

# **NEPA/Section 404 Concurrence Point 4A: Avoidance and Minimization Kinston Bypass**

## **CP 4A Meeting November 13, 2024**

**STIP Project No. R-2553  
WBS No. 34460.1.2**

**North Carolina Department of Transportation  
Division 2**



Prepared By

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# NEPA/Section 404 Concurrence Point 4A: Avoidance and Minimization

November 13, 2024

## Purpose of Meeting

The purpose of today's meeting is to achieve Merger Team concurrence on Concurrence Point (CP) 4A (Avoidance and Minimization) for the proposed Kinston Bypass Project (STIP No. R-2553). A Draft Environmental Impact Statement (DEIS) for the project was published in June of 2019, and a Corridor Public Hearing was held on August 20, 2019. Based on the approved DEIS and comments received, Alternative 1SB was selected as the applicant's preferred alternative in February of 2020. A CP 4A meeting was held on June 22, 2022.

Discussions held during the CP 4A meeting resulted in the request for additional information prior to reaching concurrence. The USFWS asked that the project team provide a memorandum that evaluates the types of bridges being considered for Falling Creek and Southwest Creek. This memo was developed, accepted by Gary Jordan at USFWS, and distributed to Merger Team members along with the CP 4A presentation, packet, and meeting minutes on May 22, 2023 (attached).

A Section 106 Consulting Parties meeting was held just prior to the CP 4A meeting on June 15, 2022. The purpose of this meeting was to gather input from the consulting parties on how to minimize and mitigate affects to cultural resources along the Kinston Bypass, namely the resource associated with the Wyse Fork Battlefield. One of the minimization measures requested during this meeting was to investigate shifting the interchange at Wyse Fork and Caswell Station Road approximately 1.1 miles east to avoid the core of the battlefield. The project team developed and investigated different configurations and locations for the Wyse Fork interchange and presented them to the consulting parties at a second consulting parties meeting held on November 9, 2023.

Some of the consulting parties requested evaluation of additional interchange locations for the Wyse Fork interchange, including shifting the interchange 0.3 miles to the east. The project team developed and investigated three additional interchange locations. One of these interchange locations was agreed upon by NCDOT, resource agencies, and consulting parties as the preferred interchange location. The process and outcome are detailed on the project website (<https://www.ncdot.gov/projects/kinston-bypass/Pages/faqs.aspx>) and further discussed in Section 5.1.2 of this packet.

The project team has been working to develop a Memorandum of Agreement (MOA) with the consulting parties to satisfy Section 106. The Draft MOA has been agreed to by USACE, SHPO, OSA, NCDOT, and ACHP and was sent to the consulting parties for review on October 14, 2024 (attached).

This packet contains updates to the packet from the June 22, 2022 CP 4A Merger Meeting. Please reference back to the June 22, 2022 packet for additional information.

## 1.0 Project Status

Since the last correspondence with the Merger Team at the previous CP 4A meeting, the following major milestones have occurred:

- Updated NRTR Report – October 2022
- Aquatic Species Survey Report – November 2022
- Land Use Scenario Assessment – April 2023
- Air Quality Report – June 2023
- Consulting Parties Meeting #2 – November 2023
- HMGP Coordination with NCEM and FEMA – Revised packet submitted August 2023, second revision submitted April 2024
- Public Involvement Plan – May 2024
- Agency Coordination Plan – May 2024
- Wyse Fork Interchange Decision – May 2024
- Delineations for new Wyse Fork Interchange – May 2024
- Draft MOA to ACHP – July 2024
- Draft MOA to Consulting Parties – October 2024
- Initiation of Formal Consultation for Section 7 – October 2024
- Biological Opinion – Currently underway
- 2D Flood Analysis – Currently underway
- Community Impact Assessment – Currently underway
- Economic Impact Assessment – Currently underway
- Archaeological surveys for new Wyse Fork Interchange – Currently underway

### Projected Next Steps

The project is not currently funded for right-of-way acquisition or construction in the 2024-2033 STIP.

- Final Environmental Impact Statement released – Summer 2025
- Hold Local Officials Meeting, Pre-Hearing Open Houses, and Design Public Hearing – Fall 2025
- Record of Decision issued – Early 2026
- Right-of-way acquisition begins – TBD
- Construction begins – TBD

## 2.0 Agenda

This meeting is being held to:

- Review the additional design changes to the Least Environmentally Damaging Practicable Alternative (LEDPA)/applicant's preferred alternative presented since the June 2022 CP 4A meeting.
- Summarize the changes to impacts that will be disclosed in the Final Environmental Impact Statement (FEIS).
- Discuss the proposed measures to avoid and minimize the impacts of the proposed action.
- Reach concurrence on avoidance and minimization measures for the project.

### 3.0 Typical Sections

The typical sections developed for the project were designed in order to avoid and minimize impacts. There are five proposed typical sections for Alternative 1SB. There have been minor changes made to these typical sections since the June 2022 CP 4A meeting. Those changes are reflected in Figures 1 through 5:

- A typical section without service roads (Figure 1)
- A typical section with a service road on one side (Figure 2)
- A typical section with a service road on both sides (Figure 3)
- A typical section with barrier separated service road(s) (Figure 4)
- A typical section for the bridge over the Neuse River (Figure 5)

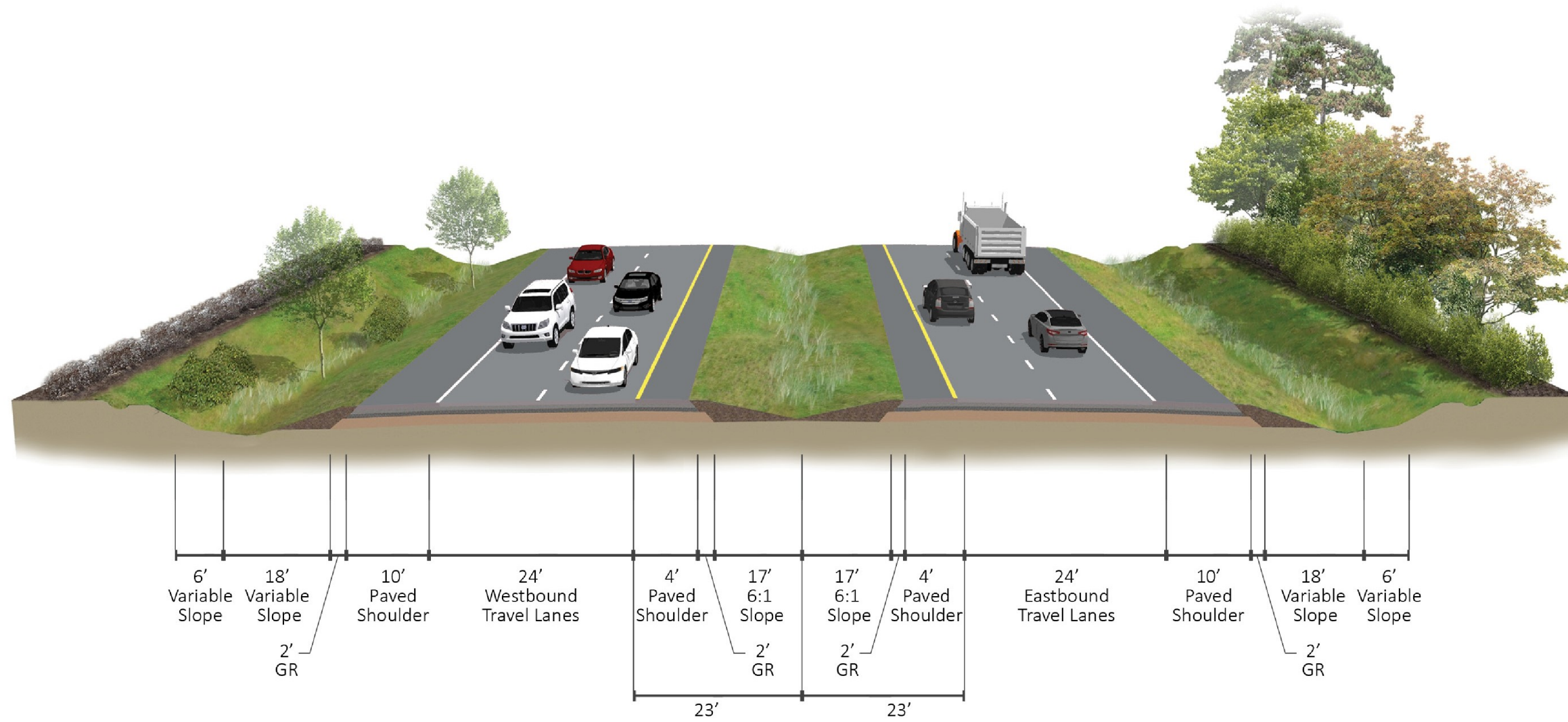




Source: AECOM

Figure 1:  
Typical section without service road

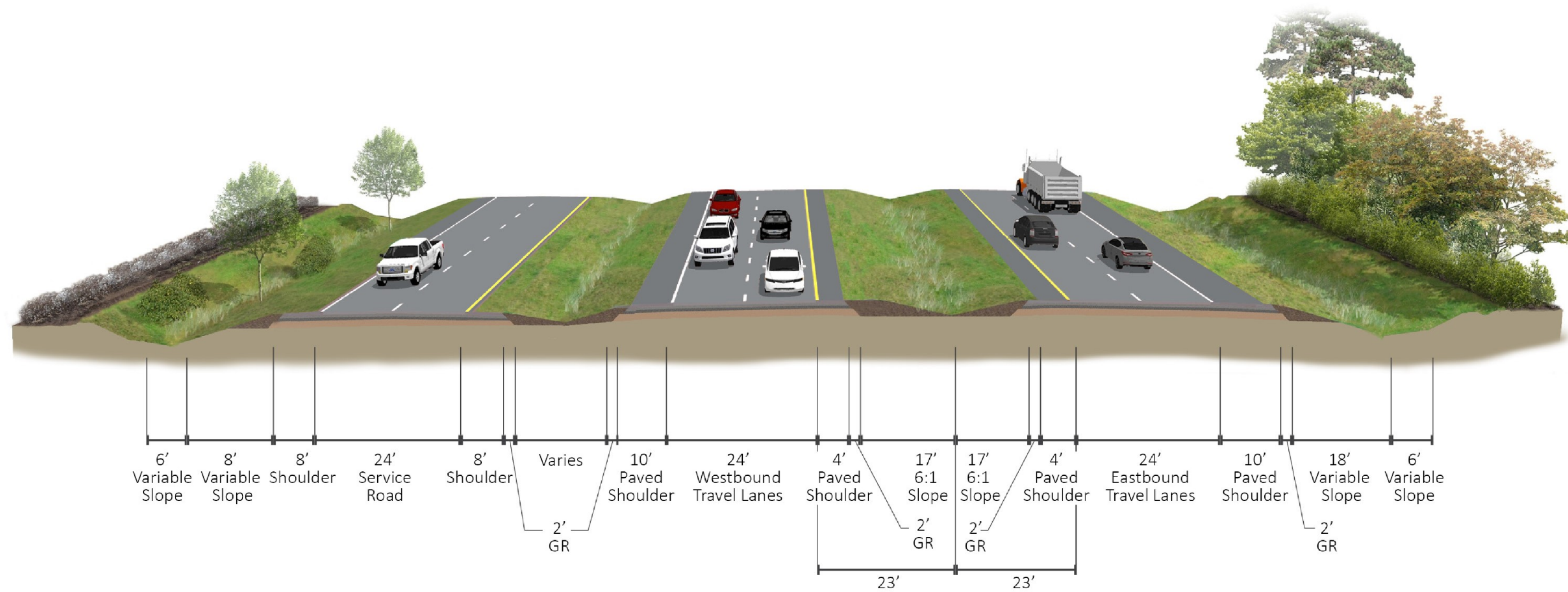
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Source: AECOM

Figure 2:  
Typical section with service road on one side

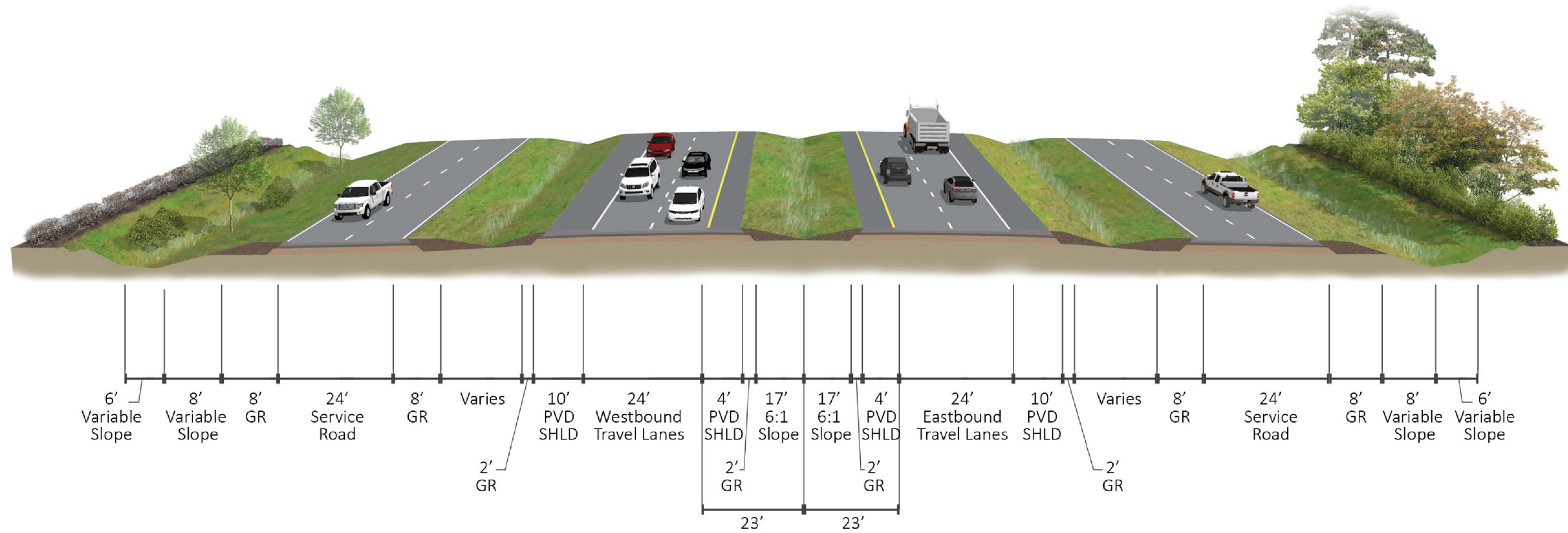




Source: AECOM

Figure 3:  
Typical section with service road on both sides

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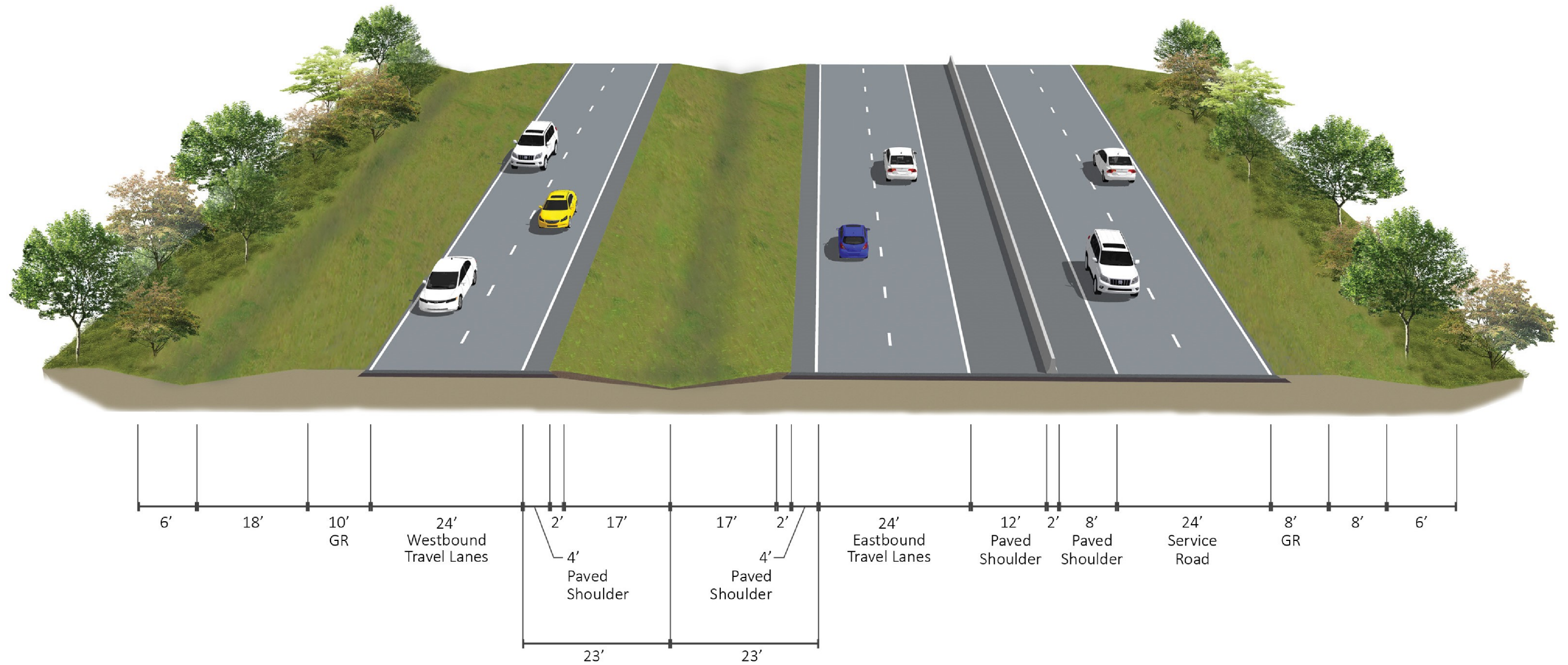




Source: AECOM

Figure 4:  
Typical section with barrier separated service road

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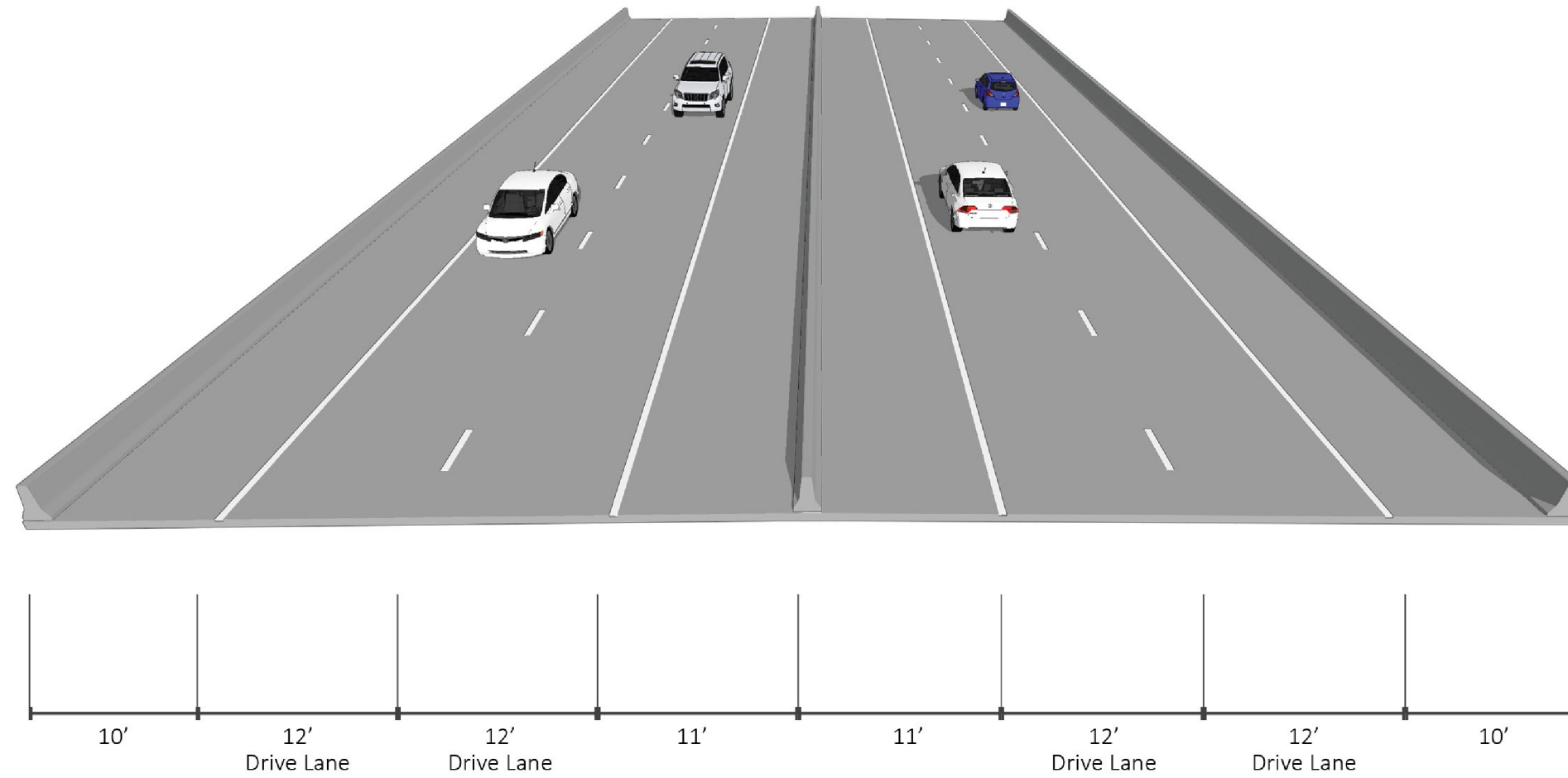




Source: AECOM

Figure 5:  
Typical section for Neuse River bridge

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## 4.0 Hydraulic Structures

Major hydraulic structures are those with a contributing drainage area requiring a conveyance greater than a 72-inch pipe. Twenty-three sites meeting that requirement were identified within the revised Hydraulics Analysis Report developed for the applicant's preferred alternative in October of 2021.

Changes in design since the June 2022 CP 4A meeting resulted in the following minor changes:

- 12-4: removal of proposed new culvert due to elimination of a ramp
- 516-2: additional extension of existing culvert due to change in Ramp B alignment
- 516-3: removal due to realignment of Ramp B
- 516-4: retain existing because proposed design no longer impacts crossing
- 516-5: change to location of proposed culvert to account for change in Y10 alignment
- 516-6: additional extension of existing culvert due to change in Ramp A alignment
- 516-8: removal due to change in Ramp D alignment
- 516-9: change to location of proposed culvert to account for change in Ramp D alignment
- Addition of new 7' x 7' box culvert between 516-2 and 516-9 due to shift and widening of Y10

These edits are shown in Table 1 and the locations of these crossings are shown on Figures 6 and 7. An addendum to the Hydraulics Analysis Report will be completed to reflect these changes.



**PRELIMINARY HYDRAULIC RECOMMENDATIONS FOR MAJOR<sup>(1)</sup> CROSSINGS**

DATE: 6/15/2021  
 PROJECT NUMBER: R-2553 Kinston Bypass  
 WBS ELEMENT #:  
 PROJECT DESCRIPTION:  
 NAME: Kinston Bypass

SITE NUMBER	ALT ID <sup>(2)</sup>	ROUTE	STATION	LAT	LONG	STREAM/WETLAND ID	STREAM NAME	FEMA STUDY TYPE	DRAINAGE AREA (Mi <sup>2</sup> )	EXISTING STRUCTURE	MINIMUM RECOMMENDED STRUCTURE	Notes
										Number, Size, Structure Type	Number, Size, Structure Type	
1	2	L	233+00	35.26694	-77.73161	Stream SA	Unnamed	None	1.72	6.5x4 box culvert	9'x7' RCBC with wingwalls	Replace existing
2	4	L	320+75	35.260997	-77.692803	Falling Creek	Falling Creek	Detailed	46.5	2-3@40' bridges	retain existing, add 2 bridges 3@40'-4"	Retain existing bridges, add two for aux. lanes
3	505	L2	N/A	35.260788	-77.674406	Stream SJ	Unnamed	None	2.98	12'x6' RCBC	12'x7' RCBC	Replace existing
4	<del>12-4</del>	<del>L2 Ramp A</del>	<del>N/A</del>	<del>35.266537</del>	<del>-77.674177</del>	<del>Stream SJ</del>	<del>Unnamed</del>	<del>None</del>	<del>2.24</del>	<del>None</del>	<del>3@12'x10' RCBC</del>	<del>Minimum structure size by Q is 7.5'x7.5'; match up and downstream structure sizes</del>
5	509	Y3	68+00	35.260801	-77.651981	Stream SO	Unnamed	None	1.41	1@6'x4' RCBC	1@8'x8' RCBC	Retain existing structure - no changes
6	304	L	454+50	35.258242	-77.651854	Stream SO	Unnamed	None	1.69	None	1@9'x7' RCBC	New location
7	307	L	607+00	35.240655	-77.606443	Stream SU	Unnamed	None	2.08	None	1@10' x 7' RCBC	New location
8	308	L	620+50	35.238034	-77.603833	Stream SV	Unnamed	None	1.48	None	1@10'x7' RCBC	New location
9	311	Y5	28+00	35.236385	-77.600422	Stream SV	Unnamed	None	1.43	1 24" RCP	1@8'x7' RCBC	Replace existing 24" pipe
10	313-3	L	641+50	35.23453	-77.59836	Stream SX	Unnamed	None	1.09	None	1@8'x7' RCBC	New location
11	312-1	A1C1Y5_RPA	26+50	35.236094	-77.598271	Stream SV	Unnamed	None	1.41	None	1@8'x7' RCBC	New location
12	312-2	A1C1Y5_RPA	23+25	35.235373	-77.59791	Stream SV	Unnamed	None	1.41	None	1@8'x7' RCBC	New location
13	110	L	818+50	35.229658	-77.543182	Southwest Creek	Southwest Creek	Detailed	56.1	2 bridges, both 1@56', 1@55', 1@56'	retain existing, add 1 bridge, 1@56', 1@55', 1@56'	Retain existing, add additional bridge for service road
14	112	L	905+00	35.21913	-77.517401	Mill Branch	Mill Branch	Limited	2.3	2 barrel 7'x6' RCBC	retain and extend 2@7'x6'	Retain and extend existing (sized for 50 year currently)
15	48	L	1035+00	35.223119	-77.474747	Tracey Swamp	Tracey Swamp	Limited	5.02	3@7'x7' RCBC	retain and extend 3@7'x7' RCBC	Retain and extend existing (sized for 50 year currently)
16	516-2	L	1097+00	35.2187335	-77.454464	Stream SAN	Unnamed	None	0.79	1@5' RCP	Replace with 84" Pipe with headwalls	Replace existing pipe (will now require extension due to change in Ramp B alignment)
<del>17</del>	<del>516-3</del>	<del>Y10 Ramp B</del>	<del>N/A</del>	<del>35.219674</del>	<del>-77.4538</del>	<del>Stream SAN</del>	<del>Unnamed</del>	<del>None</del>	<del>0.82</del>	<del>None</del>	<del>Install new 84" RCP with headwalls</del>	
18	516-4	Y10	67+75	35.219246	-77.452178	Gum Swamp	Gum Swamp	Detailed	2.37	CM Ellipse 12'x7'	Retain and extend	Retain existing, proposed design no longer impacts crossing
19	516-5	Y10 Ramp A	N/A	35.218281	-77.451525	Gum Swamp	Gum Swamp	Detailed	2.34	None	1@11'x8' RCBC	New location - change of alignment needed
20	516-6	L	1111+50	35.216818	-77.450859	Gum Swamp	Gum Swamp	Detailed	1.87	2@5'x7'	Retain as-is	Retain existing pipe (will now require extension due to change in Ramp A alignment)
<del>21</del>	<del>516-8</del>	<del>Y10 Ramp D</del>	<del>N/A</del>	<del>35.215787</del>	<del>-77.449953</del>	<del>Gum Swamp</del>	<del>Gum Swamp</del>	<del>Detailed</del>	<del>1.85</del>	<del>None</del>	<del>1@10'x7' RCBC</del>	<del>New location</del>
22	516-9	Y10 Ramp C	N/A	35.217319	-77.454361	Stream SAM	Unnamed	Detailed	0.61	None	1@5'x7' RCBC	New location required to account for change in Ramp D alignment
23	305	L	480+00	35.254052	-77.63601	Neuse River	Neuse River	Detailed	2700	None	7115' bridge	New Location

NOTES:  
 (1) Major Crossings - conveyance greater than 72" pipe (This table should be used for Merger CP2A concurrence.)  
 (2) Provided in planning document  
 (3) New culvert to be added between 516-2 and 516-9



**Figure 6: Culvert Locations**

**Legend**

- Proposed Box Culvert Crossing
- Retain Existing Culvert (Extend as Needed)
- Study Area
- Alternative 1 SB
- Stream
- Railroad
- County
- US Highway
- NC Highway
- Secondary Road
- Waterbody
- Global TransPark (GTP)
- Floodplain
- Floodway
- Municipal Area

0 12,000 Feet



This map is for reference only.  
Sources: CGIA, NCDOT, NCDENR, NCFPM, Craven County, NCDCM, NCEM, Lenoir County, Pitt County, Kinston Planning Department, NCOneMap, NCWRC, NCSHPO, EPA, USFWS, USDA, NRCS, DWQ, ESRI and URS.

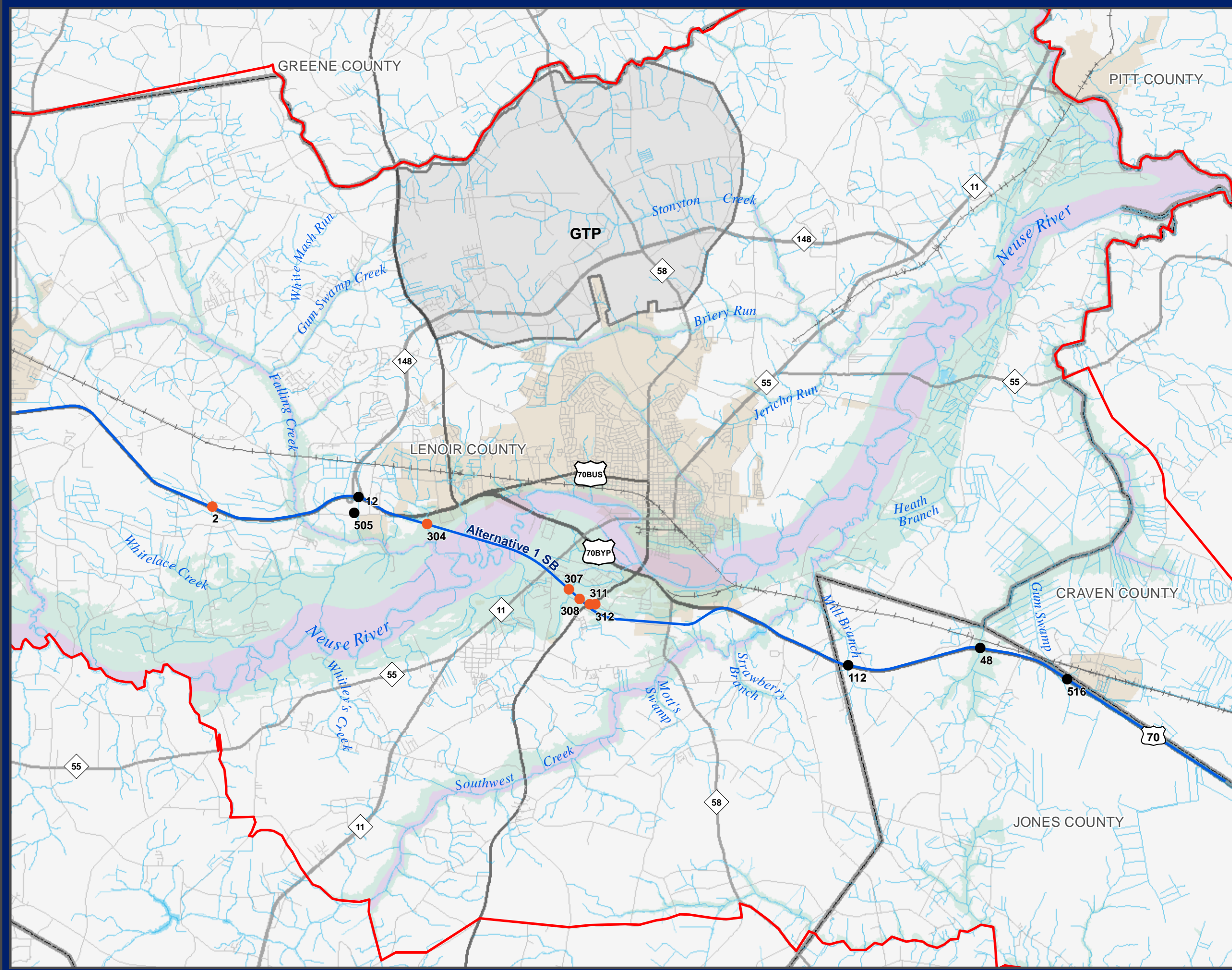




Figure 7: Bridge Locations

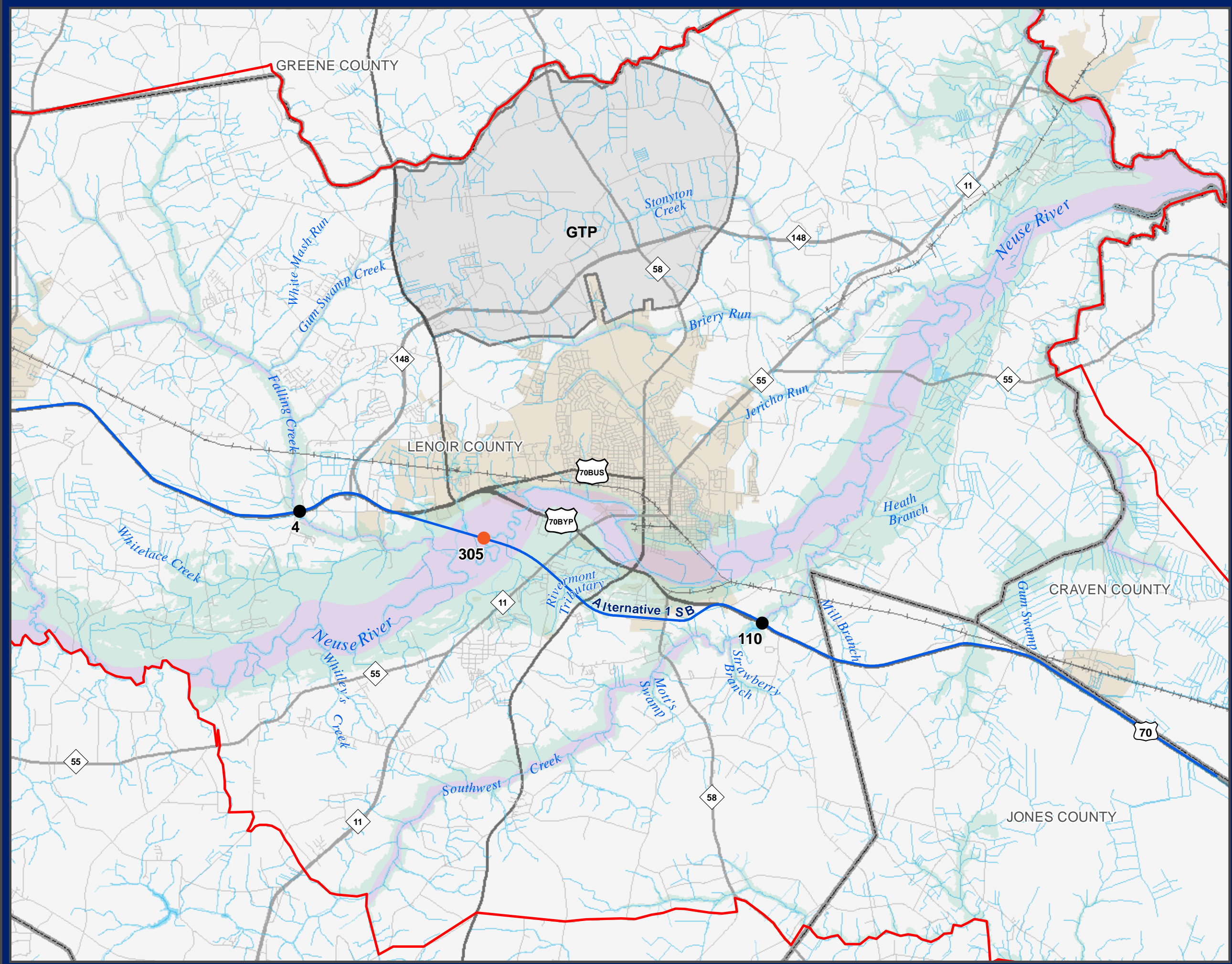
**Legend**

- Proposed Bridge Crossing
- Maintain Existing Bridge (No Modification Anticipated)
- Maintain Existing Bridge (with Potential Widening and/or Proposed Ramp/Service Rd. Bridge)
- Study Area
- Alternative 1-SB
- Stream
- Railroad
- US Highway
- NC Highway
- Secondary Road
- Global TransPark (GTP)
- County
- Waterbody
- Floodplain
- Floodway
- Municipal Area

0 12,000 Feet



This map is for reference only.  
Sources: CGIA, NCDOT, NCDENR, NCFPM Craven County, NCDCM, NCEM, Lenoir County, Pitt County, Kinston Planning Department, NCOneMap, NCWRC, NCSHPO, EPA, USFWS, USDA, NRCS, DWQ, ESRI and URS.



## 5.0 Avoidance and Minimization

Avoidance and minimization efforts have been applied throughout the project development and alternative analysis process including during the identification of preliminary alternatives and selection of the detailed study alternatives (CP 2 and CP 2A). In selecting the preferred alternative, NCDOT considered impacts calculated based on the proposed preliminary design as presented in the DEIS. However, it was recognized that the preliminary design would continue to be refined within the applicant's preferred alternative corridor through final design to address comments from environmental agencies and the public, and to further avoid and minimize impacts.

### 5.1 Design Refinements to the Applicant's Preferred Alternative

The June 2022 CP 4A packet contained design changes and refinements that occurred after the DEIS and corridor public hearing in 2019. Please see pages 18-31 of the June 2022 CP 4A packet for details.

The design refinements outlined below are those that have been incorporated since the June 2022 CP 4A meeting.

#### 5.1.1 CF Harvey Parkway Interchange

The original design for the project included a signal at the intersection of Sanderson Way and the slip lane off the project for eastbound traffic, with Sanderson Way intersecting Felix Harvey Parkway with a free flow ramp.

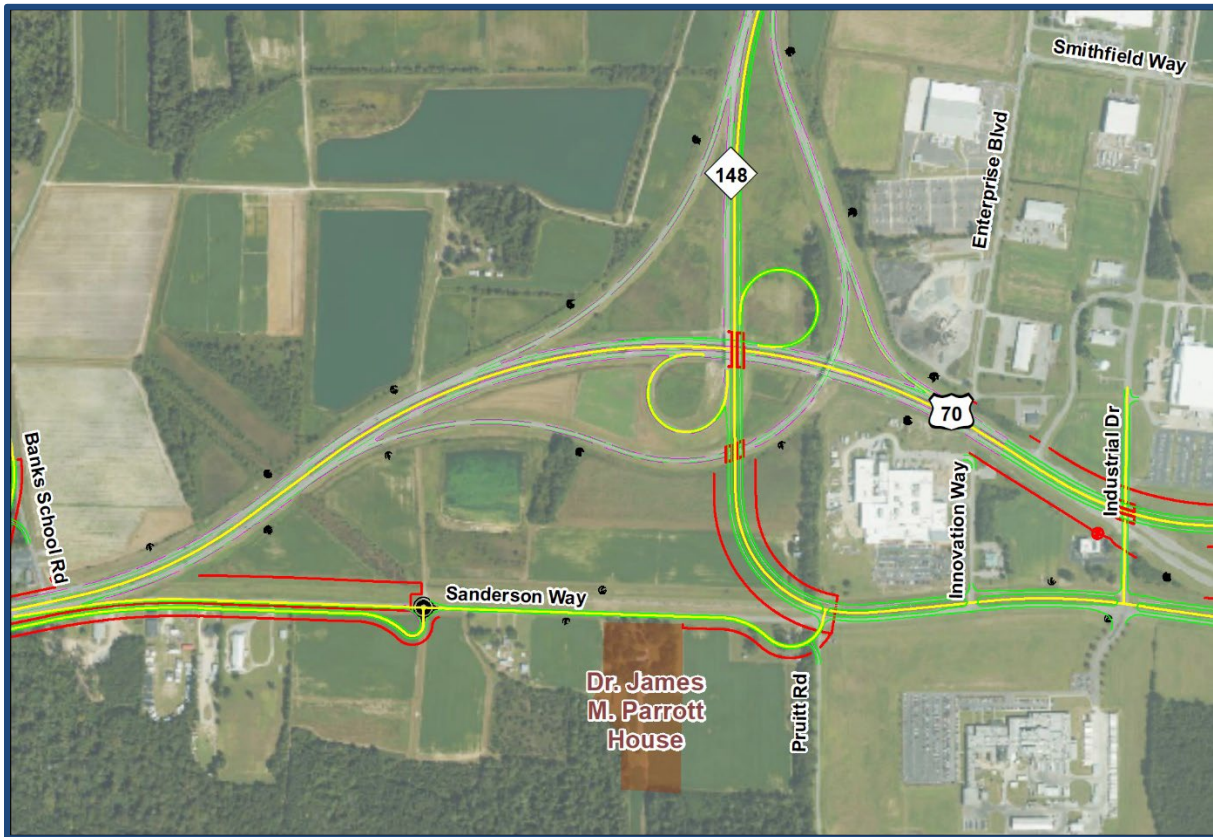
##### *Original Design*

The VE Study suggested a roundabout be used at the intersection of Sanderson Way and the slip lane in place of a signalized intersection to improve traffic operations and safety. The intersection of Sanderson Way with Felix Harvey Parkway was also reconfigured to come into the Felix Harvey Parkway ramp at a signalized intersection instead of the free-flow ramp for better traffic operations and safety. Once Felix Harvey Parkway intersects with Sanderson Way it would be transitioned to a more urban arterial roadway with potentially signalized intersections (to be determined later during final design). The design changes resulted in the elimination of direct impacts to the National Register listed Dr. James M. Parrot House property (LR-0703) from 0.2 acres (as shown in the DEIS) to zero. The original design would have impacted landscaping in front of the house that had been requested by SHPO to mitigate impacts from the previous roadway project at this intersection. This change was included in the June 2022 CP 4A packet and is shown in the first map below.

##### *Revised Design*

Following the June 2022 CP 4A meeting, NCDOT evaluated traffic movements and construction cost for the original design and the revised design and found that traffic functioned with or without the connector between the CF Harvey Parkway interchange and Sanderson Way. The connector was a redundant movement that did not affect capacity and would have been very costly to acquire right-of-way and construct. NCDOT consulted with and requested feedback from local businesses in the area as well as County Commissioners while evaluating the change in design. This change retained the elimination of impacts (including the landscaping) to the National Register listed Dr. James M. Parrot House property (LR-0703), and also reduces the amount of right-of-way acquisition in this area from approximately 253.7 acres to 187.0 acres. Wetland impacts in this area did increase slightly from 1.99 acres to 2.06 acres. The current design is shown in the second map below.





June 2022 Design



Current Design

### 5.1.2 Wyse Fork Battlefield

The original design for the Wyse Fork/Caswell Station Road interchange included a full-access, conventional interchange. After receiving public feedback via two Section 106 Consulting Parties meetings, NCDOT reviewed other preliminary design options for upgrading the conventional intersection to interstate standards. Each option impacted the Wyse Fork Battlefield to a different extent and necessitated the construction of service roads for existing residences and businesses in Wyse Fork. The options included the construction of a compressed-diamond interchange to minimize those impacts.

#### *Additional Design Evaluation*

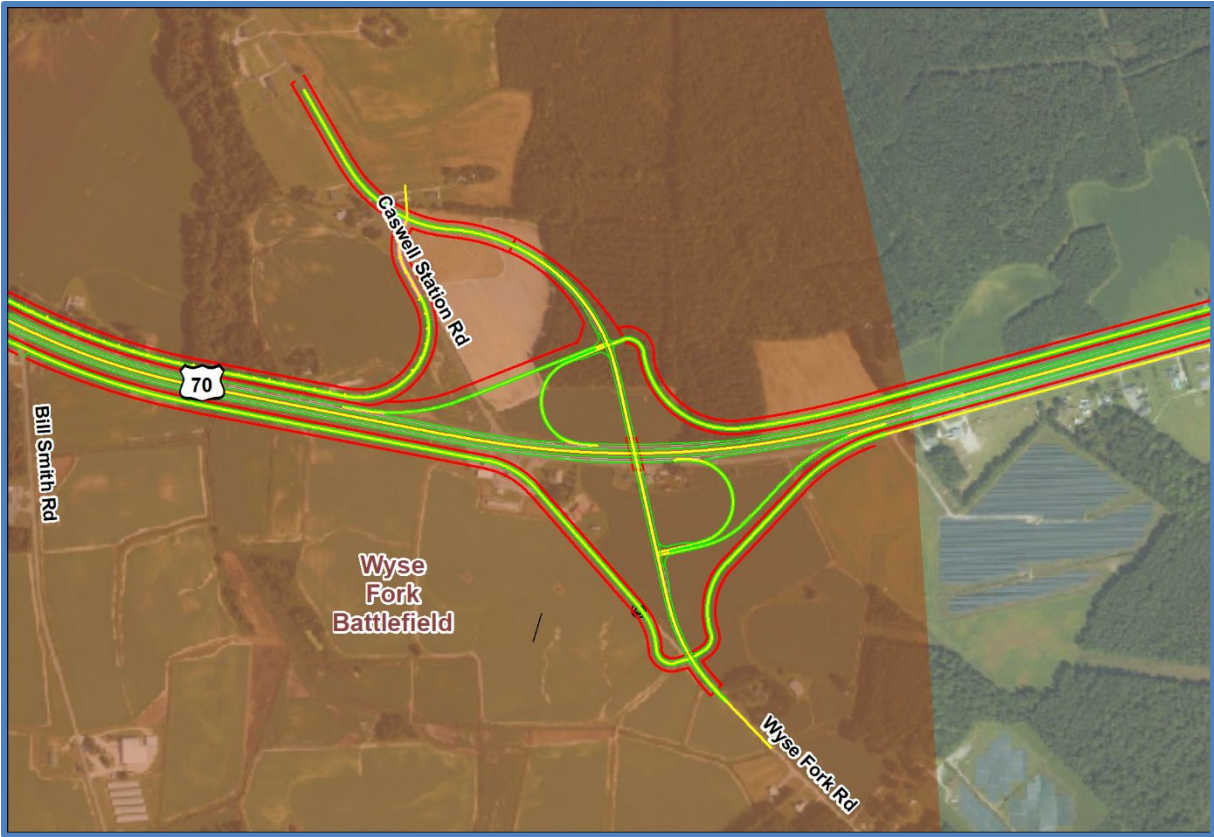
In May 2024, NCDOT developed a compressed diamond design in order to minimize impacts to the Wyse Fork Battlefield by shifting the interchange further away from the battlefield's "core" area. The compressed diamond would be constructed 0.3 miles to the east of the existing intersection. The existing intersection would be closed at US 70. This option would require 32.2 acres of new right-of-way but would eliminate impacts to newly developed conservation easements for the Wyse Fork Battlefield. NCDOT made this revision to provide a reasonable balance between competing interests, the needs of the project, and the requests made by stakeholders who make up the Section 106 Consulting Parties.

NCDOT also evaluated two other options requested by the consulting parties before determining they would not meet the need for and purpose of this project. The first option would have built an overpass without direct highway access to the two side roads. After a thorough review, it was determined that the no-access option did not provide the level of connectivity needed for the Jones County community.

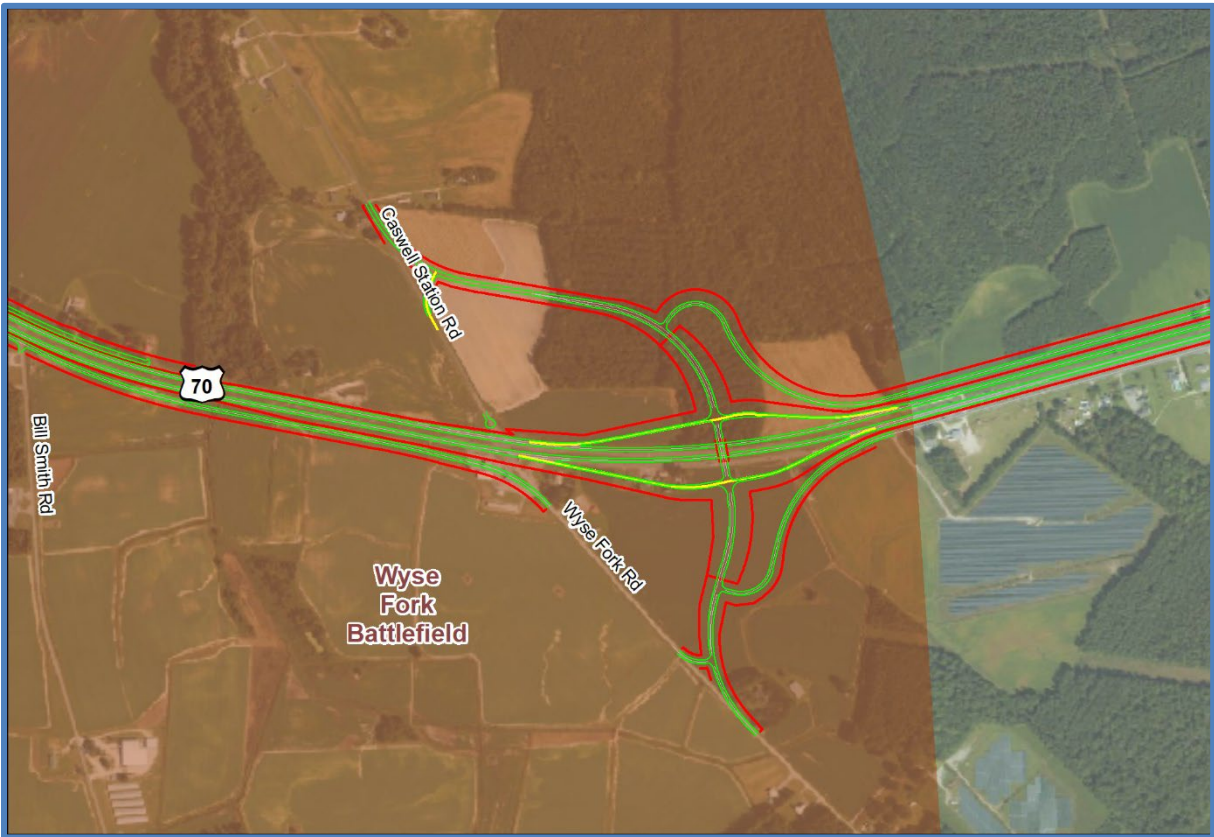
The second option would have involved relocating the interchange between 1.1 and 1.5 miles to the east out of the battlefield's historic boundary. After a thorough review, it was determined that relocating the interchange that far east would not be reasonable for several reasons. These reasons included that there is no existing road network south of US 70 to provide connectivity to the Jones County community, it would significantly raise costs, increase project timelines, reduce highway access, and increase environmental and property impacts.

The original design required approximately 79.7 acres of right-of-way and would impact 0.01 acres of wetlands. The new design requires approximately 64.5 acres of right-of-way and will impact 1.29 acres of wetlands. The original design included in the June 2022 CP 4A packet is shown in the first map below and the current, revised design is shown in the second map below.





June 2022 Design



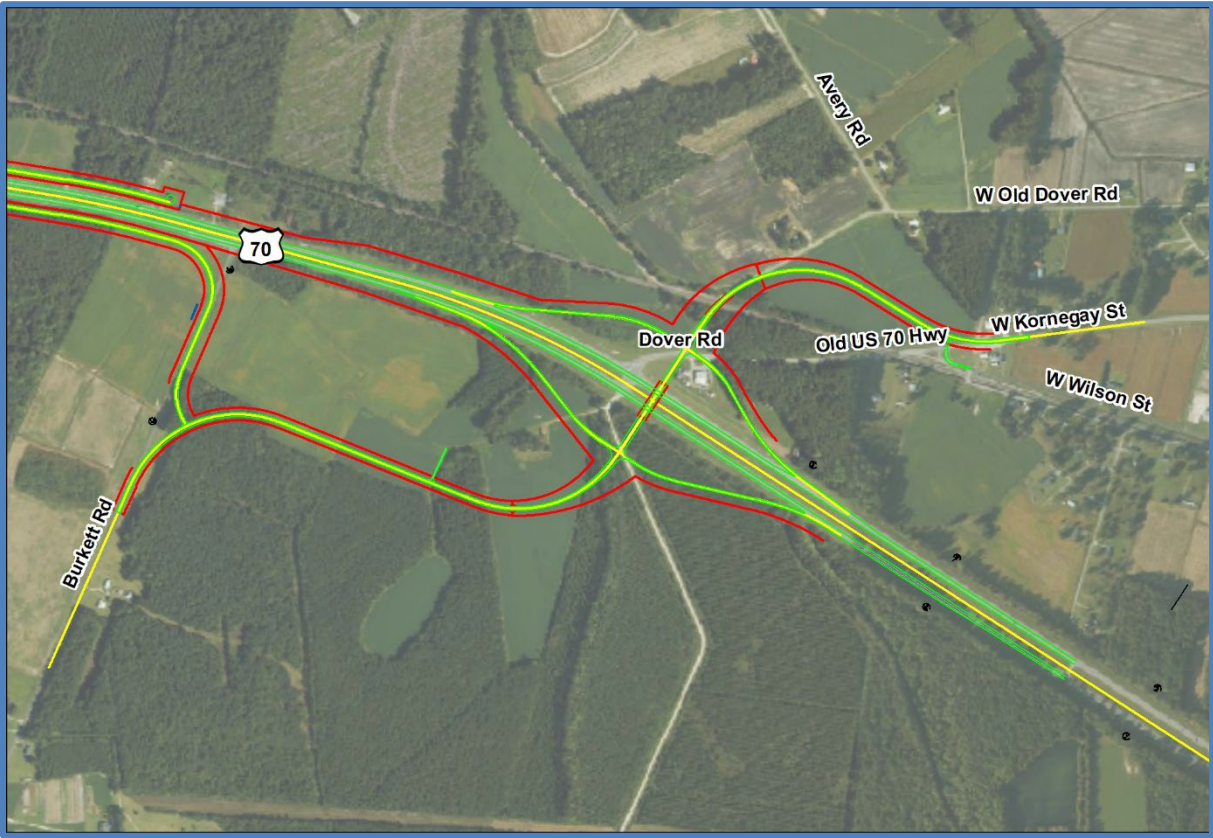
Current Design

### 5.1.3 Dover Interchange

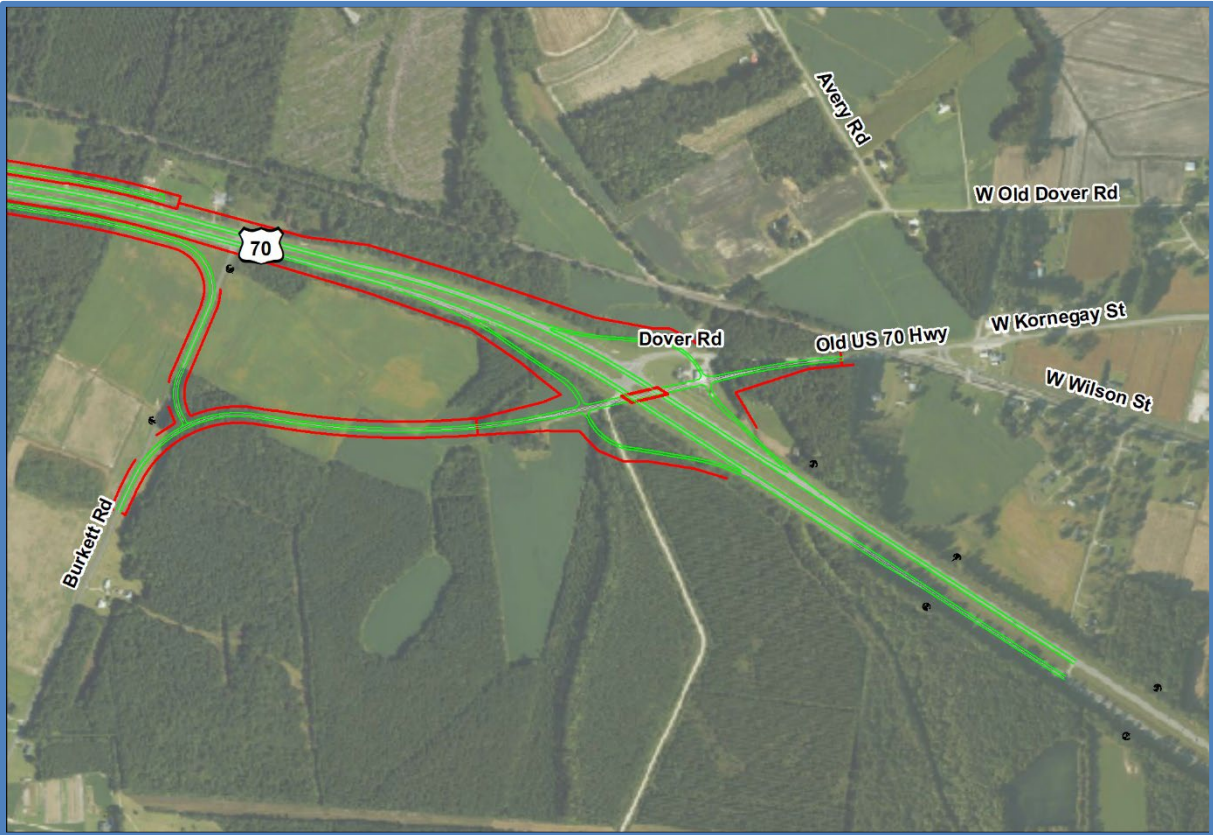
Following the VE Study, the interchange at Dover was revised to reduce the length of ramps to lessen impacts and minimize the overall footprint of the interchange. This reduction in ramp lengths would allow for an additional reduction in cost without impacting traffic operations or increasing environmental impacts. The right-of-way reductions in this area were reduced from 153.3 acres in the DEIS to 89.0 acres. The original design included in the June 2022 CP 4A packet is shown in the first map below.

This design was later revised after coordination with the NCDOT Rail Division. The NCDOT Rail Division relayed feedback from Norfolk Southern Railroad that the company would not allow three existing at-grade driveway crossings to remain in place if the bridge were constructed. Norfolk Southern Railroad also opposed the extension of West Railroad Street on rail right-of-way as a means of maintaining access for residents and emergency services. The bridge was removed from the design in order to avoid relocating all of the residences with existing driveway access and to maintain access for emergency services. The original design required approximately 93.8 acres of right-of-way and would impact 1.3 acres of wetlands. The new design requires approximately 60.1 acres of right-of-way and will impact 1.07 acres of wetlands. The current, revised design is shown in the second map below.





June 2022 Design



Current Design

## 5.2 Human Environment

The traffic noise report completed for the DEIS found that there were 56 noise receptors impacted. The updated traffic noise report completed in 2022 found that there were 63 noise receptors. The increase in noise receptors between the DEIS and 2022 CP 4A was due to the decrease in direct takes. The 2024 traffic noise report (addendum 2) identified 79 impacted noise receptors and is also the result of a further decrease in direct takes as well as changes to design. Additional noise barriers were analyzed but were determined to be not reasonable due to the low density of the impacts. Additional barriers are not likely to be constructed.

Impacts to residences and businesses were minimized to the greatest extent possible, while still allowing for traffic operations. Changes to relocation impacts between the DEIS, 2022 CP 4A, and 2024 CP 4A are shown in Table 2.

**Table 2. Relocation Impacts Comparison between DEIS and FEIS**

Type of Relocation	DEIS Impacts	2022 CP 4A Impacts	2024 CP 4A <sup>1</sup> Impacts
Residential (#)	162	55	53
Business (#)	67	25	25
Non-Profit (#)	0	1	1
<b>Total (#)</b>	<b>229</b>	<b>81</b>	<b>79</b>

<sup>1</sup>2024 CP 4A Impacts will be impacts disclosed in the FEIS. Impacts shown are estimates based on design and will be updated once a new relocation report is completed by NCDOT.

### 5.2.1 Cultural Resources

The DEIS reported that Alternative 1SB would require right-of-way from the following historic properties. Effect determinations are also listed for each of the properties below.

- Dr James M. Parrott House – no adverse effect
- Henry Loftin Herring Farm – no adverse effect
- Wyse Fork Battlefield – adverse effect
- Cobb-King-Humphrey House – adverse effect

The effects calls listed above remain valid. Changes in impacts between the DEIS, 2022 CP 4A, and 2024 CP 4A are reflected in Table 3.

As part of the MOA, NCDOT has committed to the following to further minimize impacts to cultural resources:

- Revise roadway designs to avoid areas of archaeological interest to the extent possible
- Include construction contract language to prevent ground disturbing activities (i.e. staging areas and borrow pits) within the Wyse Fork Battlefield
- Include contractual language the contractor must adhere to avoid archaeological sites and other sensitive areas
- Hold a burial treatment preconstruction meeting
- Monitor construction for cultural resources



**Table 3. Property takings (acres) of Historic Architectural Resources by the Applicant’s Preferred Alternative**

HPO Site #	Resource Name	DEIS Impacts	2022 CP 4A Impacts	2024 CP 4A Impacts
LR-0703	Dr James M. Parrott House	0.2	0.0	0.0
LR-0700	Henry Loftin Herring Farm	1.8	3.9 <sup>1</sup>	4.4
JN-0603	Wyse Fork Battlefield	266.9	186.5	167.5
LR-1197	Cobb-King-Humphrey House	3.0	2.0	1.8

<sup>1</sup> Design changes made between the DEIS and 2022 CP 4A to provide better access for travelers resulted in an overall increase in impacts to the property. The interchange changed to a tight urban diamond which increases the interchange area but does not bring the mainline of the project closer to the home. Access to the farm has not changed.

### 5.3 Natural Resources

The Kinston Bypass project was designated as a pilot project by the North Carolina Interagency Leadership Team, which included using GIS data as the basis for alternative development, alternative evaluation, and selection of the applicant’s preferred alternative. In order to meet the intent of the pilot project process, two ArcGIS models were used to assess potential stream and wetland impacts and land cover data was used to assess terrestrial community impacts prior to the publication of the DEIS.

Impacts presented in the DEIS were estimated using corridor-level slope stake limits plus 40 feet. The corridor-level design at the time of the DEIS did not include interchange areas or y-lines.

Following distribution of the June 2019 DEIS and the August 2019 corridor public hearings, NCDOT selected Alternative 1SB as the applicant’s preferred alternative for the project. In 2022 and 2024, streams and wetlands were field delineated for Alternative 1SB. Terrestrial communities were also field verified at that time. Therefore, comparison of impacts between the DEIS and the CP 4A data sets represents not only the change in design and addition of interchange areas, but also a change in the type of data collection being used for streams, wetlands, and terrestrial communities. Tables 4 through 7 reflect these changes and differences resulting from design modifications between 2022 and 2024.

#### 5.3.1 Terrestrial Communities

Areas mapped as forested upland and palustrine wetland are the only remaining natural areas present within the study area. Since a portion of this project would involve construction on new location, fragmentation of these forested natural communities would be expected. Impacts to forested uplands are showing an increase between the DEIS and CP 4A data sets (Table 4). However, as mentioned above, the methodology used to distinguish community types between the DEIS and the CP 4A data sets have now changed. The DEIS used land cover data to quantify terrestrial communities. While the CP 4A data sets contain communities identified during field studies.

**Table 4. Natural Community Impacts by the Applicant’s Preferred Alternative**

Natural Community	Coverage (acres)		
	DEIS Impacts	2022 CP 4A Impacts	2024 CP 4A Impacts
Maintained/Disturbed	516.6	638.5	535.9
Agriculture	507.9	369.6	305.2
Pine Plantation	148.5	26.6	21.4
Forested Upland	25.3	146.1	134.5
Palustrine Wetland	97.4	42.6	39.5
Open Water	13.7	2.1	1.7
<b>Total</b>	<b>1,309.4</b>	<b>1,225.5</b>	<b>1,038.2</b>

**5.3.2 Streams, Floodplains, and Wetlands**

Impacts to streams, stream buffers, floodplains, and wetlands were calculated within the slope stakes of the current preliminary design plus 40 feet. The change in impacts between the DEIS, 2022 CP 4A, and 2024 CP 4A are shown below (Tables 5 and 6). Impacts have decreased as a result of field verification and design adjustments for avoidance and minimization of resources. Table 7 contains impacts by wetland type, as defined during field delineations.

Streams and wetlands in areas where the design has changed since the 2022 CP 4A meeting are shown on Figure 8, Figure 9, and Figure 10.

**Table 5. Stream and Floodplain Impacts by the Applicant’s Preferred Alternative**

Impact Type	DEIS Impacts	2022 CP 4A Impacts	2024 CP 4A Impacts
Stream crossings (#)	44	48	46
Stream length (ft)	33,112	21,842	18,152
Stream buffer – Zone 1 (sq ft)	N/A <sup>a</sup>	N/A	1,072,994
Stream buffer – Zone 2 (sq ft)	N/A <sup>a</sup>	N./A	742,462
100-year floodplain (ac)	147.7	135.9	121.4
500-year floodplain (ac)	130.8	109.1	100.8
Floodway (ac)	0.6	1.1	0.4
<b>Total floodplains (ac)</b>	<b>278.5</b>	<b>246.1</b>	<b>226.6</b>

<sup>a</sup> Stream buffers were not calculated on modeled data or for 2022 CP 4A meeting.

**Table 6. Wetland Impacts by the Applicant’s Preferred Alternative**

Impact Type	DEIS Impacts	2022 CP 4A Impacts	2024 CP 4A Impacts
Riparian wetland (ac)	41.2	40.4	35.9
Non-riparian wetland (ac)	24.2	2.2	3.6
<b>Total wetland impacts (ac)</b>	<b>65.4</b>	<b>42.6</b>	<b>39.5</b>

**Table 7. Wetland Impacts by Type for the Applicant’s Preferred Alternative**

Impact Type	2022 CP 4A Impacts	2024 CP 4A Impacts
Basin wetland (ac)	0.23	0.23
Bottomland hardwood forest (ac)	10.61	9.60
Floodplain pool (ac)	0.68	0.07
Headwater forest (ac)	9.97	8.79
Riverine swamp forest (ac)	19.07	17.45
Pine flat (ac)	1.99	3.25
Pocosin (ac)	0	0.07
Seep (ac)	0	0.002
<b>Total wetland impacts (ac)</b>	<b>42.55</b>	<b>39.45</b>



**Jurisdictional Features  
Alternative I SB**

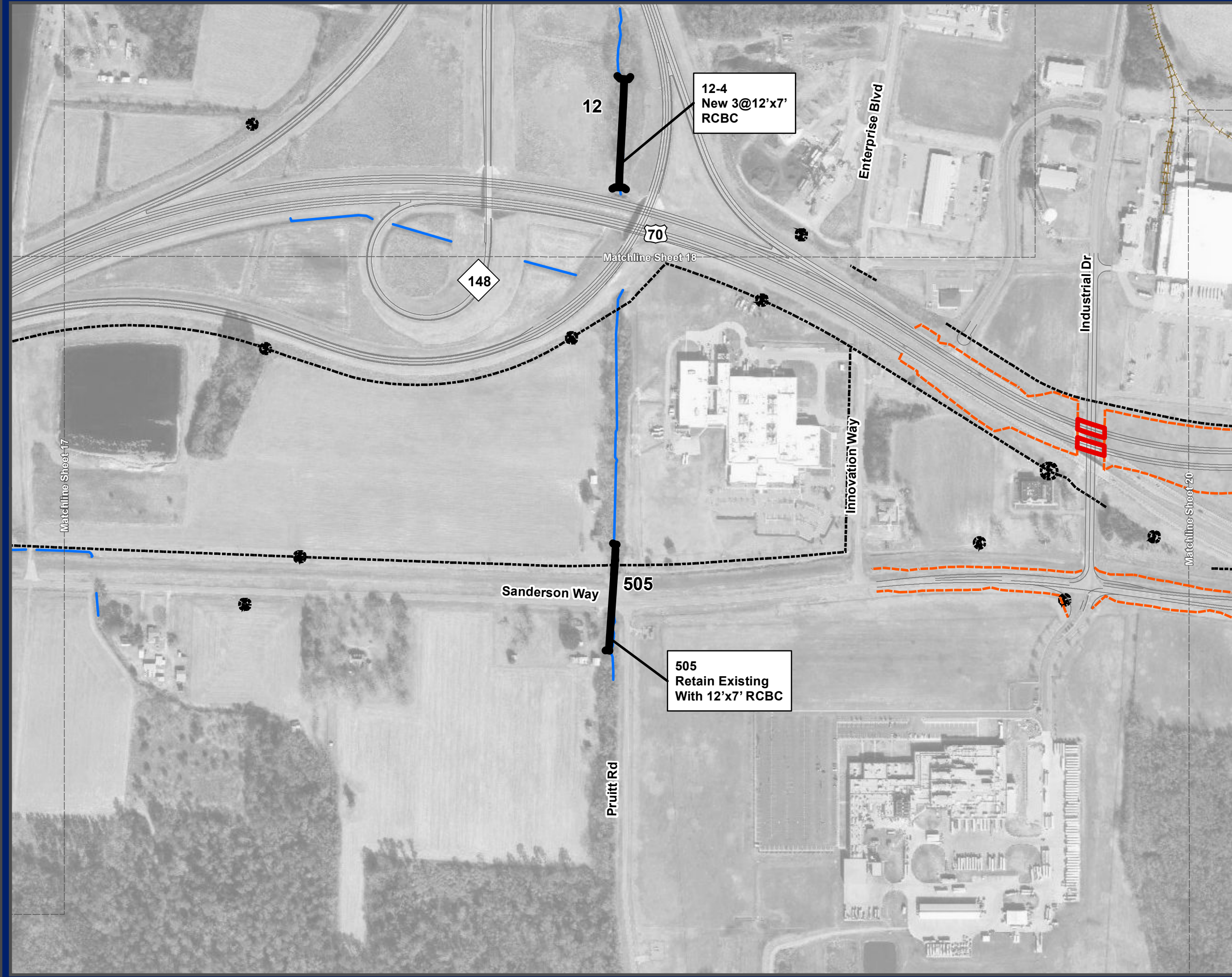
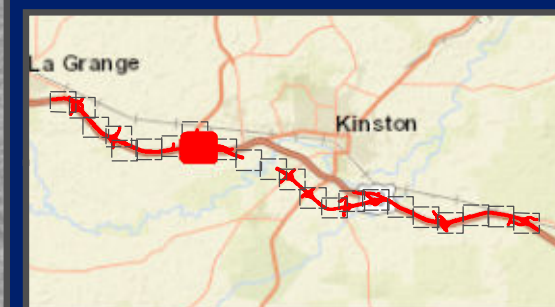
Figure 8

**Legend**

-  Jurisdictional Streams
-  Railroad
-  Existing Drainage Structure
-  Proposed Drainage Structure
-  Jurisdictional Wetlands
-  Slope Stakes FEIS
-  ROW FEIS
-  Proposed Bridge
-  Matchline



This map is for reference only.  
Sources: CGIA, NCDOT, NCDEQ,  
Craven County, Lenoir County, Jones County,  
Kinston Planning Department, NCOneMap,  
NCSHPO, DWR, ESRI and AECOM.



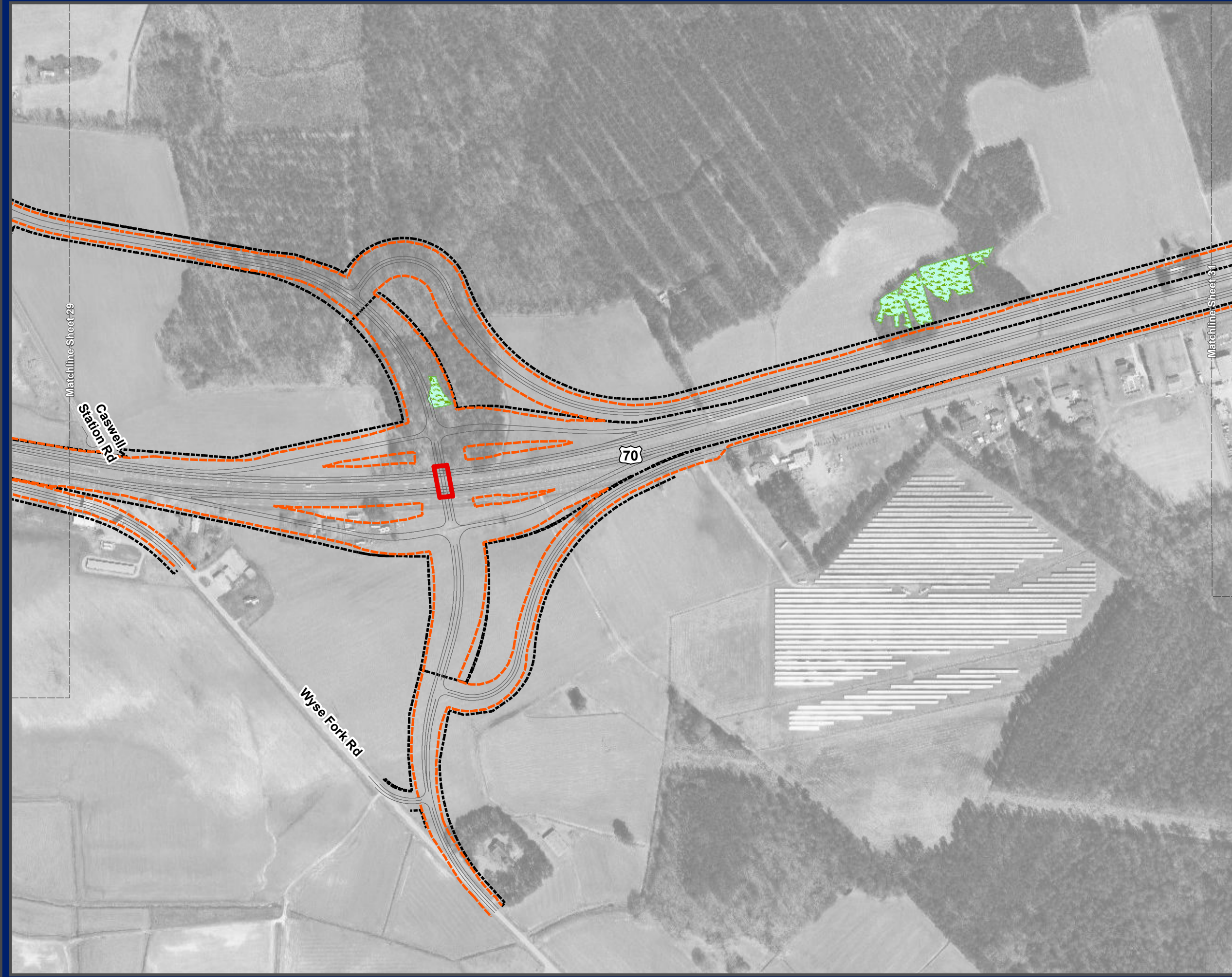


### Jurisdictional Features Alternative I SB

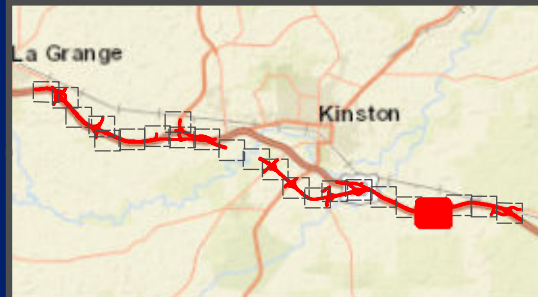
Figure 9

#### Legend

- Jurisdictional Streams
- Existing Drainage Structure
- Proposed Drainage Structure
- Jurisdictional Wetlands
- Slope Stakes FEIS
- ROW FEIS
- Proposed Bridge
- Matchline



This map is for reference only.  
Sources: CGIA, NCDOT, NCDEQ,  
Craven County, Lenoir County, Jones County,  
Kinston Planning Department, NCOneMap,  
NCSHPO, DWR, ESRI and AECOM.





**Jurisdictional Features  
Alternative I SB**

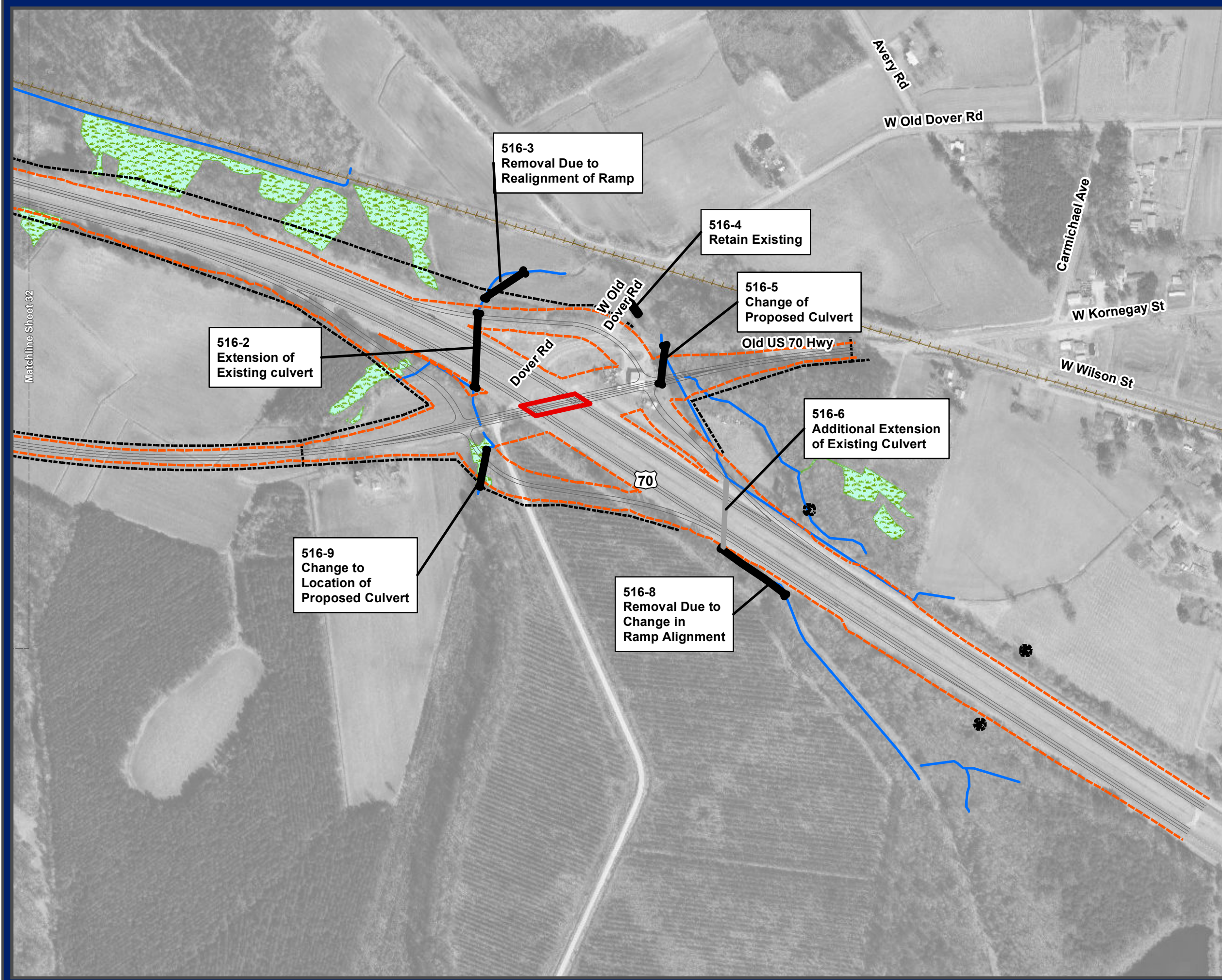
Figure 10

**Legend**

-  Jurisdictional Streams
-  Railroad
-  Existing Drainage Structure
-  Proposed Drainage Structure
-  Jurisdictional Wetlands
-  Slope Stakes FEIS
-  ROW FEIS
-  Proposed Bridge
-  Matchline



This map is for reference only.  
Sources: CGIA, NCDOT, NCDEQ,  
Craven County, Lenoir County, Jones County,  
Kinston Planning Department, NCOneMap,  
NCSHPO, DWR, ESRI and AECOM.





### 5.3.3 Protected Species

Since the June 2022 CP 4A meeting, a Biological Assessment (BA) was prepared (2023), in which a biological conclusion of May Affect, Likely to Adversely Affect was determined for the project, to initiate Formal Consultation for the Neuse River Waterdog (*Necturus lewisii*) under Section 7 of the ESA of 1973, as amended (16 U.S.C. 1531 et seq.), with the US Fish and Wildlife Service (USFWS). Formal Consultation was initiated on October 1, 2024 in order to acquire concurrence with the BA by issuance of a USFWS Biological Opinion (BO). The Biological Opinion for the project is currently underway.

Surveys for terrestrial plants and animals were conducted in July and August 2022. A No Effect determination was reached for red-cockaded woodpecker (*Picoides borealis*), rough-leaved loosestrife (*Lysimachia asperulaefolia*), and sensitive joint-vetch (*Aeschynomene virginiana*). A determination of May Affect, Likely to Adversely Affect was reached for Northern long-eared bat (*Myotis septentrionalis*) through a Programmatic Biological Opinion (PBO). Since that time, tricolored bat (*Perimyotis subflavus*), a proposed endangered species has been added to the list for the project area. The USFWS has issued a Programmatic Conference Opinion (PCO) in conjunction with FHWA, USACE, and NCDOT for the tricolored bat in eastern North Carolina. The PCO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. NCDOT, FHWA, and USACE have agreed to three conservation measures (listed in the PCO) which will avoid/minimize take to tricolored bats. These conservation measures apply to all counties in Divisions 1-8. The programmatic determination for tricolored bat for the NCDOT program is May Affect, Likely to Adversely Affect. Once the tricolored bat is officially listed, the PCO will become the PBO by formal request from FHWA and USACE. The PBO will ensure compliance with Section 7 of the ESA for approximately five years (effective through December 31, 2028) for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Lenoir, Jones, and Craven Counties, where R-2553 is located.

## 6.0 Summary DEIS Impacts versus FEIS Impacts

Impacts calculated for the DEIS compared to the current designs for the applicant's preferred alternative to be presented in the FEIS for both slope stake limits plus 40 feet and slope stake limits plus 25 feet, where appropriate, are shown in Table 8.

**Table 8. Summary of DEIS Impacts versus FEIS Impacts**

Impact Type	DEIS Impacts <sup>8</sup>	2022 CP4A Impacts	2024 CP4A Impacts (SS+40)	2024 CP4A Impacts (SS+25)
<b>General</b>				
Length (miles)	21.2	21.1	21.1	-
Intelligent transportation system cost (\$)	\$450,000	\$2,600,000	TBD	-
Utility cost (\$)	\$10,800,000	\$17,090,000	TBD	-
Right-of-way cost (\$)	\$123,710,000	\$86,830,000	TBD	-
Construction cost (\$)	\$292,800,000	\$582,600,000	TBD	-
Mitigation cost (\$)	\$12,250,000	\$27,050,000	TBD	-
<b>Total cost (\$)</b>	<b>\$440,010,000</b>	<b>\$716,170,000</b>	<b>TBD</b>	<b>-</b>
<b>Socioeconomic Resources</b>				
Residential (#)	162	55 <sup>1</sup>	53 <sup>1</sup>	-
Business (#)	67	25 <sup>1</sup>	25 <sup>1</sup>	-
Non-Profit (#)	0	1 <sup>1</sup>	1 <sup>1</sup>	-
<b>Total (#)</b>	<b>229</b>	<b>81<sup>1</sup></b>	<b>79</b>	<b>-</b>
Communities (#)	3	7 <sup>2</sup>	7	-
Environmental Justice residential areas (#)	6	8 <sup>3</sup>	8	-
Minority block groups (#)	0	0	8	-
Low income block groups (#)	3	8 <sup>3</sup>	8	-
Schools (#)	1	1	1	-
Hospitals (#)	0	0	0	-
Churches (#)	6	6	10 <sup>9</sup>	-
Fire departments (#)	1	0	1	-
Emergency Medical Services stations (#)	0	0	0	-
Airports (#)	0	0	0	-
Parks and recreational areas (#)	0	0	0	-
Cemeteries (#)	1	2 <sup>4</sup>	2	-
VADs (#)	0	0	0	-
VADs (ac)	0.0	0.0	0.0	-
NCNHP managed areas (ac)	2.3	31.9 <sup>5</sup>	30.8	-
Prime farmland (ac)	302.3	328.0 <sup>6</sup>	283.3	-
Farmland of statewide importance (ac)	225.5	231.4 <sup>6</sup>	219.1	-



Impact Type	DEIS Impacts <sup>8</sup>	2022 CP4A Impacts	2024 CP4A Impacts (SS+40)	2024 CP4A Impacts (SS+25)
Farmland of unique importance (ac)	53.3	39.9	39.9	-
Economic Resources				
Annual total net benefits (quantified 2040)	\$23,400,000	\$37,200,000	\$37,200,000	-
<b>Physical Resources</b>				
Noise receptors impacted	56	63 <sup>7</sup>	79	-
Hazardous materials sites (#)	9	19	15	-
<b>Cultural Resources</b>				
Section 106 adverse effects	2	2	2	-
Archaeological sites - high probability (ac)	829.3	834.9	762.1	-
Archaeological sites - low probability (ac)	480.1	1,267.6 <sup>10</sup> 432.7	345.5	-
<b>Natural Resources<sup>8</sup></b>				
Maintained/Disturbed (ac)	516.6	638.5	535.9	487.8
Agriculture (ac)	507.9	369.6	305.2	265.8
Pine Plantation (ac)	148.5	26.6	21.4	18.7
Forested Upland (ac)	25.3	146.1	134.5	114.7
Palustrine Wetland (ac)	97.4	42.6	39.5	34.7
Open Water (ac)	13.7	2.1	1.7	1.6
<b>Total biotic resources (ac)</b>	<b>1,309.4</b>	<b>1,225.5</b>	<b>1,038.2</b>	<b>923.3</b>
Stream crossings (#)	44	48	46	46
Stream length (ft)	33,112	21,842	18,152	16,562
Stream buffer – Zone 1 (sq ft)	N/A <sup>11</sup>	N/A <sup>11</sup>	1,072,994	957,473
Stream buffer – Zone 2 (sq ft)	N/A <sup>11</sup>	N/A <sup>11</sup>	742,462	662,490
100-year floodplain (ac)	147.7	135.9	121.4	107.3
500-year floodplain (ac)	130.8	109.1	100.8	89.6
Floodway (ac)	0.6	1.1	0.4	0.4
<b>Total floodplains (ac)</b>	<b>278.5</b>	<b>246.1</b>	<b>222.6</b>	<b>197.3</b>
Riparian wetland	41.2	40.4	35.9	31.7
Non-riparian wetland	24.2	2.2	3.6	3.0
<b>Total wetland impacts (ac)</b>	<b>65.4</b>	<b>42.6</b>	<b>39.5</b>	<b>34.7</b>

<sup>1</sup> Relocation numbers are preliminary and subject to change.

<sup>2</sup> GIS data was used to determine DEIS impact numbers. Ground-truthing and community outreach resulted in the identification of additional communities.

<sup>3</sup> Updated 2020 Census data resulted in changes to minority and low-income communities.

<sup>4</sup> Field reconnaissance identified an additional cemetery.

<sup>5</sup> Updates to the NCNHP managed areas data now include HMGP properties.

<sup>6</sup> Soil data layers were updated.

<sup>7</sup> Avoidance and minimization efforts resulted in the taking of less properties and an increase in noise receptors.

<sup>8</sup> DEIS was an estimate based on GIS/model using corridor-level design slope stakes plus 40 feet (which did not include interchange areas or y-lines). FEIS are calculated based on actual field surveys for 1,000 foot corridor and encompasses all potential ROW, interchanges, and y-lines.

<sup>9</sup> 2024 church impact estimates include all ROW impacts. Previous estimates were based on the 1,000-foot DCIA corridor which did not contain interchanges, y-lines, or loss of access.

<sup>10</sup> Correction – previous packet contained total acres (1,267.6). Correct acreage is now shown.

<sup>11</sup> Stream buffers were not calculated on modeled data or for 2022 CP 4A meeting.

## 7.0 Summary of Recent Public and Agency Involvement

NCDOT published the DEIS in June of 2019 and held a Corridor Public Hearing in August of 2019. Since that time, NCDOT and the project team have held small group meetings with businesses and EJ communities with potential to be affected by the project as well as agency coordination meetings. Meetings held since August 2019 are summarized in Table 9.

**Table 9. Summary of Meetings**

Date	Description
2/19/2020	CP 3 Meeting
6/17/2020	Merger Team Informational Meeting #9
10/12/2021	Small Group Meeting with owners of Foss Farm Mobile Home Park
11/4/2021	Local Officials Meeting #9
11/10/2021	CP2A Revisited Meeting
11/13/2021	Small Group Meeting with residents of Foss Farm Mobile Home Park
11/09/2021 11/15/2021	Business Community Virtual & Open House Meetings (Microsoft Teams and NCDOT Division 2 Office)
11/17/2021	Small Group Meeting - EJ and Affected Community at Southwood Memorial Church
12/2/2021	Small Group Meeting - EJ and Affected Community at Kinston Community Center
2/14/2022	Business Meeting with Electrolux
3/17/2022	Small Group Meeting with God's House for All People
3/24/2022	Section 106 Effects Meeting
4/19/2022	Business Meeting with West Pharmaceutical
4/19/2022	Business Meeting with MasterBrand
5/10/2022	Small Group Meeting with God's House for All People
6/15/2022	Section 106 Consulting Parties Meeting
6/22/2022	CP 4A Meeting
7/18/2022	Small Group Meeting with Chosen Vessel Ministries
7/28/2022	Business Meeting with West Pharmaceutical
8/22/2022	Meeting with Jones County Board of Commissioners
10/17/2022	Meeting with Lenoir County
11/9/2023	Section 106 Consulting Parties Meeting
11/16/2023	Small Group Meeting with Chosen Vessel Ministries
5/14/2024	Meeting with Wyse Fork Volunteer Fire Department