

## **MERGER TEAM MEETING – CONCURRENCE POINT (CP) 3 AND CONCURRENCE POINT 4A**

**US 158 (SHORTCUT ROAD) IMPROVEMENTS – FROM EAST OF NC 34  
(SHAWBORO ROAD) AT BELCROSS TO NC 168 (CARATOKE HIGHWAY)  
CAMDEN AND CURRITUCK COUNTIES  
STIP PROJECT NO. R-2574**

**APRIL 17, 2019**

### **PURPOSE OF THIS MEETING**

The purpose of today's meeting is to provide the Merger team with a project update and to discuss the Least Environmentally Damaging and Practicable Alternative (LEDPA) (CP 3) and preview Avoidance and Minimization (CP 4A). Concurrence will be requested on LEDPA and information will be provided on Avoidance and Minimization during today's meeting.

### **PROJECT DESCRIPTION**

North Carolina State Transportation Improvement Program (STIP) Project No. R-2574 consists of widening US 158 to multilanes from east of NC 34 (Shawboro Road) at Belcross in Camden County to US 158/ NC 168 (Caratoke Highway) in Currituck County, a distance of approximately 10.6 miles. Proposed improvements include four 12-foot travel lanes, a 46-foot median and 8-foot grassed shoulders (4-foot paved) to accommodate bicyclists. Access will be limited to one driveway per parcel with no other access, with some exceptions for larger properties. Directional crossovers are proposed at select intersections that will restrict left turns and through movements onto U.S. 158, redirecting traffic to U-turns. This project is included in the 2018-2027 STIP.

### **PROJECT SCHEDULE/COST**

The right-of-way acquisition and construction schedule for the project in the 2018-2027 STIP is currently:

Begin Right-of-Way Acquisition: Fiscal Year (FY) 2023  
Begin Construction: FY 2025

Table 1 outlines the next major milestones in the development of the project leading to right-of-way acquisition and construction. Table 2 provides the 2018-2027 State Transportation Improvement Program (STIP) project funding.

**Table 1. Project Schedule**

Next Steps	Date*
LEDPA Concurrence Point 3	April 2019
Avoidance and Minimization/Concurrence Point 4	April 2019
Complete the Final Environmental Document (SFONSI)	May 2019
Begin Final Design	March 2019
Begin Right-of-Way Acquisition	FY 2023
Begin Construction	FY 2025

**Table 2. Cost Estimates (STIP)**

	Estimated Cost
Project Development/Design	\$2.3 Million
Right-of-Way & Utilities	\$13.49 Million
Construction	\$20.13 Million
Future Costs (unfunded)	\$80.52 Million
<b>Total Cost</b>	<b>\$116.44 Million</b>

## **MERGER HISTORY**

### ***Project Purpose (CP 1)***

Formal concurrence on the project purpose was reached on September 19, 2013.

**Purpose statement:** 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.

*Improving capacity was identified as the primary purpose for the project, with regional needs and hurricane evacuation as secondary purposes.*

*Traffic forecasts for the project were updated in April 2018. The forecasted traffic in the design year of the project (2040) is between 12,000 vehicles per day and 12,800 vehicles per day. This level of traffic is consistent with traffic projections at the time of CP 1 concurrence and confirms that improved capacity is still a need for the project.*

The merger team agreed to a study area width of 1,000 feet that includes the large wetland systems in the area.

## **Alternatives for Detailed Study (CP 2)**

Formal concurrence on alternatives for detailed study was reached on December 18, 2014. Subsequently, formal concurrence on revised alternatives for detailed study was reached on January 26, 2016.

Alternatives for improvement of existing facilities were developed for the proposed project.

### **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.

### **Build Alternative: Widen 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. These sections are:

- 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 approx. 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 - 1.4 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

Team members agreed to evaluate a No-Build Alternative, as well as an

alternative to widen existing US 158. The project was divided into six segments for the build alternative to analyze potential impacts, and north side, south side, and best fit widenings were considered for each section. A summary of impacts associated with northern and southern alignments of each segment is provided in **Table 3** below:

**Table 3. Impacts associated with northern and southern alignments for each Build-Alternative segment**

Section	1		2		3		4		5		6	
	N	S	N	S	N	S	N	S	N	S	N	S
North Side (N) South Side (S)	0	0	13.3	13.3	0.4	0.6	28.7	27.91	0.4	0.1	1.0	0.4
Delineated Wetlands (ac)	0	0	13.3	13.3	0.4	0.6	28.7	27.91	0.4	0.1	1.0	0.4
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
RW 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

250-foot impact area

\*Tributaries to Waters of the U.S.

\*\*Churches

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

Historic properties and cemeteries were not expected to be affected by any alignment of the project, and community facilities could be affected by right of way, but were not expected to be relocated. Other potential impacts associated with each alignment were evaluated section-by-section based on the following factors:

- Jurisdictional wetlands, streams, and surface waters as described in the Natural Resources Technical Report that was completed for the project.
- Construction limits assumed to be within a 250-foot impact area.
- Potential relocations of homes, businesses, and non-profits based on the assumed impact area.

**After reviewing all alignments for all six segments of the project, the Merger Team and NCDOT agreed on December 18, 2014 to evaluate the following widening preferences for each section:**

- Section 1 - south side
- Section 2 - best fit
- Section 3 - north side and best fit
- Section 4 - south side
- Section 5 - south side
- Section 6 - south side and best fit

The segments and reasoning for these selections are described in Table 4 below:

**Table 4. Alternatives segments selected for study**

Section Number	Length (miles)	Widening Alternative			Reasons for selection/impact comparison
		North Side	South Side	Best Fit	
1	1.5		✓		A business park is being developed on the north side, and a south side widening would reduce business impacts.
2	0.7			✓	Wetlands in this area have a high quality rating. Since jurisdictional impacts and relocations were comparable for the northern and southern alignments, a best-fit alternative was selected to join with Section 3.
3	3.5	✓		✓	The north side widening would result in fewer wetland and stream impacts, while the best-fit widening would likely reduce the number of residential relocations.
4	1.4		✓		This section passes through Great Swamp, Great Swamp Natural Heritage Area, and the North River Game Land. A south side alternative would minimize wetland impacts, as well as impacts to the North River Game Land.
5	1.1		✓		The south side alternative is preferable to minimize impacts to wetlands, the Currituck County Regional Airport, and Central Elementary School. There may be impacts to the North River Game Land, which occupies the south side of US 158 in this section.
6	1.6		✓	✓	A south side alternative was selected for study, since it will likely reduce impacts to wetlands and homes. A best-fit alignment was also requested to be studied in detail since it could minimize the required number of relocations.

Best Fit widening was incorporated in to the alternatives (Sections 2, 3, and 6) considered to balance impacts in each section and to minimize impacts to existing homes and businesses in Sections 2, 3 and 6.

Estimated impacts of the detailed study alternatives are shown on Table 5 below.

**Table 5: Detailed Study Alternatives Comparison**

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

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 formally concurred with removing north side widening in Section 3 and south side widening in Section 6 from the detailed study alternatives at a subsequent CP 2 meeting held on January 26, 2016.**

### ***Bridging Decisions and Alignment Review (CP 2A)***

**Formal concurrence on bridging decisions was reached on June 29, 2016.**

US 158 is a barrier across the Run Swamp and the Great Swamp. In North Carolina, the highest incidents of vehicles striking black bears occur on US 158 in the project area and near Coinjock. Options were considered to increase permeability for wildlife passage within the Great Swamp.

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)

One Corrugated Metal Pipe carrying a drainage canal under the roadway at Site No. 3 will require replacement with a Reinforced Concrete Box Culvert. Three additional CMPs associated with Great Swamp at Sites 4A, 4B, and 4C will require extensions. The bridges over Run Swamp Canal, a CAMA Public Trust Water and anadromous fish spawning area, at Sites 1 and 2 will be replaced with dual bridges (36' x 100' and 36' x 120', respectively) that are longer than hydraulic requirements call for to accommodate impacts to wildlife passage. No new major drainage structures are proposed. Table 6 provides additional detail on the existing and proposed major drainage structures.

**Table 6. Recommended Major Drainage Structures**

SITE NO.	LOCATION	EXISTING STRUCTURE NO., SIZE, TYPE	PROPOSED STRUCTURE SIZE, TYPE
1	Run Swamp Canal Section 2	Bridge #1, 1 span, 42' x 45' cored slab bridge	Replace with 2 @ 36' x 100' bridges (Best Fit Alignment)
2	Run Swamp Canal Section 2	Bridge #9, 2 span, 28' x 70' cored slab bridge	Replace with 2 @ 36' x 120' bridges (Best Fit Alignment)
3	Drainage Canal #1 Section 3	Culvert #P005, 117"x79" CMP	Replace with 2 @ 9' x 7' RCBC (Best Fit Alignment)
4A	Great Swamp Section 4	2 @ 60" CMP	Retain and extend existing by 142' (South Side Alignment)
4B	Great Swamp Section 4	2 @ 72" CMP	Retain and extend existing by 67' (South Side Alignment)
4C	Great Swamp Section 4	2 @ 72" CMP	Retain and extend existing by 105' (South Side Alignment)

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

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



## **PUBLIC INVOLVEMENT**

A citizen's 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.

A public hearing was held on Tuesday, June 5, 2018 at the Currituck Cooperative Extension Center (Barco). Approximately 61 members of the public and 11 local officials attended the meeting, and 15 comment sheets were collected. The meeting consisted of a formal presentation for local officials by NCDOT representatives, followed by an open house for the general public. The public meeting maps illustrated proposed right-of-way, easements, roadway improvements, and intersection treatments. Comments received are summarized below:

- Two of the comments were in favor of the project
- One of the comments was opposed to the project.
- Three comments provided general feedback
- Nine comments recognized the need for the project but had questions or suggestions.
- General concerns that were raised were related to:
  - The spacing and number of U-turn bulbs incorporated in the design
  - U-turn bulbs accommodating large trucks used for agricultural operations in the area, notably near Indiantown Road
  - Impacts of U-turn movements to congestion
  - Impacts to emergency services response times and property
  - General impacts to properties and access
  - Safety impacts related to pedestrian access, notably affecting residents, including children, of Ponderosa Park, a mobile home community located along the project just south of US 158.

Prior to the public meeting, members of HDR performed a survey of the residents located within Ponderosa Park. This was done by going door to door and asking homeowners to complete the survey in order to help gauge the resident's opinions on the proposed project, as well as their feelings towards their neighborhood.

The USACE Public Notice was posted and the 30-day comment period expired on February 13, 2019. **No public comments were received during the comment period.**

### **CONCURRENCE POINT (CP) 3 – LEAST ENVIRONMENTALLY DAMAGING AND PRACTICABLE ALTERNATIVE**

- The alternatives that were evaluated are described in detail above in the CP 2 section. The build alternative carried forward and presented as the preferred alternative in the State Environmental Assessment (June 29, 2016) is described below.
- Build Alternative: Widen US 158

Widening existing US 158 would increase roadway capacity as well as support regional transportation needs and hurricane evacuation.

The proposed design for this alternative assumes the best fit widening options for Sections 2, 3, and 6, and south side widening for Sections 1,4, and 5.

The build alternative would impact approximately 492 linear feet of streams, 33.3 acres of wetlands, 19.4 acres of surface water, and 136.4 acres of floodplain. Detailed impacts for each segment are described below and in Table 7 below.

#### Section 1 (South side widening)

- South side widening is expected to require one relocation and no impacts to streams, wetlands, or surface waters.

#### Section 2 (Best fit widening)

- Best fit widening is expected to require one relocation, 10.8 acres of wetlands, and 3.7 acres of surface waters and no streams. Bridge #1 (Site 1) and Bridge #9 (Site 2) over Run Swamp Canal are located along this segment.

#### Section 3 (Best fit widening)

- Best fit widening is expected to require 10 relocations, 0.63 acre of Great Swamp Natural Heritage Area, 0.3 acre of wetlands, and 0.7 acre of surface waters. A corrugated metal pipe (CMP) arch exists at Site 3 (Drainage Canal #1) in this section.

#### Section 4 (South side widening)

- This section passes through Great Swamp, North River Game Land, and Great Swamp Natural Heritage Area. South side widening is expected to require no relocations, 41.8 acres of Great Swamp Natural Heritage Area, 9.0 acres of North River Game Land, 19.3 acres of wetlands, no streams, and 14.2 acres of surface waters. Three CMP's at Sites 4A, 4B, and 4C are proposed to be retained and extended along this segment. These are equalizer pipes, and there is no distinct channel.

#### Section 5 (South side widening)

- South side widening is expected to require five relocations, less than 0.1 acre of North River Game Land, 0.1 acre of wetlands, 156 feet of stream, and 0.1 acre of surface waters.

#### Section 6 (Best fit widening)

- Best fit widening is expected to require 18 relocations, 0.4 acre of wetlands, no streams, and 0.6 acre of surface waters.

A preferred alternative was selected based on the alignment options and balancing of impacts described above. Rationale for selecting the preferred alternative by section is presented below in Table 7.

**Table 7: Widening Scenarios Selected for the Preferred Alternative**

Section	Scenario Selected	Reason For Selection
1	South Side	Fewer business relocations
2	Best-Fit	Best fit for bridge at Run Swamp Canal
3	Best Fit	Fewer residential relocations
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	Best Fit	Fewer business and residential relocations

The estimated impacts for the preferred alternative are described in Table 8 below.

**Table 8. Anticipated Environmental Effects of the Preferred Alternative.**

Relocations	
Residential	20
Business	5
Non-Profit	2
<b>Total</b>	<b>27</b>
Other	
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
Length of Proposed Improvements (miles)	10.5
Water Resources	
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

## PREVIEW OF CONCURRENCE POINT (CP) 4A – AVOIDANCE AND MINIMIZATION

Throughout the project development process the project team has examined ways to avoid and minimize impacts to the human and natural environment. These measures have been incorporated into the preliminary design. Avoidance and minimization efforts include:

### Jurisdictional Features

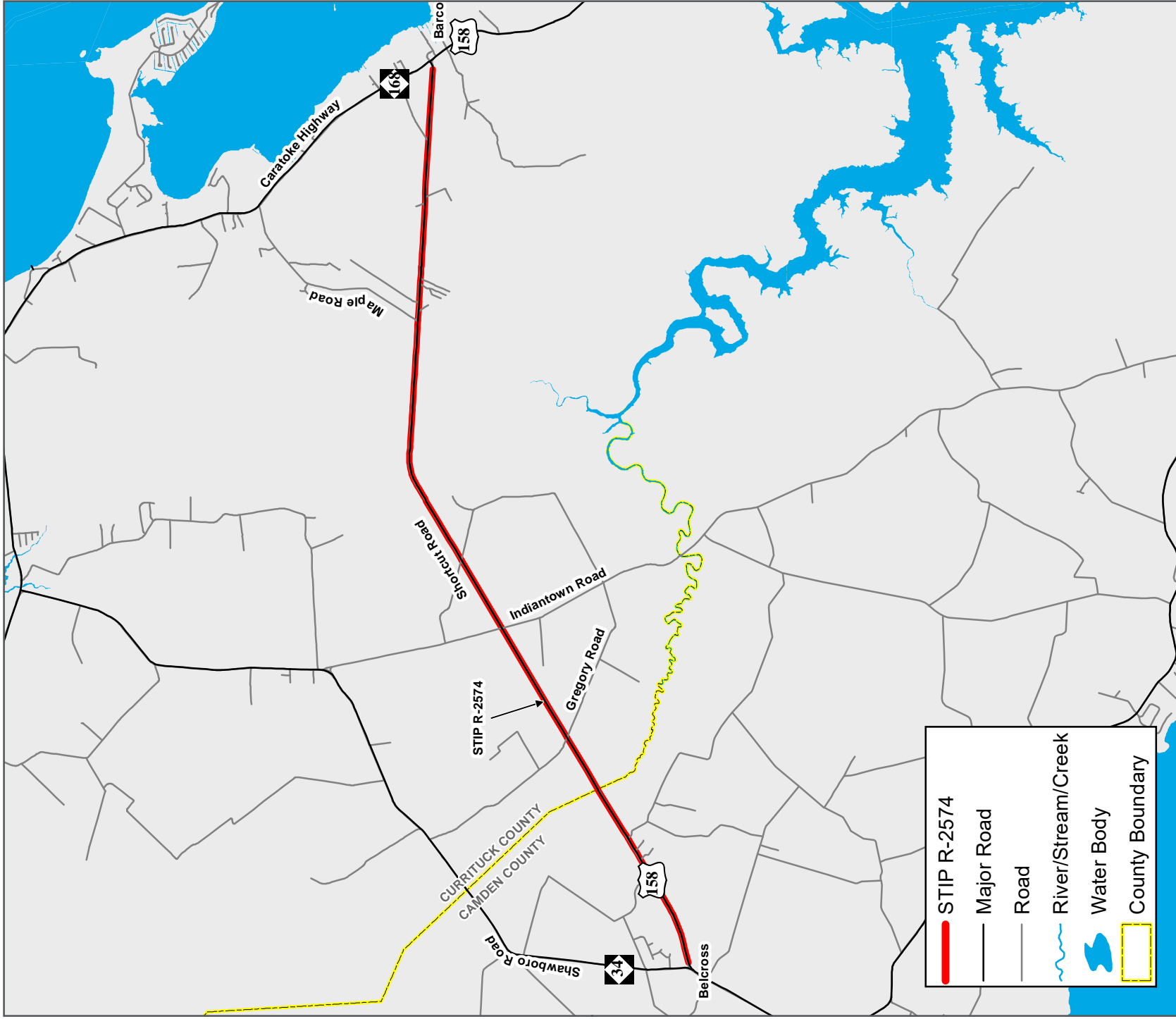
- All alternatives were designed to avoid and minimize impacts along the project corridor, including those to Great Swamp, Run Swamp, and other jurisdictional streams and wetlands within the study area.
- Proposed U-turn bulbs that were previously designed within the boundaries of Great Swamp were revised to minimize impacts to jurisdictional water features within the study area.
- The proposed best-fit alignments along Sections 3 and 6 were designed to cross jurisdictional features as perpendicularly as possible while also minimizing relocation impacts.
- The alignment for Section 4 was selected to minimize impacts to wetlands, as well as North River Game Land.
- Section 5 was aligned to the south to limit impacts to wetlands in this area.
- The project corridor is a notable barrier to wildlife, and a high number of black bear strikes occur along this roadway. The design has been developed with consideration for this issue and will be constructed to enhance wildlife passage across the roadway. Wider offsets that exclude rip-rap are being considered at the Run Swamp Canal crossing, and the Bridges #1 and #9 have been lengthened with supporting piers outside of the center of the channel to enhance wildlife permeability.
- The proposed alignment will continue to be refined to minimize impacts to protected areas along the corridor, including North River Game Land and Great Swamp National Heritage Area, as well as prime farmlands and forested areas.

### Other Minimization and Avoidance Measures

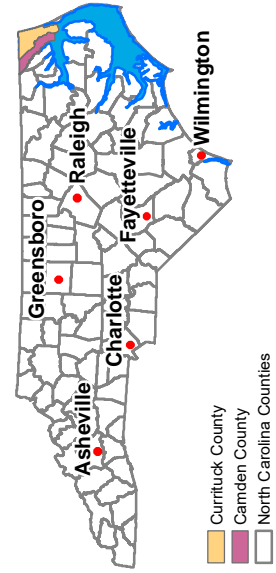
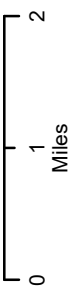
- Directional crossover intersection treatments are proposed at the US 158 intersections with North Gregory Road (SR 1148) and North Indiantown Road (SR 1147), with additional at-grade intersection configurations, median openings, and U-turn bulbs at select locations in between. These configurations, as opposed to conventional intersections, are proposed to minimize the number of lanes needed to support regional transportation needs and enhance the traffic carrying capacity of US 158 for emergency response and day-to-day operations.
- Section 1 was aligned to the south to avoid anticipated business impacts to the north side.
- In addition to limiting wetland impacts, Section 5 was aligned to the south to minimize impacts to the Currituck County Regional Airport and Central Elementary School.

- The project was designed to minimize impacts to the Dominion Power easement, which parallels US 158 and crosses the corridor at North River Road (SR 1135) and between Four Forks Road (SR 1148) and Maple Road (SR 1246).
- The best-fit widening options for both Sections 3 and 6 were selected on the basis that they would result in fewer (3 and 5 fewer, respectively) relocations compared to the other alignments being considered along these segments. The design will continue to be refined as needed to minimize property impacts and relocations.
- Public involvement activities revealed that the design presented at the June 2018 public hearing did not sufficiently provide median U-turn locations to facilitate westbound travel for southern properties east of Four Forks Road. The design will be refined to place a U-turn bulb between Barco Way and US 168.
- Additional coordination between NCDOT and local emergency service management (EMS) officials is underway to evaluate the potential for the addition of mountable medians and other crossover accommodations to reduce impacts to EMS operations.
- As previously mentioned, outreach activities occurred in June of 2018 to thoroughly evaluate potential project impacts that may occur to special populations residing at the Ponderosa Park. Attention and accommodations will continue to be made for Environmental Justice, Title VI, and special populations present along the STIP R-2574 corridor through project design development. Additional internal coordination is underway to examine the feasibility of providing crossing and other pedestrian accommodations for this community. Some factors being considered by the NCDOT Bicycle and Pedestrian Transportation Division include:
  - If applicable, the crossing facility type that is most appropriate and most feasible given the context.
  - Roadway characteristics (e.g. design speed, crossing distance, sight distance), traffic volume, pedestrian volume, heavy vehicle traffic, future land use, and crash history.
  - Pedestrian accommodations would be contingent upon further coordination with Currituck County and the addition of the multiuse path on the north side of US 158.
- Because of the high agricultural traffic along US 158 and Indiantown Road, the design will be modified with more consideration for the number and placement of U-turn bulbs. The pork chops and center islands have been designed for the WB-67 trailer size, and some of the medians have been pulled back. All design revisions moving forward will be made with consideration for the heavy use of agricultural grain trucks along US 158 and Y-lines, especially Indiantown Road.

Additional minimization may be achieved during final design when final surveys are available and project hydraulic design (CP 4B and 4C) and utility relocation design commence.



	STIP R-2574
	Major Road
	Road
	River/Stream/Creek
	Water Body
	County Boundary



**VICINITY MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM NC 34  
 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY),  
 WITH MULTI-USE PATH FROM  
 SR 1246 (MAPLE ROAD)  
 TO NC 168.  
 JULY 2018

# Section 1

# Southside Widening

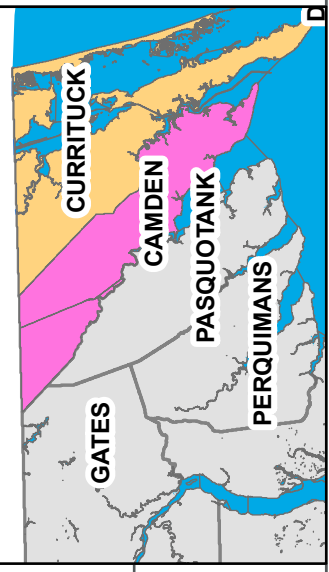


Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM  
 NC 34 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY), WITH  
 MULTI-USE PATH FROM SR 1246  
 (MAPLE ROAD) TO NC 168.

MARCH 2019

- Existing Edge of Pavement
- - - Slope Stakes Plus 25 Feet
- Jurisdictional Stream
- Tributary to Waters of the US
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland



**FDR**

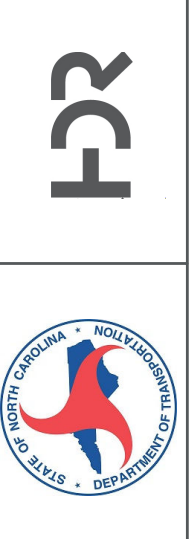
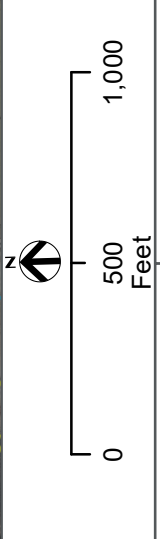
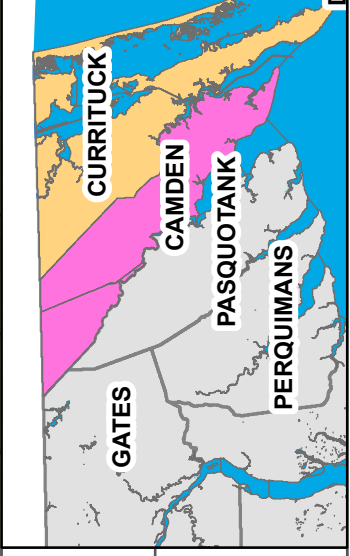


Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
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MARCH 2019

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- Jurisdictional Wetland
- Impacted Wetland



**Southside Widening**

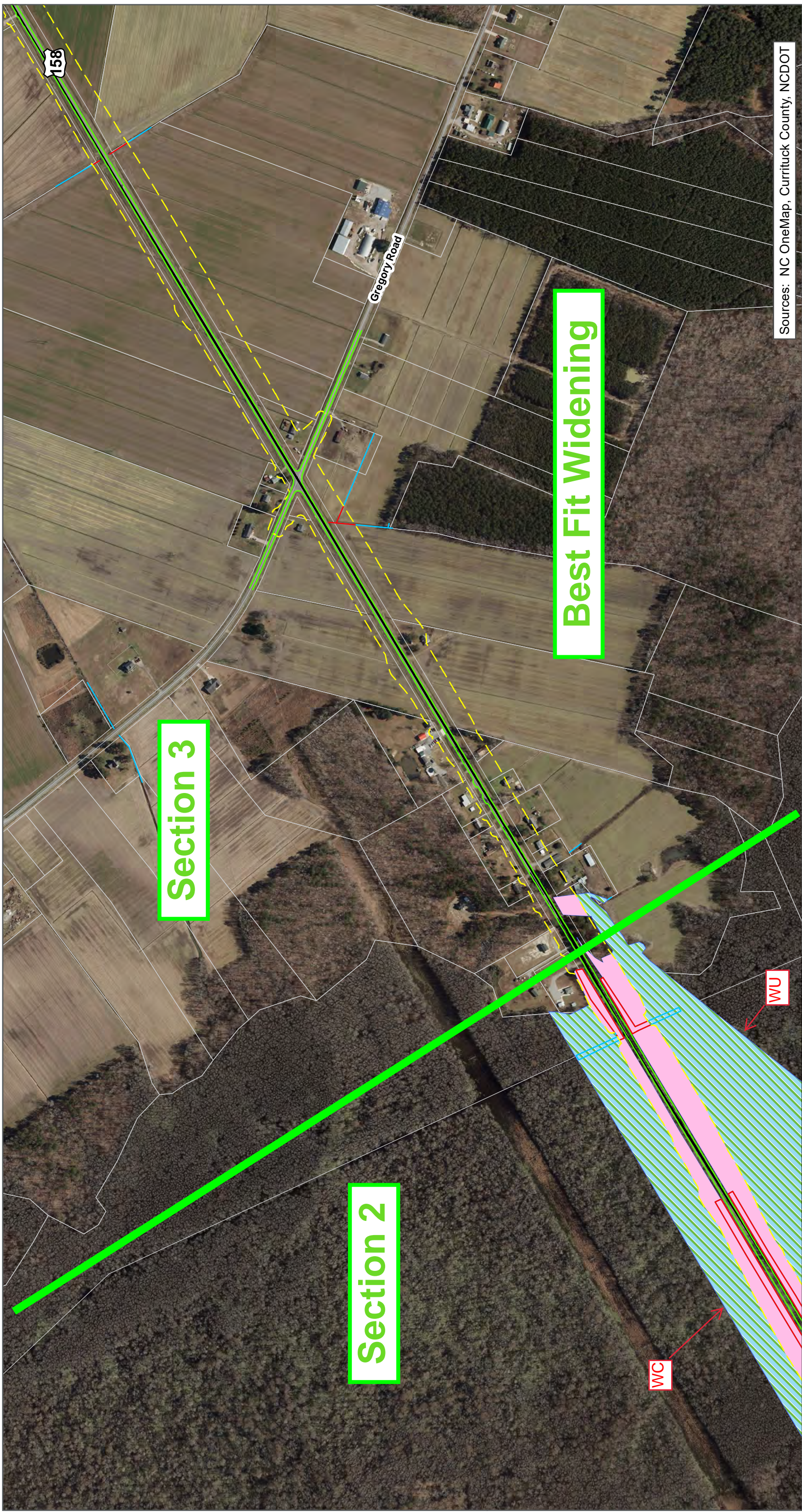
**Section 2**

**Section 1**

Whitehurst Lane

158



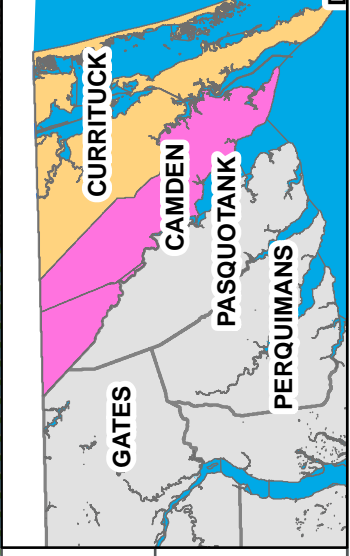


Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
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MARCH 2019

- Existing Edge of Pavement
- Tributary to Waters of the US
- Slope Stakes Plus 25 Feet
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland



0 500 1,000  
Feet

**Section 3**

**Section 2**

**Best Fit Widening**

WU

WC

Gregory Road

158



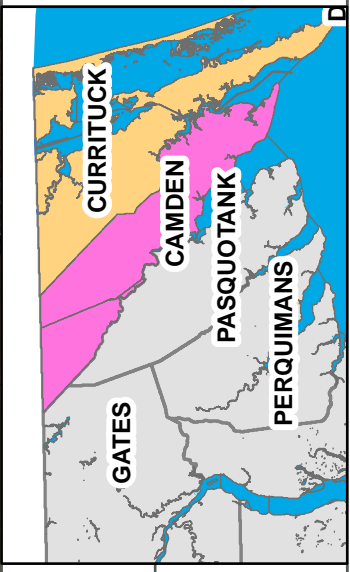
**Section 3**

**Best Fit Widening**

Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM  
 NC 34 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY), WITH  
 MULTI-USE PATH FROM SR 1246  
 (MAPLE ROAD) TO NC 168.  
 MARCH 2019

- Existing Edge of Pavement
- Slope Stakes Plus 25 Feet
- Tributary to Waters of the US
- Impacted Stream
- ▨ Jurisdictional Wetland
- ▨ Impacted Wetland



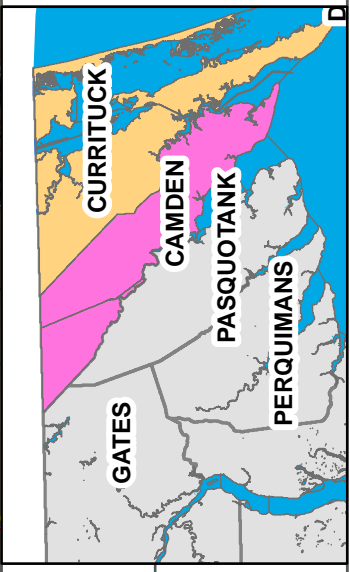


Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM  
 NC 34 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY), WITH  
 MULTI-USE PATH FROM SR 1246  
 (MAPLE ROAD) TO NC 168.

MARCH 2019

- Existing Edge of Pavement
- Tributary to Waters of the US
- Slope Stakes Plus 25 Feet
- Impacted Stream
- Jurisdictional Wetland Impacted
- Wetland



0 500 1,000 Feet

# Section 4



# Southside Widening

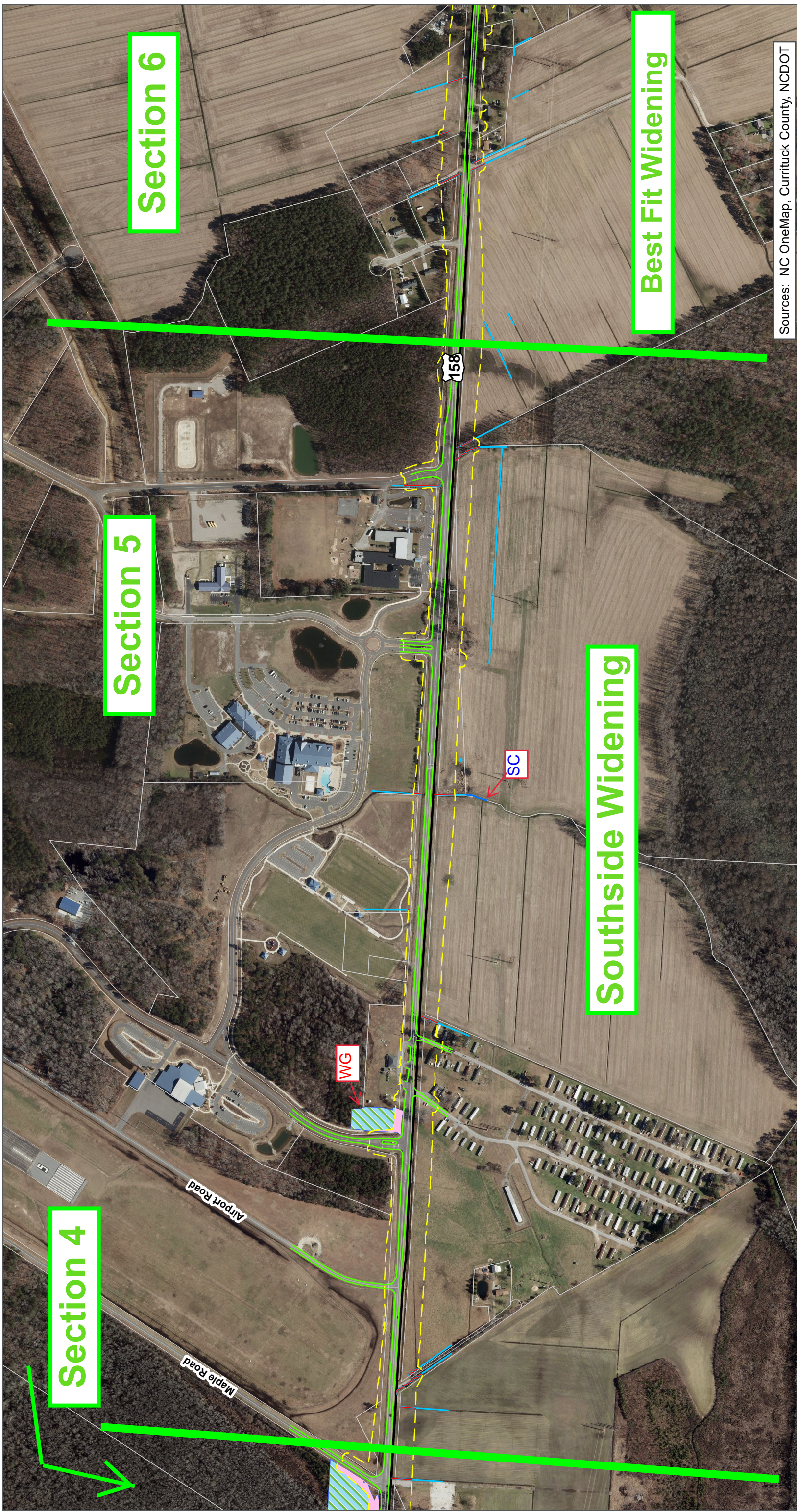
Sources: NC OneMap, Currituck County, NCDOT

**Legend:**

- Existing Edge of Pavement
- Slope Stakes Plus 25 Feet
- Tributary to Waters of the US
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland

**STREAM AND WETLAND IMPACT MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM  
 NC 34 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY), WITH  
 MULTI-USE PATH FROM SR 1246  
 (MAPLE ROAD) TO NC 168.

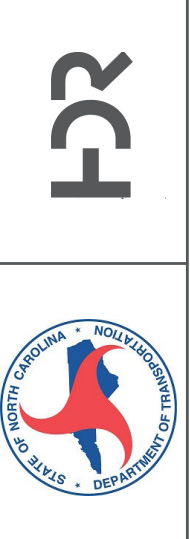
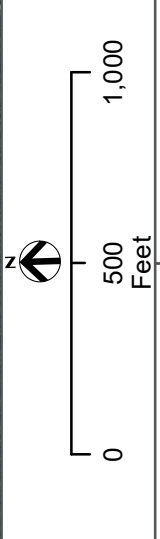
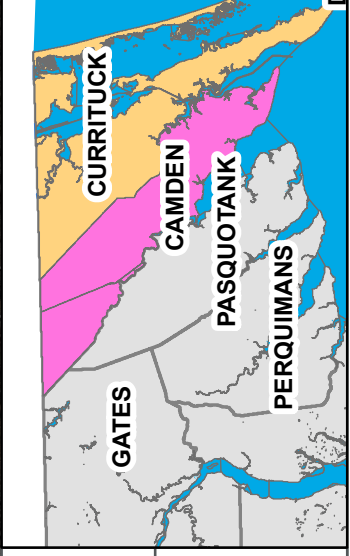
MARCH 2019



Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM  
 NC 34 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY), WITH  
 MULTI-USE PATH FROM SR 1246  
 (MAPLE ROAD) TO NC 168.  
 MARCH 2019

- Existing Edge of Pavement
- Slope Stakes Plus 25 Feet
- Jurisdictional Stream
- Tributary to Waters of the US
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland



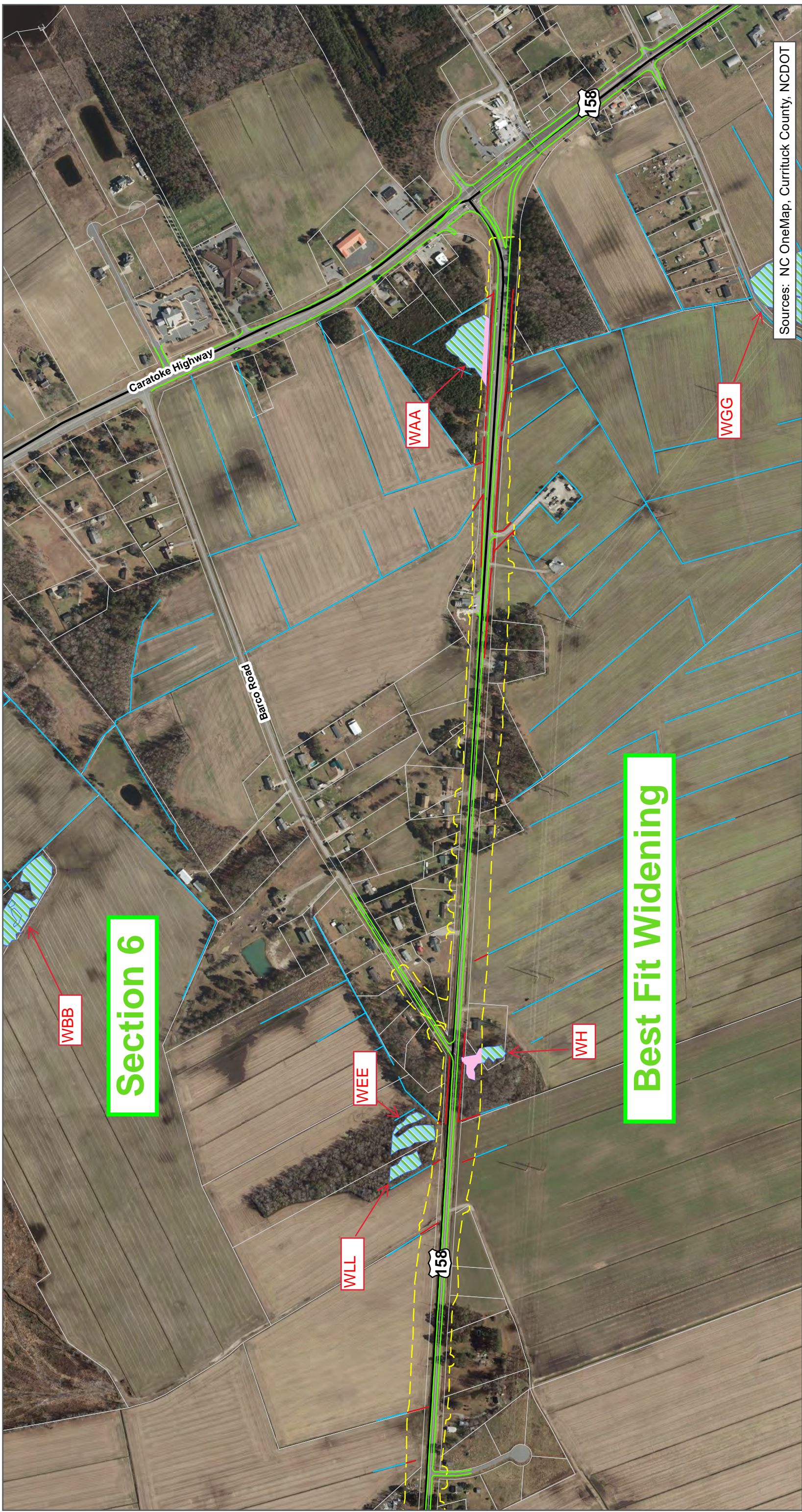
**Section 4**

**Section 5**

**Section 6**

**Southside Widening**

**Best Fit Widening**

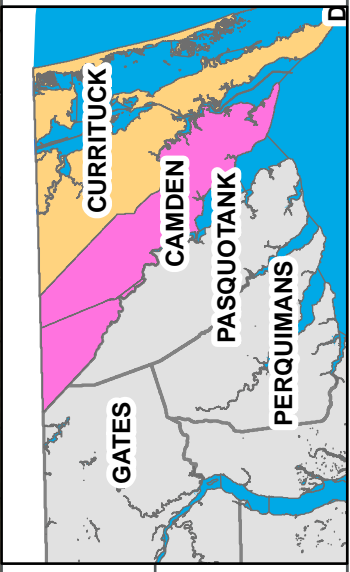


Sources: NC OneMap, Currituck County, NCDOT

**STREAM AND WETLAND IMPACT MAP**  
 STIP PROJECT NO. R-2574  
 US 158 WIDENING FROM  
 NC 34 (CAMDEN COUNTY) TO NC 168  
 (CURRITUCK COUNTY), WITH  
 MULTI-USE PATH FROM SR 1246  
 (MAPLE ROAD) TO NC 168.

MARCH 2019

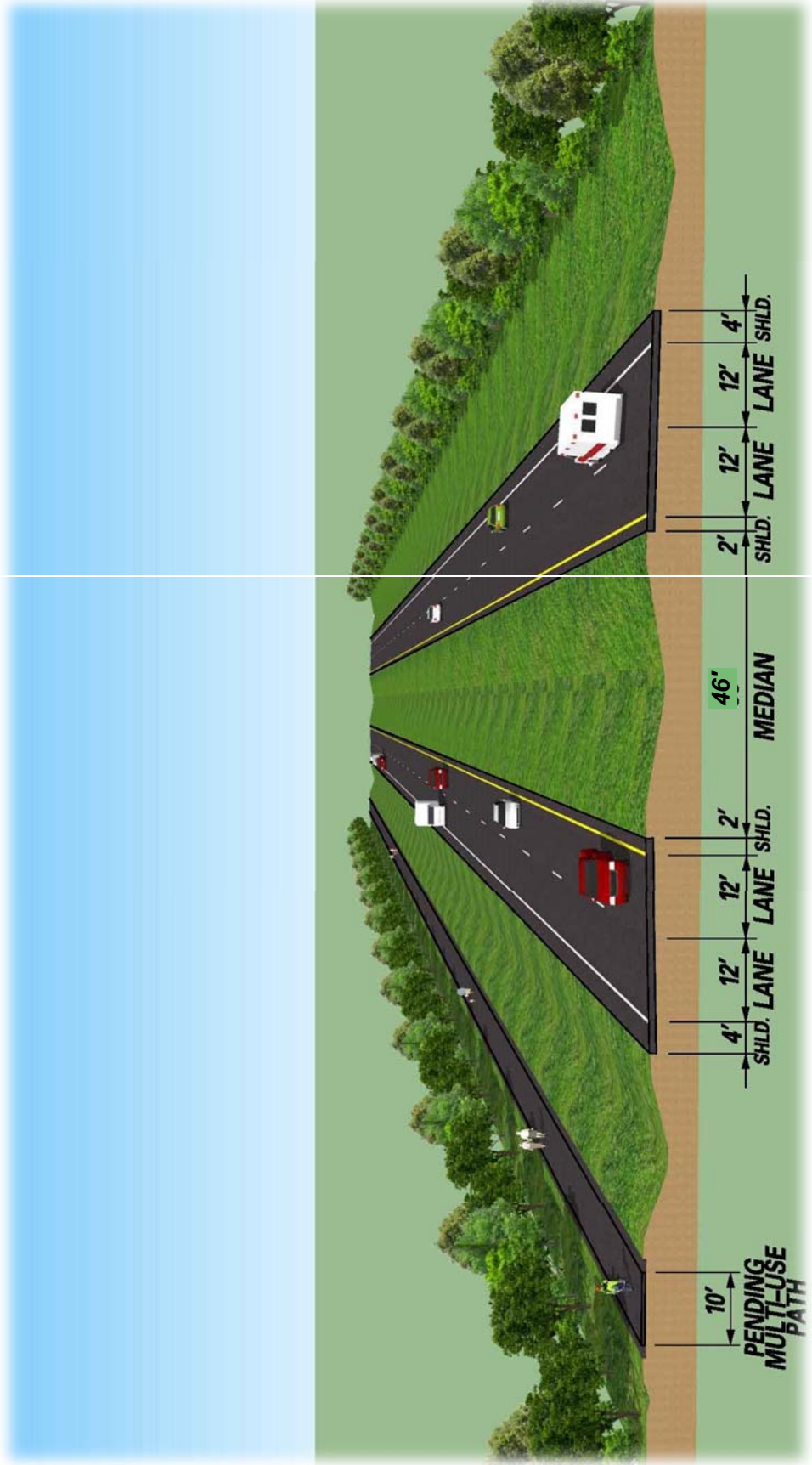
- Existing Edge of Pavement
- Slope Stakes Plus 25 Feet
- Tributary to Waters of the US
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland



0 500 1,000  
Feet

## Proposed Typical Section

Note: A ten-foot multi-use path by Currituck County is proposed from Maple Road (SR 1246) to NC 168 pending cost sharing agreements. Shown together in the graphic below, the path is not proposed for the entire length of the project. The right of way width for the project varies between 200 and 250 feet.

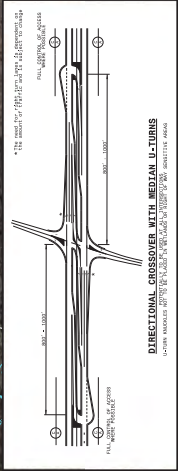
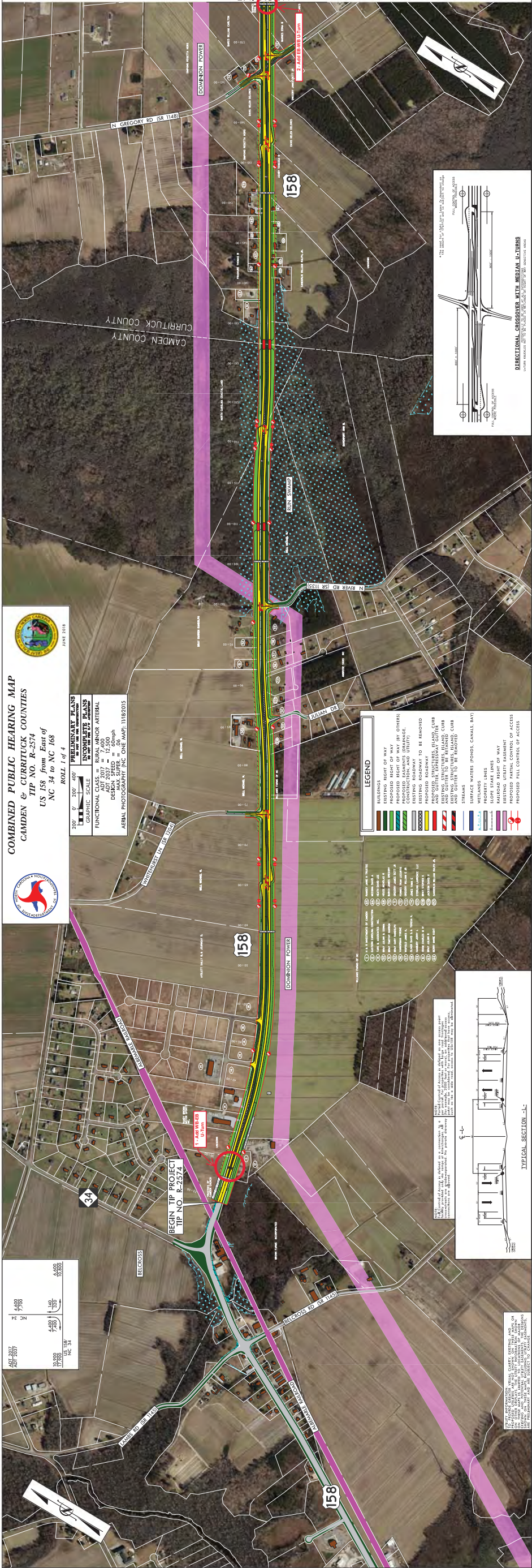




COMBINED PUBLIC HEARING MAP  
CAMDEN & CURRITUCK COUNTIES  
TIP NO. R-2574  
US 158 from East of  
NC 34 to NC 168  
ROLL 1 of 4

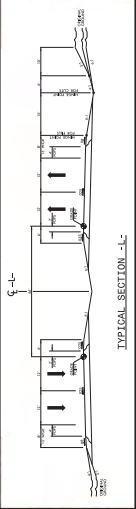


SEE ROLL PLOT 2



**LEGEND**

	BUILDINGS
	EXISTING RIGHT OF WAY
	PROPOSED RIGHT OF WAY (BY OTHER)
	PROPOSED RIGHT OF WAY (THIS PROJECT)
	FLOODED BASEMENTS (DRAINAGE)
	FLOODED BASEMENTS (OTHER)
	EXISTING ROADWAY
	PROPOSED ROADWAY
	PROPOSED ROADWAY TO BE REMOVED
	PROPOSED STRUCTURES (ISLAND, CURB)
	EXISTING STRUCTURES (ISLAND, CURB)
	PROPOSED STRUCTURES (ISLAND, CURB) TO BE REMOVED
	EXISTING STRUCTURES (ISLAND, CURB) TO BE REMOVED
	SURFACE WATERS (PONDS, CANALS, BAY)
	WETLANDS
	SLOPE STAKE LINES
	RAILROAD RIGHT OF WAY
	PROPOSED PARTIAL CONTROL OF ACCESS
	PROPOSED FULL CONTROL OF ACCESS



COMBINED PUBLIC HEARING MAP  
CAMDEN & CURRITUCK COUNTIES  
TIP NO. R-2574  
US 158 from East of  
NC 34 to NC 168  
ROLL 1 of 4  
JUNE 2018

**PRELIMINARY PLANS**  
FUNCTIONAL CLASSIFICATION: **LOCAL ARTERIAL**  
DESIGN SPEED: **70 MPH**  
DESIGN SUPER ELEVATION: **2% MINIMUM**  
AERIAL PHOTOGRAPHY: **CON. MAPS, 11/8/2015**

**INCOMPLETE PLANS**  
DATE: **NOV 2017**  
SCALE: **AS SHOWN**

**GRAPHIC SCALE**  
200' 0" 200' 400'

**VERTICAL SCALE**  
1" = 4'-0" (VERTICAL)  
1" = 100'-0" (HORIZONTAL)

**DATE**

4-07-2017	10,000	4,000	4,000
2-07-2017	17,000	7,000	10,000
		1,000	1,000
		1,000	1,000

US 158  
NC 34



COMBINED PUBLIC HEARING MAP  
CAMDEN & CURRITUCK COUNTIES  
TIP NO. R-2574  
US 158 from East of  
NC 34 to NC 168  
ROLL 1 of 4

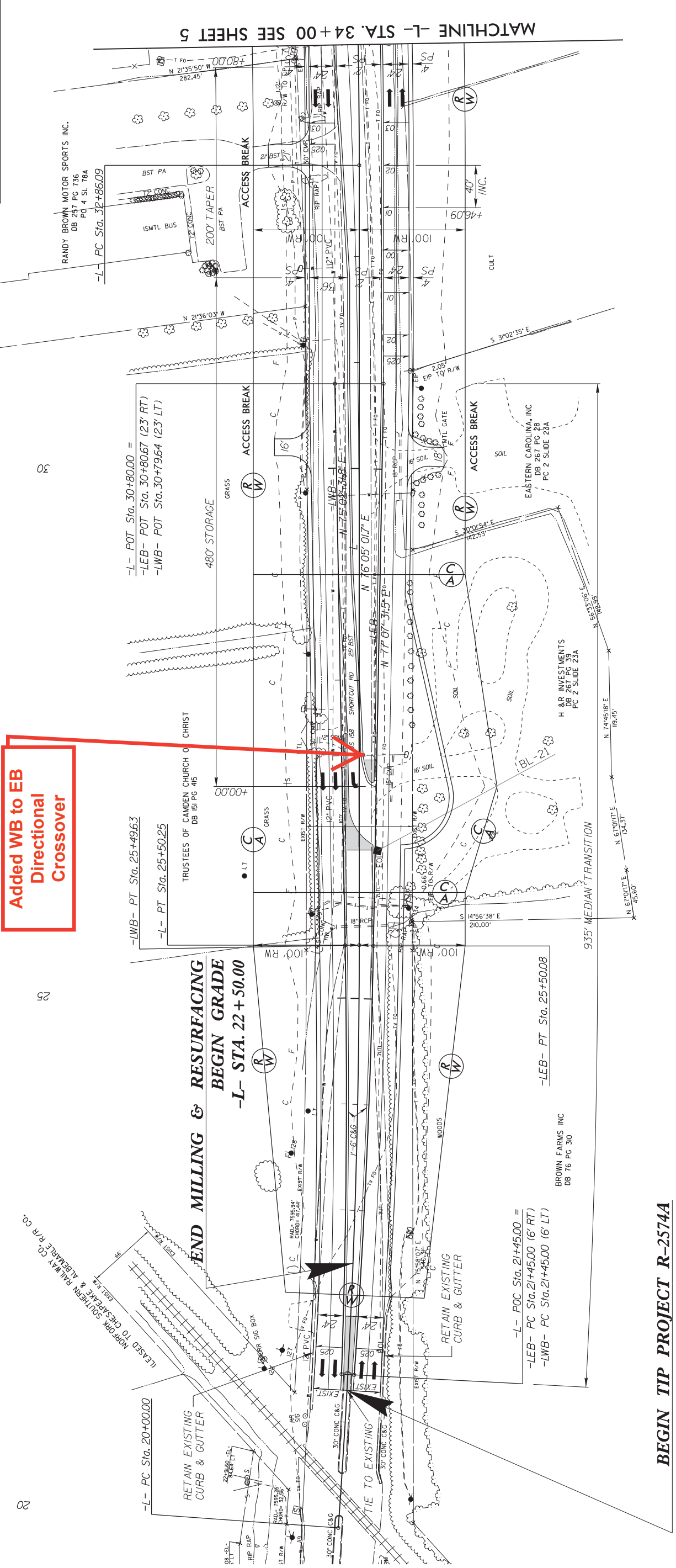




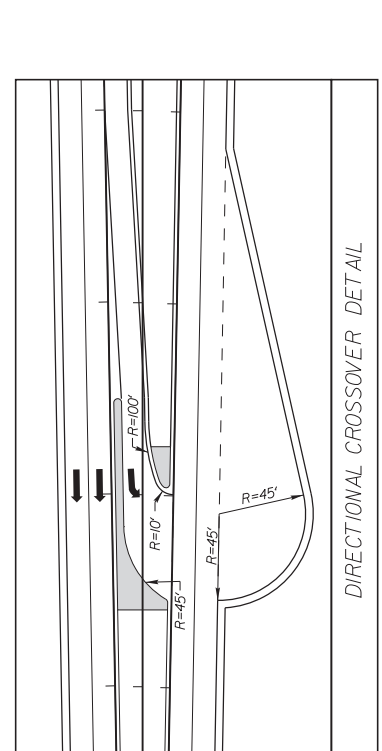
NAD 83/NA 2011

<p><b>-L- CURVE DATA</b></p> <p>PI Sta. 22+75.24    PI Sta. 42+53.74  <math>\Delta = 47^{\circ} 27' 01" (LT)</math>    <math>\Delta = 16^{\circ} 56' 05.3" (LT)</math>  <math>D = 0' 44" 58.2'</math>    <math>D = 0' 52" 53.3'</math>  <math>L = 550.25'</math>    <math>L = 192.19'</math>  <math>T = 275.24'</math>    <math>T = 967.65'</math>  <math>R = 7,644.46'</math>    <math>R = 6,500.00'</math>  <math>e = 0.025</math>    <math>e = 0.03</math>  <math>R.O. = 100</math></p>	<p><b>-LEB- CURVE DATA</b></p> <p>PI Sta. 23+47.59    PI Sta. 43+47.56  <math>\Delta = 37^{\circ} 02' 23.6" (LT)</math>    <math>\Delta = 37^{\circ} 02' 11.5" (LT)</math>  <math>D = 0' 45" 01.6"</math>    <math>D = 0' 45" 01.6"</math>  <math>L = 405.08'</math>    <math>L = 404.63'</math>  <math>T = 202.59'</math>    <math>T = 202.36'</math>  <math>R = 7,635.00'</math>    <math>R = 7,635.00'</math></p>	<p><b>-LWB- CURVE DATA</b></p> <p>PI Sta. 23+47.59    PI Sta. 43+47.56  <math>\Delta = 37^{\circ} 02' 23.6" (LT)</math>    <math>\Delta = 37^{\circ} 02' 11.5" (LT)</math>  <math>D = 0' 45" 01.6"</math>    <math>D = 0' 45" 01.6"</math>  <math>L = 405.08'</math>    <math>L = 404.63'</math>  <math>T = 202.59'</math>    <math>T = 202.36'</math>  <math>R = 7,635.00'</math>    <math>R = 7,635.00'</math></p>
--	--	--

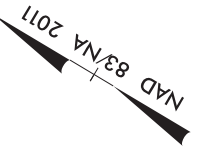
REVISIONS



NOTE: ALL DRIVEWAY RADII ARE 20'  
FOR -L- PROFILE, SEE SHEET 24



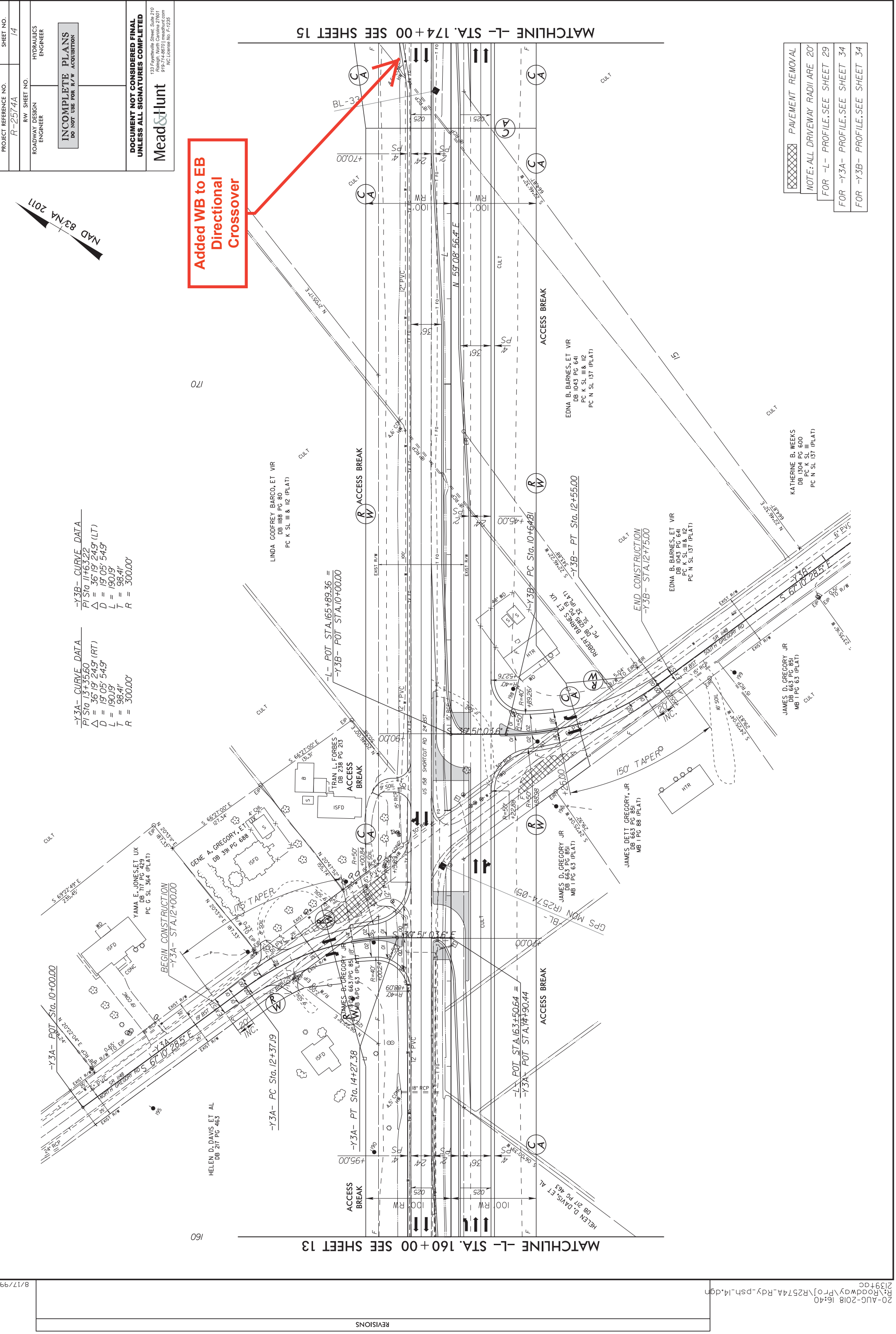
20-AUG-2018 16:40  
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2139400



**-Y3A- CURVE DATA**  
 P/Sta 13+35.60  
 $\Delta = 36.19' 24.9" (RT)$   
 $D = 19.05' 54.9"$   
 $L = 190.19'$   
 $T = 98.41'$   
 $R = 3000.00'$

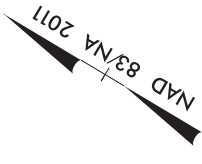
**-Y3B- CURVE DATA**  
 P/Sta 11+63.22  
 $\Delta = 36.19' 24.9" (LT)$   
 $D = 19.05' 54.9"$   
 $L = 190.19'$   
 $T = 98.41'$   
 $R = 3000.00'$

**Added WB to EB Directional Crossover**

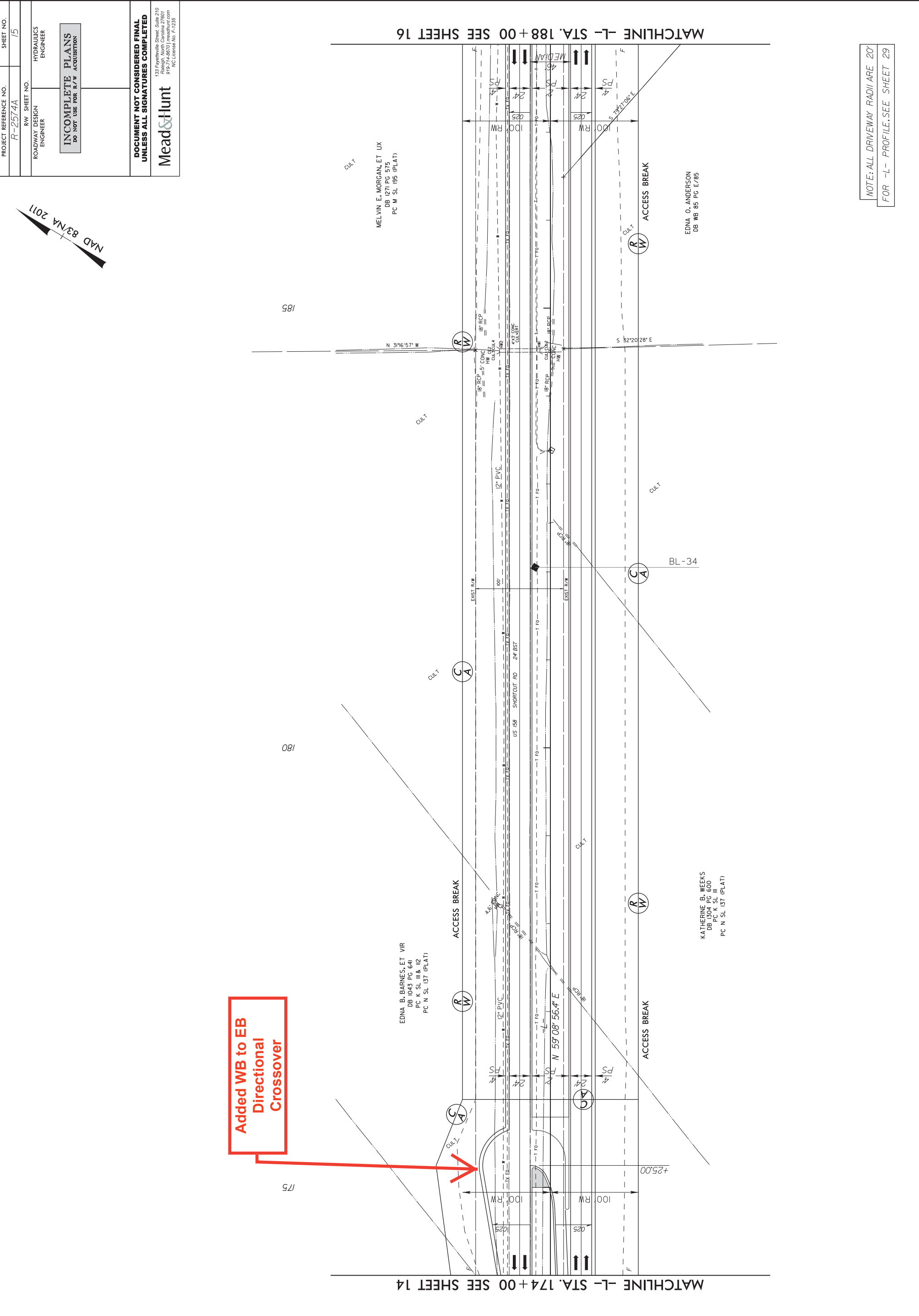


**PAVEMENT REMOVAL**  
 NOTE: ALL DRIVEWAY RADII ARE 20'  
 FOR -Y3A- PROFILE, SEE SHEET 29  
 FOR -Y3B- PROFILE, SEE SHEET 34

PROJECT REFERENCE NO.	R-2574A
SHEET NO.	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>Mead&amp;Hunt</b>	
<small>133 Fayetteville Street, Suite 210 Raleigh, North Carolina 27601 919.833.8800 NC License No. E-12235</small>	
<b>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</b>	



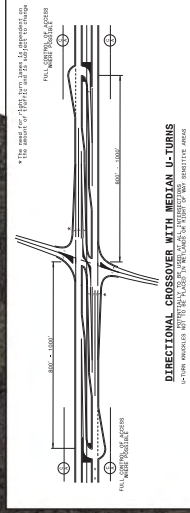
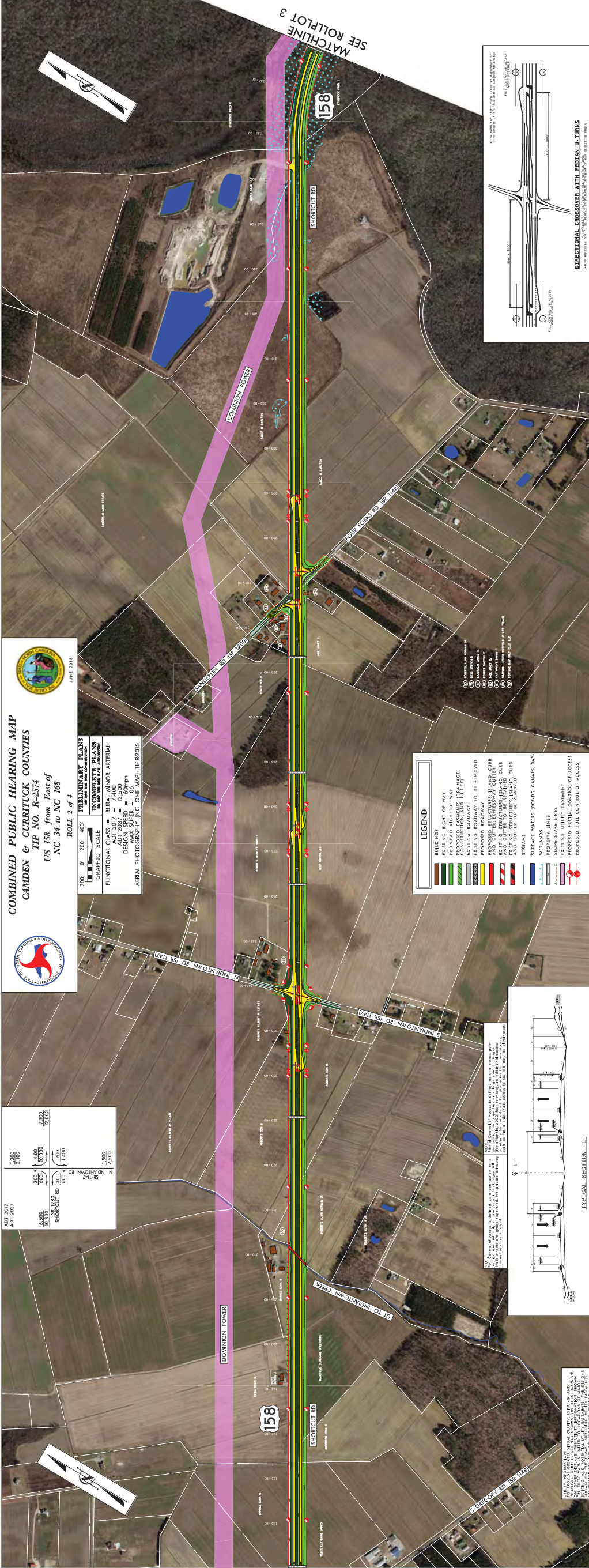
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NOTE: ALL DRIVEWAY RADII ARE 20'  
FOR -L- PROFILE, SEE SHEET 29

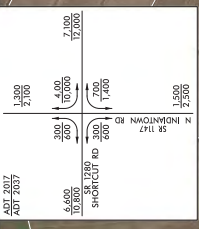


COMBINED PUBLIC HEARING MAP  
CAMDEN & CURRITUCK COUNTIES  
TIP NO. R-2574  
US 158 from East of  
NC 34 to NC 168  
ROLL 2 of 4



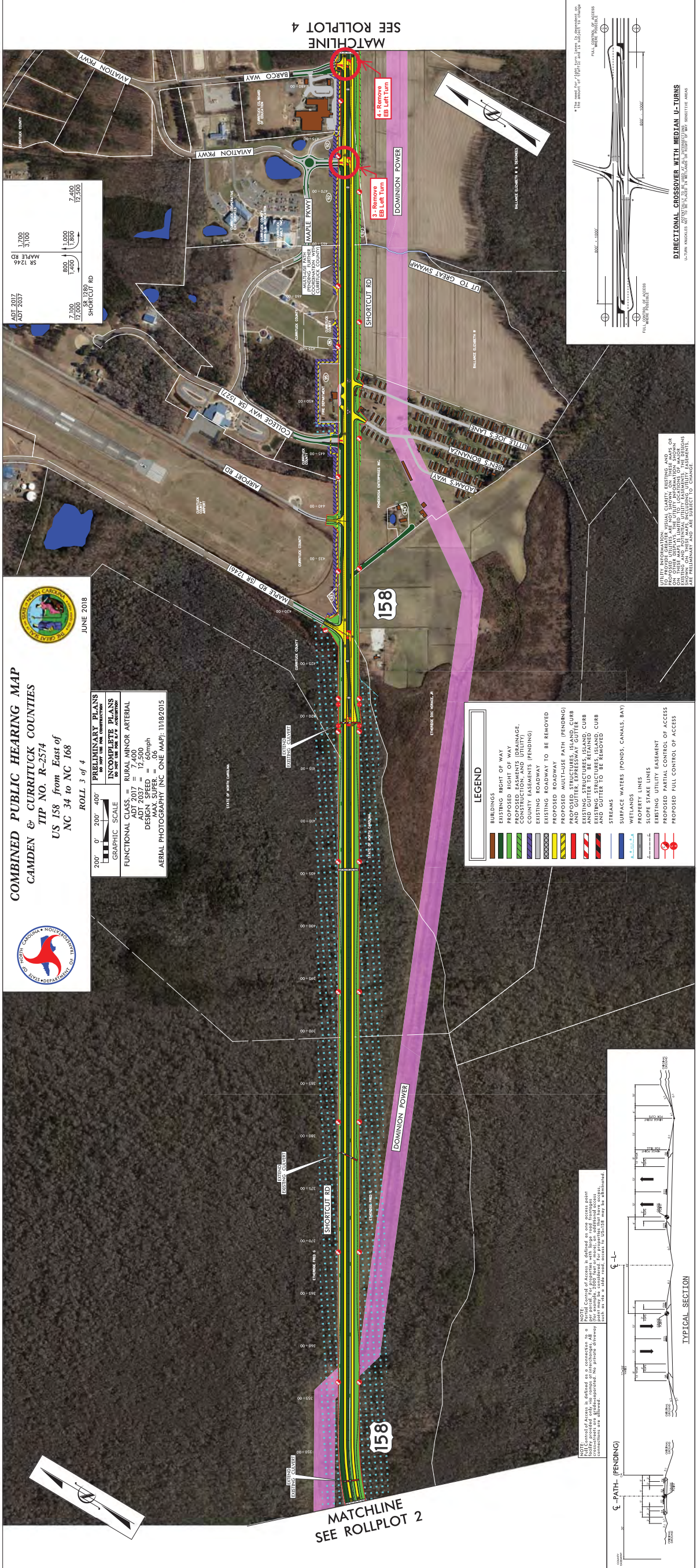
COMBINED PUBLIC HEARING MAP  
CAMDEN & CURRITUCK COUNTIES  
TIP NO. R-2574  
US 158 from East of  
NC 34 to NC 168  
ROLL 2 of 4  
JUNE 2018

**PRELIMINARY PLANS**  
FOR THE  
**CONCRETE PAVEMENT**  
ROADWAY  
FUNCTIONAL CLASS. = RURAL MINOR ARTERIAL  
GRAPHIC SCALE  
200' 0" 200' 400'  
DESIGN SPEED = 50 mph  
ADT 2037 = 12,500  
DESIGN SUPER = 2%  
AERIAL PHOTOGRAPHY INC. ONE MAP: 11182015





**COMBINED PUBLIC HEARING MAP**  
**CAMDEN & CURRITUCK COUNTIES**  
**TIP NO. R-2574**  
**US 158 from East of**  
**NC 34 to NC 168**  
**ROLL 3 of 4**



**COMBINED PUBLIC HEARING MAP**  
**CAMDEN & CURRITUCK COUNTIES**  
**TIP NO. R-2574**  
**US 158 from East of**  
**NC 34 to NC 168**  
**ROLL 3 of 4**  
**JUNE 2018**

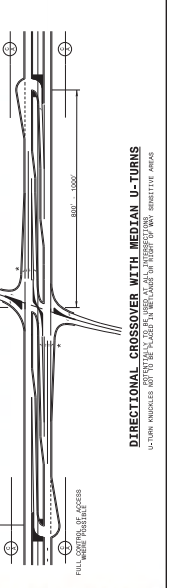
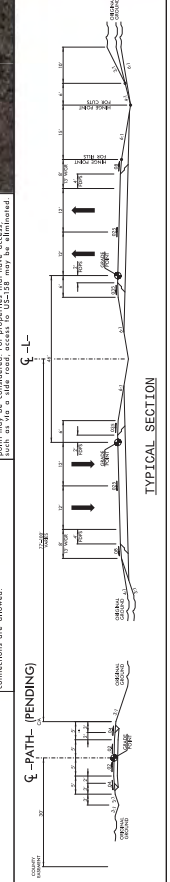
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

**INCOMPLETE PLANS**  
 DO NOT USE FOR CONSTRUCTION

**GRAPHIC SCALE**  
 FUNCTIONAL CLASS = RURAL MINOR ARTERIAL  
 ADT 2017 = 17,400  
 ADT 2037 = 12,500  
 DESIGN SPEED = 60mph  
 AERIAL PHOTOGRAPHY INC. ONE MAP: 11/18/2015

**LEGEND**

- BUILDINGS
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- PROPOSED EASEMENTS (DRAINAGE, UTILITY, ETC.)
- COUNTY EASEMENTS (PENDING)
- EXISTING ROADWAY
- EXISTING ROADWAY TO BE REMOVED
- PROPOSED MULTILANE WITH (PENDING) AND GUTTER EXPRESSWAY-GUTTER, C&G AND GUTTER TO BE REMOVED
- EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE REMOVED
- STREAMS
- SURFACE WATERS (PONDS, CANALS, BAY)
- WETLANDS LINES
- SLOPE STAKE LINES
- EXISTING UTILITY EASEMENT
- PROPOSED PARTIAL CONTROL OF ACCESS
- PROPOSED FULL CONTROL OF ACCESS



**MATCHLINE 4**  
 SEE ROLLPLOT 4

**MATCHLINE 2**  
 SEE ROLLPLOT 2



**COMBINED PUBLIC HEARING MAP**  
**CAMDEN & CURRITUCK COUNTIES**  
**TIP NO. R-2574**  
**US 158 from East of**  
**NC 34 to NC 168**  
**ROLL 3 of 4**



Prepared In the Office of:  
**JOHNSON, MIRMAN, & THOMPSON, INC.**  
 1130 Sittus Court, Suite 200, Raleigh NC, 27606

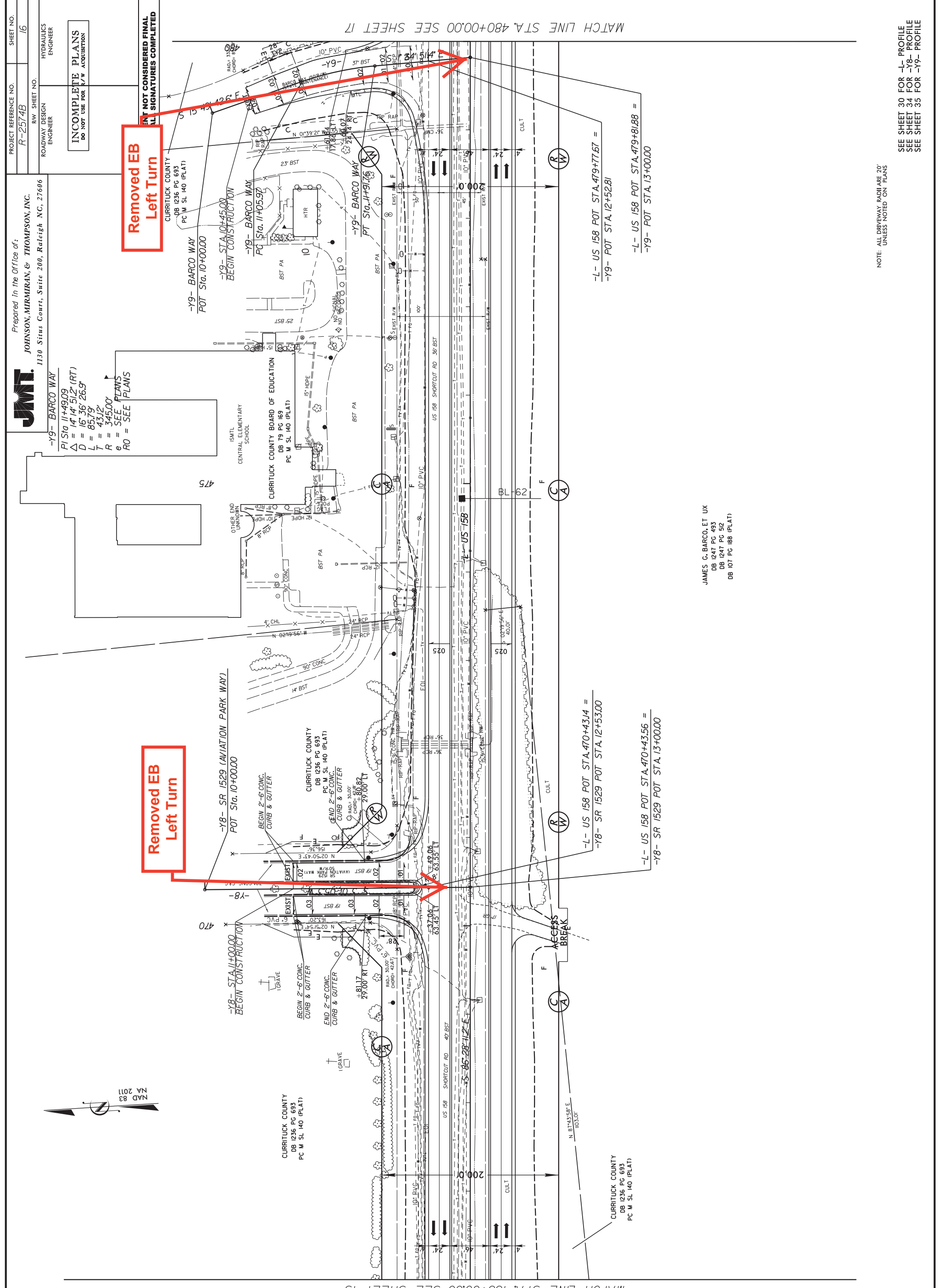
**JMT.**  
 -Y9- BARCO WAY  
 PI Sta 11+49.09  
 $\Delta = 14'14" 51.2" (RT)$   
 $D = 16'36" 26.9"$   
 $L = 85.79'$   
 $T = 43.12'$   
 $R = 345.00'$   
 e = SEE PLANS  
 RO = SEE PLANS

**Removed EB  
 Left Turn**

**Removed EB  
 Left Turn**

**INCOMPLETE PLANS**  
 DO NOT USE FOR R/W ACQUISITION

DO NOT CONSIDER FINAL  
 ALL SIGNATURES COMPLETED



MATCH LINE STA. 466+00.00 SEE SHEET 15

MATCH LINE STA. 480+00.00 SEE SHEET 17

REVISIONS

8/23/2018  
 R2574B-rdy-psh-16.dgn  
 sheet\_group

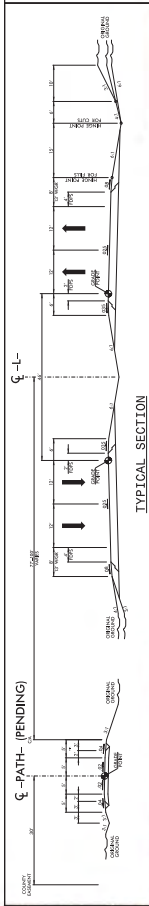
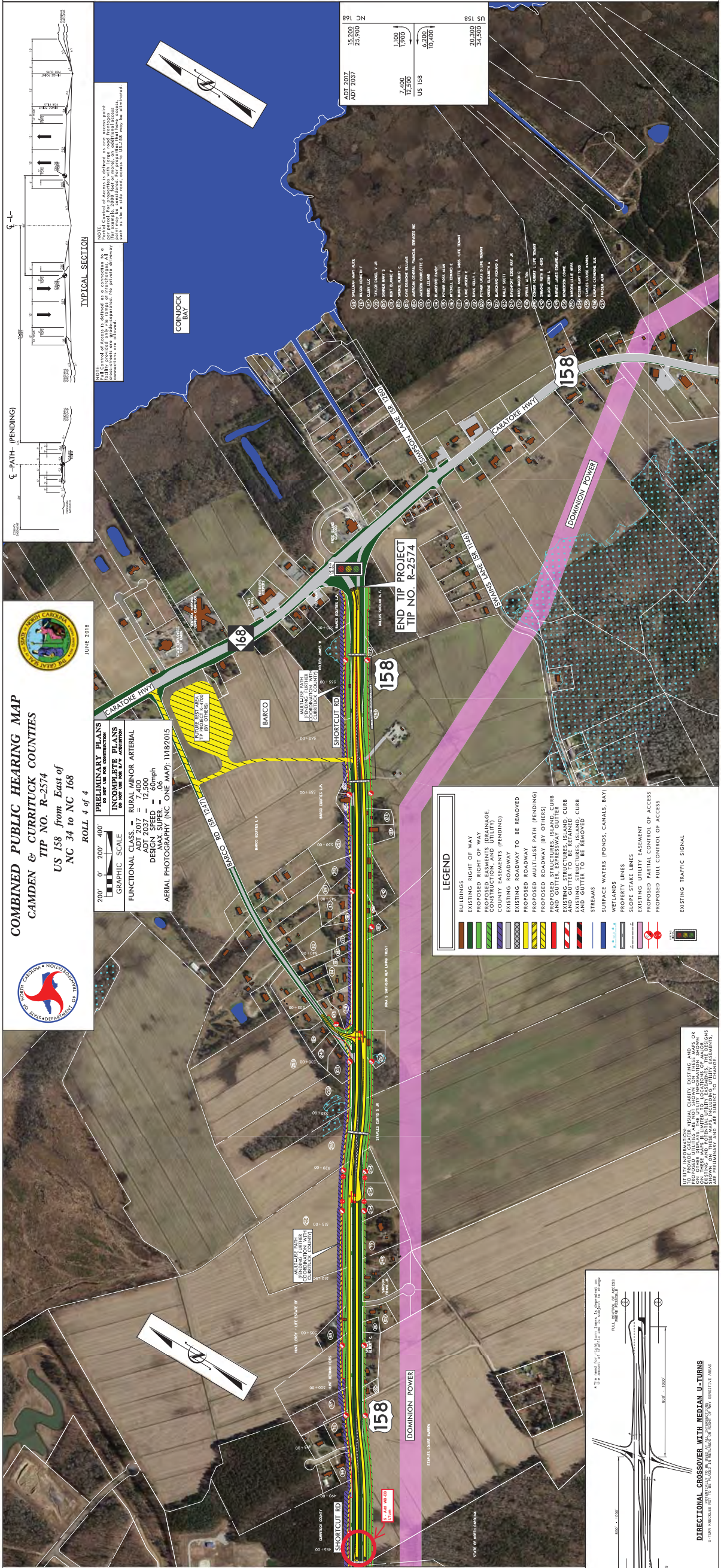
8/17/99

NAD 83  
 NA 2011

JAMES G. BARCO, ET UX  
 DB 1247 PG 493  
 DB 1247 PG 512  
 DB 107 PG 188 (PLAT)

NOTE: ALL DRIVEWAY FOOTPRINTS  
 UNLESS NOTED ON PLANS

SEE SHEET 30 FOR -L- PROFILE  
 SEE SHEET 34 FOR -Y8- PROFILE  
 SEE SHEET 35 FOR -Y9- PROFILE



NOTE: ALL UTILITY LOCATIONS SHOWN ON THIS MAP ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY DATA. THE LOCATION OF UTILITIES IS NOT GUARANTEED. ANY UTILITIES NOT SHOWN ON THIS MAP ARE THE RESPONSIBILITY OF THE USER. THE USER SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES NOT SHOWN ON THIS MAP ARE THE RESPONSIBILITY OF THE USER. THE USER SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.

ADT 2017	15,200	NC 168
ADT 2037	25,500	
US 158	7,400	
	12,500	
	6,200	
	10,400	
	90,000	
	34,500	

**COMBINED PUBLIC HEARING MAP**  
**CAMDEN & CURRITUCK COUNTIES**  
**TIP NO. R-2574**  
**US 158 from East of**  
**NC 34 to NC 168**  
 ROLL 4 of 4  
 JUNE 2018

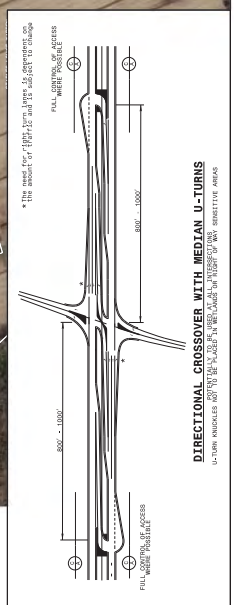
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
**INCOMPLETE PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 FUNCTIONAL CLASS = RURAL ARTERIAL  
 GRAPHIC SCALE = 1" = 200'  
 AERIAL PHOTOGRAPHY (INC ONE MAP): 11/18/2015  
 DESIGN SPEED = 60mph  
 ADT 2017 = 12,500  
 ADT 2037 = 25,500

**LEGEND**

	BUILDINGS
	EXISTING RIGHT OF WAY
	PROPOSED RIGHT OF WAY
	PROPOSED EASEMENTS (DRAINAGE, EASEMENT, ETC.)
	COUNTY EASEMENTS (PENDING)
	EXISTING ROADWAY
	EXISTING ROADWAY TO BE REMOVED
	PROPOSED ROADWAY
	PROPOSED MULTI-LANE PATH (PENDING)
	PROPOSED ROADWAY (BY OTHERS)
	EXISTING STRUCTURES (ISLAND, CURB AND GUTTER, EXPRESSWAY, ETC.)
	EXISTING STRUCTURES (ISLAND, CURB AND GUTTER TO BE REMOVED)
	STREAMS
	SURFACE WATERS (PONDS, CANALS, BAY)
	WETLANDS
	EASEMENT LINES
	EXISTING UTILITY EASEMENT
	PROPOSED PARTIAL CONTROL OF ACCESS
	PROPOSED FULL CONTROL OF ACCESS
	EXISTING TRAFFIC SIGNAL

THE USER SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. ANY UTILITIES NOT SHOWN ON THIS MAP ARE THE RESPONSIBILITY OF THE USER. THE USER SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.

**MATCHLINE**  
**SEE ROLL PLOT 3**



**INCOMPLETE PLANS**  
 DO NOT USE FOR R/W ACQUISITION

**DOCUMENT NOT CONSIDERED FINAL**  
 UNLESS ALL SIGNATURES COMPLETED

JOSEPH C. POPE, ET UX  
 DB 821 PC 683  
 PC H SL 136 (PLAT)

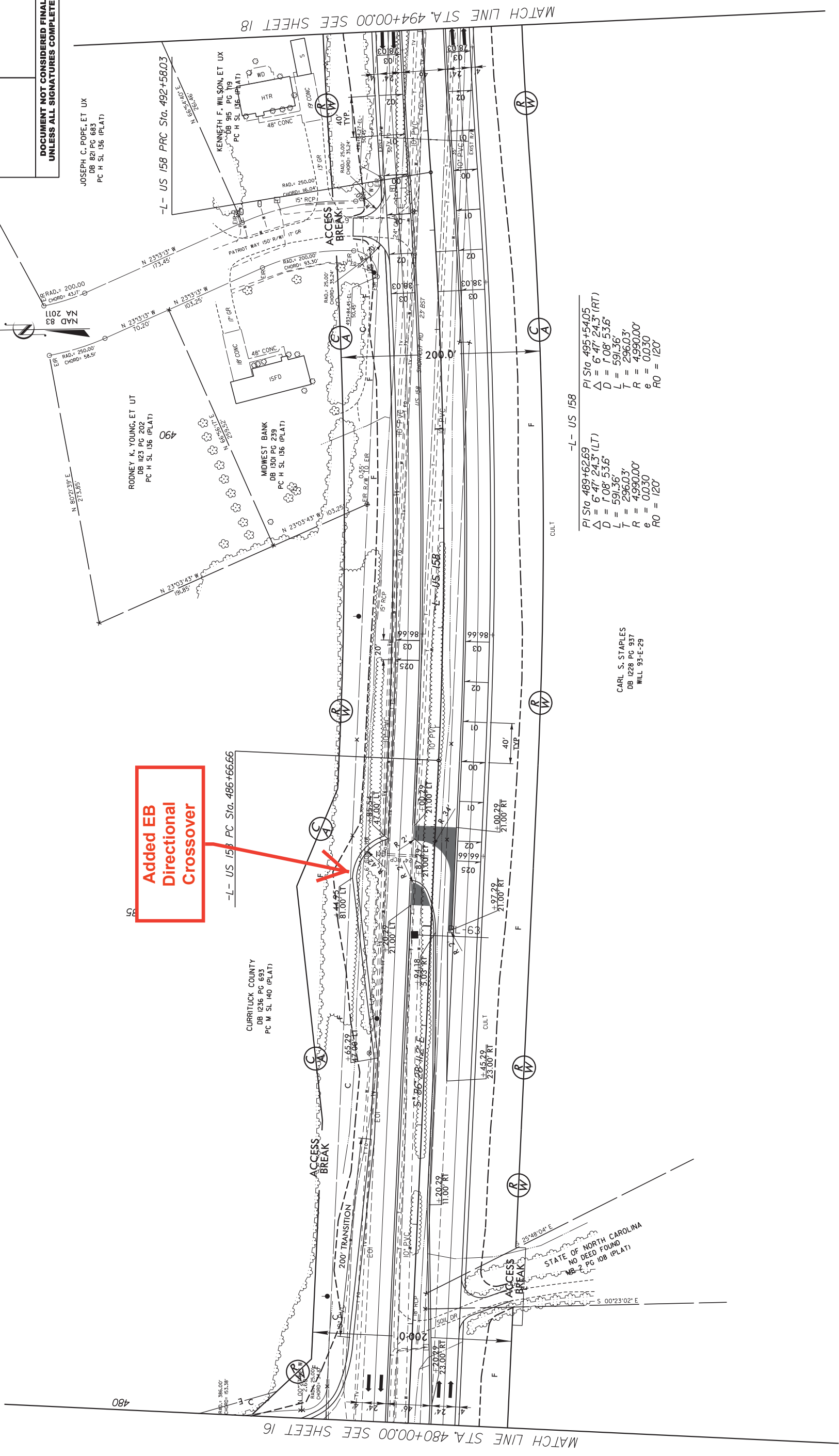
RODNEY K. YOUNG, ET UT  
 DB 123 PG 202  
 PC H SL 136 (PLAT)

CURRITUCK COUNTY  
 DB 1236 PG 693  
 PC M SL 140 (PLAT)

CARL S. STAPLES  
 DB 1228 PG 937  
 WILL 93-E-29

NOTE: ALL DRIVEWAY RADII ARE 20'  
 UNLESS NOTED ON PLANS

SEE SHEET 30 FOR -L- PROFILE  
 SEE SHEET 34 FOR -Y9- PROFILE



MATCH LINE STA. 494+00.00 SEE SHEET 18

MATCH LINE STA. 480+00.00 SEE SHEET 16

**-L- US 158**

PI Sta 489+62.69	PI Sta 495+54.05
$\Delta = 6' 47'' 24.3''$ (LT)	$\Delta = 6' 47'' 24.3''$ (RT)
$D = 1' 08'' 53.6''$	$D = 1' 08'' 53.6''$
$L = 591.36'$	$L = 591.36'$
$T = 296.03'$	$T = 296.03'$
$R = 4990.00'$	$R = 4990.00'$
$e = 0.030'$	$e = 0.030'$
$RO = 120'$	$RO = 120'$

**Added EB Directional Crossover**

-L- US 158 PC Sta. 486+66.66

REVISIONS