

US 158 (Shortcut Road)  
From East of NC 34 (Shawboro Road) at Belcross  
To NC 168 (Caratoke Highway)  
Camden – Currituck Counties  
**TIP PROJECT R-2574**

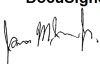
## **STATE ENVIRONMENTAL ASSESSMENT**

N.C. Department of Transportation

In Compliance with the North Carolina Environmental Policy Act

Approved:

6/29/2016 | 3:43 PM EDT

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DATE

FOR

Robert P. Hanson, P.E.,  
Eastern Project Development Section Head  
Project Development and Environmental Analysis Unit  
North Carolina Department of Transportation

US 158 (Shortcut Road)  
From East of NC 34 (Shawboro Road) at Belcross  
To NC 168 (Caratoke Highway)  
Camden – Currituck Counties  
**TIP Project R-2574**

## STATE ENVIRONMENTAL ASSESSMENT

June 2016

Documentation Prepared By  
ICA Engineering, Inc.

DocuSigned by:

*Mark L. Reep*

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Mark L. Reep, P.E.  
Project Engineer – ICA Engineering, Inc.



DocuSigned by:

*Mark L. Reep*

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6/29/2016 | 10:17 AM PDT

For The North Carolina Department of Transportation

DocuSigned by:

*James McInnis, Jr.*

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James McInnis, Jr., P.E.  
Project Engineer  
Project Development and Environmental Analysis Unit

DocuSigned by:

*Joseph H. Miller*

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Joseph Miller, P.E.  
Project Planning Engineer  
Project Development and Environmental Analysis Unit

# **PROJECT COMMITMENTS**

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From East of NC 34 (Shawboro Road) at Belcross  
To NC 168 (Caratoke Highway)  
Camden - Currituck Counties  
TIP Project R-2574

## **NCDOT Hydraulics Unit**

NCDOT will coordinate with the Floodplain Mapping Program (FMP) to determine whether the Memorandum of Agreement between NCDOT and the FMP is applicable or if approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) will be required.

## **NCDOT Division 1**

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, NCDOT Division 1 shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying the drainage structures and roadway embankment within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

## **NCDOT Structure Management Unit/ Roadway Design Unit**

Additional bridge lengths beyond the hydraulic requirements are proposed for wildlife passage at the two crossings of Run Swamp Canal. Dual bridges 100 feet long will replace Bridge #1 (Site 1) and dual bridges 120 feet long will replace Bridge #9 (Site 2) to allow a wider offset on each side of Run Swamp Canal without rip rap.

## **NCDOT Project Development and Environmental Analysis Unit**

One archaeological site (31CK178) in the project area was recommended eligible for the National Register of Historic Places. The proposed project is not expected to affect Site 31CK178. Project plans will be reviewed prior to right of way acquisition to confirm the project will not affect this site. If it is determined Site 31CK178 will be affected by project construction, a mitigation plan will be developed and implemented prior to construction.

Additional work may be required at six sites (31CK134, 31CK252, 31CK260, 31CK272, 31CK282 and 31CK286) because access was denied by the property owners. Project plans will be reviewed prior to right of way acquisition to determine whether or not these sites are located

within the proposed right of way for the project. If these sites are located within proposed right of way, these sites will be assessed after right of way has been acquired.

NCDOT will conduct enhanced community outreach within the Ponderosa Park mobile home park to assess the potential for community cohesion and effects pertaining to Title VI of the Civil Rights Act of 1964 and related statutes. Ponderosa Park contains minority and low-income residents and is located on the south side of US 158 between the Currituck County Regional Airport and Central Elementary School.

The project will be resurveyed for red-cockaded woodpecker prior to construction.

### **NCDOT Project Development and Environmental Analysis Unit/NCDOT Right of Way Unit**

If it is determined any of the six archaeological sites requiring additional testing are within proposed right of way, a request will be sent to the NCDOT Right of Way Unit asking that acquisition of required right of way from the properties containing the sites begin as soon as right of way acquisition is authorized.

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## **SUMMARY**

State Environmental Assessment  
Prepared for the Project Development and Environmental Analysis Unit  
of the  
North Carolina Department of Transportation

### **A. Type of Action**

This is a State Environmental Assessment.

### **B. Description of Action**

The proposed project involves widening a section of US 158 in Camden and Currituck Counties from two lanes to four lanes. The project extends from NC 34 at Belcross in Camden County to NC 168 in Currituck County (see Figure 1). Proposed improvements include four 12-foot travel lanes, a 46-foot median and eight-foot grassed shoulders (four-foot paved). The proposed project is approximately 10.6 miles long.

It is anticipated approximately 200 feet of right of way will be required for the project. Partial control of access is proposed. All intersecting roadways will cross US 158 at-grade. No grade separations or interchanges are proposed.

The purpose of the proposed project is to improve mobility and increase the roadway carrying capacity of US 158 in the project area to support both regional transportation needs and hurricane evacuation.

The proposed project will address the following needs:

- US 158 is a vital artery in moving people and goods through North Carolina, connecting northern North Carolina and Virginia with the northern outer banks region of North Carolina.
- Under current traffic conditions, US 158 from NC 34 at Belcross to NC 168 operates at a Level of service (LOS) D.
- If no improvements are made, the subject segment of US 158 will operate at capacity (LOS E) in 2035.
- US 158 in the project area is a hurricane evacuation route. If the NC/ VA Border Traffic Control Plan is implemented, US 158 is the only evacuation route available for some parts of Currituck and Camden Counties.

### **C. Alternatives Considered**

Widening the existing roadway and the “no-build” alternative were considered for the project (Section III). Table S1 presents a summary of the environmental effects of the project.



**Table S1: Summary of Project Environmental Effects**

<b>Relocations</b>	
Residential	20
Business	5
Non-Profit	2
Total	27
Minority/ Low Income Populations Disproportionately Impacted?	None
Historic Properties (Adverse Effect)	None
Community Facilities	2
Noise Impacts	56
North River Game Land (acres)	10.0
Prime Farmland (acres)	59.0
Forested Areas (acres)	54.8
<b>Water Resources</b>	
Stream Crossings (major structures)	6
Wetlands (acres)	33.3
Streams (linear feet)	492
Surface Water (acres)	19.4
Floodplain (acres)	136.4
Federally-Protected Species	No Effect
<b>Costs</b>	
Right of Way	\$8,729,000
Construction	\$77,500,000
Wetland/Stream Mitigation	\$3,000,000
Utility Relocation	\$923,000
Total	\$90,152,000
Length of Proposed Improvements (miles)	10.5

**D. Permits Required**

An Individual Section 404 Permit will likely be applicable. The US Army Corps of Engineers (USACE) holds the final discretion as to what permit will be required to authorize project construction. If a Section 404 permit is required, then a Section 401 Water Quality Certification from the NC Division of Water Resources will be needed.

One Coastal Area Management Act (CAMA) Area of Environmental Concern (AEC) was identified in the study area. A CAMA permit from the North Carolina Division of Coastal Management (NCDCM) will be required for any impacts to designated AECs within the study area.

#### **E. Coordination**

This project was coordinated with the following federal, state and local agencies during this study:

US Department of the Army - Corps of Engineers (Wilmington District)  
US Department of the Interior - US Fish and Wildlife Service (Raleigh)  
US Environmental Protection Agency  
NC Department of Agriculture and Consumer Services – Agricultural Services  
NC Department of Public Safety – Emergency Management  
NC Department of Cultural Resources  
NC Department of Environment and Natural Resources  
NC Division of Water Resources  
NC Division of Waste Management  
NC Division of Coastal Management  
NC Wildlife Resources Commission  
Camden County Board of Commissioners  
Camden County Schools  
Pasquotank-Camden-Elizabeth City Emergency Management Agency  
Camden County Planning and Zoning  
Currituck County Board of Commissioners  
Currituck County Schools  
Currituck County Department of Emergency Management  
Currituck County Planning and Community Development  
Albemarle Rural Planning Organization

#### **F. Contact Information**

The following individual may be contacted for additional information concerning this proposal and statement:

Robert P. Hanson, P.E., Eastern Project Development Section Head  
Project Development and Environmental Analysis Unit  
NC Department of Transportation  
1548 Mail Service Center  
Raleigh, North Carolina 27699-1548  
(919) 707-6000

US 158 (Shortcut Road)  
From East of NC 34 (Shawboro Road) at Belcross  
To NC 168 (Caratoke Highway)  
Camden - Currituck Counties  
TIP Project R-2574

**I. DESCRIPTION OF PROPOSED ACTION**

**A. General Description**

TIP Project R-2574 is included in the 2016-2025 North Carolina State Transportation Improvement Program (STIP). The project extends from NC 34 at Belcross in Camden County to NC 168 in Currituck County, a distance of approximately 10.6 miles (see Figure 1). Proposed improvements include four 12-foot travel lanes, a 46-foot median and eight-foot grassed shoulders (four-foot paved).

It is anticipated approximately 200 feet of right of way will be required for the project. Partial control of access is proposed. All intersecting roadways will cross US 158 at-grade. No grade separations or interchanges are proposed.

**B. Historical Resume and Project Status**

The project is included in the 2016-2025 STIP and is programmed for planning and environmental studies. Right of way acquisition and construction are unfunded. The Albemarle Rural Planning Organization's Comprehensive Transportation Plans for Camden County (July 2014) and Currituck County (May 2012) have identified this section of US 158 as an expressway that needs improvement.

In 2011, NCDOT performed a feasibility study for widening US 158. The feasibility study identified potential improvements, preliminary costs, and possible impacts to the community and natural resources. Project development studies for R-2574 also began in 2011. The project has followed an interagency decision-making process (known as the NEPA/ 404 merger process) to reach concurrence on key project milestones. Between 2013 and 2015, the interagency merger process team concurred on the project's purpose and need, alternatives to be studied in detail, and locations where wetlands and streams are to be bridged.

**C. Cost Estimates**

The estimated cost in the 2016-2025 STIP for R-2574 is as follows:

Right of Way Acquisition	\$40,600,000
Utility Relocation	\$1,400,000
Construction	<u>\$82,500,000</u>
Total Estimated Cost	\$124,500,000

The current estimated cost for the project is shown in Table 1.

**Table 1: Project Cost Estimates**

Construction	\$77,500,000
Wetland/Stream Mitigation	\$3,000,000
Right of Way	\$8,729,000
Utility Relocation	\$923,000
<b>Total</b>	<b>\$90,125,000</b>

## **II. PURPOSE AND NEED FOR PROJECT**

### **A. Purpose of Project**

The purpose of the proposed project is to improve mobility and increase the roadway carrying capacity of US 158 in the project area to support both regional transportation needs and hurricane evacuation.

### **B. Need for Project**

#### **1. Description of Existing Conditions**

##### **a. Functional Classification**

US 158 is classified as a minor arterial in the North Carolina Functional Classification System.

##### **b. Hurricane Evacuation**

US 158 in the project area is a hurricane evacuation route (see Figure 6). North Carolina General Statute 136-102.7 specifies that the hurricane evacuation standard to be used for any bridge or highway project is 18 hours. This evacuation time is measured from when the first evacuating vehicle begins to leave until the last evacuating vehicle reaches I-95. This evacuation standard was recommended by State emergency management officials following completion of the 2005 NCDOT Hurricane Evacuation Study. The 18-hour evacuation goal is for the scenario of a Category 3 hurricane and a 75% occupancy rate for area hotels and rental properties.

US 158 from Barco to Belcross plays a very important role in hurricane evacuations under normal circumstances, both for the existing and future study years. NC 168 into Virginia is also an important evacuation route. However, traffic on NC 168/ Virginia 168 would have to travel through the Virginia Beach/ Norfolk area and then head inland during a hurricane evacuation. Virginia officials have expressed concern the addition of traffic from North Carolina will make evacuating the Virginia Beach/ Norfolk area more difficult. In response to this, the NC/ VA Border Traffic Control Plan has been developed. This plan calls for the closing of NC 168 at the

border and redirecting evacuating traffic onto US 158 in cases where traffic evacuating from North Carolina would hinder the evacuation of the Virginia Beach/ Norfolk area.

In the case of a major hurricane with the NC/ VA Border Traffic Control Plan implemented, US 158 will play an especially important role in an evacuation. The table below presents the anticipated evacuation clearance times with a two-lane US 158 for the current year (2013) and the design year (2035) both with and without implementation of the NC/ VA Border Traffic Control Plan. These evacuation times are from an analysis conducted by Atkins North America, Inc. in September 2013.

**Table 2: Evacuation Clearance Times with a Two-Lane US 158  
(Category 3 Hurricane With 75% Occupancy)**

<b>Condition</b>	<b>2013</b>	<b>2035</b>
<b>Without NC/ VA Border Traffic Control Plan</b>	<b>22 hours</b>	<b>26 hours</b>
<b>With NC/ VA Border Traffic Control Plan</b>	<b>45 hours</b>	<b>52 hours</b>

As the table above shows, existing US 158 in the project area does not meet the evacuation goal now or in the future. Implementation of the border traffic control plan doubles the evacuation times for US 158 in the project area.

**c. Physical Description of Existing Facility**

**1) Roadway Cross-Section**

Existing US 158 is a two-lane roadway within the project area. Pavement width is 24 feet and the shoulders are unpaved.

**2) Right of Way and Access Control**

Existing right of way along US 158 in the project area varies from 100 feet to 140 feet wide. No control of access currently exists along US 158 in the project area.

**3) Speed Limit**

The speed limit along US 158 in the project area is generally 55 miles per hour (mph). The speed limit reduces to 45 mph near the eastern project limit at NC 168.

**4) Intersections/ Interchanges**

All intersections along existing US 158 in the project area are at-grade. No interchanges are located along the roadway. The NC 168 intersection is controlled by a traffic signal, but all others are stop-sign controlled.

## 5) Railroad Crossings

There is one at-grade railroad crossing along US 158 in the project area. The roadway crosses Norfolk Southern Railway-owned tracks just east of NC 34 near the project's western terminus.

## 6) Structures

Four major pipes or culverts and two bridges are located on US 158 in the project area and are described in Table 3.

**Table 3: Existing Structures**

<b>Crossing</b>	<b>Existing Structure</b>
Run Swamp Canal (Bridge #1)	1 span @ 45-foot Cored Slab
Run Swamp Canal (Bridge #9)	2 spans @ 35-foot Cored Slab
Drainage Canal #1 (P005)	117-inch x 79-inch CMP arch
Great Swamp	2 @ 60-inch CMP
Great Swamp	2 @ 72-inch CMP
Great Swamp	2 @ 72-inch CMP

UT = unnamed tributary; CMP = corrugated metal pipe.

## 7) Bicycle and Pedestrian Facilities

This section of US 158 is not a designated bike route. No exclusive bicycle or pedestrian facilities currently exist along the roadway.

## 8) Utilities

The following utilities are located within the project limits:

- Fiber optic cable (within the existing right of way)
- Telephone cable (within the existing right of way)
- Water line (within the existing right of way)
- Power lines in various locations

### d. School Bus Usage

According to the Camden County Schools Transportation Director, two buses make four daily trips along the Camden County portion of the project corridor from the western terminus to North River Road. According to the Currituck County Schools Transportation Supervisor, at least four buses serving K-12 schools make as many as three trips daily (including a mid-day trip

to Central Elementary) along the project corridor from Maple Road to the Camden County line. From Maple Road to NC 168 as many as 12 buses make two trips daily.

**e. Traffic Carrying Capacity**

**1) Traffic Volumes**

Traffic volumes for existing US 158 within the project area were estimated for the years 2012 and 2035. In the year 2012, traffic volumes along existing US 158 ranged between 5,500 and 6,100 vehicles per day. In 2035, traffic along this route is expected to range between 10,400 and 12,000 vehicles per day. Figure 3 depicts the estimated average daily traffic volumes for the years 2012 and 2035 along roadways in the project area. Trucks make up 12 to 13 percent of the total traffic.

**2) Levels of Service**

The effectiveness of a roadway to service traffic demand is measured in terms of level of service (LOS). LOS is a qualitative measure describing the ability of a facility to carry traffic and how individual users perceive traffic conditions. It is based on factors of speed, travel time, comfort, maneuverability, interruptions, convenience and safety. LOS ranges from “A” to “F”, with “A” representing free flow (ideal conditions), and “F” representing forced or breakdown flow (undesirable conditions).

A transportation facility is considered to be operating at capacity when it is just able to accommodate the traffic demand. Once the traffic demand exceeds the facility’s capacity (LOS E), excessive delays occur.

Traffic capacity analyses were conducted for the existing roadway along US 158 for the years 2012 and 2035. Capacity analysis results indicate the existing two-lane facility currently operates at LOS D and is expected to operate at LOS E in 2035. Currently, US 158 intersections at NC 168, SR 1246 (Maple Road), and SR 1147 (Indiantown Road) operate at LOS B, while the NC 34 intersection operates at LOS C. In 2035, the NC 168 and Maple Road intersections will operate at LOS D, and the intersections at Indiantown Road and NC 34 will have traffic movements that operate at LOS F.

**f. Accident Data**

A crash study was conducted for existing US 158 within the project area. Between March 1, 2011 and February 29, 2016, 190 crashes occurred along US 158 within the project area. Of these accidents, 51 involved injuries and four were fatal. Table 4 below presents the results of this crash study.

**Table 4: Accident Study**

<b>Rate</b>	<b>Crashes</b>	<b>Crashes per 100 MVM</b>	<b>Statewide Rate<sup>1</sup></b>	<b>Critical Rate<sup>2</sup></b>
Total	190	178.03	143.51	163.05
Fatal	4	3.75	1.62	4.12
Non-Fatal Injury	51	47.79	43.34	54.29
Night	65	60.9	54.13	66.31
Wet	38	35.61	23.91	32.16

<sup>1</sup> 2012-2014 statewide crash rate for rural two-lane, undivided US routes.

<sup>2</sup> Based on the statewide crash rate (95% level of confidence).

MVM = million vehicle miles.

### **g. Airports**

The Currituck Regional Airport is located on the north side of US 158 just east of Maple Road. The County-owned general aviation airport is open to the public and includes a 5,500-foot runway, small terminal building and corporate hanger space.

### **h. Projects in the Area**

Other nearby transportation projects listed in the 2016-2025 STIP include:

- R-2576 – Mid-Currituck Bridge. The project proposes a new bridge over Currituck Sound from Coinjock to Corolla. Right of way acquisition and construction are scheduled to begin in fiscal year 2017.
- K-4700 – Rest Area on north side of US 158 near the US 158/ NC 168 intersection. Right of way acquisition is underway. Construction is unfunded.

## **2. Transportation and Land Use Plans**

### **a. Comprehensive Transportation Plans**

R-2574 is identified in the Camden County *Comprehensive Transportation Plan* (CTP) (July 2014) and the Currituck County *CTP* (May 2012) as an existing expressway that needs improvement. The Currituck County CTP recommends a sidewalk along US 158 between Airport Road and the Currituck Community Center.

### **b. Land Use Plans**

The *Camden County 2035 Comprehensive Plan* was adopted by the Camden County Board of Commissioners on October 1, 2012. This plan supports the Camden County CTP and its recommended transportation projects. According to the comprehensive plan, existing land uses within the project area include primarily agricultural, rural residential and vacant land. The



future land use map shows mixed-use employment, village mixed-use, rural residential, rural preservation and environmental preservation uses in the project area.

The *Currituck County 2006 Land Use Plan* was adopted by the Currituck County Board of Commissioners on October 2, 2006 (amended April 20, 2009). Improvements to US 158 are included in this plan. According to the land use plan, existing land uses within the project area include primarily agricultural and undeveloped land with institutional and industrial uses located at Central Elementary School and Currituck Regional Airport, respectively. The future land use map shows rural, conservation and full service uses in the project area.<sup>1</sup>

## **C. Benefits of the Project**

### **1. Regional Travel**

The proposed project will improve mobility and increase the traffic carrying capacity of this regionally important route. The additional capacity provided by this project will reduce travel time and provide a more reliable route for general travel and hurricane evacuations. The additional lanes will make it less likely the road would have to be closed due to an accident or other incident. US 158 is the only east-west route across Camden and Currituck Counties.

### **2. Traffic Levels of Service with Project**

A traffic capacity analysis was conducted for the project for the year 2035. US 158 will operate at LOS A with the project. The NC 168 intersection will operate at LOS D. The unsignalized Maple Road intersection will have traffic movements that operate at LOS C. The Indiantown Road and NC 34 intersections are also unsignalized and will have traffic movements that operate at LOS E and LOS F.

### **3. Hurricane Evacuation**

The proposed widening of US 158 will result in substantial reductions in hurricane evacuation times. Without implementation of the NC/ VA Border Traffic Control Plan, evacuation times will be less than the 18-hour goal. Although the proposed widening alone will not reduce evacuation times to below the 18-hour goal in the year 2035 with implementation of the Border Traffic Control Plan, the proposed widening will reduce evacuation times by approximately 44 percent (from 52 hours to 29 hours). Table 5 below presents evacuation times with the proposed widening. These evacuation times are from the September 2013 hurricane evacuation analysis.

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<sup>1</sup> Full service areas are those parts of the County where a broad range of infrastructure and service investments have been provided or will be made available by the public and/ or private sectors.

**Table 5: Evacuation Clearance Times in the Year 2035 with Proposed Four-Lane US 158 (Category 3 Hurricane With 75% Occupancy)**

<b>Condition</b>	<b>Time</b>
<b>Without NC/ VA Border Traffic Control Plan</b>	<b>14 hours</b>
<b>With NC/ VA Border Traffic Control Plan</b>	<b>29 hours</b>

#### **4. Safety**

By increasing the number of lanes on US 158, the proposed project is expected to have a positive impact on vehicular safety. The proposed project will likely make it safer for large trucks and local traffic. The proposed paved shoulders will improve roadway drainage, making it less likely for vehicles to hydroplane during rain events. The proposed median will provide separation between opposing traffic, making head-on collisions less likely. The proposed dual lanes in each direction will allow faster traffic to pass slower moving vehicles without using the opposing traffic lane, making head-on and rear-end collisions less likely.

Emergency response time should improve with construction of the project. By reducing the congestion on US 158, emergency vehicles traveling within or through this area would likely have a reduction in emergency response time.

### **III. ALTERNATIVES**

#### **A. Preliminary Study Alternatives**

##### **1. Mass Transit**

Fixed-route transit services do not currently operate within the project area. However, Inter-County Transportation Authority (ICPTA) provides on-demand public transportation to the five-county service area of: Currituck, Camden, Pasquotank, Perquimans, and Chowan. ICPTA operates as a Dial-A-Ride service that provides transportation for Camden and Currituck County residents to Virginia and Greenville.

Given the predominantly rural nature of the project area, improvements to public transportation or upgraded inter-city bus service are unlikely to result in substantial reductions in the amount of traffic along US 158 in the project area.

The mass transit alternative does not reduce traffic volumes in the project area and does not address the mobility and hurricane evacuation needs of the project area. Mass transit alternatives would not meet the purpose and need of the project and have been eliminated from further consideration.

## **2. Travel Demand Management (TDM)**

Travel demand management (TDM) strategies include staggered work hours and ridesharing. Given the predominately rural nature of the project area, it is not expected that adjustments to work schedules or ridesharing would substantially reduce the peak hour traffic volumes within the study area. Travel demand management would also not address the mobility and hurricane evacuation needs of the project area. Travel demand management strategies would not meet the purpose and need of the project and have been eliminated from further consideration.

## **3. Transportation System Management (TSM)**

Transportation system management (TSM) activities, such as intersection improvements, signing or traffic signalization improvements would potentially improve safety along existing US 158. However, such improvements would not sufficiently meet the project purpose of improving mobility and increasing traffic capacity. TSM alternatives would also not substantially address the hurricane evacuation needs of the project area. Transportation system management activities would not meet the purpose and need of the project and have been eliminated from further consideration.

## **4. “No-Build” Alternative**

The No-Build Alternative would not provide any substantial improvements to US 158 within the study area; only typical maintenance activities would occur. The No-Build Alternative would not meet the purpose and need of the project.

## **5. Widening Existing US 158**

Widening existing US 158 would increase roadway capacity as well as support regional transportation needs and hurricane evacuation. The project has been divided into six sections in order to analyze potential impacts. The sections are shown on Figure 2 and described below.

- Section 1 – West end of project to just west of SR 1135 – 1.5 miles
- Section 2 – Just west of SR 1135 in Camden County to approximately 0.6 mile west of the western SR 1148 intersection in Currituck County – 0.7 mile
- Section 3 – Approximately 0.6 mile west of the western SR 1148 intersection to approximately 0.7 mile east of the eastern SR 1148 intersection – 3.5 miles
- Section 4 – Approximately 0.7 mile east of the eastern SR 1148 intersection to approximately 0.1 mile east of Maple Road – 2.1 miles
- Section 5 – Approximately 0.1 mile east of Maple Road to approximately 0.2 mile west of Will Poyner Lane – 1.1 miles
- Section 6 – Approximately 0.2 mile west of Will Poyner Lane to east end of project – 1.6 miles

Initially, north side and south side widening were considered for each section. Table 6 compares preliminary impacts for both scenarios.

**Table 6: Preliminary Widening Scenario Comparison**

Impact	Section											
	1		2		3		4		5		6	
	N	S	N	S	N	S	N	S	N	S	N	S
Delineated Wetlands (ac)	0	0	13.34	13.30	0.39	0.57	28.68	27.91	0.37	0.11	1.01	0.42
Streams (ft)	0	0	0	0	239	298	0	0	0	0	0	0
Surface Water* (ac)	<0.01	0.01	3.81	3.76	0.71	0.72	14.50	14.87	0.05	0.08	0.42	0.42
Homes Relocated	2	4	1	1	14	9	0	0	2	6	19	17
Businesses Relocated	3	1	0	0	1	0	0	0	0	0	1	1
Non-Profit Relocated**	0	0	0	0	1	1	0	0	1	0	0	0
Right of Way From Historic Property?	No	No	No	No	No	No	No	No	No	No	No	No
Cemeteries	0	0	0	0	0	0	0	0	0	0	0	0
Community Facilities Affected***	None	None	None	None	None	None	None	None	Airport School	School	None	None

Notes: Impacts calculated using a 250-foot wide impact area. N = north side widening; S = south side widening.

\* Tributaries to Waters of the US.

\*\* Churches

\*\*\* Community facilities that right of way will be required from, though they would not be relocated.

NCDOT analyzed and refined the preliminary widening scenarios and selected options for Section 1 (south side), Section 2 (best fit), Section 4 (south side), and Section 5 (south side). The NEPA/ 404 Merger Team concurred on the alternatives to be studied in detail at a meeting held December 18, 2014 (see Appendix C for Merger Correspondence). The reasons for selecting the widening scenarios are described in Table 7.

**Table 7: Widening Scenarios Selected for Detailed Study**

Section	Scenario Selected	Reason For Selection
1	South Side	Fewer business relocations
2	Best-Fit	Best fit for bridge at Run Swamp Canal
3	North Side and Best Fit	Fewer impacts to wetlands/ streams
4	South Side	Fewer impacts to wetlands/ streams, game land, and natural heritage area
5	South Side	Fewer impacts to wetlands/ streams, airport, and school
6	South Side and Best Fit	Fewer relocations and impacts to wetlands/ streams

**B. Detailed Study Alternatives**

A widening alternative was selected for four of the six project sections. The impacts of the detailed study alternatives are shown on Table 8.

**Table 8: Detailed Study Alternatives Comparison**

Impact	Section							
	1	2	3		4	5	6	
	South	Best Fit	North	Best Fit	South	South	South	Best Fit
<b>Relocations</b>								
Residential	0	0	12	7	0	3	21	10
Business	0	0	1	1	0	1	1	3
Non-Profit*	0	0	0	1	0	0	1	1
Total	0	0	13	9	0	4	23	14
Minority/ Low Income Populations Disproportionately Impacted?	None	None	None	None	None	None	None	None
Historic Properties (Adverse Effect)	None	None	None	None	None	None	None	None
Community Facilities**	0	0	0	0	0	2	0	0
Noise Impacts	5	2	12	13	0	17	13	19
North River Game Land (acres)	0	0	0	0	9.9	< 0.1	0	0
Forested Areas (acres)	1.3	11.5	8.5	8.5	28.2	1	4.3	4.3
Wetlands (acres)	0	11.6	0.1	0.3	20.9	0.1	0.3	0.4
Streams (linear feet)	0	0	276	336	0	156	0	0
Surface Water (acres)***	0	3.7	1	0.7	14.3	0.1	0.4	0.6
Floodplain (acres)	0.9	22.4	26.9	27.3	53.7	7.9	14.8	24.2
Endangered Species	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect	No Effect
<b>Costs</b>								
Right of Way	\$946,800	\$120,000	****	\$2,762,000	\$145,500	\$943,500	****	\$3,811,200
Utility Relocation^	\$103,000	\$39,000	\$577,000	\$28,000	\$92,000	\$535,000	\$882,000	\$126,000
Construction	\$9,100,000	\$11,000,000	\$23,600,000	\$23,300,000	\$16,800,000	\$7,500,000	\$10,200,000	\$9,800,000
Total	\$10,149,800	\$11,159,000	****	\$26,390,000	\$17,037,500	\$8,978,500	****	\$13,737,200
Length (miles)	1.5	0.7	3.5	3.5	2.1	1.1	1.6	1.6

\* The non-profit relocation in Section 5 is a volunteer fire department building. All other non-profit relocations are churches.

\*\* Community facilities that right of way would be required from, though they would not be relocated.

\*\*\* Tributaries to waters of the United States.

^Utility costs rounded up to next highest thousand.

\*\*\*\* Costs were calculated after Section 3 (North) and Section 6 (South) were removed from the detailed study alternatives and are not available for these eliminated sections.

### C. Current Alternative

Following detailed environmental surveys and preliminary design, the decision was made to eliminate the north side widening alternative in Section 3 and to eliminate the south side widening alternative in Section 6. Best fit widening is more desirable in Sections 3 and 6 to reduce relocations. The NEPA/ 404 Merger Team concurred with removing north side widening in Section 3 and south side widening in Section 6 from the detailed study alternatives at a meeting held on January 26, 2016 (see concurrence form in Appendix C). Table 9 summarizes the environmental effects of the current alternative.

**Table 9: Summary of Environmental Effects**

<b>Relocations</b>	
Residential	20
Business	5
Non-Profit	2
Total	27
Minority/ Low Income Populations Disproportionately Impacted?	None
Historic Properties (Adverse Effect)	None
Community Facilities	2
Noise Impacts	56
North River Game Land (acres)	10.0
Prime Farmland (acres)	59.0
Forested Areas (acres)	54.8
<b>Water Resources</b>	
Stream Crossings (major structures)	6
Wetlands (acres)	33.3
Streams (linear feet)	492
Surface Water (acres)	19.4
Floodplain (acres)	136.4
Endangered Species	No Effect
<b>Costs</b>	
Right of Way	\$8,729,000
Construction	\$77,500,000
Wetland/Stream Mitigation	\$3,000,000
Utility Relocation	\$923,000
Total	\$90,152,000
Length of Proposed Improvements (miles)	10.5

## **IV. PROPOSED IMPROVEMENTS**

### **A. Roadway Cross-section and Alignment**

The proposed cross-section has four 12-foot lanes with a 46-foot median and eight-foot grass shoulders with a four-foot paved shoulder on each side. The proposed typical section is shown on Figure 4.

### **B. Right of way and Access Control**

A right of way width of 200 feet is proposed for the project. This right of way width is sufficient to accommodate a four-lane roadway with a 46-foot median, although temporary easements may be required outside the proposed right of way in some areas. Partial control of access will be obtained along the proposed roadway. Access will be limited to one driveway per parcel with no other access. However, additional access points may be provided for larger properties. The location of access points will be determined during the design phase of the project.

### **C. Speed Limit**

The proposed posted speed limit is generally 55 mph. The speed limit reduces to 45 mph near the eastern project limit at NC 168.

### **D. Design Speed**

The proposed design speed is 60 mph.

### **E. Anticipated Design Exceptions**

No design exceptions are anticipated for this project.

### **F. Intersections/ Interchanges**

All intersections will remain at-grade, with the side roads being stop-sign controlled. The existing traffic signal at US 158/ NC 168 will remain. Directional crossovers with median U-turns will be provided at intersections. No left turns will be allowed onto US 158 from side roads or driveways. The proposed directional crossovers will reduce the number of potential conflict points compared to a traditional full-movement median opening. Studies have indicated this type of intersection treatment is safer than intersections with full-movement median openings. Traffic on the primary highway is not affected, as all movements are still permitted. Traffic on the secondary highway may only turn right onto the primary highway. Through and left movements from the secondary highway are directed to a median U-turn crossover located downstream. Figure 5 depicts a typical intersection with a directional crossover.

## **G. Service Roads**

There are no service roads planned for this project.

## **H. Railroad Crossings**

There is one at-grade railroad crossing along US 158 just east of the NC 34 intersection. However, no improvements to the crossing are planned as a part of this project, as this crossing was recently widened to multi-lanes. Construction of R-2574 will begin east of the railroad crossing.

## **I. Structures**

Table 10 describes the proposed structures along the project.

**Table 10: Proposed Structures**

<b>Crossing</b>	<b>Proposed Structure</b>
Run Swamp Canal	Dual bridges: 100 feet long
Run Swamp Canal	Dual bridges: 120 feet long
Drainage Canal #1 (P005)	2 barrel 9-foot x7-foot RCBC
Great Swamp	Retain and extend existing 60-inch CMP
Great Swamp	Retain and extend existing 72-inch CMP
Great Swamp	Retain and extend existing 72-inch CMP

RCBC = reinforced concrete box culvert; CMP = corrugated metal pipe.

Additional bridge lengths beyond the hydraulic requirements are proposed for wildlife passage at the two crossings of Run Swamp Canal. Dual bridges 100 feet long are proposed at the western crossing (Site #1) and dual bridges 120 feet long are proposed at the eastern crossing (Site #2).

## **J. Bicycle and Pedestrian Facilities**

No exclusive bicycle or pedestrian accommodations are currently proposed as a part of this project. The proposed four-foot paved outside shoulder will accommodate bicycles.

As discussed in Section II-B-2-a, the Currituck County *Comprehensive Transportation Plan* (2012) recommends a sidewalk along US 158 between Airport Road and the Currituck Community Center. However, Currituck County has not requested a sidewalk be constructed as a part of this project. If the County requests a sidewalk and agrees to participate in the sidewalk cost and accept maintenance and liability for the sidewalk, NCDOT will include a sidewalk in the project design in accordance with the NCDOT Pedestrian Policy.



## **K. Utilities**

Utilities along the project will be relocated prior to construction. Care will be taken to prevent damage to water lines and fiber-optic cables in the area.

## **L. Landscaping**

No special landscaping is proposed for this project. Shoulder areas will be seeded with grass.

## **M. Noise Barriers**

Traffic noise abatement measures were considered but were determined not to be feasible. Based on this preliminary study, traffic noise abatement is not recommended, and no noise abatement measures are proposed (see Section V-J).

## **N. Work Zone Traffic Control and Construction Phasing**

Traffic will be maintained on-site during project construction. However, temporary lane closures may be required during construction.

# **V. ENVIRONMENTAL EFFECTS OF PROPOSED ACTION**

## **A. Natural Resources**

The study area lies in the coastal plain physiographic region of North Carolina. Topography in the project vicinity is comprised of flat land with minimal topographic relief. Elevations in the study area range from sea level to four feet above sea level. Land use in the project vicinity consists primarily of forested areas, agricultural fields, and low-density residential housing.

### **1. Biotic Resources**

#### **a. Terrestrial Communities**

Four terrestrial communities were identified in the study area: maintained/ disturbed, coastal plain bottomland hardwood forest (brownwater subtype), coastal plain small stream swamp (brownwater subtype), and cypress-gum swamp (brownwater subtype). A brief description of each community type follows. Scientific names of all species identified are included in Appendix B of the R-2574 *Natural Resources Technical Report* (April 2013), available from NCDOT.

#### **Maintained/ Disturbed**

Maintained/ disturbed communities make up the majority of the study area including roadside shoulders, residential lawns, utility right-of-ways, and agricultural fields. The vegetation in this community is comprised of scattered trees and shrubs including sweetgum,

crape myrtle, red maple, princess tree, mimosa, Chinese privet, and loblolly pine. Low growing grasses and herbs present in these areas include fescue, broomsedge, common reed, goldenrod, rice cutgrass, Japanese grass, ebony spleenwort, soft stem bulrush, blackberry, and dogfennel. Vines present include Japanese honeysuckle, grapevine, and common greenbrier. Included in this community are wetland areas classified as headwater forest, basin wetland, and riverine swamp forest using the North Carolina Wetland Assessment Method (NCWAM) classification system.

#### **Coastal Plain Bottomland Hardwood Forest (Brownwater Subtype)**

The coastal plain bottomland hardwood forest (brownwater subtype) communities occur along the floodplains of the Great Swamp and Run Swamp Canal where periodic overbank flooding from these features occur. Within the study area, this community type has been heavily logged in the past and fragmented by agricultural practices and has an abundance of loblolly pine in addition to tulip poplar, sweetgum, American elm, and swamp chestnut oak in the canopy. American hornbeam, giant cane, and paw paw dominate the understory. The herbaceous layer in this community is sparse and limited to sedges. Vines in this community include laurel greenbrier, common greenbrier, poison ivy, and grapevine. Included within this community are wetland areas classified as riverine swamp forest and headwater forest using the NCWAM classification system.

#### **Coastal Plain Small Stream Swamp (Brownwater Subtype)**

The coastal plain small stream swamp communities are present along the floodplain of Sawyers Creek near the western project boundary. Canopy and shrub species present in this community type include bald cypress, slippery elm, red oak, water oak, and musclewood. The herbaceous layer in this community includes netted chain fern, royal fern, lizard's tail, and false nettle. Vines observed in this community include laurel greenbrier, common greenbrier, and grapevine. Included within this community are wetland areas classified as riverine swamp forest using the NCWAM classification system.

#### **Cypress-gum Swamp (Brownwater Subtype)**

The cypress-gum swamp community type is found within the study area along the margins of Run Swamp Canal and Great Swamp. Canopy and shrub species present in this community type include bald cypress, black gum, and red maple. The understory consists of giant cane, wax myrtle, red bay, and sweet bay magnolia. The herbaceous layer consists of cattail, soft rush, lizard's tail, and soft stem bulrush. Vines observed in this community include laurel greenbrier, common greenbrier, and grapevine. Included within this community are wetland areas classified as riverine swamp forest, hardwood flat, basin wetland, and headwater forest using the NCWAM classification system.

## **Terrestrial Community Impacts**

Terrestrial communities in the study area may be impacted by project construction as a result of grading and paving the proposed new lanes. Table 11 presents the amount of each community type within the project study area.

**Table 11: Terrestrial Communities within the Study Area**

<b>Community</b>	<b>Coverage (ac.)</b>
Maintained/ Disturbed	1,260
Coastal Plain Bottomland Hardwoods (Brownwater Subtype)	86
Coastal Plain Small Stream Swamp (Brownwater Subtype)	14
Cypress-gum Swamp (Brownwater Subtype)	300

### **b. Terrestrial Wildlife**

Terrestrial communities in the study area are comprised of both natural and disturbed habitats that may support a diversity of wildlife species (those species actually observed are indicated with \*). Mammal species that commonly exploit forested habitats and stream corridors found within the study area include eastern chipmunk, common mouse, gray squirrel\*, eastern cottontail\*, raccoon, Virginia opossum, coyote, bobcat\*, black bear\*, and white-tailed deer\*. Birds that commonly use forest and forest edge habitats include the red-shouldered hawk\*, American crow\*, eastern meadowlark, yellow-bellied sapsucker, pileated woodpecker\*, Carolina chickadee, and tufted titmouse. Birds that may use the open habitat or water bodies within the study area include Canada goose\*, American kestrel, eastern bluebird, great blue heron, and turkey vulture. Reptile and amphibian species that may use terrestrial communities located in the study area include the water moccasin\*, eastern ribbon snake\*, copperhead\*, green snake\*, corn snake, black rat snake, black racer, eastern box turtle, snapping turtle, American toad\*, spring peeper\*, eastern fence lizard, and five-lined skink.

### **c. Aquatic Communities**

Aquatic communities in the study area consist of perennial and intermittent coastal streams, as well as still water ponds. The perennial streams in the study area could support bluegill, channel catfish, bluehead chub, and red breast sunfish. Intermittent streams in the study area are relatively small in size and would support crayfish, and various benthic macroinvertebrates. Pond habitats could support crappie, largemouth bass, and carp.

### **d. Invasive Species**

Six species from the NCDOT Invasive Exotic Plant List for North Carolina were found to occur in the study area. The species identified were princess tree (Threat), common reed (Threat), Chinese privet (Threat), Japanese grass (Threat), mimosa (Moderate Threat), and Japanese honeysuckle (Moderate Threat). NCDOT will manage invasive plant species as appropriate.

## 2. Waters of the United States

### a. Streams, Rivers and Impoundments

Water resources in the study area are part of the Pasquotank River basin [US Geological Survey (USGS) Hydrologic Unit 03010205]. Four streams were identified in the study area (Table 12). The physical characteristics of these streams are provided in Table 13.

**Table 12: Water Resources in the Study Area**

Stream Name	Map ID*	NCDWR Index Number	Best Usage Classification
UT to Indiantown Creek	SA	30-2-1	C; SW
UT to Great Swamp	SC	30-2-1	C; SW
UT to Sawyers Creek	SW	30-3-6	C; SW
UT to Sawyers Creek	SX	30-3-6	C; SW

NCDWR = North Carolina Division of Water Resources

**Table 13: Physical Characteristics of Water Resources in the Study Area**

Map ID	Bank Height (ft)	Bankful Width (ft)	Water Depth (in)	Channel Substrate	Velocity	Clarity
SA	10	30	48	Sand, Silt	Slow	Clear
SC	3	5	12	Sand, Silt	Slow	Clear
SW	4	6	0	Silt	N/A*	N/A*
SX	4	8	0	Silt	N/A*	N/A*

\* No flow observed in channel during site reconnaissance.

Ditches excavated for agricultural and roadside drainage purposes are located throughout the study area and are categorized as tributaries to waters of the United States. Approximately 8.16 acres of jurisdictional ditches are located in the study area (Figure 2). Two ponds, PA and PB, are located in the study area. These are excavated pits sustained by high groundwater levels. The ponds have no surface water connection to any jurisdictional stream features.

Run Swamp Canal within the project area is designated as an inland anadromous fish spawning area. There are no designated Primary Nursery Areas present in the study area. There are no designated High Quality Waters (HQW), Outstanding Resource Waters (ORW), or water supply watersheds (WS-I or WS-II) within one mile downstream of the study area. No streams within the project study area, or within one mile downstream of the study area, are identified on the North Carolina 2014 Final 303(d) list of impaired waters.

Benthic samples were collected at Sawyers Creek at SR 1259 in 2002. However, a determination of “Not Rated” was assigned to the samples. No fish monitoring data is available for any streams in the study area or within one mile of the study area.

Table 14 presents anticipated impacts to streams in the project area of the current alternative.

**Table 14: Anticipated Impacts to Water Resources in the Study Area**

Stream Name	Map ID	Anticipated Impacts (ft.)*	Classification	Compensatory Mitigation Required	River Basin Buffer
UT to Indiantown Creek	SA	336	Perennial	Yes	Not Subject
UT to Great Swamp	SC	156	Perennial	Yes	Not Subject
UT to Sawyers Creek	SW	0	Intermittent	Yes	Not Subject
UT to Sawyers Creek	SX	0	Intermittent	Yes	Not Subject
<b>Total</b>		492		--	--

\* Anticipated Impacts: Impacts to jurisdictional areas are considered to be all areas which fall within 25 feet of the proposed slope-stake limits.

#### **b. Wetlands**

Twenty-two jurisdictional wetlands were identified within the study area (Figure 2). Wetland classification and quality rating data are presented in Table 15. All wetlands in the study area are within the Pasquotank River basin (USGS Hydrologic Unit 03010205).

**Table 15: Anticipated Impacts to Wetlands in the Study Area**

<b>Map ID</b>	<b>NCWAM Classification</b>	<b>Hydrologic Classification</b>	<b>NCDWR Wetland Rating</b>	<b>Area (ac.)</b>	<b>Anticipated Impacts (ac.) *</b>
WA	Riverine Swamp Forest	Riparian	88	0.8	0.0
WC	Riverine Swamp Forest	Riparian	96	20.9	6.2
WD	Riverine Swamp Forest	Riparian	49	0.4	0.0
WE	Riverine Swamp Forest	Riparian	44	0.1	0.0
WF	Headwater Forest	Riparian	45	1.7	<0.1
WG	Headwater Forest	Riparian	33	0.7	0.1
WH	Headwater Forest	Riparian	49	0.4	0.2
WI	Riverine Swamp Forest	Riparian	96	51.7	2.8
WR	Riverine Swamp Forest	Riparian	96	51.3	18.0
WS	Hardwood Flat	Riparian	32	0.1	<0.1
WT	Basin Wetland	Riparian	37	0.8	0.0
WU	Riverine Swamp Forest	Riparian	96	29.4	5.7
WV	Headwater Forest	Riparian	55	1.5	0.0
WX	Headwater Forest	Riparian	11	0.3	0.0
WY	Riverine Swamp Forest	Riparian	58	0.1	0.0
WAA	Basin Wetland	Riparian	58	1.1	0.2
WBB	Headwater Forest	Riparian	40	1.4	0.0
WEE	Headwater Forest	Riparian	48	0.6	0.0
WGG	Riverine Swamp Forest	Riparian	98	115.0	0.0
WJJ	Riverine Swamp Forest	Riparian	79	<0.1	0.0
WKK	Riverine Swamp Forest	Riparian	83	1.1	0.0
WLL	Headwater Forest	Riparian	48	0.3	0.0
<b>Total</b>				<b>279.7</b>	<b>33.3</b>

\* Anticipated Impacts: Impacts to jurisdictional wetlands are considered to be all areas which fall within 25 feet of the proposed slope-stake limits.

**c. Avoidance, Minimization and Mitigation**

Total avoidance of wetlands by the proposed project is not possible. US 158 in the project area crosses two large wetland systems. Wetlands are on both sides of the road, widening to either side of the road will affect wetlands.

Minimization of wetland and stream impacts was considered in the selection of alternatives for the various sections of the project. Additional minimization measures will be considered as the project progresses.

NCDOT will investigate potential on-site stream and wetland mitigation opportunities prior to submitting a Section 404 permit application. If on-site mitigation is not feasible, mitigation will be provided by the North Carolina Division of Mitigation Services.

**d. Coastal Area Management Act Areas of Environmental Concern**

One Coastal Area Management Act (CAMA) Area of Environmental Concern (AEC) was identified in the study area. Run Swamp Canal has been designated as a CAMA Public Trust Water. The canal crosses the study area near the eastern ends of wetlands WC and WU (Figure 2). A CAMA permit from the North Carolina Division of Coastal Management will be required for any impacts to designated AECs within the study area.

**e. Construction Moratoria**

Run Swamp Canal within the project area has been identified by the North Carolina Wildlife Resources Commission as inland anadromous fish spawning waters. As a result, a moratorium on in-water construction work will be in effect from February 15th to June 30th.

**f. North Carolina River Basin Buffer Rules**

No NCDWR river basin buffer rules apply to the study area.

**g. Rivers and Harbors Act Section 10 Navigable Waters**

No waters in the study area have been designated by the US Army Corps of Engineers as Navigable Waters under Section 10 of the Rivers and Harbors Act.

**h. Permits Required**

An Individual Section 404 Permit will likely be applicable. The US Army Corps of Engineers holds the final discretion as to what permit will be required to authorize project construction. Since a Section 404 permit is required, then a Section 401 Water Quality Certification from the North Carolina Division of Water Resources will be needed.

A CAMA permit from the North Carolina Division of Coastal Management will be required for any impacts to designated AECs within the study area.

### 3. Federally-Protected Species

As of April 2, 2015 (Camden County), and November 30, 2015 (Currituck County), the United States Fish and Wildlife (USFWS) and the National Marine Fisheries Service list 14 federally protected species for Camden and Currituck Counties (Table 16).

**Table 16: Federally-protected Species Listed for Camden and Currituck Counties**

Scientific Name	Common Name	County	Federal Status	Habitat Present	Biological Conclusion
<i>Acipenser brevirostrum</i>	Shortnose sturgeon	Camden, Currituck	E	No	No Effect
<i>Acipenser oxyrinchus oxyrinchus</i>	Atlantic sturgeon	Camden	E	No	No Effect
<i>Alligator mississippiensis</i>	American alligator	Camden	T(S/A)	Yes	Not Required
<i>Amaranthus pumilus</i>	Seabeach amaranth	Currituck	T	No	No Effect
<i>Chelonia mydas</i>	Green sea turtle	Currituck	T	No	No Effect
<i>Eretmochelys imbricata</i>	Hawksbill (Carey) sea turtle	Currituck	E	No	No Effect
<i>Lepidochelys kempii</i>	Kemp's (Atlantic) ridley sea turtle	Currituck	E	No	No Effect
<i>Caretta caretta</i>	Loggerhead sea turtle	Currituck	T	No	No Effect
<i>Charadrius melodus</i>	Piping plover	Currituck	T	No	No Effect
<i>Dermochelys coriacea</i>	Leatherback sea turtle	Currituck	E	No	No Effect
<i>Myotis septentrionalis</i>	Northern long-eared bat	Camden	T	Yes	MALAA
<i>Picoides borealis</i>	Red-cockaded woodpecker	Camden, Currituck	E	Yes	No Effect
<i>Calidris canutus rufa</i>	Red knot	Camden, Currituck	T	No	No Effect
<i>Trichechus manatus</i>	West Indian manatee	Camden, Currituck	E	No	No Effect

E = Endangered; T = Threatened; T(S/A) = Threatened due to similarity of appearance; MALAA = May Affect, Likely to Adversely Affect.



No habitat exists in the project area for the shortnose sturgeon, Atlantic sturgeon, seabeach amaranth, green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, loggerhead sea turtle, piping plover, leatherback sea turtle, red knot, or West Indian manatee. Suitable habitats for American alligator and red-cockaded woodpecker do exist in the project area. The American alligator is listed as threatened due to similarity of appearance; therefore, Section 7 consultation with the USFWS is not required. Surveys for the red-cockaded woodpecker, including pedestrian transects, were conducted throughout areas of suitable foraging habitat and suitable nesting habitat within a half mile of the suitable foraging habitat on July 11, 2012. No red-cockaded woodpeckers or cavity trees were observed. A review of Natural Heritage Program records, updated October 2015, indicates no known occurrence within one mile of the study area. Due to the lack observed cavity trees and known occurrences, it has been determined this project will not affect this species. NCDOT will resurvey for red-cockaded woodpecker prior to construction.

The US Fish and Wildlife Service has developed a programmatic biological opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), the US Army Corps of Engineers, and NCDOT for the northern long-eared bat (NLEB) (*Myotis septentrionalis*) in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. The programmatic determination for NLEB for the NCDOT program is "May Affect, Likely to Adversely Affect." The PBO provides incidental take coverage for NLEB and will ensure compliance with Section 7 of the Endangered Species Act for five years for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Camden and Currituck Counties.

### **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 project study area, as well as the area within a 1.13-mile radius (one mile plus 660 feet) of the project limits, was performed on June 29, 2012 using 2010 color aerials. Coinjock Bay is located approximately 0.3 mile east of the project study area. Surveys were conducted by biologists throughout areas of suitable habitat July 11-12, 2012. No bald eagles or nesting sites were observed. Suitable nesting trees were observed to be sparse within the study area and within 660 feet of the study area. A review of the NC Natural Heritage Program database, updated October 2015, revealed no known occurrences of this species within one mile of the project study area. Due to the results of the survey and lack of known occurrences, it has been determined this project will not affect this species.

### **Essential Fish Habitat**

According to the National Marine Fisheries Service, there is no essential fish habitat within the study area.

#### 4. Soils

The Soil Surveys for Camden and Currituck Counties identify 24 soil types within the study area (see Table 17).

**Table 17: Soils in the Study Area**

Soil Series	Mapping Unit	Drainage Class	Hydric Status
Altavista fine sandy loam	AaA	Moderately well drained	Hydric *
Augusta fine sandy loam	At	Somewhat poorly drained	Hydric *
Bojac loamy sand	BoA	Well drained	Non-Hydric
Cape Fear loam	Cfa, Ca	Very poorly drained	Hydric
Conaby muck	Cb	Very poorly drained	Hydric
Chapanoke silt loam	ChA	Somewhat poorly drained	Hydric *
Chowan silt loam	CoA	Poorly drained	Hydric
Dare muck	Da	Very poorly drained	Hydric
Dorovan muck	DoA	Very poorly drained	Hydric
Dragston loamy fine sand	Ds	Somewhat poorly drained	Hydric *
Munden loamy sand	Mu, MuA	Moderately well drained	Hydric *
Newhan fine sand	NeC	Excessively drained	Hydric *
Nimmo loamy sand	No, NoA	Poorly drained	Hydric
Pasquotank silt loam	Pa	Poorly drained	Hydric
Perquimans silt loam	PeA	Poorly drained	Hydric
Ponzer muck	Po	Very poorly drained	Hydric
Portsmouth fine sandy loam	Pt	Very poorly drained	Hydric
Roanoke fine sandy loam	Ro	Poorly drained	Hydric
Roanoke silt loam	RoA	Poorly drained	Hydric
State fine sandy loam	StA, StB	Well drained	Non-Hydric
Tomotley fine sandy loam	To, ToA	Poorly drained	Hydric
Wando loamy fine sand	WnB	Excessively drained	Hydric *
Wasda muck	Ws	Very poorly drained	Hydric
Yeopim silt loam	YeA	Moderately well drained	Hydric *

#### **B. Cultural Resources**

The proposed project is subject to North Carolina General Statute 121-12(a) and Section 106 of the National Historic Preservation Act of 1966. Section 106 requires federal agencies to take into account the effect of their undertakings (federally-funded, licensed, or permitted) on

properties listed on or eligible for listing on the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings. A US Army Corps of Engineers Individual Permit is expected to be required for this project; therefore, Section 106 applies.

## **1. Historic Architectural Resources**

In correspondence dated March 27, 2013, the State Historic Preservation Office (HPO) concurred the following properties are eligible for listing in the National Register (see Appendix A):

- Creekmore Store and Gas Station: criterion A for commerce and criterion C for architecture
- Tom Sawyer and Sons Complex: criterion A for commerce and criterion C for architecture
- Cooper House: criterion C for architecture

Upon further correspondence with the HPO, the Creekmore Store and Gas Station and the Cooper House were determined to be outside the project study area and would not be affected by the proposed US 158 improvements. The Tom Sawyer and Sons Complex falls within the study area for this project (R-2574), but improvements to US 158 adjacent to the property were made by an adjacent US 158 widening project (R-2414), which is complete. Impacts to the Tom Sawyer and Sons Complex were documented in the environmental document for R-2414. Project R-2574 will not acquire right of way or involve construction activities within the property's boundary. The project will have no effect on the property, and the HPO concurs with this determination (see Appendix A).

## **2. Archaeological Resources**

An archaeological survey was conducted for the project. A total of 116 archaeological sites were addressed. Of these, one site (31CK178) was recommended eligible for the National Register of Historic Places. The proposed project is not expected to affect Site 31CK178. Project plans will be reviewed prior to right of way acquisition to confirm the project will not affect this site. If it is determined Site 31CK178 will be affected by project construction, a mitigation plan will be developed and implemented prior to construction.

Additional work may be required at six sites (31CK134, 31CK252, 31CK260, 31CK272, 31CK282 and 31CK286) because access was denied by the property owners. Project plans will be reviewed prior to right of way acquisition to determine whether or not these sites are located within the proposed right of way for the project. If these sites are located within proposed right of way, these sites will be assessed after right of way has been acquired.

If it is determined any of the six archaeological sites requiring additional testing are within proposed right of way, a request will be sent to the NCDOT Right of Way Unit asking that acquisition of required right of way from the properties containing the sites begin as soon as right of way acquisition is authorized.

None of the other sites addressed by the survey are recommended as eligible for the National Register. No further work is recommended for these sites (see HPO correspondence in Appendix A).

Sixteen cemeteries and three sites containing cemeteries were recorded during archaeological surveys. Nine of these cemeteries will not be affected by the project. If any of the remaining seven cemeteries cannot be avoided, the cemeteries will be relocated in accordance with GS 65-13.

### **C. Farmland**

North Carolina Executive Order 96 requires all state agencies to ensure that actions taken by those agencies will minimize the loss of prime agricultural lands and forest lands. It also requires the identification and disclosure of prime soil impacts.

Much of the land on either side of US 158 is prime farmland and farmland of statewide importance. However, because R-2574 is state funded, these farmland soils are not eligible for protection under the FPPA but are subject to Executive Order 96. The project involves widening the existing road. Most of the soils along both sides of the existing road, except in portions of Run Swamp and Great Swamp, are prime farmland, prime farmland if drained, or farmland of statewide importance. Within the proposed right of way are 10.2 acres of prime farmland, 48.8 acres of prime farmland if drained or protected from flooding, and 53.0 acres of statewide important farmland.

The North Carolina Agricultural Development and Farmland Preservation Trust Fund's Agricultural District Program encourages the preservation and protection of farmland from non-farm development. Counties throughout the State have adopted Voluntary Agricultural District Ordinances (VAD) and Enhanced Voluntary Agricultural District Ordinances (EVAD) to encourage the preservation of farmland.

Camden County has a VAD ordinance and Currituck County does not have a VAD or EVAD ordinance. There are no parcels participating in the Camden County VAD program in the project area.

### **D. Social Effects**

#### **1. Neighborhoods/ Communities**

Based on site visit observations and discussions with local planners, little community cohesion appears to exist within the project area. The lack of cohesion is attributed to the rural nature of the area with the predominance of large agricultural operations and large-lot, single-family homes. The project is also not anticipated to result in the division of existing residential neighborhoods. Impacts to community cohesion are possible in Ponderosa Park (mobile home park), which is located on the south side of US 158 between the Currituck County Regional Airport and Central Elementary School (see Figure 7). Both the Currituck County Planning

Director and the owner of Ponderosa Park have indicated community cohesion exists within the community. The project is expected to require the relocation of the rental office as well as three residences on the north side of the community, which could impact community cohesion.

NCDOT will conduct enhanced community outreach within the Ponderosa Park mobile home park to assess the potential for community cohesion and effects pertaining to Title VI of the Civil Rights Act of 1964 and related statutes. Ponderosa Park contains minority and low-income residents.

## **2. Emergency Response**

The Pasquotank-Camden Emergency Management Coordinator indicated Camden County emergency response services may experience moderate impacts during construction of the project. Although specific detour routes were not discussed, it was noted that alternative routes in the area are limited. Access to residences, businesses and areas along and off of the project corridor that are not accessible via alternative routes are a concern. In addition, several of the potential detour routes in Camden County are secondary routes that are more restrictive for the County's larger emergency vehicles, as well as routes that are subject to flooding during heavy rain.

The Currituck County Emergency Management Director anticipates high impacts to the County's emergency response services during construction of R-2574. US 158 is used by emergency response vehicles to access Albemarle Hospital in Elizabeth City. Although this hospital is accessible from NC 34, the Emergency Management Director indicated that medic units coming from the south end of the County will lose valuable time taking that route. Additionally, emergency response may be hindered to Central Elementary, the airport, community buildings in the Currituck Community Center, and many residences during construction.

US 158 will remain open to traffic during construction. It is anticipated the proposed new lanes can be constructed while leaving the existing two lanes open to traffic, although lane closures may be necessary at times. Emergency vehicles will be given preference in areas where traffic has to be flagged due to lane closures.

## **3. Relocation of Residences and Businesses**

The current alternative displaces 20 residences, five businesses, and two non-profit organizations. There are seven minority-owned or occupied residential units and no minority-owned business units that will be relocated. Three of the minority-owned or occupied residential relocations are from Ponderosa Park mobile home park in Section 5. The other four are in Section 6. The two non-profit organizations are churches – New Vision Community Church (Section 3) and Church of Jesus Christ of Latter Day Saints (Section 6). No farming businesses or schools will be relocated. Appendix B discusses the NCDOT Relocation Assistance Program and presents the relocation reports for the project alternatives.

**Table 18: Relocations**

<b>Relocations</b>	<b>Current Alternative*</b>
Residences	20 (7)
Businesses	5 (0)
Non-profit	2 (0)

\* Numbers in parenthesis () indicate minority-owned or occupied homes, businesses or non-profits.

All relocations will be carried out in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) and/ or the North Carolina Relocations Assistance Act (GS-133-5 through 133-18). NCDOT's Relocation Assistance Program will be utilized to assist in finding replacement housing for residents relocated by the project.

#### **4. Cemeteries**

Several small family cemeteries are located in the project area. Archaeological surveys conducted for the project (see Section V-B-2) found 20 cemeteries in the study area. Thirteen of these cemeteries are far enough away from existing US 158 that project construction will not affect them. The remaining seven cemeteries are closer to US 158 and may be affected.

#### **5. Demographics**

Table 19 presents demographic data gathered from the American Community Survey 5-year Estimate (2009-2013) for the Demographic Study Area (DSA), Camden County, and Currituck County.<sup>2</sup>

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<sup>2</sup> The Demographic Study Area (DSA) includes the 2010 US Census boundary for Census Tract 9501.01/ Block Group 2 and Census Tract 9501.02/ Block Group 1 in Camden County; and Census Tract 1103.02/ Block Groups 1 and 2 in Currituck County. See the *Community Impact Assessment* (January 2016) for this project (available from NCDOT) for more demographic information.

**Table 19: Demographic Overview**

Minority Population						
Population	Demographic Study Area		Camden County		Currituck County	
	Pop.	%	Pop.	%	Pop.	%
White, Non-Hispanic	5,878	83.7%	8,040	80.1%	21,082	88.3%
Minority <sup>1</sup>	1,148	16.3%	1,997	19.9%	2,798	11.7%
Total	7,026	100.0%	10,037	100.0%	23,880	100.0%
Poverty						
Poverty	Demographic Study Area		Camden County		Currituck County	
	Pop.	%	Pop.	%	Pop.	%
Below Poverty Level	594	8.6%	598	6.0%	2,311	9.8%
Very Poor: Under 50% of Poverty Level	265	3.9%	302	3.0%	678	2.9%
Near Poor: Between 100% and 150% of Poverty Level	483	7.0%	1,126	11.3%	2,714	11.5%

Source: US Census Bureau, American Community Survey 5-year Estimates (2009-2013).

1. The minority population includes all races that are non-white and Hispanic or Latino populations that are also white.

Census data indicates a notable presence of minority populations within the DSA, and minority and low-income communities were noted by local planners. Camden County planning officials are not aware of any minority communities or populations within the project area. However, Currituck County planning officials indicated minority populations are known to be located in Ponderosa Park (mobile home park).

Executive Order 13166 "Improving Access to Services for Persons with Limited English Proficiency" requires all recipients of federal funds to provide meaningful access to persons who are limited in their English proficiency (LEP). The US Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). Data about LEP populations were gathered from the US Census' 2006-2010 American Community Survey (ACS).

According to data obtained from the ACS, there are no groups within the DSA in which more than five percent of the adult population or 1,000 persons, whichever is less, speak English less than "Very Well." Census data does not indicate LEP populations meeting the US Department of Justice LEP Safe Harbor threshold but does indicate a Spanish language-speaking population exceeding 50 persons within the DSA that may require language assistance. Language assistance may be needed for public meetings and to provide relocation assistance to Hispanic persons being relocated.

As shown in Table 19, 8.6 percent of the DSA population earned incomes below the poverty level, as compared to 6.0 percent and 9.8 percent in Camden and Currituck counties, respectively. In addition, 3.9 percent of the DSA population was considered “very poor” (under 50 percent of poverty level), which is slightly higher than in Camden County (3.0 percent) and Currituck County (2.9 percent).

Based on this demographic assessment, it does not appear there are notable low-income populations in the DSA at this geographic level or at the block group level. However, a Camden County planner indicated rental homes are located along the south side of US 158 just west of North River Road that may be indicative of a low-income population. Additionally, a Currituck County planner indicated a low-income population is located in Ponderosa Park.

## **6. Title VI Evaluation**

Title VI of the Civil Rights Act of 1964 protects individuals from discrimination on the grounds of race, age, color, religion, disability, sex, and national origin. Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” provides that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects on minority and low-income populations.

While minority populations are present, no notably adverse community impacts are anticipated with this project, depending on the finding of effects with Ponderosa Park; thus, impacts to minority populations do not appear to be disproportionately high and adverse at this point in time. Benefits and burdens resulting from the project are anticipated to be equitably distributed throughout the community, and no denial of benefit is expected.

## **7. Bicycle and Pedestrian Facilities**

According to local officials, there is very little pedestrian or bike activity along US 158. However, Currituck County officials have noted residents of Ponderosa Park crossing US 158 to access the Currituck Community Park. The Currituck County *Comprehensive Transportation Plan* (2012) recommends a sidewalk along US 158 between Airport Road and the Currituck Community Center. However, Currituck County has not requested a sidewalk be provided along this portion of US 158.

There are currently no exclusive accommodations for pedestrians or bicyclists included in the project design. If the County requests a sidewalk and agrees to participate in the sidewalk cost and accept maintenance and liability for the sidewalk, NCDOT will include a sidewalk in the project design in accordance with the NCDOT Pedestrian Policy. The proposed typical section includes four-foot paved shoulders on each side which will accommodate bicycles.



## **8. Recreational Facilities**

The following recreational facilities are located in, or in close proximity to, the project area (see Figure 7):

- Currituck Community Park (includes Currituck Family YMCA)
- Maple Park – this facility is a public park located on the northeastern end of Airport Road and includes a skate park, fishing pond, pavilion with restrooms and grills, baseball/softball field, fitness trail, concrete walking trail, playground, volleyball courts, and picnic shelters.
- Indiantown Creek Paddle Trail and two access points

While these resources are located adjacent to and are accessed from US 158, impacts to the use and/or access to these resources are not anticipated. Maple Park is located approximately 2,300 feet north of the existing right of way and while accessed from US 158, will not be impacted.

## **9. Public Facilities**

Other public facilities and services in, or in close proximity to, the project area include (see Figure 7):

- Camden Church of Christ Jimmy Clark Pavilion
- Camden County Administrative Offices
- Camden Business Park
- New Vision Community Church
- Mainland Water Treatment Plant
- Currituck County Sherriff's office and detention center
- Currituck Regional Airport
- Regional Aviation and Technical Training Center
- Crawford Township Volunteer Fire Department
- NC Forest Service county headquarters
- Currituck Animal Shelter
- Currituck Cooperative Extension office
- Central Elementary School
- Church of Jesus Christ of Latter Day Saints

## **10. School Bus Usage**

According to the Camden County Schools Transportation Director, two buses make four daily trips along the Camden County portion of the project corridor from the western terminus to North River Road. According to the Currituck County Schools Transportation Supervisor, at least four buses serving K-12 schools make as many as three trips daily (including a mid-day trip to Central Elementary) along the project corridor from Maple Road to the Camden County line. From Maple Road to NC 168, as many as 12 buses make two trips daily.

## **E. Economics**

### **1. Economic Data**

The North Carolina Department of Commerce annually ranks the State's 100 counties based on economic well-being and assigns each a tier designation (Tier 1: Most distressed to Tier 3: Least distressed) to determine which counties' eligible businesses qualify for larger tax credits. According to this source, Camden County has a Tier 1 status and Currituck County has a Tier 2 status. The rankings are based on factors such as unemployment rates, median income, population growth and property values.

### **2. Economic Effects**

Camden County hopes to attract commercial and industrial uses to the US 158 corridor between NC 34 and Whitehurst Lane.

The addition of a 46-foot wide grassed median and U-turns at specific locations along the project corridor, and the subsequent change to partial control of access, could minimally hinder the movement of agricultural equipment and trucks and increase travel time. Travel time could be made notably longer if U-turns are not provided in advance of existing causeways through the Great Swamp and wetlands adjacent to Indiantown Creek.

## **F. Land Use**

### **1. Existing Land Use and Zoning**

Land use throughout the project area is predominantly rural in character, consisting of large agricultural crops and farms interspersed with single-family homes and tracts of wooded swamp land. The types of crops in the area consist of corn, soy beans, or wheat. Commercial development within the project area is located near the US 158 intersections of NC 34 and NC 168.

According to Camden County's online GIS database (accessed November 2012), properties along the north side of US 158 from NC 34 to Whitehurst Lane are zoned as Highway Commercial, and properties along the south side of US 158 in this area are zoned as Light Industrial. Just east of Whitehurst Lane, several properties on both sides of the corridor are zoned Light Industrial, then the corridor transitions to Residential and General Use zoning designations to the County line. While a large portion of the studied US 158 corridor in Camden County is zoned Light Industrial, these properties predominantly contain agricultural uses today.

The majority of the Currituck County portion of the project area is zoned Agricultural, with some General Business designations located near the intersections of US 158/ Indiantown Road, US 158/ Airport Road, and US 158/ NC 168. Additionally, the airport property and a parcel on the south side of US 158 across from Airport Road are zoned Heavy Industrial.

## **2. Future Land Use**

Camden County adopted the *Camden County Advanced Core CAMA Land Use Plan* in 2005 to comply with Coastal Area Management Act (CAMA) requirements and to define a future land use vision, policy framework and implementation strategies. More specifically, the plan calls for the protection of natural resources, rural character and cultural heritage while improving infrastructure, expanding recreational opportunities and promoting economic development.

The Camden County *2035 Comprehensive Plan* (2012) builds upon the 2005 CAMA Land Use Plan. The Future Land Use Map contained within this document outlines future land use at the project's western terminus, the US 158/NC 34 intersection. Future land uses in this area include: Mixed-Use Employment on the north side of US 158 in the northeast quadrant of the intersection; Village Mixed-Use in the southeast quadrant; a small portion of Village Commercial along US 158 south of the western terminus; Rural Preservation and Rural Residential.

The Currituck County Planning Department's *Maple-Barco Small Area Plan* (July 2009) details future land use goals for much of the eastern portion of the project area from west of Maple Road to Coinjock Bay. The plan identifies the US 158/NC 168 intersection area and the Currituck Regional Airport as future activity centers. In addition, the Currituck Community Center is designated as an employment area while the area from just west of Barco Road to NC 168 is planned for mixed uses. According to the plan's Future Land Use Map, a portion of the US 158 corridor on the south and north sides, west of Maple Road, is designated as a conservation area. This area corresponds to land within the Great Swamp, which is largely state-owned and/ or within the North River Game Lands.

The *Currituck County Land Use Plan* (2009) envisions the eastern portion of the project corridor from the Maple Road/ Currituck Regional Airport area to the eastern terminus as developing into the community center for mainland Currituck County.

## **3. Project Compatibility With Local Plans**

This project is not expected to have any considerable effect on local land use, character, or development plans. The project is consistent with local area plans and goals. Improvements to US 158 are included in the following local plans:

- Currituck County *Comprehensive Transportation Plan* (2012)
- Camden County *Comprehensive Transportation Plan* (2014)

## **G. Game Lands and Preservation Areas**

The North River Game Land totals 20,318 acres, and extends through both Camden and Currituck Counties (see Figure 2). The game land offers activities including hunting, shooting, fishing, hiking, and biking. The proposed project area extends into the north side of the game land and is estimated to impact 10.0 acres.

## **H. Indirect and Cumulative Effects**

Indirect impacts are those impacts that, as a result of an event such as this proposed transportation project, occur over a longer period of time and can take place away from the immediate project area. A short-term example would be the development of a small subdivision along a new or widened roadway that would otherwise not have occurred. Closely related is the concept of cumulative impacts, which are the collective effects of multiple events and actions. These may be dependent or independent of the proposed action.

The project consists of widening existing US 158. There is currently no control of access along US 158, and this would change to partial control of access as part of the proposed project. Right of way is expected to increase from approximately 100-140 feet to approximately 200 feet throughout the project corridor.

There is a low to moderate concern for indirect and cumulative effects as a result of the project. Despite the relatively large amount of available land, local officials suggest there are a number of constraints to development in the area, including the lack of sewer service, a lack of local employment centers, a relatively weak local market for development, low population density, and a number of natural environmental features. Potential land use effects as a result of the project are further tempered by the fact the project is not expected to provide any new access or opportunities for traffic exposure to properties in the area. The extent of potential indirect and cumulative land use effects as a result of the R-2574 project will be largely dependent upon several key variables, including: the future local economy and market for development, public infrastructure projects, as well as the completion of other transportation improvements in the area, particularly the Mid-Currituck Bridge (R-2576), proposed NC 168 Bypass (Currituck County) and US 158 relocation (Camden County).

This project would complement the recently completed widening of the portion of US 158 west of the subject project (TIP Project R-2414) in the provision of greater regional mobility between Elizabeth City and the Currituck Outer Banks.

Based on this assessment, the project is not expected to have a notable indirect effect on land use in the area.

Because few indirect impacts are anticipated, the cumulative effect of this project, when considered in the context of other past, present and future actions, and the resulting impact on the notable human and natural features, should be minimal. Therefore, contribution of the project to cumulative impacts resulting from current and planned development patterns is expected to be minimal.

## **I. Flood Hazard Evaluation**

Camden and Currituck Counties are both participants in the National Flood Insurance Regular Program. The project is located near the Atlantic Ocean. The proposed roadway is being raised to provide an increased level of service to facilitate the hurricane evaluation route, thus the flood maps are anticipated to be revised.

NCDOT will coordinate with the Floodplain Mapping Program (FMP), the delegated state agency for administering FEMA's National Flood Insurance Program, to determine whether the Memorandum of Agreement between NCDOT and the FMP is applicable or if approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR) will be required.

This project involves construction activities on or adjacent to FEMA-regulated streams. Therefore, NCDOT Division 1 shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying the drainage structures and roadway embankment within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

## **J. Traffic Noise Analysis**

In accordance with Title 23 Code of Federal Regulations Part 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise (Title 23 CFR 772) and the North Carolina Department of Transportation Traffic Noise Abatement Policy, a traffic noise analysis was conducted for the project.

Traffic noise impacts are determined through implementing the current Traffic Noise Model (TNM) approved by the Federal Highway Administration (FHWA) and following procedures detailed in Title 23 CFR 772, the NCDOT Traffic Noise Abatement Policy 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 unabridged version of the full technical report entitled Traffic Noise Analysis: US 158 (Shortcut Road) From East of NC 34 (Shawboro Road) at Belcross to NC 168 (Caratoke Highway) dated December 2015 can be viewed in the Project Development and Environmental Analysis Unit, 1000 Birch Ridge Drive, Raleigh.

### **1. Traffic Noise Impacts and Noise Contours**

The maximum number of receptors in each project alternative predicted to become impacted by future traffic noise is shown in Table 20. The table includes those receptors expected to experience traffic noise impacts by either approaching or exceeding the FHWA Noise Abatement Criteria (NAC) or by a substantial increase in exterior noise levels. As Table 20 shows, the proposed project is expected to impact 56 receptors due to traffic noise.

**Table 20: Predicted Traffic Noise Impacts of Current Alternative**

<b>Traffic Noise Impacts*</b>				
<b>Residential (NAC B)</b>	<b>Places of Worship/ Schools, Parks, etc. (NAC C &amp; D)</b>	<b>Businesses (NAC E)</b>	<b>Substantial Noise Level Increase</b>	<b>Total Impacts*</b>
<b>44</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>56</b>

The maximum extent of the 71- and 66- A-weighted decibels (dBA) noise level contours measured from the center of the proposed roadway is approximately 80 feet and 170 feet, respectively.

**2. No-Build Alternative**

The traffic noise analysis also considered traffic noise impacts for the No-Build alternative. If the proposed project does not occur, 34 receptors are predicted to experience traffic noise impacts and the future traffic noise levels will increase by approximately 1-3 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.

**3. 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.

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 plus an incremental increase of \$525 (as defined in the NCDOT Policy) per benefited receptor, causing this abatement measure to be unreasonable.

**4. 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, materials and construction

costs are estimated to exceed the NCDOT maximum allowable base quantity of 7,000 cubic yards, plus an incremental increase of 100 cubic yards per benefited receptor, as defined in the NCDOT Policy.

This project will maintain partial control of access, meaning most noise-sensitive land uses will have direct access connections to the proposed project, and all intersections will be at grade. The traffic noise analysis for this project confirmed the physical breaks in potential noise barriers for property access would prohibit any noise barrier from providing the minimum required traffic noise level reductions at all receptors predicted to be impacted by traffic noise.

Based on this preliminary study, traffic noise abatement is not recommended and no noise abatement measures are proposed. This evaluation completes the highway traffic noise requirements of Title 23 CFR Part 772. No additional noise analysis will be performed for this project unless warranted by a substantial change in the project scope, vehicle capacity or alignment.

In accordance with NCDOT Traffic Noise Abatement Policy, the Federal/ State governments are not responsible 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 State Finding of No Significant Impact (SFONSI). For development occurring after this date, local governing bodies are responsible to insure that noise compatible designs are utilized along the proposed facility.

## **K. 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. Motor vehicles emit carbon monoxide (CO), nitrogen oxide (NO), hydrocarbons (HC), particulate matter, sulfur dioxide (SO<sub>2</sub>), and lead (Pb) (listed in order of decreasing emission rate).

The Federal Clean Air Act of 1970 established the National Ambient Air Quality Standards (NAAQS). These were established in order to protect public health, safety, and welfare from known or anticipated effects of air pollutants.

A project-level air quality analysis was prepared for this project. A copy of the unabridged version of the full technical report entitled Air Quality Analysis US 158 (Shortcut Road) From East of NC 34 (Shawboro Road) at Belcross to NC 168 (Caratoke Highway) dated December 2015 can be viewed at the Project Development and Environmental Analysis Unit, 1000 Birch Ridge Drive, Raleigh.

### **1. Mobile Source Air Toxics (MSAT)**

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated the US Environmental

Protection Agency (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/iris/>). 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 MOVES2010b model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 102 percent from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

MSAT analyses are intended to capture the net change in emissions within an affected environment, defined as the transportation network affected by the project. The affected environment for MSATs may be different than the affected environment defined in the NEPA document for other environmental effects, such as noise or wetlands. Analyzing MSATs only within a geographically-defined "study area" will not capture the emissions effects of changes in traffic on roadways outside of that area, which is particularly important where the project creates an alternative route or diverts traffic from one roadway class to another. At the other extreme, analyzing a metropolitan area's entire roadway network will result in emissions estimates for many roadway links not affected by the project, diluting the results of the analysis.

## **2. Incomplete or Unavailable Information for Project Specific MSAT Health Impact 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 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 unsupported 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.



It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

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 ([www.epa.gov/risk/basicinformation.htm#g](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 an "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 deemed 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.

Based on the qualitative analysis completed, it is expected MSAT emissions in the project study area would not be higher with any of the build alternatives compared relative to the No-Build Alternative. In comparing the build alternatives, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify them. However, in considering the project study area, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause area-wide MSAT levels to be significantly lower than today

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 Camden and Currituck Counties, which have been determined to comply with the National Ambient Air Quality Standards. The proposed project is located in an attainment area for CO; therefore, 40 CFR Parts 51 and 93 are not applicable. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

This evaluation completes the assessment requirements for air quality of the 1990 Clean Air Act Amendments and the SEPA process, and no additional reports are necessary.

**L. Hazardous Materials**

Eight possible underground storage tank (UST) facilities were identified within the proposed project corridor. Low monetary and scheduling impacts resulting from these sites are anticipated. These sites are described in Table 21.

**Table 21: Potentially Contaminated Properties in Project Area**

Site	Site Name	Facility ID#	Facility Type
1	New Vision Community Church	None	Possible former gas station
2	Former Shawboro Service Center	None	Possible former gas station
3	Crawford Township Volunteer Fire Department	None	Possible UST
4	Central Elementary School	0-011911	Heating oil USTs
5	The Bar	None	Former gas station w/ USTs
6	7-Eleven 202996	0-011789	Gas station w/ USTs
7	Frog Island Seafood	0-001120	Former store w/ USTs
8	Poyner Auto Sales & Service	0-001907	Former service station w/ USTs

## **VI. COMMENTS AND COORDINATION**

### **A. Citizens Informational Workshop**

A citizens informational workshop was held on January 23, 2012 from 4:00 p.m. to 7:00 p.m. at Central Elementary School in Currituck County near Barco. Approximately 50 people attended the workshop. Several comments were received in favor of the project. Other comments were received from citizens concerned about their property and right of way.

### **B. Public Hearing**

A public hearing for this project will be held following distribution of this document. Comments received at the public hearing will be taken into consideration as project development continues.

NCDOT will conduct enhanced community outreach within the Ponderosa Park mobile home park to assess the potential for community cohesion and effects pertaining to Title VI of the Civil Rights Act of 1964 and related statutes. Ponderosa Park contains minority and low-income residents and is located on the south side of US 158 between the Currituck County Regional Airport and Central Elementary School.

### **C. NEPA/404 Merger Process**

This project has followed the NEPA/404 merger process. The merger process is an interagency procedure integrating the regulatory requirements of Section 404 of the Clean Water Act into the National Environmental Policy Act or State Environmental Policy Act decision-making process.

Representatives of the US Army Corps of Engineers and NCDOT served as co-chairs for the merger team. The following agencies also participated on the NEPA/404 Merger Team for this project:

- US Fish and Wildlife Service
- US Environmental Protection Agency
- National Marine Fisheries Service
- NC Department of Cultural Resources
- NC Division of Marine Fisheries
- NC Division of Water Resources
- NC Wildlife Resources Commission
- NC Division of Coastal Management

On September 19, 2013, the Merger Team concurred on the purpose and need and the project study area and reached Concurrence Point 1 (CP1). On December 18, 2014, the Merger Team concurred on the alternatives to be studied in detail and reached CP2. On January 26, 2016, the

Merger Team met to review the preliminary alignments and bridging decisions. After reviewing preliminary alignments, the Merger Team concurred with NCDOT's recommendation to remove north side widening in Section 3 and south side widening in Section 6 from the detailed study alternatives.

Merger Team representatives noted that US 158 is a barrier across the Run Swamp and the Great Swamp for wildlife. The highest incidents of vehicles striking black bears in North Carolina occur on US 158 in the project area and near Coinjock. NC Wildlife Resources Commission and US Fish and Wildlife Service representatives requested the project include additional bridge length and dry culverts for wildlife passage.

In order to provide for wildlife passage, NCDOT agreed to investigate lengthening the dual bridges at Site #1 and Site #2 beyond the hydraulic requirements and providing two dry box culverts (east and west of Site 4B) within the Great Swamp.

Evaluations indicated lengthening the bridges by 10 feet and raising the grade to provide five-foot clearance under the bridges would increase wetland impacts by 0.5 acre at Site #1 and 0.4 acre at Site #2. Providing two dry box culverts would increase wetland impacts by 1.5 acres due to the grade having to be raised by a notable amount. After additional coordination, representatives from NC Wildlife Resources Commission and US Fish and Wildlife Service asked NCDOT to lengthen the bridges at Site #1 and Site #2 but not provide the two dry box culverts. NCDOT agreed to:

- Dual bridges 100 feet long will be provided at Bridge #1 (Site #1) and dual bridges 120 feet long at Bridge #9 (Site 2)

After reviewing the results of these investigations, the Merger Team concurred with the bridging decisions and major hydraulic structure recommendations and reached CP2A.

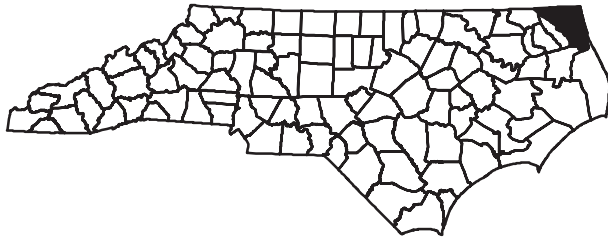
The Merger Team will concur on the least environmentally damaging practicable alternative for the project following the public hearing. The team will also concur on further avoidance and minimization measures for the project.

## **D. Agency Coordination**

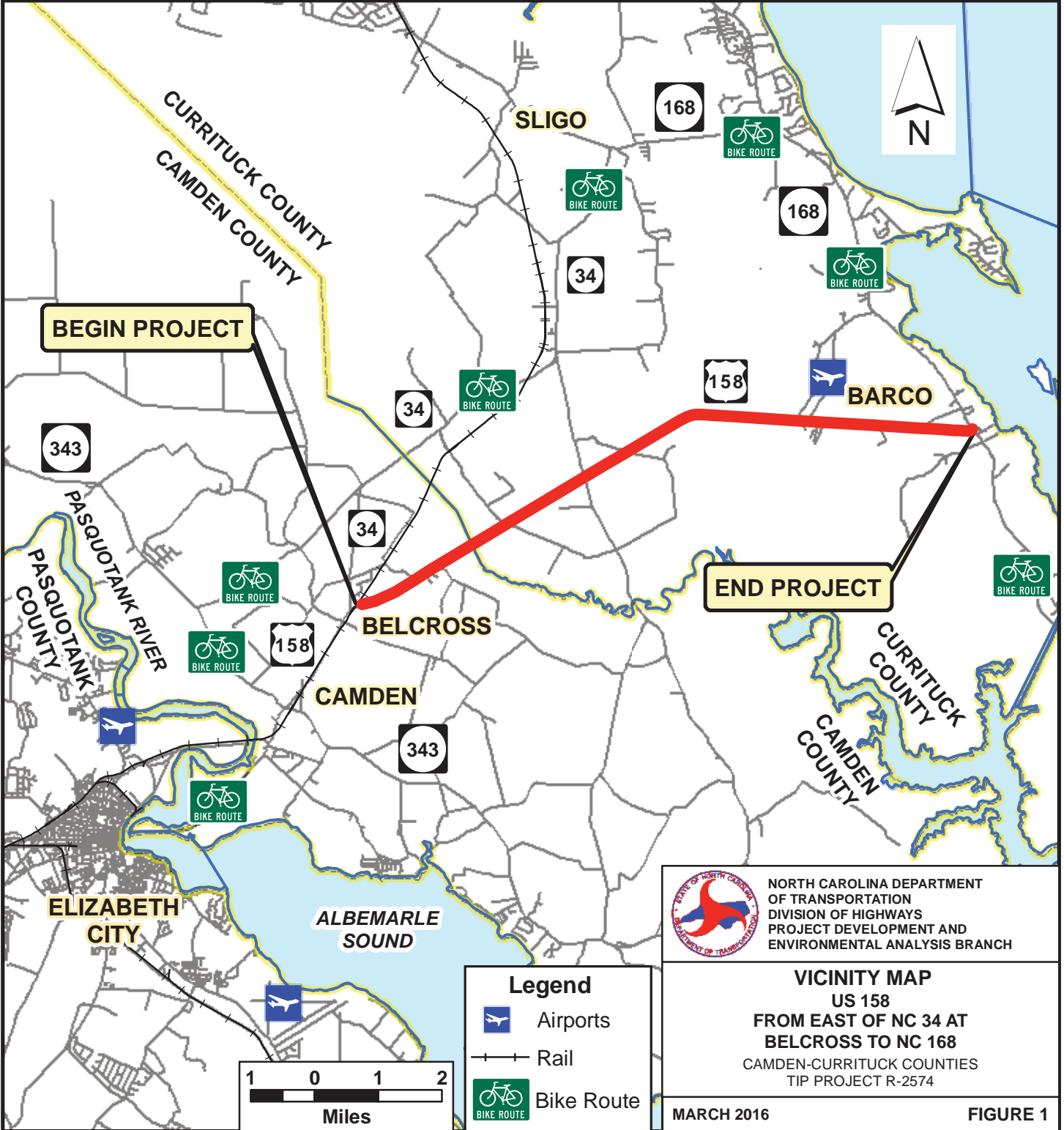
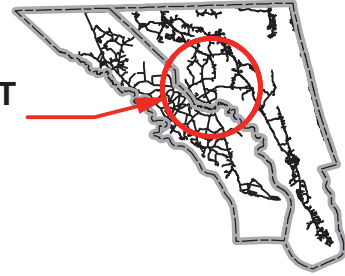
Input from the appropriate federal, state, and local agencies concerning effects of the proposed project on the environment was requested in a scoping letter (dated September 15, 2011) in preparation for the environmental document. Written comments were received from agencies noted with an asterisk (\*) (see Appendix A). The agencies contacted are listed below:


- US Department of the Army - Corps of Engineers (Wilmington District)
- \* US Department of the Interior - US Fish and Wildlife Service (Raleigh)
- US Environmental Protection Agency
- NC Department of Agriculture and Consumer Services – Agricultural Services
- NC Department of Public Safety – Emergency Management
- \* NC Department of Cultural Resources
- NC Department of Environment and Natural Resources (now NC Department of Environmental Quality)
- NC Division of Water Resources
- NC Division of Waste Management
- \* NC Division of Coastal Management
- NC Wildlife Resources Commission
- Camden County Board of Commissioners
- Camden County Schools
- Pasquotank-Camden-Elizabeth City Emergency Management Agency
- Camden County Planning Department
- Currituck County Board of Commissioners
- Currituck County Schools
- Currituck County Department of Emergency Management
- Currituck County Planning & Community Development
- Albemarle Rural Planning Organization

## Figures

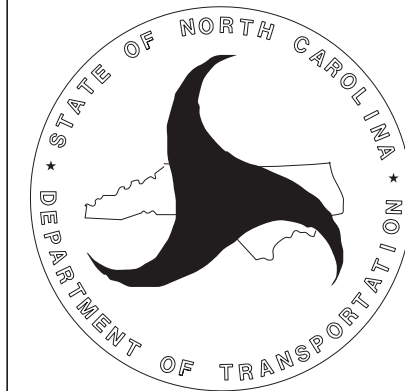


PROJECT AREA



 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

**VICINITY MAP**  
US 158  
FROM EAST OF NC 34 AT BELCROSS TO NC 168  
CAMDEN-CURRITUCK COUNTIES  
TIP PROJECT R-2574



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

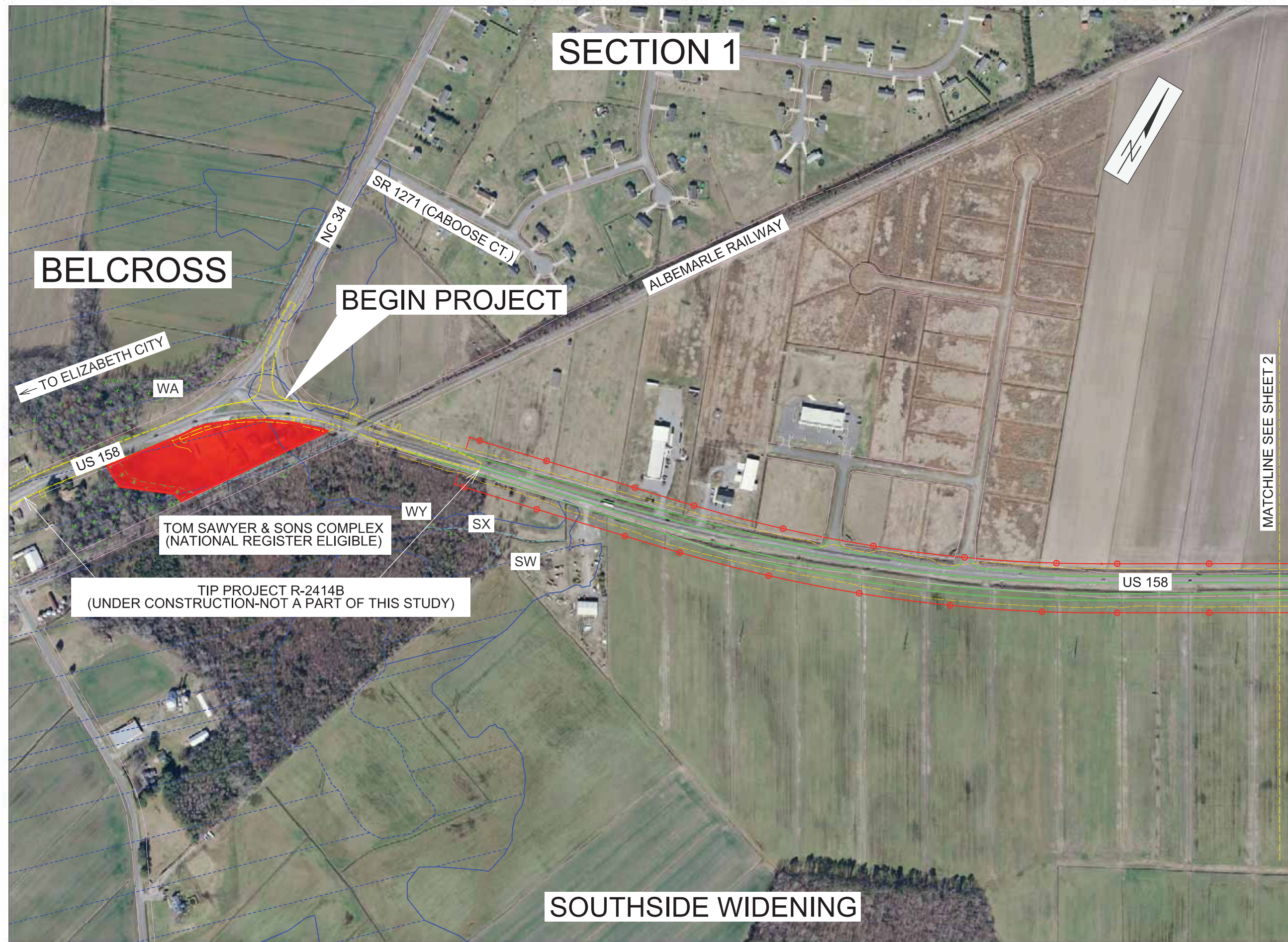
US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

**LEGEND**

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 1 OF 12  
**FIGURE 2**



**SECTION 1**

**BELCROSS**

**BEGIN PROJECT**

MATCHLINE SEE SHEET 2

**SOUTHSIDE WIDENING**

TIP PROJECT R-2414B  
(UNDER CONSTRUCTION-NOT A PART OF THIS STUDY)

TOM SAWYER & SONS COMPLEX  
(NATIONAL REGISTER ELIGIBLE)

← TO ELIZABETH CITY

NC 34

SR 1271 (CABOOSE CT.)

ALBEMARLE RAILWAY

US 158

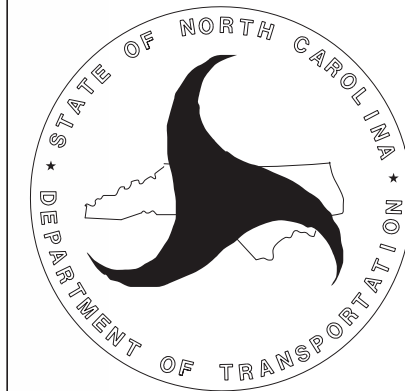
WA

WY

SX

SW





NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

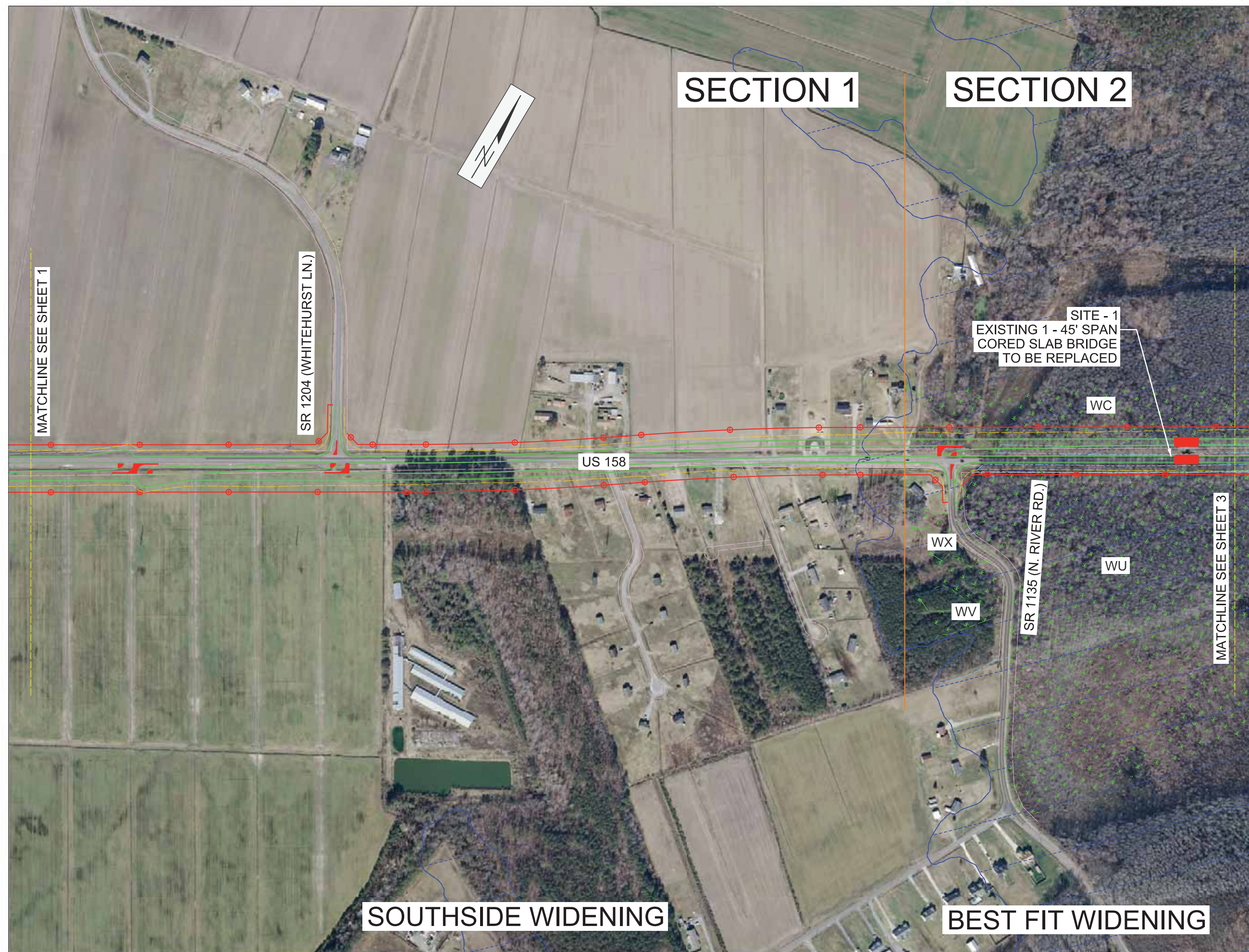
US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

**LEGEND**

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 2 OF 12  
**FIGURE 2**



**SECTION 1**

**SECTION 2**

MATCHLINE SEE SHEET 1

SR 1204 (WHITEHURST LN.)

US 158

SITE - 1  
EXISTING 1 - 45' SPAN  
CORED SLAB BRIDGE  
TO BE REPLACED

WC

WX

WV

SR 1135 (N. RIVER RD.)

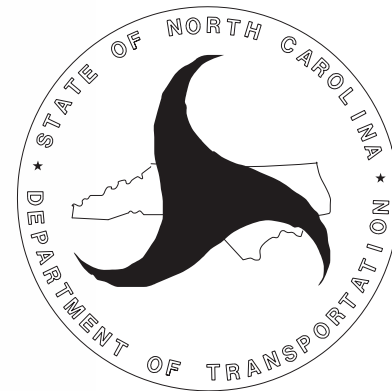
WU

MATCHLINE SEE SHEET 3

**SOUTHSIDE WIDENING**

**BEST FIT WIDENING**





NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
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ENVIRONMENTAL ANALYSIS  
UNIT

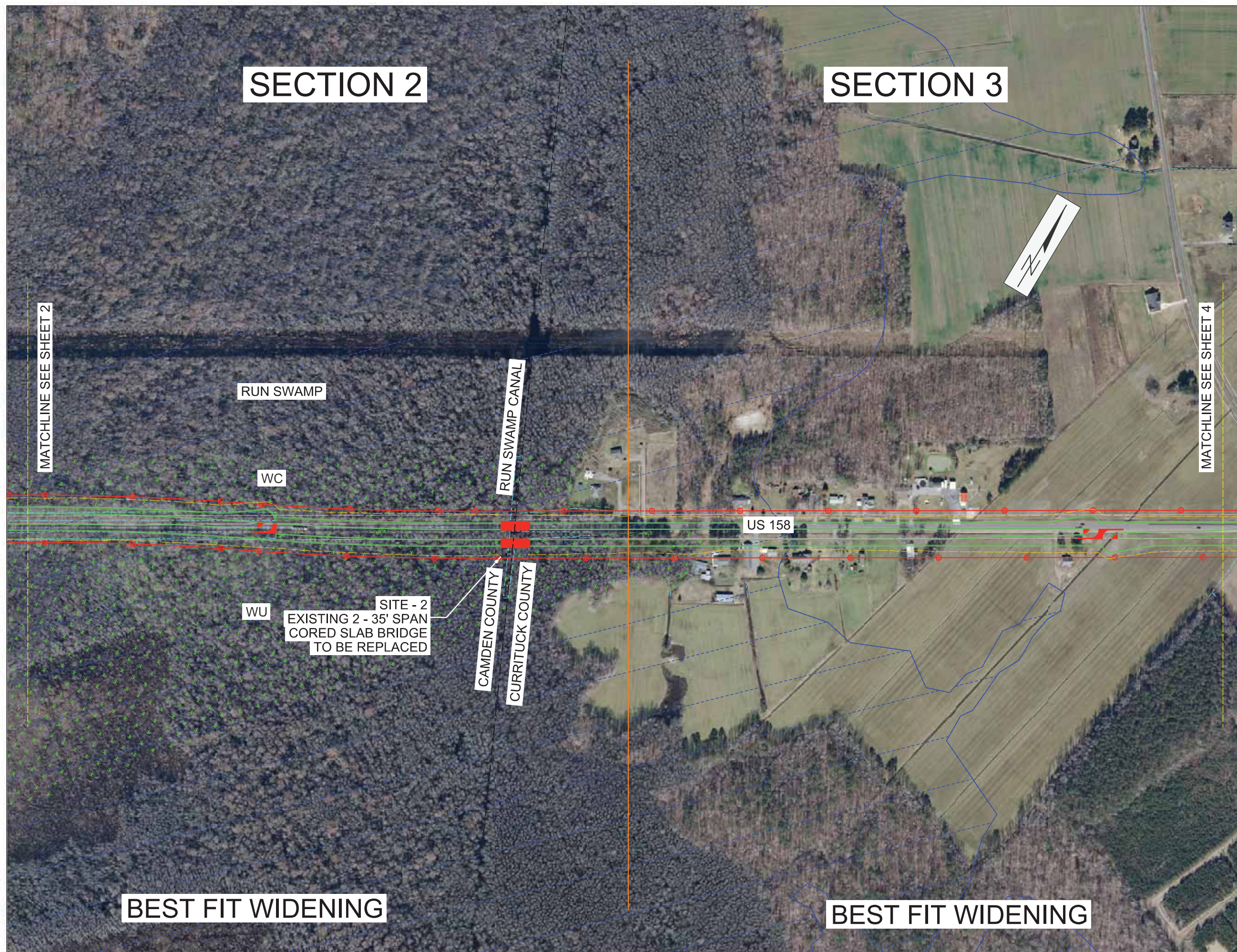
US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

### LEGEND

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 3 OF 12  
**FIGURE 2**



SECTION 2

SECTION 3

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

RUN SWAMP

RUN SWAMP CANAL

US 158

SITE - 2  
EXISTING 2 - 35' SPAN  
CORED SLAB BRIDGE  
TO BE REPLACED

CAMDEN COUNTY  
CURRITUCK COUNTY

BEST FIT WIDENING

BEST FIT WIDENING

# SECTION 3



MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 5

SR 1148 (N. GREGORY RD.)

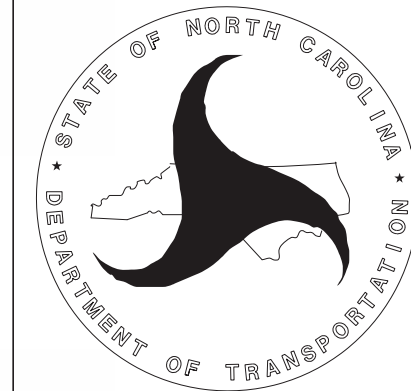
SR 1148 (S. GREGORY RD.)

US 158

SITE - 3  
EXISTING DOUBLE  
117' x 79' CMP ARCH  
TO BE REPLACED

SA

BEST FIT WIDENING



NORTH CAROLINA  
DEPARTMENT OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

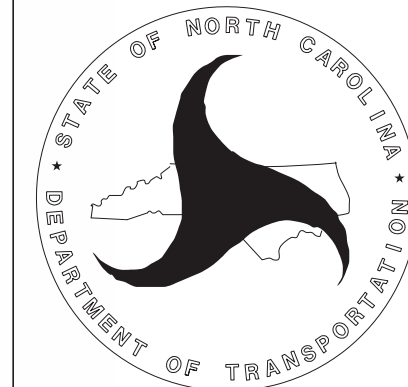
## LEGEND

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 4 OF 12  
**FIGURE 2**

# SECTION 3



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

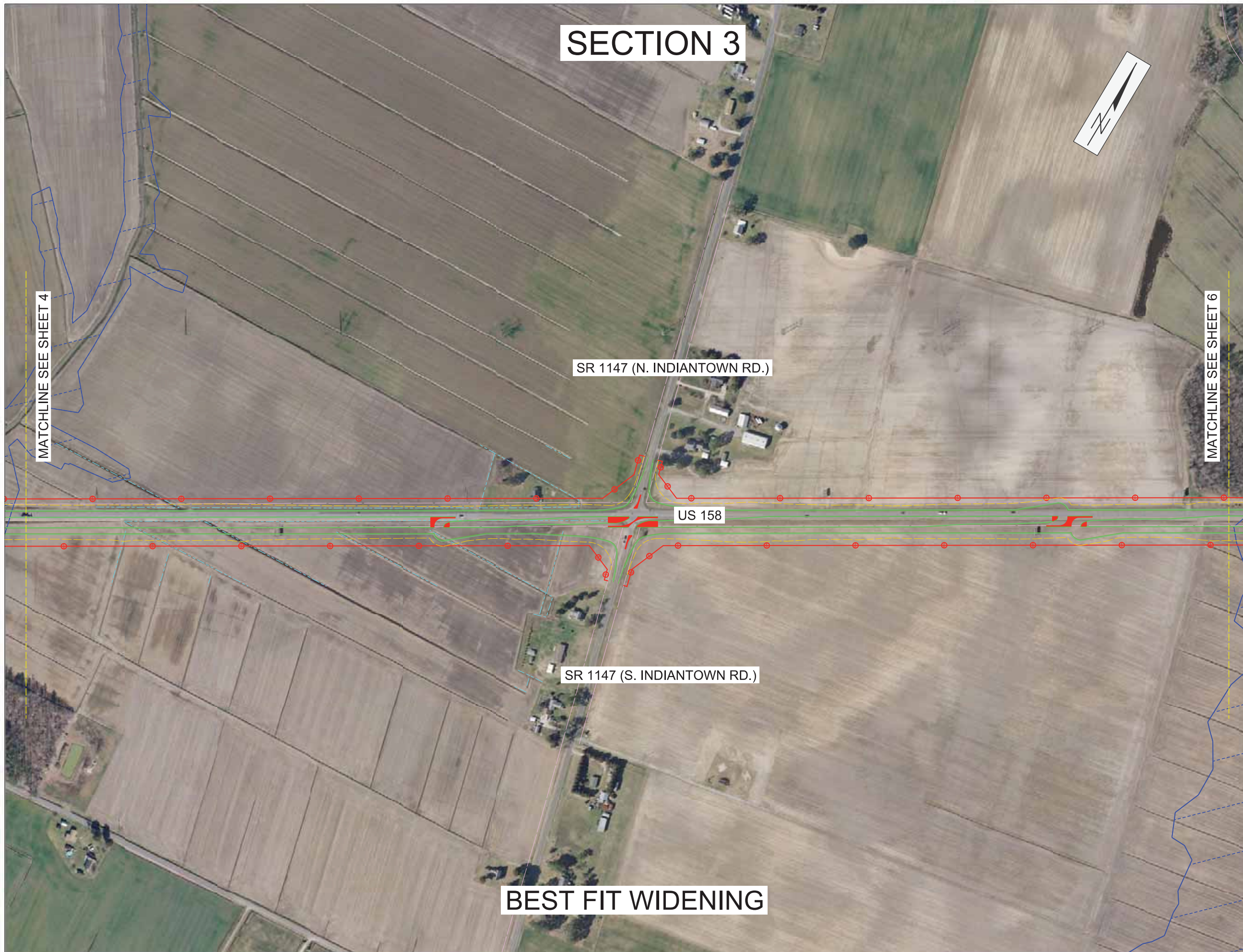
US 158  
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AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

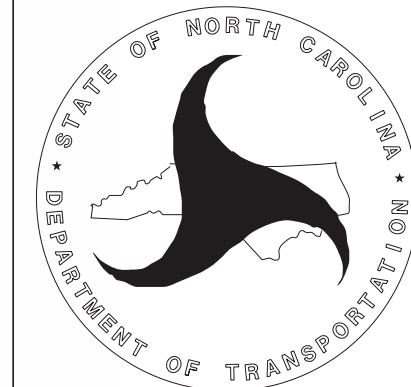
## LEGEND

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 5 OF 12  
**FIGURE 2**





NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

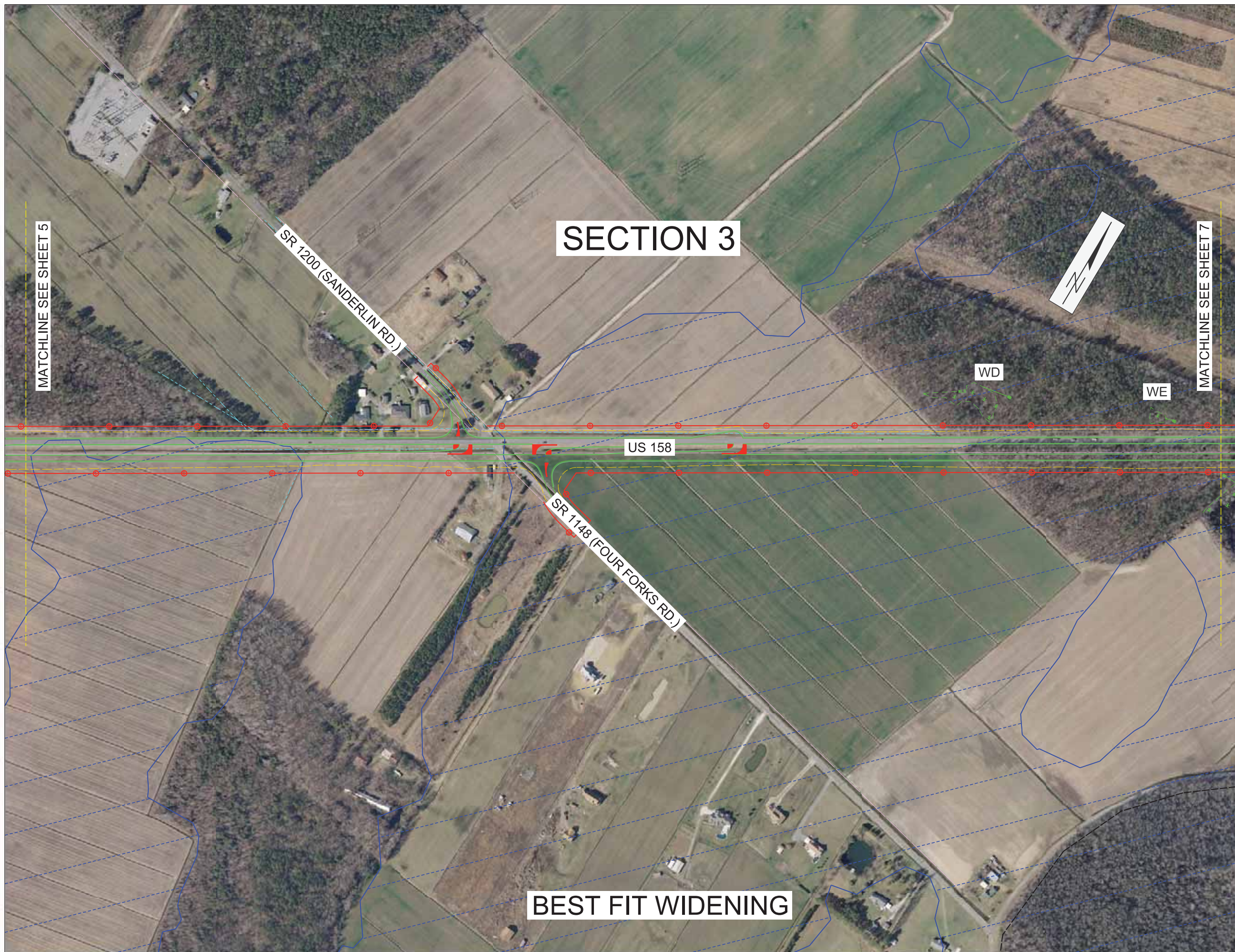
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AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

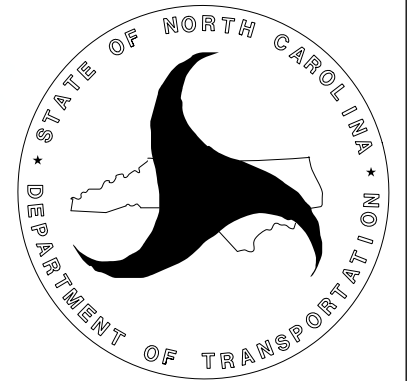
### LEGEND

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
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- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 6 OF 12  
**FIGURE 2**





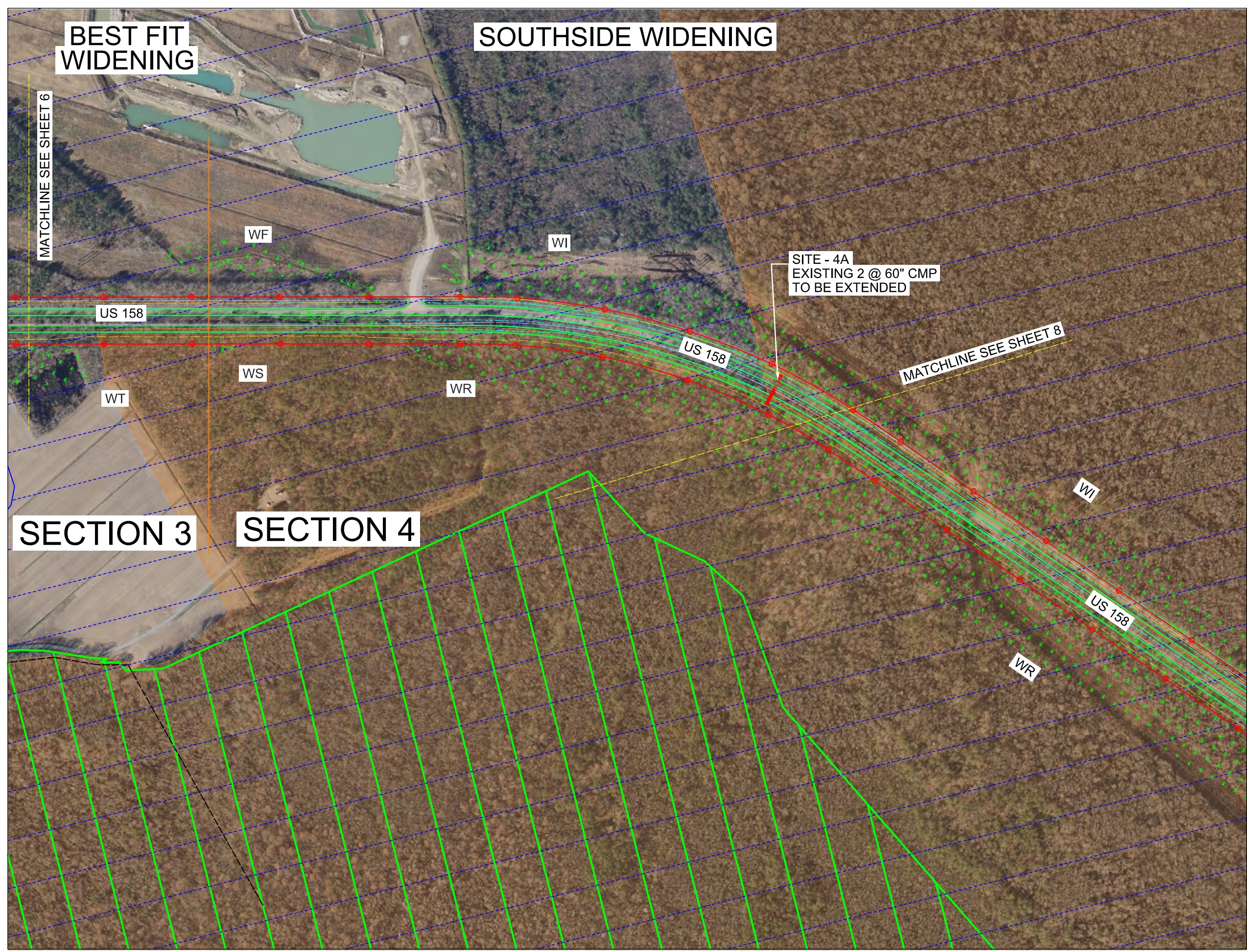
NORTH CAROLINA  
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AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
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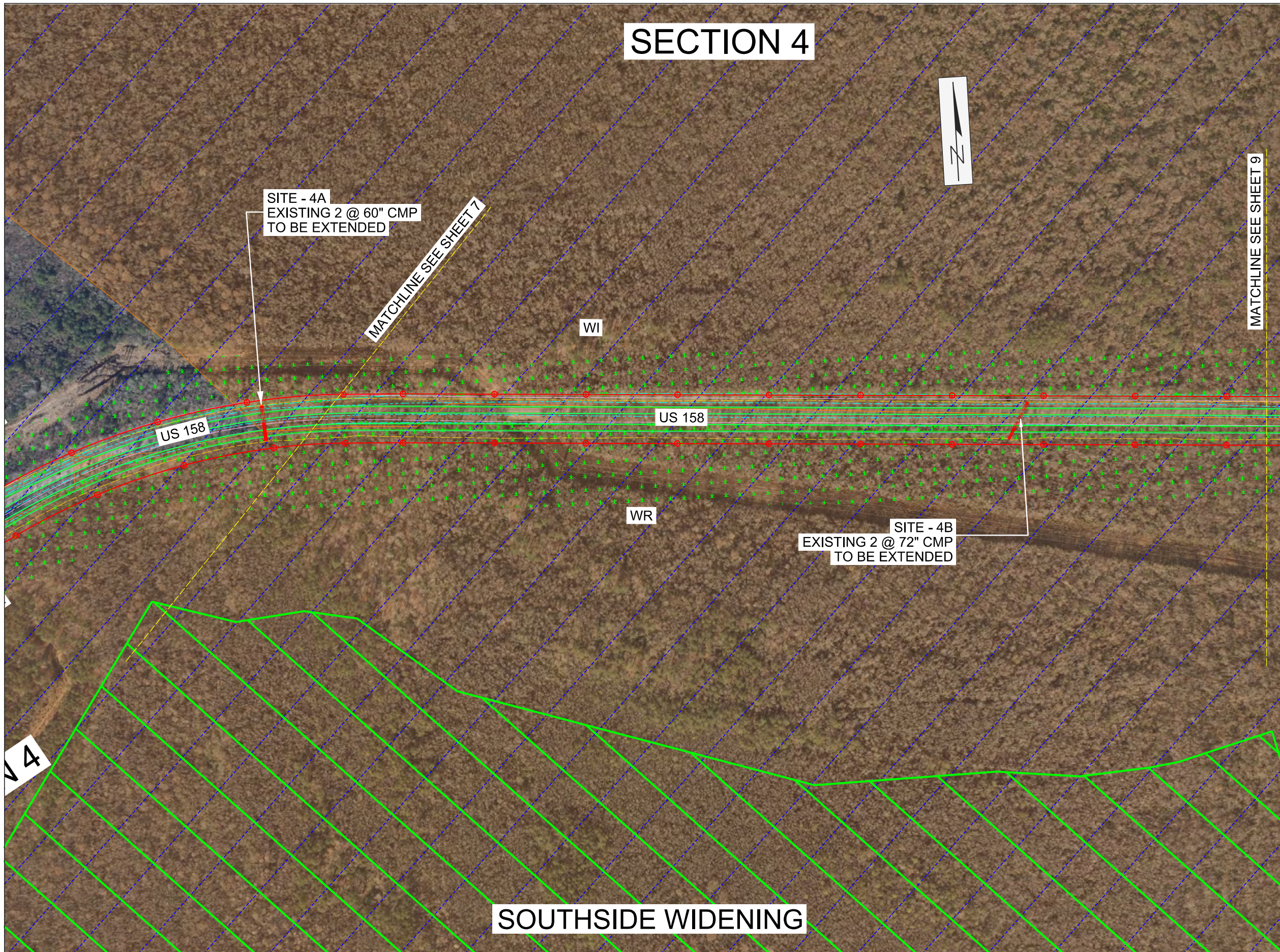
- LEGEND**
- PROPOSED PAVEMENT
  - PROPOSED STRUCTURE
  - PROPOSED SLOPE STAKES
  - PROPOSED RIGHT OF WAY
  - EXISTING RIGHT OF WAY
  - ADJACENT PROJECT (NOT A PART OF THIS STUDY)
  - DELINEATED WETLANDS
  - DELINEATED STREAMS OR OPEN WATER
  - 100-YEAR FLOODPLAIN
  - HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)
  - GREAT SWAMP NATURAL HERITAGE AREA
  - NORTH RIVER GAMELAND



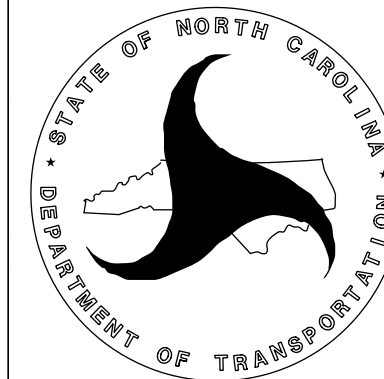
SHEET 7 OF 12  
**FIGURE 2**



# SECTION 4



SOUTHSIDE WIDENING



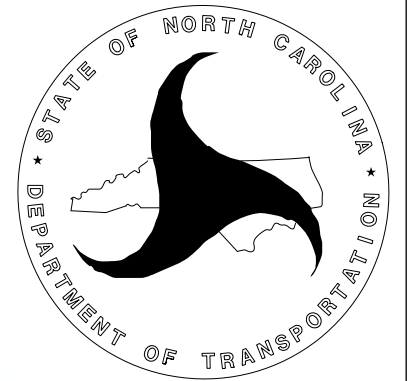
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
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AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
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TIP PROJECT R-2574

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- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)
- GREAT SWAMP NATURAL HERITAGE AREA
- NORTH RIVER GAMELAND

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NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
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PROJECT DEVELOPMENT  
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ENVIRONMENTAL ANALYSIS  
UNIT

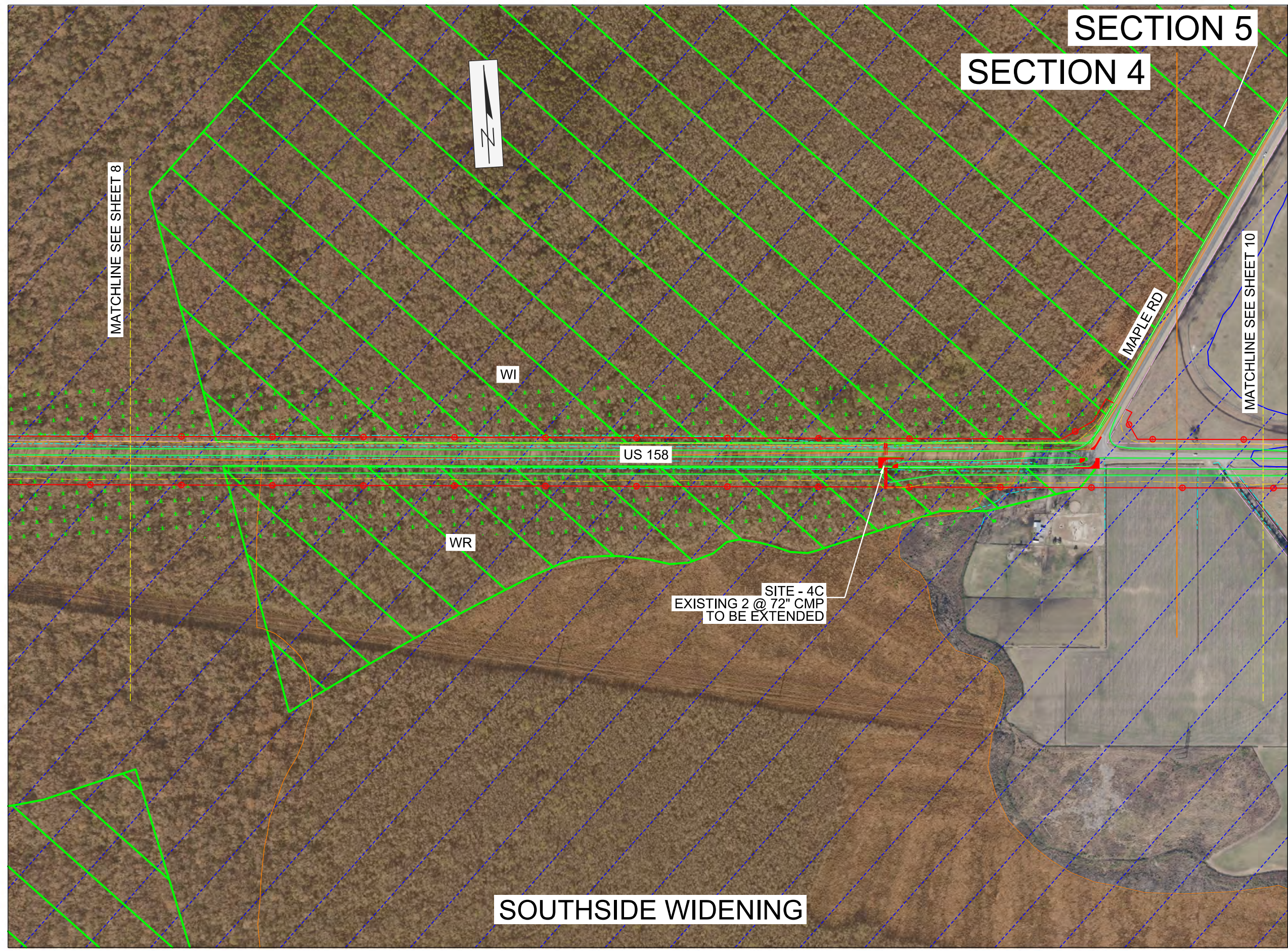
US 158  
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**LEGEND**

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- ○ PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- - - ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- ▭ DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- ▭ 100-YEAR FLOODPLAIN
- ▭ HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)
- ▭ GREAT SWAMP NATURAL HERITAGE AREA
- ▨ NORTH RIVER GAMELAND

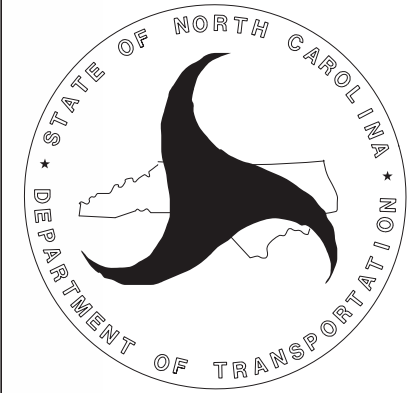
0 FEET 400

SHEET 9 OF 12  
**FIGURE 2**



**SOUTHSIDE WIDENING**



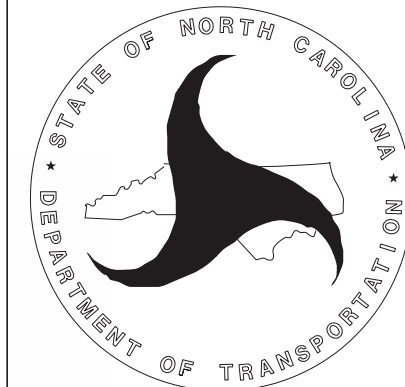


NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

- LEGEND**
- PROPOSED PAVEMENT
  - PROPOSED STRUCTURE
  - - - PROPOSED SLOPE STAKES
  - PROPOSED RIGHT OF WAY
  - - - EXISTING RIGHT OF WAY
  - - - ADJACENT PROJECT (NOT A PART OF THIS STUDY)
  - DELINEATED WETLANDS
  - DELINEATED STREAMS OR OPEN WATER
  - 100-YEAR FLOODPLAIN
  - HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)
  - GREAT SWAMP NATURAL HERITAGE AREA
  - NORTH RIVER GAMELAND













0 FEET 400



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
FROM CROSS OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

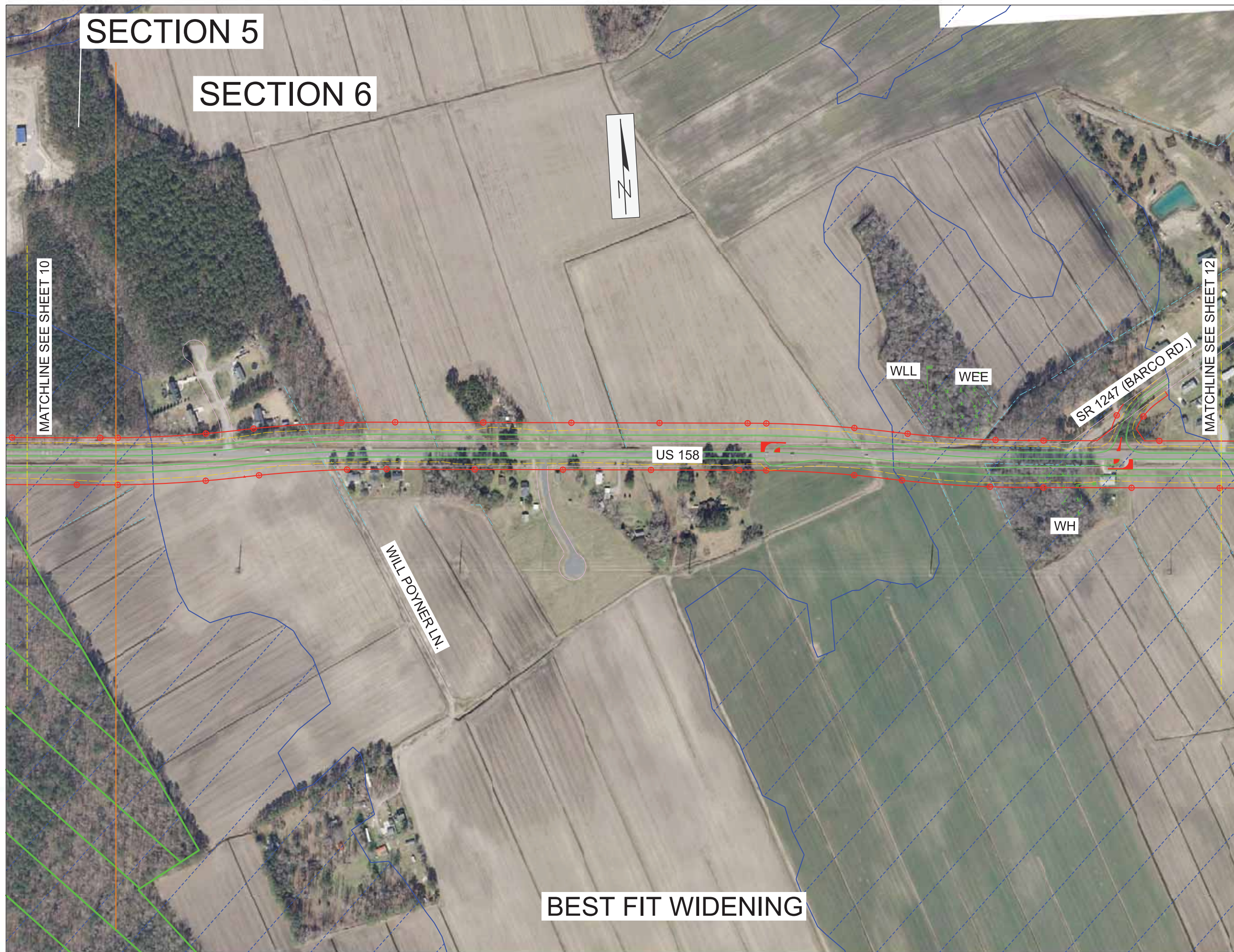
**LEGEND**

-  PROPOSED PAVEMENT
-  PROPOSED STRUCTURE
-  PROPOSED SLOPE STAKES
-  PROPOSED RIGHT OF WAY
-  EXISTING RIGHT OF WAY
-  ADJACENT PROJECT (NOT A PART OF THIS STUDY)
-  DELINEATED WETLANDS
-  DELINEATED STREAMS OR OPEN WATER
-  100-YEAR FLOODPLAIN
-  HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)
-  GREAT SWAMP NATURAL HERITAGE AREA
-  NORTH RIVER GAMESLAND

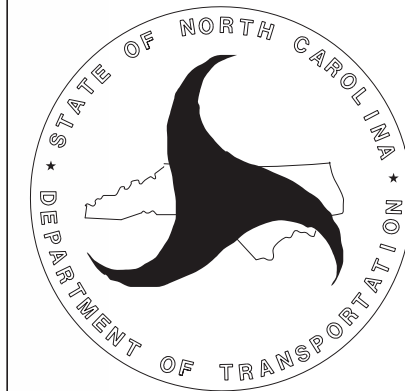
0 FEET 400



SHEET 11 OF 12  
**FIGURE 2**



**BEST FIT WIDENING**



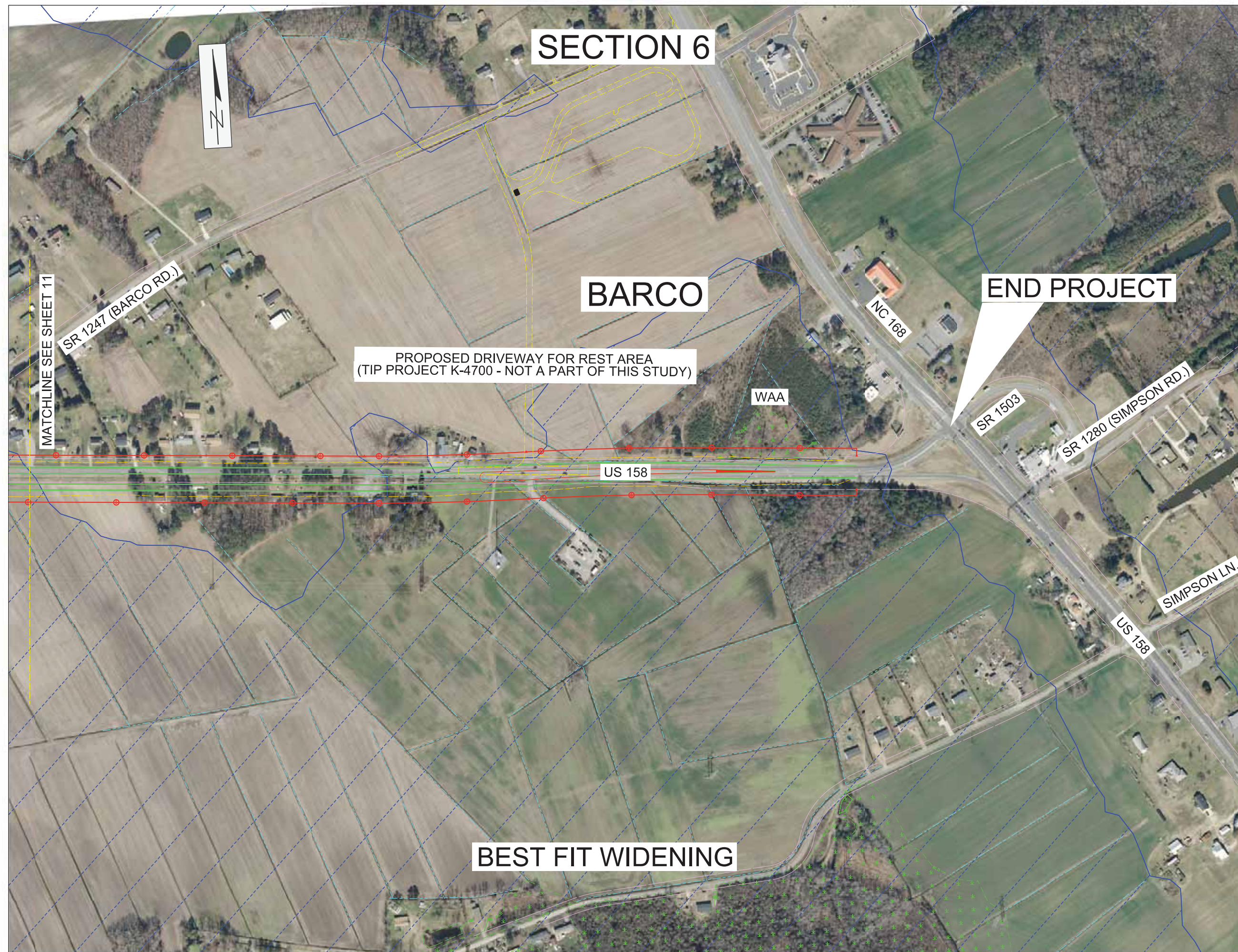
NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

- LEGEND**
- PROPOSED PAVEMENT
  - PROPOSED STRUCTURE
  - PROPOSED SLOPE STAKES
  - PROPOSED RIGHT OF WAY
  - EXISTING RIGHT OF WAY
  - ADJACENT PROJECT (NOT A PART OF THIS STUDY)
  - DELINEATED WETLANDS
  - DELINEATED STREAMS OR OPEN WATER
  - 100-YEAR FLOODPLAIN
  - HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)
  - GREAT SWAMP NATURAL HERITAGE AREA
  - NORTH RIVER GAMELAND

0 FEET 400

SHEET 12 OF 12  
**FIGURE 2**



**SECTION 6**

**BARCO**

**END PROJECT**

PROPOSED DRIVEWAY FOR REST AREA  
(TIP PROJECT K-4700 - NOT A PART OF THIS STUDY)

WAA

US 158

MATCHLINE SEE SHEET 11

SR 1247 (BARCO RD.)

NC 168

SR 1503

SR 1280 (SIMPSON RD.)

SIMPSON LN.

US 158

**BEST FIT WIDENING**

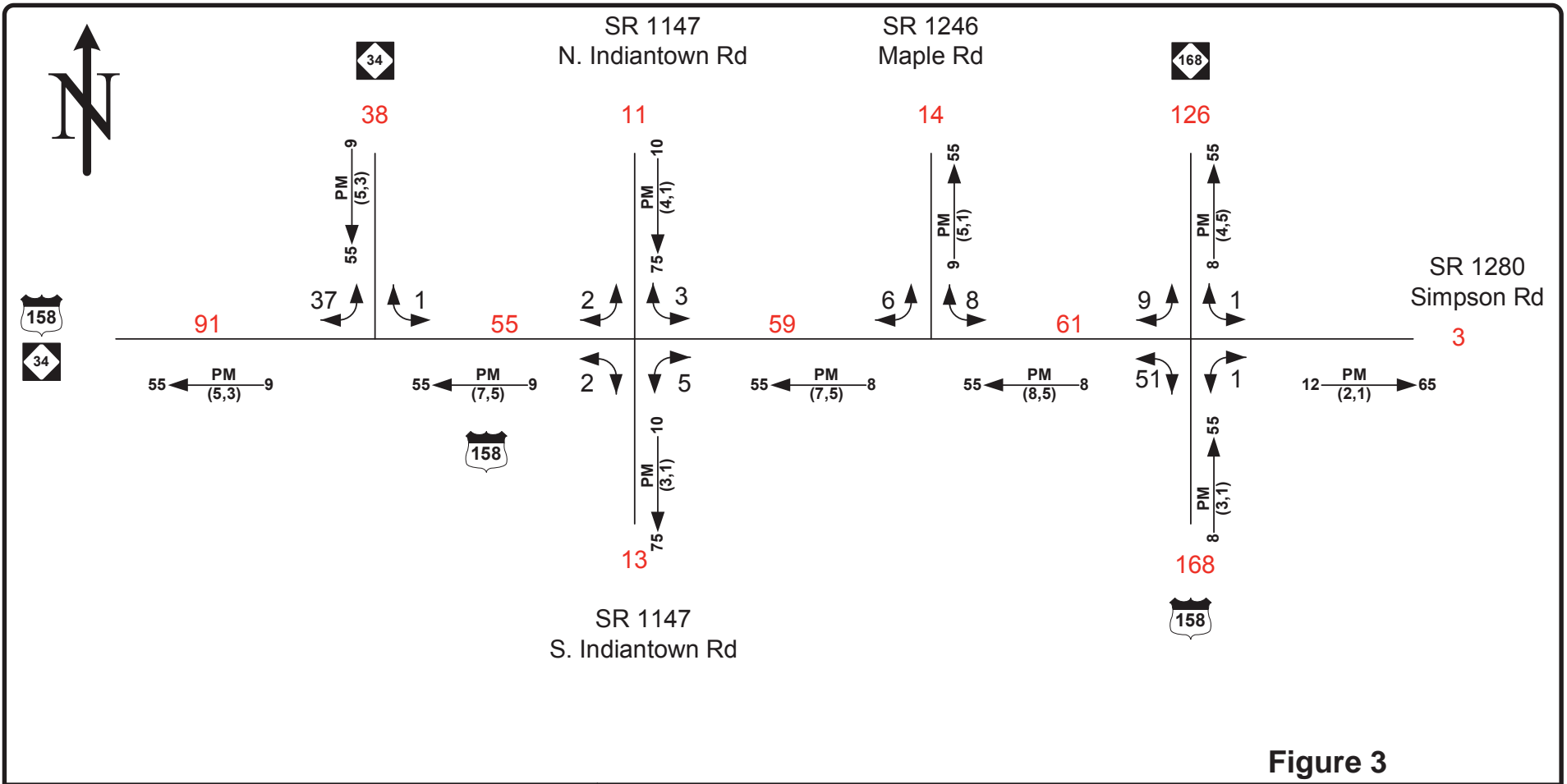
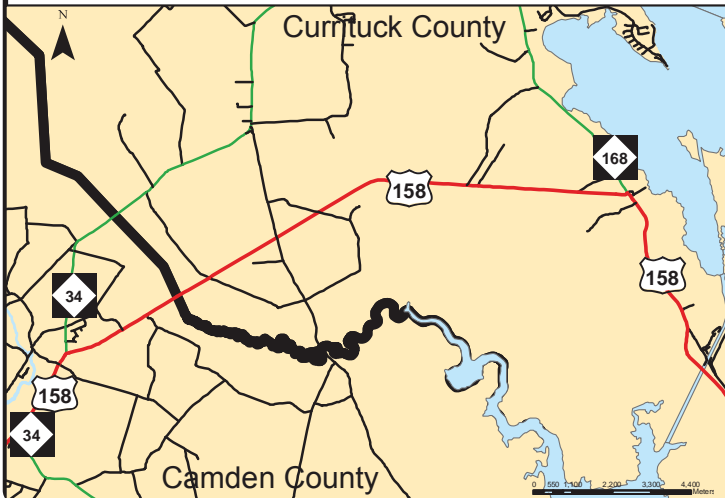


Figure 3



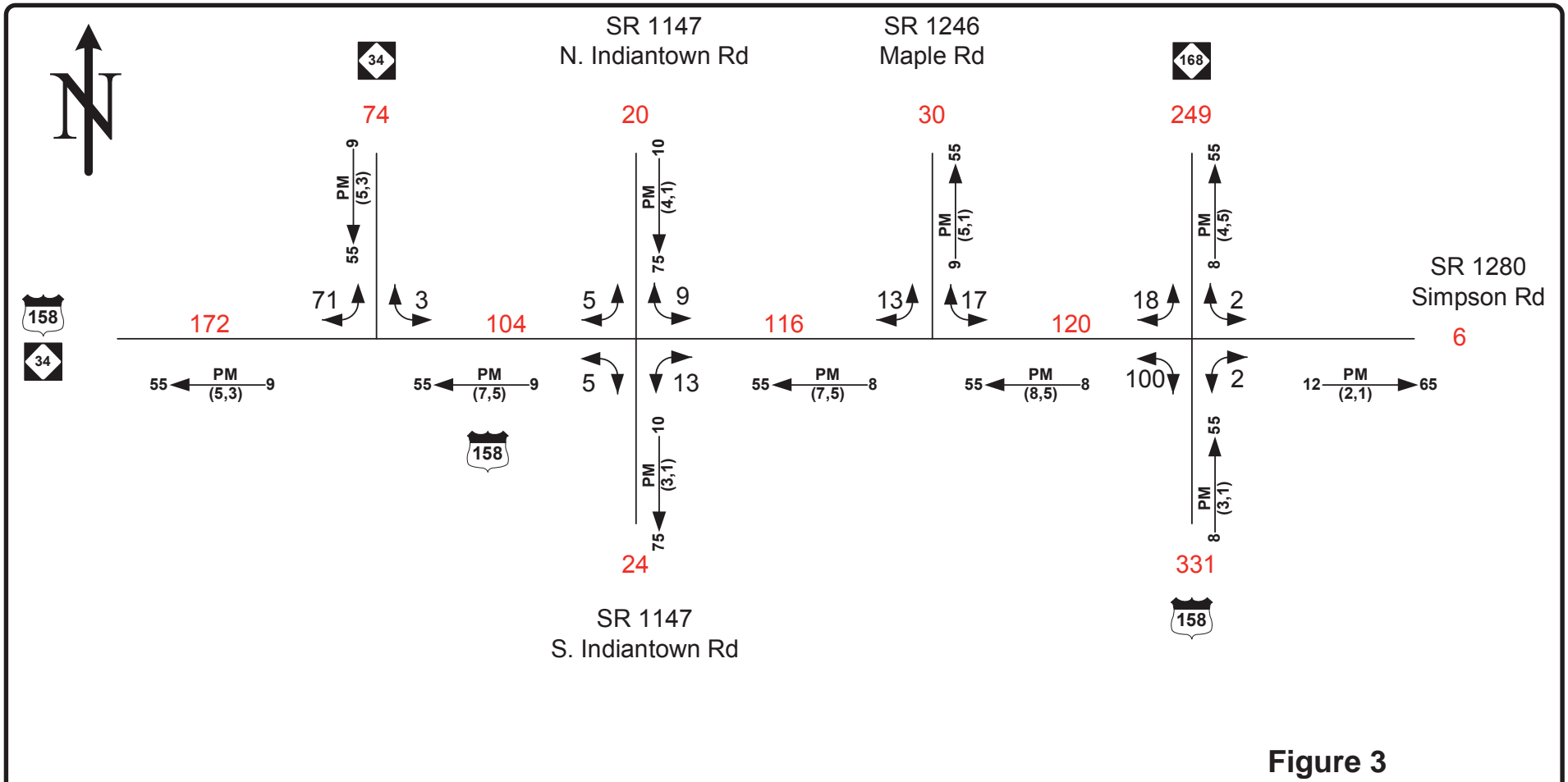
# 2012 AVERAGE ANNUAL DAILY TRAFFIC

## Base Year No Build SHEET 1 OF 2

### LEGEND

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- $K \frac{PM}{(d, t)} \rightarrow D$
- K Design Hour Factor (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- $\rightarrow$  Indicates Direction of D
- (d, t) Duals, TT-STs (%)

<b>TIP: R-2574</b>		<b>WBS: 38802.1.1</b>	
<b>COUNTY:</b> Camden/ Currituck		<b>DIVISION:</b> 1	
<b>DATE:</b> 10-26-12			
<b>PREPARED BY:</b> Elisabeth Bray			
<b>LOCATION:</b> US 158			
<b>PROJECT:</b> Widen to multi-lane highway from NC 34 to NC 168			



**Figure 3**



**2035 AVERAGE ANNUAL DAILY TRAFFIC**

**Future Year Build SHEET 2 OF 2**

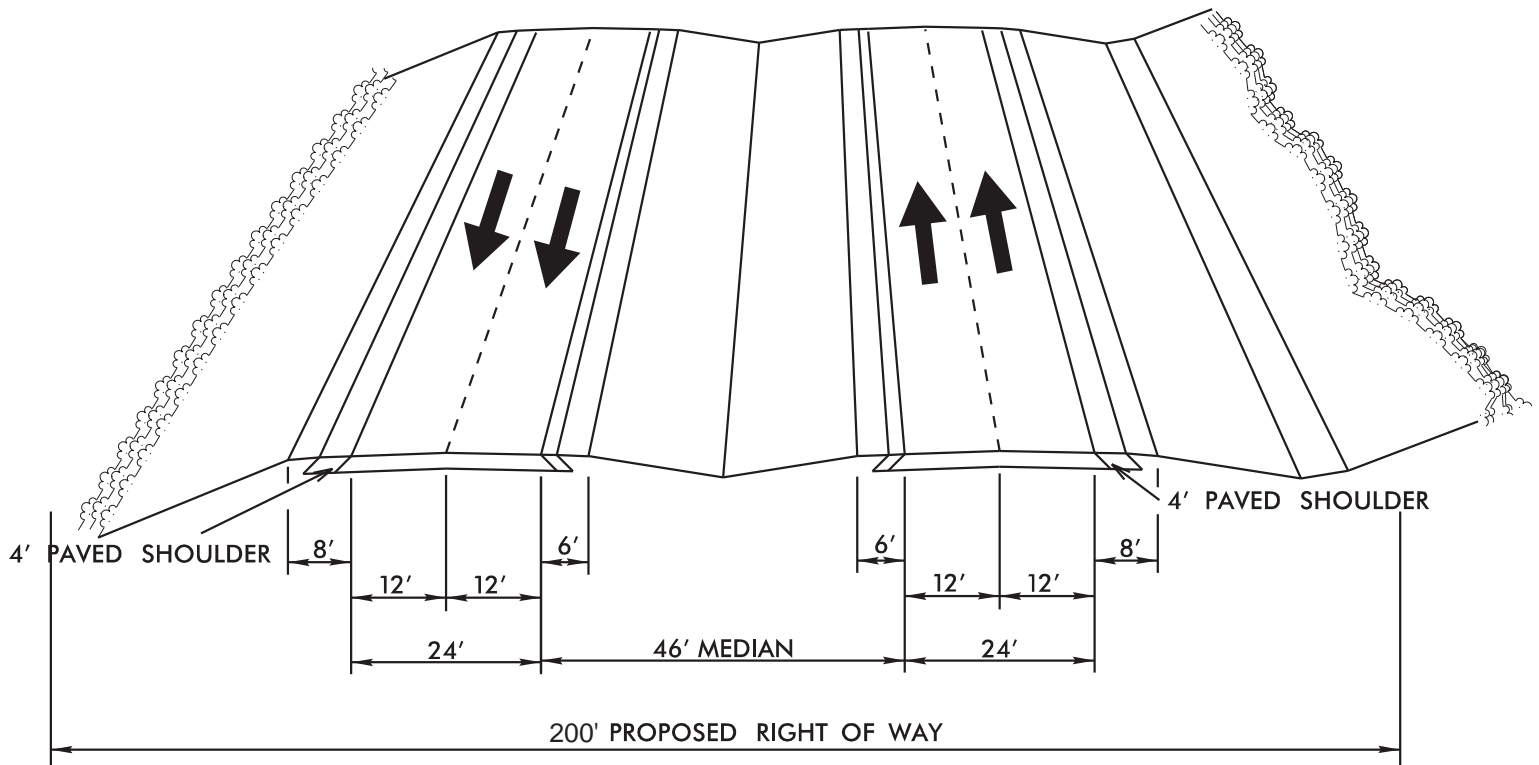
**LEGEND**

- ### No. of Vehicles Per Day in 100s
- 1- Less than 50 vpd
- X Movement Prohibited
- $K \frac{PM}{(d, t)} \rightarrow D$
- K Design Hour Factor (%)
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

<b>TIP: R-2574</b>		<b>WBS: 38802.1.1</b>	
<b>COUNTY:</b> Camden/Currituck		<b>DIVISION:</b> 1	
<b>DATE:</b> 10-26-12			
<b>PREPARED BY:</b> Elisabeth Bray			
<b>LOCATION:</b> US 158			
<b>PROJECT:</b> Widen to multi-lane highway from NC 34 to NC 168			

# TIP PROJECT R-2574

## PROPOSED ROADWAY TYPICAL SECTION



**NOT TO SCALE**

NOTE: PROPOSED ADDITIONAL TWO LANES MAY BE ON EITHER LEFT OR RIGHT SIDE OF EXISTING LANES, DEPENDING ON PROJECT SECTION.

# FIGURE 4

# TIP PROJECT R-2574

\* - RIGHT TURN LANES WILL BE PROVIDED WHERE WARRANTED.

800' - 1000'

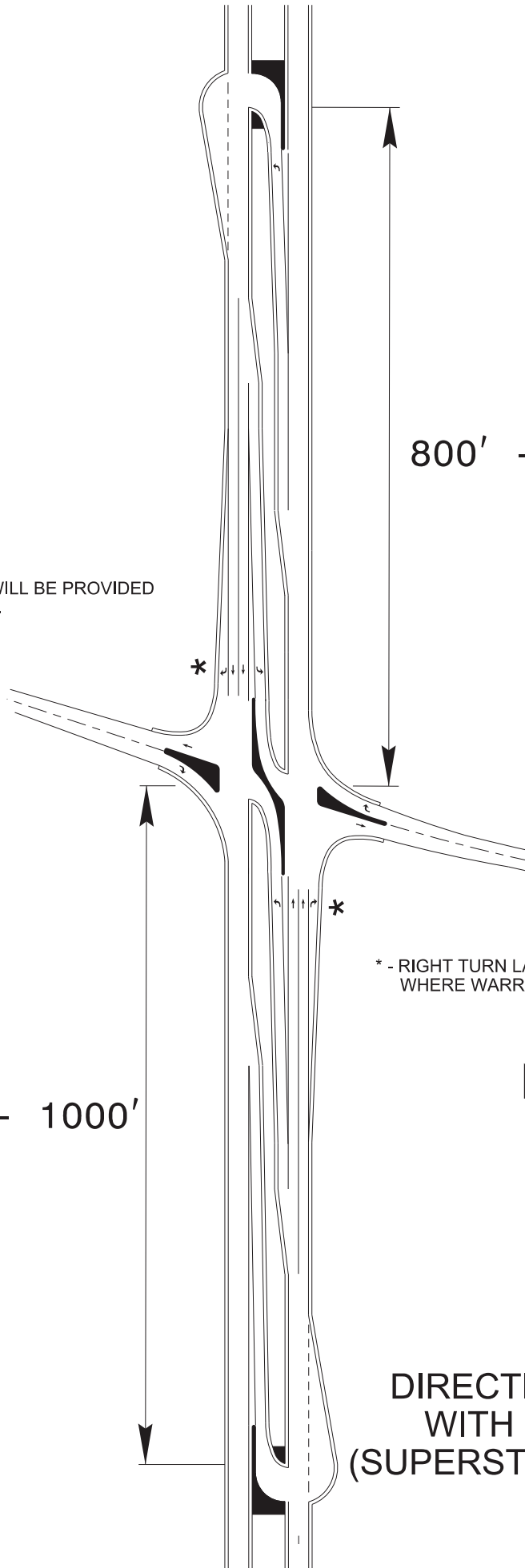
\* - RIGHT TURN LANES WILL BE PROVIDED WHERE WARRANTED.

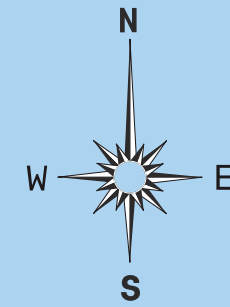
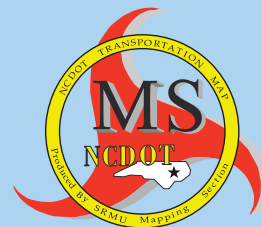
800' - 1000'

**NOT TO SCALE**

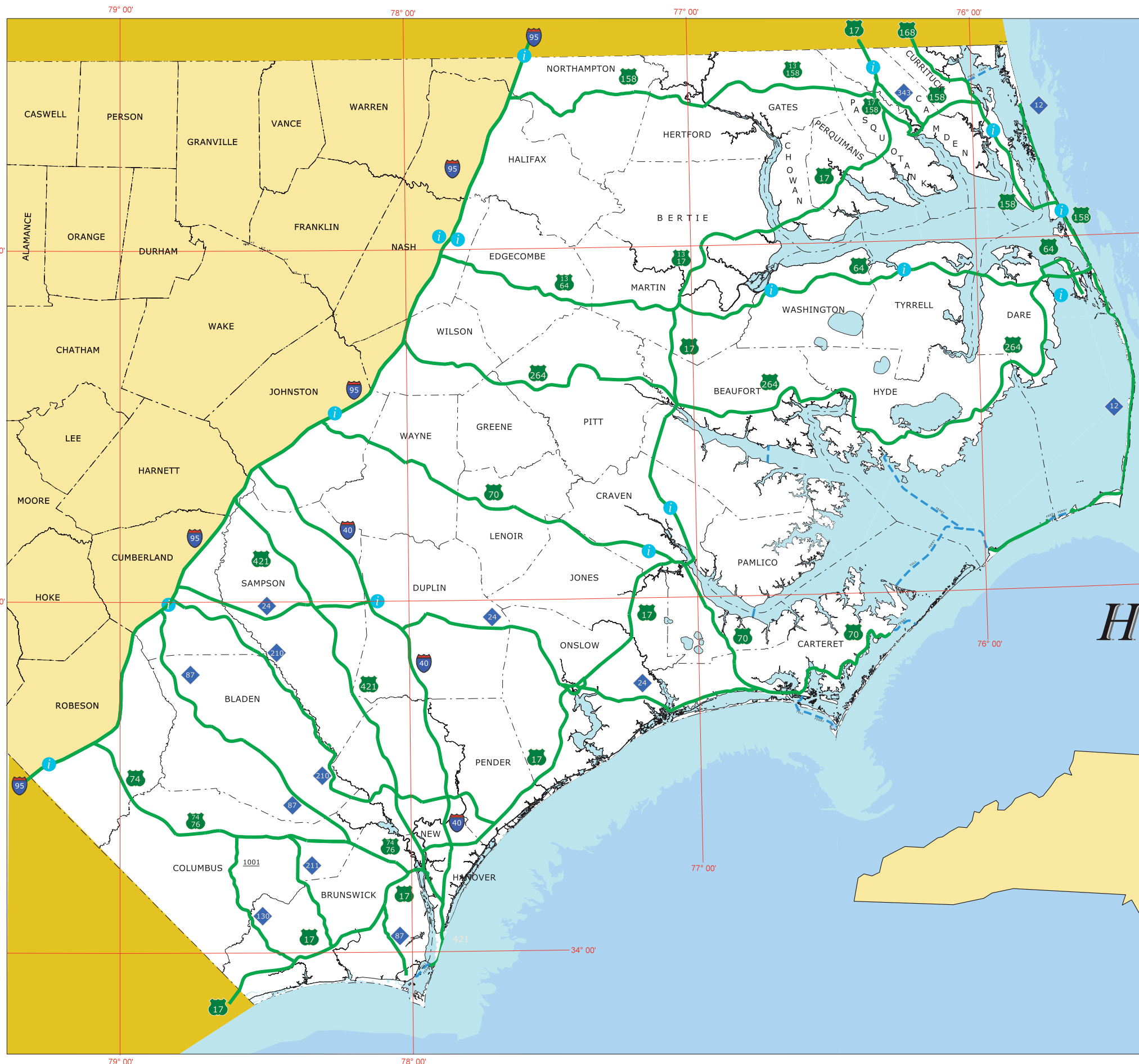
**DIRECTIONAL CROSSOVER  
WITH MEDIAN U-TURNS  
(SUPERSTREET INTERSECTION)**




**FIGURE 5**



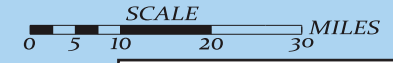


# North Carolina Hurricane Evacuation Routes



-  Rest Areas & Reception Points
-  Hurricane Evacuation Routes
-  Ferry Routes

*Routes are current  
as of  
5/8/2013*

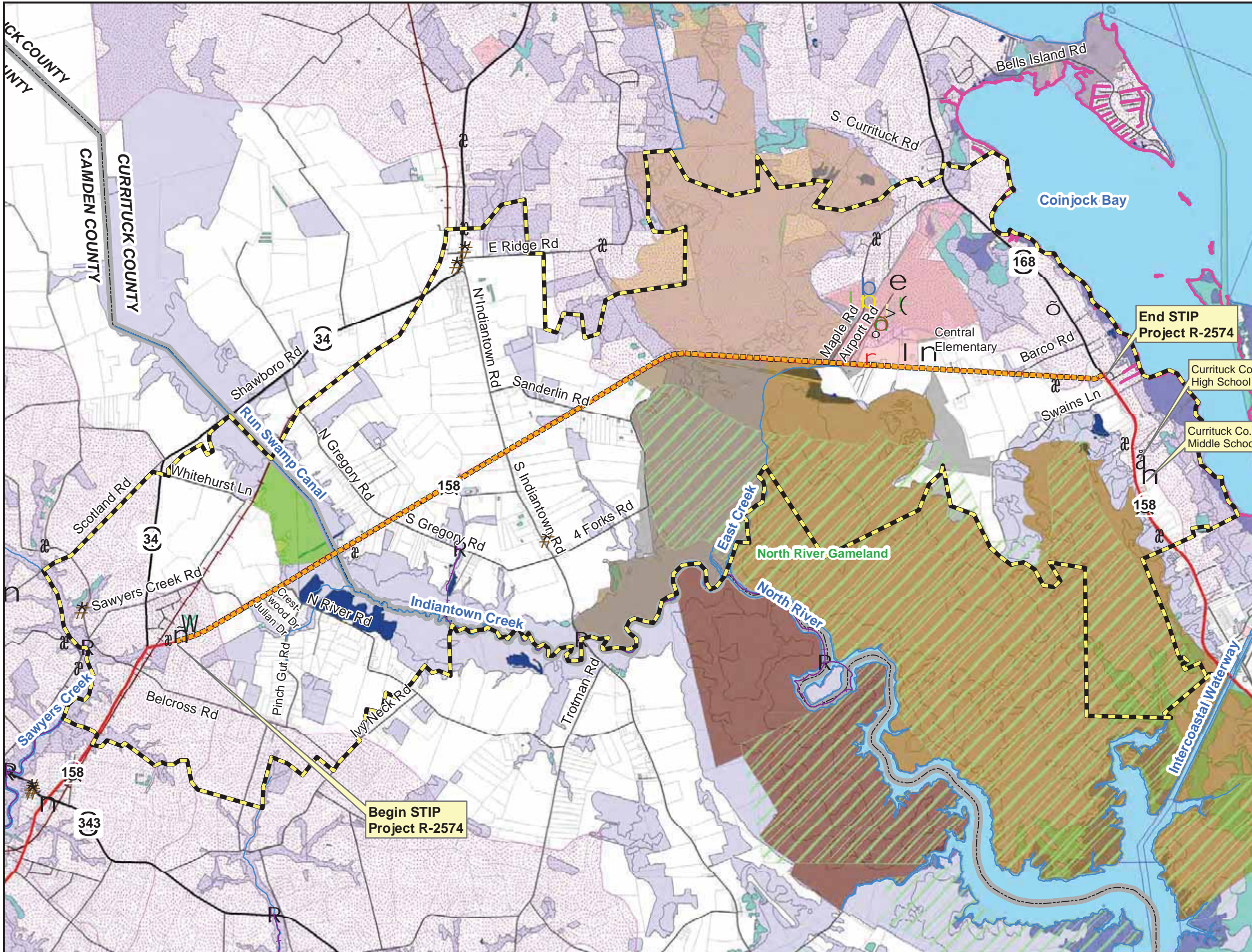


**FIGURE 6**





# FIGURE 7 - NOTABLE ENVIRONMENTAL FEATURES



**STIP R-2574**

- FLUSA
- US Highway
- NC Highway
- State Route
- Railroad
- Parcel Boundary
- River-Streams
- Water Bodies
- County Boundary
- 303(d) Water Body

**NC Paddle Trail**

- Paddle Trails
- WRC Gamelands
- National Register Structure
- County Owned Land
- State Owned Land
- Targeted Local Watershed
- NC Coastal Land Trust Property

**NWI Wetlands**

- Other Wetland
- Freshwater Forested/Shrub Wetland
- Estuarine and Marine Wetland
- Estuarine and Marine Deepwater
- Freshwater Emergent Wetland

**Camden Business Park**

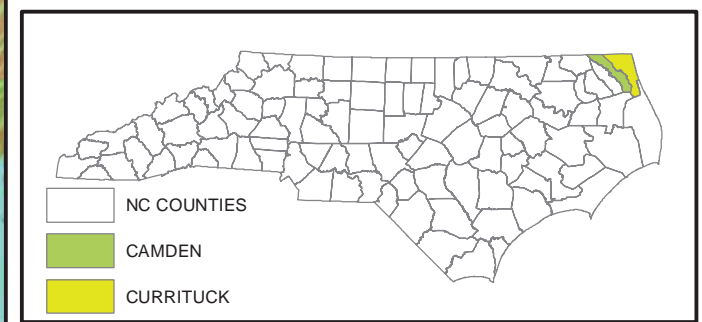
- Camden County Admin. Offices
- Currituck Animal Shelter
- Currituck Co. Detention Center
- Currituck Co. Sheriff's Office
- Currituck Cooperative Ext. Office & YMCA
- Fire Department
- Maple Park
- Morris Farm Market
- NC Forest Service County Headquarters
- Regional Aviation & Technical Training Center
- Mainland Water Treatment Plant
- Church
- School
- Currituck Regional Airport

**Significant Natural Heritage Areas**

- Bell Point Marsh
- Buckskin Creek/Great Swamp
- North River/Great Swamp
- Indiantown Creek/N. River Cypress Forest
- North River/Crooked Creek Wetlands

0 0.5 1 2 Miles

MAP SOURCES:  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
NORTH CAROLINA ONE MAP  
SITE VISIT OBSERVATIONS (NOV. 2012)



## **Appendix A – Comments Received**



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Raleigh Field Office  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

January 12, 2012

Gregory J. Thorpe, Ph.D.  
North Carolina Department of Transportation  
Project Development and Environmental Analysis  
1598 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your request for comments from the U.S. Fish and Wildlife Service (Service) on the potential environmental effects of the proposed improvements to the US 158 and NC 12 intersection at Southern Shores in Dare County, North Carolina (TIP No. R-4457). These comments provide information in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

Given the urban nature of the project area and the limited scope of the project, the Service does not have any specific concerns. We anticipate that impacts to fish and wildlife resources will be insignificant. The Service appreciates the opportunity to comment on this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520, ext. 32.

Sincerely,

*for*   
Pete Benjamin  
Field Supervisor

**RECEIVED**  
Division of Highway  
JAN 17 2012  
Preconstruction  
Project Development and  
Environmental Analysis Branch



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Ramona M. Bartos, Administrator

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

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

March 27, 2013

MEMORANDUM

TO: Kate Husband  
Office of Human Environment  
NCDOT Division of Highways

FROM: Ramona M. Bartos *RMB for Ramona M. Bartos*

SUBJECT: Architectural Survey for Improvements to US 158, from East of NC 34 at Belcross to NC 168, R-2574, Currituck and Camden Counties, ER 11-1152

Thank you for your submittal of March 13, 2013, transmitting the above report prepared by Dovetail Cultural Resource Group.

For the purpose of compliance with Section 106 of the National Historic Preservation Act, we concur that the following properties are eligible for listing in the National Register of Historic Places under the criteria cited, and that the proposed boundaries appear appropriate:

- **Creekmore Store and Gas Station** (CM 0009): Criterion A for Commerce and Criterion C for Architecture;
- **Tom Sawyer and Sons Complex** (CM 0085): Criterion A for Commerce and Criterion C for Architecture; and,
- **Cooper House** (CK 0331): Criterion C for Architecture.

We also concur that, barring additional information to the contrary, the following properties are *not* eligible for listing in the National Register at this time:

- **Village of Belcross Historic District** (CM 0095);
- **Run Swamp Canal** (CM 0091);
- **Don Roberts House** (CK 0375);
- **John Humphries House** (CK 0052);
- **Lindsey House** (CK 0179);
- **Forbes House** (CK 0414);
- **Jones House** (CK 0329); and,
- **Boswood Mathias House** (CK 0432).

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 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

cc: Mary Pope Furr, NC DOT, [mfurr@ncdot.gov](mailto:mfurr@ncdot.gov)  
Dr. Kerri Barile, Dovetail Cultural Resource Group, [kbarile@dovetailcrg.com](mailto:kbarile@dovetailcrg.com)



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory  
Secretary Susan Kluttz

Office of Archives and History  
Deputy Secretary Kevin Cherry

April 7, 2014

MEMORANDUM

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

FROM: Ramona M. Bartos *RMB for Ramona M. Bartos*

SUBJECT: Final Report, Cultural Resources Survey, Archaeological Evaluations, and Geophysical Survey for the Proposed Widening and Improvement to US 158 from NC 34 in Belcross to NC 168 in Barco, R-2574, Camden and Currituck Counties, ER 11-1152

Thank you for your letter of February 26, 2014 transmitting the survey report for the project referenced above. We have reviewed this report and offer the following comments.

A total 116 sites were addressed by this survey. These include 29 isolated finds and 87 sites. The isolated finds include:

31CK238	31CK273	31CK305 - 31CK306
31CK241 - 31CK243	31CK278 - 31CK279	31CK308
31CK246 - 31CK247	31CK290	31CK310
31CK250	31CK292	31CK325 - 31CK328
31CK254	31CK295	31CM76
31CK256	31CK301	31CM80
31CK261 - 31CK262		

None of these sites are recommended as eligible for the National Register of Historic Places (NRHP). No further work is recommended for these isolated finds. We concur with these recommendations.

The 87 sites addressed include 64 historic sites. These include:

31CK23	31CK248 - 31CK249	31CK280 - 31CK285	31CK311
31CK76	31CK251 - 31CK253	31CK288 - 31CK289	31CK313
31CK98	31CK255	31CK293 - 31CK294	31CK315 - 31CK324
31CK102	31CK257 - 31CK258	31CK296 - 31CK298	31CK329
31CK116	31CK260	31CK300	31CK331
31CK239	31CK263 - 31CK264	31CK303	31CM77
31CK240	31CK266 - 31CK269	31CK307	31CM79
31CK244	31CK274	31CK309	31CM81 - 31CM83

Three sites, 31CK252, 31CK260, and 31CK282, remain unassessed in terms of the NRHP due to loss of property access as a result of landowner objections. It is recommended that these sites be revisited and assessed if they are located within the preferred corridor and once the land has been acquired by NCDOT. None of the other sites listed above are recommended as eligible for the NRHP. No further work is recommended for these sites. We concur with these recommendations.

Sixteen cemeteries and 3 sites containing cemeteries were recorded. These include:

31CK35	31CK98	31CK275 - 31CK277	31CK299
31CK73 - 31CK74	31CK134 - 31CK138	31CK286	31CK314
31CK76	31CK271 - 31CK272	31CK291	

Of these, access was denied to sites 31CK134, 31CK272, AND 31CK286. It is recommended that additional work be conducted at these three sites if they are located within the preferred alternative. Avoidance is recommended for all of these cemeteries. If any of the cemeteries listed above are within the preferred alternative and avoidance is not possible, then it is recommended that the cemeteries be relocated. We concur with these recommendations.

Eleven sites were tested to determine NRHP status. These sites include:

31CK35	31CK245	31CK302	31CK330
31CK75	31CK265	31CK304	31CM78
31CK178	31CK270	31CK312	

All of the sites except 31CK178 are recommended as ineligible for the NRHP. 31CK178 is recommended as eligible for the NRHP under Criterion D. Avoidance of site 31CK178 is recommended. In the event avoidance is not possible, then the development and implementation of a mitigation plan is recommended. No further work is recommended for the balance of the tested sites. We concur with these recommendations.

The report meets our office's guidelines and those of the Secretary of the Interior. The present version of this document will serve as the final report for this project with the addition of an Errata Sheet to correct minor edits to the report. These specific comments are listed on a separate sheet for your review and to aid the report's authors to prepare an Errata Sheet.

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 or [renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

Specific Comments For Preparation of an Errata Sheet: Cultural Resources Survey, Archaeological Evaluations, and Geophysical Survey for the Proposed Widening and Improvement to US 158 from NC 34 in Belcross to NC 168 in Barco, Camden and Currituck Counties, TIP Project R-2574,  
ER 11-1152

Page 46 (Table 5.3) – The table total is 116 rather than 117.

Page 192 (Figure 5.63, 31CK315\*\*) – The figure shows TR205, ST26 as a positive test with prehistoric artifacts. The text states and Table 5.43 shows the site contains historic artifacts only.

Page 226 (31CM77\*\*) – Under the heading of “Material Culture” the text notes 18 artifacts including a terra cotta flower pot. The terra cotta pot does not appear listed in Table 5.50. Are there 18 or 19 artifacts?

Page 379 (Site Density) - The first paragraph, third sentence notes that 88 sites and 29 isolated finds were addressed as part of the survey. A total of 87 sites are noted within the survey area on page 378 in Table 6.1 and throughout the report.

Page 380 (Site Probability and Soil Drainage) – Second paragraph, first sentence states the APE contains 88 sites. Table 6.1 states 87 sites are located within the APE.

Page 380 (Table 6.2) – This table shows 88 sites including 17 cemeteries. Table 6.1 shows 87 sites with 16 cemeteries.

Page 381 (Table 6.3) – The chi-square test appears to have been calculated using 88 sites rather than 87. The chi-square values should be recalculated using the correct number of sites. In addition the data presented in Table 6.3 should be revised to reflect 87 sites.

Page 381 (General Text) – The general discussion in terms of percentages should be revised to reflect 87 sites rather than 88 sites.

Pages 381 – 382 (Table 6.4 and General Text) – Table 6.4 should be reviewed to insure that the data does not include an extra site. The data should be checked to insure it reflects information gleaned from 87 sites rather than 88 sites (to include the chi-square values). In addition, the discussion presented on page 382 should be checked to insure it reflects the correct number of sites (87) considered for the analysis and that an extra site has not been inserted inadvertently.



## NCDOT CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

<b>TIP #:</b>	R-2574	<b>County:</b>	Camden and Currituck
<b>WBS #:</b>	38802.1.1	<b>Federal Aid #:</b>	
<b>Federal Permit(s):</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Funding:</b>	<input checked="" type="checkbox"/> State <input type="checkbox"/> Federal
<b>Project Description:</b> Improve US 158 from East of NC 34 at Belcross to NC 168.			

On April 26, 2016, representatives of the

- North Carolina Department of Transportation (NCDOT)
- North Carolina State Historic Preservation Office (NC-HPO)
- Federal Agency \_\_\_\_\_
- Other

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

Signed:

  
 \_\_\_\_\_  
 Representative, NCDOT 4/26/16  
Date

  
 \_\_\_\_\_  
 Representative, NC-HPO 4.26.16  
Date

\_\_\_\_\_  
 Representative, Federal Agency Date

Property and Status	Alternative	Effect Finding	Reasons
Creekmore Store/Gas Station Determined Eligible		No effect	No Construction activities near Property.
Tom Sawyer and Sons Complex Determined Eligible		No effect	No Construction activities near Property.
Cooper House Determined Eligible		No effect	No Construction activities near Property.

Initialed: NCDOT KLH Federal Agency \_\_\_\_\_ NC-HPO \_\_\_\_\_

FHWA Intends to use the NC-HPO's concurrence as a basis for a "de minimis" finding for the following properties, pursuant to Section 4(f):



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
ENVIRONMENTAL ANALYSIS  
UNIT

US 158  
FROM EAST OF NC 34  
AT BELCROSS TO NC 168  
CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

**LEGEND**

— PROPOSED  
PAVEMENT  
— PROPOSED  
STRUCTURE

— PROPOSED  
SLOPE STAKES

— PROPOSED  
RIGHT OF WAY

— EXISTING  
RIGHT OF WAY

— ADJACENT PROJECT  
(NOT A PART OF  
THIS STUDY)

— DELINEATED  
WETLANDS

— DELINEATED  
STREAMS OR  
OPEN WATER

— 100-YEAR FLOODPLAIN  
HISTORIC PROPERTY  
(NATIONAL REGISTER  
ELIGIBLE)

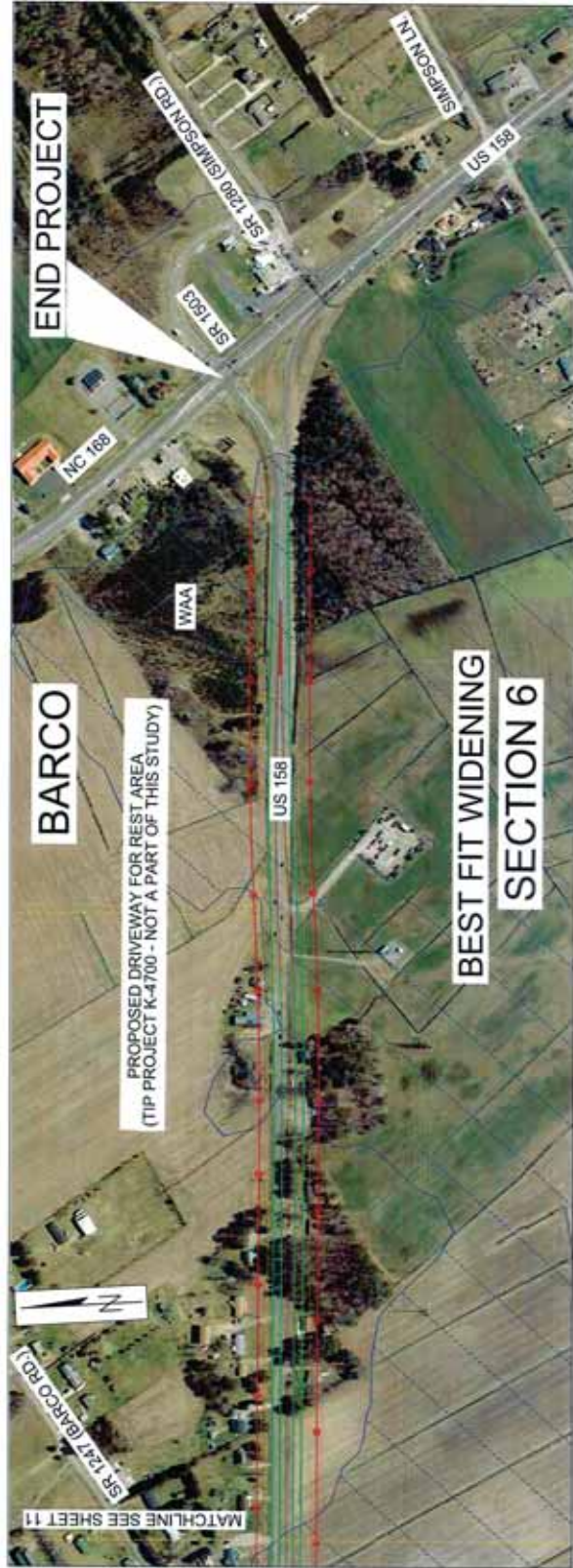
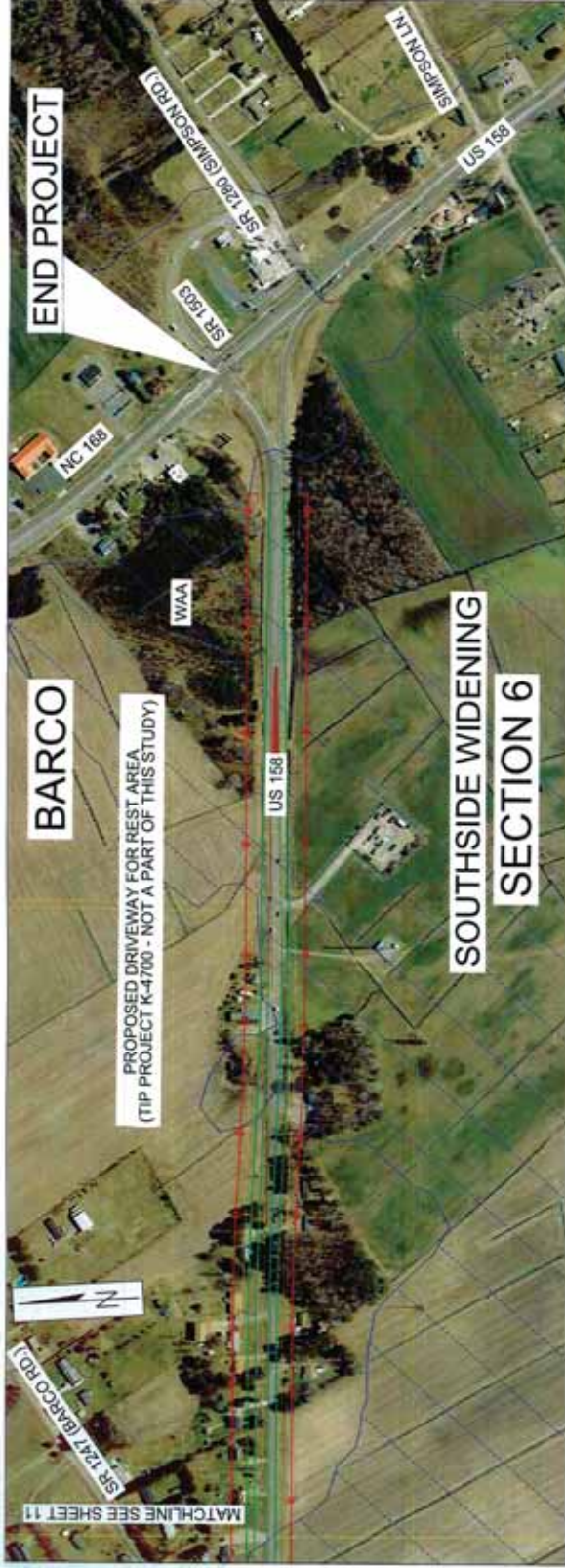
— GREAT SWAMP  
NATURAL HERITAGE  
AREA

— NORTH RIVER  
GAMELAND

0 FEET 400

SHEET 12 OF 12

**FIGURE 2**





NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
PROJECT DEVELOPMENT  
AND  
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UNIT

US 158  
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CAMDEN - CURRITUCK  
COUNTIES  
TIP PROJECT R-2574

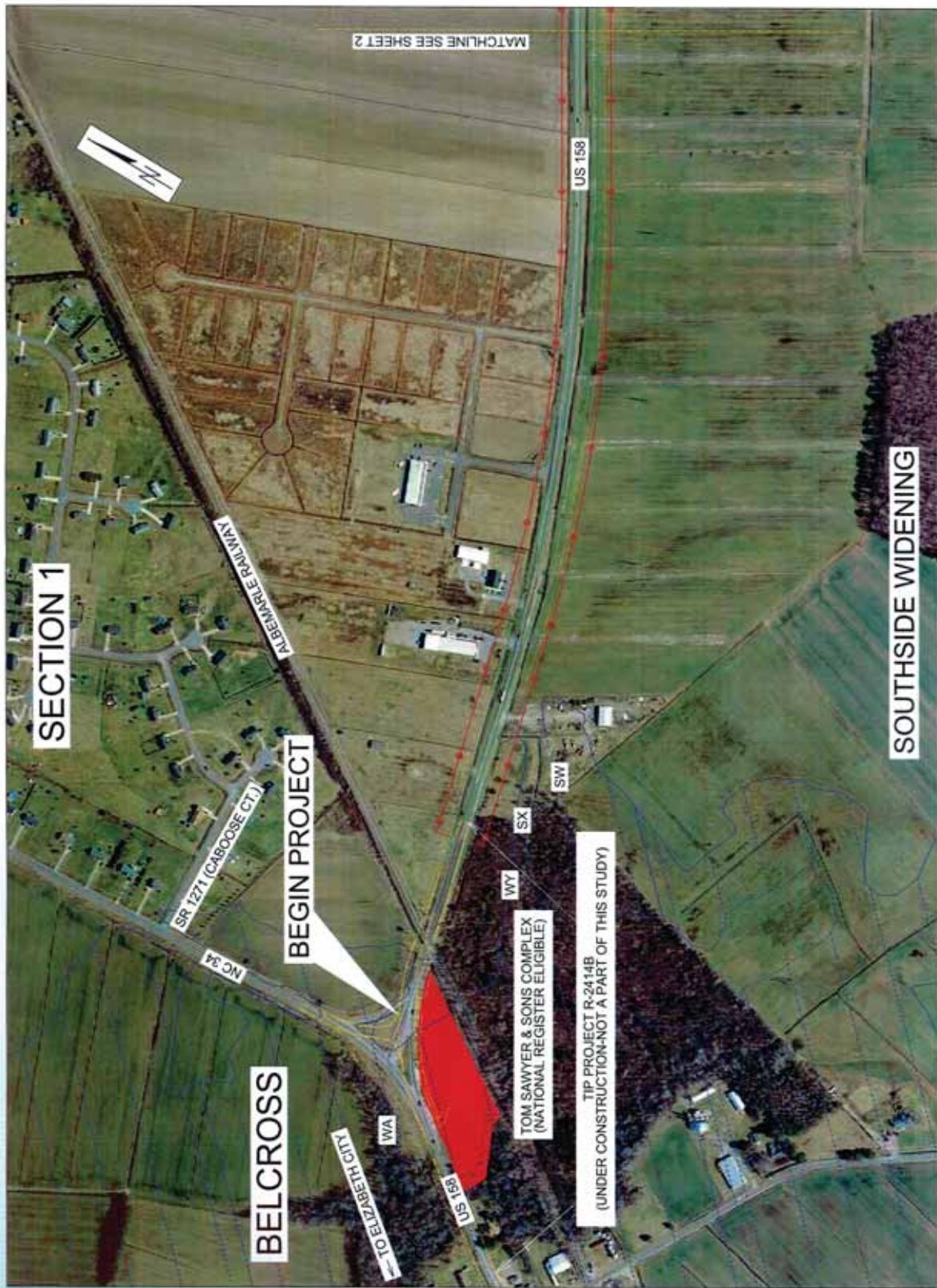
**LEGEND**

- PROPOSED PAVEMENT
- PROPOSED STRUCTURE
- PROPOSED SLOPE STAKES
- PROPOSED RIGHT OF WAY
- EXISTING RIGHT OF WAY
- ADJACENT PROJECT (NOT A PART OF THIS STUDY)
- DELINEATED WETLANDS
- DELINEATED STREAMS OR OPEN WATER
- 100-YEAR FLOODPLAIN
- HISTORIC PROPERTY (NATIONAL REGISTER ELIGIBLE)

0 FEET 400

SHEET 1 OF 12

**FIGURE 2**



**Appendix B – Relocation Assistance Program/  
Relocation Reports**

It is the policy of NCDOT to ensure that comparable replacement housing is available for those relocated, prior to construction of state and/or federally assisted projects. Furthermore, the NCDOT has three programs to minimize the inconvenience of relocation including relocation assistance, relocation moving payments, and relocation replacement housing payments or rent supplement.

With the Relocation Assistance Program, experienced NCDOT staff will be available to assist displacees with information such as availability and prices of homes, apartments, or businesses for sale or rent, and financing or other housing programs. The Relocation Moving Payments Program, in general, provides for payment of actual moving expenses encountered in relocation. Where a displacement will force an owner or tenant to purchase or rent property of higher cost or to lose a favorable financing arrangement (in cases of ownership), the Relocation Replacement Housing Payments or Rent Supplement Program will compensate owners and tenants who are eligible and qualify.

The relocation program for the proposed action will be conducted in accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) and the North Carolina Relocation Assistance Act (GS-133-5 through 133-18). This program is designed to provide assistance to displaced persons in relocating to a replacement site in which to live or do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will determine the needs of displaced families, individuals, businesses, non-profit organizations, and farm operations without regard to race, color, religion, sex, or national origin. The NCDOT will schedule its work to allow ample time, prior to displacement, for negotiations and possession of replacement housing that meets decent, safe, and sanitary standards. The displacees are given a 90-day written notice to vacate after NCDOT purchases the property. Relocation of displaced persons will be offered in areas not generally less desirable in regard to public utilities and commercial facilities.

Rent and sale prices of replacement housing will be within the financial budget of the families and individuals displaced and will be reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations, and farm operations in searching for and moving to replacement property.

All tenant and owner residential occupants who may be displaced will receive an explanation regarding all available options, such as: 1) purchases of replacement housing; 2) rental of replacement housing, either private or public; 3) moving existing owner-occupant housing to another site (if practicable). The relocation officer will also supply information concerning other state or federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location.

The Moving Expense Payments Program is designed to compensate the displaced persons for the costs of moving personal property from homes, businesses, non-profit organizations, and farm operations acquired for a highway project. Under the Replacement Program for Owners,

NCDOT will participate in reasonable incidental purchase payments for replacement dwellings such as attorney's fees, surveys, appraisals, and other closing costs and if applicable, make a payment for any increased interest payments, and incidental purchase expenses, except under the Last Resort Housing Provision.

A displaced tenant may be eligible to receive a payment to rent a replacement dwelling or to make a down payment, including incidental expenses, on the purchase of a replacement dwelling. The down payment is based upon what the state determines is required, when the rent supplement exceeds a given threshold.

It is a policy of the State that no person will be displaced by the NCDOT's federally-assisted construction projects unless and until comparable or adequate replacement housing has been offered or provided for each displacee within a reasonable period of time prior to displacement. No relocation payment received will be considered as income for the purpose of the Internal Revenue Code of 1954 or for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other federal law.

Last Resort Housing is a program used when comparable replacement housing is not available, or is unavailable within the displacee's financial means, and the replacement payment exceeds the federal and state legal limitation. The purpose of the program is to allow broad latitude in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided. The Last Resort Housing Program may be necessary if the opportunity for relocation within the area is inadequate.

EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.  CORRIDOR  DESIGN

WBS ELEMENT:	38802.1.1	COUNTY	Camden	Alternate Section 1/Roll 1 of South Side Widening Alternative
T.I.P. No.:	R2574			
DESCRIPTION OF PROJECT:	Widening of US 158 from East of NC 34 at Belcross to NC 168 (Camden and Currituck Counties)			

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	0	0	0	0	0	0	0	0	0
Businesses	0	0	0	0	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms / PP (personal property move)*	4 (p.p. signs & gate)	0	4	0	Owners	Tenants	For Sale	For Rent	
Non-Profit	0	0	0	0	0-20M	\$ 0-150	0-20M	\$ 0-150	



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?							
X		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 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? <b>6 month</b>							

REMARKS (Respond by Number)

3. No business relocation involved; closed business sites available for rehabilitation or immediate occupancy.

6. Internet and local contact revealed limited housing in the immediate project area, but recourses revealed housing counts listed above

\*Personal property move for 3 business signs and one gate

 D. Wade Brown, SR/WA, R/W-RAC Right of Way Agent	4/13/2016 Date	 Relocation Coordinator	5/17/16 Date
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# EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.  CORRIDOR  DESIGN

WBS ELEMENT:	38802.1.1	COUNTY	Camden/Currituck	Alternate Section 2/Roll 1 Of Best Fit Widening Alternate
T.I.P. No.:	R2574			
DESCRIPTION OF PROJECT:	Widening of US 158 from East of NC 34 at Belcross to NC 168 (Camden and Currituck Counties)			

ESTIMATED DISPLACED					INCOME LEVEL					
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP	
Residential	0	0	0	0	0	0	0	0	0	
Businesses	0	0	0	0	VALUE OF DWELLING			DSS DWELLING AVAILABLE		
Farms / PP (personal property move)*	0	0	0	0	Owners		Tenants		For Sale / For Rent	
Non-Profit	0	0	0	0	0-20M	0	\$ 0-150	0	0-20M	0
					20-40M	0	150-250	0	20-40M	0
					40-70M	0	250-400	0	40-70M	5
					70-100M	0	400-600	0	70-100M	5
					100 UP	0	600 UP	0	100 UP	10+
					TOTAL	0	0	0	20+	15+

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 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? <span style="float: right;">No Relocation</span>

REMARKS (Respond by Number)									
3. No business relocation involved but there are available; closed business sites available for rehabilitation or immediate occupancy.									

D. Wade Brown, SR/WA, R/W-RAC Right of Way Agent	4/13/2016 Date	Relocation Coordinator	5/17/16 Date
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EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.  CORRIDOR  DESIGN

WBS ELEMENT:	38802.1.1	COUNTY	Currituck	Alternate Section 3/Roll 2 Of Best Fit Alternate
T.I.P. No.:	R2574			
DESCRIPTION OF PROJECT:	Widening of US 158 from East of NC 34 at Belcross to NC 168 (Camden and Currituck Counties)			

ESTIMATED DISPLACED					INCOME LEVEL							
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP			
Residential	4	3	7	0	0	0	5	2	0			
Businesses	1	0	1	0	VALUE OF DWELLING				DSS DWELLING AVAILABLE			
Farms / PP (personal property move)*	5 pp/signs	6 billboards 4 pp/signs	15		Owners		Tenants		For Sale		For Rent	
Non-Profit	0	1	1	0	0-20M	20-40M	\$ 0-150	0-20M	\$ 0-150	0-20M	20-40M	150-250

ANSWER ALL QUESTIONS		Explain all "YES" answers.
Yes	No	
	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?
X		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 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? <b>18</b>

VALUE OF DWELLING		DSS DWELLING AVAILABLE					
Owners		Tenants		For Sale		For Rent	
0-20M	0	\$ 0-150	0	0-20M	0	\$ 0-150	0
20-40M	4	150-250	0	20-40M	0	150-250	0
40-70M	0	250-400	0	40-70M	5	250-400	0
70-100M	0	400-600	3	70-100M	5	400-600	5
100 UP	0	600 UP	0	100 UP	10+	600 UP	10+
TOTAL	4		3	20+			15+

**REMARKS (Respond by Number)**

2. New Vision Community Church relocation

3. No business relocation involved; closed business sites available for rehabilitation or immediate occupancy. 6 billboards in the project limits that will need to be relocated

4. Just a landlord

6. Internet and local contact revealed limited housing in the immediate project area but resources reveal housing counts listed above.

8. Population are considered low income and some appear not to be DS&S so some probability for super supplement payments to accommodate last resort housing issue.

9. Residential dwellings appear small in size and noted wheelchair ramps; some of observed occupants were elderly.

12. The above DS&S dwellings available appears to be sufficient to relocate the 6 relocations noted on this section.

13. See number 8 above. It is anticipated based on typical projects such as this along with census data that small percentage of displacees on this segment will involve last resort housing to resolve the relocation impact.

14. There are no businesses impacted on this alternative; however, suitable amount of vacant / closed businesses available. See number 3. Source: field inspection

15. Typical relocation time-frame should be sufficient to accommodate identified impacts.

\*2 abandoned homes located that do not appear to be in a condition to occupy or be DS&S  
6 billboards will need to be relocated



4/13/2016

Date

D. Wade Brown, SRWA, R/W-RAC  
Right of Way Agent



5/17/16

Date

Relocation Coordinator

EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.  CORRIDOR  DESIGN

WBS ELEMENT: 38802.1.1 COUNTY: Currituck Alternate Section 4/Roll 3 Of South Widening Alternate  
 T.I.P. No.: R2574  
 DESCRIPTION OF PROJECT: Widening of US 158 from East of NC 34 at Belcross to NC 168 (Camden and Currituck Counties)

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	0	0	0	0	0	0	0	0	0
Businesses	0	0	0	0	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms / PP (personal property move)*	2 (p.p. signs)	2 billboards	4		Owners	Tenants	For Sale	For Rent	
Non-Profit	0	0	0	0	0-20M	\$ 0-150	0-20M	\$ 0-150	

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?
X		6. Source for available housing (list).
	X	7. Will additional housing programs be needed?
	X	8. Should Last Resort Housing be considered?
X	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 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).
X		15. Number months estimated to complete RELOCATION? 18 months

20-40M	40-70M	70-100M	100 UP	TOTAL	150-250	250-400	400-600	600 UP	20-40M	40-70M	70-100M	100 UP	20+	150-250	250-400	400-600	600 UP	10+	15
0	0	0	0	0	0	0	0	0	0	5	5	10+	20+	0	0	0	0	10+	15

REMARKS (Respond by Number)



3. No business relocation involved; closed business sites available for rehabilitation or immediate occupancy.

6. Internet and local contact revealed limited housing in the immediate project area but resources reveal housing counts listed above.

14. There are no businesses impacted on this alternative; however, suitable amount of vacant / closed businesses available. See number 3. Source: field inspection

15. Typical relocation time-frame should be sufficient to accommodate identified impacts.

\*2 business signs relo  
\*2 billboard relocations

	4/13/2016		
D. Wade Brown, SR/WA, R/W-RAC Right of Way Agent	Date		5/17/16 Date
		Relocation Coordinator	

EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.  CORRIDOR  DESIGN

WBS ELEMENT: 38802.1.1 COUNTY: Currituck Alternate Section 5/Roll 3 Of South Widening Alternate  
 T.I.P. NO.: R2574  
 DESCRIPTION OF PROJECT: Widening of US 158 from East of NC 34 at Belcross to NC 168 (Camden and Currituck Counties)

ESTIMATED DISPLACEDS					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	0	3	3	3	0	0	3	0	0
Businesses	1	0	1	0	VALUE OF DWELLING			DSS DWELLING AVAILABLE	
Farms / PP (personal property move)*	15 (p.p./ signs)	2 billboards	17	0	Owners	Tenants	For Sale	For Rent	
Non-Profit	0	0	0	0	0-20M	\$ 0-150	0-20M	\$ 0-150	

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?
X		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 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).
X		15. Number months estimated to complete RELOCATION? 18 months

20-40M	0	150-250	0	20-40M	0	150-250	0
40-70M	0	250-400	3	40-70M	5	250-400	0
70-100M	0	400-600	0	70-100M	5	400-600	5
100 UP	0	600 UP	0	100 UP	10+	600 UP	10+
TOTAL	0		3		20+		15+

REMARKS (Respond by Number)

3. No business being displaced; no business relocation involved. Mobile home park office is a personal property move as it can be relocated on the remainder of property

4. Just a landlord

6. Internet and local contact revealed limited housing in the immediate project area but resources reveal housing counts listed above.

8. Most of the population are considered low income so some probability for super supplement payments to accommodate last resort housing issue.



9. Residential dwellings are mobile homes; some of observed occupants were elderly.

13. See number 8 above. It is anticipated based on typical projects such as this along with census data that small percentage of displacees on this segment will involve last resort housing to resolve the relocation impact.

14. see 3 above

15. Typical relocation time-frame should be sufficient to accommodate identified impacts.

\*15 personal property/sign relocations  
\*2 billboard relocations

 4/13/2016 Date  
 D. Wade Brown, SRWA, RW-RAC Right of Way Agent  
 5/17/16 Date  
 Relocation Coordinator

EIS RELOCATION REPORT

North Carolina Department of Transportation  
RELOCATION ASSISTANCE PROGRAM

E.I.S.  CORRIDOR  DESIGN

WBS ELEMENT: 38802.1.1 COUNTY: Currituck Alternate Section 6/Roll 3 Of Best Fit Widening Alternate  
 T.I.P. No.: R2574  
 DESCRIPTION OF PROJECT: Widening of US 158 from East of NC 34 at Belcross to NC 168 (Camden and Currituck Counties)

ESTIMATED DISPLACED					INCOME LEVEL				
Type of Displacees	Owners	Tenants	Total	Minorities	0-15M	15-25M	25-35M	35-50M	50 UP
Residential	4	6	10	4	0	6	3	1	0
Businesses	3	0	3	0	VALUE OF DWELLING		DSS DWELLING AVAILABLE		
Farms / PP (personal property move)*	5 (p.p. sign)	2 (p.p./ sign) 3 billboard	10	1	Owners	Tenants	For Sale	For Rent	
Non-Profit	0	1	1	0	0-20M	\$ 0-150	3	0-20M	\$ 0-150

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?
X		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 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? <b>18 months</b>

0-20M	20-40M	40-70M	70-100M	100 UP	TOTAL	\$ 0-150	150-250	250-400	400-600	600 UP	0-20M	20-40M	40-70M	70-100M	100 UP	20+
0	0	4	0	0	4	3	1	2	0	0	0	0	5	5	10+	15+

REMARKS (Respond by Number)

2. Church of Latter Day Saint in take area

3. Yes-business sites available for rehabilitation or immediate occupancy.

4.-No-business currently closed - *Just 3 landlords*

6. Internet and local contact revealed limited housing in the immediate project area but resources reveal housing counts listed above.

8. Population are considered low income so some probability for super supplement payments to accommodate last resort housing issue.

9. Residential dwellings appear small in size; some of observed occupants were elderly.

13. See number 8 above. It is anticipated based on typical projects such as this along with census data that small percentage of displacees on this segment will involve last resort housing to resolve the relocation impact.

14. see 3 above

\*Personal property move for 5 signs and 2 billboards

*[Signature]* 4/13/2016 Date  
 D. Wade Brown, SRWA, R/W-RAC Right of Way Agent

*[Signature]* 5/17/16 Date  
 Relocation Coordinator

## **Appendix C – Merger Team Correspondence**





# NEPA/404 MERGER TEAM AGREEMENT

## Concurrence Point No. 2: Alternatives for Detailed Study

**PROJECT DESCRIPTION:**


US 158 (Shortcut Road), from east of NC 34 (Shawboro Road) at Belcross to NC 168 (Caratoke Highway), Camden-Currituck Counties, TIP Project R-2574

**Alternatives For Detailed Study:** The following are the project alternatives for detailed study:

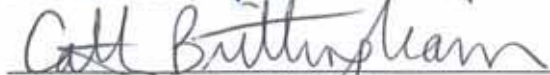
Section Number	Section Description	Length (miles)	(Check All That Apply) Widening Alternative		
			North Side	South Side	Best Fit
1	West end of project to just west of SR 1135	1.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Just west of SR 1135 in Camden County to approximately 0.6 mile west of the western SR 1148 intersection in Currituck County	0.7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Approximately 0.6 mile west of the western SR 1148 intersection to approx. 0.7 mile east of the eastern SR 1148 intersection	3.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Approximately 0.7 mile east of the eastern SR 1148 intersection to approximately 0.1 mile east of Maple Road	1.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Approximately 0.1 mile east of Maple Road to approximately 0.2 mile west of Will Poyner Lane	1.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Approximately 0.2 mile west of Will Poyner Lane to east end of project	1.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The Project Team concurred on this date of December 18, 2014 with the detailed study alternatives carried forward (DSA) as described above.

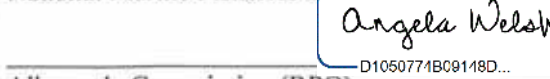
  
US Army Corps of Engineers

  
US Fish and Wildlife Service

  
NC Division of Water Resources

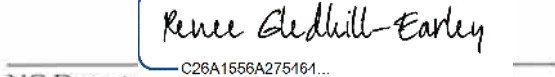
  
NC Division of Coastal Management


  
National Marine Fisheries Service

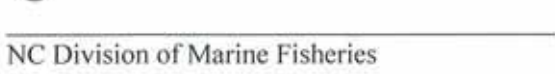
  
Albemarle Commission (RPO)

  
US Environmental Protection Agency

  
NC Wildlife Resources Commission

  
NC Department of Cultural Resources

  
NC Department of Transportation

  
NC Division of Marine Fisheries

# NEPA/404 MERGER TEAM AGREEMENT

## Concurrence Point No. 2: *Alternatives for Detailed Study*

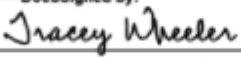
**PROJECT DESCRIPTION:**

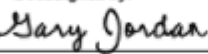
US 158 (Shortcut Road), from east of NC 34 (Shawboro Road) at Belcross to NC 168 (Caratoke Highway), Camden-Currituck Counties, TIP Project R-2574

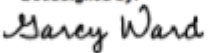
**Alternatives For Detailed Study:** The following are the revised project alternatives for detailed study:


Section Number	Section Description	Length (miles)	(Check All That Apply) Widening Alternative		
			North Side	South Side	Best Fit
1	West end of project to just west of SR 1135	1.5		✓	
2	Just west of SR 1135 in Camden County to approximately 0.6 mile west of the western SR 1148 intersection in Currituck County	0.7			✓
3	Approximately 0.6 mile west of the western SR 1148 intersection to approx. 0.7 mile east of the eastern SR 1148 intersection	3.5			✓
4	Approximately 0.7 mile east of the eastern SR 1148 intersection to approximately 0.1 mile east of Maple Road	1.4		✓	
5	Approximately 0.1 mile east of Maple Road to approximately 0.2 mile west of Will Poyner Lane	1.1		✓	
6	Approximately 0.2 mile west of Will Poyner Lane to east end of project	1.6			✓


The Project Team concurred on this date of January 26, 2016 with the revised detailed study alternatives carried forward (DSA) as described above. This concurrence form supersedes the form signed December 18, 2014.

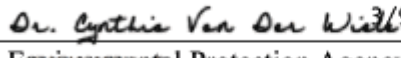
DocuSigned by:  
 3/21/2016  
 US Army Corps of Engineers

DocuSigned by:  
 3/14/2016  
 US Fish and Wildlife Service

DocuSigned by:  
 3/11/2016  
 NC Division of Water Resources

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 3/14/2016  
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 Albemarle Commission (RPO)

# NEPA/404 MERGER TEAM AGREEMENT

## Concurrence Point No. 2A: *Bridging Decisions and Alignment Review*

**PROJECT DESCRIPTION:**

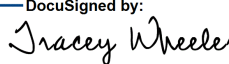
US 158 (Shortcut Road), from east of NC 34 (Shawboro Road) at Belcross to NC 168 (Caratoke Highway), Camden-Currituck Counties, TIP Project R-2574

**Recommended Major Structures**

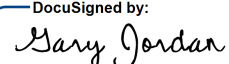
SITE NUMBER	LOCATION	EXISTING STRUCTURE NO., SIZE, TYPE	PROPOSED STRUCTURE SIZE, TYPE
1	Run Swamp Canal	1 span, 42' x 45' bridge	Replace with 2 @ 36' x 100' bridges
2	Run Swamp Canal	2 span, 28' x 70' bridge	Replace with 2 @ 36' x 120' bridges
3	Drainage Canal #1	117"x79" CMP	Replace with 2 @ 9' x 7' RCBC
4A	Great Swamp	2 @ 60" CMP	Retain and extend existing by 142'
4B	Great Swamp	2 @ 72" CMP	Retain and extend existing by 67'
4C	Great Swamp	2 @ 72" CMP	Retain and extend existing by 105'

NOTES: CMP = Corrugated Metal Pipe, RCBC = Reinforced Concrete Box Culvert

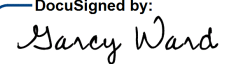
The Project Team has concurred with the major drainage structures for the proposed project as described above.

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