	0.1	0.1
WAF	4K	Bottomland Hardwood Forest	Riparian	53	0.9	-	-	-
WAI	4K	Bottomland Hardwood Forest	Riparian	21	<0.1	-	-	-
WAN	4K, 4L	Bottomland Hardwood Forest	Riparian	68	3.7	<0.1	0.5	0.5
WAM	4L	Bottomland Hardwood Forest	Riparian	48	<0.1	-	-	-
WAO	4L	Bottomland Hardwood Forest	Riparian	29	0.2	-	-	-
WAP	4L	Bottomland Hardwood Forest	Riparian	30	0.4	-	-	-
WAG	4K, 4L	Bottomland Hardwood Forest	Riparian	58	1.0	-	-	-
WAH	4L	Headwater Forest	Riparian	27	0.1	-	-	-
WAT	4L	Bottomland Hardwood Forest	Riparian	30	1.5	-	-	-

Table 11. Wetlands in the Study Area *(continued)*

Name	Figure No.	NCWAM Classification	Classification	DWQ Rating	Acres in Study Area	Impacts		
						Within Slope Stakes	Within 25' clearing zone	Total (Slope stakes + 25 feet)
WAQ	4L	Headwater Forest	Non-Riparian	24	0.7	<0.1	0.2	0.2
WAR	4M	Bottomland Hardwood Forest	Riparian	53	2.2	-	0.3	0.3
WAS	4M	Bottomland Hardwood Forest	Riparian	34	1.0	-	0.1	0.1
WAV	4M	Headwater Forest	Non-Riparian	15	0.6	-	0.2	0.2
WAW	4N	Small Basin	Non-Riparian	17	0.1	0.1	-	0.1
WZZ	4N	Small Basin	Riparian	17	<0.1	-	-	-
WBB**	4P	Headwater Forest	Riparian	64	-	-	-	-
WBD	4P	Headwater Forest	Riparian	48	0.2	-	-	-
WBG	4P	Headwater Forest	Riparian	44	0.1	-	-	-
WBH	4Q	Headwater Forest	Riparian	50	0.6	-	-	-
WBI	4Q	Bottomland Hardwood Forest	Riparian	48	<0.1	-	-	-

Table 11. Wetlands in the Study Area *(continued)*

Name	Figure No.	NCWAM Classification	Classification	DWQ Rating	Acres in Study Area	Impacts		
						Within Slope Stakes	Within 25' clearing zone	Total (Slope stakes + 25 feet)
WH-2	4Q	Bottomland Hardwood Forest	Riparian	62	2.3	-	-	-
WSLB	4Q	Headwater Forest	Non-Riparian	62	<0.1	-	-	-
WSL	4Q	Headwater Forest	Riparian	35	0.1	-	-	-
				Total	19.1	0.2	1.5	1.7
				Total Riparian	17.6	0.1	1.1	1.2
				Total Non-Riparian	1.5	0.1	0.4	0.5

Approximately 9,230 linear feet of jurisdictional streams will be affected as a result of the proposed project, including 4,257 linear feet within slope stake limits and 4,973 linear feet within a clearing area 25 feet beyond the slope stake lines.

The proposed project will impact approximately 1.7 acres of jurisdictional wetlands, including 0.2 acre within slope stake limits and 1.5 acres within a clearing area 25 feet beyond the slope stake limits.

These impacts are based upon preliminary design mapping and could change during final project design.

4.2.1 Clean Water Act Permits

Section 404 of the Clean Water Act requires regulation of discharges into Waters of the United States. The US Environmental Protection Agency (USEPA) is the principal administrative agency of the Clean Water Act; however, the US Army Corps of Engineers (USACE) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act. Section 401 of the Clean Water Act grants authority to individual States for regulation of discharges into Waters of the United States. Under North Carolina General Statutes, NCAC 15A, the NC Division of Water Resources (NCDWR) has the responsibility for implementation, permitting, and enforcement of the provisions of the Act.

Under the current Section 404 permitting requirements, it is expected the project will require an Individual Permit (IP). In general, the USACE Wilmington District issues an IP for projects that result in 0.5 acre or more of fill to Waters of the US or 300 linear feet or more of stream impacts or if the project is considered by the agency to be a major action. This permit requires a full public interest review, including public notices and coordination with involved agencies, interested parties, and the general public.

A Section 401 Water Quality Certification (WQC) is required for any activity, including maintenance or construction activities which may result in a discharge into Waters of the US. The NCDWR issues an Individual WQC when the USACE issues an IP. Impacts to waters deemed isolated by the USACE exceeding 150 linear feet of intermittent or perennial stream channel or 0.10 acre of wetland will require an isolated waters permit from NCDWR.

4.2.2 Construction Moratoria

The NC Wildlife Resources Commission (NCWRC) has indicated that there are no moratoria related to construction within the study area.

4.2.3 NC River Basin Buffer Rules

There are currently no municipal, state, or federal buffer rules that apply to any jurisdictional surface waters within the study area.

4.2.4 Rivers and Harbors Section 10 Navigable Waters

There are no waters designated by the USACE as a Navigable Water subject to Section 10 of the Rivers and Harbors Act in the study area.

4.2.5 Mitigation

Avoidance and Minimization of Impacts

Avoidance and minimization efforts have been incorporated in the preliminary design. These include primarily using steep fill slopes (mostly 2:1) to avoid and minimize stream and wetland impacts, particularly lateral stream impacts. These efforts resulted in the complete avoidance of impacts to Irish Buffalo Creek (BC). Of the 19,626 linear feet of Cold Water Creek that run parallel to I-85 in the study area, only 1,098 feet are impacted by the proposed project. Out of a total of nearly 60,000 linear feet of jurisdictional streams in the study area, only 9,230 linear feet are impacted. Out of approximately 19 acres of wetlands identified in the study area, only 1.7 acres are affected by the proposed project.

Widening associated with the roadway improvements will be performed within the existing right-of-way to the maximum extent possible to minimize impacts to areas which are currently undisturbed.

NCDOT will investigate additional ways to minimize impacts during final design.

Compensatory Mitigation of Impacts

NCDOT will investigate potential on-site stream and wetland mitigation opportunities for the recommended alternative. If on-site mitigation is not feasible, mitigation will be provided by the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP). In accordance with the "Memorandum of Agreement Among the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), July 28, 2010, the EEP, will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

4.2.6 Endangered Species Act

As of December 26, 2012, the U.S. Fish and Wildlife Service (USFWS) lists two federally protected species for Cabarrus and Rowan Counties (Table 12). A brief description of each species' habitat requirements follows, along with the biological conclusion rendered based on surveys conducted in the study area. Habitat requirements for each species are based on the current best available information as per referenced literature and USFWS correspondence.

Table 12. Federally Protected Species Listed for Cabarrus and Rowan Counties

Scientific Name	Common Name	County	Federal Status	Habitat Present	Biological Conclusion
Helianthus schweinitzii	Schweinitz's sunflower	Cabarrus Rowan	E	Yes	No Effect
Lasmigona decorata	Carolina heelsplitter*	Cabarrus	E	Yes	No Effect

E - Endangered
* Historic record (the species was last observed in the county more than 50 years ago)

Schweinitz's sunflower

USFWS optimal survey window: late August-October

Habitat Description: Schweinitz's sunflower is endemic to the Piedmont of North and South Carolina. The few sites where this rhizomatous perennial herb occurs are in relatively natural vegetation and are often found in Xeric Hardpan Forests. The species is also found along roadside rights-of-way, maintained power lines and other utility rights-of-way, edges of thickets and old pastures, clearings and edges of upland oak-pine-hickory woods and Piedmont longleaf pine forests, and other sunny or semi-sunny habitats where disturbances (e.g., mowing, clearing, grazing, blow downs, storms, frequent fire) help create open or partially open areas for sunlight. It is intolerant of full shade and excessive competition from other vegetation. Schweinitz's sunflower occurs in a variety of soil series, including Badin, Cecil, Cid, Enon, Gaston, Georgeville, Iredell, Mecklenburg, Misenheimer, Secrest, Tatum, Uwharrie, and Zion, among others. It is generally found growing on shallow sandy soils with high gravel content; shallow, poor, clayey hardpans; or shallow rocky soils, especially those derived from mafic rocks.

Biological Conclusion: No Effect

Suitable habitat for Schweinitz's sunflower is present in the study area along roadside shoulders, utility easements, and forest edges. Surveys were conducted by biologists throughout areas of suitable habitat for the entire project study area on October 15 and 16, 2010; June 18, 2011; September 21, 2011; and September 2012. No individuals of Schweinitz's sunflower were observed. A review of the NC Natural Heritage Program (NCNHP) records, updated May 14, 2012, indicates no known occurrences within one mile of the study area.

Carolina heelsplitter

USFWS optimal survey window: year round

Habitat Description: The Carolina heelsplitter, a freshwater mussel species, was historically known from several locations within the Catawba and Pee Dee River systems in North Carolina and the Pee Dee and Savannah River systems, and possibly the Saluda River system, in South Carolina. In North Carolina, the species is now known only from a handful of streams in the Rocky and Catawba River systems. The species exists in very low abundances, usually within 6 feet of shorelines, throughout its known range. The general habitat requirements for the Carolina heelsplitter are shaded areas in large rivers to small streams, often burrowed into clay banks between the root systems of trees, or in runs along steep banks with moderate current. The more recent habitat where the Carolina heelsplitter has been found is in sections of streams containing bedrock with perpendicular crevices filled with sand and gravel, and with wide riparian buffers.

Biological Conclusion: No Effect

Suitable habitat for Carolina heelsplitter is present in Threemile Branch, a perennial stream in the study area. NCNHP records, updated May 14, 2012, do not list any occurrences of the Carolina heelsplitter within a one-mile radius of the project area. The NCDOT

Biological Surveys Group conducted freshwater mussel surveys at five locations within the project study area, including Threemile Branch, on December 17, 2007. No freshwater mussel specimens of any species, including Carolina heelsplitter, were observed during these surveys. An additional mussel survey was conducted in Threemile Branch on April 11, 2011. No freshwater mussel specimens of any species, including Carolina heelsplitter, were found during the survey. The NCDOT Biological Surveys Group determined that no additional surveys are required. Given the results of the mussel surveys in 2007 and 2011, it is unlikely that the Carolina heelsplitter occurs in any of the study area streams. Therefore, this project will have No Effect on Carolina heelsplitter. The survey memorandum is available for review at NCDOT Project Development & Environmental Analysis Unit, Century Center Building A, 1010 Birch Ridge Drive, Raleigh.

4.2.7 Bald and Golden Eagle Protection Act

Habitat for the bald eagle primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within one mile of open water. A desktop GIS assessment of the study area, as well as the area within a 1.13 mile radius (1 mile plus 660 feet) of the project limits, was performed in May, September, and November 2011 using 2010 ESRI color aerials. Two water bodies, Lake Concord and Lake Fisher, are large enough and sufficiently open to be considered potential feeding sources. No nests were observed during a survey of the study area and within 660 feet of the study area. A review of NCNHP records, updated December 2012, indicates no known occurrences of the species within one mile of the study area. Discussions with representatives of NCWRC and USFWS indicate there are no known bald eagle nesting sites in the Lake Fisher area. Due to the lack of findings and known occurrences, it was determined that this project will not affect this species.

4.2.8 Endangered Species Act Candidate Species

As of December 26, 2012, the USFWS lists no candidate species for Cabarrus County and one candidate species for Rowan County: Georgia aster (*Symphyotrichum georgianum*). Suitable habitat for Georgia aster is present in the study area. A review of NCNHP records, updated December 2012, indicates no occurrence of George aster within one mile of the study area.

4.3 Cultural Resources

4.3.1 Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified as 36 CFR Part 800. Section 106 requires federal agencies to consider the effect of their undertakings (federally-funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

4.3.2 Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted by an architectural historian in 2005. All structures within the APE were evaluated for National Register eligibility, and the architectural historian concluded that there were two properties eligible for the National Register of Historic Places (NRHP) within the APE: the Blake House and

Goodman Farm. The North Carolina State Historic Preservation Office (HPO) concurred with the findings in a memorandum dated March 9, 2006. An additional survey conducted in December 2010 determined that no additional properties were eligible for the National Register. In a meeting between NCDOT, FHWA, and HPO on July 26, 2011, it was determined that the proposed project would have no effect on either the Blake House or Goodman Farm.

In September 2013, a third field survey was conducted to establish the historic architectural eligibility of structures in an expanded study area that included Winecoff School Road. One structure was recommended as potentially eligible for the NRHP, R.O. Caldwell House, near the corner of Winecoff School Road and S. Main Street. In a memorandum dated October 30, 2013, HPO concurred that the Caldwell House is eligible for the NRHP. HPO also recommended an additional property, Dr. H.W. Barrier House as eligible. In addition, HPO recommended a survey be done to determine the eligibility of Mt. Olivet Methodist Church on Mt. Olivet Road. An alignment for the Winecoff School Road area improvements was developed to minimize impacts to both of the NRHP-eligible properties, and completely avoid the church. In a meeting between NCDOT, FHWA, and HPO on December 3, 2013, it was determined the proposed project would have no adverse effect on either of the eligible properties. The HPO also agreed Mt. Olivet Methodist Church is not in the APE of the recommended alignment. However, NCDOT will evaluate the church in the event final design changes its status with regard to the APE.

A copy of the signed concurrence forms is included in Appendix B.

4.3.3 Archaeology

The HPO, in a memorandum dated May 9, 2012, commented that based on their knowledge of the area, it is unlikely any archaeological resources that may be eligible for the NRHP will be affected by the proposed project. HPO recommended no archaeological investigation be conducted for the project. In a second memorandum, dated July 9, 2013, HPO reached the same conclusion for the area of potential effects associated with the Winecoff School Road improvements. Copies of both memoranda are located in Appendix B.

4.4 Sections 4(f) and 6(f) Resources

4.4.1 Section 4(f) Resources

The US Department of Transportation Act of 1966 includes a special provision, Section 4(f), which stipulates that the Federal Highway Administration and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent alternative to the use of the land; and
- The action includes all possible planning to minimize harm to the property resulting from that use.

The project study area contains one Section 4(f) property, North Cabarrus Park (Figure 4A). It is a 90-acre park owned by the City of Kannapolis. The park is bounded by I-85 to the east, Irish Buffalo Creek to the south, and Orphanage Road (SR 1778) to the west. All

proposed improvements are contained within the I-85 existing right-of-way at this location. Therefore, there will be no impacts to the park.

4.4.2 Section 6(f) Resources

According to state and county reports provided on the National Park Service Land and Water Conservation Fund website, no properties within the study area were purchased or improved using funds from Section 6(f) of the Land and Water Conservation Fund Act of 1965. Therefore, the proposed project will not impact Section 6(f) properties.

4.5 Farmland

As described in the land use discussion in Section 4.8, the proposed project is located in an urbanized metropolitan area. Most land uses in the Cabarrus County portion of the study area are residential or mixed use. In the Rowan County portion of the study area, land adjacent to the interstate is considered urban or transitioning to urban. Much of it is residential with some industrial in interchange areas. There is scattered agricultural land along I-85 south of NC 152 but much of this is planned for low-density residential development, according to local plans. It is therefore not subject to the Farmland Protection Policy Act.

There are no Voluntary Agricultural Districts (VADs) located within the study area.

4.6 Social Effects

4.6.1 Neighborhoods/Communities

A number of neighborhoods and subdivisions border I-85 through the study area, though most are outside the project limits. They are labeled on Figures 4A-4Q. However, a few neighborhoods fall within the study area, in particular at interchange areas. These include:

- A neighborhood north of I-85 on Tremont Avenue near Winecoff School Road (Figures 4B and 4D). Residents in this area can expect right-of-way impacts as well as a change in how they access Winecoff School Road. These access changes are a result of the proposed termination of Tremont Avenue into a cul de sac south of realigned Winecoff School Road. Residents will access Winecoff School Road from Stewart Street or from S. Main Street via Stewart Street. It is expected the Winecoff School Road improvements will displace two residences and six businesses.

- Homes on S. Ridge Avenue north of Mt. Olivet Road (Figure 4D) will experience access changes as a result of the removal of the S. Ridge Avenue bridge over I-85. To reach the other side of I-85, residents will have to access S. Main Street using the proposed Winecoff School Road bridge or travel east on Mt. Olivet Road and south on US 29.

- An older, established neighborhood south of I-85 near S. Main Street in Concord (Figure 4B and Figure 5). Residents in this area can expect right-of-way impacts and temporary inconvenience as a result of the multiple bridge replacements in this general area (railroad, S. Ridge Avenue, S. Main Street/Kannapolis Highway) and the realignment of S. Main Street and S. Ridge Avenue. Access to and from the neighborhood will be maintained and is not expected to change after the project.

- Homes near Northlite Shopping Center, along Roxie Street and Knowles Street near the Dale Earnhardt Boulevard/I-85 interchange (Figure 4F and Figure 6). This area has a greater concentration of minority and low-income persons than the county as a whole. More detail is provided in Section 4.6.3. The residential areas are transitioning to commercial use, as evidenced by the amount of stores, restaurants, and fast food establishments surrounding the residential area. Houses fronting Dale Earnhardt Boulevard have been replaced by a Wendy's restaurant and an office park. All but three houses along Roxie Street have been removed, with a gazebo and decorative landscaping installed opposite one of the shopping center entrances. This neighborhood is surrounded on all sides by existing commercial development or land cleared and marketed for commercial development. In anticipation of future redevelopment, the City of Kannapolis has rezoned this neighborhood for commercial use. Some homes on Roxie Street and along Dale Earnhardt Boulevard, between Roxie Street and Knowles Street, are expected to be displaced as a result of the proposed project. Community cohesion is not expected to be an issue on Roxie Street, as only a few homes exist there now.

- A portion of the Forestbrook neighborhood, along Windingbrook Drive (Figure 4G and Figure 6). Homes along Windingbrook Drive are at the back of a series of subdivisions along Forestbrook Drive. Forestbrook Drive accesses Centergrove Road to the north of Dale Earnhardt Boulevard and outside of the study area. These are newer and larger houses, on large lots, with four of the ten in the study area having swimming pools. The demographics of this area reflect those of the DSA and county, being predominantly white and middle income. These homes back up to Jaycee Road, which is proposed to become the southbound I-85 exit ramp/entrance loop. As a result of the improvements, some of the homes on Windingbrook Drive will be displaced. While these impacts are not expected to adversely affect community cohesion for the much larger Forestbrook neighborhood, particularly as this is the outer edge of the neighborhood, it is nonetheless an adverse impact to the homes on Windingbrook Drive. Because part of Windingbrook Drive shifts towards Jaycee Road, either smaller front yard setbacks and minimum lot sizes would need to be permitted by the local jurisdiction or the resulting parcels will be undevelopable. Gaps between houses should not be a concern in an area of large lot suburban development. Conversion of Jaycee Road to an interchange ramp will eliminate secondary driveway access points for the remaining residences, requiring all trips to be via Forestbrook Drive to Centergrove Road. This change in travel pattern is anticipated to be a minor impact. The remaining homes on Windingbrook Drive will experience more traffic and noise as Jaycee Road, which is adjacent to the neighborhood, would now handle traffic entering and exiting the interstate. Jaycee Road is currently a dead-end, dirt road. The area will change visually, as well. Some sort of screening will be provided to separate the neighborhood from the ramp. The details are being coordinated with local officials.

- A small neighborhood on Centergrove Road, just east of I-85 (Figure 4H). Minor right-of-way impacts are anticipated at these homes, as a result of the bridge

replacement on Centergrove Road. Access over I-85 will be temporarily affected as an offsite detour is proposed during the bridge replacement.

- A portion of the Brantley Woods subdivision, along Brantley Road and east of I-85 (Figure 4I). Minor right-of-way impacts are anticipated at this location, as a result of the replacement of the bridge on Brantley Road.

- A small neighborhood on Turkey Road, near the Lane Street interchange, will experience impacts as a result of the proposed roundabout at Turkey Road/Royce Street. Some residential relocations are anticipated, and access to the neighborhood will be permanently altered with construction of the roundabout.

- A neighborhood west of I-85 along Pine Ridge Road (Figure 4N) could experience minor right-of-way impacts as a result of the proposed replacement of the bridge on Pine Ridge Road. Traffic will be maintained onsite during bridge construction.

4.6.2 Relocation of Residences and Businesses

Based on the preliminary design, 36 residences, 20 businesses, and one church will be displaced. These displacements occur across the five interchanges to be modified by this project. A relocation report is included in Appendix C. The report includes preliminary information regarding ownership status and income level of the anticipated displacees. Information regarding NCDOT's Relocation Assistance Program is also included in Appendix C.

4.6.3 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, provides that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations."

The following information is adapted from *I-3802 Environmental Justice Technical Memorandum* (NCDOT, October 2012). The U.S. Department of Transportation Order to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 5680.1 – April 15, 1997) defines minority groups as being African-American, Hispanic, Asian American, American Indian, and Alaskan Native. This same Order defines low-income as being persons whose median household income is at or below the Department of Health and Human Services (DHHS) poverty guidelines. The 2000 DHHS poverty guideline is $17,050 for a family of four, which is similar to the 2000 US Census poverty threshold of $17,603 for a family of four.

According to field observations, census data, and comments from local planners, the neighborhood north of Roxie Street along Knowles and Denwood Streets appears to be predominantly minority residents. As many homes in this area are older, smaller and often lacking paved driveways, central air conditioning, or other improvements, the neighborhood appears to be predominantly lower income, although not necessarily low income. Since this neighborhood has a higher proportion of minority residents living in smaller, older and more modest homes, it appears to be an Environmental Justice community. The positive and

negative impacts of this project on environmental justice populations have been compared with the impacts on non-environmental justice populations. These impacts were detailed in the preceding section and are summarized below.

- Knowles-Denwood neighborhood (Figure 4F and 6). Widening of Dale Earnhardt Boulevard is expected to require the relocation of three residences fronting Dale Earnhardt Boulevard south of Wendy's on both sides of Knowles Street. Widening of Roxie Street is expected to require the relocation of the three remaining residences fronting that street. Twenty-one houses on Knowles Street and four on Denwood Street would remain. Extending medians along Dale Earnhardt Boulevard will change Knowles and Denwood Streets from full movement to right-in/right-out intersections. While sometimes inconvenient, medians and other access management techniques are proposed to improve safety in this area. While this change in access is not itself an impact, in conjunction with zoning and nearby development, it may encourage the transition from residential to commercial development.

- Forestbrook neighborhood (Figure 4G and 6). Widening and extending Jaycee Road is expected to require the relocation of five residences backing up to the proposed interchange ramp. Five houses south of Windingbrook Drive and four to the north will remain, along with houses along intersecting streets. Because part of Windingbrook Drive shifts towards Jaycee Road, either smaller front yard setbacks and minimum lot sizes would need to be permitted by the local jurisdiction or the resulting parcels will be undevelopable. Gaps between houses should not be a concern in an area of large lot suburban development. Conversion of Jaycee Road to an interchange ramp will eliminate secondary driveway access points for the remaining residences, requiring all trips to be via Forestbrook Drive to Centergrove Road. This change in travel pattern is anticipated to be a minor impact.

In summary, impacts to environmental justice populations in the Knowles-Denwood neighborhood are roughly equivalent to impacts to non-environmental justice populations in the Windingbrook neighborhood, both in the number of proposed relocations and in the change in access/travel patterns.

The negative impacts of this project do not appear to be predominantly borne by a minority population and/or low-income population, nor more severe than the adverse effect that will be suffered by the non-minority and/or non-low-income population. Therefore, there are no disproportionately high and adverse effects on minority and low-income populations.

4.6.4 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are described in Section 3.5.7. The proposed improvements will not adversely affect any bicycle or pedestrian facilities, beyond temporary construction impacts. Any facilities that are disturbed due to construction will be restored or replaced. NCDOT is coordinating with local municipalities on the placement of and cost-sharing for new sidewalks and pedestrian controls.

4.6.5 Recreational Facilities

Three parks are adjacent to I-85 along the project corridor. North Cabarrus Park, a Section 4(f) resource, was discussed in Section 4.4.1. The following is a review of impacts to non-Section 4(f) recreational facilities.

Overcash Soccer Complex is adjacent to northbound I-85 between Covenant Classical School and Denbriar Drive (Figure 4A). It is a private facility comprised of soccer practice fields for the Futbol Club Carolina Alliance, which is an alliance dedicated to youth soccer. No impacts are anticipated to the complex.

CMC Northeast Stadium (formerly Fieldcrest Cannon Stadium) is located west of I-85 between Moose Road and Lane Street (Figure 4J). Access points are available from both roads but the stadium advertises access from I-85 via Lane Street. The 4,700-seat facility is home to the Kannapolis Intimidators, a Class A affiliate of the Chicago White Sox. No impacts are anticipated at the stadium.

There are two public rest areas located off northbound and southbound I-85 between Dale Earnhardt Boulevard and US 29-601. Impacts are limited to tying the reconfigured interchange ramps to the rest area ramps.

4.6.6 Other Public Facilities and Services

Numerous health care facilities are located within the study area, most notably off of Copperfield Boulevard, which turns into Dale Earnhardt Boulevard at the I-85 interchange. Cabarrus Memorial Hospital is on Copperfield Boulevard (Figure 4E). An urgent care clinic and pediatric center are in the area, near Concord Lake Road and I-85. Minor right-of-way impacts could occur to some facilities as a result of the Lake Concord Road bridge replacement. Traffic is expected to be maintained onsite during the bridge construction so access will remain unchanged for the facilities. Northeast Medical Center, Cabarrus County's largest employer, is located east of I-85 on US 29-601 (Figure 4C). It is outside of the study area, but its proximity is expected to generate a large amount of traffic within the study area near the US 29-601 interchange. The proposed project is not expected to affect this facility.

Nearby schools include Winecoff Elementary School off of Winecoff School Road, and Covenant Classical School, which is adjacent to northbound I-85 north of the I-85/NC 73 interchange. No impacts are expected to Covenant Classical School. Travel patterns to and from Winecoff Elementary School will be affected by the closing of the Winecoff School Road at-grade crossing and realignment of the road. Currently, drivers leaving the school headed east can travel directly to S. Main Street and cross the at-grade railroad crossing to S. Ridge Avenue. With the proposed improvements, these drivers will use the new roundabout to access S. Main Street. They will use the new bridge over the railroad to travel to S. Ridge Avenue. Direct access from Tremont Avenue to Winecoff School Road will be eliminated. Drivers will no longer be able to queue on Tremont as they wait to access the adjacent school entrance. Some residents have expressed concern that this traffic might instead queue on S. Main Street.

La Petite Academy is the only daycare observed in the study area. It is on S. Ridge Avenue near US 29-601 (Figure 4B). S. Ridge Avenue access at US 29/S. Main Street may be

permanently changed, as it is proposed to become right-in/right-out only. This would not affect direct access to the daycare center but could affect the way patrons travel to and from the center. In addition, removal of the S. Ridge Avenue bridge over I-85 will eliminate direct access to the center from the north. Drivers headed southbound on S. Ridge Avenue will need to use the new Winecoff School Road bridge to S. Main Street to get back to S. Ridge Avenue. They would then head north on S. Ridge Avenue to the daycare.

Five churches were observed in the study area: Cabarrus Fellowship (Figure 4B), Mt. Olivet Methodist Church (Figure 4D), River of Life Family Worship Center (Figure 4G), Lane Street Church of God (Figure 4I), and Foot of the Cross (Figure 4J). The proposed project will displace Cabarrus Fellowship. No impacts are anticipated at the other four churches.

Carolina Memorial Gardens cemetery (Figure 2D) is located adjacent to US 29 (Cannon Boulevard). Approximately 0.2 acre of the cemetery property would be affected by the proposed project. No graves will be affected.

The Rider Transit Center, discussed in Section 2.4.2, is located on S. Ridge Avenue, near the intersection of S. Ridge Avenue and US 29A/S. Main Street. According to the transit manager, the proposed right-in/right-out access from S. Ridge Avenue to US 29A/S. Main Street will have adverse effects on transit operations. To address this concern, a leftover is proposed from northbound Cannon Boulevard to S. Ridge Avenue and access from S. Ridge Avenue will be provided to the transit center.

4.7 Economic Effects

It is anticipated improved mobility and access will have a positive economic effect in the study area. Development at interchange areas is occurring without the project, and is expected to follow current patterns. New access is not being provided with the proposed project, so growth is not expected as a result of the project.

The project could result in negative impacts to some businesses that are relocated as a result of interchange improvements. Other businesses could experience benefits as a result of improved access.

Property values could increase in areas where access is improved. Conversely, a decrease in value to some properties is possible where the proposed improvements extend close to residential areas. A decrease in value could result from a loss in aesthetics, increase in noise, or partial taking of some properties.

4.8 Land Use

4.8.1 Existing Land Use

Land use surrounding the proposed project is a mixture of business and residential uses. Abundant undeveloped property and agricultural land are located adjacent to I-85. Small retail, gasoline, and other service-type businesses are common at interchanges. South of Dale Earnhardt Boulevard in Cabarrus County, there is dense development, including big box retail such as Lowe's, Walmart, and Kohl's. North of Dale Earnhardt Boulevard, land adjacent to I-85 is predominantly undeveloped. Numerous shopping centers and other commercial establishments are found throughout the study area. Carolina Mall is located on

US 29-601 south of the interchange with I-85.

4.8.2 Future Land Use

The proposed project extends through several planning areas, many with their own land use plans. This section summarizes those plans.

City of Concord

City of Concord Land Use Plan

The *City of Concord Land Use Plan* was adopted in 2004 and revised in 2007. Mixed-use Districts and Village Centers are key elements of the Plan, encouraging development that reduces daily vehicle-miles of travel by creating compact, pedestrian-oriented development. Mixed-use Districts are proposed at major intersections, primarily along existing or planned transit routes. There are two Mixed-use Nodes along the I-85 project corridor: Concord Parkway North (US 29) at I-85 and Copperfield Boulevard (Dale Earnhardt Boulevard interchange). No Village Centers are along or adjacent to the I-85 corridor. The Mixed-use Nodes are described below.

Concord Parkway North at I-85 is at Exit 58. This node is already a mixed-use area, with the two primary uses being the Northeast Medical Center and Carolina Mall. Other medical offices are present, as well as several commercial uses, a single-family residential neighborhood, and apartments. This node is mostly developed, but in the future is expected to continue with an emphasis on commercial and office at the core and multi-family housing at the periphery.

The Copperfield Boulevard Node includes Copperfield Boulevard from Branchview Drive north to I-85 at Exit 60. The headquarters of Concord Telephone Company are located here, as well as medical offices, a Super Wal-Mart, and other big-box retail uses. Development is expected to continue as primarily commercial and office uses. Future land use may also include limited multi-family residential uses.

Center City Plan

The *Center City Plan* was developed to establish a set of strategies for the future redevelopment and sustainability of the existing neighborhoods that surround the City of Concord's downtown area. It is separated into 14 neighborhoods, one of which is near the proposed project. The Northgate neighborhood is adjacent to I-85 and US 29-601. Northgate is home to some of the City's key services and shopping, Northeast Medical Center and Carolina Mall. Northgate is part of the previously discussed Concord Parkway North at I-85 Mixed-use Node. Future plans for this neighborhood include expansion of services by Northeast Medical Center, a bus transfer station near Carolina Mall and the medical center, creating more pedestrian connections, and improving aesthetics by such activities as burying overhead power lines and adding additional landscaping.

City of Kannapolis

City of Kannapolis 2015 Land Use Plan

The *City of Kannapolis 2015 Land Use Plan* (adopted July, 2004) was created to establish guidelines for development of the physical landscape of the City and its growth areas, and to provide a decision-making tool for elected and/or appointed officials. In the short term, the City's primary focus is the pursuit of economic development to increase the commercial/industrial base and local job availability. In the long term, the City will study future growth areas and develop long-range strategies for development and annexation as appropriate, and may pursue extension of water, sewer or other proprietary interests outside City limits. The *City of Kannapolis 2015 Land Use Plan* is separated into eight planning areas. Four of these areas are adjacent to the I-85 widening corridor.

The Coddle Creek Planning Area includes the crossing of Kannapolis Parkway and I-85, as well as one of the region's major east-west corridors, NC 73 (Davidson Highway). The southern portion of this planning area, which is closest to I-85, is focused on business development. Other parts of the planning area are outside of the project study area.

The South Kannapolis Planning Area includes two I-85 interchanges: US 29-601 (Cannon Boulevard), and Dale Earnhardt Boulevard. Areas near Cannon Boulevard, S. Main Street, and Dale Earnhardt Boulevard are expected to continue developing as retail and small-scale non-residential uses. Most of the remaining South Kannapolis Planning Area is either residential or undeveloped.

Bounded by Dale Earnhardt Boulevard and Centergrove Road to the south, I-85 to the east, Lane Street to the north, and Cannon Boulevard to the west, the East Kannapolis Planning Area has two water supply reservoirs: Lake Concord, and Lake Fisher. This planning area includes the eastern edge of the Cannon Boulevard retail commercial corridor and the southern edge of the Lane Street mixed-use corridor. Lane Street is developed as mostly single-family housing; however, a large number of these structures are being converted to office/low intensity commercial uses. Other parts of this planning area include mostly single-family residential development.

The North Kannapolis Planning Area is bounded by Lane Street to the south, a railroad to the west, the City and extra-territorial jurisdiction (ETJ) limits to the north, and Lake Fisher to the east. This planning area contains the North Cannon Boulevard commercial corridor, which the City considers to be a fragile economic area. Almost no new construction or redevelopment initiatives have occurred along this thoroughfare and many sites are deteriorating as they sit vacant or have high tenant turnover. The neighborhoods surrounding this corridor are in decline as well. CMC Northeast Stadium (formerly Fieldcrest Cannon Stadium) is located at the eastern edge of this planning area. The ETJ area is mostly developed as low density residential.

The Eastern Growth Area is composed largely of land currently not within the planning and zoning jurisdiction of the City of Kannapolis. It is located mostly east of I-85. In cooperation with City of Concord officials, the area is being reserved for future Kannapolis growth. The key factor in development of this eastern area is the maximization of the Lane

Street/I-85 interchange and associated water/sewer availability. In the vicinity of the Lane Street/I-85 interchange a mix of commercial and light industrial land uses are proposed. Most other areas are proposed as single-family residential.

Town of China Grove

The Town of China Grove does not have a land use plan. Zoning districts and a Unified Development Ordinance are in place. Generalized zoning within the study area is mostly residential or industrial.

Cabarrus County

Northwest Area Plan

Cabarrus County is divided into several planning areas. Planning areas adjacent to the I-85 widening corridor include Northwest Area, Concord, Kannapolis, and Central Area. Of these, a plan is available for the Northwest Area, which is west of I-85 and includes NC 73. The *Northwest Area Plan* shows proposed future land use adjacent to I-85 near the NC 73 interchange as Employment. Areas just north of the interchange are proposed as residential.

Rowan County

The Rowan County portion of the study area falls primarily within Planning Area Three, as defined in the *East Rowan County Land Use Plan* (2012). General future land use recommendations attempt to preserve the rural character of the area and encourage a mix of uses around designated community nodes. Connectivity is encouraged between commercial nodes and adjacent developments, as well as standards for promoting compatible land development patterns. Specifically along the I-85 corridor the plan recommends the designation of a regional node with the construction of a new interchange at Old Beatty Ford Road. The Plan also encourages the continued siting of commercial and industrial uses along this corridor, particularly those that could take advantage of the highway and rail infrastructure and those that require frontage, acreage or visibility from I-85. Finally, the plan recommends a detailed study of the potential for a regional node at I-85 and Old Beatty Ford Road.

4.8.3 Project Compatibility with Local Plans

The project is compatible with local plans. The Rowan County Land Use Plan and Cabarrus-Rowan Urban Area MPO Long Range Transportation Plan both list widening I-85 and a new interchange at Old Beatty Ford Road as their top priority. The proposed project addresses one of these two priorities and is therefore consistent with local plans. A decision has been made by NCDOT and FHWA to consider a new interchange at Old Beatty Ford Road as a separate project. The improvements for the proposed project, however, do not preclude the future construction of this interchange nor the development planned in the interchange area.

4.8.4 Indirect and Cumulative Effects

The following was summarized from *Community Impact Assessment and Qualitative Indirect and Cumulative Effects Assessment* (July, 2008). The entire report can be viewed in the Project

Development & Environmental Analysis Unit, Century Center Building A, 1000 Birch Ridge Drive, Raleigh.

Water resources in the study area, including a drinking water supply, could incur indirect and cumulative effects. Some protection will be provided from development restrictions within the Critical Area of the Water Supply Watershed, and to a lesser extent, in the Protected Area. There are no High Quality Waters (HQW), Outstanding Resource Waters (ORW), or Wild and Scenic Rivers in the FLUSA. Town Creek and Irish Buffalo Creek are 303(d) streams.

Reduced congestion on I-85 and improvements to existing interchanges will likely contribute to travel time savings in the study area.

An increase in development interests in the more rural portions of the study area could eventually result in some of those areas transitioning to residential and business land use. Local ordinances regulating development and designed to preserve agricultural lands will guide this development.

4.9 Flood Hazard Evaluation

The proposed project crosses approximately 21 acres of 100-year floodplain, as shown in Figure 4. The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine the status of the project with regard to applicability of NCDOT'S Memorandum of Agreement with FMP, or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, NCDOT Division Office shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

4.10 Traffic Noise Analysis

4.10.1 Introduction

In accordance with Title 23 Code of Federal Regulations Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise* (23 CFR 772) and the North Carolina Department of Transportation Traffic Noise Abatement Policy, each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed Federal or Federal-aid highway projects for construction of a highway or interchange on new location, improvements of an existing highway which significantly changes the horizontal or vertical alignment or increases the vehicle capacity, or projects that involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.

Predicted Design Year Traffic noise impacts are determined through implementing the current Traffic Noise Model (TNM 2.5) approved by the Federal Highway Administration (FHWA) and following procedures detailed in 23 CFR and the NCDOT Traffic Noise

Analysis and Abatement Manual. When traffic noise impacts are predicted, examination and evaluation of alternative noise abatement measures must be considered for reducing or eliminating these impacts. Temporary and localized noise impacts will likely occur as a result of project construction activities. Construction noise control measures will be incorporated into the project plans and specifications.

A copy of the full technical report entitled *Traffic Noise Analysis, I-85 Widening from NC 73 to US 29-601 Connector (TIP Project I-3802) and Multiple Interchange Improvements (TIP Projects I-3610 and B-5365), Cabarrus and Rowan Counties* (Martin/Alexiou/Bryson, 2013) can be viewed in the Project Development & Environmental Analysis Unit, Century Center Building A, 1000 Birch Ridge Drive, Raleigh. A supplemental analysis to address the Winecoff School Road grade-separation was prepared and is also available in the project file. No additional impacted receptors are noted in that report.

4.10.2 Traffic Noise Impacts and Noise Contours

The maximum number of receptors (locations that receive highway traffic noise) in each project alternative predicted to become impacted (as defined by the NCDOT Traffic Noise Abatement Policy) by future traffic noise is shown in Table 13. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria or by a substantial increase in exterior noise levels. The table shows a total of 308 impacted receptors. However, this is an increase of only 61 receptors over existing impacted receptors (55 residences, two institutions, and four businesses).

The maximum extent of the 71- and 66- dB(A) noise level contours measured from the center of the proposed roadway is 323 feet and 561 feet, respectively.

4.10.3 No-Build Alternative

The Traffic Noise Analysis also considered traffic noise impacts for the No-Build alternative. If the proposed project does not occur, 276 existing receptors are predicted to experience traffic noise impacts and the future traffic noise levels will increase by less than 1-dBA. Based upon research, humans barely detect noise level changes of 2-3 dBA. A 5-dBA change is more readily noticeable. Therefore, most people working and living near the roadway will not notice this predicted increase.

4.10.4 Traffic Noise Abatement Measures

Measures for reducing or eliminating the traffic noise impacts were considered for all impacted receptors in each alternative. The primary noise abatement measures evaluated for highway projects include highway alignment changes, traffic system management measures, establishment of buffer zones, noise barriers and noise insulation (NAC D only). For each of these measures, benefits versus costs (reasonableness), engineering feasibility, effectiveness and practicability and other factors were included in the noise abatement considerations.

Table 13. Predicted Traffic Noise Impacts by Alternative*

Alternative	Traffic Noise Impacts			
	Residential (NAC B)	Churches/Schools, etc. (NAC C & D)	Businesses (NAC E)	Total
Existing	211	24	12	247
No-Build	234	23	19	276
Build	266	26	16	308
Difference Between Existing and Build	+55	+2	+4	+61

*Per TNM®2.5 and in accordance with 23 CFR Part 772

Substantially changing the highway alignment to minimize noise impacts is not considered to be a viable option for this project due to engineering and/or environmental factors. Traffic system management measures are not considered viable for noise abatement due to the negative impact they would have on the capacity and level of service of the proposed roadway. Costs to acquire buffer zones for impacted receptors will exceed the NCDOT base dollar value of $37,500 per benefited receptor, causing this abatement measure to be unreasonable.

4.10.5 Noise Barriers

Noise barriers include two basic types: earthen berms and noise walls. These structures act to diffract, absorb and reflect highway traffic noise. For this project, earthen berms are not found to be a viable abatement measure because the additional right of way required for their construction does not meet reasonableness criteria found in the NCDOT Traffic Noise Abatement Policy. Noise abatement measures, such as noise barriers, that are found to be feasible and reasonable in accordance with the NCDOT Policy will be analyzed in more detail during project final design.

Noise barrier evaluations were conducted at eleven noise study areas within the project limits, utilizing the Traffic Noise Model (TNM 2.5) software developed by the FHWA. Determinations were made regarding each of these barriers' ability to meet feasibility and reasonableness criteria defined in the NCDOT Policy.

The first noise study area is along northbound I-85, north of the NC 73 interchange at Mistletoe Place and Dennbriar Drive. The proposed noise barrier would benefit five receptors at an average of 3,030 square feet per benefited receptor. This quantity of noise wall exceeds the maximum allowable quantity of 2,605 square feet. Based upon the NCDOT Policy reasonableness criteria, this barrier is not recommended for further analysis.

The second noise study area is located along the northbound lane of I-85, immediately south of the Winecoff School Road overpass. The proposed barrier would benefit 34 receptors at an average of 2,333 square feet per benefited receptor. This quantity of noise wall is below the maximum allowable quantity of 2,605 square feet. Based upon the NCDOT Policy criteria, this barrier is recommended for further analysis during the project's final design.

The third noise study area is located along northbound I-85, immediately east Winecoff School Road overpass. The preliminary design of a concrete wall at this location would benefit four receptors at an average of 4,440 square feet per benefited receptor, which exceeds the maximum allowable quantity of 2,570 square feet. Based upon reasonableness criteria in the NCDOT Policy, this barrier is not recommended for further analysis.

The fourth noise study area is located at along northbound I-85, immediately west of US 29A (Kannapolis Highway) at Mills Avenue. The proposed barrier at this location would benefit five receptors at an average of 1,488 square feet per benefited receptor, which is below the maximum allowable quantity of 2,675 square feet. Based upon the NCDOT Policy reasonableness criteria, this barrier is recommended for further analysis.

The fifth noise study area lies along northbound I-85, between US 29 (Concord Parkway) and NC 3 (Lake Concord Road). The preliminary design of a noise wall at this location would benefit 47 receptors at an average of 507 square feet per benefited receptor, below the maximum allowable quantity of 2,500 square feet. Based upon reasonableness criteria defined in the NCDOT Policy, this barrier is recommended for further analysis.

The sixth noise study area is located along southbound I-85, immediately south of the Centergrove Road overpass at Anchor Way. A potential barrier in this location would benefit 15 receptors at an average of 2,229 square feet per benefited receptor. This quantity of noise wall is below the maximum allowable quantity of 2,605 square feet and, therefore, is recommended for further analysis in accordance with the NCDOT Policy.

The seventh noise study area lies along northbound I-85, immediately south of Brantley Road. A proposed barrier at this location would benefit three receptors at an average of 5,019 square feet per benefited receptor, which exceeds the maximum allowable quantity of 2,570 square feet. Based upon reasonableness criteria defined in the NCDOT Policy, this barrier is not recommended for further consideration.

The eighth noise study area is adjacent to northbound I-85 and straddles the Cabarrus – Rowan County line at Wensil Lane. The preliminary design of an optimized concrete wall at this location would benefit seven receptors at an average of 2,906 square feet per benefited receptor. This quantity of noise wall exceeds the maximum allowable quantity of 2,570 square feet and, based upon reasonableness criteria in the NCDOT Policy, this barrier is not recommended for further analysis.

The ninth noise study area is located along northbound I-85 immediately north of Old Beatty Ford Road at Ivory Lane. A proposed noise wall here would benefit four receptors at an average of 2,099 square feet per benefited receptor, which is below the maximum allowable quantity of 2,605 square feet. Based upon the NCDOT Policy reasonableness criteria, this barrier is recommended for further analysis.

The tenth noise study area is located along northbound I-85, immediately north of the Lentz Road overpass. A noise wall at this would benefit five receptors at an average of 3,029 square feet per benefited receptor. This quantity of noise wall exceeds the maximum allowable quantity of 2,605 square feet. Based upon NCDOT Policy reasonableness criteria, this barrier is not recommended for further analysis.

The eleventh potential barrier location is along northbound I-85, immediately north of Mt. Hope Church Road. The preliminary design of an optimized noise wall at this location would benefit six receptors at an average of 3,980 square feet per benefited receptor, which exceeds the maximum allowable quantity of 2,535 square feet. Based upon reasonableness criteria in the NCDOT Policy, this barrier is not recommended for further analysis.

4.10.6 Summary

Based on the preliminary Traffic Noise Analysis, traffic noise abatement is recommended and noise abatement measures are proposed at five of eleven noise study areas analyzed for this project. This evaluation partially completes the highway traffic noise requirements of 23 CFR 772. These are preliminary findings only, for use in the project environmental document. An additional noise analysis (Design Noise Report) will be performed during final design of this project to develop more detailed locations and dimensions of the recommended noise barriers.

In accordance with NCDOT Traffic Noise Abatement Policy, the federal and state governments are not responsible for noise analyses or for providing noise abatement measures for new development for which building permits are issued after the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the project Categorical Exclusion (CE). For development occurring after this date, local governing bodies are responsible to ensure that noise compatible designs are utilized along the proposed facility.

4.11 Construction Noise

The major construction elements of this project are expected to be earth removal, hauling, grading, and paving. General construction noise impacts, such as temporary speech interference for passers-by and those individuals living or working near the project, can be expected, particularly from paving operations and from the earth moving equipment during grading operations. However, considering the relatively short-term nature of construction noise, these impacts are not expected to be substantial. Nearby natural elements and man-made structures are expected to serve as a buffer to moderate the effects of intrusive construction noise.

4.12 Air Quality Analysis

Air pollution originates from various sources. Emissions from industry and internal combustion engines are the most prevalent sources. The impact resulting from highway construction ranges from intensifying existing air pollution problems to improving the ambient air quality. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. Motor vehicles emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), particulate matter, sulfur dioxide (SO2), and lead (Pb) (listed in order of decreasing emission rate).

4.12.1 Attainment Status

The project is located in Rowan and Cabarrus counties, which are within the Charlotte-Gastonia-Rock Hill nonattainment area for ozone (O_3) as defined by the U.S. Environmental Protection Agency (EPA). This area was designated moderate nonattainment for O_3 under the eight-hour ozone standard effective June 15, 2004. Section 176(c) of the CAAA requires that transportation plans, programs, and projects conform to the intent of the state air quality implementation plan (SIP). The current SIP does not contain any transportation control measures for Rowan County. The Cabarrus-Rowan Metropolitan Planning Organization 2035 Long Range Transportation Plan (LRTP) and the FY 2012-2018 Transportation Improvement Program (TIP) conform to the intent of the SIP (or base year emissions, in areas where no SIP is approved or found adequate). The EPA made a conformity determination on the LRTP and the TIP on September 13, 2013, and is included in Appendix B. The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. There are no significant changes in the project's design concept or scope, as used in the conformity analyses.

4.12.2 Carbon Monoxide

Automobiles are considered the major source of CO in the project area. In order to determine the ambient CO concentration at a receptor near a highway, two concentration components must be used: local and background. The local concentration is defined as the CO emissions from cars operating on highways in the near vicinity (i.e., distances within 400 feet) of the receptor location. The background concentration is defined by the North Carolina Department of Environment, Health and Natural Resources as "the concentration of a pollutant at a point that is the result of emissions outside the local vicinity; that is, the concentration at the upwind edge of the local sources." In accordance with 40 CFR 93.126, this project is an air quality neutral project. It is not required to be included in the regional emissions analysis (if applicable) and a project level CO analysis is not required.

4.12.3 Ozone and Nitrogen Dioxide

Automobiles are regarded as sources of hydrocarbons and nitrogen oxides. Hydrocarbons and nitrogen oxides emitted from cars are carried into the atmosphere where they react with sunlight to form ozone (O_3) and nitrogen dioxide (NO_2). Automotive emissions of HC and NOx are expected to decrease in the future due to the continued installation and maintenance of pollution control devices on new cars. However, regarding area-wide emissions, these technological improvements may be offset by the increasing number of cars on the transportation facilities of the area.

The photochemical reactions that form ozone and nitrogen dioxide require several hours to occur. For this reason, the peak levels of ozone generally occur ten to twenty kilometers downwind of the source of hydrocarbon emissions. Urban areas as a whole are regarded as sources of hydrocarbons, not individual streets and highways. The emissions of all sources in an urban area mix in the atmosphere, and, in the presence of sunlight, this mixture reacts to form ozone, nitrogen dioxide, and other photochemical oxidants. The best example of this type of air pollution is the smog that forms in Los Angeles, California.

4.12.4 Particulate Matter and Sulfur

Automobiles are not regarded as significant sources of particulate matter (PM) and sulfur dioxide (SO_2). Nationwide, highway sources account for less than seven percent of particulate matter emissions and less than two percent of sulfur dioxide emissions. Particulate matter and sulfur dioxide emissions are predominantly the result of non-highway sources (e.g., industrial, commercial, and agricultural). Because emissions of particulate matter and sulfur dioxide from automobiles are very low, there is no reason to suspect that traffic on the project will cause air quality standards for particulate matter and sulfur dioxide to exceed the NAAQS.

4.12.5 Mobile Source Air Toxics

Projected traffic volumes for the proposed project exceed the 150,000 AADT threshold requiring a quantitative MSAT analysis. Therefore, a quantitative MSAT analysis was prepared for the proposed project. This section details the development of a Quantitative Mobile Source Air Toxics (MSAT) Analysis to comply with the interim guidance issued by FHWA concerning MSATs.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/ncea/iris/index.html). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

The 2007 EPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in Graph 1.

Quantitative MSAT Analysis

The MSAT analysis years included the existing year, opening year, and design year of project I-3802. These scenarios include the following:

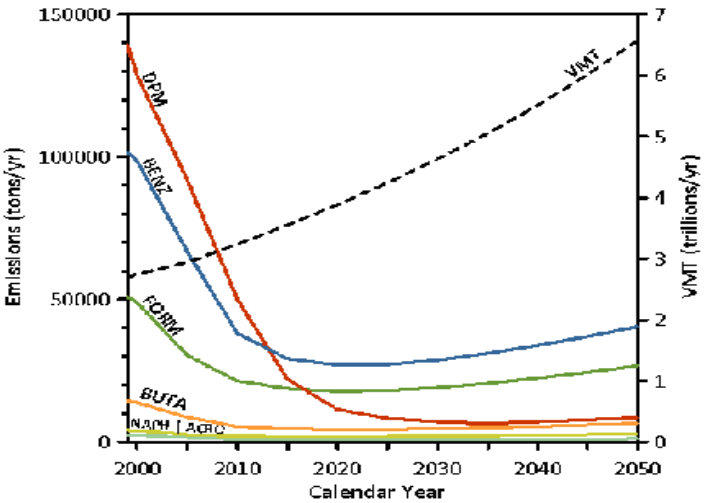
- 2008 base year
- 2016 project completion year No-Build (Project completion year, using the 2008 transportation network, along with project completion year socioeconomic data)

- 2016 project completion year Build (Project completion year, using the project completion year transportation network and the project completion year socioeconomic data)

- 2035 project design year No-Build (Project design year, using the 2008 transportation network, along with project design year socioeconomic data)

- 2035 project design year Build (Project design year, using the project design year transportation network and the project design year socioeconomic data)

Graph 1. National MSAT Emission Trends, 1999-2050 for Vehicles Operating on Roadways (Using EPA's MOBILE6.2 Model)



Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Notes:
(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

Due to improvements in emissions technologies MSAT levels are expected to decrease over time, even with an increase in overall VMT. For the study area, VMTs on the included roadways are anticipated to increase approximately 10 percent between the base year and the 2016 no-build scenario. The VMT is also expected to increase eight percent between the 2016 no-build scenario and the 2016 build scenario. These relatively small increases are indicative of the already high traffic volumes in the area, and also somewhat reflect the impact of the proposed widening project to the area transportation network. Graph 2 shows the forecasted VMTs for the modeled network links.

Table 14 shows the total emissions for each scenario for each of the modeled MSAT

pollutants. The construction of I-3802 is one portion of the overall widening and new location projects proposed for the I-85 freeway. The overall impact of these I-85 improvements will be an additional draw of traffic to the area. With this shift in traffic, there is also the potential for reductions in AADT on neighboring or supporting facilities. In addition to the regional traffic being served by these facilities, there is also a significant amount of local traffic being served in the future years. Growth in both residential and employment populations will draw additional traffic to this area. This local traffic will be served not only by the arterial network already in place, but also by the existing and future interstate facilities.

Overall, the emission levels for the six MSATs modeled in EMIT in the study area are anticipated to decrease by 49 percent between the 2008 base year and the 2035 design year build condition. Four of the six MSATs modeled using this method experience decreases in emissions during this period. Formaldehyde and acetaldehyde emissions are expected to increase five percent each in the 2035 build scenario compared with the 2008 base condition. Given the substantial increase in VMT between the No-Build and build scenarios (particularly in 2035), this increase is perhaps not unexpected. The widening of I-85 in this location will bring additional traffic volume that would have been otherwise served by neighboring facilities. Therefore, while the overall regional and national trend in MSAT emissions is a decrease in pollutant levels over time, the improved facility will cause more pollutants to appear in this area. It is to be expected that the improvements to this facility will help alleviate some traffic pressure on its neighboring facilities. So while some MSAT emissions are increasing here, they may decrease somewhat in other areas. Graph 3 shows the total MSAT emissions emanating from the studied network for each modeled scenario.

Due to the composition of roadway functional classes within the I-3802 Affected Transportation Network, there may be localized areas with increased MSAT emission levels. VMT fluctuations on sections of roadway network will likely occur as changes are made to the transportation network and socioeconomic characteristics of the area shift.

Graph 2. Total Daily VMT within the I-3802 Affected Transportation Network

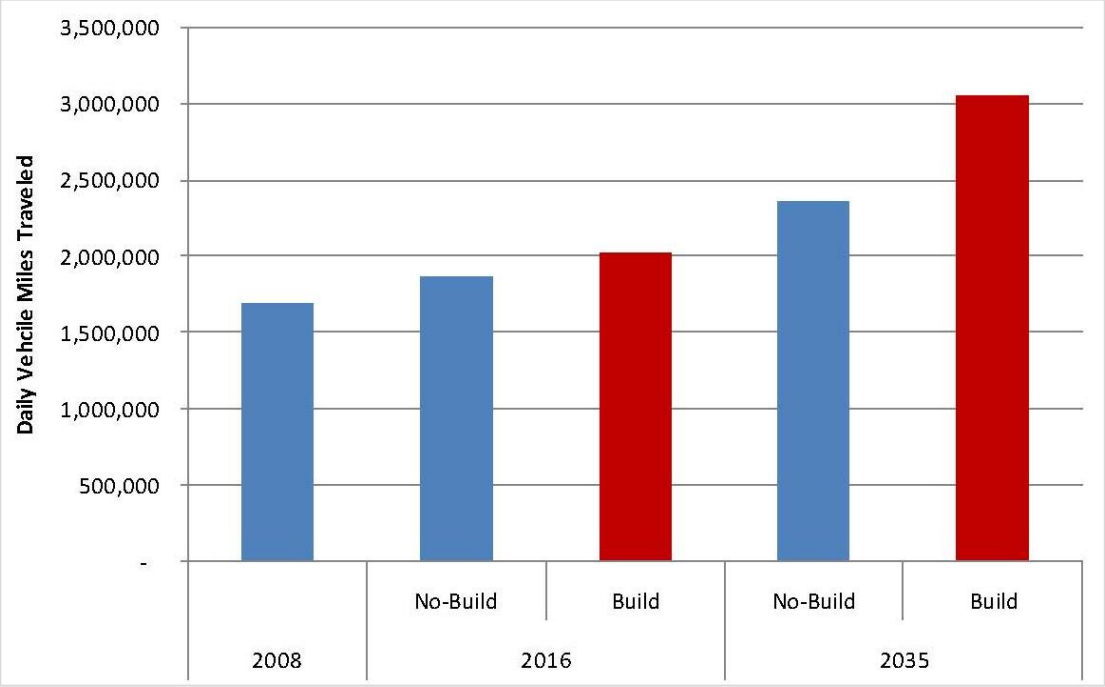
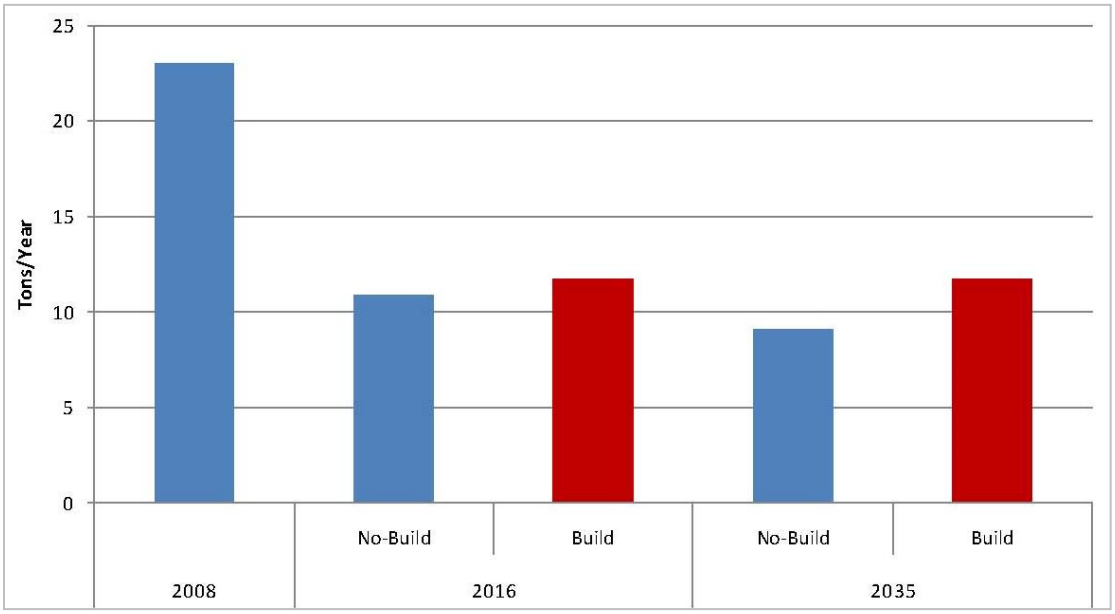


Table 14. Total Emissions for Each Air Toxic Pollutant (tons/year)

	2008	2016		2035		% Change, 2008 to 2035 Build
		No-Build	Build	No-Build	Build	
Benzene	6.45	3.76	4.07	3.35	4.32	-33%
DPM	11.20	3.20	3.47	1.56	2.02	-82%
1,3 Butadiene	0.84	0.52	0.56	0.51	0.65	-23%
Formaldehyde	3.13	2.37	2.55	2.59	3.31	5%
Acetaldehyde	1.18	0.89	0.95	0.96	1.23	5%
Acrolein	0.16	0.11	0.12	0.12	0.16	-4%
Totals	22.96	10.85	11.73	9.10	11.69	-49%

Graph 3. Changes in MSAT Emissions Levels within the I-3802 Affected Transportation Network



Additional Hazardous Air Pollutants (HAPs)

In addition to the air toxics analyzed with the EMIT program, FHWA mandates the study of certain additional hazardous air pollutants. Specifically, exhaust emission rates for Naphthalene and Polycyclic Organic Matter (POM) need to be considered. POM emission rates are determined by summing the emission rates for the following air pollutants: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, chrysene, dibenz(ah)anthracene, fluoranthene, fluorine, indeno(123cd)pyrene, naphthalene, phenanthrene, and pyrene. Since emission rates change during winter and summer seasons, conditions for both are included. A comparison has been conducted between the 2008 base conditions and the 2035 build conditions. Winter emission rates for POM and naphthalene decreased 35 percent and 34 percent respectively, and summer emission rates decreased 32 percent and 31 percent, respectively.

Unavailable Information for Project Specific MSAT Impact Analysis

This report includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives for the project. Due to these limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22) regarding incomplete or unavailable information:

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSATs. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, http://www.epa.gov/ncea/iris/index.html). Each report contains assessments of non- cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of EPA's guideline CAL3QHC model was conducted in an NCHRP study http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and

fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Potential MSAT Mitigation Strategies

At this time, there is not a budget or standard in place to compare against forecasted project-level emissions. The proposed widened I-85 compared to the existing I-85 is expected to see MSAT levels decrease significantly from the base year level to the 2035 design year. However, while there is an overall decrease, certain MSAT pollutants in this area are expected to see slight increases over time. As a result, MSAT mitigation activities likely do not need to be considered. However, a summary of potential mitigation measures is contained below.

Mitigating for Construction MSAT Emissions

Construction activity may generate a temporary increase in MSAT emissions. Project- level assessments that render a decision to pursue construction emission mitigation will benefit from a number of technologies and operational practices that should help lower short-term MSAT. In addition, the SAFETEA-LU has emphasized a host of diesel retrofit technologies in the Congestion Mitigation and Air Quality Improvement (CMAQ) Program provisions - technologies that are designed to lessen a number of MSATs.

Construction mitigation includes strategies that reduce engine activity or reduce emissions per unit of operating time, such as reducing the numbers of trips and extended idling. Operational agreements that reduce or redirect work or shift times to avoid community exposures can have positive benefits when sites are near populated areas. For example, agreements that stress work activity outside normal hours of an adjacent school campus would be operations-oriented mitigation. Verified emissions control technology retrofits or fleet modernization of engines for construction equipment could be appropriate mitigation strategies. Technology retrofits could include particulate matter traps, oxidation catalysts, and other devices that provide an after-treatment of exhaust emissions. Implementing maintenance programs per manufacturers' specifications to ensure engines perform at EPA certification levels, as applicable, and to ensure retrofit technologies perform at verified standards, as applicable, could also be deemed appropriate. The use of clean fuels, such as ultra-low sulfur diesel, biodiesel, or natural gas also can be a very cost-beneficial strategy.

The EPA has listed a number of approved diesel retrofit technologies; many of these can be deployed as emissions mitigation measures for equipment used in construction. This listing can be found at: www.epa.gov/otaq/retrofit/index.htm.

Post-Construction Mitigation for Projects with Potentially Significant MSAT Levels

Travel demand management strategies and techniques that reduce overall vehicle-mile of travel; reduce a particular type of travel, such as long-haul freight or commuter travel; or improve the transportation system's efficiency will mitigate MSAT emissions. Examples of such strategies include congestion pricing, commuter incentive programs, and increases in truck weight or length limits. Operational strategies that focus on speed limit enforcement or traffic management policies may help reduce MSAT emissions even beyond the benefits of fleet turnover. Well-traveled highways with high proportions of heavy-duty diesel truck

activity may benefit from active Intelligent Transportation System programs, such as traffic management centers or incident management systems. Similarly, anti-idling strategies, such as truck-stop electrification can complement projects that focus on new or increased freight activity.

Planners also may want to consider the benefits of establishing buffer zones between new or expanded highway alignments and populated areas. Modifications of local zoning or the development of guidelines that are more protective also may be useful in separating emissions and receptors.

The initial decision to pursue MSAT emissions mitigation should be the result of interagency consultation at the earliest juncture. Options available to project sponsors should be identified through careful information gathering and the required level of deliberation to assure an effective course of action. Such options may include local programs, whether voluntary or with incentives, to replace or rebuild older diesel engines with updated emissions controls. Information on EPA diesel collaborative around the country can be found at http://www.epa.gov/otaq/diesel/whereyoulive.htm.

Summary

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly.

The project is located in Cabarrus and Rowan Counties, which comply with the National Ambient Air Quality Standards. This project will not add substantial new capacity or creating a facility that is likely to meaningfully increase emissions. Therefore, it is not anticipated to create any adverse effects on the air quality of this nonattainment area.

This project falls under MSAT Analysis Category Three (3) because AADT is projected to be in the range of 140,000 to 150,000 or greater by the design year. Therefore, this project requires a quantitative MSAT analysis. Because of the uncertainties outlined above, an exact quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, it is not possible to make a determination of whether any of the alternatives would have "significant" adverse impacts on the human environment.

4.13 Utilities

A utilities memorandum was prepared by NCDOT in January 2011 that listed the utility providers and type of utilities in the project area (Section 3.5.9). Because of the number of utilities that will need to be relocated as a result of the proposed improvements, impacts are expected to be high.

4.14 Hazardous Materials

Based on a hazardous materials evaluation prepared by NCDOT in September 2013, seventeen sites presently or formerly containing petroleum underground storage tanks (USTs) were identified within the project limits. These sites are listed in Table 15 and shown on Figure 4. No hazardous waste sites or landfills were noted. Four other geoenvironmental concerns were identified within the project limits: three automotive repair facilities and one automotive salvage yard. These are also listed in Table 15. Soil and groundwater assessments will be conducted at each of the UST sites prior to right-of-way acquisition.

Table 15. USTs, Landfills and Other Potentially Contaminated Sites

Site	Location	UST Facility ID Number	Property Name	Property Owner (UST Owner)	Anticipated Impacts (Severity)
1	1529 Concord Pkwy North	0-036520	Pantry 3960	National Retail Properties (The Pantry)	Petroleum contaminated soils (low)
2	1561 Concord Pkwy North	0-004306	Little Buck Food Store	United Oil of the Carolinas, Inc. (same)	Petroleum contaminated soils (low)
3	503 Winecoff School Rd	N/A	Former G&S Computers	Ruby Spears	Petroleum contaminated soils (low)
4	404 Winecoff School Rd	N/A	Former NC Sound of Charlotte	Earl & Mary Creech	Petroleum contaminated soils (low)
5	2850 S. Cannon Blvd	0-036241	Rushco Food Store 14	Keith Hoogland Partnership (Rusher Oil Co, Inc)	Petroleum contaminated soils (low)
6	2020 Kannapolis Hwy	0-035762	Home Town Mart	Satya SAI, Inc. (same)	Petroleum contaminated soils (low)
7	2044 Kannapolis Hwy	0-007545	Flowers Baking Co. Thrift Store	James A. Fisher (Bost Bakery, Inc.)	Petroleum contaminated soils (low)
8	2192 Kannapolis Hwy	0-021008	Cabarrus Co DMV Enforcement Office	State of North Carolina CC&PS (same)	Petroleum contaminated soils (low)
9	2200 Kannapolis Hwy	N/A	PDQ Services	DSP Properties, LLC (N/A)	Petroleum contaminated soils (low)
10	2201 Kannapolis Hwy	N/A	A-Complete Automotive Shop, Inc.	Edward Cline & Wendy Hill (N/A)	Petroleum contaminated soils (low)
11	2199 Kannapolis Hwy	N/A	Universal Automotive Service	Universal Automotive Service, Inc. (N/A)	Petroleum contaminated soils (low)
12	2909 S. Cannon Blvd	N/A	Cash & Carry	Carolina Oil of Concord, Inc. (N/A)	Petroleum contaminated soils (low)
13	3020 S. Cannon Blvd	N/A	Freeway BP 120	Fresh Green Water, LLC (N/A)	Petroleum contaminated soils (low)

Table 15. USTs, Landfills, and Other Potentially Contaminated Sites *(continued)*

Site	Location	UST Facility ID Number	Property Name	Property Owner (UST Owner)	Anticipated Impacts (Severity)
14	2355 Lake Concord Road	0-035492	Ken's Quick Stop	South Central Oil Co. Inc. (same)	Petroleum contaminated soils (low)
15	540 Lake Concord Road	0-025770	Express Shoppe 12	Propost Bros Dist, Inc. (same)	Petroleum contaminated soils (low)
16	1145 Copperfield Blvd NE	0-034653	Pantry Store 860	Rachel LLC The Pantry Inc.	Petroleum contaminated soils (low)
17	1160 Copperfield Blvd NE	0-036494	Express Shoppe 3	Propost Bros Dist, Inc. (same)	Petroleum contaminated soils (low)
18	2399 Dale Earnhardt Blvd	0-036129	Pantry 3470	James Carver Properties, LLC (The Pantry Inc.)	Petroleum contaminated soils (low)
19	2825 Lane Street	0-011084	Pilot Travel Centers 56	SSS Delaware, LLC (Pilot Travel Centers, LLC)	Petroleum contaminated soils (low)
20	180 Wankel Drive	N/A	Mark Ortiz Automotive	Estus & Phyllis White (N/A)	Petroleum contaminated soils (low)
21	645 Lentz Road	N/A	C&D Salvage	Scott D. Cook (N/A)	Petroleum contaminated soils (low)

5.0 COMMENTS AND COORDINATION

This project was coordinated with appropriate federal, state, and local agencies and the public. Four Local Officials Meetings and five public meetings were held during project development. In addition, scoping letters were sent to interested agencies. A summary of public and agency coordination is discussed in this section.

5.1 Local Officials Meetings

Twenty-three local officials attended a Local Officials Meeting on January 8, 2008 at the Kannapolis Railroad Station. Those attending included representatives from Cabarrus and Rowan Counties, the Cabarrus-Rowan Metropolitan Planning Organization (MPO), the Cities of Concord and Kannapolis, the Towns of China Grove and Landis, and the NC House of Representatives. Three citizens also attended. Many of the questions and comments related to the project's funding and schedule. Officials indicated strong support for the project.

A Local Officials Informational Meeting was held on November 27, 2012 at the Kannapolis Train Station. Fourteen local officials attended, including representatives from Cabarrus-Rowan MPO, the Cities of Concord and Kannapolis, Concord-Kannapolis Area Transit, Cabarrus County Schools, Mt. Mitchell Fire Department, Rowan County Emergency Services, and Cabarrus County. Some officials expressed concern about impacts of the proposed improvements to the Dale Earnhardt Boulevard interchange. One official expressed concern about emergency response times without an interchange at Old Beatty Ford Road. There were questions about whether the roundabouts on Lane Street could accommodate tractor trailers and emergency vehicles. Another official stated that the B section should be constructed the same time as Section A. There was also a discussion about the process for setting local priorities and the role that traffic studies play in determining priorities.

A Local Officials Informational Meeting was held on February 26, 2013 at the Kannapolis Train Station. Twenty-four local officials signed in. Comments and questions focused primarily on project impacts near the US 29-601 interchange, Dale Earnhardt Boulevard, and Lane Street interchanges. NCDOT officials explained changes that were being recommended for final design to improve access to and from the Rider Transit Center. Changes to improve access along Dale Earnhardt Boulevard and Lane Street were also discussed. NCDOT officials explained the process used to evaluate various interchange configurations at Dale Earnhardt Boulevard and the reasons for the recommended configuration. Some officials stated the need for an interchange at Old Beatty Ford Road.

A Local Officials Informational Meeting was held on November 4, 2013 at Winecoff Elementary School. Twenty local officials attended, including representatives from the City of Concord, the City of Kannapolis, Cabarrus County, Cabarrus-Rowan MPO, Cabarrus County School System, Rider Transit, and the NC Railroad. The purpose of the meeting was to inform the local officials of the need to make improvements to the Winecoff School Road railroad crossing as a result of the improvements to the railroad bridge over I-85. In addition, NCDOT officials noted that Alternate 2A was added after the meeting was announced to avoid and minimize impacts to the Barrier House property that HPO

recommended eligible for the National Register of Historic Places. Many expressed their appreciation to NCDOT for considering improvements to the Winecoff School Road rail crossing. There were general questions about project schedule, impacts to recently identified historic properties, and construction staging.

5.2 Citizens Informational Workshop

A Citizens Informational Workshop was held on January 29, 2008, at the Kannapolis Railroad Station. The public meeting notice is included in Appendix D. Forty-six people signed in at the workshop. Citizens were provided a meeting handout and comment sheets (Appendix D), and three copies of an aerial showing the study area boundary were displayed for viewing. Fourteen comment forms were received. Comments were generally supportive of the project. Over half of the concerns were about noise impacts and requests for noise walls. Commenters also expressed a desire for landscaping along interchange ramps. A few comments mentioned the impact of this project on US 29 access.

5.3 Design Public Meetings

Design Public Meetings were held on November 27, 2012 at the Kannapolis Train Station and November 29, 2012 at J.C. Carson High School in China Grove. The meeting notice and handout are included in Appendix D. A total of 259 people signed in at the meetings. Citizens received a handout and comment forms and maps were displayed that showed the recommended project design and project schedule. Detailed maps of the interchange areas were displayed and available as handouts. Seventeen total comment forms were received at both meetings. Seventy citizens submitted written comments from November 27 through the end of the public comment period on December 14, 2012. In general, comments covered the following topics:

- Right-of-way impacts to property. Many property owners whose property would be purchased as a result of the project had questions about the right-of-way acquisition and relocation process.
- Changes in access or loss of multiple access points as a result of proposed medians on cross streets.
- Local officials in Kannapolis expressed a desire for a connection between Winecoff School Road and Mt. Olivet Road in lieu of replacing the bridge on S. Ridge Avenue.
- Impacts to the Rider Transit Center of the proposed right-in/right-out access from S. Ridge Avenue to S. Main Street.
- Redesigned interchange at Dale Earnhardt Boulevard. Some residents of the Forest Brook neighborhood expressed opposition over the proposed relocation of the southbound ramp to Jaycee Boulevard. They indicated concern about noise and visual impacts and a reduction in property values. Other residents whose homes would be directly affected by the relocated ramp expressed support for the project.
- Lack of interchange at Old Beatty Ford Road. Some local officials commented that not having an area where emergency vehicles could turn around in the median of I-85, combined with the lack of an interchange for five miles, will create a safety hazard. Others believe the interchange would foster economic development in southern Rowan County.

- Roundabouts on Lane Street. Some commenters expressed concern over impacts of the roundabout to businesses in that area, including the truck stop.
- Project schedule. Some officials in Rowan County requested that the schedule for the "B" section of the project be moved up to coincide with the "A" section.
- Some residents and local officials expressed concern about modified access on US 29 in China Grove.
- Some comments expressed concern over a perceived lack of coordination between NCDOT and local municipalities.

5.4 Public Meetings

A public meeting was held on February 26, 2013 at the Kannapolis Train Station. The meeting notice and handout are included in Appendix D. One hundred fifty-six citizens signed in to the meeting. Meeting handouts consisted of a project fact sheet and fact sheets for each interchange in the study area. Recommended modifications to the US 29-601 and Lane Street interchanges, based on public comment from the November Design Public Meetings, were included on the fact sheets and shown on display boards. Two comment forms were completed at the workshop. Both were requests for maps. Six comments were received after the meeting through the end of the public comment period on March 12, 2013. One commenter expressed appreciation over proposed changes to the designs presented at the November meeting. Others expressed concern about:

- The need for a service road to provide access to businesses along Dale Earnhardt Boulevard between the existing ramp and Jaycee Road. Existing access on Jaycee Road will be terminated with the proposed improvements and the proposed median will alter access from Dale Earnhardt Boulevard. NCDOT is recommending a service road to address this issue.
- Access at Dickens Place and Vinehaven Drive on Dale Earnhardt Boulevard. NCDOT is recommending a roundabout study for Vinehaven Drive.
- The need for a sidewalk on Old Earnhardt Road. NCDOT will address new sidewalks with local officials.
- The proximity of a residence to the widened Dale Earnhardt Boulevard.
- General questions about construction staging and the right-of-way acquisition process.

A public meeting was held on November 4, 2013 at the Winecoff Elementary School. The meeting notice and handout are included in Appendix D. One hundred fifty-six citizens signed in to the meeting, which was held after the meeting with local officials. The meeting handout included fact sheets that explained the overall combination of projects and the proposed changes to the Winecoff School Road railroad crossing. Figures were provided that showed all three design options. Maps showing the proposed design options were displayed around the room. Nineteen comment forms were completed at the meeting and an additional two were returned during the comment period. Six additional comments were received by email or letter following the meeting through the end of the public comment period (November 15, 2013). Additional comments were submitted after the comment period ended. In the comment sheets, most participants noted a preference for Alternative 2A. Other written comments included:

- Request to consider school traffic circulation and a design that allows quality access.
- Requests to include a roundabout – in Alternative 2A – at S. Ridge Avenue and Mt. Olivet Road.
- Two business owners noted the design will help their businesses on S. Ridge Avenue.
- Request to consider a traffic signal at the intersection of Country Club Drive and Lake Concord Road.
- Two property owners noted their properties will be affected by all three alternatives, likely resulting in relocation. A letter and emails were received from the vice president and employees at Ketchie, Inc. expressed opposition to all of the proposed alternatives for Winecoff School Road. A letter from the president of Carolina Memorial Gardens expressed opposition to the proposed alternatives, in particular Alternatives 2B and 4A, which crossed a portion of the property.
- A follow up email from the president of the neighborhood near Winecoff Elementary School, including residents of Tremont Avenue and Stewart Street, noted concern over loss of access, traffic congestion, and speeding. She indicated that area residents and parents of students had concerns regarding any changes near the school and proposed the following alternatives:

    1. Eliminate the railroad crossing at Winecoff School Road and redistrict the fire station utilized to respond to S. Ridge Avenue calls for service.
    2. Re-do the existing S. Ridge Avenue bridge and train bridge with no other changes in the area.
    3. If any changes are to take place, approach the owners of the historic owned Mills property [Caldwell House] and/or the historical society about moving the home. Then locate Winecoff School Road through the property.
    4. Request for a Public Hearing to voice concern and have a question and answer session with NCDOT and the officials of the Cities of Kannapolis and Concord.

5.5 NEPA/Section 404 Merger Process

Because of potential impacts to natural resources, this project was subject to the NEPA/Section 404 Merger Process. This process is based on concurrence from a Project Merger Team at major milestones during the development of the project. The Merger Team includes representatives from federal, state, and local agencies.

Concurrence was reached through the Merger Process on Concurrence Point 1 (Purpose and Need and Study Area Defined) and Concurrence Point 2 (Design Options for Detailed Study) on December 16, 2010. A Concurrent Point 2 Update meeting was held and concurrence reached on January 16, 2013. The Merger Team concurred on Concurrence Point 2A (Bridging Decisions and Alignment Review) on December 20, 2013. Copies of the concurrence forms are included in Appendix D.

Coordination with the Merger Team will continue throughout the project development phase for Concurrence Point 3 (Least Environmentally Damaging Practicable Alternative), Concurrence Point 4A (Avoidance and Minimization of Impacts), Concurrence Point 4B (30 percent Hydraulic Design Review), and Concurrence Point 4C (Permit Drawings Review).

5.6 Other Agency Coordination

As part of the development of the Categorical Exclusion, a scoping letter was mailed on February 16, 2005 to federal and state regulatory agencies and local officials to request information regarding potential environmental impacts that could result from the proposed project. The following agencies and local officials that were notified are listed below. An asterisk (*) next to the name indicates that a written response was received. Agency correspondence is included in Appendix B.

U.S. Army Corps of Engineers*

U. S. Environmental Protection Agency

U. S. Fish & Wildlife Service

North Carolina Department of Administration, State Clearinghouse*

Cabarrus County

Cabarrus County Emergency Management

Cabarrus County Schools

Cabarrus-Rowan Urban Area Metropolitan Planning Organization*

Centralina Council of Governments

City of Concord

City of Kannapolis*

Rowan County

Rowan County Emergency Services

Rowan-Salisbury School System

Town of China Grove

Town of Landis

Additional written responses were received by:

- Cabarrus County Soil Conservation Service (included in Appendix B)
- Concord Kannapolis Area Transit (Rider)
- Concord Parks and Recreation
- Kannapolis Parks and Recreation

6.0 BASIS FOR CATEGORICAL EXCLUSION

Based upon the study of the proposed project presented in this document and comments from federal, state, and local agencies and the public, it is determined that the project will not have a significant impact upon the quality of the human or natural environment. The project is not controversial from an environmental standpoint. No significant impacts on natural, ecological, cultural, or scenic resources are expected. No significant impact on air or water quality or on ambient noise levels is expected. The project is consistent with local plans and will not divide or disrupt the communities along the project. The proposed project will have no adverse effect on any historic properties. The proposed improvements will have no effect on federally threatened or endangered species. Although the majority of the I-85 widening will occur within the existing right-of-way, the proposed project will require relocation of some homes and businesses. Attempts will be made to further minimize relocation impacts during final design. The proposed project is not anticipated to result in any significant impacts to the natural or human environment and is considered to be a "categorical exclusion," as defined by the Federal Highway Administration's environmental guidelines (23 CFR 771.117).

Appendix A - Figures

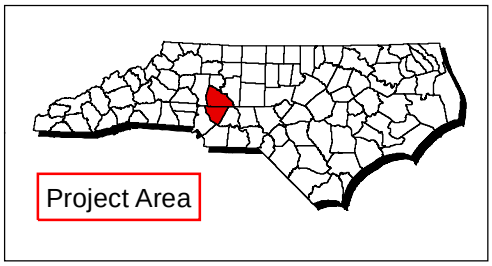


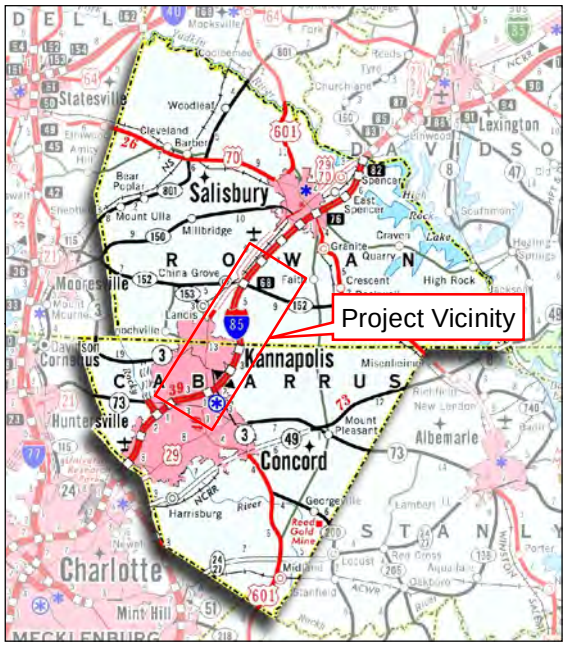
Figure 1

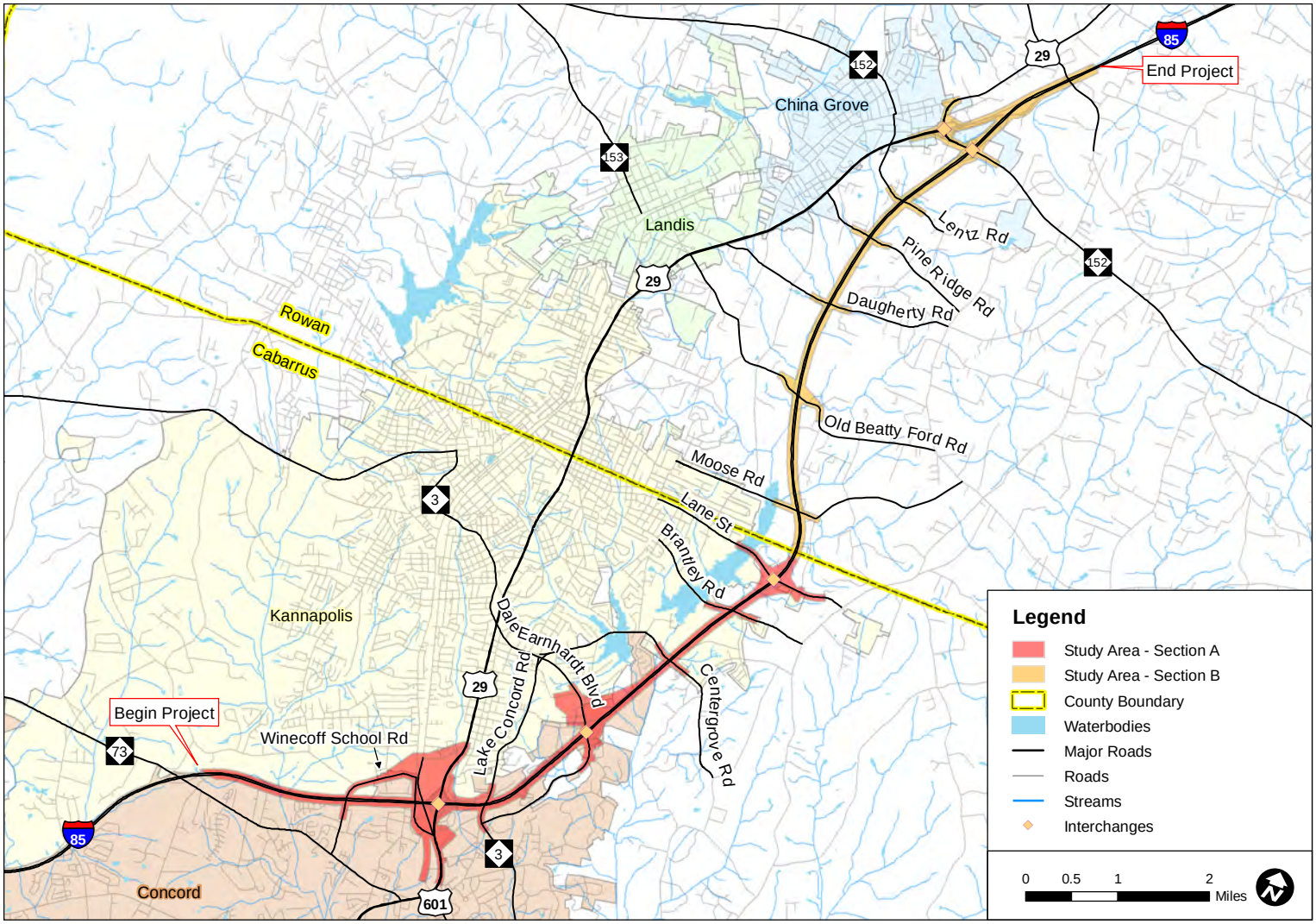
Project Vicinity

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)

Rowan and Cabarrus Counties, North Carolina

North Carolina
Department of Transportation





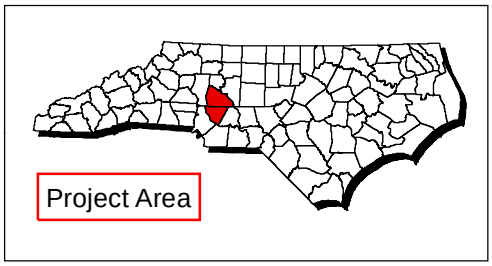
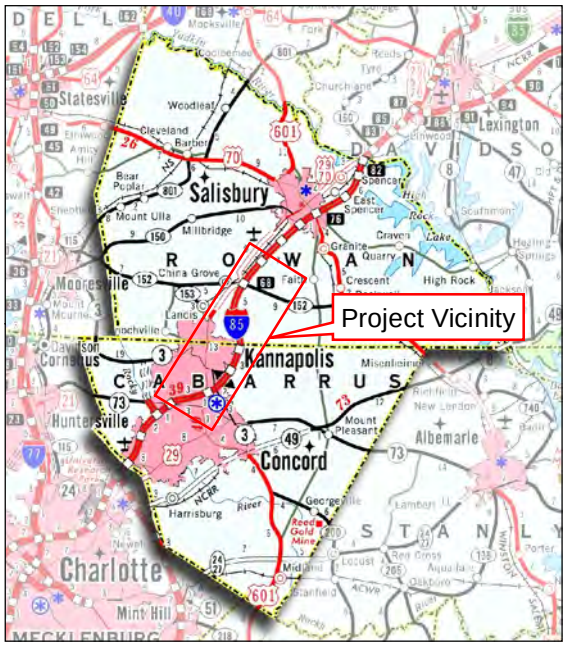


Figure 2

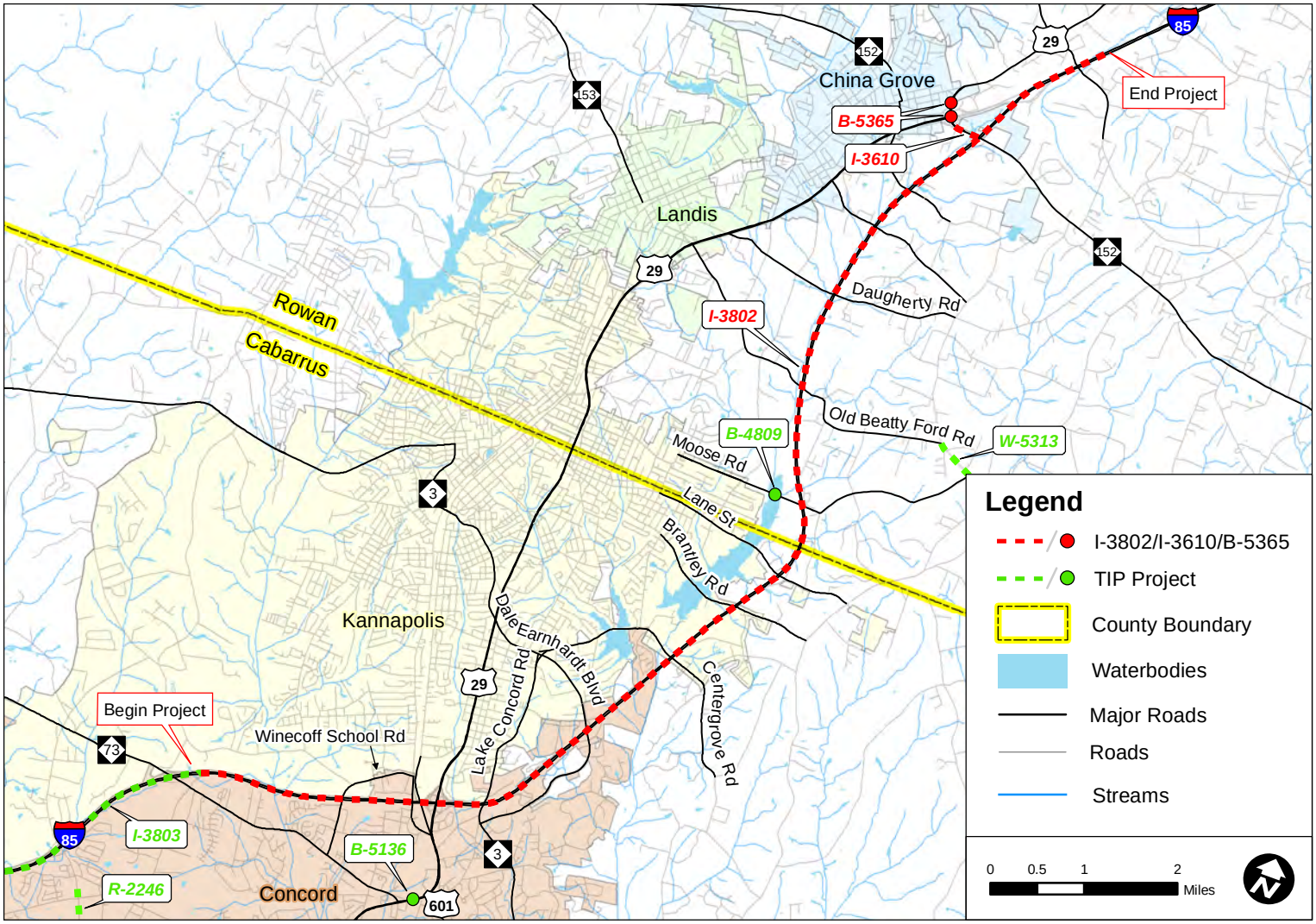
TIP Projects in the Vicinity of I-3802, I-3610 and B-5365

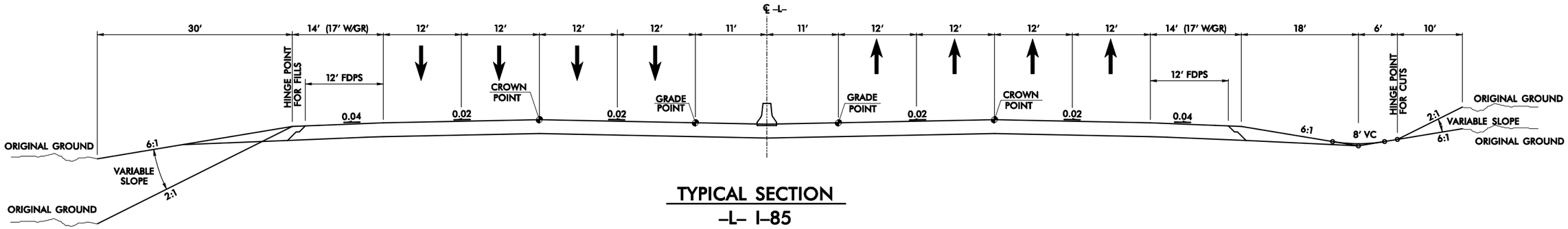
I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)

Rowan and Cabarrus Counties, North Carolina

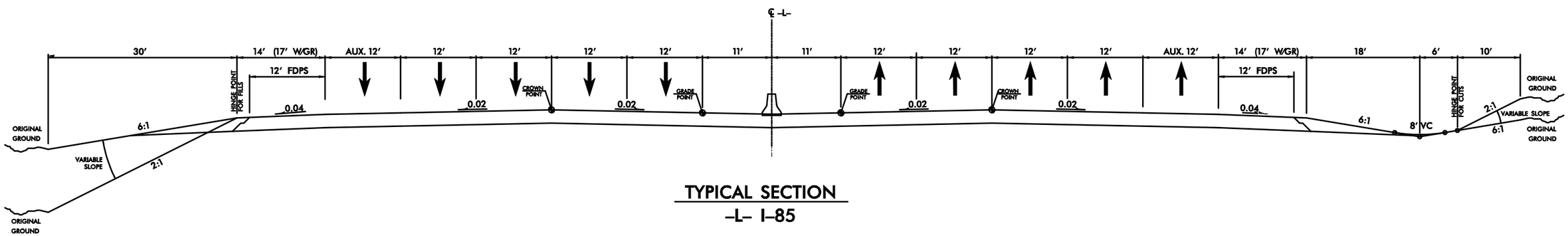


North Carolina
Department of Transportation

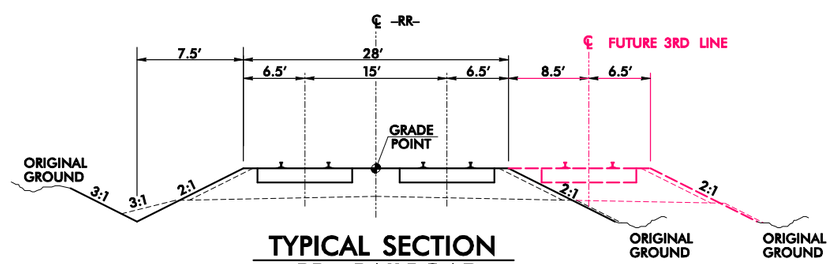




TYPICAL SECTION
–L– I–85



TYPICAL SECTION
–L– I–85



TYPICAL SECTION
–RR– RAILROAD

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

Not to Scale

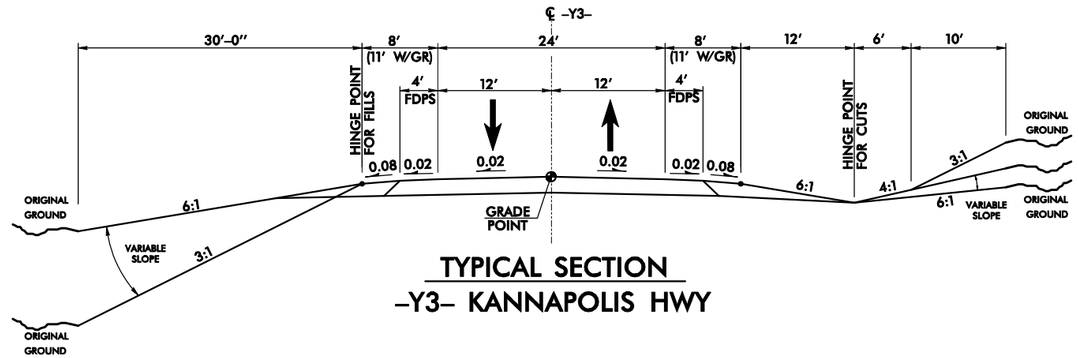
Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

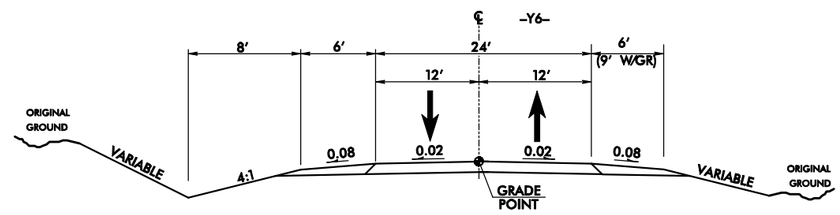
Map Date: 9/4/2012

Figure

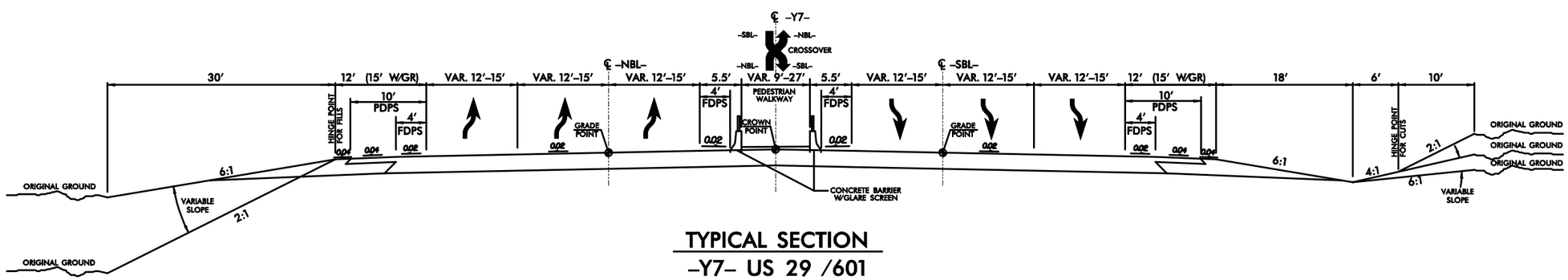
3A



TYPICAL SECTION
–Y3– KANNAPOLIS HWY



TYPICAL SECTION
–Y6– RIDGE AVE.



TYPICAL SECTION
–Y7– US 29 /601

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

Not to Scale

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I-85 Widening and Interchange Improvements From North of NC 73 to
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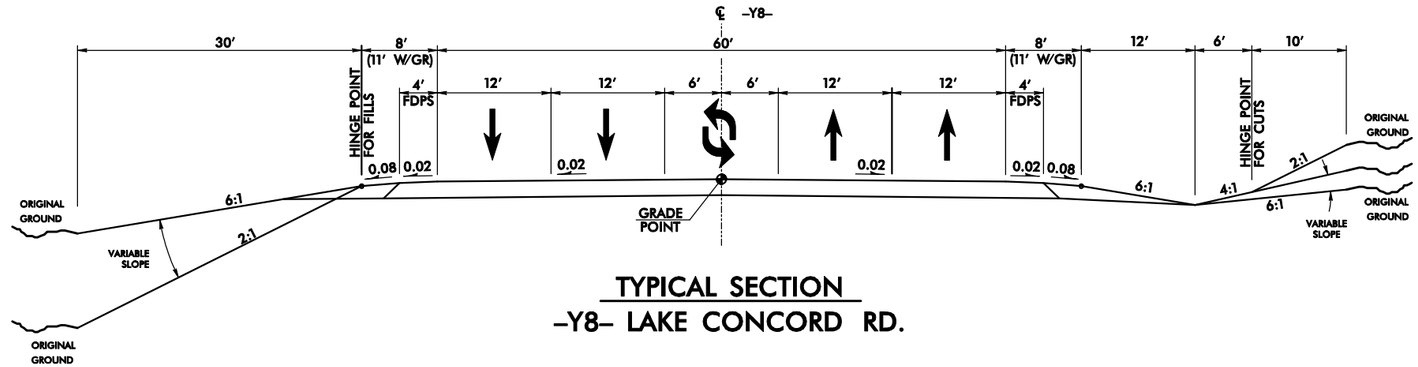
Rowan and Cabarrus Counties, North Carolina

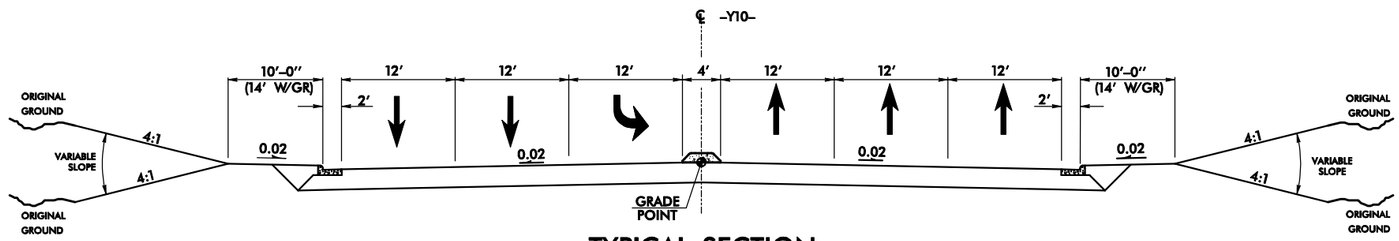
Map Date: 9/4/2012

Figure

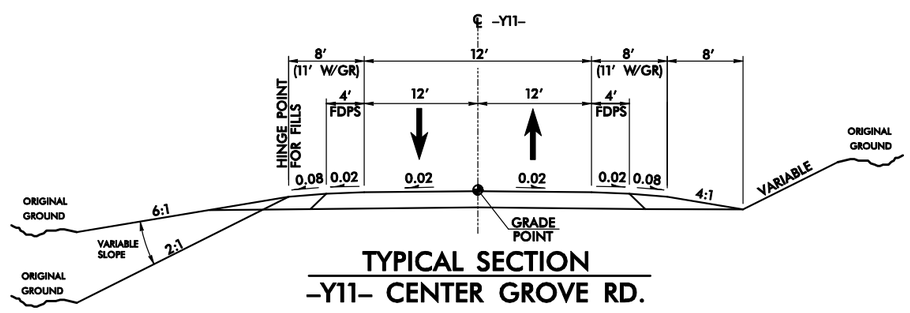
3B



TYPICAL SECTION
–Y8– LAKE CONCORD RD.



TYPICAL SECTION
–Y10– DALE EARNHARDT BLVD.



TYPICAL SECTION
–Y11– CENTER GROVE RD.

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

Not to Scale

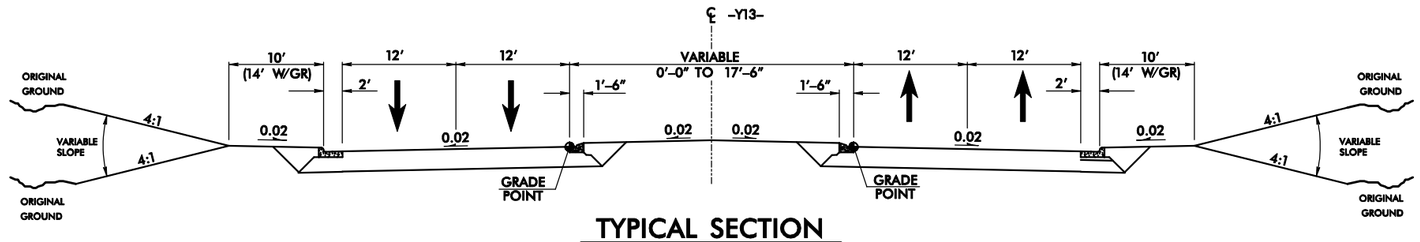
Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

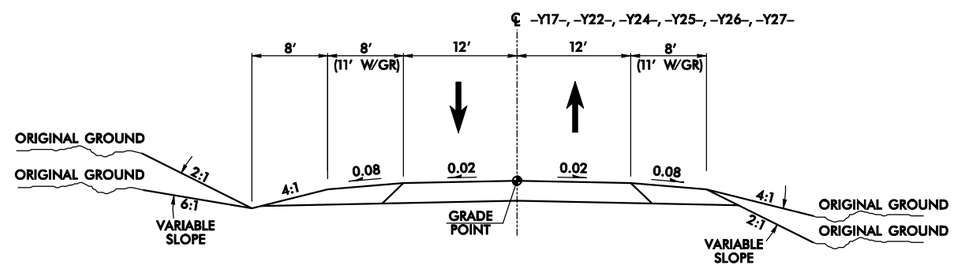
Map Date: 9/4/2012

Figure

3C



TYPICAL SECTION
–Y13– LANE ST.



TYPICAL SECTION
–Y17– PINE RIDGE RD.
–Y22– MADISON RD.
–Y24– MYRTLE GOODNIGHT
–Y25– POWER ST.
–Y26– YOST HILL RD.
–Y27– KETCHIE ESTATES

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

Not to Scale

Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
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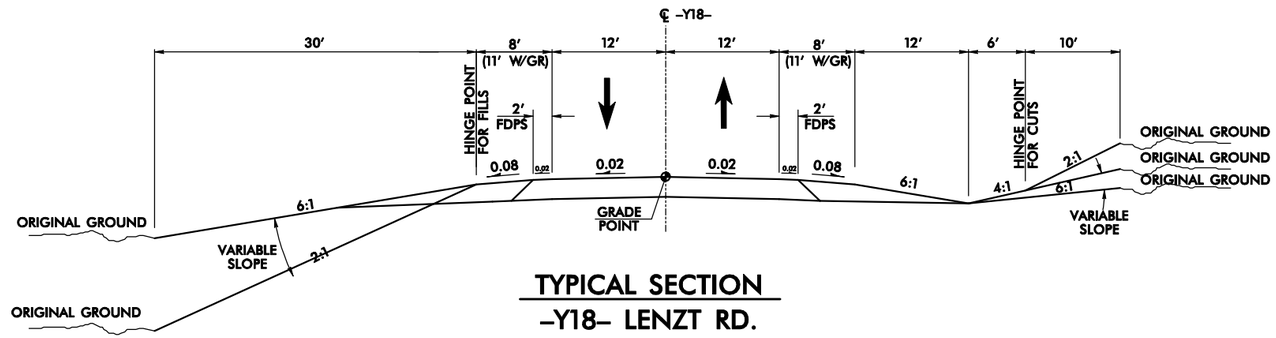
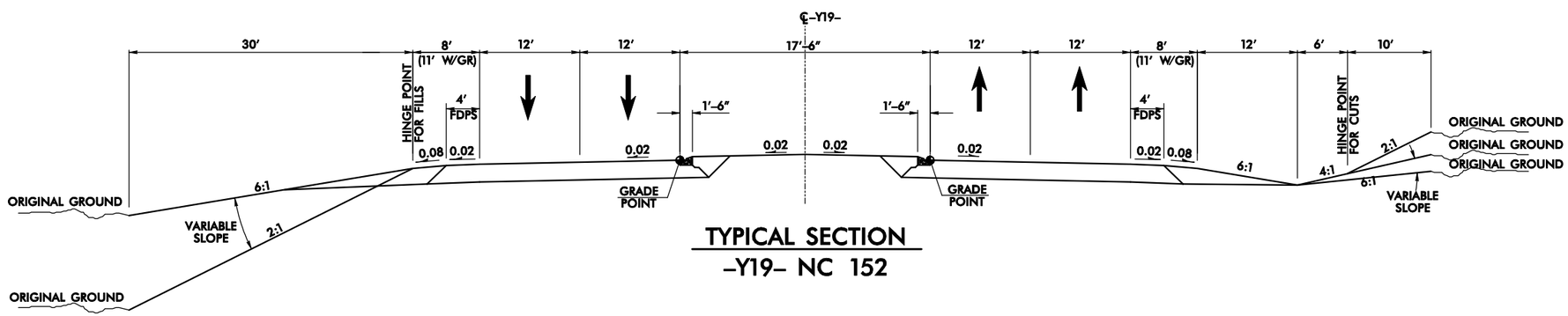
Map Date: 9/4/2012

Figure

3D



TYPICAL SECTION
–Y18– LENZT RD.



TYPICAL SECTION
–Y19– NC 152

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

Not to Scale

Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
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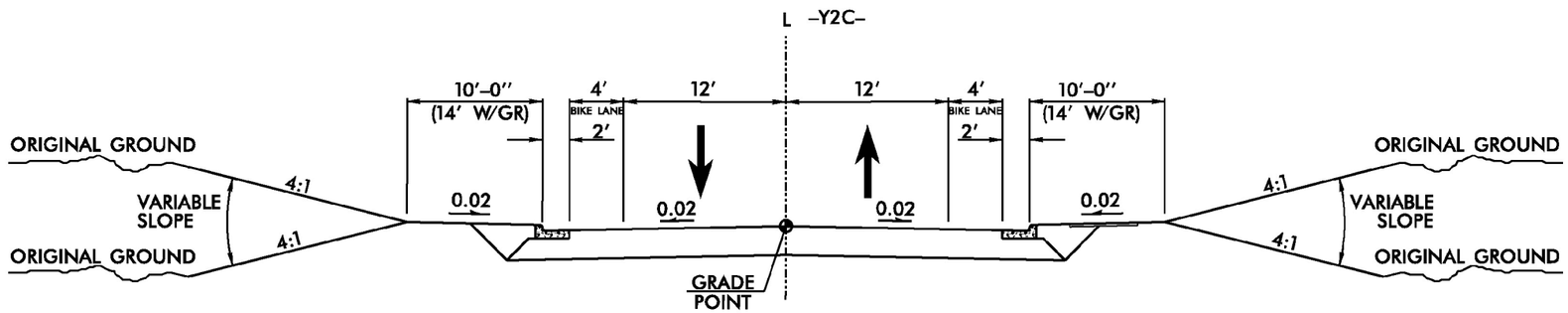
Rowan and Cabarrus Counties, North Carolina

Map Date: 9/4/2012

Figure

3E



TYPICAL SECTION

–Y2 2A– WINECOFF SCHOOL RD.

Prepared For:

Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610)
Rowan and Cabarrus Counties, North Carolina

Map Date: 12/5/2013

Figure

3F

NEW HAVEN PARK
AUTUMN CHASE
ORPHANAGE RD
Irish Buffalo Creek Greenway - Proposed
North Cabarrus Park
PINEBOUGH LN
WIGHTMAN OAKS
TRINITY CHURCH RD
THE PINES OF CABARRUS
WBL
UTJ1
UTI
UTK
UTJ1
Bridge No. 88
WA-1
UTF
85
Blake House
City of Concord Lift Station 10
BC-Irish Buffalo Creek
Bridge No. 86
Covenant Classical School Private
HAVENBROOK
HAVENBROOK WA
UTJA
UTJB
WBK
UTJ2
Begin Project
GUSSIE LN
MISTLETOE RIDGE
DENNBRIAR DR
Overcash Soccer Complex
PATRICK HENRY DR
FAIRING
OKE POINTE
WEXF
RHYLMA PL
WESTGATE CIR
CAMBRIDGE HEIGHTS PL
MISTLETOE RIDGE PL
73
DAVIDSON HWY
WESTGATE MOBILE HOME ESTATES
TERRES BEND
STOCKTON AV
RUSTIC LN
CAMBRIDGE COMMONS
International Business Park
RURAL
4Q
4P
4O
4N
4M
4L
4K
4J
4I
4H
4G
4F
4E
4D
4C
4B
4A

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 11/8/2012

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Legend

- Study Area
- County Boundary
- Road
- Railroad
- Proposed Slope Stake
- Proposed Edge of Pavement
- Proposed Bridge
- Removed Bridge
- Retained Bridge
- Proposed Culvert
- Existing Culvert
- Stream
- Jurisdictional Wetland
- Pond
- WS-IV WSWS Protected Area
- WS-IV WSWS Critical Area
- 100-Year Floodplain
- Park
- Historic APE
- Historic Site
- Hazmat
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4A

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

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I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
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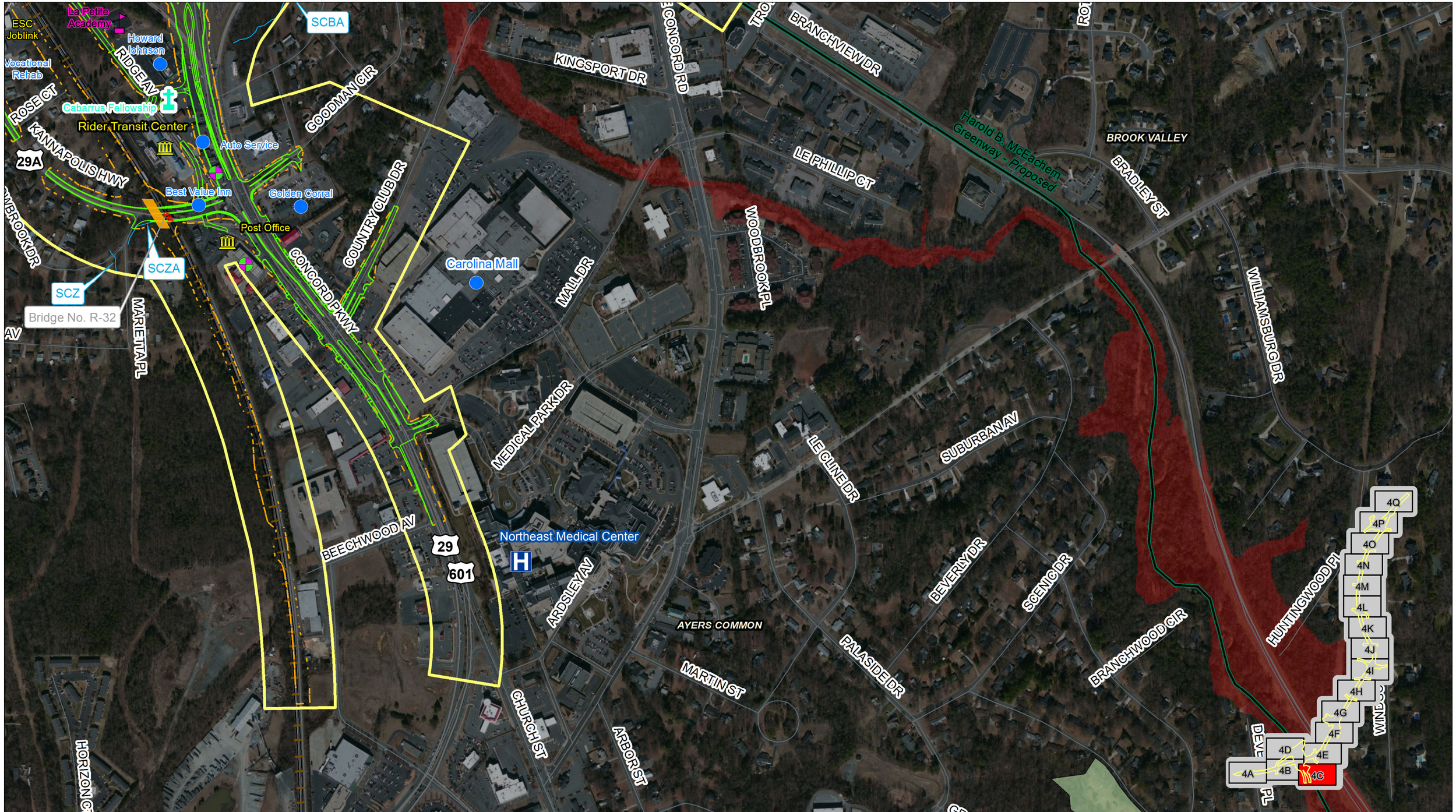
Figure 4B



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
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- Gov. Facility
- Business
- Cemetery

Figure 4C

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
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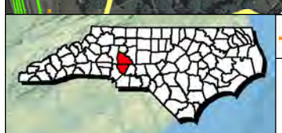
- Cemetery

Figure 4D

Threemile Branch
OREGON ST
SKYWAY DR
NORTH AV
CONCORD LAKE RD
BIKE ROUTE 1
SDA
SDA
SDAA
SC-R
AIRLINE DR
CLOVERLEAD MHP
Industrial Trans Re-New
Cabarrus Memorial Hospital
COPPERFIELD II
PARTRIDGE BLUFF
BRIDLEWOOD
Animal Hosp
Industrial Area
Multiple Steel Bldgs
Rest Area
GOVERNORS POINT
COPPERFIELD BLVD
GOVERNORS POINTE CT
Cabarrus Mercy Clinic
Urgent Care
DONCASTLE CT
Harold B. McEachern Greenway - Proposed
Suburban Pediatric Center
85
Home Depot
SC
SC-1
Microtel
Econo Lodge
Mainstay Suites
CLOVERLEAF PKWY
CT Communications
Bridge No. 40
PENNY LN
WAVERLY CT
WESSEX DR
WOODCREEK
SCAA
SCCA
SCC
SC
COUNTRY CLUB DR
McGREGOR DR
WILHELM PL
ROTHMOOR DR
TROTWOOD LN
LAKE CONCORD R
3
SCBA
BRANCHVIEW DR
KINGSPORT DR
CIR
4Q
4P
4O
4N
4M
4L
4K
4J
4I
4H
4G
4F
4D
4E
4A
4B
4C



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
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Map Date: 11/8/2012

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- Hazmat
- Church
- School
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- Gov. Facility
- Business
- Cemetery

Figure

4E

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

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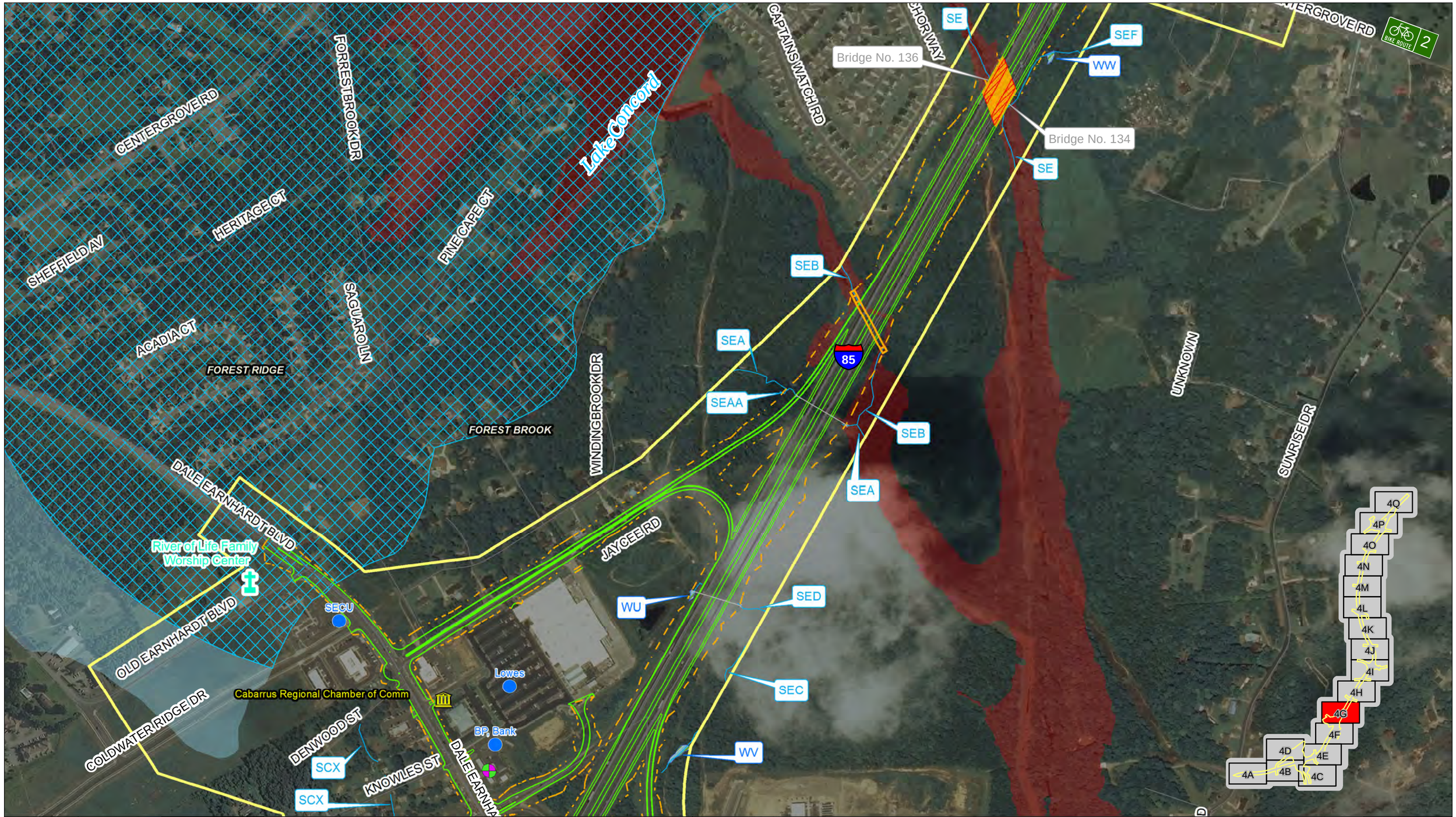
Figure

4F



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

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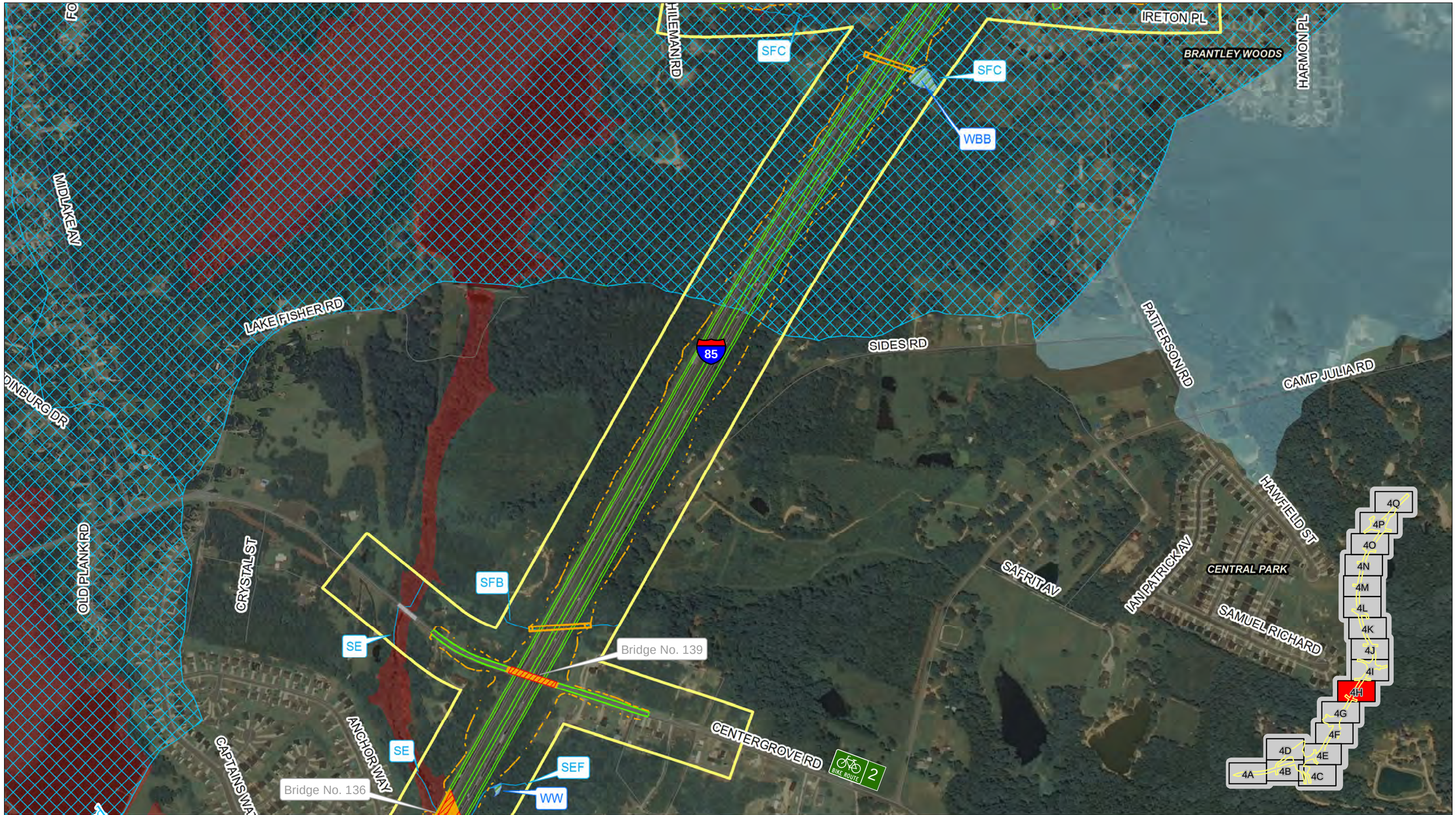
Figure

4G



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

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- Historic Site
- Hazmat
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4H

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

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- Business
- Cemetery

Figure

4I

Foot of the cross
LOCKHART RD
SH
SHA
Contaminant Control
WAL
WAK
SH
WAE
Lake Fisher
LZC
LZC
MOOSE RD
BIKE ROUTE 1
Bridge No. 32
Car Service/Repair
NAOMI CT
NFIELD ST
F.C. SMITH PROPERTY SUNSET HILLS
ECHERD ST
CMC-NorthEast Stadium
85
TURKEY RD
GLENWOOD ST
SHADY HAVEN SUBDIVISION
SCOTT ST
STADIUM DR
Macleod Concrete Pumping
TREELIMB LN
SG-1
SG-1
SGB
JOYCE ST
WENSIL LN
Rowan County
Cabarrus County
HAVEN ST
SGA
LZA
SGAD
Lane Street

4Q
4P
4O
4N
4M
4L
4K
4J
4I
4H
4G
4F
4D
4E
4A
4B
4C

MULKEY ENGINEERS & CONSULTANTS

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0 250 500 1,000 Feet
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- Road
- Railroad
- Proposed Slope Stake
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- Removed Bridge
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- WS-IV WSWS Protected Area
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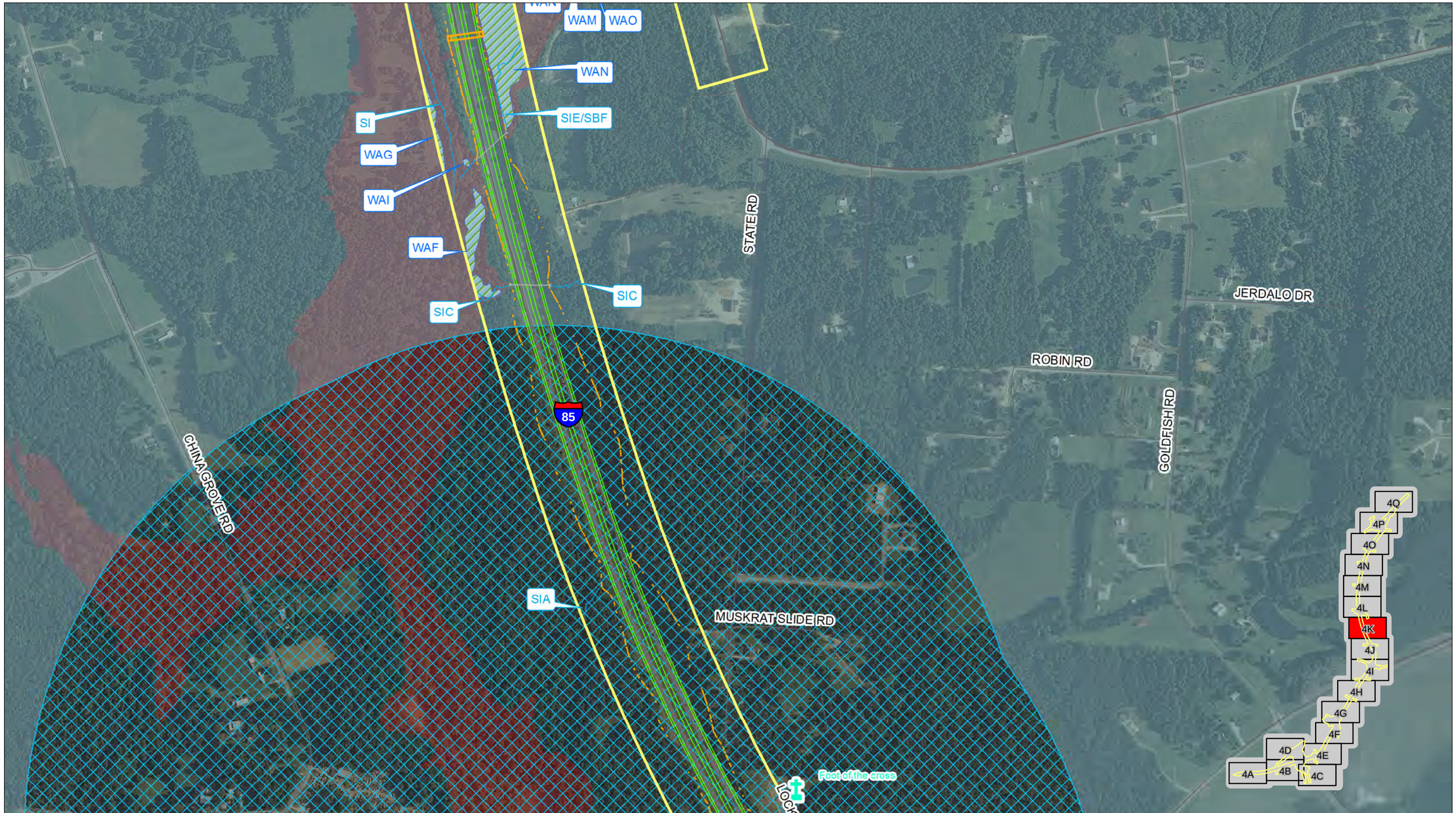
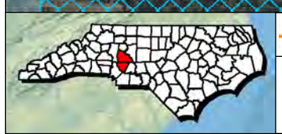
- 100-Year Floodplain
- Park
- Historic APE
- Historic Site
- Hazmat
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4J





MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 11/8/2012

This Exhibit is for planning purposes only and is not intended to be used for design or construction.
Wetland, Ponds, and Streams are approximate locations as the work was completed for inventory purposes using a Trimble GeoXT/XH with supposed sub-meter accuracy.

Legend

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- Cemetery

Figure

4K

HORSEPOWER LN

WAQ

SJ

SJC

85

WAT

OLD BEATTY FORD RD

IVORY LN

SERENITY RIDGE RD

SIE/SBF

SZD

SZD

PE

WAG

WAG

WAH

Bridge No. 65

WAN

WAP

WAM

WAO

WAN

4Q
4P
4O
4N
4M
4L
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4A
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MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

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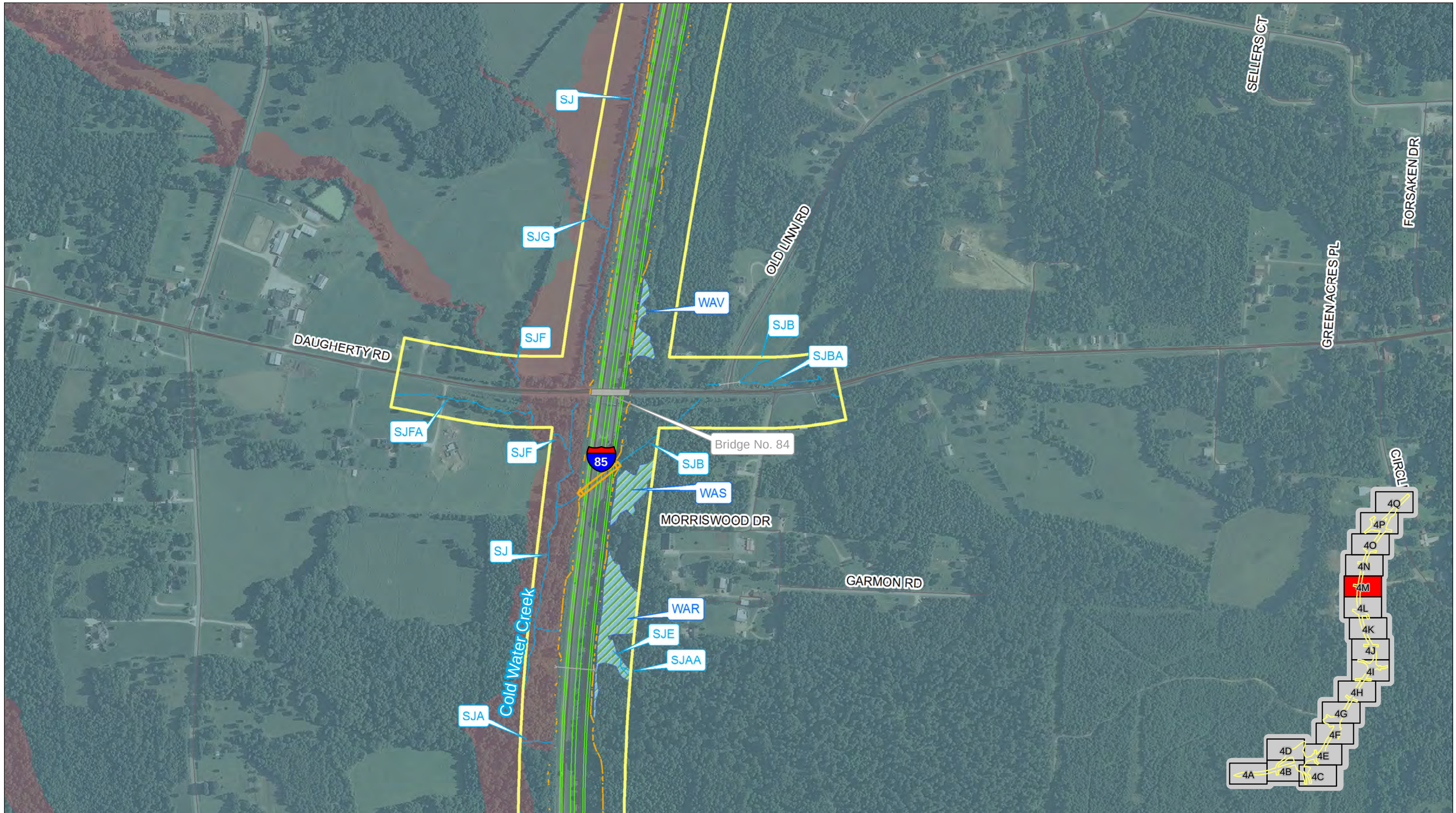
Figure

4L



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
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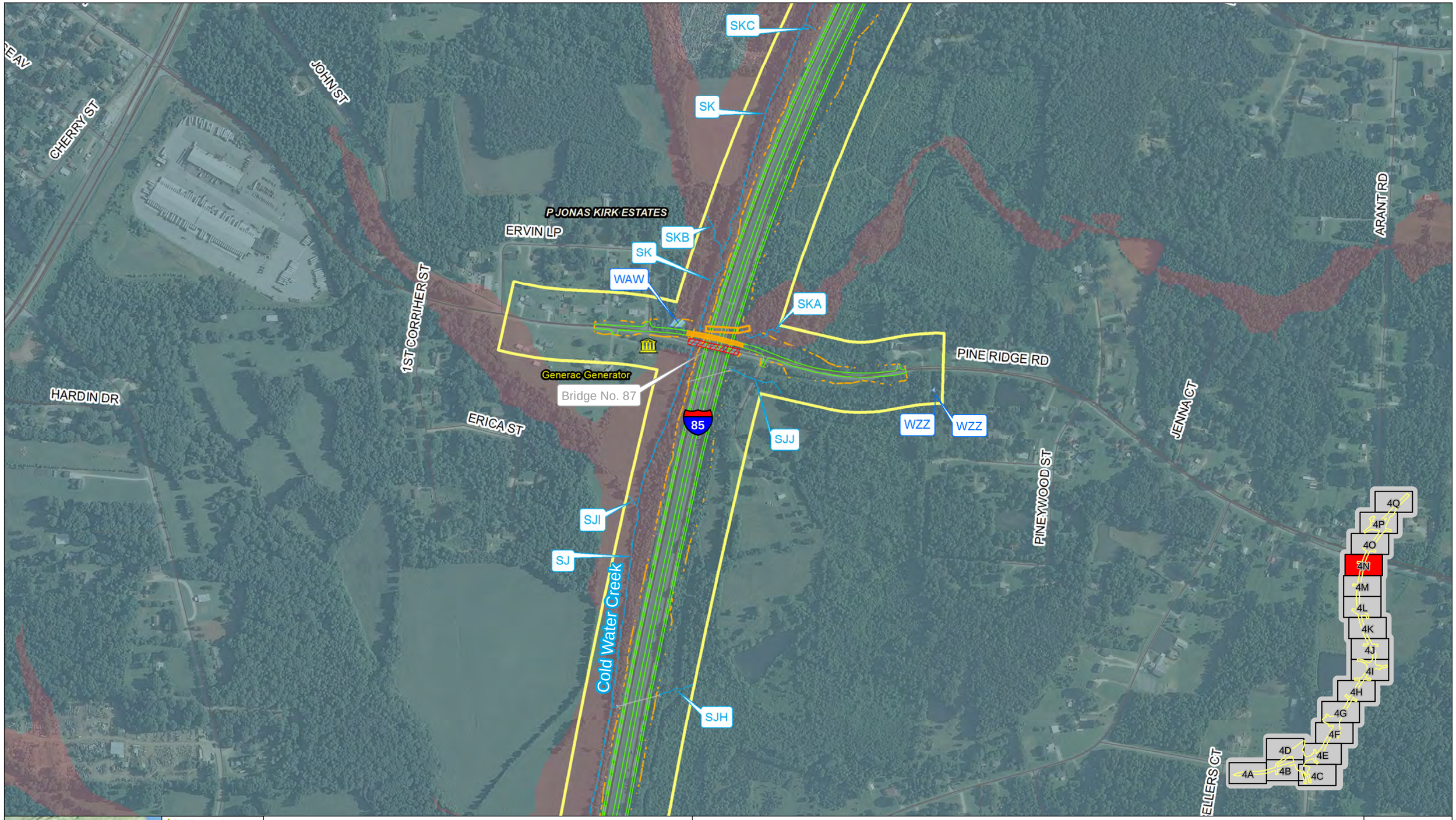
- Hazmat
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4M



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 11/8/2012

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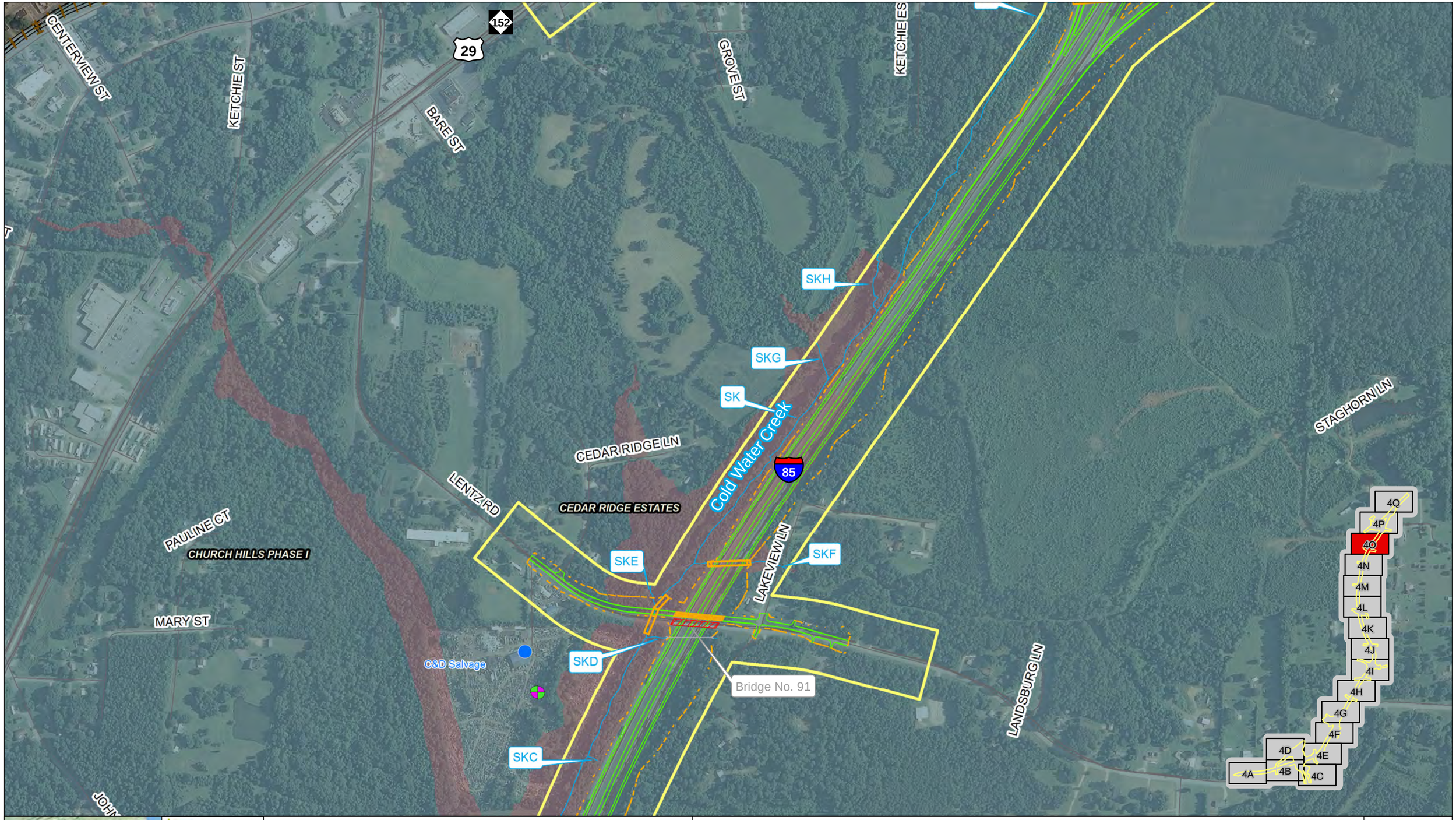
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4N



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 11/8/2012

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- Hazmat
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4O

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 11/8/2012

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- School
- Hospital/Medical
- Gov. Facility
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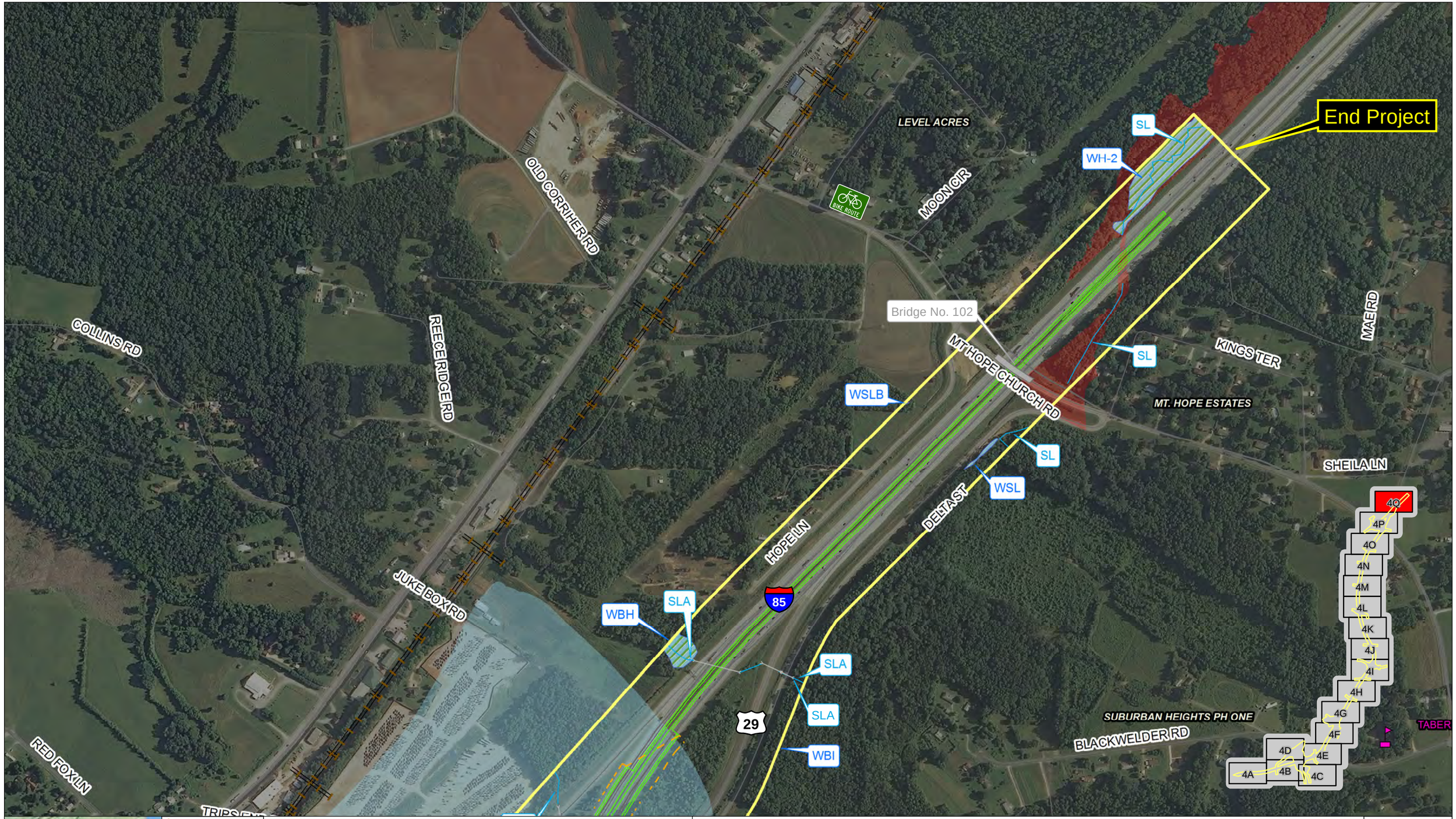
Figure

4P



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 11/8/2012

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- Historic Site
- Hazmat
- Church
- School
- Hospital/Medical
- Gov. Facility
- Business
- Cemetery

Figure

4Q

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 250 500 1,000 Feet

*1"= 500'

Proposed Improvements - US 29-601 Interchange

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 12/4/2013

This Exhibit is for planning purposes only and is not intended to be used for design or construction.
Wetland, Ponds, and Streams are approximate locations as the work was completed for inventory purposes using a Trimble GeoXT/XH with supposed sub-meter accuracy.

Legend

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- Proposed Culvert
- Existing Culvert

Figure

5

MULKEY ENGINEERS & CONSULTANTS

Prepared For:

0 200 400 800 Feet

*1"= 400'

Proposed Improvements - Dale Earnhardt Boulevard Interchange

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Source: NCDOT, Mulkey, Rowan and Cabarrus Co. GIS
Orthophotography: ESRI Imagery Service (update 7/12)

Map Date: 8/15/2012

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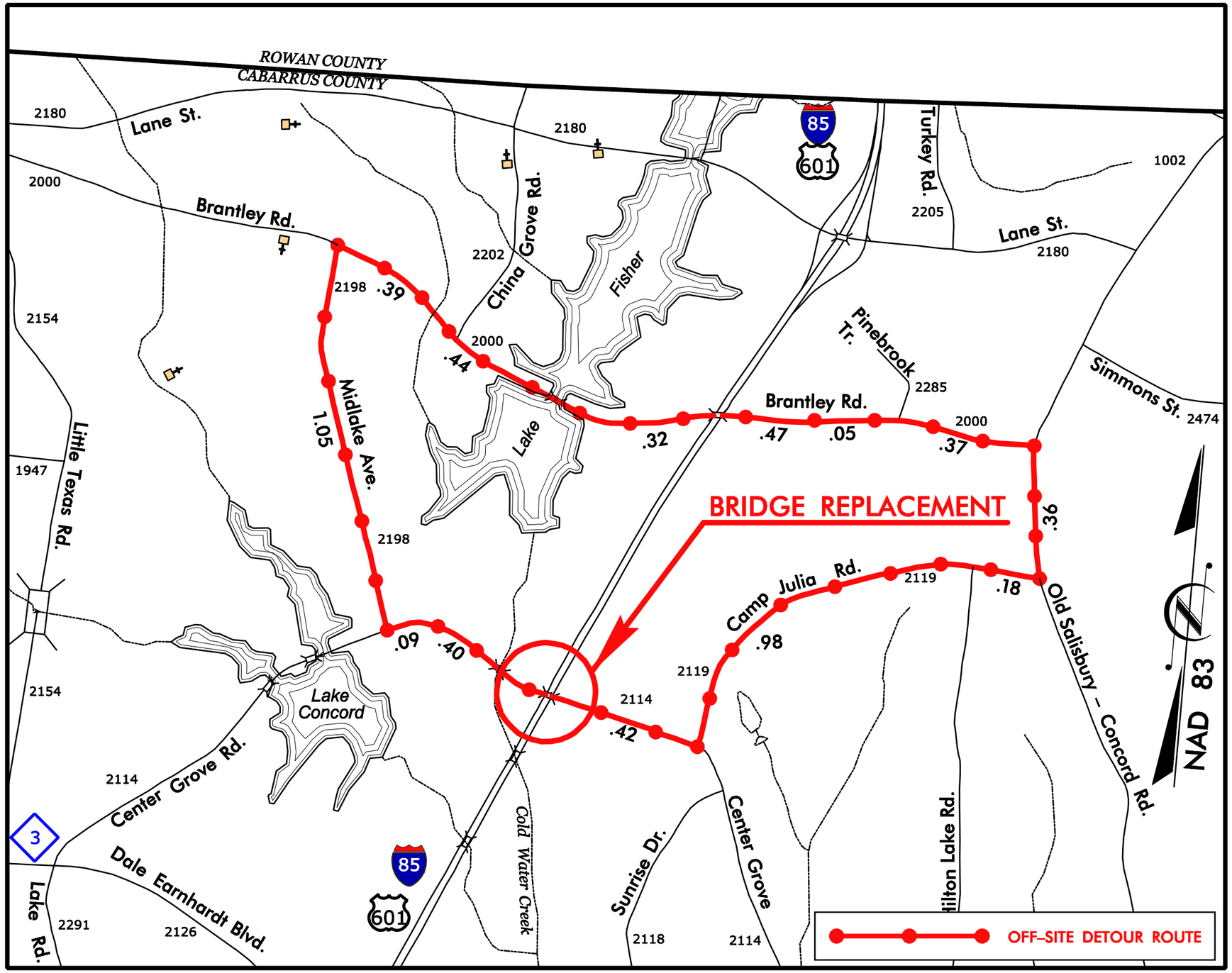
Figure

6



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

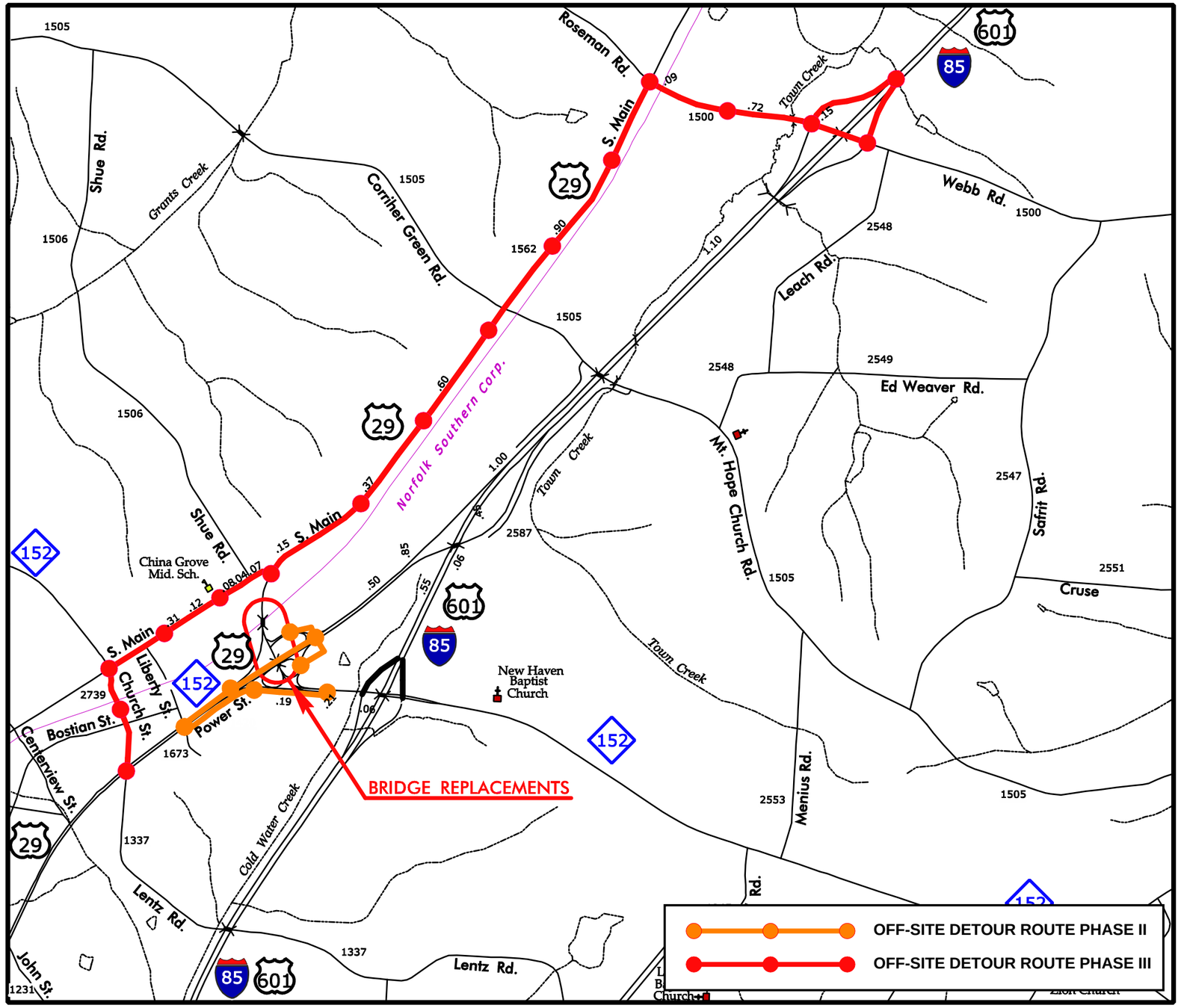
Proposed Improvements - Centergrove Road Detour

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610)
Rowan and Cabarrus Counties, North Carolina

Map Date: 3/21/2013

Figure

7



MULKEY ENGINEERS & CONSULTANTS

Prepared For:

Proposed Improvements – NC 152/I-85/US 601 Detour

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610)
Rowan and Cabarrus Counties, North Carolina

Map Date: 3/21/2013

Figure

8

Appendix B – Agency Correspondence

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

?
RECEIVED
MAR 14 2005
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

IN REPLY REFER TO

March 10, 2005

Regulatory Division

SUBJECT: Action ID. 200520565; Environmental Study for the Proposed Widening and Interchange Improvements of I-85, Cabarrus and Rowan Counties, North Carolina, TIP Nos. I-3802, I-3610 and B-3039.

RECEIVED
MAR 14 2005
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

This is in response to your February 16, 2005 letter requesting comments for the proposed environmental study being initiated for the Proposed Widening and Interchange Improvements of I-85, from NC 73 in Cabarrus County, to US29/601 Connector in Rowan County, North Carolina, TIP Nos. I-3802, I-3610 and B-3039.

Prior Department of the Army permit authorization, pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material into waters and/or wetlands in conjunction with this project, including temporary impacts for construction access, temporary detours, site dewatering or bridge demolition, and the disposal of construction debris.

Review of the project indicates that the proposed work will likely involve the discharge of excavated or fill material into waters and wetlands. Based on the anticipated total impacts to waters of the United States, and the likely requirement for an individual Department of the Army permit, it is recommended that The Corps recommends that NCDOT conduct further evaluation of this project through the full NEPA/404 Merger Process.

The Corps of Engineers must assess the impacts of the proposed activities on the aquatic environment prior to issuing Department of the Army permits. Authorization of aquatic fill activities requires that the project be water dependent and/or that no practicable alternatives are available. Our initial review emphasis for this NCDOT project will focus on the impacts to waters and/or wetlands. However, if degradation to other aspects of the natural environment

(e.g., habitat of endangered species) is considered to be of greater concern, an alternative resulting in greater aquatic losses may be chosen as preferred.

In all cases, and in accordance with the Memorandum of Agreement between the U.S. Environmental Protection Agency and the Corps, the sequencing process of avoidance, minimization, and compensatory mitigation of unavoidable wetland and stream impacts will be satisfied prior to the final permit decision. The corps will not issue a Department of the Army permit until a final plan for compensatory mitigation is approved.

Special attention should be given to avoiding impacts to stream/wetland corridors that parallel the proposed project, particularly as follows: 1) The tributary to Irish Buffalo Creek, and adjacent wetlands (shown on National Wetlands Inventory (NWI) mapping), that parallel the north side of I-85 just east of the NC 73 Interchange. 2) Cold Water Creek where it parallels the west side of I-85 from upstream of Lake Fisher to its headwaters. Avoidance and minimization of impacts to jurisdictional waters of the United States can probably be best obtained by considering asymmetrical widening as a practicable alternative.

Questions or comments pertaining to permits may be directed to me at telephone (919) 876-8441, ext. 23 (Web page http://www.saw.usace.army.mil/WETLANDS).

Sincerely,

Eric C. Alsmeyer
Regulatory Project Manager

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **200803229** County: **Rowan &Cabarrus** U.S.G.S. Quad: **Concord**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Agent: **Gregory Thorpe**
Address: **NC DOT**
1598 Mail Service Center
Raleigh, NC 27699-1598
Telephone No.: **919 715-7217**

COPY

Property description:
Size (acres) **400** Nearest Town **China Grove**
Nearest Waterway **Town Creek/ Cold Water Creek** River Basin **Yadkin River**
USGS HUC **03040104** Coordinates N **35.477019** W **-80.5790540**
Location description **I-85 widening from the US 29-601 connector south to SR 1430, adjacent to Town Creek, Cold Water Creek, and Irish Buffalo Creek, south of China Grove, in Rowan and Caburrus Counties, North Carolina. TIP I-3802, I-3804, and I-3610.**
As requested by your letter (i.e. agent's letter Mulkey Engineering dated December 2, 2010) and the documentation included with your letter this existing jurisdictional determination is modified to include the field verified jurisdictional determinations assoicated with y-line interchanges to be include in the proposed I-85 widening project.
As requested by your letter (i.e. agent's letter Mulkey Engineering dated September, 26, 2013) and the documentation included with your letter this existing jurisdictional determination is modified to include in field JD verifications on May 2, 2012 and is extended with this modification to September 30, 2018.

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are waters of the U.S. on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

X The waters of the U.S. including wetland on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

Action ID: 200803229

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Washington, NC, at (252) 946-6481 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **John Thomas** at **919 554-4884 ext. 25**.

C. Basis For Determination

There are stream channels within your project site which are tributaries of Town Creek, Cold Water Creek, and Irish Buffalo Creek which flows into the Yadkin River and the Atlantic Ocean.

D. Remarks

—

E. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

District Engineer, Wilmington Regulatory Division
Attn:Jean Manuele, Project Manager,
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the District Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **November 30, 2013**.

It is not necessary to submit an RFA form to the District Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____

Date **09/30/2013** Expiration Date **09/30/2018**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at our website at http://regulatory.usacesurvey.com/ to complete the survey online.

Copy furnished:
Mark Mickley / Cindy Carr, Mulkey Engineers & Consultants, P.O. Box 33127, Raleigh, NC 27636

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: NC DOT / TIP I-3802, I-3804, & I-3610	File Number: SAW 2008 03229	Date: September 30, 2013
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☐ APPROVED JURISDICTIONAL DETERMINATION		D
☒ PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: John Thomas @ 919 554-4884 ext. 25	If you only have questions regarding the appeal process you may also contact: Mr. Mike Bell, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits and approved Jurisdictional Determinations send this form to:

District Engineer, Wilmington Regulatory Division, Attn:Jean Manuele, Project Manager, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive , Suite 105, Wake Forest, North Carolina 27587

For Permit denials and Proffered Permits send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Mike Bell, Administrative Appeal Officer, CESAD-ET-CO-R, 60 Forsyth Street, Room 9M15, Atlanta, Georgia 30303-8801

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

September 13, 2013

John F. Sullivan, III, P.E.
Division Administrator
North Carolina Division Office
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601

Dear Mr. Sullivan:

Thank you for your letter requesting our review of the transportation conformity determinations for the 8-hour ozone standard for the amended 2035 Long Range Transportation Plan (LRTP) and FY 2012-2018 Transportation Improvement Program (TIP) for the Cabarrus-Rowan MPO located in the North Carolina portion of the Charlotte bi-state nonattainment area. As allowed by the Transportation Conformity Rule, the South Carolina portion of this nonattainment area implements transportation conformity independent of the North Carolina portion of this area. We have completed our review, and recommend a finding of conformity for 2008 8-hour ozone standard for the amended 2035 LRTP and FY 2012 -2018 TIP.

On August 15, 1997, July 1, 2014, and subsequently on May 6, 2005, the U.S. Environmental Protection Agency published revisions related to the criteria and procedures for determining that transportation plans, program, and projects which are funded or approved under Title 23 U.S.C. or "the Federal Transit Act" conform with State or Federal air quality implementation plans or "the Transportation Conformity Rule (40 Code of Federal Regulations Part 93)". These revisions outline the criteria that must be met for the 8-hour ozone standard. The EPA has reviewed the conformity determinations related to the 8-hour ozone standard for the amended 2035 LRTP and FY 2012-2018 TIP, and has concluded that all of the criteria, including those outlined in the July 1, 2004, conformity rule revision entitled, "Transportation Conformity Rule Amendments: Conformity Amendments for New 8-hour Ozone and PM2.5 National Ambient Air Quality Standards, Response to March 1999, Court Decision and Additional Rule Changes," (69 FR 40004) and those outlined in the May 6, 2005, conformity rule revision entitled, "Transportation Conformity Rule Amendments for the New $PM_{2.5}$ National Ambient Air Quality Standard: $PM_{2.5}$ Precursors," (70 FR 24280), have been met.

The EPA has considered this conformity determination in light of the current status of the Clean Air Interstate Rule (CAIR). The EPA notes that the District of Columbia (D.C.) Circuit issued a decision on July 11, 2008, vacating CAIR. North Carolina v. EPA, 531 F.3d 896 (D.C. Cir. 2008). On September 24, 2008, the EPA and other parties in the case filed motions for rehearing asking the D.C. Circuit to reconsider its decision in the case. On December 23, 2008, the court granted EPA's motion for rehearing to the extent it agreed to remand CAIR without vacating it. However, the court made no other changes to the July 11, 2008, opinion, remanding the case to the EPA for further rulemaking consistent with this opinion. Therefore, the CAIR rule remained in place, but the EPA was required to promulgate another rule consistent with the court's July 11, 2008, opinion.

On August 8, 2011, (76 FR 48208) the EPA finalized the Cross State Air Pollution Rule (CSAPR) as replacement for the remanded CAIR rule. The final rule was effective on October 7, 2011.

On December 30, 2011, the D.C. Circuit Court stayed the implementation of CSAPR pending its review of the rule. The Court also ruled that EPA was expected to continue administering the CAIR pending the Court's resolution of the petitions for review of CSAPR.

On August 21, 2012, the D.C. Circuit Court issued its decision on CSAPR. The Court vacated the rule and the associated federal implementation plans. The Court further ruled that the EPA must continue to administer CAIR pending the promulgation of a valid replacement. Therefore, CAIR remains in place. (EME Homer City Generation v. EPA, No. 11-1302 (D.C. Cir))

Thank you again for the opportunity to review the conformity determinations for the amended 2035 LRTP and FY 2012-2018 TIP for the Cabarrus-Rowan MPO located in the North Carolina portion of the Charlotte Bi-State nonattainment area. If you have any questions regarding this letter, please contact Dianna Smith of the EPA Region 4 staff at (404) 562-9207.

Sincerely,

Brenda C. Johnson
Acting Chief
Air Quality Modeling
and Transportation Section

cc: Eddie Dancausse, FHWA NC
Loretta Barren, FHWA NC
Heather Hildebrandt, NC DAQ
Myra Immings, FTA Region 4

U.S. Department of Transportation
Federal Highway Administration

North Carolina Division

310 New Bern Avenue, Suite 410
Raleigh, NC 27601
(919) 856-4346
(919) 747-7030
http://www.fhwa.dot.gov/ncdiv/

September 17, 2013

In Reply Refer To:
HDA-NC

Mr. Anthony J. Tata
Secretary
North Carolina Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

Dear Secretary Tata:

We reviewed the Cabarrus Rowan Metropolitan Planning Organization (CRMPO) Transportation Conformity Determination Report for the:

- The CRMPO 2035 LRTP (I-3802A/I-3802B/I-3803B) Amendment
- The CRMPO FY 2012-2018 TIP (I-3802A/I-3802B/I-3803B) Amendment

The CRMPO made a conformity determination on their 2035 LRTP Amendment/FY 2012-2018 TIP Amendment on the following date:

- CRMPO on August 28, 2013

The CRMPO amended FY 2012-2018 TIP is a direct subset of their amended 2035 LRTP.

The Federal Highway Administration and the Federal Transit Administration reviewed these documents. We coordinated our review with the Environmental Protection Agency (EPA) Region 4 and have enclosed their comments to this letter.

Based on our review and the comments provided to us by the EPA, we find that the following conform to the purpose of the State Implementation Plan in accordance with 40 CFR Part 93:

- The CRMPO 2035 LRTP (I-3802A/I-3802B/I-3803B) Amendment
- The CRMPO FY 2012-2018 TIP (I-3802A/I-3802B/I-3803B) Amendment

Sincerely,

For John F. Sullivan, III, P.E.
Division Administrator

Enclosure

From: Mundt, Leza W
To: Nicole Bennett
Subject: FW: I-3802 improvements to Winecoff School Rd (Cabarrus Co); archaeology
Date: Wednesday, November 20, 2013 10:05:01 AM
Attachments: I3802_psh_Winecoff_Alt2A.PDF

From: Jones, Damon
Sent: Wednesday, November 20, 2013 9:55 AM
To: Mundt, Leza W
Cc: Weaver, Derrick G; Wilkerson, Matt T
Subject: RE: I-3802 improvements to Winecoff School Rd (Cabarrus Co); archaeology

Leza,
The amended APE for I-3802 (improvements to Winecoff School Road and intersections with S. Main and S. Ridge Ave) in Cabarrus County should not impact any significant archaeological resources (PA# 13-05-0015). The revised design plans found on attached PDF has the APE located in an area that is severely disturbed from prior ground disturbing activities associated with urban development. It also avoids any known historic features that might yield potentially significant archaeological deposits. No subsurface testing is required. Should design plans change again, please inform archaeology. Include this email and your new map as an appendix to the my original "No Eligible or Listed Archaeological Sites Present or Affected" form for PA 13-05-0015 dated 7/09/13. If you have any further question, please call or email.
Thank You,

C. Damon Jones
Archaeologist II

N.C. Department of Transportation
PDEA - Human Environment Unit
1598 Mail Service Center
Raleigh, NC 27699-1598

Phone (919) 707-6076
Fax (919) 250-4224

From: Mundt, Leza W
Sent: Wednesday, November 20, 2013 6:51 AM
To: Jones, Damon
Cc: Weaver, Derrick G
Subject: RE: I-3802 improvements to Winecoff School Rd (Cabarrus Co); archaeology

Let me know if you have questions.

NO NATIONAL REGISTER OF HISTORIC PLACES ELIGIBLE OR LISTED ARCHAEOLOGICAL SITES PRESENT OR AFFECTED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No:	**I-3802**	*County:*	**Cabarrus**
WBS No:	**36780.1.2**	*Document:*	**CE**
F.A. No:	**FANHIMF-085-2(61)55**	*Funding:*	☐ State ☒ Federal

Federal Permit Required? ☒ Yes ☐ No *Permit Type:* **Not known**

Project Description:
The project is associated with the I-85 widening and interchange improvements. The current study area reviewed by this PA was not previously included in the prior environmental analysis work. The current project is a new alignment and bridge for Winecoff School Road (SR 1790) over an existing railroad, South Main Street (SR 1008), and Ridge Avenue in Cabarrus County. The archaeological Area of Potential Effects (APE) for the project is defined as an approximate 2,400 foot (731.52 m) long corridor running from Winecoff School Road on the west side of South Main Street to Mt. Olivet Road on the east. The corridor has a variable width of 100 feet (30.48 m) to 300 feet (91.44 m). The APE also includes an extension leading from the new Winecoff School Road alignment to South Main Street and improvements along Mt. Olivet Road from Ridge Avenue to Carolina Memorial Park. This current APE varies from the initial APE that was defined on the previously submitted survey required form.

SUMMARY OF ARCHAEOLOGICAL FINDINGS

The North Carolina Department of Transportation (NCDOT) Archaeology Group reviewed the subject project and determined:

☒ There are no National Register listed ARCHAEOLOGICAL SITES within the project's area of potential effects.
☒ No subsurface archaeological investigations are required for this project.
☐ Subsurface investigations did not reveal the presence of any archaeological resources.
☐ Subsurface investigations did not reveal the presence of any archaeological resources considered eligible for the National Register.
☐ All identified archaeological sites located within the APE have been considered and all compliance for archaeological resources with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
☒ There are no National Register Eligible or Listed ARCHAEOLOGICAL SITES present or affected by this project. (*Attach any notes or documents as needed*)

Brief description of review activities, results of review, and conclusions:

The project area is located just north of I-85 between Kannapolis to the north and Concord to the south in the northwestern portion of Cabarrus County, North Carolina. The project area is plotted near the western edge of the Concord USGS 7.5' topographic quadrangle (Figure 1).

A map review and site file search was conducted at the Office of State Archaeology (OSA) on May 28, 2013. No previously recorded archaeological sites have been identified within the APE or within a mile radius. In addition, no existing National Register of Historic Places (NRHP), Determined Eligible (DE), State Study Listed (SL), or Locally Designated (LD) properties are within or adjacent to the project area. However, two Surveyed Site (SS) properties are in the vicinity (Figure 2). The Julius Shakespeare Harris House #2 (CA 423) is found west of South Main Street within the APE (Figure 3), while the Mt Olive Methodist Church (CA 503) is adjacent to the APE at its eastern end (Figure 4). Topographic maps, USDA soil survey maps, aerial photographs (NC One Map), and historic maps (North Carolina maps website) were utilized to gage environmental and cultural variables that may have contributed to prehistoric or historic settlement within the project limits and to assess the level of ground disturbance. An archaeological reconnaissance survey was carried out on June 26, 2013, to evaluate the project area.

The APE for the project area is situated mostly along a broad ridge top with only a small portion in the east residing along gentle side slope (see Figure 2). No natural waterways are crossed, but water drains off the ridge to the northwest and southeast into unnamed streams. These waterways are part of the Yadkin-Pee Dee drainage basin. The area is a mix of urban development, residential properties, cleared grassy lots, forest, and a transmission power line corridor. Ground disturbance is more severe than initially reported. Soil erosion is heavy and previous earth moving activities have removed much of the natural soil as a result of grading and/or digging.

According to the USDA soil survey map, the APE encompasses two soil types (Figure 5). Most of the area including the ridge top is composed of Cecil-Urban land complex (CeB). These soils are typically sandy clay loams. They are well drained with little slope. If soil is exposed as in disturbed areas, erosion can be severe. Urban development on this soil type is a recognizable characteristic, which suggest heavy ground disturbance. Some areas are recorded as having up to 20 in (51 cm) of fill covering the original surface or the soil has been removed by a process of cutting/grading. Typically, urban disturbance only covers less than half of this series throughout the county with Cecil soils making up the remainder. Cecil soils cover 50 to 70 percent of the Cecil-Urban land complex and are described as only moderately disturbed. The second identified soil type is the Cecil sandy clay loam (CcD2), which is found along the side slope in the eastern half of the APE. This soil is well drained with a slope of 8 to 15 percent. Soil erosion is considered moderate to heavy. If present, the surface layer is typically mixed with subsoil from tillage. It is unlikely an intact and significant archaeological site will be encountered in areas of urban development, but it was believed prior to the reconnaissance survey that intact deposits could be present along the Cecil soils that have avoided erosion and modern ground alterations.

A review of the site files show that very few archaeological investigations have been conducted in the vicinity of the project, and no sites have been identified within a mile. OSA has cleared several projects in the area of further archaeological work due to severe ground disturbance related to modern urban development. The current project falls into a similar setting as these cleared projects, but it appeared at first that the Julius Shakespeare Harris House #2 and property adjacent to Carolina Memorial Park in the east had avoided most major urban disturbances. It was thought that these small pockets of undeveloped lands could contain intact archaeological deposits associated with the early settlement of the region in an area where undisturbed and intact properties are rare.

A historic map review was also conducted prior to field work. Most early maps from the 18th and 19th centuries provide few details of the region illustrating only major routes and settlements. The 1910 soil survey map for Cabarrus County is one of the first in which the project area can be accurately identified (Figure 6). This map shows an alignment of roads similar to present day Winecoff School Road, South Main Street, Mt Olivet Road, and the railroad. The map also depicts Mt Olive Methodist Church, an unidentified structure to the south of the church, and a third structure southwest of the current location of the Julius Shakespeare Harris House #2. Other nearby structures fall outside of the APE and were not considered for this study. Due to the scale and/or schematic nature of early maps, there is the possibility that the location of these structures are off. Mt. Olive Church seems to be situated in the same location plotted on the map. The unidentified structure to the south corresponds with a local doctor's house/office and its smaller adjacent outbuildings (Figures 7 and 8). These structures can be seen on the aerial view (see Figures 2). It is not immediately clear if these structures are related to the image depicted on the map, but it appears likely. The third structure was first thought to be J.S. Harris House #2, but the current house was not built until the 1920s according to the State Historic Preservation Office's (SHPO) site survey file. The object on the map appears to be unidentified structure that falls outside of the APE. No evidence for this structure remains as its location is now developed.

The archaeological investigations at the Winecoff School Road improvement project consisted of a reconnaissance survey with a NC DOT architect historian and a surface inspection of the APE (see Figures 2). No subsurface excavations were conducted due to severe ground disturbance and the presence of good surface visibility. All structures within the APE date from the 20th century with the Julius Shakespeare Harris House #2 and the doctor's house/office from the first half of the century (see Figures 3 and 7). Both structures are dilapidated with many of the household fixtures removed. General Julius Shakespeare Harris (1845–1936) was a member of the 5th North Carolina Cavalry in the Civil War and an active member of the community and the United Confederate Veterans (his papers are available at the University of North Carolina Library). It is reported that he inherited a house and property from his father, Charles J. Harris; but House #2 within the project area is not the original family home. The original 19th century house and property was located a few miles to the southwest on Poplar Tent Road. The currently standing J.S. Harris House #2 was built by Julius Shakespeare Harris for his adoptive daughter (nice) Lula Jay Harris and her husband R(alph?).O. Caldwell in the 1920s (1921 or 1923). SHPO's site file for the house says that the property consisting of 19 acres was not occupied prior to the construction of House #2. East of the J.S. Harris House #2 is a grassy lot that contains a former drive running parallel with Winecoff School Road (Figure 9). This drive leads to second 20th century house, which has experienced severe fire damage (Figures 10 and 11). Other than the former drive and drainage ditches, the property between the two houses show no landscape features such as surface depressions and rises associated with the removal of historic structures. Investigations on the eastern half of the project area around the doctor's house/office found severed soil erosion and disturbed landforms caused mostly by earth moving activities (Figures 12 and 13). No significant features were observed within the APE as subsoil is at the surface (Figure 14). The surface was inspected but no cultural material was recovered.

The archaeological investigations for the proposed Winecoff School Road improvements suggest no significant archaeological sites or deposits are within the project limits. The soils are severely disturbed from previous earth moving activities and suffer from heavy soil erosion. Subsoil was observed at the surface making it unlikely for intact subsurface deposits to be present. A surface inspection of the exposed areas also failed to produce cultural material. A historic review of the properties suggests that no 19th century or earlier structures were once present within the APE, and the current structures do not appear to contain significant archaeological deposits that will provide new or important information regarding the culture of the region during the early 20th century. As long as impacts to the subsurface occur within the defined APE, no further archaeological work is required for this project. Should the design or permit requirements change to extend outside of the defined APE, further archaeological consultation might be necessary.

SUPPORT DOCUMENTATION

See attached: ☒ Map(s) ☐ Previous Survey Info ☒ Photos ☐ Correspondence

Other: **images of historic maps consulted**

Signed:

7/09/13

C. Damon Jones **Date**

NCDOT ARCHAEOLOGIST

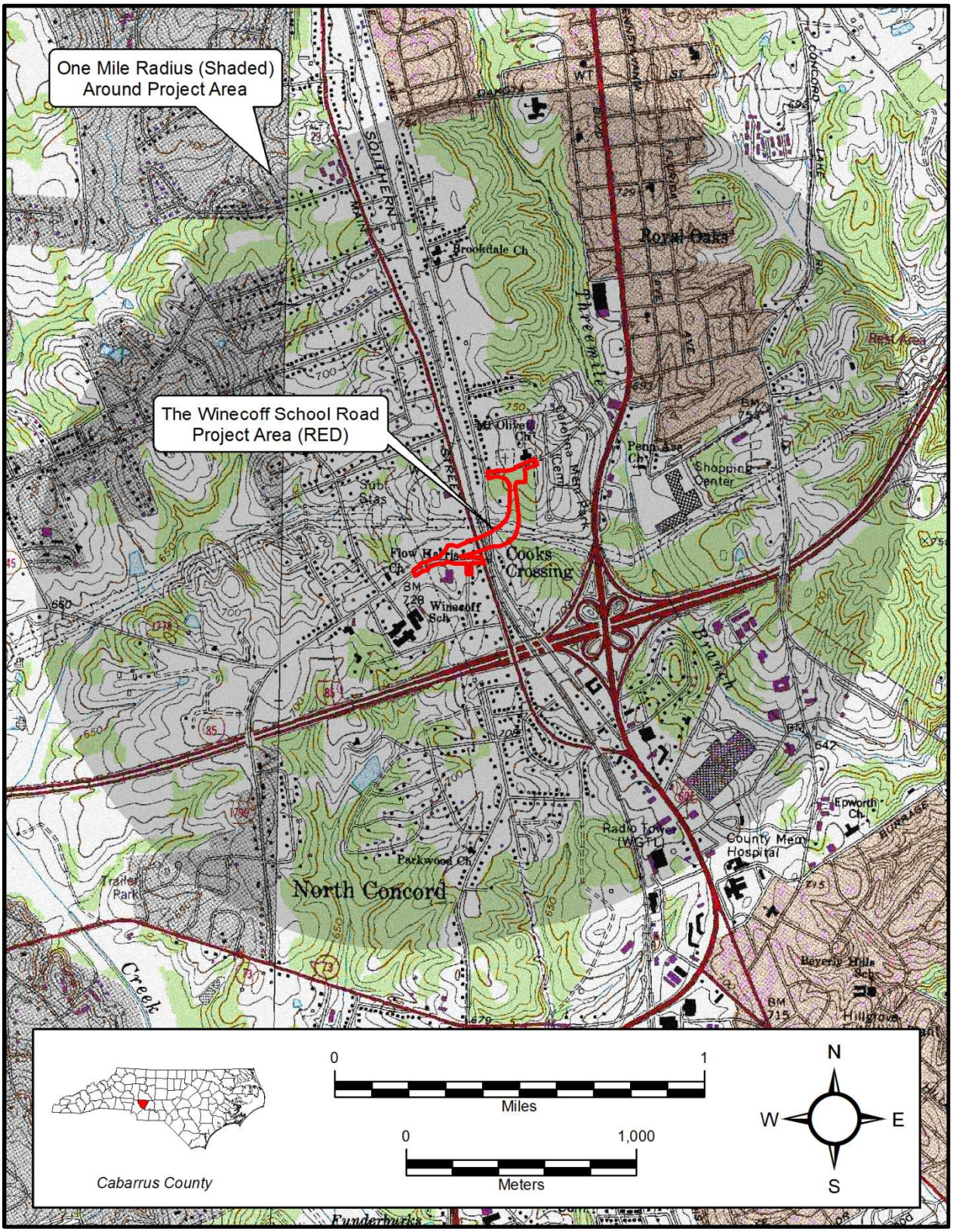


Figure 1. Topographic Setting of Project Area, Concord (1969, photorevised 1987) and Kannapolis (1993), NC, USGS 7.5' Topographic Quadrangle.

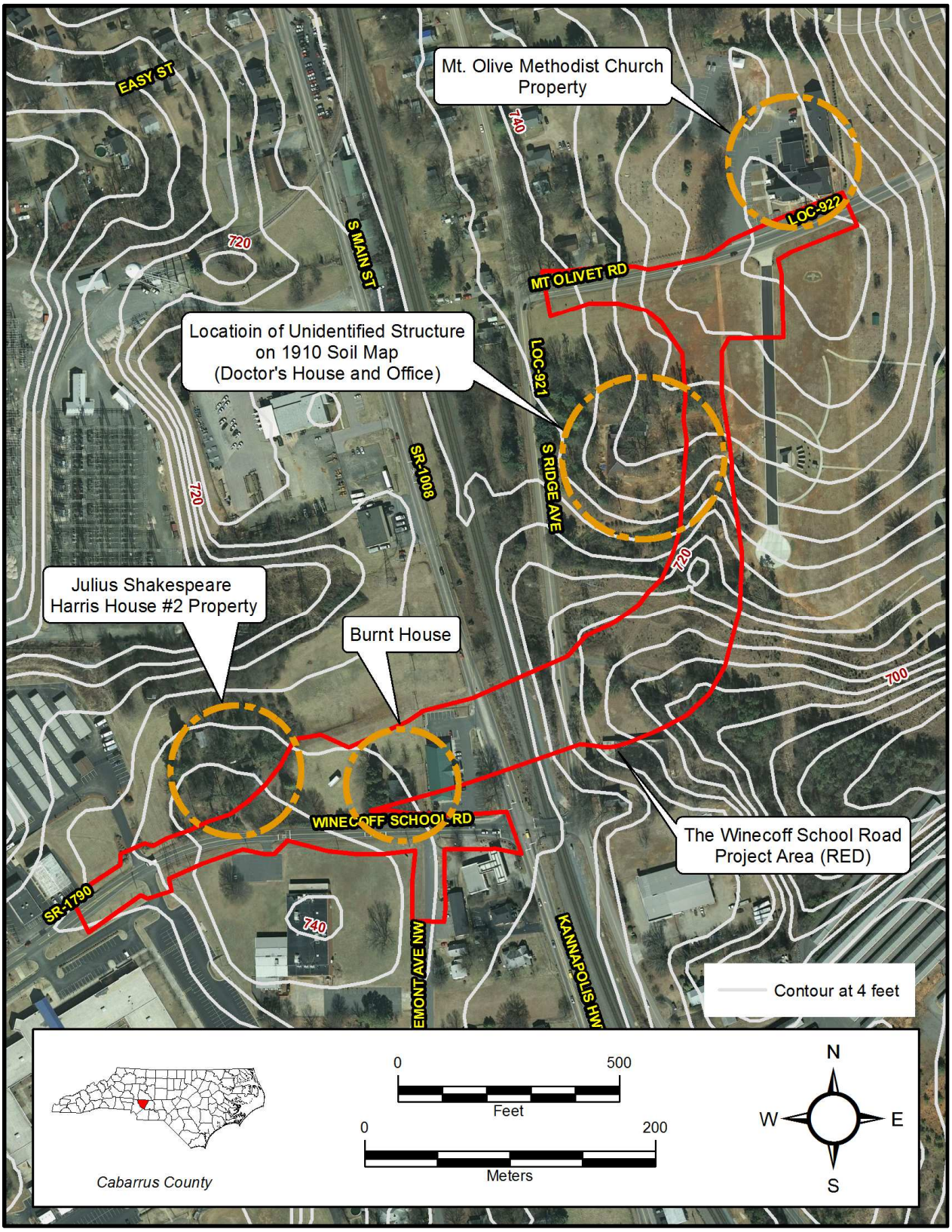


Figure 2. Aerial photograph of the APE showing development, landforms, and the location of historic properties within the near the project area.

Figure 3. General View of the Julius Shakespeare Harris House #2 looking west.

Figure 4. General View of the Mt Olive Methodist Church looking north.

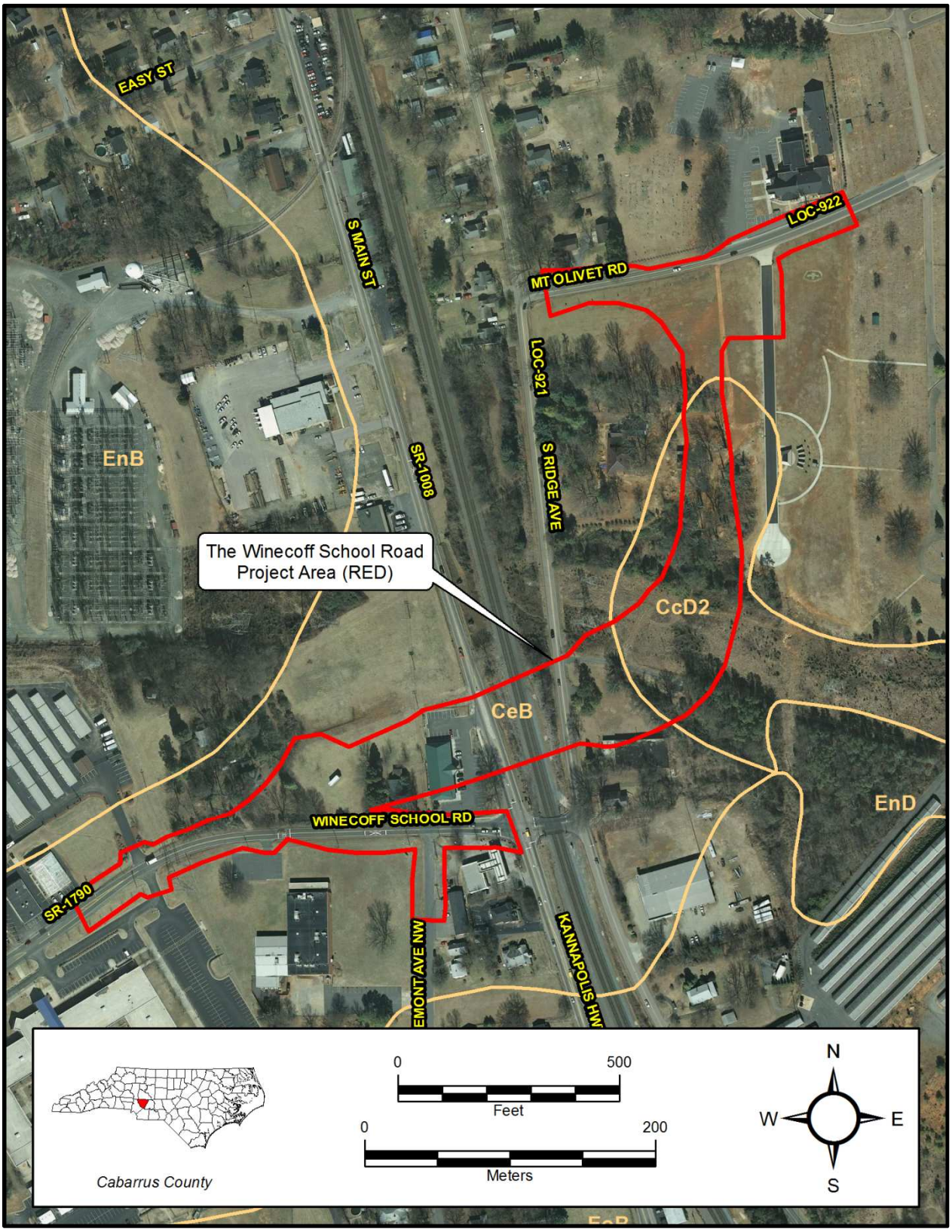


Figure 5. Aerial photograph of the APE showing development and soils within and near the project area.

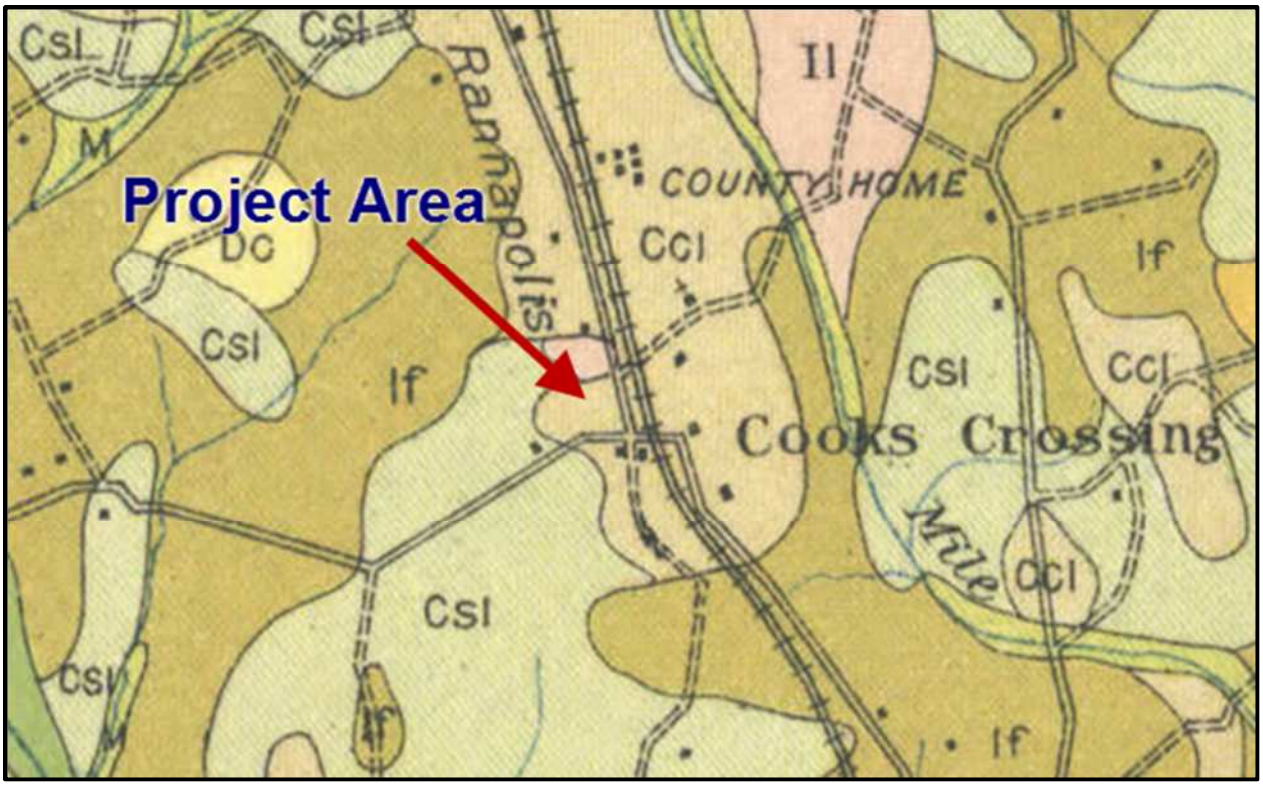


Figure 6. The 1910 Soil Survey Map for Cabarrus County showing the location of the project area.

Figure 7. General View of the local doctor's house/office looking southeast.

Figure 8. General View of the adjacent garage and outbuilding looking east.

Figure 9. General View of the property in front of the J.S. Harries House looking east.

Figure 10. General View of fire damaged 20th century house within the APE looking north.

Figure 11. General View of fire damaged 20th century house within the APE looking south.

Figure 12. General View of ground disturbance in the eastern half of the project area looking south.

Figure 13. General View of ground disturbance in the eastern half of the project area looking south.

Figure 14. General View of exposed subsoil at the surface looking northeast.

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Beverly Eaves Perdue, Governor
Linda A. Carlisle, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

May 9, 2012

MEMORANDUM

TO: Matt Wilkerson
Office of Human Environment
NCDOT Division of Highways

FROM: Ramona M. Bartos RGE for Ramona M. Bartos

SUBJECT: Amendment for Widening I-85 Between China Grove and Kannapolis, I-3802, Rowan and Cabarrus Counties, ER 05-0376

Thank you for your letter of April 25, 2012, concerning the above project.

There are no known archaeological sites within the proposed project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above referenced tracking number.

HISTORIC ARCHICTECTURE AND LANDSCAPES ASSESSMENT OF EFFECTS FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	I-3802	***County***:	Cabarrus
WBS No.:	36780.1.2	***Document Type***:	CE
Fed. Aid No:	FANHIMF-085-2(61) 55	***Funding***	☐ State ☒ Federal
Federal Permit(s):	☒ Yes ☐ No	***Permit Type(s)***:	n/a

Project Description:
Realignment and new railroad crossing for Winecoff School Road in Cabarrus County as part of the I-85 widening and interchange improvements from north of NC 71 to US 29-601 Connector.

SUMMARY OF HISTORIC ARCHICTECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions:
On June 13, 2013 a review HPOGIS website revealed the presence of two historic properties in the project vicinity. In September 2013, one of the properties was recommended eligible for National Register Listing: R.O. Caldwell House (CA 423) while the other property, the Dr. H.W. Barrier House (CA 1561) was recommended not eligible. In a letter dated October 20, 2013 NC HPO found both properties National Register Eligible.

ASSESSMENT OF EFFECTS

Property Name:	R.O Caldwell House	***Status***:	DE
Survey Site No.:	CA 423	***PIN***:	

Effects
☐ No Effect ☐ No Adverse Effect ☐ Adverse Effect

Explanation of Effects Determination:
4A - Temporary construction easement - no adverse effect.
2B - Temporary construction easement. no adverse with conditions we would replant trees
2A - no adverse effect

List of Environmental Commitments:

Property Name:	Dr. H.W. Barrier House	***Status***:	DE
Survey Site No.:	CA 1561	***PIN***:	

Effects see below

☐ No Effect ☐ No Adverse Effect ☐ Adverse Effect

Explanation of Effects Determination:

4A is adverse effect
2B - adverse effect
2A - no adverse effect

List of Environmental Commitments:

SUPPORT DOCUMENTATION

☐Map(s) ☐Previous Survey Info. ☐Photos ☐Correspondence ☒Design Plans

FINDING BY NCDOT AND STATE HISTORIC PRESERVATION OFFICE

Historic Architecture and Landscapes – ASSESSMENT OF EFFECTS

Shelby Reap — Dec. 3, 2013

NCDOT Architectural Historian — Date

Renee Gledhill-Earley — 12.3.13

State Historic Preservation Office Representative — Date

FHWA, for the Division Administrator, or other Federal Agency — Date

FHWA intends to use SHPO's concurrence as a basis of a "de minimis" finding for the following properties, pursuant to Section 4(f):

Federal Aid #: NHIMF-85-2 (61) 55 *TIP#:* I-3802 *County*: Cabarrus

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Project Description: Widen I-85 from NC 73 to the US 29/601 Connector in Cabarrus County

On July 26, 2011, representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project and agreed on the effects findings listed within the table on the reverse of this signature page.

Signed:

Shelby L Spillers 7/26/2011

Representative, NCDOT Date

Dale W Bruce 7-26-11

FHWA, for the Division Administrator, or other Federal Agency Date

Representative, HPO Date

for Renee Gledhill-Earley 7-26-11

State Historic Preservation Officer Date

Federal Aid #: NHIMF-85-2 (61) 55 *TIP #* : I-3802 *County*: Cabarrus

Property and Status	Alternative	Effect Finding	Reasons
Goodman Farm (DOE) Criteria A & C	best fit	no effect	not within ROW and no changes to Winecoff Rd.
Blake House (DOE)	best fit	no effect	inside ~~the~~ APE but outside the project area.

Initialed: NCDOT SLS FHWA DB HPO Rye

Federal Aid # FANHIMF-085-2(61)55 *TIP #* I-3802/I-3610 *County*: Rowan/Cabarrus

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description:

On December 21, 2010, representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project at historic architectural resources photograph review session/consultation and

All parties present agreed

- ☐ There are no properties over fifty years old within the project's Area of Potential Effects (APE).
- ☒ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's APE.
- ☒ There are properties over fifty years old within the project's APE, but based on the historical information available and the photographs of each property, the properties identified as 1-43 are considered not eligible for the National Register and no further evaluation of them is necessary. Photographs of these properties are attached.
- ☒ There are no National Register-listed or Study Listed properties within the project's APE.
- ☒ All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- ☐ More information is requested on properties _____.

Signed:

Shelby Spillers 12/21/2010

Representative, NCDOT Date

FHWA, for the Division Administrator, or other Federal Agency Date

Representative, HPO Date

Renee Gledhill-Early 12/21/10

State Historic Preservation Officer Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

Federal Aid # *TIP#* **I-3802** *County:* **Rowan/Cabarrus**

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: **Widen I-85 and improve interchanges**

On **March 24, 2008** representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☐ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project at

- ☐ Scoping meeting
- ☒ Historic architectural resources photograph review session/consultation
- ☐ Other

All parties present agreed

- ☐ There are no properties over fifty years old within the project's area of potential effects.
- ☒ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- ☒ There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the properties identified as 1-10 are considered not eligible for the National Register and no further evaluation of them is necessary.
- ☒ There are no National Register-listed or Study Listed properties within the project's area of potential effects.
- ☒ All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- ☐ There are no historic properties affected by this project. (*Attach any notes or documents as needed*)

Signed:

[illegible] 3/24/2008
Representative, NCDOT Date

FHWA, for the Division Administrator, or other Federal Agency Date

Representative, HPO Date

Renee Gledhill-Earley 3.24.08
State Historic Preservation Officer Date

If a survey report is prepared, a final copy of this form and the attached list will be included.

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Pat McCrory, Governor
Susan Kluttz, Secretary
Kevin Cherry, Deputy Secretary

Office of Archives and History
Division of Historical Resources

October 30, 2013

MEMORANDUM

TO: Shelby Reap, Architectural Historian
NCDOT/PDEA/HEU

FROM: Ramona Bartos RMB for RMB

RE: Historic Architectural Eligiblity Evaluation, Realignment and New Railroad Crossing for Winecoff School Road, WBS #36780.1.2, Cabarrus County, ER 13-2237

Thank you for your submittal of September 27, 2013, transmitting the above survey report.

For the purpose of compliance with Section 106 of the National Historic Preservation Act, we concur that the **R. O. Caldwell House** (CA 0423, previously surveyed as the Second Julius Shakespeare Harris House) is eligible for listing in the National Register of Historic Places under Criterion C for architecture and that the proposed National Register boundaries appear appropriate.

At this time we cannot concur with the report's recommendation regarding the **Dr. H. W. Barrier House** (CA 1561). The office and adjoining garage date to the 1940s (though the garage appears to have been added later) and are well integrated into the 1935 house's design, with compatible style and scale and matching materials. While the apartment was added later still, it appears to more likely date to the 1940s or 1950s, with much later interior renovations and stair additions. The apartment repeats design elements of the original house, notably the soldier courses, and its siting, to the rear of the office, does not substantially detract from the overall design of the house. The property illustrates a unique and significant building evolution and we believe that it retains sufficient historic integrity to be *eligible* for listing in the National Register under Criterion C for architecture. Our proposed National Register boundaries correspond to the existing parcel lines for the property (Cabarrus County PIN #56129239000000).

The submitted survey report makes no mention of the **Mount Olivet Methodist Church** (CA 0503), which was identified during the 1981 Cabarrus County architectural survey, and is included in Peter Kaplan's *The Historic Architecture of Cabarrus County*. The church falls within the project's area of potential effect and is shown on the USGS map excerpt on page 2 of the report. We recommend that the

National Register eligibility of this church and its adjacent cemetery be evaluated and the findings reported to us.

The above comments are offered in accordance with Section 106 of the National Historic Preservation Act and the regulations of the Advisory Council on Historic Preservation at 36 CFR 800. If you have questions concerning them, please contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919-807-6579 or renee.gledhill-earley@ncdcr.gov. Thank you.

cc: Mary Pope Furr, NCDOT, mfurr@ncdot.gov

MAR 15 2006
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

March 9, 2006

MEMORANDUM

TO: Greg Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: Peter Sandbeck RSE for Peter Sandbeck

SUBJECT: Historic Architectural Resources Survey Report, I-85 Widening From NC 73 to the US 29/601 Connector, NC 152 Interchange Improvements at US 29/601 and I-85 Bridge Over US 29 on NC 152, I-3802/I-3610/B-3029, Cabarrus and Rowan Counties, ER 05-0376

Thank you for your letter of December 20, 2006, transmitting the survey report by Debbie Bevin of Circa, Inc.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are eligible for the National Register of Historic Places under the criterion cited:

- Blake House, E side of SR 1622 (Trinity Church Road), .2 mi. N of junction with NC 73, Odell School vicinity, is eligible for the National Register under Criterion C for architecture as a notable example of an early-nineteenth-century Cabarrus County vernacular house. The house exhibits Federal-style trim and is unusual for its enclosed stair that rises directly from the front porch.

  We concur with the proposed National Register boundary as described, justified, and delineated in the survey report.

- Goodman Farm, W side SR 1790 (Winecoff Road) S of intersection with SR 1778 (Orphanage Road), Concord vicinity, is eligible for the National Register under Criteria A and C for agriculture and architecture. The property is a now rare example of the dairy farms that once doted the county in the first quarter of the twentieth century. The complex is representative of a dairy farm of the period and includes the 82-acre parcel, Queen Anne farmhouse, and surviving outbuildings.

  We concur with the proposed National Register boundary as described, justified, and delineated in the survey report.

For purposes of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties and the remaining properties noted in the report are not eligible for the National Register of Historic Places.

- Samuel Deal House, SR 1221 (Old Beatty Road), North Kannapolis vicinity, is not eligible for the National Register because it has lost architectural integrity and integrity of setting.

- Shinn House, 1410 N. Main St., China Grove, is not eligible for the National Register because it has lost immediate setting integrity, thus compromising the house's ability to convey its architectural significance.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NCDOT
Debbie Bevin, Circa, Inc.

North Carolina Department of Cultural Resources

State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

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Division of Historical Resources
David Brook, Director

RECEIVED
APR 15 2005
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

April 12, 2005

MEMORANDUM

TO: Gregory J. Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: Peter Sandbeck PBS for PBS

SUBJECT: Environmental Assessment, Proposed Widening and Interchange Improvements Of I-85 from NC 73 to US 29/601 Connector (TIP Project No. I-3802), and NC-152 Interchange Improvements at US 29/601 and I-85 (TIP Project Nos. I-3610 & B-3039), Rowan and Cabarrus Counties, ER 05-0376

We have received notification from the State Clearinghouse and your memorandum of February 16, 2005, concerning the above project.

We have conducted a search of our maps and files and located the following structure of historical or architectural importance within the general area of this project:

- (RO 317) Samuel Deal House, south side SR 1221, 0.05 miles west of junction with SR 1440

We recommend that a Department of Transportation architectural historian identify and evaluate any structures over fifty years of age within the project area, and report the findings to us.

Your memorandum noted that archaeological site 31CA182 is located within the project area. The staff of the NC Department of Transportation recorded this site in 1989 in connection with the I-2303 project. Although no site form was submitted for the site, it has been evaluated as not eligible for the National Register of Historic Places and no additional investigation of this site is recommended.

If the proposed improvements to I-85 are to be confined to the existing right-of-way, no archaeological investigation is recommended. If new right-of-way is to be acquired, please forward the location to us for additional evaluation.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: State Clearinghouse
Mary Pope Furr, NCDOT
Matt Wilkerson, NCDOT

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Moore... Office
MAR 1 0 2005

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number
05-0254
County
Cabarrus/Rowan

Inter-Agency Project Review Response

Project Name NC DOT

Type of Project Proposed project is to widen I-85 from 4 lanes to 8 from NC 73 to US29-601 Connector. TIP#3802 and NC 152 interchange Improvements at US29/601 & I-85. TIP# I-3610 & B-3039.

Comments provided by:

- ☐ Regional Program Person
- ☒ Regional Supervisor for Public Water Supply Section
- ☐ Central Office program person

Name: Britt Setzer-Mooresville RO

Date: 3-8-05

Telephone number: 704 235-2127

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MAR 1 6 2005
PUBLIC WATER SUPPLY SECTION

Program within Division of Environmental Health:

- ☐ Public Water Supply
- ☐ Other, Name of Program: _____

Response (check all applicable):

- ☐ No objection to project as proposed
- ☐ No comment
- ☐ Insufficient information to complete review
- ☐ Comments attached
- ☒ See comments below

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DOA

See reverse side of form

Return to:

Public Water Supply Section
Environmental Review Coordinator
for the
Division of Environmental Health

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Project Number
05-0254
County
Cabarrus/Rowan

Proposed project is to widen I-85 from 4 lanes to 8 from NC 73 to US29-601 Connector.

Inter-Agency Project Review Response

Project Name NC DOT Type of Project_____

☐ The applicant should be advised that plans and specifications for all water system improvements must be approved by the Division of Environmental Health prior to the award of a contract or the initiation of construction (as required by 15A NCAC 18C .0300et. seq.). For information, contact the Public Water Supply Section, (919) 733-2321.

☐ This project will be classified as a non-community public water supply and must comply with state and federal drinking water monitoring requirements. For more information the applicant should contact the Public Water Supply Section, (919) 733-2321.

☐ If this project is constructed as proposed, we will recommend closure of _____ feet of adjacent waters to the harvest of shellfish. For information regarding the shellfish sanitation program, the applicant should contact the Shellfish Sanitation Section at (252) 726-6827.

☐ The soil disposal area(s) proposed for this project may produce a mosquito breeding problem. For information concerning appropriate mosquito control measures, the applicant should contact the Public Health Pest Management Section at (919) 733-6407.

☐ The applicant should be advised that prior to the removal or demolition of dilapidated structures, a extensive rodent control program may be necessary in order to prevent the migration of the rodents to adjacent areas. For information concerning rodent control, contact the local health department or the Public Health Pest Management Section at (919) 733-6407.

☐ The applicant should be advised to contact the local health department regarding their requirements for septic tank installations (as required under 15A NCAC 18A. 1900 et. sep.). For information concerning septic tank and other on-site waste disposal methods, contact the On-Site Wastewater Section at (919) 733-2895.

☐ The applicant should be advised to contact the local health department regarding the sanitary facilities required for this project.

☒ If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Environmental Health, Public Water Supply Section, Technical Services Branch, 1634 Mail Service Center, Raleigh, North Carolina 27699-1634, (919) 733-2321.

☒ For Regional and Central Office comments, see the reverse side of this form.

Jim McRight	PWS	03-08-05
Reviewer	Section/Branch	Date

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality
Coleen H. Sullins
Division of Water Quality

March 22, 2005

MEMORANDUM

To: Melba McGee

From: Brian Wrenn BW

Subject: Comments on proposed project to widen I-85 from 4 lanes to 8 from NC 73 to US 29/601 Connector and NC 152 Interchange Improvements at US29/601 and I-85 in Rowan and Cabarrus Counties, TIP's I-3802, I-3610, B-3039, DENR No. 05-0254.

Reference your correspondence dated February 16, 2005 in which you requested comments for the referenced project. Preliminary analysis of the project reveals the potential for multiple impacts to perennial streams and jurisdictional wetlands in the project area. More specifically, impacts to:

Stream Name	River Basin	Stream Classification(s)	Stream Index Number
Town Creek	Yadkin	C	12-115-3
Cold Water Creek, source to 0.5 mi. downstream of Rowan Co. SR 1221	Yadkin	WS-IV	13-17-9-4-(0.5)
Cold Water Creek (Lake Fisher), 0.5 mile downstream of Rowan Co. SR 1221 to Dam at Lake Fisher	Yadkin	WS-IV; CA	13-17-9-4-(1)
Cold Water Creek, dam at Lake Fisher to Irish Buffalo Creek	Yadkin	C	13-17-9-4-(1.5)
Threemile Branch	Yadkin	C	13-17-9-4-5
Irish Buffalo Creek	Yadkin	C	13-17-9-(2)

Further investigations at a higher resolution should be undertaken to verify the presence of other streams and/or jurisdictional wetlands in the area. In the event that any jurisdictional areas are identified, the Division of Water Quality requests that NCDOT consider the following environmental issues for the proposed project:

A. One of the surface water impacts sites for project is the Cold Water Creek. In the project area, this surface water has a Water Quality Classification of WS-IV Critical Area. Therefore, the potential for impacts to waters that are used for municipal drinking water is possible. Please locate and identify all water intakes in the projects study area. In addition, please include their locations in all future documentation. In addition, it should be noted that alternatives to avoid impacts upstream of any water supply intakes will need to be considered during the development of the environmental documents.

B. The document should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping.

C. There should be a discussion on mitigation plans for unavoidable impacts. If mitigation is required, it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects

requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

D. Review of the project reveals the presence of surface waters classified as Water Supply Critical Area in the project study area. Given the potent for impacts to these resources during the project implementation, the DWQ requests that DOT strictly adhere to North Carolina regulations entitled "Design Standards in Sensitive Watersheds" (15A NCAC 04B .0024) throughout design and construction of the project. This would apply for any area that drains to streams having WS CA(Water Supply Critical Area) classifications.

E. Review of the project reveals that Water Supply Critical Area Waters will potentially be impacted by the project. If an alternative located upstream of the drinking water supply intake is selected as the preferred alternative, the NCDOT will be required to design, construct, and maintain hazardous spill catch basins in the project area. The number of catch basins installed should be determined by the design of the bridge, so that runoff would enter said basin(s) rather than flowing directly into the stream, and in consultation with the DWQ.

F. Wetland and stream impacts should be avoided (including sediment and erosion control structures/measures) to the maximum extent practical. If this is not possible, alternatives that minimize wetland impacts should be chosen. Mitigation for unavoidable impacts will be required by DWQ for impacts to wetlands in excess of one acre and/or to streams in excess of 150 linear feet.

G. Borrow/waste areas should not be located in wetlands. It is likely that compensatory mitigation will be required if wetlands are impacted by waste or borrow.

H. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3027/Nationwide Permit No. 6 for Survey Activities.

I. In accordance with the Environmental Management Commission's Wetlands Rules {15A NCAC 2H.0506(b)(6)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation becomes required, the mitigation plan should be designed to replace appropriate lost functions and values. In accordance with the NCDWQ Wetlands Rules {15A NCAC 2H.0506 (h)(3)}, the Wetland Restoration Program may be available for use as stream mitigation.

J. Sediment and erosion control measures should not be placed in wetlands.

K. While the use of National Wetland Inventory (NWI) maps and soil surveys is a useful office tool, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.

L. An analysis of cumulative and secondary impacts anticipated as a result of this project is required.

M. Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in *Best Management Practices for the Protection of Surface Waters*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.

N. When practical, the DWQ requests that bridges be replaced on the existing location with road closure. If a detour proves necessary, remediation measures in accordance with the NCDWQ requirements for General 401 Certification No. 3366/Nationwide Permit No. 33 (Temporary Construction, Access and Dewatering) must be followed.

Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources
Alan W. Klimek, P.E. Director

O. Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.

P. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact Brian L. Wrenn at 919-733-5715.

cc: Eric Alsmeyer, Corps of Engineers Raleigh Field Office
Steve Lund, Corps of Engineers Asheville Field Office
Gary Jordan, USFWS
Travis Wilson, NCWRC
Chris Militcher, USEPA
Central Files
File Copy

C:\Correspondence\2005 EA, EIS, FONSI\I-3802 I-3610 B-3039\scoping comments.doc

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Air Quality

Pat McCrory
Governor

Sheila C. Holman
Director

John E. Skvarla, III
Secretary

July 3, 2013

Phil Conrad
Cabarrus-Rowan Metropolitan Planning Organization
135 Cabarrus Avenue East, Suite 101
Concord, NC 28025

Dear Mr. Conrad:

Thank you for forwarding the draft of the Conformity Analysis and Determination Report for the Metrolina Area Cabarrus-Rowan MPO dated June 14, 2013. The amendments to the Long Range Transportation Plan (LRTP) and Transportation Improvement Program (TIP) are to accommodate the changes to projects I-3802A, I-3802B, and I-3803A on Interstate 85 by the Cabarrus-Rowan Metropolitan Planning Organization. The North Carolina Department of Environment and Natural Resources, Division of Air Quality (DAQ) has completed its review of the report and analysis.

The analysis that is provided in this report demonstrates that the projected emissions from the amended projects do not exceed the emission limits established by the SIP (or base year emissions, in areas where no SIP has been approved or found adequate by EPA). The comparisons were completed for each of the analysis years for the affected counties. The amendment report is very comprehensive and adequately addresses the details of the analysis. As all comments were adequately addressed, the Division of Air Quality believes this amendment report contains the appropriate air quality information to support a conformity determination on the amended LRTPs and TIPs for the Metrolina Maintenance Area.

Thank you again for the opportunity to review this amendment and analysis. If you have any questions, you may contact Heather Hildebrandt of my staff at (919) 707-8424.

Sincerely,

Sheila C. Holman

Sheila C. Holman

SCH: hjh

Cc: Terry Arellano, DOT
Dianna Smith, EPA
Heather Hildebrandt, DAQ
Eddie Dancausse, FHWA
Myra Immings, FTA

1641 Mail Service Center, Raleigh, North Carolina 27699-1641
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North Carolina
Department of Environment and
Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

North Carolina
Division of Forest Resources

Stanford M. Adams, Director
2411 Old US 70 West
Clayton, NC 27520
March 11, 2005

APR 2005
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MEMORANDUM

TO: Melba McGee, Office of Legislative Affairs

FROM: Bill Pickens, NC Division Forest Resources

SUBJECT: DOT Scoping for Widening I-85 from NC 73 to US 29/601 Connector in Cabarrus and Rowan Counties

PROJECT #: 05-0254 and TIP # I-3610 & B-3039

The North Carolina Division of Forest Resources has reviewed the referenced scoping document and offers the following comments that should be addressed in the EA concerning impacts to woodlands.

1. The widening of an existing roadway usually has fewer impacts to forest resources than a new location project. So that we can evaluate construction impact, list, by timber type, the total forest land acreage that is removed or taken out of forest production as a result of the project. If no impacts will occur please state so in the document.

2. Additionally, efforts should be made to align corridors to minimize impacts to woodlands in the following order of priority:
   - Managed, high site index woodland
   - Productive forested woodlands
   - Managed, lower site index woodlands
   - Unique forest ecosystems
   - Unmanaged, fully stocked woodlands
   - Unmanaged, cutover woodlands
   - Urban woodlands

3. The EA should include a summary of the potential productivity of the forest stands affected by the proposed project. Potential productivity is quantified by the soil series, and is found in the USDA Soil Survey for the county involved.

4. The provisions the contractor will take to utilize the merchantable timber removed during construction. Emphasis should be on selling all wood products. However, if the wood products cannot be sold then efforts should be made to haul off the material or turn it into mulch with a tub grinder. This practice will minimize the need for debris burning, and the risk of escaped fires and smoke management problems to residences, highways, schools, and towns.

5. If woodland burning is needed, the contractor must comply with the laws and regulations of open burning as covered under G.S. 113-60.21 through G.S. 113-60.31. Cabarrus and Rowan County are classified as non-high hazard counties, and G.S. 113-60.24 requiring a regular burning permit would apply.

6. The provisions that the contractor will take to prevent erosion and damage to forestland outside the right-of-way. Trees, particularly the root system, can be permanently damaged by heavy equipment. Efforts should be to avoid skinning of the tree trunk, compacting the soil, adding layers of fill, exposing the root system, or spilling petroleum or other substances.

7. The impact upon any existing greenways in the proposed project area should be addressed.

We appreciate the opportunity to comment on the proposed project, and encourage the impact on our forestland be considered during the planning process.

cc: Barry New

APR 2005
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North Carolina Wildlife Resources Commission

Richard B. Hamilton, Executive Director

TO: Melba McGee, Environmental Coordinator
Office of Legislative and Intergovernmental Affairs, DENR

FROM: Marla Chambers, Western NCDOT Permit Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: March 21, 2005

SUBJECT: Scoping review of NCDOT's proposed projects to widen I-85 from NC 73 to US 29-601 Connector and NC 152 interchange improvements at US 29-601 and I-85. Cabarrus and Rowan Counties. TIP No's. I-3802, I-3610 and B-3039.

North Carolina Department of Transportation (NCDOT) is requesting comments from the North Carolina Wildlife Resources Commission (NCWRC) regarding impacts to fish and wildlife resources resulting from the subject project. Staff biologists have reviewed the information provided and have the following preliminary comments. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT is initiating an environmental study of the proposed projects to widen I-85 from 4 lanes to 8 lanes from NC 73 to the US 29-601 Connector, a distance of 13.6 miles, and NC 152 interchange improvements at US 29-601 and I-85. Cabarrus County is one of the fastest growing counties in the state. Commercial and industrial development is intense in portions of the project area. It appears over half of the project lies within a Water Supply Protected Area and a portion is within the Critical Area. More than 30 streams are located in the project area. The eastern creekshell (*Villosa delumbis*), a state Significantly Rare mussel species, has been observed in Cold Water Creek. In addition, the Carolina creekshell (*V. vaughaniana*), Federal Species of Concern (FSC) and state Endangered, and the Carolina darter (*Etheostoma collis*), FSC and state Special Concern, are found in adjacent watersheds. Stormwater management is important both within the project corridor and the surrounding developing areas. We strongly encourage NCDOT and local officials to use low impact development techniques (see www.lowimpactdevelopment.org for information) to manage stormwater quantity and quality

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 • **Fax:** (919) 715-7643

and there should be no net gain in flood stage. Sediment and erosion control measures for sensitive watersheds will likely be needed for portions of the project.

In addition, to help facilitate document preparation and the review process, our general information needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with the following programs:

   The Natural Heritage Program
   http://www.ncsparks.net/nhp
   1601 Mail Service Center
   Raleigh, N. C. 27699-1601

   and,

   NCDA Plant Conservation Program
   P. O. Box 27647
   Raleigh, N. C. 27611
   (919) 733-3610

2. Description of any streams or wetlands affected by the project. If applicable, include the linear feet of stream that will be channelized or relocated.

3. Cover type maps showing wetland acreage impacted by the project. Wetland acreage should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (USACE). If the USACE is not consulted, the person delineating wetlands should be identified and criteria listed.

4. Cover type maps showing acreage of upland wildlife habitat impacted by the proposed project. Potential borrow sites and waste areas should be included.

5. Show the extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).

6. Include the mitigation plan for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.

7. Address the overall environmental effects of the project construction and quantify the contribution of this individual project to environmental degradation.

8. Provide a discussion of the probable impacts on natural resources, which will result from secondary development, facilitated by the improved road access.

9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages of this project. If you have any questions regarding these comments, please contact me at (704) 485-2384.

cc: Brian Wrenn, NCDWQ
Marella Buncick, USFWS
Sarah McRae, NCNHP

Nicole Bennett

From: Carl Pless <CDPless@cabarruscounty.us>
Sent: Tuesday, September 13, 2011 3:25 PM
To: Nicole Bennett
Cc: Debbie Bost; Christine Barrier
Subject: RE: I-3802 Voluntary Agricultural Districts

Ms. Bennett,

Debbie Bost, CED and I have looked at the map that you sent. As far as we can determine, we do not have any Voluntary Agricultural Districts next to I-85 in the Cabarrus County portion of the map that you sent.
Thanks,
Carl

From: Nicole Bennett [mailto:nbennett@mulkeyinc.com]
Sent: Tuesday, September 13, 2011 2:49 PM
To: Carl Pless
Subject: I-3802 Voluntary Agricultural Districts

Mr. Pless:

Per our conversation, I'm sending a map of the study area for the I-85 widening project I'm working on. I need to know if there are any Voluntary Agricultural Districts in the Cabarrus County portion of the study area and, if so, the details of each.

Let me know if this map is sufficient or if you need something at a larger scale.

Thanks so much for your help.

Nicole

Nicole H. Bennett, AICP
Project Manager
Mulkey Engineers & Consultants
6750 Tryon Road
Cary, North Carolina 27518
Direct: 919-858-1921
Mobile: 919-710-3877
Fax: 919-851-1918

E-mail correspondence to and from this address may be subject to the North Carolina Public Records Law and may be disclosed to third parties.

CABARRUS – ROWAN URBAN AREA
METROPOLITAN PLANNING ORGANIZATION

CABARRUS COUNTY • CHINA GROVE • CLEVELAND • CONCORD • GRANITE QUARRY • HARRISBURG • KANNAPOLIS
LANDIS • MOUNT PLEASANT • ROCKWELL • ROWAN COUNTY • SALISBURY • SPENCER

RECEIVED
MAR 22 2005
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

March 18, 2005

Mr. Greg Thorpe
NCDOT - Manager
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

SUBJECT: Proposed Widening of I-85 TIP Project No. I-3802

Dear Mr. Thorpe:

I am providing a written response to the letter dated February 16, 2005 regarding the widening of I-85. Our comments are as follows: The MPO would anticipate further discussions regarding these details upon completion of the Federal Environmental Assessment. This important highway corridor involves several pedestrian and greenway plans from our local Parks and Recreation Departments. We will provide further information on these plans and projects at the time of project design. Furthermore, the Cabarrus-Rowan MPO requested comments from the Technical Coordinating Committee and Transportation Advisory Committee of the Cabarrus-Rowan Urban Area on this project.

The Cabarrus-Rowan MPO appreciates the opportunity to comment on this state TIP project. If you should have any questions regarding these comments, please contact our staff at (704) 795-7528.

Sincerely,

Carolyn Carpenter

Carolyn Carpenter, TAC Chair
Cabarrus-Rowan MPO

cc: Mr. Mike Nunn, MPO Executive Director
Mr. Rodger Lentz, TCC Chair
Ms. Linda Dosse, NCDOT
Mr. Benton Payne, NCDOT

135 CABARRUS AVENUE EAST • SUITE 101 • CONCORD, NC • 28025 • PHONE 704.795.7528 • FAX 704.795.7529

KANNAPOLIS

March 11, 2005

Ms. Gail Grimes, P.E.
Assistant Branch Manager, Project Development & Environmental Analysis Branch
NCDOT
1548 Mail Service Center
Raleigh, NC 27699-1548

Subject: Environmental Assessment, Proposed Widening and Interchange Improvements of I-85 in Rowan and Cabarrus Counties (TIP Project No. I-3802, I-3610, and B-3039)

Dear Ms. Grimes:

The City of Kannapolis is in receipt of your letter dated February 16, 2005 requesting comments related to the environmental study of the above referenced NCDOT project. We have reviewed the details of this project and offer no specific comments other than that we are in full support and are available to provide any assistance needed for your work in and around the City of Kannapolis.

Please feel free to contact me at 704-920-4333 should you have any needs that our City can help you with.

Sincerely,

Mike Legg
City Manager

CC: Mayor and City Council

C I T Y O F K A N N A P O L I S
P.O. Box 1199 Kannapolis, NC 28082-1199 T 704.920.4300 F 704.938.5919
246 Oak Avenue Kannapolis, NC 28081 www.cityofkannapolis.com

Appendix C – NCDOT Relocation Assistance

EIS RELOCATION REPORT

North Carolina Department of Transportation
RELOCATION ASSISTANCE PROGRAM

☒ E.I.S. ☐ CORRIDOR ☐ DESIGN

WBS ELEMENT:	36780.1.1	COUNTY	Rowan/Cabarrus	Alternate 1 of 1 Alternate
T.I.P. NO.:	I-3802/I-3610			
DESCRIPTION OF PROJECT:	I-85 Widening and Interchange Improvements from North of NC 73 to US-29–601 Connector			

ESTIMATED DISPLACEES

Type of Displacees	Owners	Tenants	Total	Minorities
Residential	22	12	34	8
Businesses	7	7	14	5
Farms	0	0	0	0
Non-Profit	0	1	1	0

INCOME LEVEL

0-15M	15-25M	25-35M	35-50M	50 UP
9	8	6	5	6

VALUE OF DWELLING

Owners		Tenants	
0-20M	0	$ 0-150	2
20-40M	2	150-250	2
40-70M	1	250-400	7
70-100M	5	400-600	1
100 UP	14	600 UP	0
TOTAL	22		12

DSS DWELLING AVAILABLE

For Sale		For Rent	
0-20M	27	$ 0-150	1
20-40M	92	150-250	1
40-70M	223	250-400	3
70-100M	271	400-600	11
100 UP	1291	600 UP	108
	1904		124

ANSWER ALL QUESTIONS

Yes	No	*Explain all "YES" answers.*
	X	1. Will special relocation services be necessary?
X		2. Will schools or churches be affected by displacement?
X		3. Will business services still be available after project?
X		4. Will any business be displaced? If so, indicate size, type, estimated number of employees, minorities, etc.
	X	5. Will relocation cause a housing shortage?
		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
X		8. Should Last Resort Housing be considered?
X		9. Are there large, disabled, elderly, etc. families?
X		10. Will public housing be needed for project?
X		11. Is public housing available?
X		12. Is it felt there will be adequate DSS housing housing available during relocation period?
	X	13. Will there be a problem of housing within financial means?
X		14. Are suitable business sites available (list source).
		15. Number months estimated to complete RELOCATION? **4-8 Months**

REMARKS (Respond by Number)

Note: Explanations to "Yes" responses are attached.
All residential properties are assumed to meet DSS standards.
Number of displacees are due to plans and/or septic/well issues.
Multiple tenant displacees exist on several parcels.

This report contains additional data for sign relocations and other miscellaneous moves.

Carol P. Greene	12/14/12		1/2/13
Carol P. Greene Right of Way Agent II	Date	Relocation Coordinator	Date

FRM15-E

Explanations to all "yes" responses are as follows:

2. Will schools or churches be affected by displacement?

Yes, the following church will be impacted:

DISPLACED CHURCH	DISPLACED ADDRESS	NOTATION
CABARRUS FELLOWSHIP	3591 SOUTH RIDGE AVE, CONCORD, NC 28025	Plans indicate impact and tenant should be eligible to receive full relocation benefits.

3. Will business services still be available after project?

Business services will be available after project for those businesses undiscovered during the study.

4. Will any business be displaced?

Yes, fourteen businesses will be displaced during the project.

BUSINESS NAME	Estimated Annual Revenue *	TYPE	ESTIMATED # OF EMPLOYEES	MINORITIES
Flowers Bakery Thrift Store	$ 100,000	Bakery Thrift Store	4	No
Choice One Insurance Services	$ 170,000	Insurance Agency	5	No
The Mane Attraction	$ 500,000	Hair Styling Salon	1-4	No
Cauble Auto Sales	$ 1,000,000	Motor Vehicle Sales	1-4	No
America's Best Value Inn	$ 1,000,000	Hotel	5-9	Yes
Shell Gas Station/United Oil of The Carolinas	$ 35,000,000	Fuel Sales	20+	Yes
High Life Enterprises Inc. No 4	$ 46,000	Smoke Shop	1	Yes
PDQ Services	$ 500,000	Mechanics/Brake Service	4	No
Widenhouse Motors, Inc.	$ 1,500,000	Motor Vehicle Sales	1-4	No
Pegram Insurance Agency	$ 500,000	Insurance Agency	2-4	No
Howard Johnson	$ 1,500,000	Hotel	1-5	Yes
Chick Filet	$ 1,500,000	Restaurant	20-49	Yes
Jeffrey D. Fink, DDS	$ 1,000,000	Dental Office	1-4	No
Redus-NC ALL LLC (Troutman Living Trust)	N/A**	Research Commerce	1-4	No

*Estimated annual revenue and number of employees obtained via Manta.
**Redus-NC ALL LLC is "coming soon" as a research commerce park; therefore, revenue data is not available.

6. Source for available housing:

SOURCE	ADDRESS
Century 21 – Towne & Country	Attn: Diane, 474 Jake Alexander Boulevard W, Salisbury NC 28147-1365
Allen Tate-Team Honeycutt	Attn: Jennie, 1339 Concord Parkway N, Concord, NC 28025-2930
Exit Elite Realty	Attn: Crystal, 6043 Gateway Center Dr., Kannapolis, NC 28081

8. Should Last Resort Housing be considered?

Last Resort Housing should be considered based on Federal Requirements.

9. Are there large, disabled, elderly, etc. families?

(1) Large Family, (1) Disabled Displacee and (12) Elderly Displacees were observed in the field. Optional housing for the disabled and elderly displacees include the following:

FACILITY	FACILITY ADDRESS
Concord Place	2452 Rock Hill Church Road, Concord, NC 28027
Best of Care Assisted Living	234 Northdale Avenue, Kannapolis, NC 28081
Morning Star of Concord	500 Penny Lane NE, Concord,NC 28025
Crescent Heights	240 Branchview Dr NE, Concord, NC 28025

10. Will public housing be needed for Project?

Yes, public housing will be necessary for Project.

11. Is public housing available?

Yes, currently (3) HUD approved houses are available in Rowan and (7) available in Cabarrus. Alternatively, the following HUD approved apartments are available:

COUNTY	APARTMENT COMPLEX	ADDRESS
Cabarrus	Fairington West Apartments	3140 Chapwin NW Cir, Concord, NC 28027
	Concord Housing Department	283 Harold Goodman Circle Southeast, Concord, NC 28027
Rowan	Runningbrook Apartments	2200 Runningbrook, Kannapolis, NC 28081
	Locust Housing Complex	600 Locust Street, Kannapolis, NC 28081

12, Is it felt there will be adequate DSS housing available during relocation period?

Yes, the above number of DSS houses and apartments are available according to sources listed in (6):

14. Are suitable business sites available (list source):

Yes, the following number of business sites are currently available according to the sources previously listed in (6):.

COUNTY	AVAILABLE BUSINESS SITES
Cabarrus	99
Rowan	86

Additionally, the plan indicates impact to (52) business signs and (35) miscellaneous moves.

Atkins North America, Inc.
Prepared By: Carol P. Greene and Jackie G. Kinker
Approved By: Kevin M. Hennessey

REQUEST FOR R/W COST ESTIMATE

DATE RECEIVED: **12/02/13** DISTRIBUTED: **12/04/13** REVISION / UPDATE : **Update**

I.D.NO./ BREAK	DESCRIPTION	SCHEDULE			
I-3802	**Widen I-85 and Interchange Improvements**	R/W CONST	FY____ FY____	UNFUND ☐	POST YRS ☐

ACCESS: FULL C/A ☐ PARTIAL C/A ☐ NO CONTROL ☐

WBS ELEMENT NUMBER: **36780.1.1** COUNTY: **Cabarrus & Rowan**

ENGINEER: **Leza Mundt** DEPT.: **PDEA** DIV.: **10** APPRAISAL OFFICE.: **4**

TYPE OF PLANS FURNISHED FOR ESTIMATE: **Preliminary & Vicinity**

DATE DUE: **01/02/2014**

PRIOR ESTIMATES OF LAND AND DAMAGES (WITH DATES):
12/21/12 K. Hennessey Atkins: 428 Parcels; $30,825,000 L&D; $34,020,000 Total

BASED ON PAST PROJECT HISTORICAL DATA, THE LAND AND DAMAGE FIGURES HAVE BEEN ADJUSTED BY A FACTOR OF **50%** TO INCLUDE CONDEMNATION AND ADMINISTRATIVE INCREASES THAT OCCUR DURING SETTLEMENT OF ALL PARCELS. THESE FIGURES PROJECT THE MOST ACCURATE ACQUISITION ESTIMATES **FOR 2 (TWO)** YEARS FROM THE DATE OF THIS ESTIMATE.

ESTIMATED BY: G. Lee TIME SPENT: 40 Hrs COMPLETED DATE: 12/31/13 EXTENSION REQ.: _____

ALTERNATES

	A				
ESTIMATED NO. OF PARCELS:	**25**				
RESIDENTIAL RELOCATIONS:	**2 / $40,000**				
BUSINESS RELOCATIONS:	**6 / $150,000**				
GRAVES	**0**				
LAND AND DAMAGE:	**$3,442,500**				
ACQUISTION:	**$125,000**				
TOTAL ESTIMATED R/W COST:	**$3,757,500**				

**** TOTALS/VALUES ****

PLEASE PROVIDE ONLY BASE NUMBERS. ALL TOTALING CALCULATIONS WILL BE COMPLETED BY THE ESTIMATE COORDINATOR, SARAH D. WHITE.

THERE ARE NO FIGURES FOR UTILITY INVOLVEMENT ON THIS ESTIMATE AND NO PUE's.

NOTES: _____

Appendix D – Public Involvement Materials

NOTICE OF A CITIZENS INFORMATIONAL WORKSHOP FOR THE PROPOSED TRANSPORTATION IMPROVEMENTS OF I-85 FROM NC 73 TO US 29/601 WITH PROPOSED INTERCHANGE CONSTRUCTION OR IMPROVEMENTS

TIP Project Nos. I-3802/I-3804/I-3610 Cabarrus & Rowan Counties

The North Carolina Department of Transportation (NCDOT) will hold the above Citizens Informational Workshop on January 29, 2008 between the hours of 4:00 p.m. and 7:00 p.m. at the Kannapolis Railroad Station, 201 South Main Street, Kannapolis, 27598. Interested individuals may attend this workshop at their convenience during the above stated hours. Please note there will be no formal presentation.

The purpose of this workshop is for NCDOT representatives to provide information, answer questions, and accept written comments regarding this project. NCDOT proposes to widen I-85 from NC 73 to the US 29/601 Connector near Kannapolis and Concord and proposes interchange construction or improvements at NC 152 & US 29/601, I-85 & NC 152 and I-85 & SR 1221 (Old Beatty Ford Road). The project will widen I-85 in each direction. The project will improve traffic flow and upgrade the interstate to meet current standards.

Anyone desiring additional information may contact Ms. Beverly Robinson, Project Development and Environmental Analysis Branch at 1548 Mail Service Center, Raleigh, NC 27699-1548, phone (919) 733-3141, fax (919) 733-9794 or email: brobinson@dot.state.nc.us.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who wish to participate in this workshop. Anyone requiring special services should contact Ms. Robinson as early as possible so that arrangements can be made.

Transportation Improvement Program Projects I-3802, I-3804, and I-3610

I-85 Widening and Interchange Improvements from NC 73 to the US 29/601 Connector

Cabarrus and Rowan Counties

Workshop Handout
NCDOT Citizens Informational Workshop
January 29, 2008

Welcome!

Welcome to the Citizens Informational Workshop for the proposed widening of I-85 in Cabarrus and Rowan Counties. The North Carolina Department of Transportation appreciates your attendance tonight!

Purpose of the Workshop

The purpose of the workshop is to:

- Present information on the proposed transportation improvements.
- Discuss concerns, address issues, and answer questions on the proposed project.

See Exhibits

Ask Questions

Provide Comments

Project Information

The North Carolina Department of Transportation is preparing an environmental study of improvements to I-85 between NC 73 and US 29-601 in Cabarrus and Rowan Counties. The proposed project includes widening and interchange improvements. The proposed project is included in the NCDOT Draft 2009-2015 Transportation Improvement Program (TIP) under three different project numbers:

- **I-3802**: Addition of lanes to I-85 from north of NC 73 to the US 29/601 Connector.
- **I-3804**: Construction of an interchange at I-85 and SR 1221 (Old Beatty Ford Road).
- **I-3610**: Reconstruction of the existing cloverleaf interchange at NC 152 and US 29/601 and reconstruction of the existing I-85/ NC 152 interchange. This project also includes improvements to NC 152 between US 29/601 and I-85.

Additional Information

If you need additional information or would like to discuss the project further, please contact:

Ms. Beverly Robinson, PE
NCDOT Project Development and
Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548
Phone: 919-733-3141
Email: brobinson@dot.state.nc.us

or

Ms. Colista Freeman, PE
Mulkey Engineers and Consultants
6750 Tryon Road
Cary, NC 27518
Phone: 919-858-1848
Email: cfreeman@mulkeyinc.com

Project Benefits

- **Improves traffic flow on I-85 and its interchanges in the project area.** Traffic volumes for I-85 in the project area ranged from 68,800 to 83,400 vehicles per day (vpd) in 2005. By 2030, the projected traffic for I-85 increases to between 122,300 vpd and 161,600 vpd.
- **Upgrades I-85 to meet standards established by the Strategic Highway Corridor Vision (SHC) Plan.** The NCDOT SHC Plan has designated the I-85 facility as vital to the efficient and high-speed movement of people and goods to destinations within and just outside of North Carolina.
- **Provides direct access from I-85 to the southeastern portion of Rowan County.** The closest interchanges north and south of Old Beatty Ford Road are approximately five miles apart. According to local officials, plans for industrial land uses are underway for southeastern Rowan County, which is expected to increase the amount of truck and other vehicle traffic in the project area.

I-85 in the project area

Additional opportunities for public involvement will be provided during the project development process.

Environmental Study Process

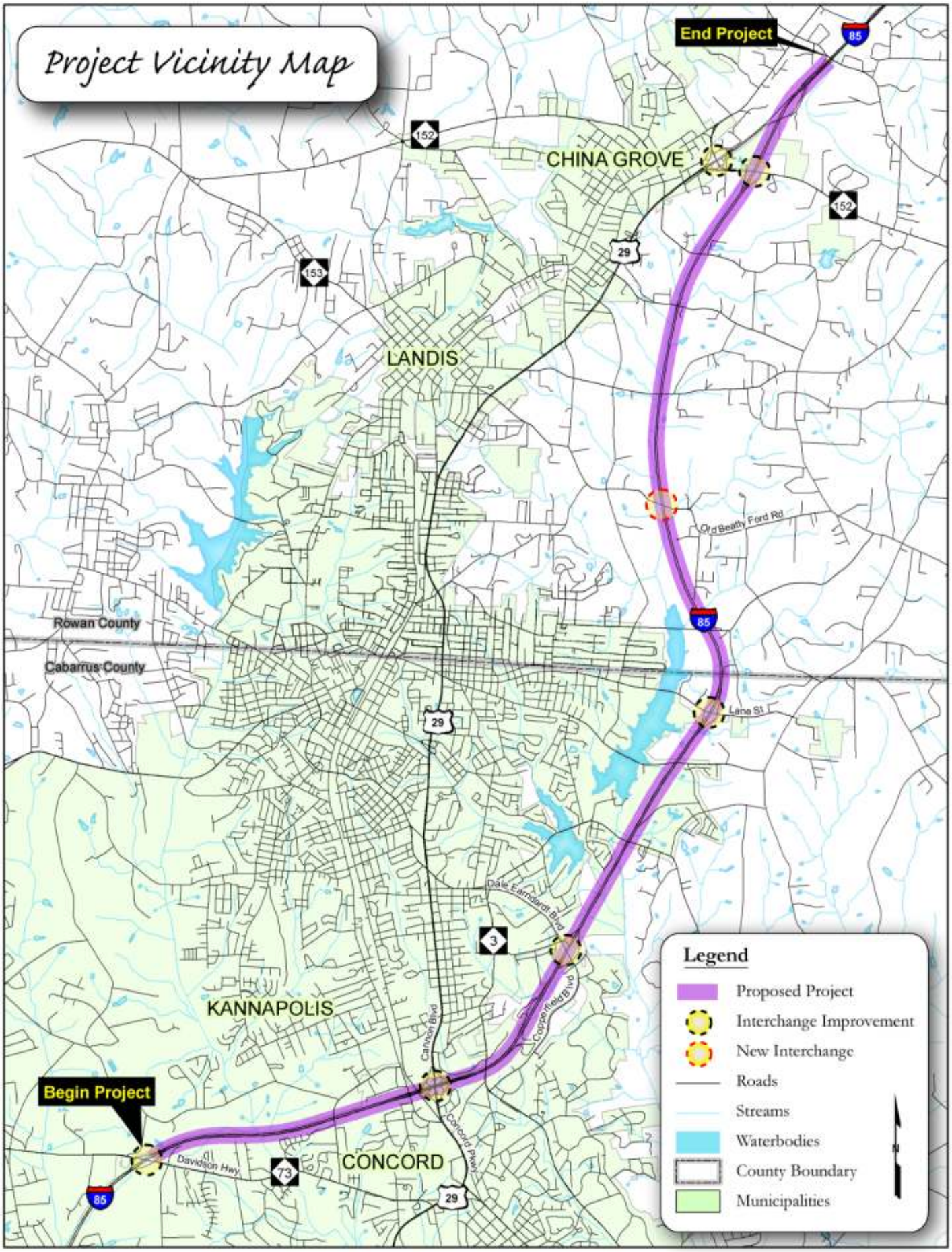
The proposed project will involve state and federal funds. Any agency that proposes a project involving federal funds must comply with the National Environmental Policy Act (NEPA). Under NEPA, an agency must study the beneficial and adverse environmental impacts of alternatives that meet the project's purpose and need, and identify the least environmentally damaging practicable alternative (LEDPA). This planning process can be divided into the steps described below. This project is currently in the early stages of Step 3.

- Step 1: Initiate project and collect data.
- Step 2: Identify alternatives.
- **Step 3: Conduct alternatives study.**
- Step 4: Categorical Exclusion.

Project Schedule

The Categorical Exclusion is expected to be completed in 2009. Right of way acquisition for I-3802 is scheduled to begin in 2012, while construction is currently unfunded. Right of way and construction are currently unfunded, as well, for I-3804 and I-3610.

Irish Buffalo Creek


Project Vicinity Map
End Project
Begin Project
CHINA GROVE
LANDIS
KANNAPOLIS
CONCORD
Rowan County
Cabarrus County
Old Beatty Ford Rd
Lane St
Dale Earnhardt Blvd
Copperfield Blvd
Concord Pkwy
Carvon Blvd
Davidson Hwy
85
152
153
29
3
73
Legend
Proposed Project
Interchange Improvement
New Interchange
Roads
Streams
Waterbodies
County Boundary
Municipalities

TIP Projects I-3802, I-3804, and I-3610

I-85 Widening and Interchange Improvements from NC 73 to the US 29/601 Connector

Cabarrus and Rowan Counties

Comment Sheet
NCDOT Citizens Informational Workshop
January 29, 2008

The North Carolina Department of Transportation (NCDOT) invites your comments on the proposed project. Please provide your comments below and include your contact information. Your written comments may be left in one of the comment boxes at the meeting or mailed to NCDOT by February 29, 2008.

Mail Comments To:

Ms. Beverly Robinson, PE
NCDOT Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

Name: _____
(Please Print)

Address: _____

_____

Comments:

Please continue on the back or on a separate sheet of paper, if necessary.

Comment Sheet (Continued)
NCDOT Citizens Informational Workshop
I-3802, I-3804, I-3610

Was the project adequately explained to you? Yes ☐ No ☐

Were NCDOT representatives understandable and clear in their explanations?

Yes ☐ No ☐ Further comments: _____

_____

_____

Were NCDOT representatives courteous and helpful? Yes ☐ No ☐

Further comments: _____

_____

Were display maps and handouts easy to read and understand? Yes ☐ No ☐

How might we better present proposed projects and address citizens' concerns in future informational workshops? _____

_____

_____

How did you hear about this meeting today? _____

_____

Based on the information available, were all substantial questions answered?

Yes ☐ No ☐ Further comments: _____

_____

_____

What was the most helpful aspect about the workshop today? What was the least helpful?

_____

_____

_____

THANK YOU FOR ATTENDING THE WORKSHOP.

YOUR COMMENTS ARE VERY IMPORTANT IN THE PLANNING PROCESS.

NOTICE OF PRE-MEETING OPEN HOUSES AND DESIGN PUBLIC MEETINGS FOR THE PROPOSED I-85 WIDENING AND INTERCHANGE IMPROVEMENTS FROM NORTH OF N.C. 73 TO U.S. 29/601 CONNECTOR

TIP Project Nos. I-3802/I-3610/B-5365 Cabarrus & Rowan Counties

The North Carolina Department of Transportation (NCDOT) proposes to widen and improve I-85 from N.C. 73 in Cabarrus County to the U.S. 29/601 Connector in Rowan County and proposes interchange improvements at U.S. 29/601, Dale Earnhardt Boulevard, Lane Street, N.C. 152. Improvements are also proposed at the U.S. 29/601 Connector and N.C. 152 interchange.

The purpose of the project is to provide relief from present and future congestion and provide a higher level of efficiency on I-85. Additional right-of-way acquisition and the relocation of homes and businesses will be required for this project.

NCDOT will hold two (2) Open Houses and Design Public Meetings for the above mentioned highway projects at the following times and locations:

- **Tuesday, November 27, 2012: Kannapolis Train Station, 201 S. Main Street, Kannapolis**
  Open House: 4 – 6:30 p.m.
  Formal Presentation: 7 p.m.

- **Thursday, November 29, 2012: J.C. Carson High School, 290 Kress Venture Rd., China Grove**
  Open House: 4 – 6:30 p.m.
  Formal Presentation: 7 p.m.

NCDOT representatives will be available at the Open Houses to answer questions and receive comments regarding the proposed projects. The opportunity to submit written comments and questions will be provided. Interested citizens may attend at any time during the above hours.

The formal presentations will consist of an explanation of the proposed location, design, right of way and relocation requirements and procedures. Citizens will have the opportunity to comment or ask questions. The presentation and comments will be recorded and a transcript will be prepared.

Maps displaying the design of the project are available for public review at the Cabarrus-Rowan Metropolitan Planning Organization, 135 Cabarrus Ave. East - Suite 101, Concord; City of Concord – Alfred M. Brown Operations Center, 850 Warren C Coleman Blvd.; City of Kannapolis, 246 Oak Ave.; Town of China Grove, 402 N. Main St. – Suite 204, Salisbury; Town of Landis, 312 S. Main St., Landis; Rowan County Planning & Development, 402 N. Main St. – Suite 204, Salisbury; Cabarrus County Governmental Center, 65 Church St. S., Concord; and the NCDOT District Office, 4770 S. Main St., Salisbury. Copies of the maps are also available on the project website at: http://www.ncdot.gov/projects/publicmeetings/.

Anyone desiring additional information may contact Jamille Robbins, NCDOT-Human Environment Section at 1598 Mail Service Center, Raleigh, NC 27699-1598, by phone at (919) 707-6085, or via email at jarobbins@ncdot.gov. Additional material may be submitted until December 14, 2012.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in these meetings. Anyone requiring special services should contact Robbins as early as possible so that arrangements can be made.

Persons who speak Spanish and do not speak English, or have a limited ability to read, speak or understand English, may receive interpretive services upon request prior to the meeting by calling 1-800-481-6494.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

I-85 Widening and Interchange Improvements from NC 73 to the US 29-601 Connector

TIP PROJECT NOS. I-3802/I-3610/B-5365

WBS Number 36780.1.2

Cabarrus and Rowan Counties

Design Public Meetings

Informal Open House 4:00 p.m. – 6:30 p.m.
Formal Presentation 7:00 p.m.

November 27, 2012
Kannapolis Train Station
201 S. Main Street
Kannapolis, NC 28081

November 29, 2012
J.C. Carson High School
290 Kress Venture Road
China Grove, NC 28023

500 copies of this handout were reproduced at a cost of $0.85 per copy

PURPOSE OF PUBLIC MEETING

Today's meeting is another important step in the North Carolina Department of Transportation's (NCDOT) procedure for making you, the public, a part of the project development process. The purpose of the meeting is to obtain public input on the design being considered for the project.

Today's meeting maps are available for public review at the following locations:

- Cabarrus-Rowan Metropolitan Planning Organization, 135 Cabarrus Avenue East - Suite 101, Concord;
- City of Concord – Alfred M. Brown Operations Center, 850 Warren C Coleman Boulevard;
- City of Kannapolis, 246 Oak Avenue;
- Town of China Grove, 402 N. Main Street – Suite 204, Salisbury;
- Town of Landis, 312 S. Main Street, Landis;
- Rowan County Planning & Development, 402 N. Main Street – Suite 204, Salisbury;
- Cabarrus County Governmental Center, 65 Church Street S., Concord; and
- NCDOT District Office, 4770 S. Main Street, Salisbury.

Copies of the maps are also available on the project website at: http://www.ncdot.gov/projects/publicmeetings/.

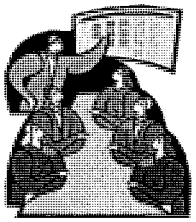
YOUR PARTICIPATION

Now that the opportunity is here, you are encouraged to participate by making your comments and/or questions a part of the public record. This may be done by having them recorded at the formal Public Meeting or by writing them on the attached comment sheet. Several representatives of the North Carolina Department of Transportation are present. They will be happy to talk with you, explain the project to you and answer your questions. You may write your comments or questions on the comment sheet and leave it with one of the representatives or mail them by December 14, 2012 to the following address:

Mr. Jamille A. Robbins
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: 919.707.6085
Email: jarobbins@ncdot.gov

Everyone present is urged to participate in the proceedings. It is important, however, that **THE OPINIONS OF ALL INDIVIDUALS BE RESPECTED REGARDLESS OF HOW DIVERGENT THEY MAY BE FROM YOUR OWN.** Accordingly, debates, as such, are out of place at public meetings. Also, the public meeting is not to be used as a POPULAR REFERENDUM to determine the location and/or design by a majority vote of those present.

WHAT IS DONE WITH THE INPUT?



A post-hearing meeting will be conducted after the comment period has ended. NCDOT staff representing Planning, Design, Traffic Operations, Division, Right of Way, Public Involvement & Community Studies and others who play a role in the development of a project will attend this meeting. The project will also be reviewed with federal agencies such as the US Army Corps of Engineers (USACE), as well as state agencies such as the NC Department of Environment and Natural Resources. When appropriate, local government staff will attend.

All spoken and written issues are discussed at the post-hearing meeting. Most issues are resolved at the post-hearing meeting. The NCDOT considers safety, costs, traffic service, social impacts and public comments in making decisions. Complex issues may require additional study and may be reviewed by higher management, Board of Transportation Members and/or the Secretary of Transportation.

Minutes of the post-hearing meeting will be summarized and are available to the public by noting your request on the attached comment sheet.

WHAT HAPPENS NEXT

Comments received from the public meeting about the design of the I-85 Widening and Interchange Improvements project will be reviewed at the post-hearing meeting and incorporated, where feasible, into the development of final design plans for the project. Further studies and surveys will be conducted on the preliminary findings collected from initial studies, such as hazardous materials, historic and archaeological sites, noise impacts and abatement, and access to residences and businesses.

An environmental document – Categorical Exclusion (CE) - will be completed based on the results of the items above. The CE will be circulated for public and agency review.

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PURPOSE AND NEED OF PROJECT

The purpose of the project is to improve the level of service on I-85 and its interchanges in the study area (see Figure 1). Another desirable outcome is to improve the vertical clearance under structures over I-85 within the study area in order to meet current design standards. An additional purpose is to correct operational deficiencies at the interchange of US 29-601 Connector and NC 152. The project is expected to address the following needs and provide the following benefits:

- **Improve traffic flow and level of service (LOS) on I-85 and its interchanges in the study area.**

  The level of service (LOS) of a roadway is the measure of its traffic carrying ability. Levels of service range from A to F, "A" being the best scenario with unrestricted maneuverability and operating speeds, and "F" being the worst scenario where travel on a roadway is characterized by "stop and go" conditions.

  Traffic volumes on I-85 are projected to increase substantially and exceed the roadway capacity by 2035, the project's design year. Nearly the entire length of I-85 in the study area would operate at LOS F conditions during one or both peak hours of the day. In fact, many segments of I-85 would reach these conditions prior to 2035, some as early as 2015.

  The proposed improvements will improve level of service on I-85 and its interchanges in the project area, benefiting both local and through traffic.

- **Eliminate vertical clearance deficiencies for structures over I-85 within the study area.**

  Many of the existing bridges carrying roadways over I-85 were constructed in the 1960s and have substandard clearances between I-85 and the bottom of the bridges. The proposed improvements include replacing or reconstructing the substandard structures so they will meet current design standards.

- **Reduce operational deficiencies at the interchange of US 29-601 Connector and NC 152.**

  The interchange at NC 152 and I-85 allows for only two movements: I-85 northbound to NC 152 and NC 152 to I-85 southbound. The other two movements to and from I-85 north of NC 152 are facilitated through the US 29-601 Connector.

  The interchange bridge at US 29-601 Connector and NC 152 does not meet current design standards for vertical clearance. In addition, three of the seven ramps at this interchange intersect with local roads and/or driveways, creating a number of conflict points for drivers.

The proposed improvements are consistent with the Long Range Transportation Plans for the local municipalities within the study area. Local governments within the Cabarrus-Rowan Urban Metropolitan Planning Organization (CRUMPO), as well as NCDOT, have included this project in their adopted plans.

PROJECT DESCRIPTION

NCDOT has combined TIP Project Numbers I-3802, I-3610, and B-5365 into a single work effort because of the proximity and interrelationship between the projects.

For Project I-3802, NCDOT proposes to add four additional travel lanes to I-85 from north of NC 73 in Cabarrus County to US 29-601 Connector in Rowan County. The project involves widening the existing four-lane freeway to eight lanes, matching TIP projects I-3803 at NC 73 to the south, and I-2511 at US 29-601 to the north. Interchange improvements, including reconstruction of existing structures to meet current design standards for vertical clearance, are proposed at US 29-601, SR 2126 (Dale Earnhardt Boulevard) and SR 2180 (Lane Street). The project is divided into two sections for construction phasing – Section A extends from NC 73 to Lane Street and Section B extends from Lane Street to US 29-601 Connector.

For Project I-3610, NCDOT proposes to reconstruct the existing cloverleaf interchange at NC 152 and US 29-601, reconstruct the interchange at NC 152 and I-85, and improve existing NC 152, which provides access to I-85 between the two interchanges.

For Project B-5365, NCDOT proposes to replace Bridge No. 21 and Bridge No. 34 over the Norfolk Southern Railroad and US 29 in China Grove.

DESIGN-BUILD PROJECTS

A portion of the I-85 Widening an Interchange Improvement project (Section A) will be built as a **Design-Build** project. This is a different process than most typical roadway projects. A typical roadway project follows four basic steps:

1. Planning, environmental document, and preliminary designs are completed.
2. Final designs are completed.
3. Right of way acquisition is completed.
4. Construction begins.

The Design-Build Process allows NCDOT to contract with a team of designers and contractors that is responsible for the design, right of way acquisition, and construction of a project. The team may begin construction of one portion of the project while they finish the design and right of way acquisition for others, usually resulting in faster project completion.

The Design-Build process has several potential benefits in addition to faster project completion. The Design-Build team looks for innovative designs that meet the project specifications but reduces costs and impacts. By working together, the designer and contractor may also quickly resolve issues that arise during construction, potentially resulting in creative and flexible solutions.

TRAFFIC NOISE SUMMARY

The NCDOT Traffic Abatement Policy contains provisions that limit state and federal responsibilities for traffic noise reduction to locations where development existed, or for which building permits were issued, at the "Date of Public Knowledge".

The "Date of Public Knowledge" of the location and potential noise impacts of a proposed highway project will be the approval date of the final environmental document.

1. After this date, the federal and state governments are no longer responsible for providing noise abatement measures for new development within the noise impact area of the proposed highway project.

2. The criteria (i.e., trigger date) for determining when undeveloped land is "planned, designed and programmed" for development will be the approval date of a building permit for an individual lot or site.

3. It is the responsibility of local governments and private landowners to ensure that noise-compatible designs are used for development permitted after the Date of Public Knowledge.

The "Date of Public Knowledge" for this project will be the date of the approved Categorical Exclusion (CE). **The CE is expected to be completed and signed in the Spring of 2013.**

Eighteen noise study areas have been identified on this project. Of these eighteen areas, twelve meet preliminary justification criteria for noise barriers and will be further studied during final project design. The noise study areas are shown in red hatching on the maps displayed at tonight's meeting.

Once a determination is made on the location of the noise barriers during final design, NCDOT will contact all property owners and tenants who are predicted to receive at least 5 decibels noise reduction due to the proposed barriers. Each owner and/or tenant will be provided a ballot so they can vote their preference for or against the noise wall. The noise barriers will be constructed unless a simple majority vote by these property owners/tenants indicates they **do not** prefer noise wall construction.

PROJECT INFORMATION

Length: See Table 1

Typical Section: See Figure 2

Right of Way: Variable width

Access Control: ***Full Control of Access:***
Access only provided via ramps at interchanges. No private driveway connections will be allowed.

Full control of access will be maintained along I-85. Along intersecting streets, controlled access will be utilized at various locations, primarily near interchange ramps.

Relocatees: See Table 1

Project Costs: See Table 1

Current Schedule: **The *tentative* schedule is shown below. A number of factors can affect a project schedule, so schedules are subject to change.**

The project is divided into two sections for construction phasing – Section A extends from NC 73 to Lane Street and Section B extends from Lane Street to the US 29-601 Connector.

Right of Way Acquisition
I-3802: *Section A – Fiscal Year 2013; Section B – Fiscal Year 2018
I-3610: included in I-3802 B
B-5365: Fiscal Year 2017

Construction
I-3802: *Section A – Fiscal Year 2013; Section B – Fiscal Year 2020
I-3610: included in I-3802 B
B-5365: Fiscal Year 2019

**Design-Build*

Table1. Summary of I-85 Widening and Interchange Improvements Impacts[1]

Feature		Impact
Length (miles)		13.5
Delineated Wetland Impacts (acres)		1.62
Delineated Stream Impacts (linear feet)		8,645
Displacements	Residential Business	24 16
Surveyed Federal / State Threatened and Endangered Species Habitat Present		Yes No Effect
100 Year Floodplain and Floodway Impacts (acres)		21.09
Water Supply Watershed Critical Area (acres)		132.19
Historic Properties (no.)		2 No Effect
Noise Impacted Receptors[2]		455
Recorded Archaeological Sites (no.)		0
Recreational Areas/Parks (no.)		1 No Effect
Cemeteries (no.)		1 0.05 acres
Potential UST / Hazmat Sites (no.)		17 Low Impact
Total Cost (in millions)	Section A Section B	$204,000,000 $124,000,000

[1]Impacts are preliminary and are subject to change during final design.
[2]Impacted noise receptors will be updated in a Design Noise Report and recommended noise barrier locations will be reviewed.

RIGHT-OF-WAY PROCEDURES

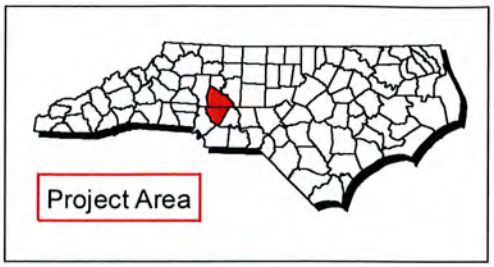
After decisions are made regarding the final design, the proposed right-of-way limits will be staked in the ground. If you are an affected property owner, a Right-of-Way Agent will contact you and arrange a meeting. The agent will explain the plans and advise you as to how the project will affect you. The agent will inform you of your rights as a property owner. If permanent right-of-way is required, professionals who are familiar with real estate values will evaluate or appraise your property. The evaluations or appraisals will be reviewed for completeness and accuracy, and then the Right-of-Way Agent will make a written offer to you. The current market value of the property at its highest and best use when appraised will be offered as compensation. The Department of Transportation must:

1. Treat all owners and tenants equally.
2. Fully explain the owner's rights.
3. Pay just compensation in exchange for property rights.
4. Furnish relocation advisory assistance.

RELOCATION ASSISTANCE

If you are a relocatee, that is, if your residence or business is to be acquired as part of the project, additional assistance in the form of advice and compensation is available. You will also be provided with assistance on locations of comparable housing and/or commercial establishments, moving procedures, and moving aid. Moving expenses may be paid for you. Additional monetary compensation is available to help homeowners cope with mortgage increases, increased value of comparable homes, closing costs, etc. A similar program is available to assist business owners. The Right-of-Way Agent can explain this assistance in greater detail.

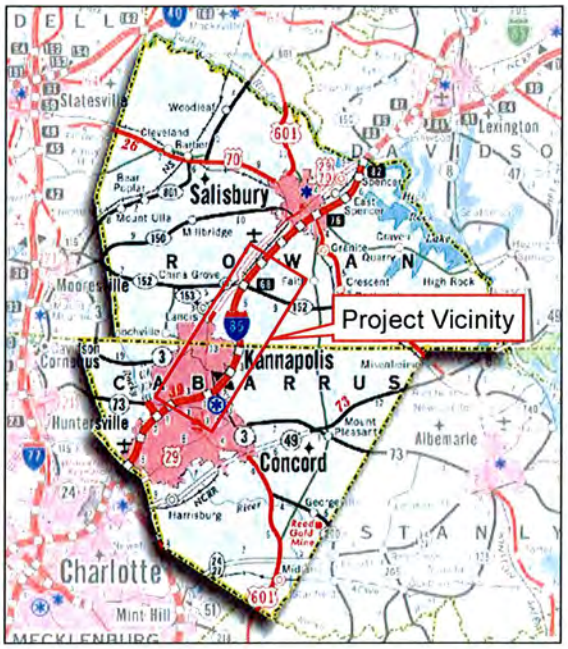
NOTE: PAMPHLETS SUMMARIZING RIGHT OF WAY AND RELOCATION PROCEDURES ARE AVAILABLE AT THE SIGN-IN TABLE.



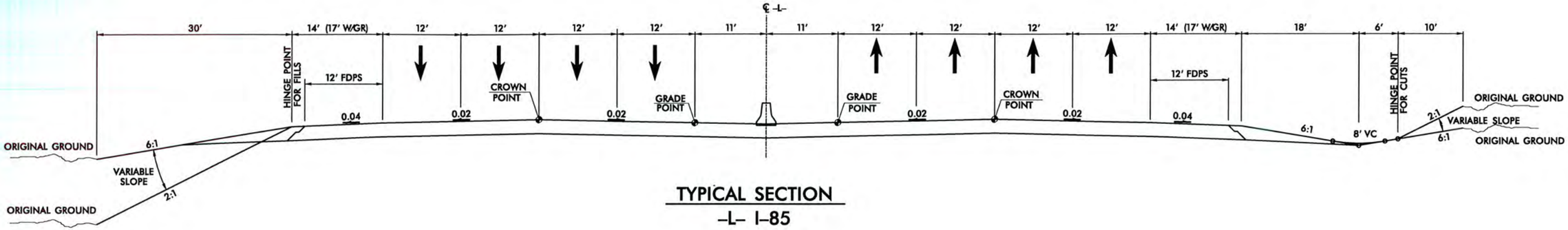
Project Vicinity

I-85 Widening and Interchange Improvements From North of NC 73 to US 29-601 Connector (I-3802/I-3610/B-5365)

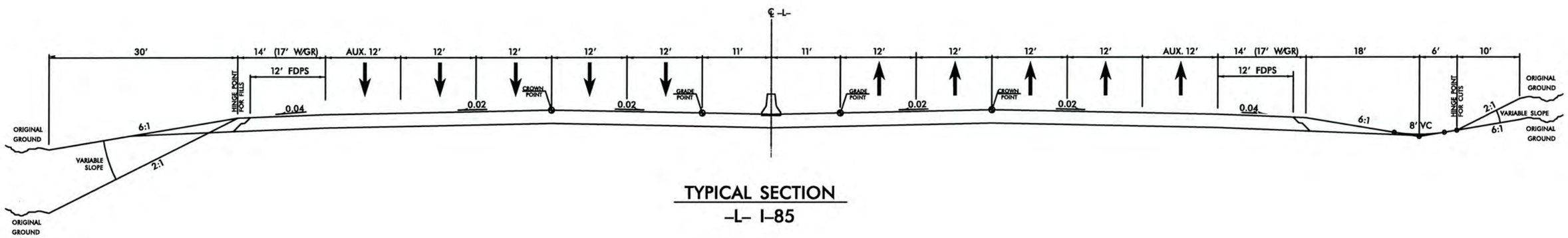
Rowan and Cabarrus Counties, North Carolina



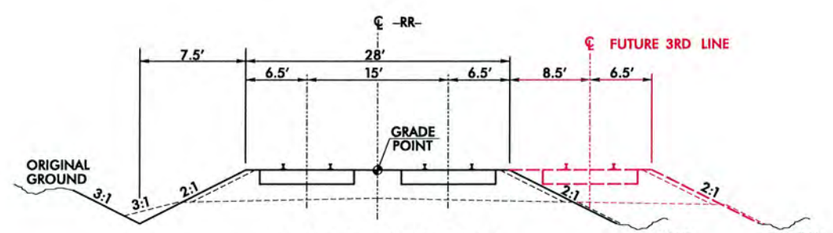
North Carolina
Department of Transportation



TYPICAL SECTION
-L- I-85



TYPICAL SECTION
-L- I-85



TYPICAL SECTION
-RR- RAILROAD

MULKEY

Prepared For:

Not to Scale

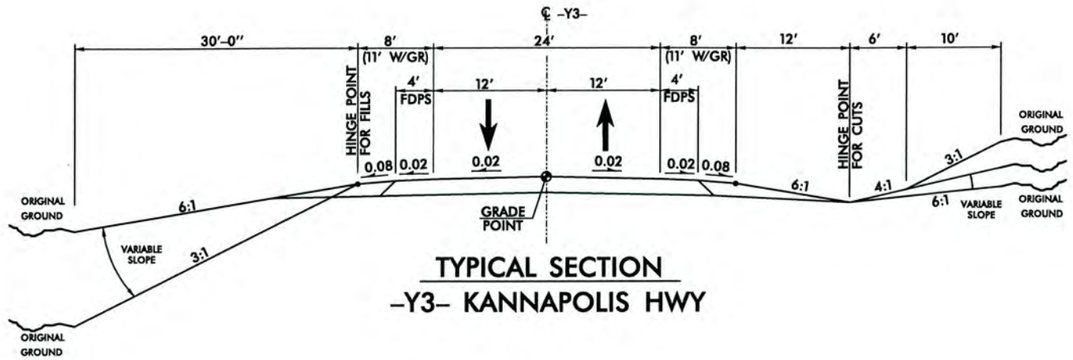
Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

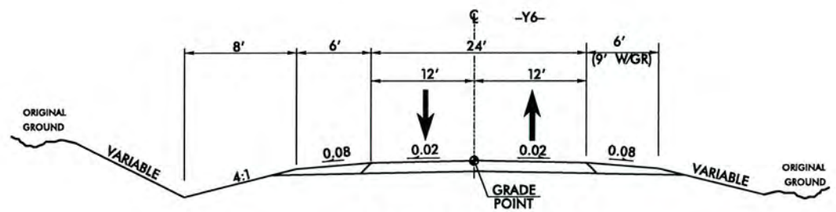
Map Date: 9/4/2012

Figure

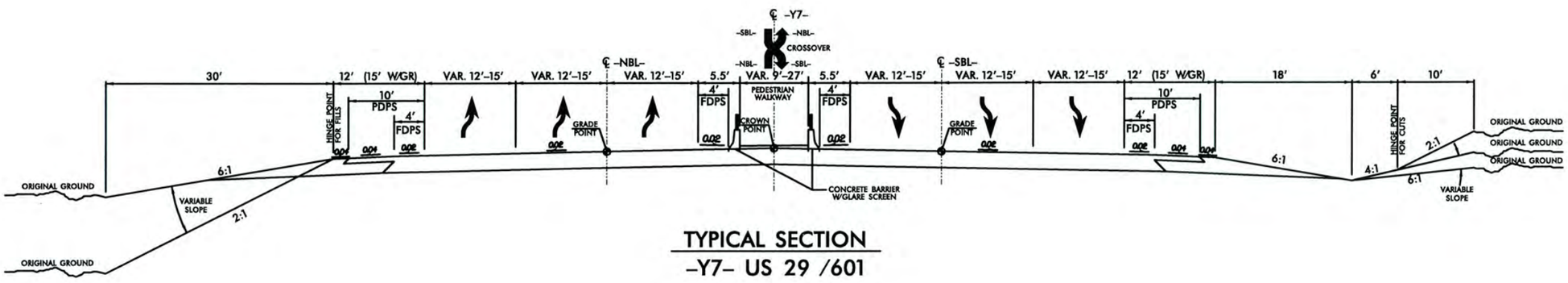
2A



TYPICAL SECTION
-Y3- KANNAPOLIS HWY



TYPICAL SECTION
-Y6- RIDGE AVE.



TYPICAL SECTION
-Y7- US 29 /601

MULKEY

Prepared For:

Not to Scale

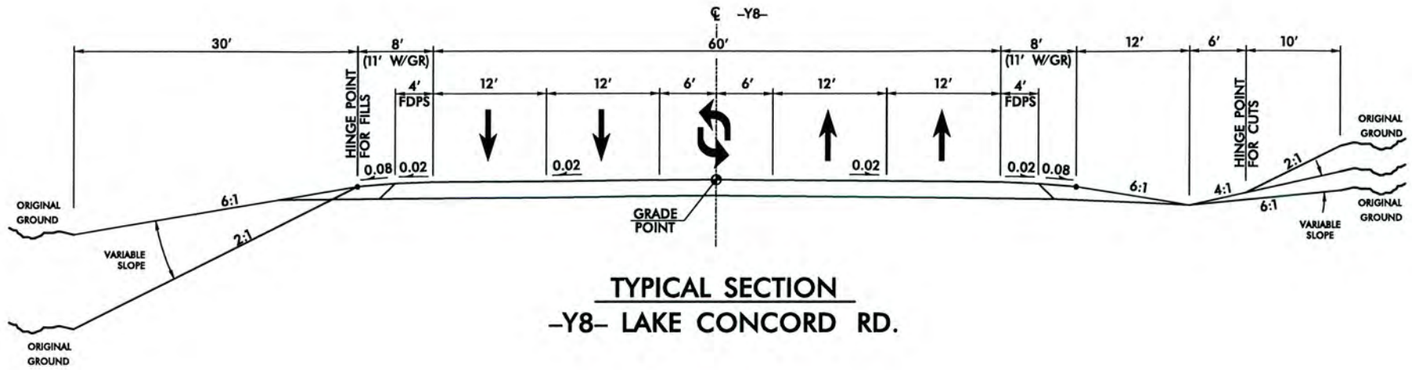
Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

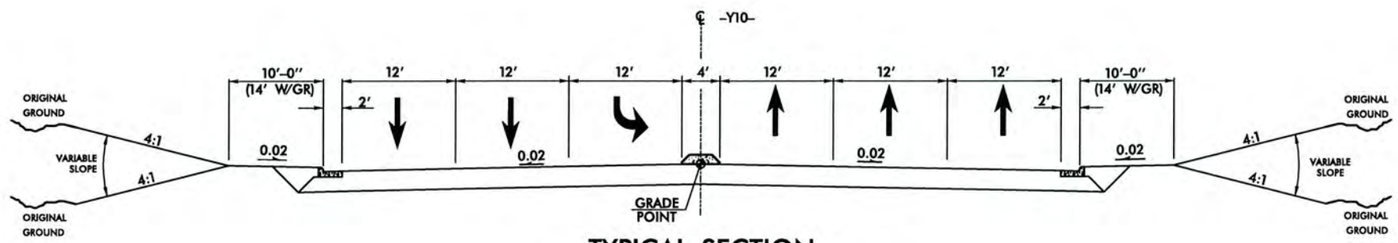
Map Date: 9/4/2012

Figure

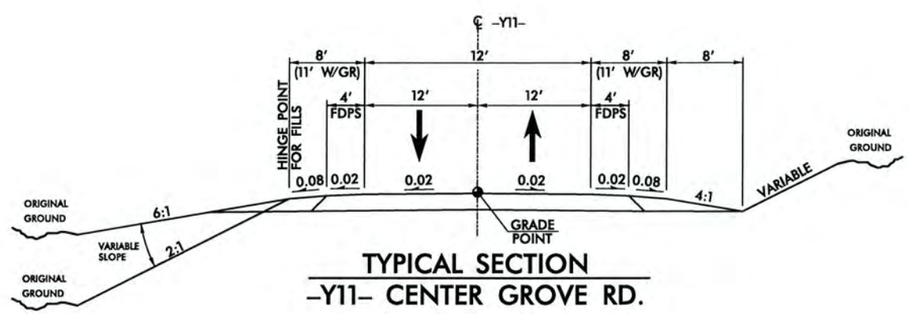
2B



TYPICAL SECTION
-Y8- LAKE CONCORD RD.



TYPICAL SECTION
-Y10- DALE EARNHARDT BLVD.



TYPICAL SECTION
-Y11- CENTER GROVE RD.

MULKEY

Prepared For:

Not to Scale

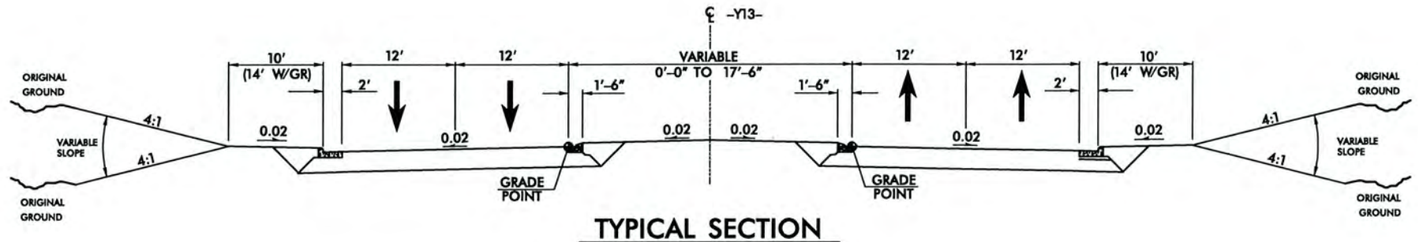
Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

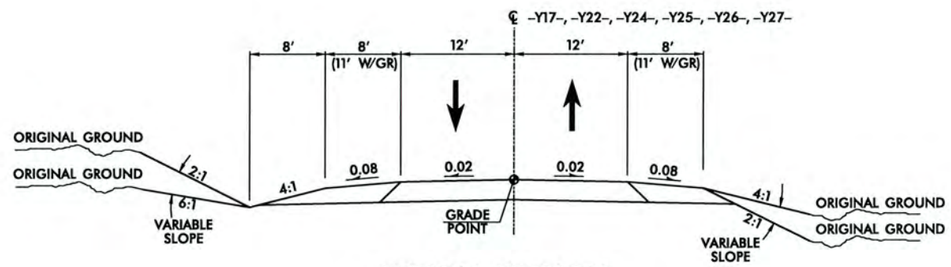
Map Date: 9/4/2012

Figure

2C



TYPICAL SECTION
-Y13- LANE ST.



TYPICAL SECTION
-Y17- PINE RIDGE RD.
-Y22- MADISON RD.
-Y24- MYRTLE GOODNIGHT
-Y25- POWER ST.
-Y26- YOST HILL RD.
-Y27- KETCHIE ESTATES

MULKEY

Prepared For:

Not to Scale

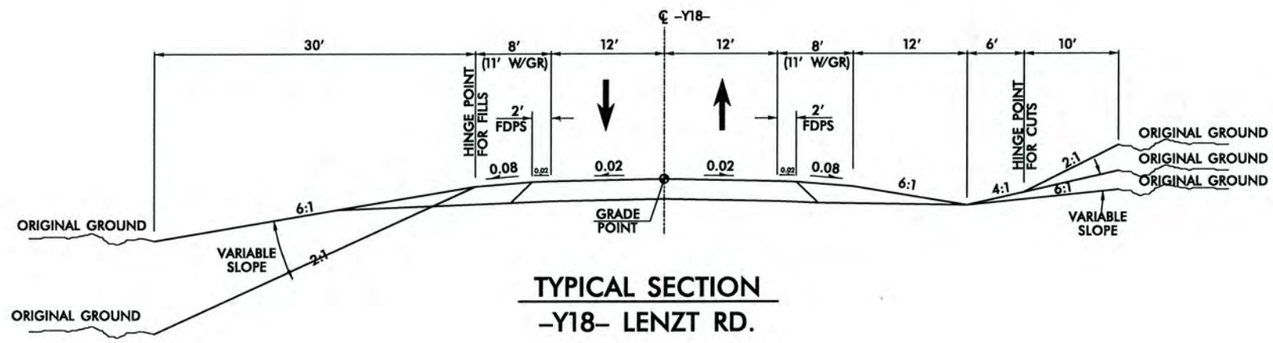
Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

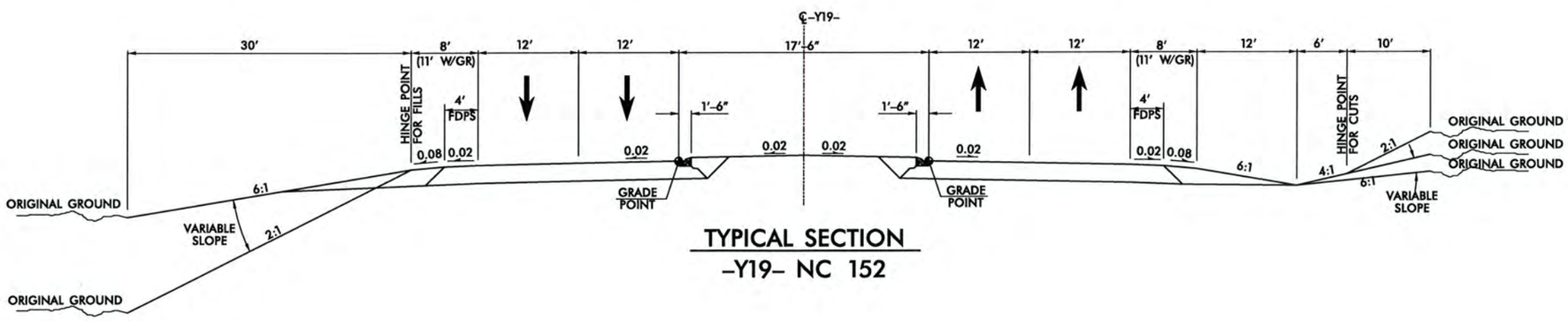
Map Date: 9/4/2012

Figure

2D



TYPICAL SECTION
-Y18- LENZT RD.



TYPICAL SECTION
-Y19- NC 152

MULKEY

Prepared For:

Not to Scale

Proposed Typical Sections

I-85 Widening and Interchange Improvements From North of NC 73 to
US 29-601 Connector (I-3802/I-3610/B-5365)
Rowan and Cabarrus Counties, North Carolina

Map Date: 9/4/2012

Figure

2E

TITLE VI PUBLIC INVOLVEMENT FORM

*Completing this form is **completely** voluntary. You are not required to provide the information requested in order to participate in this meeting.*

Meeting Type: Design Public Meetings **Location:** Kannapolis Train Station/JC Carson High School	**Date:** Nov. 27 & 29, 2012
TIP No.: I-3802/I-3610/B-5365 **Project Description:** I-85 Widening and Interchange Improvements	

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the North Carolina Department of Transportation (NCDOT) assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the PDEA-Human Environment Section, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: _____

Street Name:
(i.e. Main Street) _____

Total Household Income:

- ☐ Less than $12,000
- ☐ $12,000 – $19,999
- ☐ $20,000 – $30,999
- ☐ $31,000 – $46,999
- ☐ $47,000 – $69,999
- ☐ $70,000 – $93,999
- ☐ $94,000 – $117,999
- ☐ $118,000 or greater

Gender: ☐ Male ☐ Female

Age:

- ☐ Less than 18
- ☐ 18-29
- ☐ 30-44
- ☐ 45-64
- ☐ 65 and older

Have a Disability: ☐ **Yes** ☐ **No**

Race/Ethnicity:

- ☐ White
- ☐ Black/African American
- ☐ Asian
- ☐ American Indian/Alaskan Native
- ☐ Native Hawaiian/Pacific Islander
- ☐ Hispanic/Latino
- ☐ Other (please specify): _____

National Origin: (if born outside the U.S.)

- ☐ Mexican
- ☐ Central American: _____
- ☐ South American: _____
- ☐ Puerto Rican
- ☐ Chinese
- ☐ Vietnamese
- ☐ Korean
- ☐ Other (please specify): _____

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

_____

For more information regarding Title VI or this request, please contact the NCDOT Title VI Section at (919) 508-1808 or toll free at 1-800-522-0453, or by email at slipscomb@ncdot.gov.

Thank you for your participation!

NCDOT - PDEA
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

COMMENT SHEET

I-85 Widening and Interchange Improvements

Design Public Meeting

TIP Project Nos. I-3802/I-3610/B-5365 Cabarrus and Rowan Counties

NAME:

_____

ADDRESS:

_____

EMAIL ADDRESS:

_____

COMMENTS AND/OR QUESTIONS:

_____

_____

_____

_____

_____

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_____

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_____

_____

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_____

Comments may be mailed by December 14, 2012 to:

Mr. Jamille A. Robbins
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: 919.707.6085 FAX: 919.212.5785
Email: jarobbins@ncdot.gov

Jamille A. Robbins
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

NOTICE OF A PUBLIC MEETING FOR THE PROPOSED I-85 WIDENING AND INTERCHANGE IMPROVEMENTS FROM NORTH OF N.C. 73 TO U.S. 29/601 CONNECTOR

TIP Project Nos. I-3802/I-3610/B-5365 Cabarrus & Rowan Counties

The North Carolina Department of Transportation (NCDOT) proposes to widen and improve I-85 from N.C. 73 in Cabarrus County to the U.S. 29/601 Connector in Rowan County and proposes interchange improvements at U.S. 29/601, Dale Earnhardt Boulevard, Lane Street, N.C. 152. Improvements are also proposed at the U.S. 29/601 Connector and N.C. 152 interchange.

The purpose of the project is to provide relief from present and future congestion and provide a higher level of efficiency on I-85. Additional right-of-way acquisition and the relocation of homes and businesses will be required for this project.

NCDOT will hold an informal Public Meeting for the above mentioned highway projects on **Tuesday, February 26, 2013** from **4 p.m. until 7 p.m.** at the **Kannapolis Train Station**, located at **201 S. Main Street** in **Kannapolis**.

The purpose of the meeting is to present the design revisions that were developed since the November 2012 Public Hearings. NCDOT representatives will be available at the meeting to answer questions and receive comments regarding the proposed projects. The opportunity to submit written comments and questions will be provided. Interested citizens may attend at any time during the above hours. Comments and information received will be taken into consideration as work on the project develops.

For additional information contact Leza Wright Mundt, NCDOT-Project Development & Environmental Analysis Unit at 1548 Mail Service Center, Raleigh, NC 27699-1548, by phone at (919) 707-6032, or via email at lwmundt@ncdot.gov. Additional material may be submitted until March 12, 2013.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in these meetings. Anyone requiring special services should contact Jamille Robbins at (919) 707-6085 as early as possible so that arrangements can be made.

Persons who speak Spanish and do not speak English, or have a limited ability to read, speak or understand English, may receive interpretive services upon request prior to the meeting by calling 1-800-481-6494.

NOTIFICACIÓN DE REUNIÓN PUBLICA PARA EL PROPUESTO ENSANCHAMIENTO DEL I-85 Y MEJORAMIENTOS AL INTERCAMBIO QUE SE ENCUENTRA EN EL NORTE DEL N.C. 73 HASTA EL CONECTOR U.S. 29/601

TIP Proyecto Números I-3802/I-3610/B-5365 Condados de Cabarrus & Rowan

El NCDOT (Departamento de Transportación de Carolina del Norte)propone ensanchar y mejora la carretera del I-85 desde el N.C. 73 en el Condado de Cabarrus hasta el U.S. 29/601 conector en el Condado de Rowan County y propone un mejoramiento del intercambio en el U.S. 29/601, Dale Earnhardt Boulevard, Lane Street, N.C. 152. Mejoramientos también se proponen en el U.S. 29/601 conector y el intercambio que se encuentra en el N.C. 152.

El propósito de este proyecto es para proporcionar alivio del congestionamiento presente y futuro y también proporcionar un más alto nivel de eficiencia en el I-85. Adquisiciones de derecho a vía y el traslado de casas y negocios serán requerido para este proyecto.

El Departamento de Transportación de Carolina del Norte (NCDOT) tendrá una Junta Publica informal que tratara con el proyecto mencionado de los proyectos de carreteras mencionados el Martes, 26 de Febrero, 2013 de **4 p.m. hasta las 7 p.m.** en la Estación de Tren **Kannapolis**, localizada en el **201 S. Main Street** en **Kannapolis**.

El propósito de esta reunión es para presentar las revisiones de los diseños que se han desarrollado desde las audiencias que se efectuaron en Noviembre 2012. Representantes del Departamento de Transportación de Carolina del Norte estarán disponibles para responder a preguntas y recibir comentarios que se refieran a los proyectos propuestos. La oportunidad para entregar comentarios y preguntas por escrito estarán disponibles. Ciudadanos interesados podrán asistir a cualquier hora durante las horas mencionadas arriba. Comentarios e información recibidas se tomaran en cuenta durante el tiempo en que el proyecto se desarrolle.

Para información adicional comuníquese con Leza Wright Mundt, en la Unidad de Desarrollo de Proyectos Y Análisis Ambientales del Departamento de Transportación de Carolina del Norte al 1548 Mail Service Center, Raleigh, NC 27699-1548, por teléfono al (919) 707-6032, o vía correo electrónico al lwmundt@ncdot.gov. Material adicional puede ser sometida hasta el 12 de Marzo, 2013.

El Departamento de Transportación de Carolina del Norte (NCDOT) proveerá ayuda auxiliar y servicios necesarios bajo la Ley sobre Estadounidenses con Discapacidades (ADA) para personas discapacitadas que quieran participar en estas reuniones. Cualquier persona que requiera servicios especiales deberá contactar a Jamille Robbins al (919) 707-6085 lo mas antes posible para hacer arreglos necesarios para acomodarles.

Personas que hablan Español y que no hablen Inglés, o están limitados en la lectura, habla, o entendimiento del Inglés, pueden recibir servicios de interpretación al pedirlo antes de la reunión llamando al 1-800-481-6494.

Translation by: MM/I and Associates, LLC; 11220 Paddy Hollow Lane, Raleigh, NC 27614

I-85 IMPROVEMENTS FACT SHEET

Project Description

The I-85 Widening Project is actually three combined TIP projects:

I-3802 proposes to add four additional travel lanes to I-85 from north of NC 73 in Cabarrus County to US 29-601 Connector in Rowan County. Interchange improvements, including reconstruction of existing structures to meet current design standards for vertical clearance, are proposed at US 29-601, Dale Earnhardt Boulevard and Lane Street. The project is divided into two sections for construction phasing – Section A extends from NC 73 to Lane Street and Section B extends from Lane Street to US 29-601 Connector.

I**-3610** proposes to reconstruct the existing cloverleaf interchange at NC 152 and US 29-601, reconstruct the interchange at NC 152 and I-85, and improve existing NC 152, which provides access to I-85 between the two interchanges.

B-5365 proposes to replace Bridge No. 21 and Bridge No. 34 over the Norfolk Southern Railroad and US 29 in China Grove.

Project Schedule

Right of Way Acquisition
I-3802: Section A – Fiscal Year 2013; Section B – Fiscal Year 2018
I-3610: included in I-3802 B
B-5365: Fiscal Year 2017

Construction
I-3802: Section A – Fiscal Year 2013; Section B – Fiscal Year 2020
I-3610: included in I-3802 B
B-5365: Fiscal Year 2019

Project Cost

Section A: $204,000,000
Section B: $124,000,000

Design-Build

Design-Build is a construction process that allows a project to be completed more quickly. Under the traditional model, contracts are awarded separately for design and construction, and those steps occur sequentially. With Design-Build, one contract is awarded for right-of-way acquisition, design and construction. This allows teams of designers and contractors to simultaneously design and build to complete the project sooner.

Project Contact

Jamille Robbins
NCDOT Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
(919) 707-6085
jarobbins@ncdot.gov

Leza Wright Mundt
NCDOT PDEA
1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 707-6032
lwmundt@ncdot.gov

US 29-601 INTERCHANGE AREA (EXIT 58) FACT SHEET

- Current interchange configuration: Cloverleaf
- Proposed interchange configuration: Diverging Diamond
    - Existing loops and ramps will be removed
    - Collector-distributor lanes removed along I-85
    - Existing dual three-lane bridges over I-85 replaced with a single six-lane bridge
    - New ramps from I-85 to US 29-601
- Proposed Improvements to roads in the interchange area:
    - S. Main Street is proposed to be realigned. A new four-lane bridge with sidewalks over I-85 is proposed.
    - The bridge on S. Ridge Avenue over I-85 is proposed to be replaced. The south end of S. Ridge Avenue will be tied into realigned Main Street. Right in/right out access will be provided at the intersection of S. Ridge Avenue and Main Street.
    - Country Club Drive is proposed to be widened at its intersection with US 29-601.
    - Sidewalks and bus stops will be addressed with local officials on a case-by-case basis.
- *Recommended design modifications:*
    - *Connect S. Ridge Avenue to US 29-601 (Cannon Boulevard) with right in/right out access.*
    - *Provide a leftover from northbound US 29-601 (Cannon Boulevard) to Ridge Avenue, and provide access from Ridge Avenue to the Rider Transit Center.*
    - *Eliminate the roundabout on S. Main Street as shown on the Design Public Meeting map presented in November, 2012.*
    - *Attempt to minimize impacts to adjacent properties during final design.*

DALE EARNHARDT BOULEVARD INTERCHANGE (EXIT 60) AREA FACT SHEET

- Current interchange configuration: Folded Diamond
- Proposed configuration: Improved Diamond with Relocated, Elongated Loop
    - Ramp in southeast quadrant will be modified.
    - A new loop will be constructed and the ramp modified in the northeast quadrant.
    - Existing loop and ramp in the northwest quadrant will be removed.
    - Northwest ramp and loop will be relocated to Jaycee Road right-of-way.
    - Bridge on Dale Earnhardt Boulevard over I-85 will be retained.
- Proposed improvements to roads in the interchange area:
    - Dale Earnhardt Boulevard will be widened from north of Old Earnhardt Road to south of Vinehaven Drive.
    - A median will be constructed along the widened section of Dale Earnhardt Boulevard.
    - Roxie Street will be widened to allow turn lanes at Dale Earnhardt Boulevard.
    - Old ramp in the northwest quadrant will be modified to serve as the main access for Lowe's.
- *Recommended design modifications:*
    - *Provide all movement intersection at Old Earnhardt Road and Dale Earnhardt Boulevard.*
    - *Study a roundabout at Copperfield Parkway and Vinehaven Drive during final design.*
    - *Evaluate a reconfiguration of the proposed service road to provide improved access to Lowe's, F&M Bank, Chamber of Commerce building, and gas station.*
    - *Minimize, to the extent practicable, impacts to F&M Bank, the Chamber of Commerce Building, and Lowe's.*
    - *Further investigate access at Coldwater Ridge Drive during final design. However, NCDOT will not align Coldwater Ridge Drive with the I-85 ramp terminals to provide an all movement intersection at Coldwater Ridge Drive.*
    - *Provide vegetative screening along Jaycee Road. Privacy walls are an enhancement and would have to be funded by the municipality.*
    - *Attempt to minimize impacts to adjacent properties during final design.*

LANE STREET INTERCHANGE (EXIT 63) AREA FACT SHEET

- Current interchange configuration: Diamond
- Proposed interchange configuration: Diamond with Roundabouts
    - Ramps in all four quadrants will be reconstructed.
    - Roundabouts will be constructed at ramp terminals with Lane Street.
    - Existing three-lane bridge on Lane Street over I-85 will be replaced with a four-lane, median-divided bridge.
- Proposed improvements to roads in the interchange area:
    - Lane Street will be widened to accommodate a concrete median and turn lanes through the interchange area.
    - A roundabout will be constructed at Lane Street and Royce Street/Turkey Road.
- *Recommended design modifications:*
    - *Provide right in/right out access to existing service road for Waffle House and motel.*
    - *Provide right in/right out access to Brantley property.*
    - *Provide leftover into Pilot Truck Stop.*
    - *Remove service road shown on the Design Public Meeting map presented in November, 2012.*
    - *Attempt to minimize impacts to adjacent properties during final design.*

NC 152 (I-85) INTERCHANGE (EXIT 68) AREA FACT SHEET

- Current interchange configuration: Partial Diamond
- Proposed interchange configuration: Diamond with Roundabouts
    - New ramps will be constructed in each of the four quadrants.
    - Roundabouts will be constructed at ramp terminals.
    - The bridge on NC 152 over I-85 will be retained.
- Proposed improvements to roads in the interchange area:
    - NC 152 will be widened to accommodate a concrete median and turn lanes
- *Recommended design modifications:*
    - *None at this time.*
    - *Attempt to minimize impacts to adjacent properties during final design.*

NC 152 (US 29-601 CONNECTOR) INTERCHANGE AREA

- Current interchange configuration: Cloverleaf
- Proposed interchange configuration: Half-diamond
  - All three loops and both ramps will be removed.
  - A five-lane bridge with a concrete median is proposed over US 29.
- Proposed improvements to roads in the interchange area:
  - Yost Hill Road will be realigned to intersect with NC 152 across from the US 29 eastbound exit ramp.
  - Madison Road will be realigned to intersect with NC 152 across from the US 29 westbound entrance ramp.
  - The three-lane bridge on US 29/NC 152 over US 29 will be replaced with a five-lane bridge.
  - The four-lane bridge on US 29/NC 152 over the railroad will be replaced with a four-lane, divided bridge.
- *Recommended design modifications:*
  - *None at this time.*
  - *Attempt to minimize impacts to adjacent properties during final design.*

TITLE VI PUBLIC INVOLVEMENT FORM

*Completing this form is **completely** voluntary. You are not required to provide the information requested in order to participate in this meeting.*

Meeting Type: Public Meeting **Location:** Winecoff Elementary School	**Date:** November 4, 2013
TIP No.: I-3802/I-3610/B-5365 **Project Description:** I-85 Widening and Interchange Improvements	

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the North Carolina Department of Transportation (NCDOT) assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the PDEA-Human Environment Section, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: 28027

Street Name: (i.e. Main Street) Union Cemetery Rd Sw

Total Household Income:

- ☐ Less than $12,000
- ☐ $12,000 – $19,999
- ☐ $20,000 – $30,999
- ☐ $31,000 – $46,999
- ☑ $47,000 – $69,999
- ☐ $70,000 – $93,999
- ☐ $94,000 – $117,999
- ☐ $118,000 or greater

Gender: ☐ Male ☑ Female

Age:

- ☐ Less than 18
- ☐ 18-29
- ☑ 30-44
- ☐ 45-64
- ☐ 65 and older

Have a Disability: ☐ Yes ☐ No

Race/Ethnicity:

- ☑ White
- ☐ Black/African American
- ☐ Asian
- ☐ American Indian/Alaskan Native
- ☐ Native Hawaiian/Pacific Islander
- ☐ Hispanic/Latino
- ☐ Other (please specify): _____

National Origin: (if born outside the U.S.)

- ☐ Mexican
- ☐ Central American: _____
- ☐ South American: _____
- ☐ Puerto Rican
- ☐ Chinese
- ☐ Vietnamese
- ☐ Korean
- ☐ Other (please specify): _____

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

E-mail from Boss

For more information regarding Title VI or this request, please contact the NCDOT Title VI Section at (919) 508-1808 or toll free at 1-800-522-0453, or by email at slipscomb@ncdot.gov.

Thank you for your participation!

NCDOT - PDEA
Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598

NCDOT TO HOLD PUBLIC MEETING NOV. 4 IN CONCORD REGARDING PROPOSED WIDENING OF I-85 FROM N.C. 73 IN CABARRUS COUNTY (EXIT 55) TO U.S. 29/601 CONNECTOR (EXIT 68) IN ROWAN COUNTY

TIP Project I-3802

The N.C. Department of Transportation will hold a public meeting in November regarding the Winecoff School Road grade separation, a recent addition to the above project. This design would eliminate the existing Winecoff School Road railroad crossing and construct a new bridge carrying Winecoff School Road over the tracks, S. Main Street and S. Ridge Avenue. Two design alternatives are being studied and will be shown at the meeting.

The meeting will take place on **Monday, Nov. 4th** at **Winecoff Elementary School,** located at **375 Winecoff School Road, in Concord** from **5 p.m. to 7 p.m.** Interested citizens may attend at any time during the meeting hours, as there will be no formal presentation. NCDOT representatives will be available to answer questions and listen to comments regarding the project. Citizens will also have the opportunity to submit comments and questions in writing.

The purpose of the project is to provide relief from present and future congestion and provide a higher level of efficiency on I-85 in this corridor.

For more information, contact Leza Mundt, Project Development Engineer, NCDOT – Project Development and Environmental Analysis Unit at 1548 Mail Service Center, Raleigh 27699, by phone at: (919)707-6032 or by e-mail at lwmundt@ncdot.gov.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in these meetings. Anyone requiring special services should contact Jamille Robbins, NCDOT – Human Environment Section at 1598 Mail Service Center, Raleigh 27699; by phone at: (919)707-6085 or by e-mail at: jarobbins@ncdot.gov as early as possible so that arrangements can be made.

Persons who speak Spanish and do not speak English or have a limited ability to read, speak, or understand English, may receive interpretive services upon request prior to the meeting by calling 1-800-481-6494.

I-85 Widening and Interchange Improvements from NC 73 to the US 29-601 Connector

Transportation Improvement Program Project Nos. I-3802/I-3610/B-5365 *Cabarrus and Rowan Counties*

Public Meeting to be Held

The North Carolina Department of Transportation (NCDOT) invites you to a public meeting to discuss a recent addition to the I-85 project: a bridge carrying Winecoff School Road over the railroad.

Monday, November 4, 2013
Winecoff Elementary School
375 Winecoff School Road, Concord
5:00 - 7:00 pm

NCDOT representatives will be available to discuss design modifications for the Winecoff School Road rail crossing, a recent addition to the above project. This design would eliminate the existing Winecoff School Road railroad crossing and construct a new bridge carrying Winecoff School Road over the tracks, S. Main Street and S. Ridge Avenue. Two design alternatives are being studied and will be shown at the meeting. Project staff will answer questions and receive your feedback. This postcard is being sent to citizens and property owners in the area most likely to be affected by these changes. Interested citizens can drop in at any time during the above hours. No formal presentation will be made. Attendees will be able to submit written comments and questions during and after the meeting. Comments can be submitted until November 25, 2013.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in this workshop. Anyone requiring special services should contact Mr. Jamille Robbins at 919-707-6085 as early as possible so that arrangements can be made.

Persons who speak Spanish and do not speak English, or have a limited ability to read, speak or understand English, may receive interpretive services upon request prior to the meeting by calling 1-800-481-6494.

FOR ADDITIONAL INFORMATION CONTACT: Leza Wright Mundt NCDOT - PDEA
1548 Mail Service Center, Raleigh, NC 27699-1548 (919) 707-6032
lwmundt@ncdot.gov

www.ncdot.gov

North Carolina Department of Transportation
c/o Mulkey Engineers & Consultants
Attn: Nicole Bennett
6750 Tryon Road
Cary, NC 27518

COMMENT SHEET

-PLEASE PRINT-

Name: _____

Address: _____

_____

E-mail: _____

1) Do you represent a particular organization or group? Yes ☐ No ☐

If yes, what is the name of the organization/group?_____

2) Would you like to be included on our mailing list for this project? Yes ☐ No ☐

3) Which alternative do you prefer? Please **circle** your preference:

ALTERNATIVE 2A ALTERNATIVE 2B ALTERNATIVE 4A

4) Do you have comments, concerns and/or questions regarding this project?

_____

_____

_____

_____

_____

_____

Comments can be mailed by November 25, 2013 to:

Mr. Jamille A. Robbins
NCDOT - Human Environment Section
1598 Mail Service Center
Raleigh, NC 27699-1598
Phone: 919.707.6085 FAX: 919.212.5785
Email: jarobbins@ncdot.gov

I-85 IMPROVEMENTS FACT SHEET

Project Description

The I-85 Widening Project is actually three combined TIP projects:

I-3802 proposes to add four additional travel lanes to I-85 from north of NC 73 in Cabarrus County to US 29-601 Connector in Rowan County. Interchange improvements, including reconstruction of existing structures to meet current design standards for vertical clearance, are proposed at US 29-601, Dale Earnhardt Boulevard and Lane Street. The current Winecoff School Road railroad crossing will be removed; and a new bridge carrying Winecoff School Road over the railroad, S. Ridge Avenue, and S. Main Street will be constructed. The project is divided into two sections for construction phasing – Section A extends from NC 73 to Lane Street and Section B extends from Lane Street to US 29-601 Connector.

I**-3610** proposes to reconstruct the existing cloverleaf interchange at NC 152 and US 29-601, reconstruct the interchange at NC 152 and I-85, and improve existing NC 152, which provides access to I-85 between the two interchanges.

B-5365 proposes to replace Bridge No. 21 and Bridge No. 34 over the Norfolk Southern Railroad and US 29 in China Grove.

Project Schedule

Right of Way Acquisition
I-3802: Section A – Fiscal Year 2014; Section B – Fiscal Year 2018
I-3610: included in I-3802 B
B-5365: Fiscal Year 2017

Construction
I-3802: Section A – Fiscal Year 2014; Section B – Fiscal Year 2019
I-3610: included in I-3802 B
B-5365: Fiscal Year 2019

Project Cost

Section A: $204,000,000
Section B: $124,000,000
*The proposed improvements at Winecoff School Road will add approximately $5.5 - 7 million to Section A.

Design-Build

Design-Build is a construction process that allows a project to be completed more quickly. Under the traditional model, contracts are awarded separately for design and construction, and those steps occur sequentially. With Design-Build, one contract is awarded for right-of-way acquisition, design and construction. This allows teams of designers and contractors to simultaneously design and build to complete the project sooner.

Project Contact

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Raleigh, NC 27699-1598
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NCDOT PDEA
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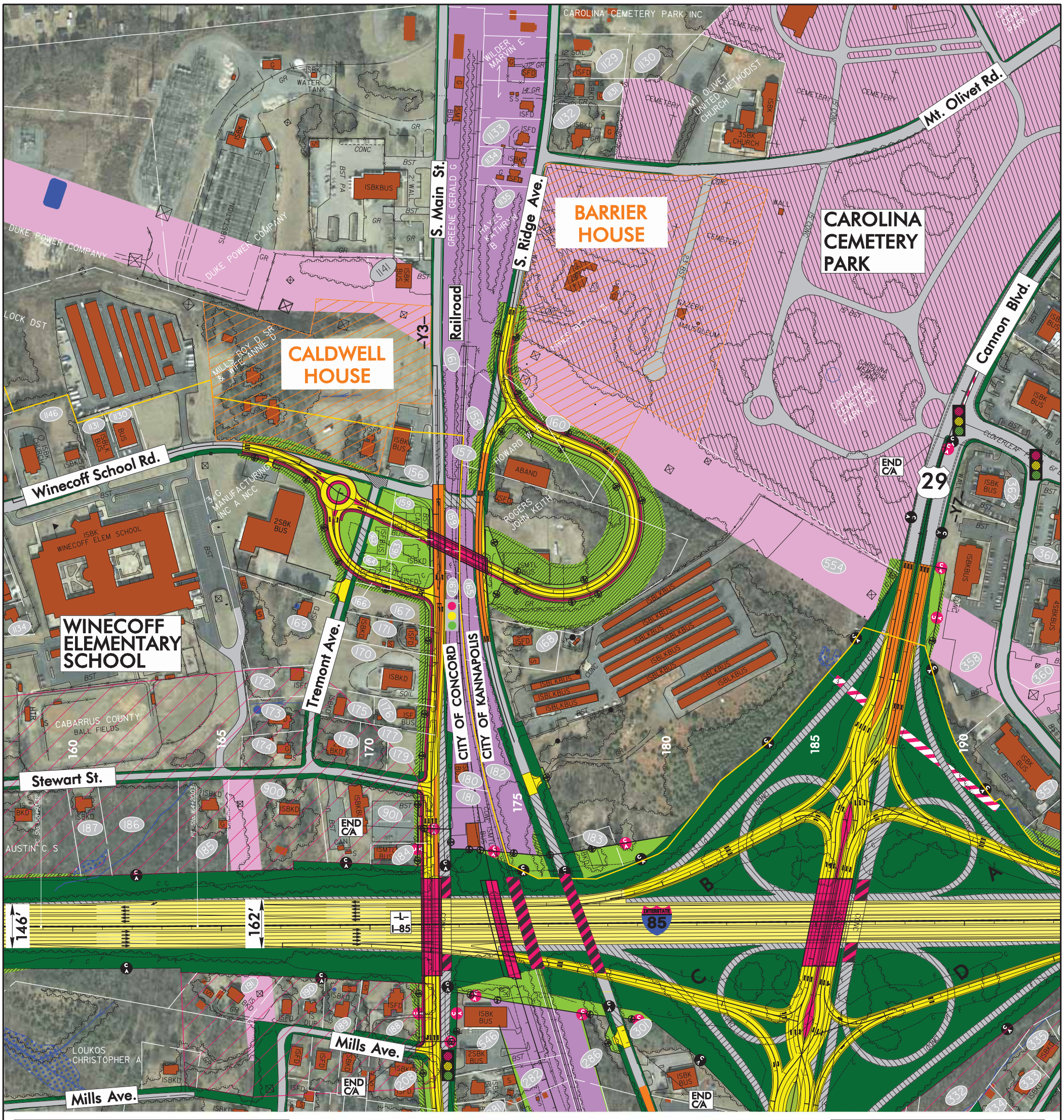
lwmundt@ncdot.gov

WINECOFF SCHOOL ROAD RAILROAD CROSSING

Current condition: The I-85 widening project will necessitate replacement of the existing railroad bridge over I-85 between the Ridge Avenue and Main Street bridges. The new railroad bridge over I-85 will be located next to the existing bridge so that train traffic is not disrupted by construction. The new bridge location affects the railroad tracks through the Winecoff School Road crossing. The existing crossing is badly humped, with little distance between Ridge Avenue and Main Street. This makes it impossible to raise the railroad grade and keep the crossing in operation.

Proposed improvement: A new bridge carrying Winecoff School Road over the railroad, S. Ridge Avenue, and S. Main Street will be constructed with a higher clearance to meet current standards. The existing at-grade crossing will be closed. The proposed bridge will maintain the connection the existing crossing now provides. In addition, the proposed bridge will allow for the removal of the existing Ridge Avenue bridge over I-85, creating a cost-saving opportunity without substantially affecting local travel patterns.

Three design options are being studied (2A, 2B, and 4A). With all three options, Winecoff School Road will be realigned south of the existing road to avoid a property recommended as eligible for the National Register of Historic Places. All three include a roundabout that provides a free flow connection from Winecoff School Road to S. Main Street. Options 2B and 4A provide a second roundabout that connects the new roadway to Mt. Olivet Road. Option 2A ties into S. Ridge Avenue instead of Mt. Olivet Road. It minimizes impacts to another property that is recommended as eligible for the National Register. All three designs will be shown at the public meeting.



PROPERTY OWNERS

156	ROGERS JOHN KEITH
157	MILLS HAROLD L & WIFE AUDREY S
158	KANWAY PROPERTIES LLC
159	CITY OF KANNAPOLIS
160	MILLS ROY D SR & WIFE ANNIE D
161	LACKEY LYNDON R & WF KELLY B
162	AUSTIN DAVID B
163	SEHORN CHRISTINE N
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176	RIZNYK KAZMIR & MAURITA RIZNYK
177	MAULDEN DAVID PAUL
179	CLINE EDWARD L
554	FAGEN CORPORATION LLC
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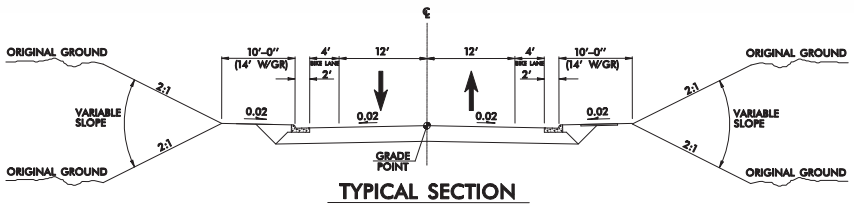
184	LENZER EDWARD A
901	STATE HIGHWAY PATROL
1133	CABLE BENNIS K & TAMMY D
1134	HAYNES DOROTHY H
1135	WINGLER JACK

100' 0 100'
ENGLISH SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION
WINECOFF SCHOOL RD.

NAD 83

WINECOFF SCHOOL ROAD GRADE SEPARATION ALTERNATE 2A

PUBLIC MEETING MAP

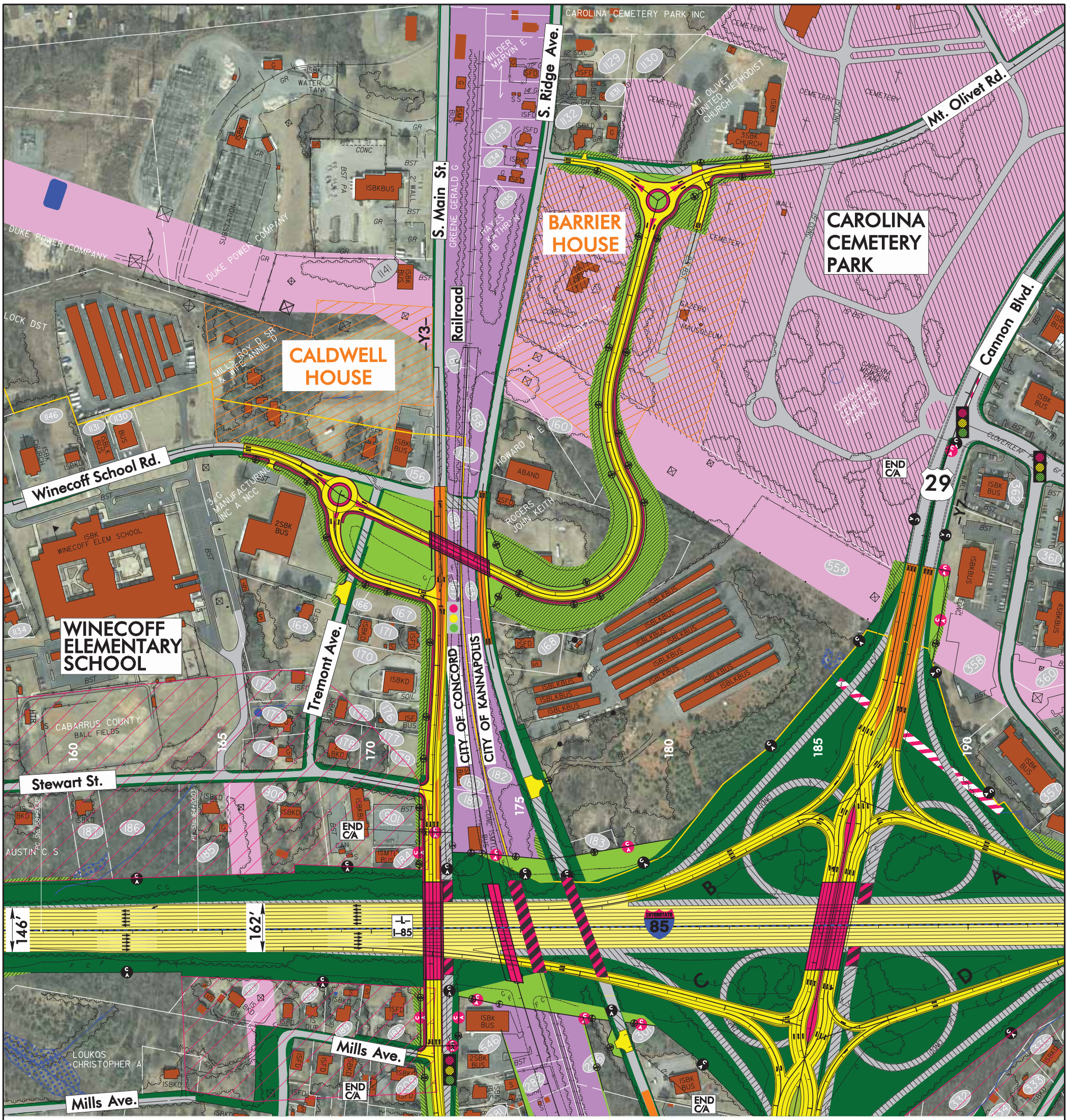
PROJECT 36780.1.1 (I-3802/I-3610/B-5365)
F.A. PROJECT FANHIMF-085-2(61)55
CABARRUS AND ROWAN COUNTIES
I-85 WIDENING AND INTERCHANGE IMPROVEMENTS FROM NORTH OF NC 73 TO US 29-601 CONNECTOR

LEGEND

- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENTS (DRAINAGE, CONSTRUCTION, AND UTILITY)
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED I-3803B
- PROPOSED GRASS MEDIAN
- TEMPORARY ROADWAY /DETOURS
- PROPOSED STRUCTURES, ISLAND, SIDEWALK, CURB AND GUTTER
- EXISTING STRUCTURES TO BE RETAINED
- EXISTING STRUCTURES TO BE REMOVED
- HISTORIC PROPERTY
- LAKES, RIVER, STREAMS AND PONDS
- RAILROAD RIGHT OF WAY
- EXISTING UTILITY EASEMENT
- CEMETERIES
- PROPOSED RIGHT OF WAY
- PROPOSED FULL CONTROL OF ACCESS
- EXISTING FULL CONTROL OF ACCESS
- 0000 / 0000 PRESENT ADT / FUTURE ADT
- PROPERTY LINES
- EXISTING TRAFFIC SIGNAL
- PROPOSED TRAFFIC SIGNAL
- CITY LIMITS BOUNDARY
- WLB WETLAND LIMITS BOUNDARY
- WATERSHED AREA
- NOISE STUDY AREA

THE SHADED AREA INDICATES NOISE-STUDY LOCATIONS FOR WHICH POTENTIAL NOISE BARRIERS HAVE BEEN IDENTIFIED. MORE DETAILED ANALYSES WILL OCCUR DURING FINAL PROJECT DESIGN TO DETERMINE WHETHER THESE POTENTIAL BARRIER LOCATIONS MEET THE REASONABLE AND FEASIBLE CRITERIA WITHIN THE NCDOT TRAFFIC NOISE ABATEMENT POLICY. IF THESE CRITERIA ARE MET, BARRIER CONSTRUCTION WILL OCCUR PENDING PUBLIC APPROVAL.

ALL PROPOSED STRUCTURES OVER I-85 WILL BE CONSTRUCTED TO ACCOMMODATE FUTURE HOV/HOT LANES.



PROPERTY OWNERS

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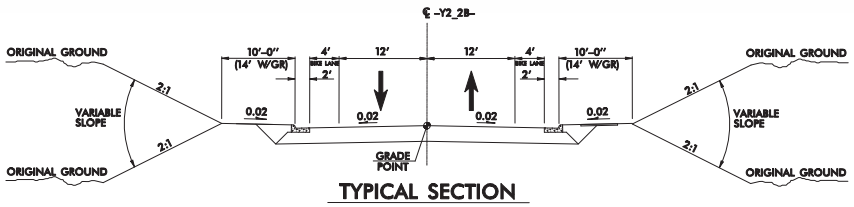

TYPICAL SECTION
-Y2_2B- WINECOFF SCHOOL RD.

NAD 83

WINECOFF SCHOOL ROAD GRADE SEPARATION ALTERNATE 2B

PUBLIC MEETING MAP

PROJECT 36780.1.1 (I-3802/I-3610/B-5365)
F.A. PROJECT FANHIMF-085-2(61)55
CABARRUS AND ROWAN COUNTIES
I-85 WIDENING AND INTERCHANGE IMPROVEMENTS FROM NORTH OF NC 73 TO US 29-601 CONNECTOR

LEGEND

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THE SHADED AREA INDICATES NOISE-STUDY LOCATIONS FOR WHICH POTENTIAL NOISE BARRIERS HAVE BEEN IDENTIFIED. MORE DETAILED ANALYSES WILL OCCUR DURING FINAL PROJECT DESIGN TO DETERMINE WHETHER THESE POTENTIAL BARRIER LOCATIONS MEET THE REASONABLE AND FEASIBLE CRITERIA WITHIN THE NCDOT TRAFFIC NOISE ABATEMENT POLICY. IF THESE CRITERIA ARE MET, BARRIER CONSTRUCTION WILL OCCUR PENDING PUBLIC APPROVAL.

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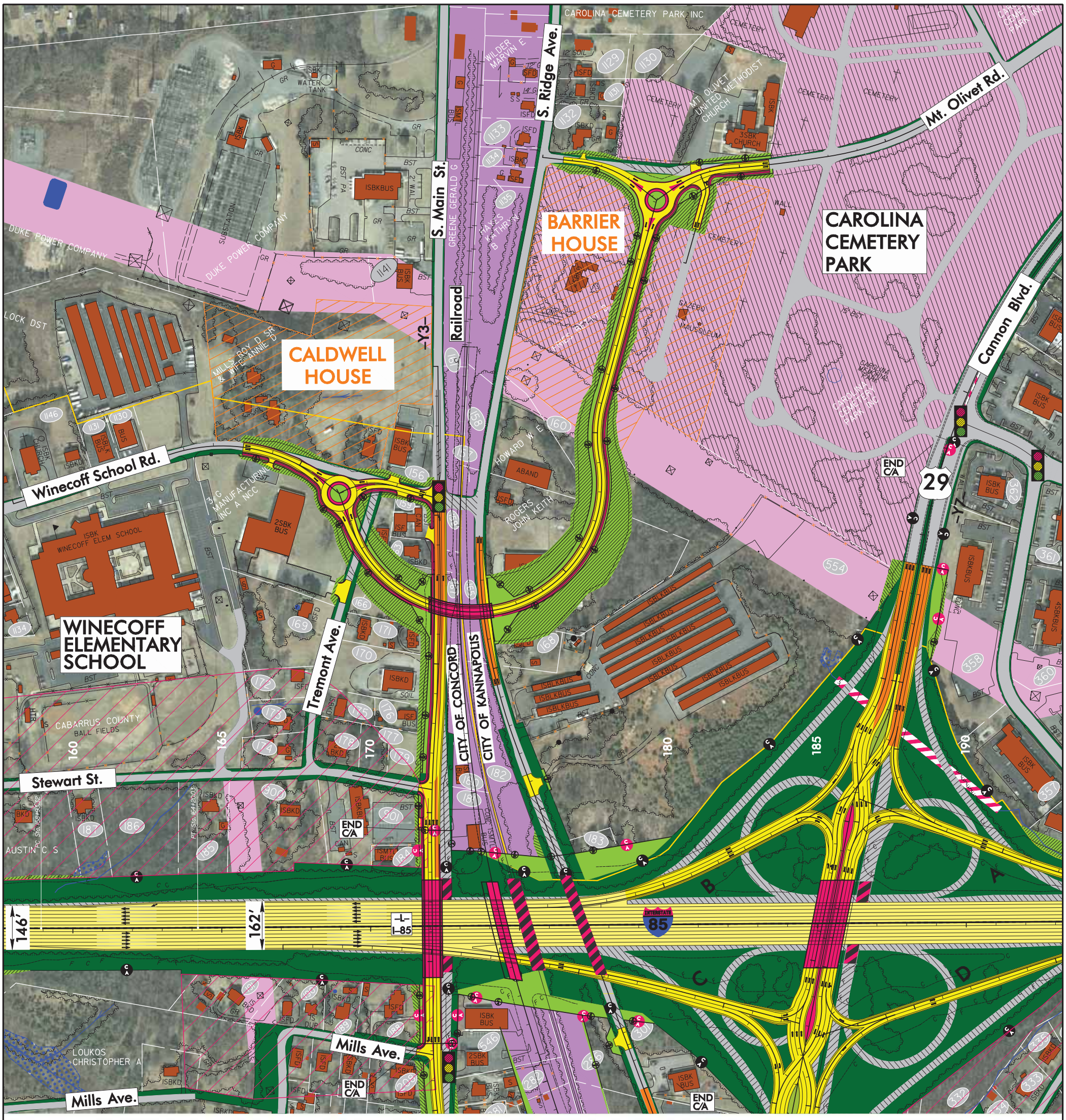

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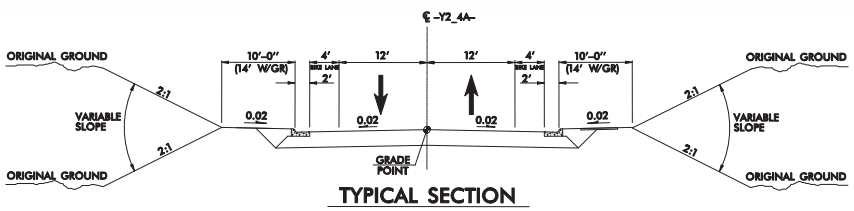
170	GOODNIGHT MARIE G
171	FORD WILLIAM MARTIN
176	RIZNYK KAZMIR & MAURITA RIZNYK
177	MAULDEN DAVID PAUL
179	CLINE EDWARD L
554	FAGEN CORPORATION LLC
1132	LAWS KEVIN T
180	UNIVERSAL AUTOMOTIVE SRVCE INC
181	INTERCHANGE X LLC NC LTD LLC
182	BARNHARDT A Y & WIFE CARLENE F
184	LENZER EDWARD A
901	STATE HIGHWAY PATROL
1133	CABLE BENNIS K & TAMMY D
1134	HAYNES DOROTHY H
1135	WINGLER JACK

100' 0 100'
ENGLISH SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION
-Y2_4A- WINECOFF SCHOOL RD.

NAD 83

WINECOFF SCHOOL ROAD GRADE SEPARATION ALTERNATE 4A

PUBLIC MEETING MAP

PROJECT 36780.1.1 (I-3802/I-3610/B-5365)
F.A. PROJECT FANHIMF-085-2(61)55
CABARRUS AND ROWAN COUNTIES
I-85 WIDENING AND INTERCHANGE IMPROVEMENTS FROM NORTH OF NC 73 TO US 29-601 CONNECTOR

LEGEND

- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENTS (DRAINAGE, CONSTRUCTION, AND UTILITY)
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- EXISTING ROADWAY TO BE RESURFACED
- PROPOSED ROADWAY
- PROPOSED I-3803B
- PROPOSED GRASS MEDIAN
- TEMPORARY ROADWAY /DETOURS
- PROPOSED STRUCTURES, ISLAND, SIDEWALK, CURB AND GUTTER
- EXISTING STRUCTURES TO BE RETAINED
- EXISTING STRUCTURES TO BE REMOVED
- HISTORIC PROPERTY
- LAKES, RIVER, STREAMS AND PONDS
- RAILROAD RIGHT OF WAY
- EXISTING UTILITY EASEMENT
- CEMETERIES
- PROPOSED RIGHT OF WAY
- PROPOSED FULL CONTROL OF ACCESS
- EXISTING FULL CONTROL OF ACCESS
- 0000 PRESENT ADT / 0000 FUTURE ADT
- PROPERTY LINES
- EXISTING TRAFFIC SIGNAL
- PROPOSED TRAFFIC SIGNAL
- CITY LIMITS BOUNDARY
- WLB WETLAND LIMITS BOUNDARY
- WATERSHED AREA
- NOISE STUDY AREA

THE SHADED AREA INDICATES NOISE-STUDY LOCATIONS FOR WHICH POTENTIAL NOISE BARRIERS HAVE BEEN IDENTIFIED. MORE DETAILED ANALYSES WILL OCCUR DURING FINAL PROJECT DESIGN TO DETERMINE WHETHER THESE POTENTIAL BARRIER LOCATIONS MEET THE REASONABLE AND FEASIBLE CRITERIA WITHIN THE NCDOT TRAFFIC NOISE ABATEMENT POLICY. IF THESE CRITERIA ARE MET, BARRIER CONSTRUCTION WILL OCCUR PENDING PUBLIC APPROVAL.

ALL PROPOSED STRUCTURES OVER I-85 WILL BE CONSTRUCTED TO ACCOMMODATE FUTURE HOV/HOT LANES.

Appendix E – NEPA/Section 404 Merger Team Concurrence Forms

SECTION 404/NEPA INTERAGENCY AGREEMENT

CONCURRENCE POINT NO. 1
PURPOSE AND NEED AND STUDY AREA DEFINED

PROJECT TITLE: I-85 Widening and Interchange Improvements from North of NC 73 to US 29-601 Connector; Rowan and Cabarrus Counties; TIP Project Numbers I-3802/I-3610; Federal Project Number FANHIMF-085-2(61)55; WBS Number 36780.1.1

PURPOSE AND NEED OF PROPOSED PROJECT: The purposes of the proposed project are as follows:

- To address congestion and capacity problems along the I-85 corridor in the project area by improving the level of service (LOS) on I-85 and its interchanges by 2035. Another desirable outcome is to eliminate vertical clearance deficiencies for structures over I-85 within the project study area in order to meet current design standards.

- To reduce operational deficiencies at the interchange of US 29-601 Connector and NC 152.

STUDY AREA: The project study area begins approximately 1,000 feet north of NC 73 and ends at approximately 2,000 feet north of US 29-601 Connector. It consists of a 600-foot wide corridor centered on I-85. At intersections and interchanges, corridors are 400 feet wide and approximately 2,000 feet long. At the US 29-601 interchange, the study area extends 2,600 feet north along Kannapolis Highway and the railroad corridor and approximately 5,000 feet to the south down US 29-601/Concord Parkway. It extends approximately 3,000 feet along Lane Street on each side of I-85. Along SR 1221 (Old Beatty Ford Road), the corridor extends approximately 1,200 feet west of I-85 and approximately 2,000 feet to the east of I-85. At NC 152, the corridor along I-85 is widened to approximately 2,000 feet to the west (from the I-85 centerline) to include the US 29-601/NC 152 interchange, Main Street and the NC 152 interchange with I-85. It extends approximately 1,500 feet along NC 152 on both sides of I-85.

The project team has concurred on this date of January 19, 2011, with the purpose and need for the proposed project as described above.

USACE _____ FHWA _____

USEPA _____ NCDOT _____

USFWS _____ NCDCR _____

NCDWQ _____ NCWRC _____

CRMPO _____

Section 404/NEPA Interagency Agreement

Concurrence Point No. 2
Design Options for Detailed Study

Project Title: I-85 Widening and Interchange Improvements from North of NC 73 to US 29-601 Connector; Rowan and Cabarrus Counties; TIP Project Numbers I-3802/I-3610; Federal Project Number FANHIMF-085-2(61)55; WBS Number 36780.1.1

Design Option to Study in Detail:

1. No Build
2. Widen to the Inside of I-85
3. I-85/US 29-601: Diverging Diamond Interchange (DDI)
4. I-85/Dale Earnhardt Blvd: Diamond with Slip Ramp
5. I-85/Lane Street: Diamond with Roundabouts
6. I-85/NC 152: Diamond with Roundabouts
7. US 29-601 Connector/NC 152: Half diamond

The project team has concurred on this day, December 16, 2010, with the design options to study in detail for the proposed project as indicated above.

USACE _____

USEPA _____

USFWS _____

NCDWQ _____

CRMPO _____

FHWA _____

NCDOT _____

NCDCR _____

NCWRC _____

SECTION 404/NEPA INTERAGENCY AGREEMENT

UPDATED CONCURRENCE POINT NO. 2
DESIGN OPTIONS FOR DETAILED STUDY

Project Title: I-85 Widening and Interchange Improvements from North of NC 73 to US 29-601 Connector; Rowan and Cabarrus Counties; TIP Project Numbers I-3802/I-3610; Federal Project Number FANHIMF-085-2(61)55; WBS Number 36780.1.1

Design Option for the Detailed Study:

1. No Build
2. Widen to the Inside of I-85
3. I-85/US 29-601: Diverging Diamond Interchange (DDI)
4. I-85/Dale Earnhardt Blvd: Diamond with Slip Ramp
5. I-85/Lane Street: Diamond with Roundabouts
6. I-85/NC 152: Diamond with Roundabouts
7. US 29-601 Connector/NC 152: Half diamond
8. I-85/Dale Earnhardt Blvd: Diamond with Elongated Loop

The project team has concurred on this day, January 16, 2013, with the design options to study in detail for the proposed project as indicated above.

USACE _____

USEPA _____

USFWS _____

NCDWQ _____

CRMPO _____

FHWA _____

NCDOT _____

NCDCR _____

NCWRC _____

Section 404/NEPA Interagency Agreement

Concurrence Point No. 2A Revised
Bridging Decisions and Alignment Review

Project Title: I-85 Widening and Interchange Improvements from North of NC 73 to US 29-601 Connector; Rowan and Cabarrus Counties; TIP Project Numbers I-3802/I-3610/ B-5365; Federal Project Number FANHIMF-085-2(61)55; WBS Number 36780.1.1

Bridging Decisions and Alignment Review: NCDOT identified jurisdictional areas and preliminary structures at major stream crossings. These are shown in the following table:

Site	Stream (Road)	Stream ID	Existing Structure (length)	Recommended Structure (length)
4,5	Irish Buffalo Creek (I-85)	BC-Buffalo Creek	2 @ 160-foot bridges	Replace both bridges with a single bridge, approximately 145 feet wide and 175 feet long
8	Threemile Branch (I-85)	SC-1	2 @ 10' x 7' RCBC (220 feet)	Retain and extend; Consider supplementation (290 feet)
11,12	UT to Cold Water Creek (I-85)	SD-1	7' x 7' RCBC (305 feet)	Supplement with 2 @ 72-inch RCP (385 feet)
17	UT to Cold Water Creek (I-85)	SEB	2 @ 9' x 7' RCBC (300 feet)	Retain and extend; Consider supplementation (390 feet)
18	Cold Water Creek (I-85)	SE	2 @ 242-foot bridges	Replace with single bridge, approximately 215 feet wide and 240 feet long
21	UT to Lake Fisher (I-85)	SFC	54-inch CMP	Replace with 72-inch RCP
23	UT to Lake Fisher (I-85)	SFE	72-inch Concrete Pipe (250 feet)	Retain and extend (295 feet)
25	UT to Lake Fisher (I-85)	SG-1	2 @ 7' x 7' RCBC (225 feet)	Extend with bevel edge in headwall (270 feet)
26	UT to Lake Fisher (I-85)	SH	7' x 7' RCBC (235 feet)	Extend with bevel edge in headwall (280 feet)
28	UT to Cold Water Creek (I-85)	SIE/SBF	8' x 8' RCBC (160 feet)	Retain and extend (200 feet)

Site	Stream (Road)	Stream ID	Existing Structure (length)	Recommended Structure (length)
33	UT to Cold Water Creek (I-85)	SJB	6' x 6' RCBC (240 feet)	Retain and extend (290 feet)
41	Cold Water Creek (SR 1232)	SK	Overpass Bridge	Replace with Overpass Bridge
42	UT to Cold Water Creek (I-85)	SKA	7' x 7' RCBC (185 feet)	Retain and extend; Supplement with 2 @ 72-inch RCP (250 feet)
43	Cold Water Creek (SR 1337)	SK	2 @ 7' x 7' RCBC (155 feet)	Retain and extend; Supplement with 2 @ 72-inch RCP and 1 @ 48-inch RCP (246 feet)
44	UT to Cold Water Creek (I-85)	SKF	72-inch Concrete Pipe (235 feet)	Retain and extend (240 feet)
45	Cold Water Creek (NC 152)	SK	7' x 7' RCBC (195 feet)	Retain and extend (245 feet)

The project team has concurred on this date of December 10, 2013 with the jurisdictional impacts as shown in the tables provided in the 2A packet and preliminary structures at major stream crossings as presented above.

USACE _____ FHWA _____

USEPA _____ NCDOT _____

USFWS _____ NCDCR _____ 12/10/13

NCDWQ _____ 12/20/13 NCWR _____

CRMPO _____

Site	Stream (Road)	Stream ID	Existing Structure (length)	Recommended Structure (length)
33	UT to Cold Water Creek (I-85)	SJB	6' x 6' RCBC (240 feet)	Retain and extend (290 feet)
41	Cold Water Creek (SR 1232)	SK	Overpass Bridge	Replace with Overpass Bridge
42	UT to Cold Water Creek (I-85)	SKA	7' x 7' RCBC (185 feet)	Retain and extend; Supplement with 2 @ 72-inch RCP (250 feet)
43	Cold Water Creek (SR 1337)	SK	2 @ 7' x 7' RCBC (155 feet)	Retain and extend; Supplement with 2 @ 72-inch RCP and 1 @ 48-inch RCP (246 feet)
44	UT to Cold Water Creek (I-85)	SKF	72-inch Concrete Pipe (235 feet)	Retain and extend (240 feet)
45	Cold Water Creek (NC 152)	SK	7' x 7' RCBC (195 feet)	Retain and extend (245 feet)

The project team has concurred on this date of December 10, 2013 with the jurisdictional impacts as shown in the tables provided in the 2A packet and preliminary structures at major stream crossings as presented above.

USACE _____

USEPA _____

USFWS _____

NCDWQ _____

CRMPO _____

FHWA _____ *

NCDOT _____

NCDCR _____

NCWR _____

Site	Stream (Road)	Stream ID	Existing Structure (length)	Recommended Structure (length)
33	UT to Cold Water Creek (I-85)	SJB	6' x 6' RCBC (240 feet)	Retain and extend (290 feet)
41	Cold Water Creek (SR 1232)	SK	Overpass Bridge	Replace with Overpass Bridge
42	UT to Cold Water Creek (I-85)	SKA	7' x 7' RCBC (185 feet)	Retain and extend; Supplement with 2 @ 72-inch RCP (250 feet)
43	Cold Water Creek (SR 1337)	SK	2 @ 7' x 7' RCBC (155 feet)	Retain and extend; Supplement with 2 @ 72-inch RCP and 1 @ 48-inch RCP (246 feet)
44	UT to Cold Water Creek (I-85)	SKF	72-inch Concrete Pipe (235 feet)	Retain and extend (240 feet)
45	Cold Water Creek (NC 152)	SK	7' x 7' RCBC (195 feet)	Retain and extend (245 feet)

The project team has concurred on this date of December 10, 2013 with the jurisdictional impacts as shown in the tables provided in the 2A packet and preliminary structures at major stream crossings as presented above.

USACE _____

USEPA _____

USFWS _____

NCDWQ _____

CRMPO Phil Conrad

FHWA Michael Gatzmich

NCDOT _____

NCDCR _____

NCWR _____