

**CONCURRENCE POINT 2-Revisited:
Alternatives to be Studied in Detail
and
CONCURRENCE POINT 2A:
Bridging Decisions and Alignment Review**

NC 211

from US 15-501 in Aberdeen to
east of SR 1244 (West Palmer Street) / SR 1311 (Mockingbird Hill Road) in Raeford
Moore and Hoke Counties

STIP Project R-5709
WBS No. 50205.1.1

January 3, 2019

1. Purpose of Meeting

The purpose of today's meeting is to discuss the alternatives to be studied in detail and review alignment. Concurrence will be requested at the January 2019 Merger Meeting. The desired outcome is to reach concurrence on one "best fit" alignment.

2. Project Description

The NCDOT proposes to widen NC 211 to a four-lane divided roadway with a grass median from US 15-501 in Aberdeen (Moore County) to east of SR 1244 (West Palmer Street) / SR 1311 (Mockingbird Hill Road) in Raeford (Hoke County), a distance of approximately 15.4 miles. The project study area and alternatives are shown on Figures 1-19.

The project is included in the 2018-2027 State Transportation Improvement Program (STIP) and is state funded. Right of way acquisition and construction are scheduled for state fiscal years 2020 and 2023, respectively. The total cost for the project included in the 2018-2027 STIP is \$141,719,000. Of this total, \$42,356,000 is included for right of way acquisition, \$5,083,000 for utility relocation and \$94,280,000 for construction.

3. Project Status

A Minimum Criteria Determination Checklist or State Environmental Assessment will be prepared in compliance with North Carolina's State Environmental Policy Act (SEPA). Two public meetings were held in July 2016 to introduce the project, discuss the project need, and present the draft study area. Approximately 150 people attended the meetings.

A combined Concurrence Point 1 / Concurrence Point 2 meeting was held on June 15, 2017. The following sections summarize the meeting results.

4.1. Concurrence Point 1

Following the merger meeting and with additional email collaboration, the Project Team concurred on the purpose and need, screening criteria, and study area for the project. Electronic signatures were obtained.

Project Purpose: The purpose of the proposed project is to reduce traffic congestion and travel delays, and correct roadway deficiencies along NC 211 within the project limits.

Screening Criteria: The following performance measures explain how alternatives that meet the Purpose stated above will be evaluated. Specifically, alternatives considered for the project must achieve the following along NC 211 within the project limits:

- provide additional traffic capacity in order to achieve a level of service “C” or better for the NC 211 roadway (mainline) segments during the peak hours in 2040;
- improve traffic operations by reducing travel delays and queue lengths and achieving an overall level of service “D” or better at signalized intersections during the peak hours in 2040;
- improve NC 211’s horizontal and vertical alignment, clear zones and sight distance to reduce, mitigate or eliminate existing design deficiencies; and
- provide at least minimum acceptable standards for lane and shoulder widths based on the current NCDOT Roadway Design Manual.

Secondary Benefits: Additional benefits of the proposed project include:

- potential traffic safety improvements by reducing the number and type of conflict points as compared to the existing conditions and
- operational improvements by providing the opportunity for motorists to pass slower-moving or stopped vehicles.

4.2. Concurrence Point 2

Options for widening NC 211 on either side of the roadway were presented at the June 2017 merger meeting, as well as options for grade-separated railroad crossings and/or the realignment of intersecting roadways. The widening options were presented in 15 sections for evaluation individually. Selected options could be combined to provide an overall “best fit” alternative, in addition to asymmetrical widening.

At the merger meeting, those present concurred on widening options to be studied in detail and signed the concurrence form. However, the concurrence form has not been signed by all merger team members. (USACE, HPO, and FAMPO representatives did not attend the meeting and have not signed the original form.)

The following decisions were made at the merger meeting regarding alternatives to carry forward:
[those present concurred]

Typical Section

NC 211 would be widened to a four-lane, median divided facility. The typical section would include:

- A 30-foot wide, raised grass-median with use of a curb and gutter section is anticipated through Aberdeen and Moore County where more residential and commercial development is located close to the existing roadway. Bicycle lanes are proposed, consistent with the Aberdeen Bicycle Plan.
- A 46-foot wide, depressed grass-median shoulder section is anticipated from the Moore/Hoke County line to the eastern project limit.

Alternatives

Following discussion of each section and option, several were eliminated from further consideration. However, more than one widening option was carried forward for 10 of the 15 project sections. The alternatives carried forward are shown in Table 1.

Table 1. Concurrence Point 2: Alternatives Carried Forward (June 2017)

Section No.	Widening Side Carried Forward		Description/Comments
	North	South	
1:	North	South	
2A:	North	South	NC 211 at-grade RR crossing
2B:	North	South	NC 211 bridges over RR
3A:	North	-	Realign Indiana Ave east to Carolina Rd
3B ¹ :	-	-	Realign Indiana Ave west
4:	North	South	
5:	-	South	
6A ¹ :	-	-	RR bridges over NC 211 / Reservation Rd
6B:	North	South	Realign Reservation Rd, provide two intersections with NC 211
6C:	-	South	Realign NC 211 and Reservation Rd, provide bridges over RR
6D ² :	-	South	Realign NC 211, provide bridges over RR
7:	North	South	
8:	-	South	
9:	North	South	
10:	North	South	
11:	North	South	
12:	-	South	Widening to the north was not considered to avoid impacts to the Calloway Nature Park ³
13:	-	South	
14:	-	South	
15:	North	South	

¹ Options 3B and 6A were eliminated.

² Option 6D was added at the Concurrence Point 2 meeting.

³ Calloway Nature Park was developed with funding from NCDOT as mitigation for impacts to red-cockaded woodpecker.

RR = Railroad

4. Concurrence Point 2 (Revisited): Detailed Study Alternatives Carried Forward

Preliminary design was completed for primary widening to the north side of NC 211 and to the south side of NC 211 with design options noted in Table 1. Because the high number of potential combinations of options, further refinement is requested. Additional detail is provided in order to determine a “best fit” alternative.

Preliminary impacts have been calculated for each section/option carried forward. Table 2 provides a comparison of the design options and is located in Appendix A while Figures 1-19 are included in Appendix B and design year traffic volumes are illustrated in Appendix C. The original identification of design options to carry forward are highlighted in green while additional recommendations for identifying the best fit alternative are highlighted in yellow.

The preliminary design includes superstreet concepts and access management along the project (e.g., use of right-in/right-out and consolidation of access points where access is also available along another roadway or a second access point is located along NC 211).

5. Concurrence Point 2A: Bridging Decisions and Alignment Review

Bridging Decisions

A Hydraulic Technical Report was completed for the project (April 2017, RK&K). There are no existing or proposed bridges along NC 211 within the project limits. A summary of the preliminary hydraulic recommendations is included in Appendix D.

Alignment Review

NC 211 does not currently meet design speed (50 MPH in Moore County and 60 MPH in Hoke County) in 37 locations due to the existing vertical alignment (sags and crests) and in 1 location due to the existing horizontal alignment, as detailed in Appendix E. The proposed improvements in all the design options, correct those deficiencies.

Appendix A

Table 2

Comparison of Impacts

Based on Preliminary Designs
(Slope Stake Lines Plus 25-Feet)

Design Option			Relocations						Right of Way		HazMat	Streams			Wetlands		Ponds		T&E Species			CP / NHP	Relocation - Church / Community Facility	ROW - Church / Community Facility	NOTES & DRAFT Best Fit Recommendations	
Section No.	Length (miles)	Widening Side	Preliminary Relocation Total (Homes + Businesses + Churches)	Home	Business	Church	Community Facilities	Cemetery - Approximate Number of Graves (Draft)	Community Facilities	Cemetery	USTS / Junk Yard	Stream Crossings	Stream ID	Streams (Lin. Ft.)	Wetland ID	Wetlands (ac.)	Pond ID	Ponds (ac.)	Federally Protected Species Present	RCW - Area from within a Foraging Partition (acres) ¹	RCW - Noncontiguous Habitat Created in Addition to the Roadway Footprint (acres)	Conservation Properties (CP) or Natural Heritage Program Site (acres)				
1	0.65	North	9	5	3	1			3		2	3	SA, SC, SD	402	WA, WB, WF, WG, WH	1.31				No				New Hope Church of God in Christ	Aberdeen Public Works / Head Start / Aberdeen Elementary School	
1	0.65	South	7	6	1		1		4		1	3	SA, SC, SD	391	WA, WB, WF, WG, WH	0.86				No				Aberdeen Primary School	Aberdeen Public Works / Head Start / Aberdeen Elementary School / New Hope Church of God in Christ	Best Fit Rec: Fewer Relocations (total), Avoids Church Relocation & Less Stream/Wetland Impacts
2A	1.29	North	30	23	7		1			1	1									No				utility	Faith Cemetery (small area)	15 townhomes
2A	1.29	South	11	6	2	3	1	6	1	1	1									No				utility / Mt Lebanon Holiness Church / Church of God in Jesus Christ / Church of God of Prophecy	Faith Cemetery	15 townhomes
2B	1.29	North	31	23	7	1	1			1	1									No				utility / Church of God in Jesus Christ	Faith Cemetery (small area)	
2B	1.29	South	13	8	2	3	1	6	1	1	1									No				utility / Mt Lebanon Holiness Church / Church of God in Jesus Christ / Church of God of Prophecy	Faith Cemetery	Best Fit Rec: Fewer Relocations than North Option & Grade-Separates Railroad Crossing
3A	0.97	North	5	2	2	1	1		1		3									No				Shady Grove Holiness Church	Crestline VFD	June 2017 Best Fit Rec: Better Traffic Operations; Fewer relocations than the South Side Option
4	0.48	North	3	3									SE	56	WI, WJ	0.24				No		4.4		TNC CP (Crowley Tract, 3.09ac; Bowling Tract, 1.31ac)		Best Fit Rec: Fewer Res. Relocations, Avoids Cemetery, Less Wetland Impact & Less CP impacted
		South	7	7				1		1			SE	56	WI, WJ	0.55				No		1.42		1 Gravestone visible in Streetview (Not surveyed); TNC CP (Crowley Tract, 1.08ac; Bowling Tract, 0.34ac)		
5	0.72	South	4	4							1		SF	189	WL, WM	0.52				No		0.61		TNC CP (Bowling Tract, 0.61ac)		2 mobile homes June 2017 Best Fit Rec: Avoids Dam Impacts; Less Stream/Wetland Impacts
6B	1.29	North	14	12	2	1*			1		1		SJ feature extension TBD		WW	0.14	PB, PC	0.29	No			0.33		Ashley Heights Baptist Church	TNC CP (Cedar Hall Easement, 0.33ac)	
		South	12	10	1	1**			1		1		SJ feature extension TBD						No			1.17		Ashley Heights Baptist Church	TNC CP (Cedar Hall Easement, 1.17ac)	
6C	1.34	South	14	14		1***			1				SJ feature extension TBD						No			1.17		Ashley Heights Baptist Church	TNC CP (Cedar Hall Easement, 1.17ac)	Best Fit Rec: Grade-Separates Railroad Crossing & Church Supports this Option
6D	1.34	South	11	10		1****			1				SJ feature extension TBD						No			1.17		Ashley Heights Baptist Church	TNC CP (Cedar Hall Easement, 1.17ac)	
7	1.29	North	6	3	3						1								Yes	10.65	12.44	9.95		TNC CP (Cedar Hall Easement, 0.8ac; Moses Tract, 4.03ac); NHP/NCDA (McCain Tract, 5.12ac)		Foraging Partition: MCCA E01 (1.9ac) + MCCA 2 (8.75ac); Noncontiguous Habitat Created: MCCA E01 (0.33ac) + MCCA 2 (12.11ac)
7	1.29	South	8	6	2														Yes	10.16	15.75	8.59		TNC CP (Cedar Hall Easement, 2.76ac; Moses Tract, 0.95ac); NHP/NCDA (McCain Tract, 4.88ac)		Foraging Partition: MCCA E01 (1.03ac) + MCCA 2 (9.13ac); Noncontiguous Habitat Created: MCCA E01 (1.03ac) + MCCA 2 (14.72ac); Best Fit Rec: Less CP impacted
8	1	South											SG	140					Yes	3.43	5.75	3.56		NHP/NCDA (McCainTract, 3.56ac)		Foraging Partition: MCCA 2 (3.43ac); Noncontiguous Habitat Created: MCCA 2 (5.75ac); June 2017 Best Fit Rec: Less Impact to the Hoke Correctional Institution Property and Woodpecker Foraging Habitat
9	1.58	North	5	4	1				1										Yes	8.92	2.25	6.4		Hoke Correctional Institute / Shiloh Presbyterian Church; ; NHP/NCDA (McCain Tract, 6.4ac)		Foraging Partition: FB 5 (8.92ac); Noncontiguous Habitat Created: FB 5 (2.25ac)
9	1.58	South	13	11	1	1		22	1	1									Yes	2.88	2.88	1.89		Shiloh Presbyterian Church & Cemetery	Hoke Correctional Institute; NHP/NCDA (McCainTract, 1.89ac)	Foraging Partition: FB 5 (2.88ac); Noncontiguous Habitat Created: FB 5 (2.88ac); Best Fit Rec: Less RCW Habitat impacted & Avoids 1.57 miles of Railroad Realignment
10-11	1.31	North	22	18	3	1			1	2	1	SH	218	WP, WQ	1.36				No					Total Praise & Deliverance Church of God	cemetery	The number of relocations for the North Side Widening are anticipated to be higher than noted in this table due to the potential for up to 12 additional relocation septic system impacts for properties along Equestrian Way that back up to NC 211.
10-11	1.31	South	21	18	2	1			1	2	1	SH	280	WP, WQ	1.93				No					Total Praise & Deliverance Church of God	cemetery	Best Fit Rec: Avoids 0.82 mile of Railroad Realignment & potential to have Fewer Res. Relocations
12	1.24	South	3	3															No							June 2017 Best Fit Rec: Avoids Impacts to Calloway Nature Park
13	0.59	South	3	3										WR	0.03				No							June 2017 Best Fit Rec: Avoids Impacts to Calloway Nature Park
14	0.55	South	3	3															No							June 2017 Best Fit Rec: Reduce Impacts to the Railroad; Short Section with Homes on Both Sides; Better tie-in with Section 13.
15	2.55	North	19	12	5	2	1		2		2		SM	228	WT	0.16				No				Living Faith Ministries / Church of God Prophecy / N. Raeford Fire Dept	Big and Little Faith Church / Raeford True Holiness Church	
15	2.55	South	20	17	1	2	1				1		SM	299	WT	0.05				No				Big and Little Faith Church / Church of God Prophecy / N. Raeford Fire Dept	Raeford True Holiness Church	Best Fit Rec: Avoids 1.62 miles of Railroad Realignment
TOTAL	BEST FIT		116	93	15	8	4	28	10	3	10	4		1284		3.74		0			16.47	24.38	20.22			

Impacts are based on preliminary design plus a 25-foot offset and are subject to change.

¹ No nesting trees will be taken by either alternative and current designs do not come within 200' of any nesting trees. Foraging habitat will be taken from three foraging partitions; however, the SMS (Standard for Managed Stability) will be met post-project with suitable and potentially suitable habitat.

* Potential to avoid relocation of the church sanctuary building; includes relocation of 3 of 6 church buildings

** Relocation of 5 of 6 church buildings, including the main sanctuary

*** Relocation of 3 of 6 church buildings (does not relocate the sanctuary)

**** Relocation of 6 of 6 church buildings, including the main sanctuary

Leadership of the Ashley Heights Baptist Church (referenced by asterisks (*) above) is not opposed to relocation of up to 5 of their 6 structures, if their main sanctuary is not impacted and they have enough land remaining to build a new multi-use building.

The current study area boundary stops short of providing NRTR coverage in the vicinity of Stream SC in Section 1; Wetlands WP and WQ within Section 11; and Stream SH within Section 11. A preliminary estimate was used to approximate the size/location of SC, WP, WQ and SH outside of the study area boundary. Stream SJ in Section 6 is in the process of being assessed for a potential extension of the stream along Arthur Lane.

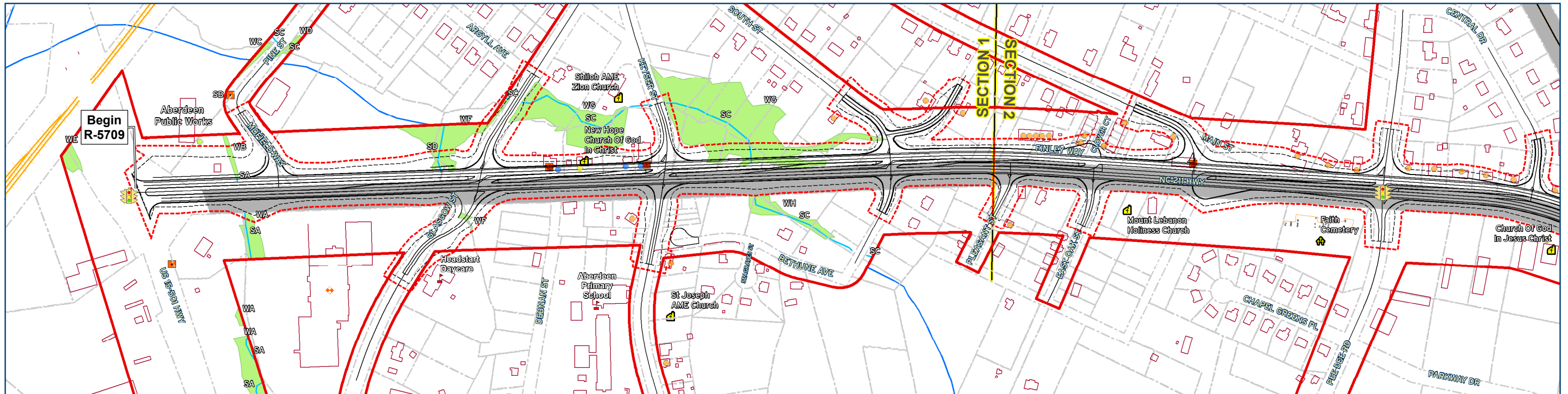
Appendix B

Design Option Figures 1-19

Based on Preliminary Designs
(Slope Stake Lines Plus 25-Feet)

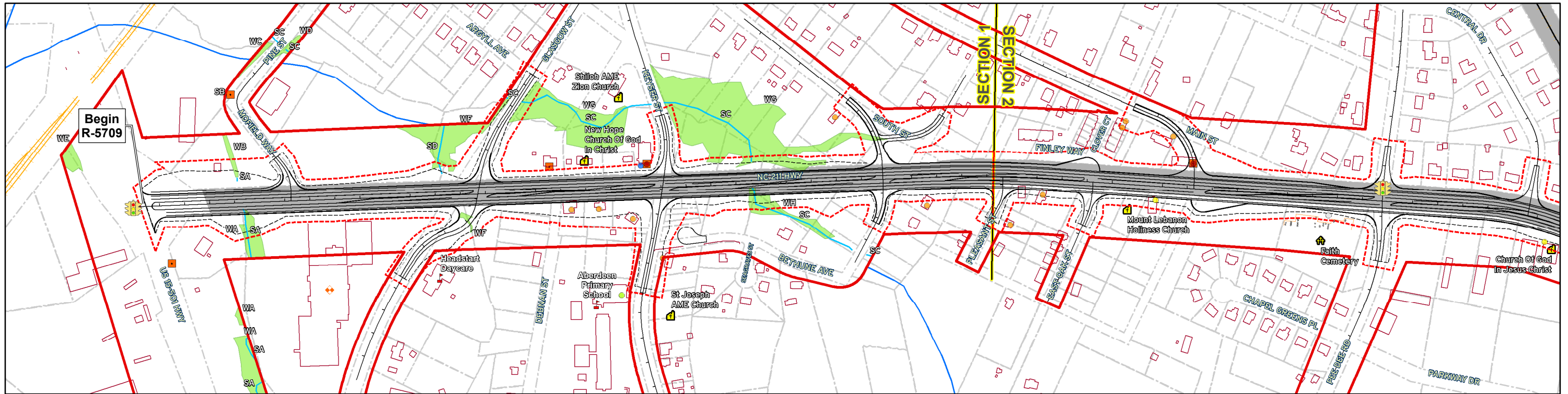
NORTH ALTERNATIVE NC 211 - SECTION 2A
































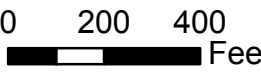
SECTIONS 1 AND 2



SOUTH ALTERNATIVE NC 211 - SECTION 2A

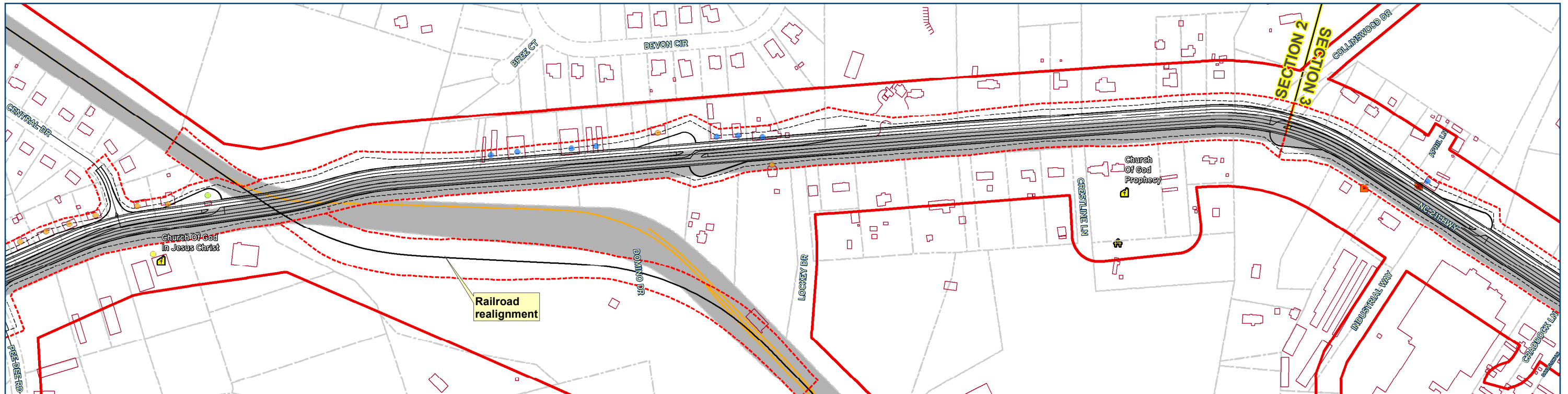
SECTIONS 1 AND 2



	 Study Area  SS + 25' & Proposed ROW  Proposed Slopestakes  County Line  Existing Railroad Alignment  Existing Right-Of-Way Existing Building Foundations	 Ft. Bragg Limits  Fire Station  School  NHP Property  Conservation Properties	 Hazardous Waste Site  Junkyard  UST  Cemetery  Church  Parcel Boundaries	 Delineated Streams  Delineated Ponds  Delineated Wetlands  Estimated Stream  Estimated Wetland  USGS Streams	<p>Potential Impacts</p> <ul style="list-style-type: none">  Business  Church  Cemetery  Community Facility  Home  Home - Septic  UST 	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 1</p>
							

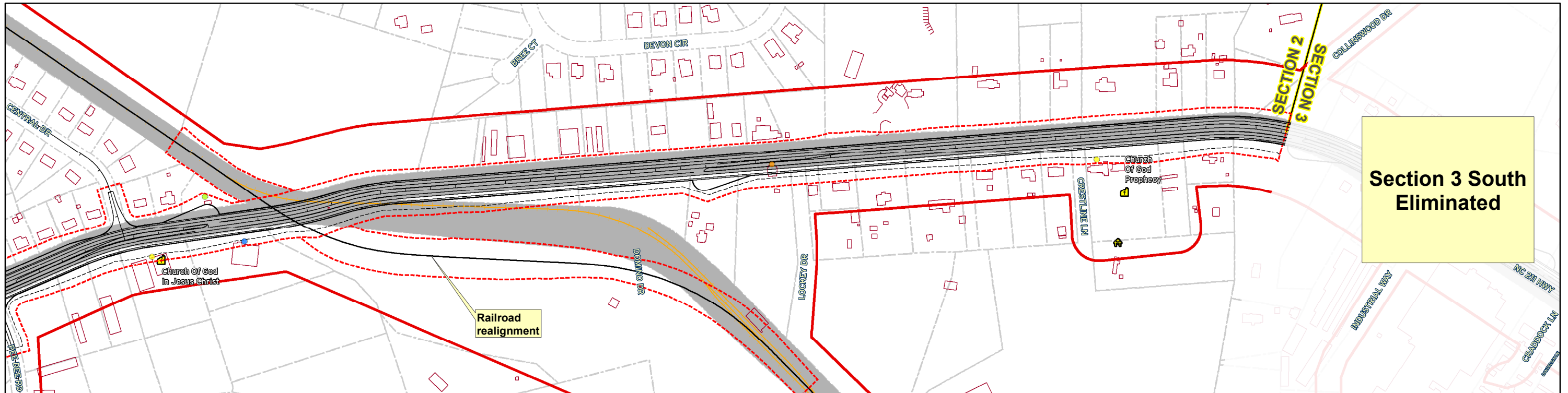
NORTH ALTERNATIVE NC 211 - SECTION 2A

SECTIONS 2 AND 3



SOUTH ALTERNATIVE NC 211 - SECTION 2A

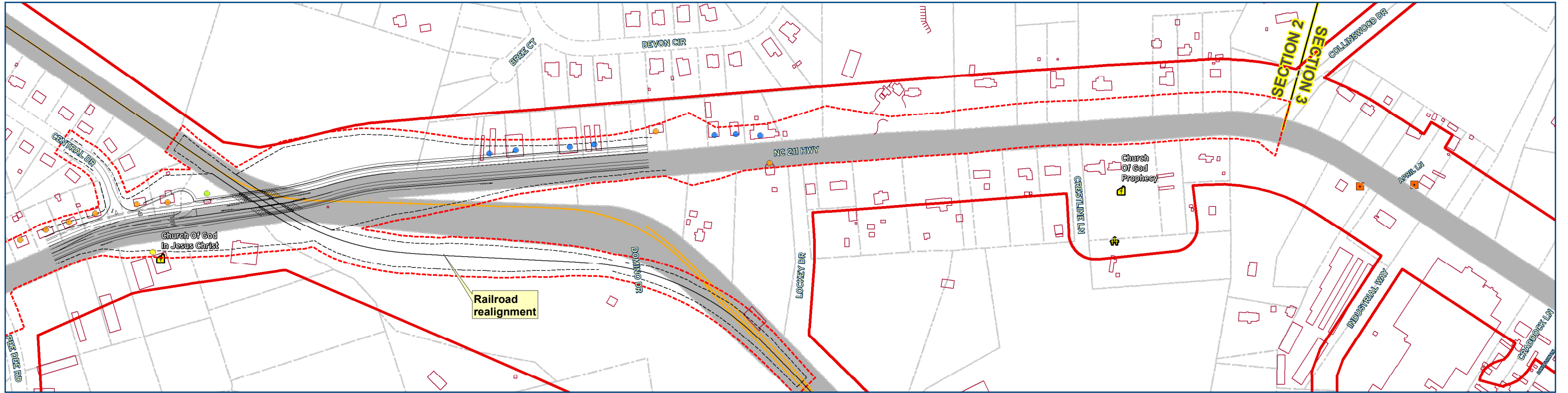
SECTIONS 2 AND 3



	<ul style="list-style-type: none"> Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations Ft. Bragg Limits Fire Station School NHP Property Conservation Properties 	<ul style="list-style-type: none"> Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams 	<p>Potential Impacts</p> <ul style="list-style-type: none"> ● Business ● Church ● Cemetery ● Community Facility ● Home ● Home - Septic ● UST 	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 2</p>
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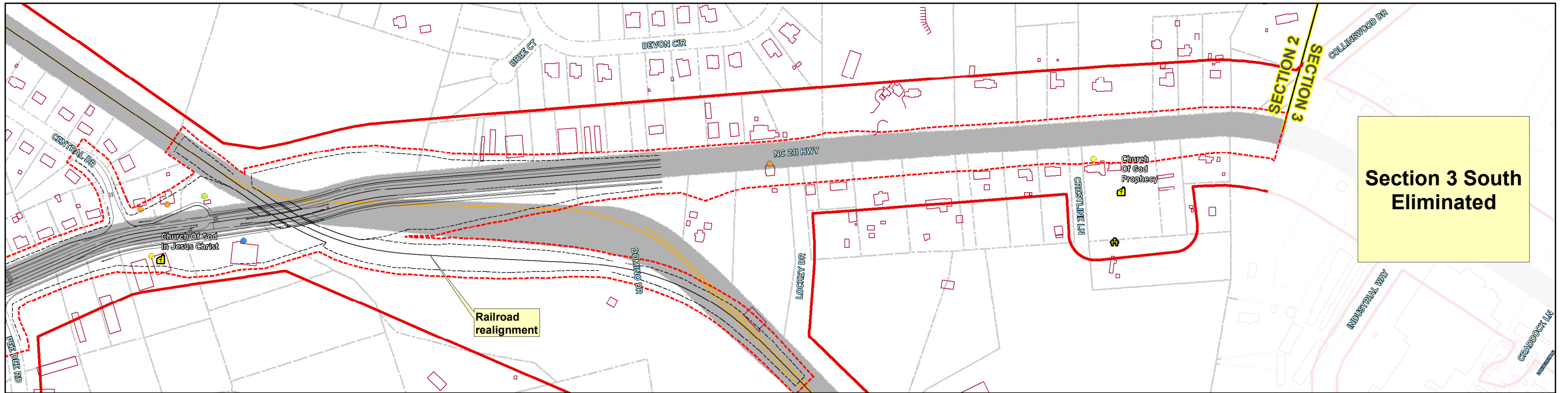
NORTH ALTERNATIVE NC 211 - SECTION 2B

































SECTIONS 2 AND 3

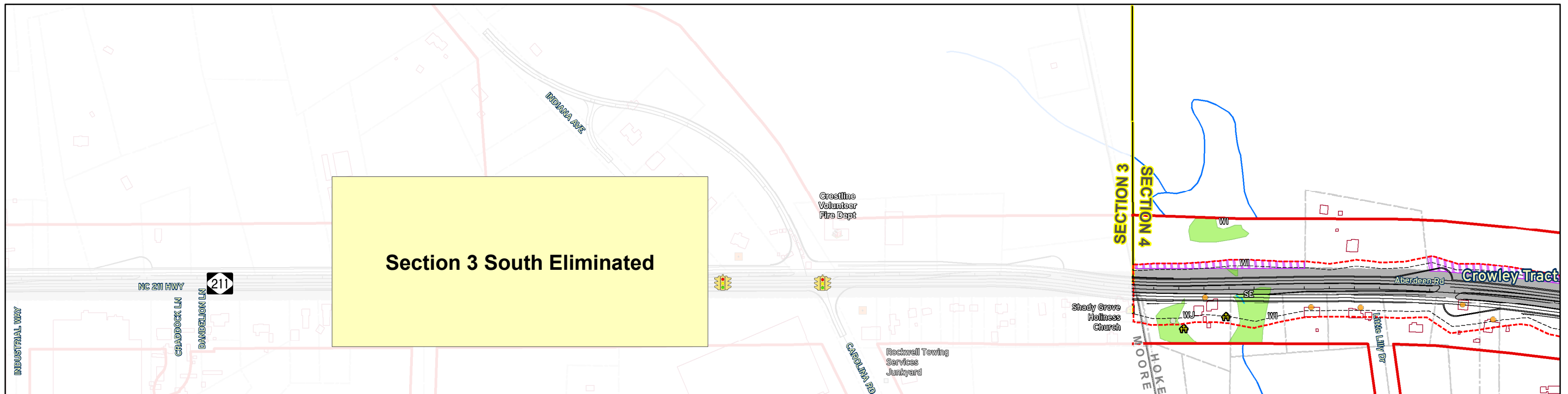
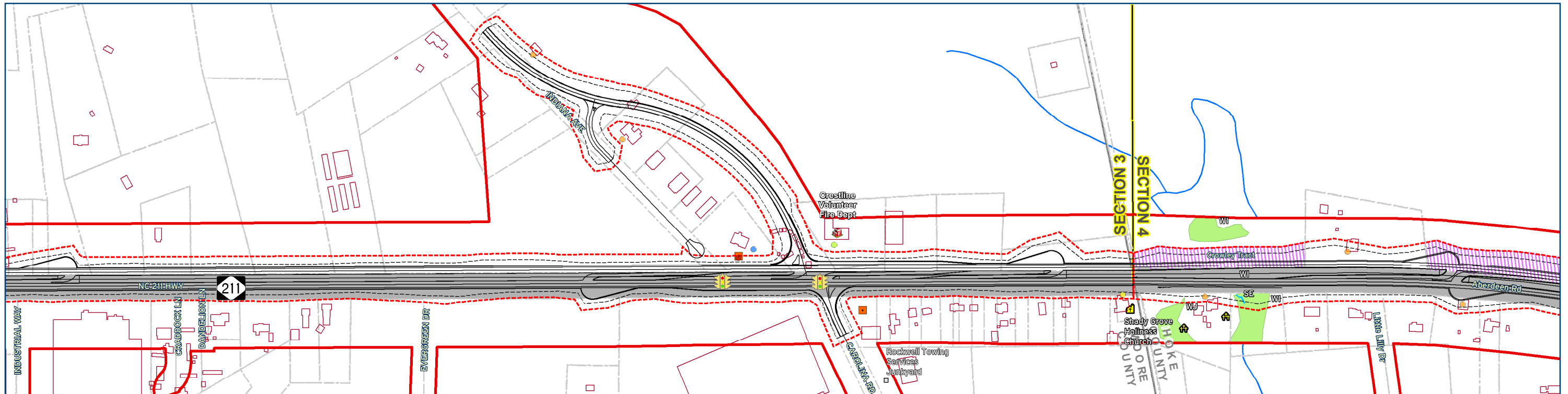


SOUTH ALTERNATIVE NC 211 - SECTION 2B

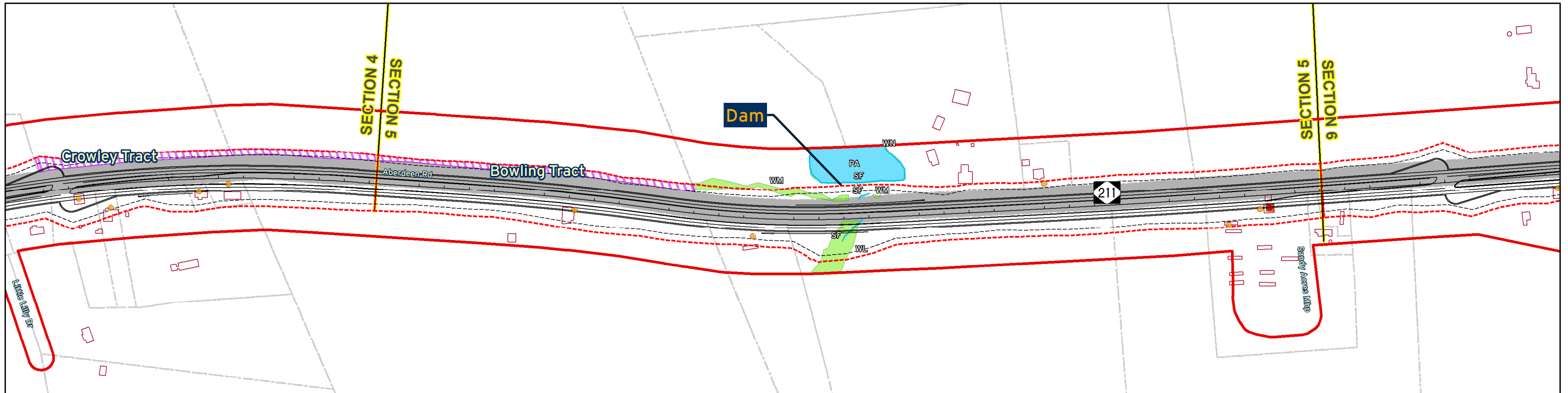
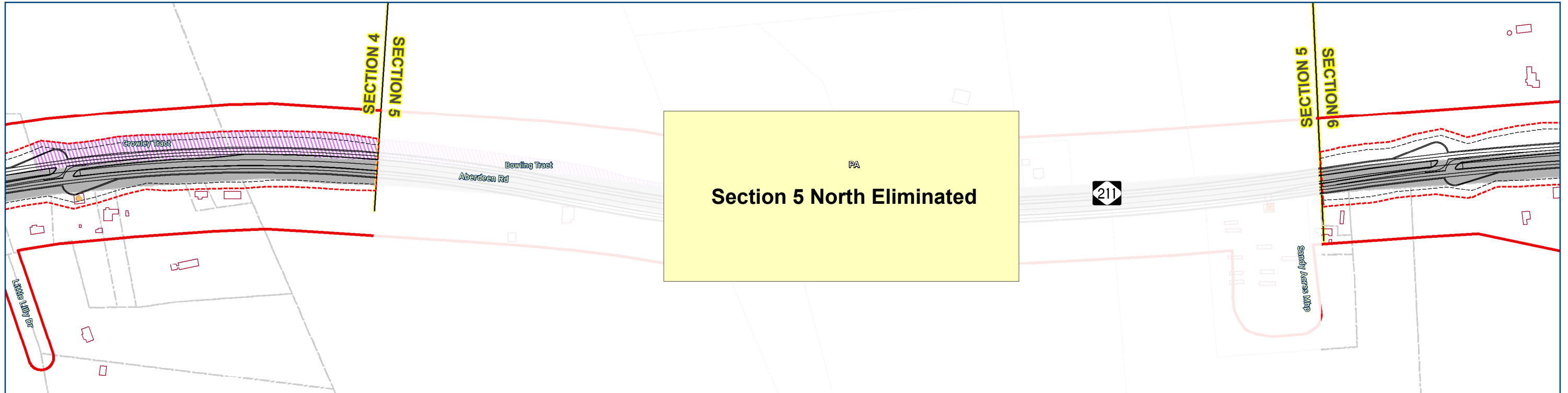
SECTIONS 2 AND 3

































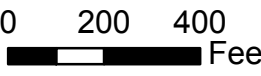


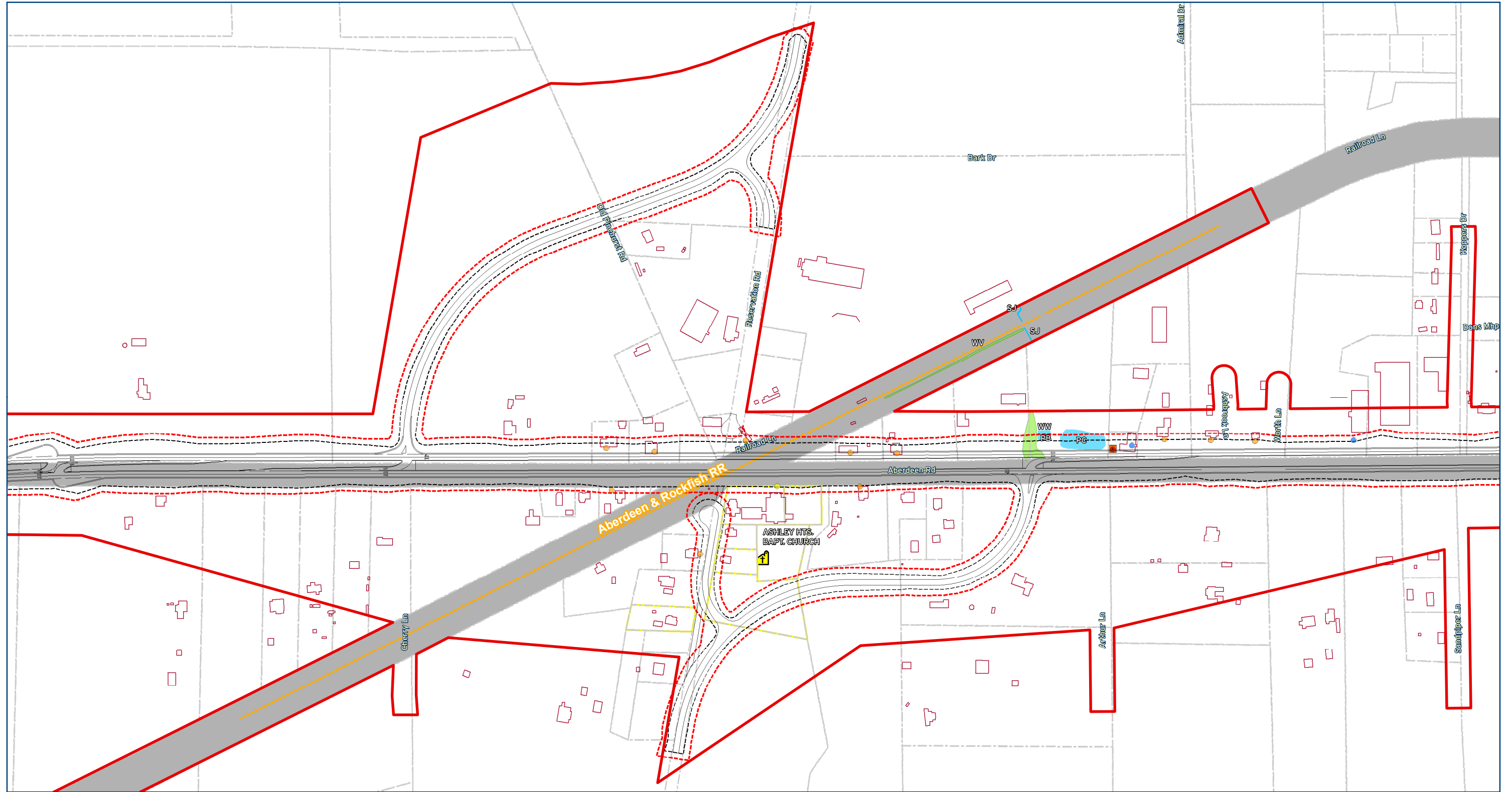
	 Study Area  SS + 25' & Proposed ROW  Proposed Slopestakes  County Line  Existing Railroad Alignment  Existing Right-Of-Way  Existing Building Foundations	 Ft. Bragg Limits  Fire Station  School  NHP Property  Conservation Properties	 Hazardous Waste Site  Junkyard  UST  Cemetery  Church  Parcel Boundaries	 Delineated Streams  Delineated Ponds  Delineated Wetlands  Estimated Stream  Estimated Wetland  USGS Streams	<p>Potential Impacts</p> <ul style="list-style-type: none">  Business  Church  Cemetery  Community Facility  Home  Home - Septic  UST 	<p align="center">ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p align="center">FIGURE 3</p>
	<p>0 200 400 Feet</p>						



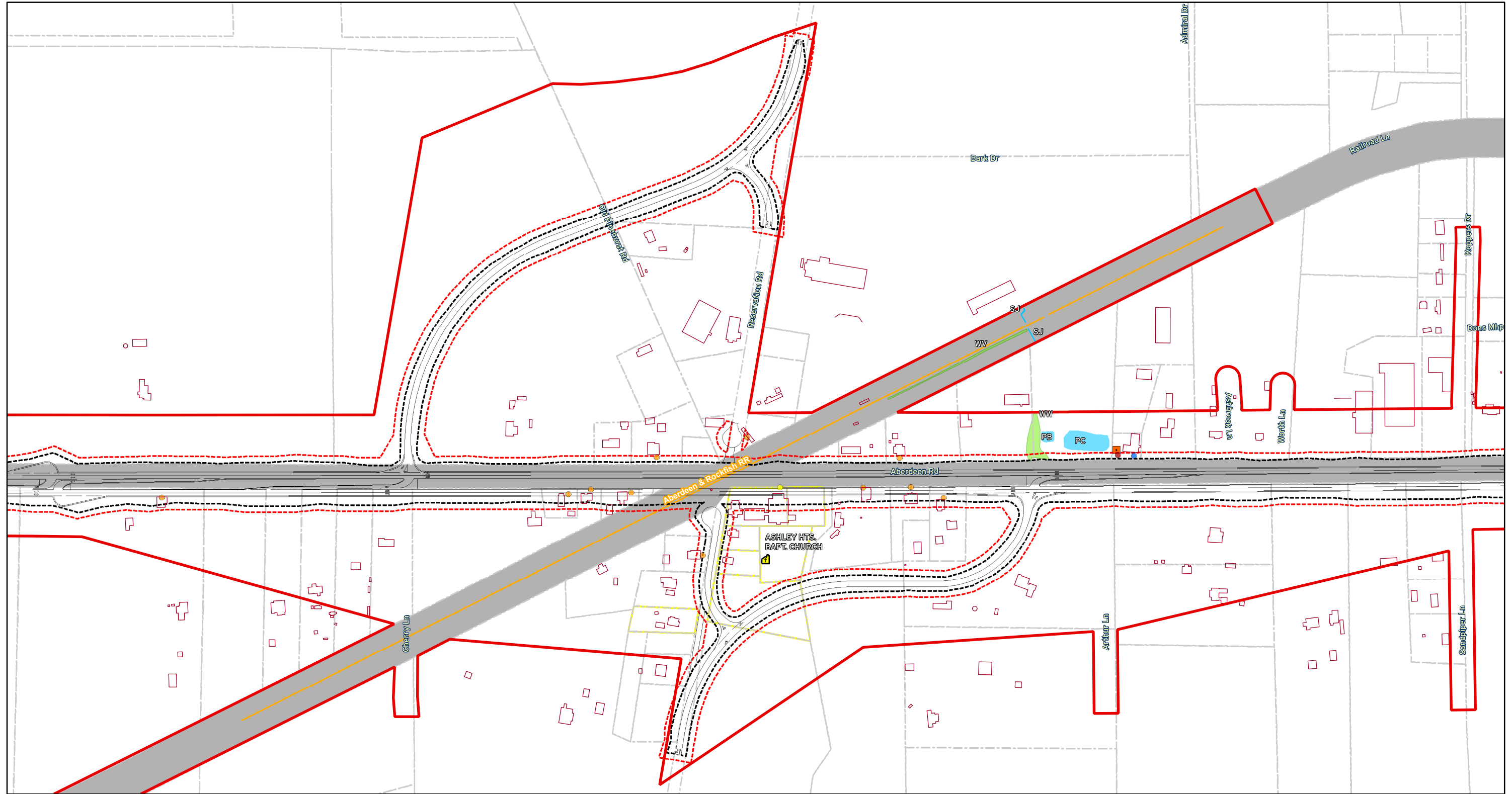
	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	<p>Potential Impacts</p> <ul style="list-style-type: none"> Business Church Cemetery Community Facility Home Home - Septic UST 	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 4</p>



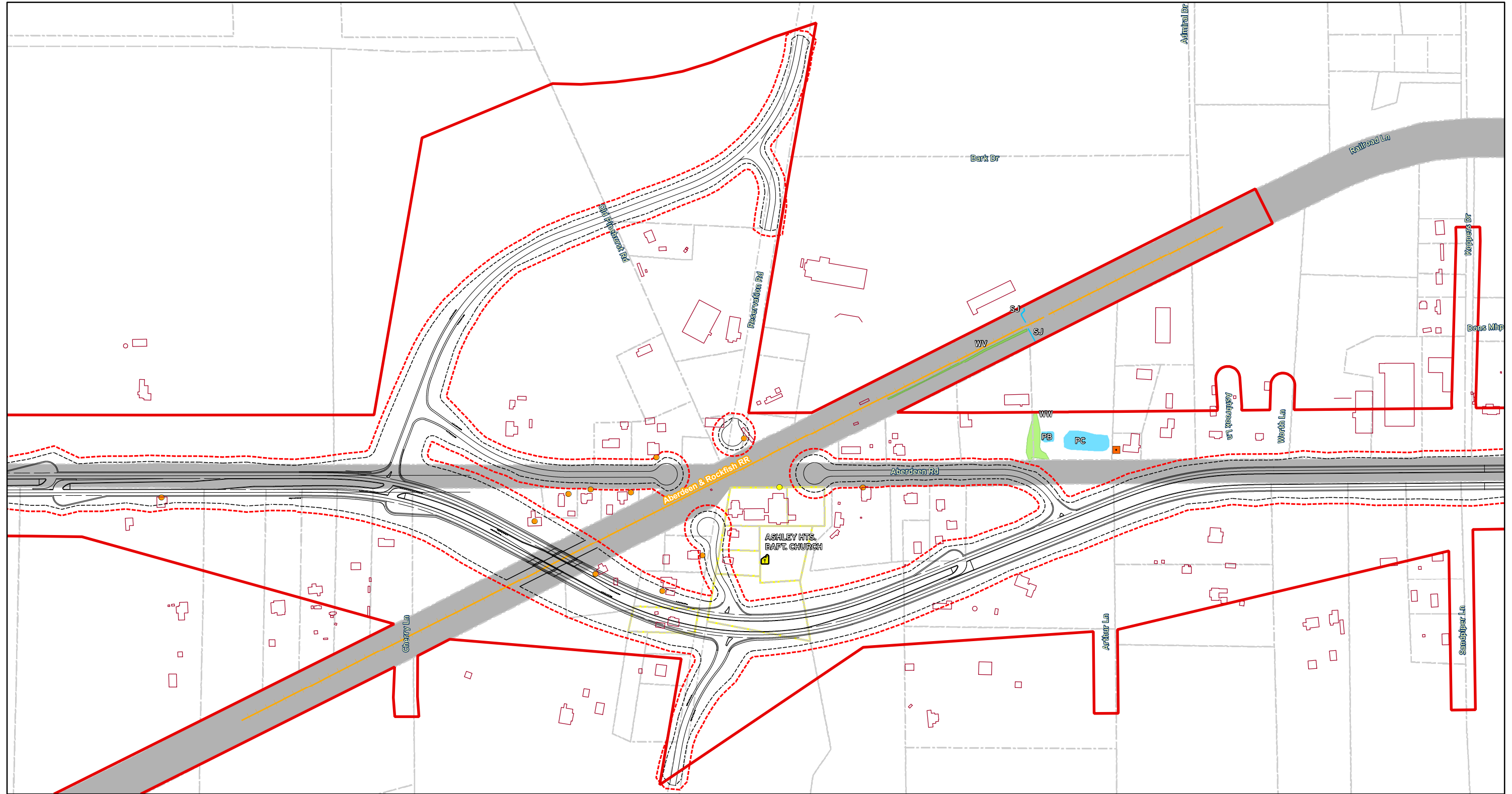
	 Study Area  SS + 25' & Proposed ROW  Proposed Slopestakes  County Line  Existing Railroad Alignment  Existing Right-Of-Way  Existing Building Foundations	 Ft. Bragg Limits  Fire Station  School  NHP Property  Conservation Properties	 Hazardous Waste Site  Junkyard  UST  Cemetery  Church  Parcel Boundaries	 Delineated Streams  Delineated Ponds  Delineated Wetlands  Estimated Stream  Estimated Wetland  USGS Streams	<p>Potential Impacts</p> <ul style="list-style-type: none">  Business  Church  Cemetery  Community Facility  Home  Home - Septic  UST 	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 5</p>
							



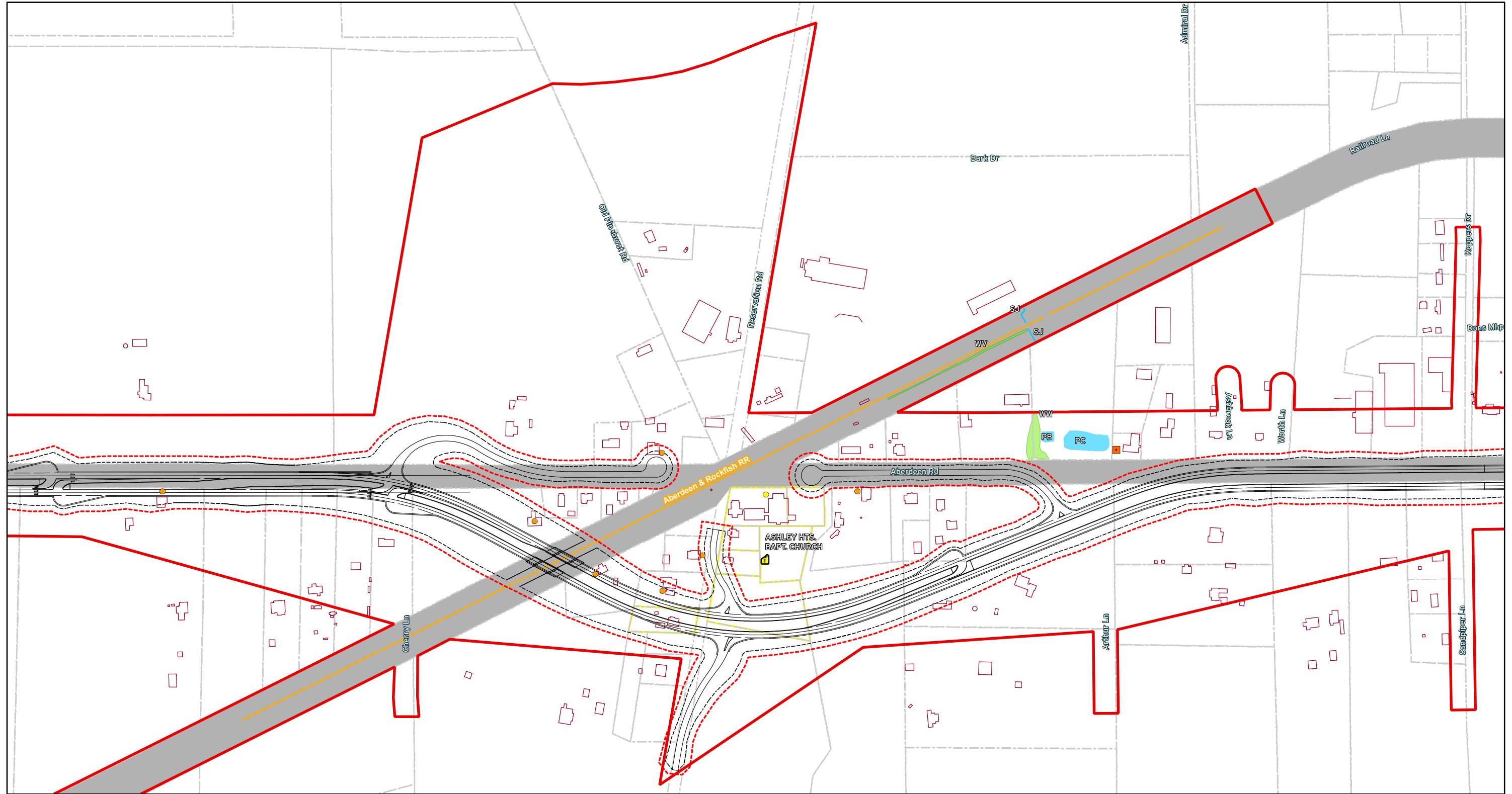
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	<ul style="list-style-type: none"> Study Area SS + 25' & Proposed ROW County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations Ft. Bragg Limits Parcel Boundaries Fire Station School 	<ul style="list-style-type: none"> Hazardous Waste Site Junkyard UST Cemetery Church 	<ul style="list-style-type: none"> Delineated Streams Delineated Ponds Delineated Wetlands USGS Streams 	<p>Potential Impacts</p> <ul style="list-style-type: none"> Business Cemetery Church Community Facility Home UST 	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 7</p>
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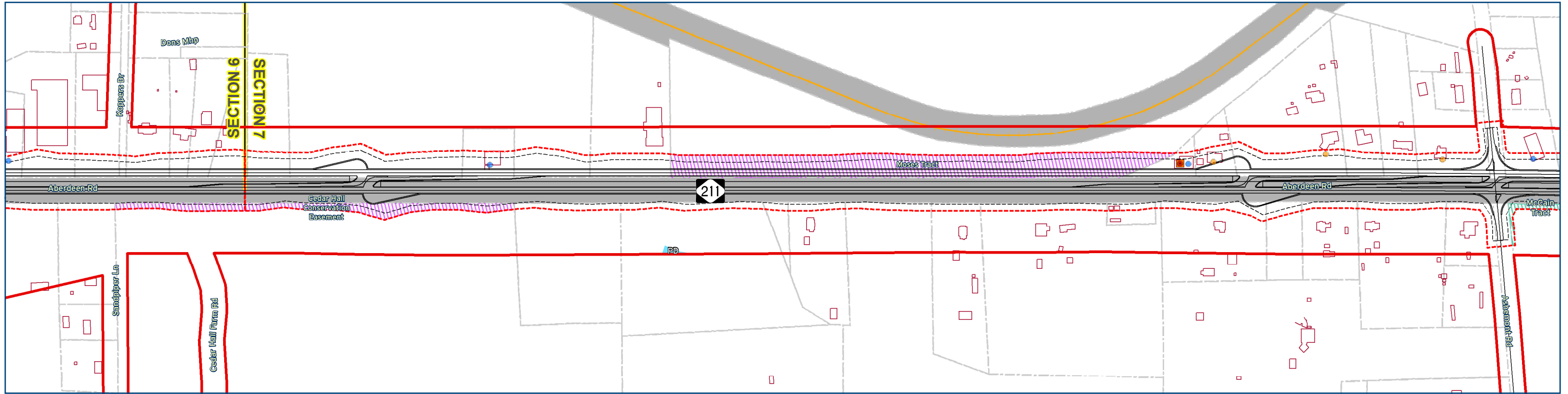
	<ul style="list-style-type: none"> Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations Ft. Bragg Limits Parcel Boundaries Fire Station School 	<ul style="list-style-type: none"> Hazardous Waste Site Junkyard UST Cemetery Church 	<ul style="list-style-type: none"> Delineated Streams Delineated Ponds Delineated Wetlands USGS Streams 	<p>Potential Impacts</p> <ul style="list-style-type: none"> Business Cemetery Church Community Facility Home UST 	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 8</p>
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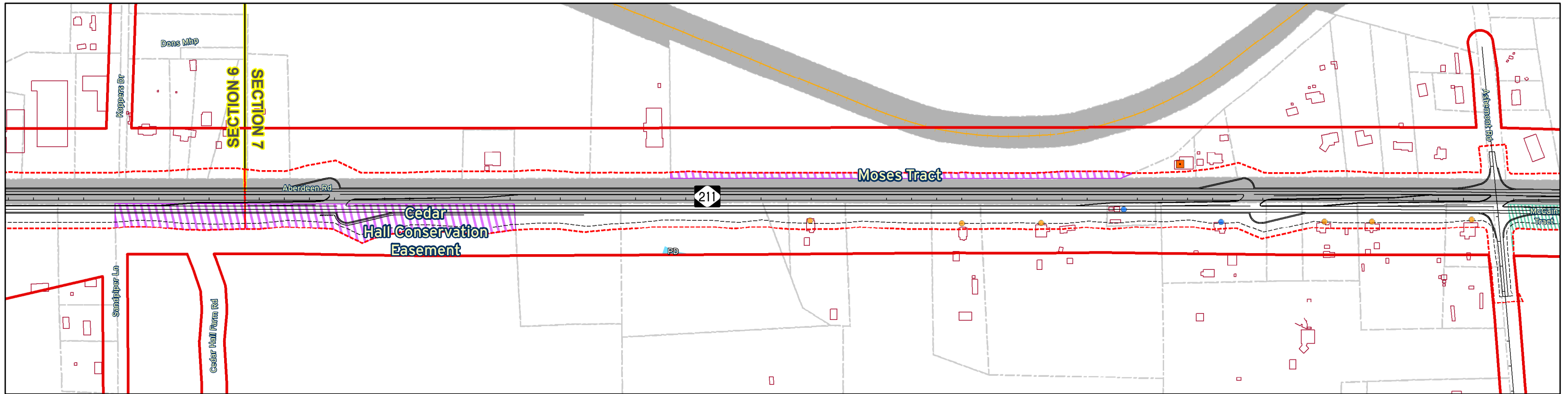
NORTH ALTERNATIVE NC 211

































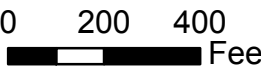
SECTIONS 6 AND 7

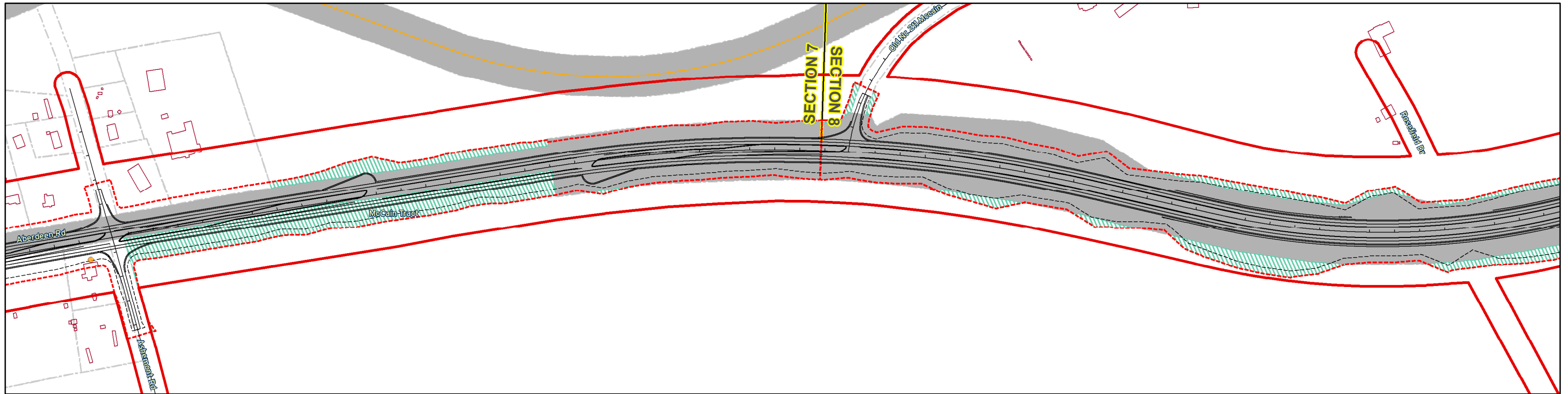
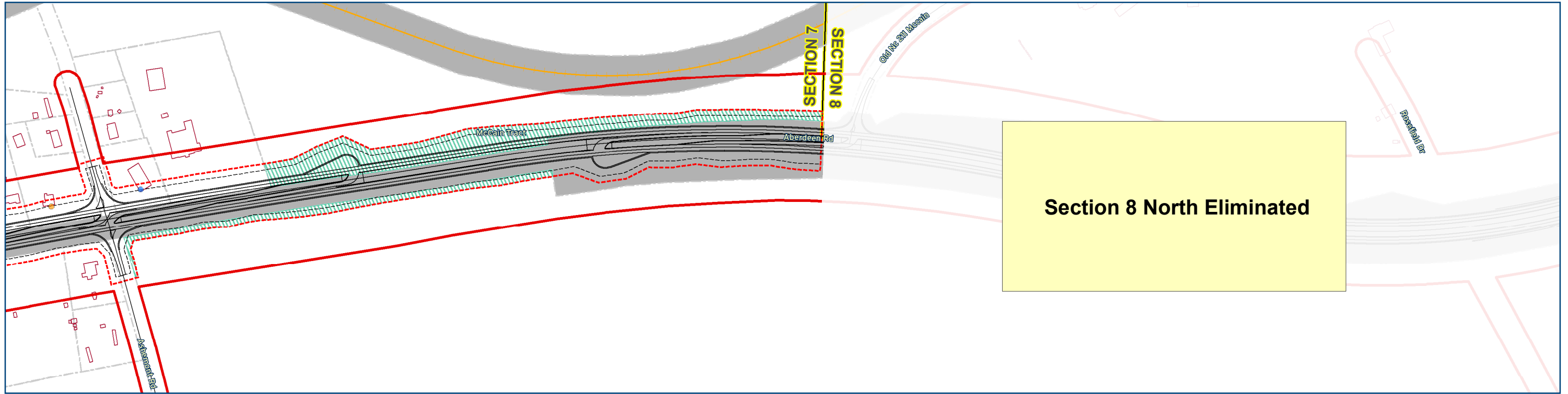


































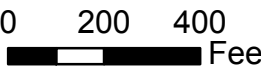
SOUTH ALTERNATIVE NC 211

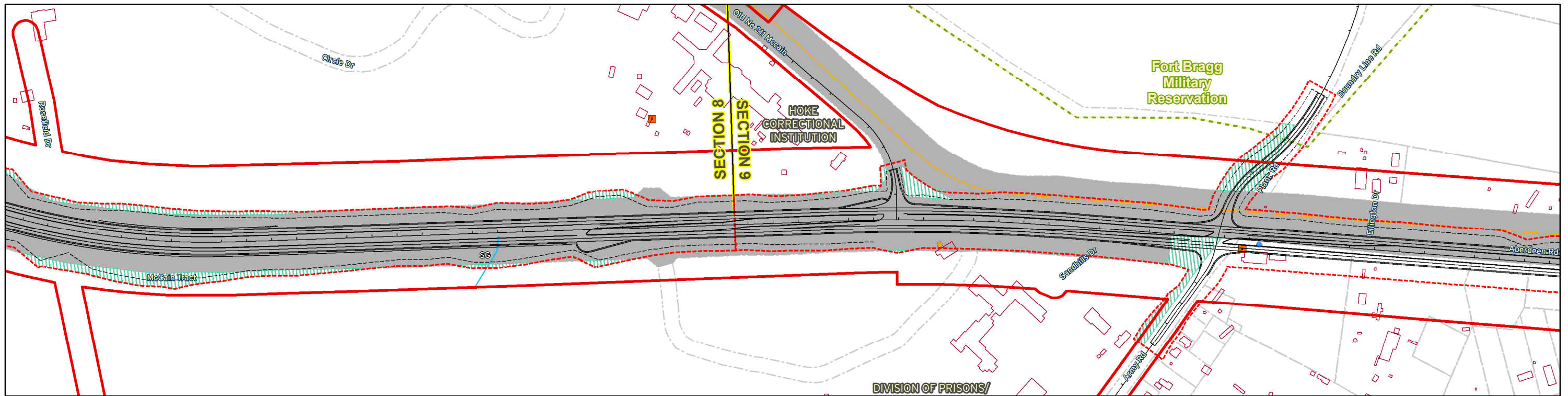
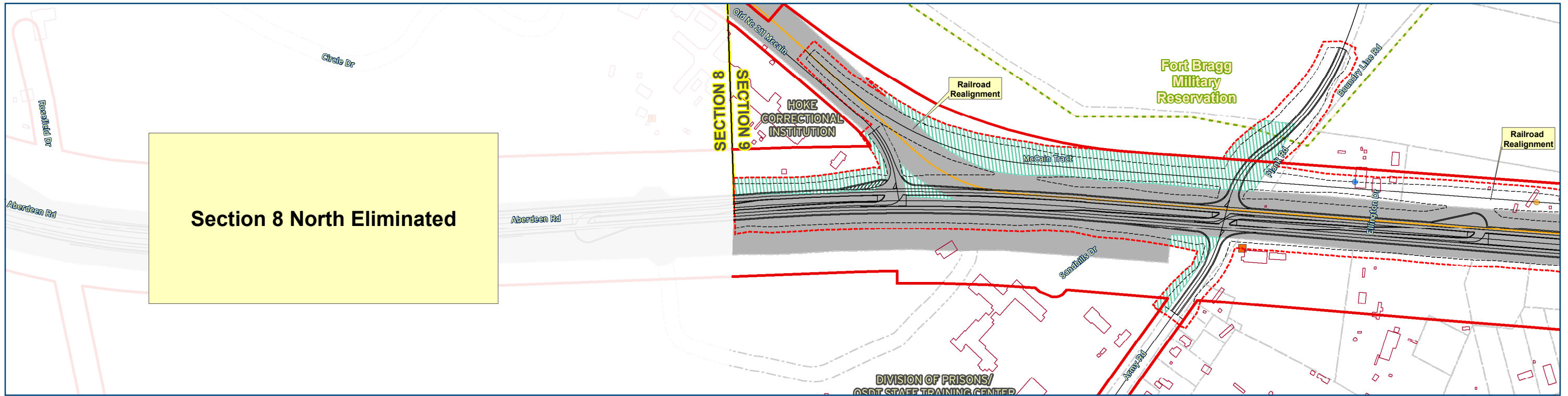
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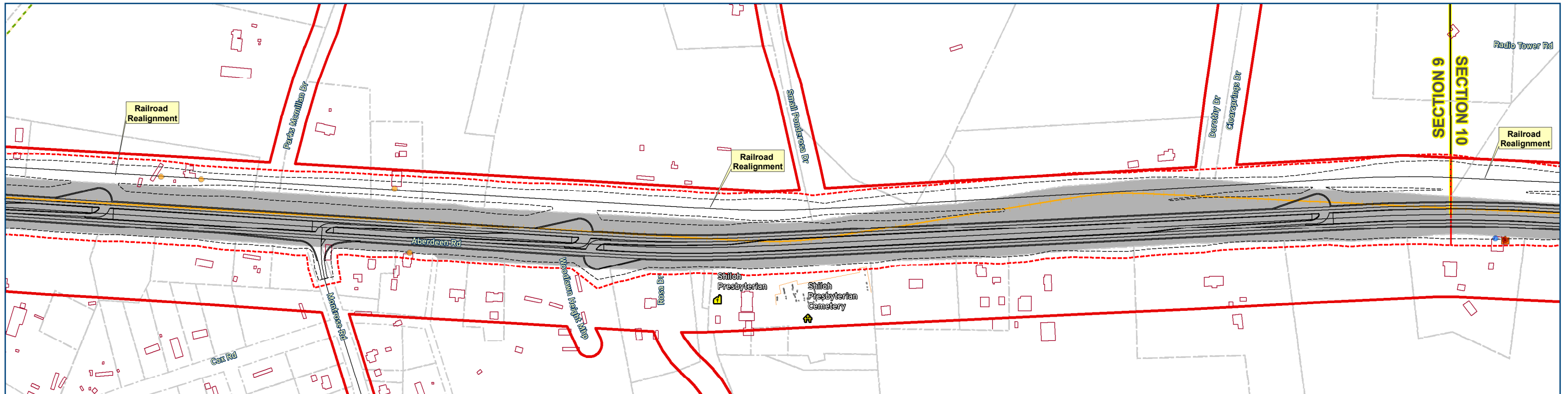
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	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	Potential Impacts Business Church Cemetery Community Facility Home Home - Septic UST	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 12</p>

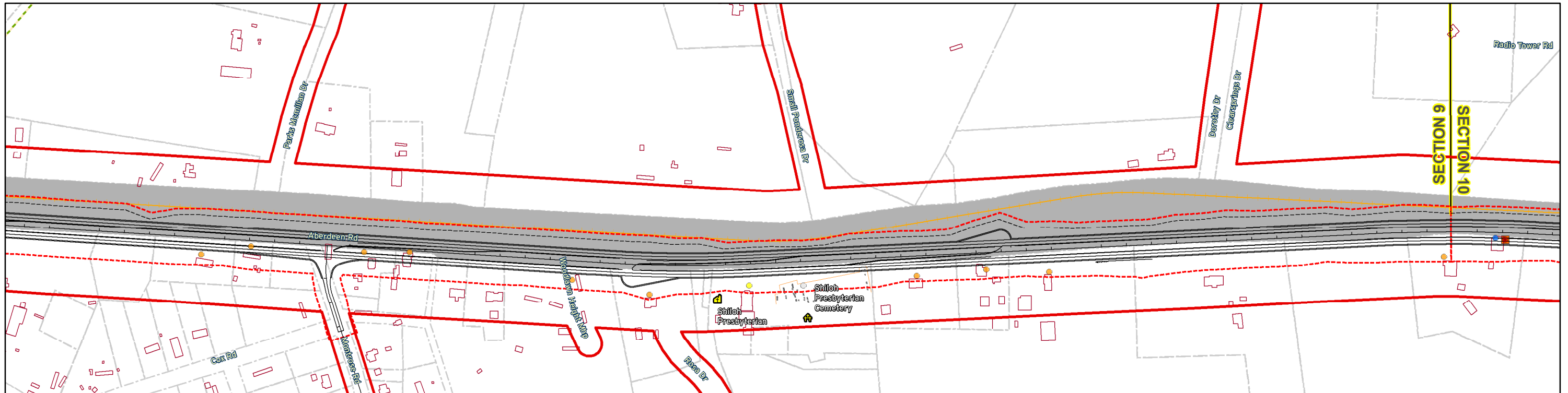
NORTH ALTERNATIVE NC 211

































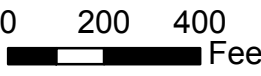
SECTIONS 9 AND 10

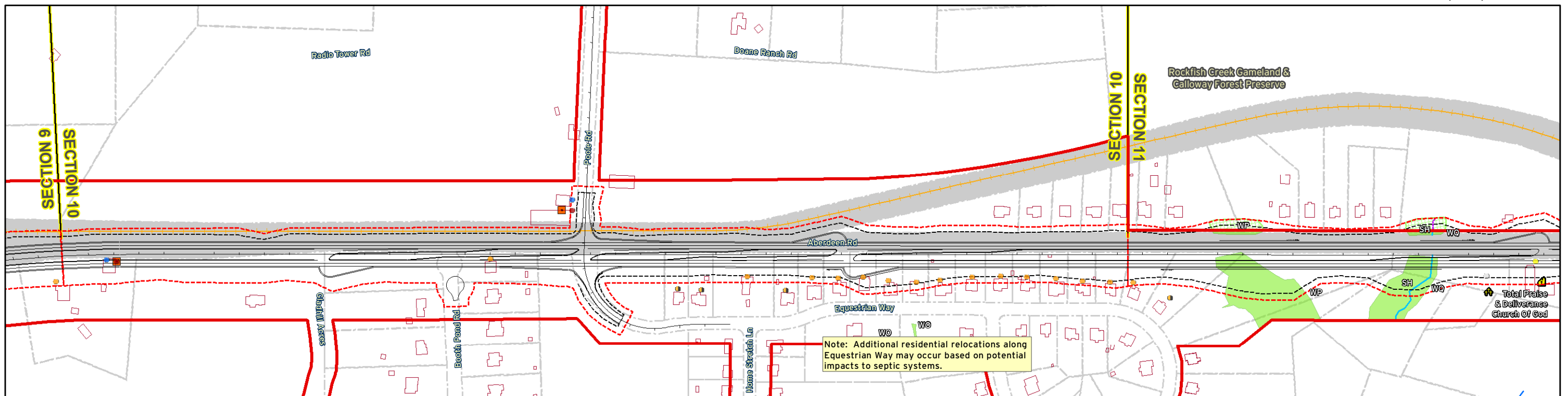
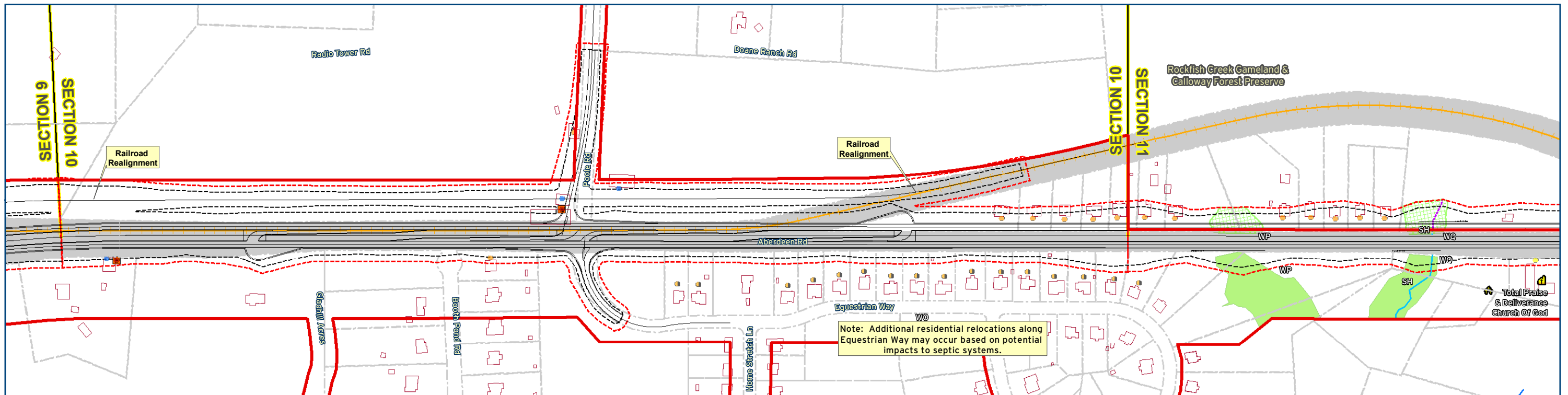


SOUTH ALTERNATIVE NC 211

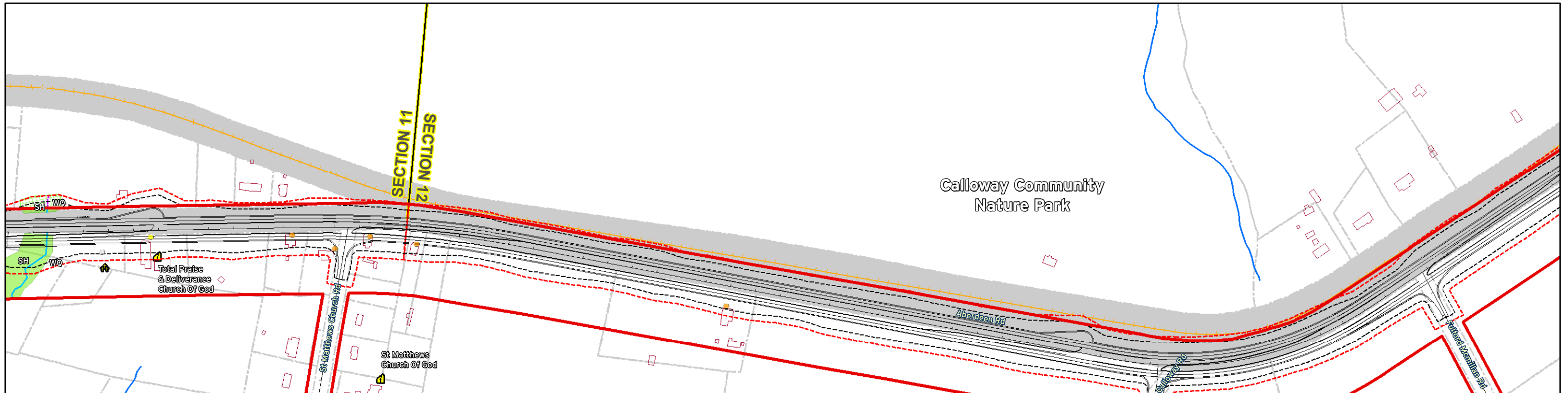
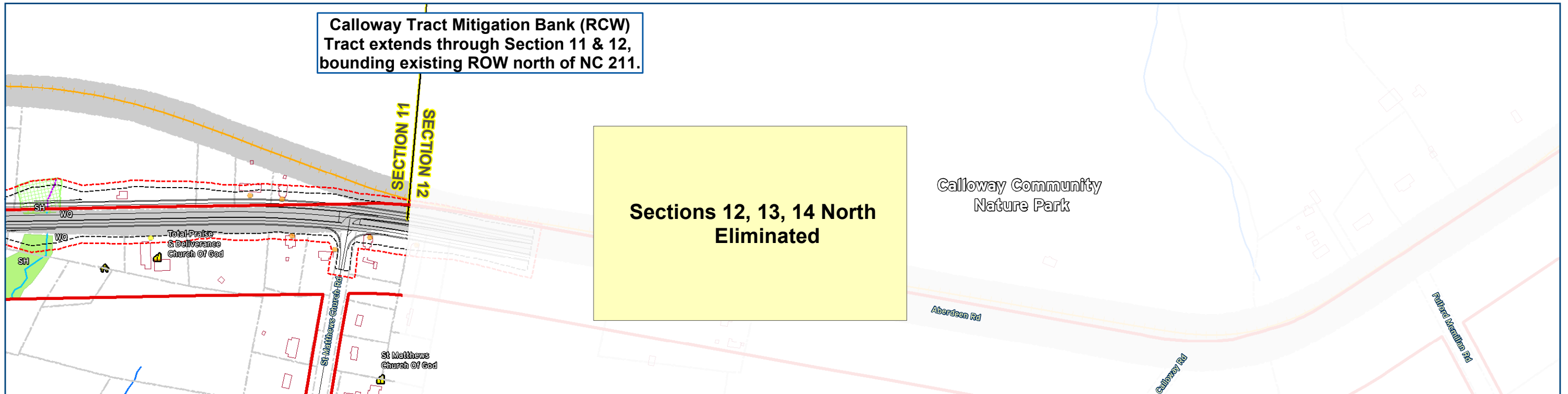
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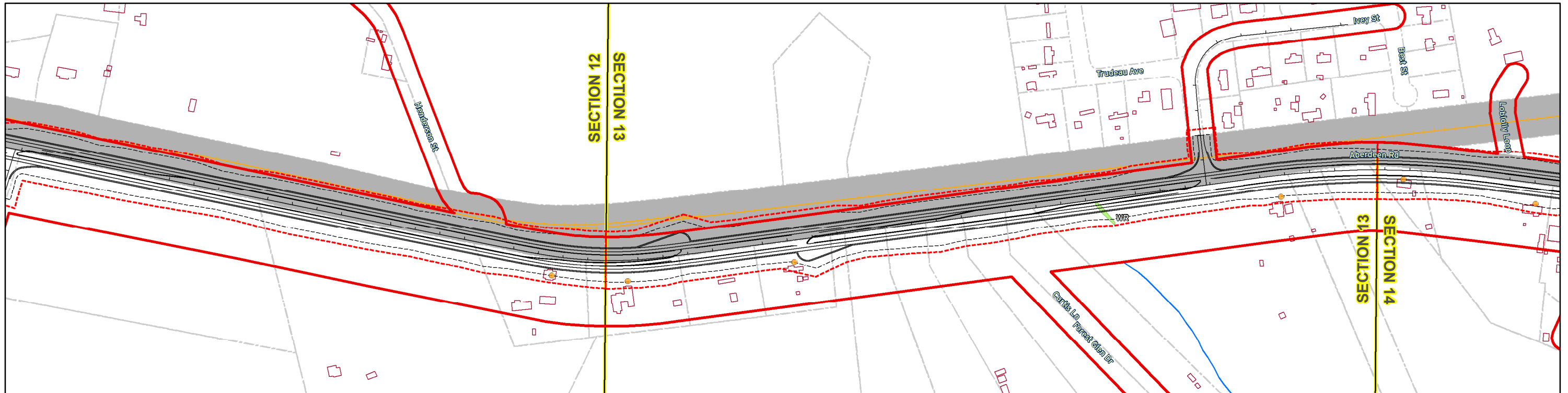
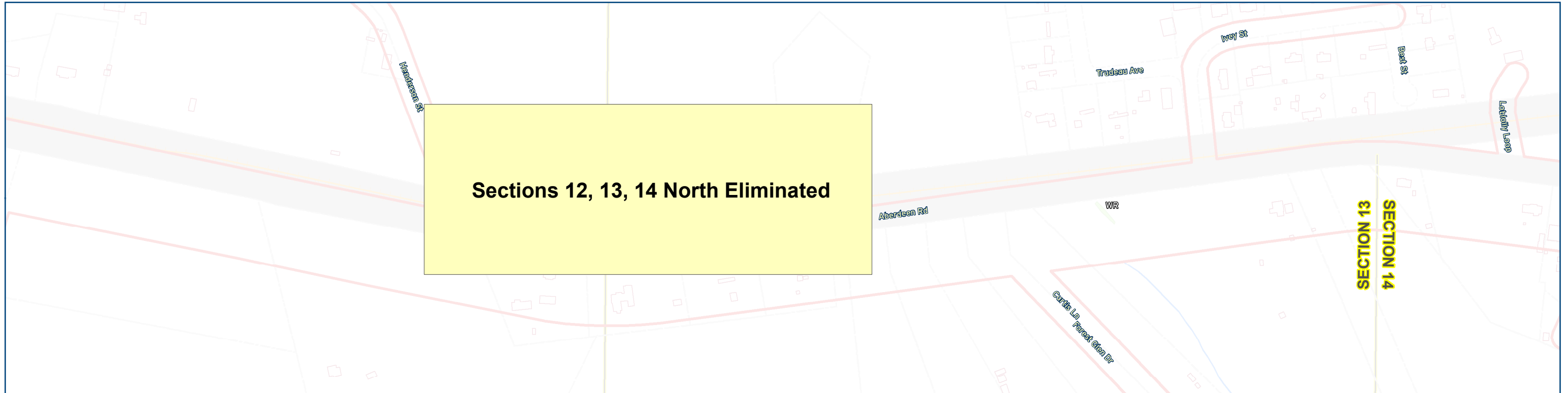
	 Study Area  SS + 25' & Proposed ROW  Proposed Slopestakes  County Line  Existing Railroad Alignment  Existing Right-Of-Way  Existing Building Foundations	 Ft. Bragg Limits  Fire Station  School  NHP Property  Conservation Properties	 Hazardous Waste Site  Junkyard  UST  Cemetery  Church  Parcel Boundaries	 Delineated Streams  Delineated Ponds  Delineated Wetlands  Estimated Stream  Estimated Wetland  USGS Streams	<p>Potential Impacts</p> <ul style="list-style-type: none">  Business  Church  Cemetery  Community Facility  Home  Home - Septic  UST 	<p>ALTERNATIVES NC 211</p> <p>FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 13</p>
							



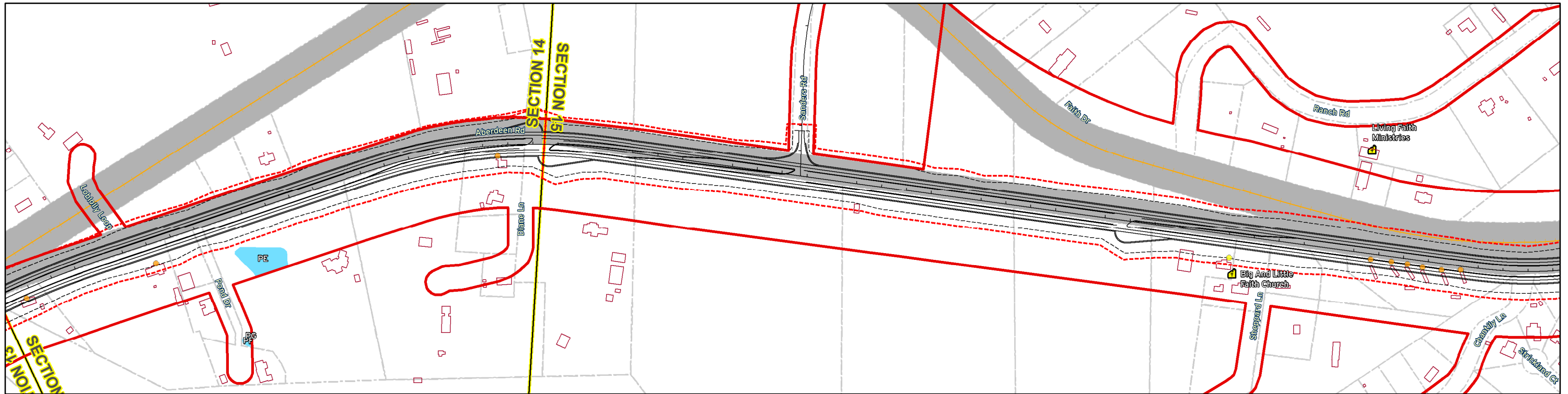
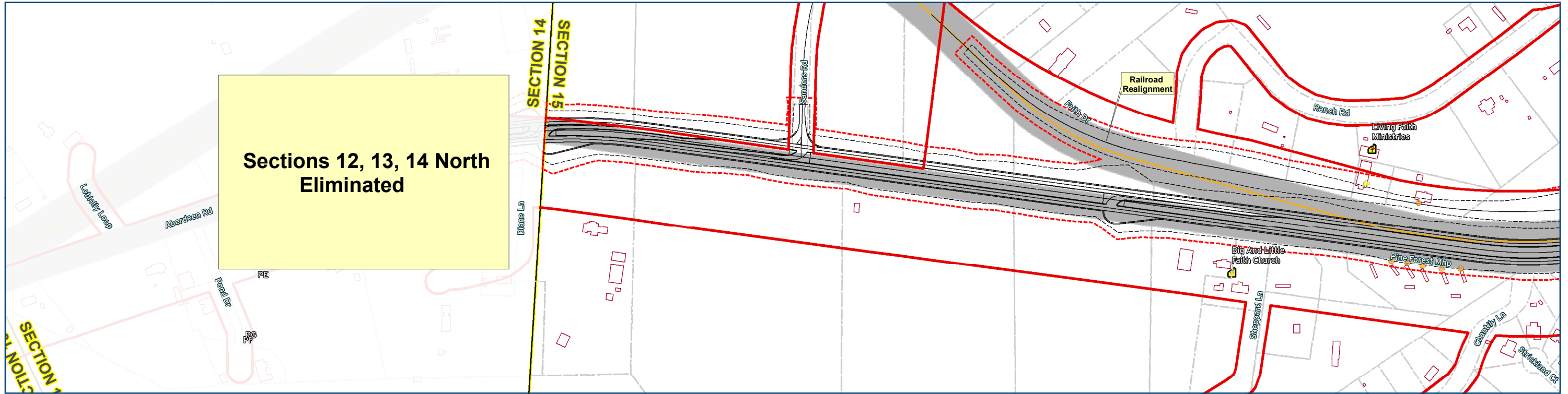
	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	Potential Impacts Business Church Cemetery Community Facility Home Home - Septic UST	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 14</p>



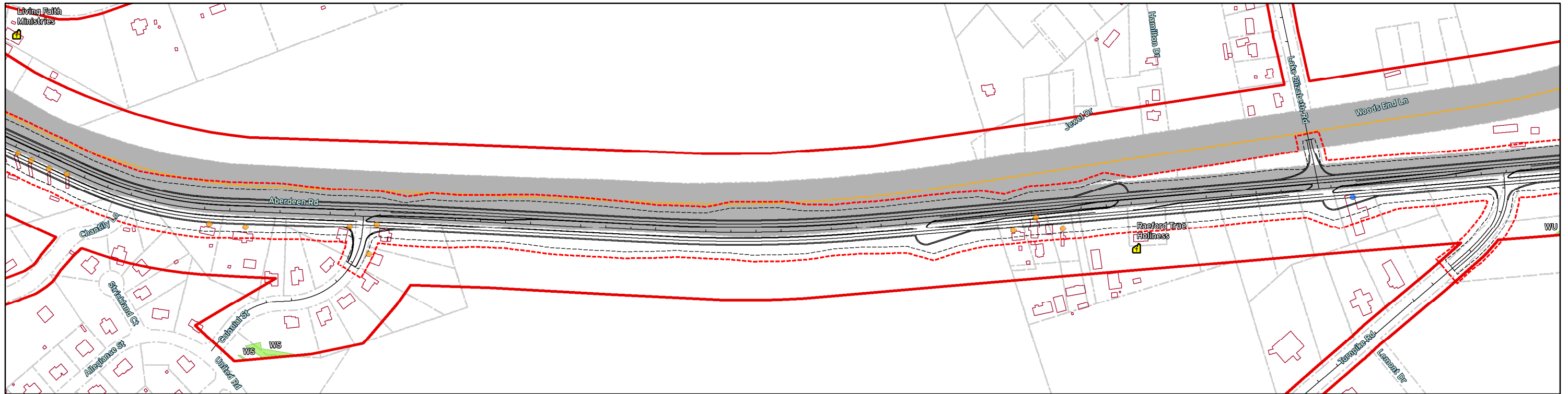
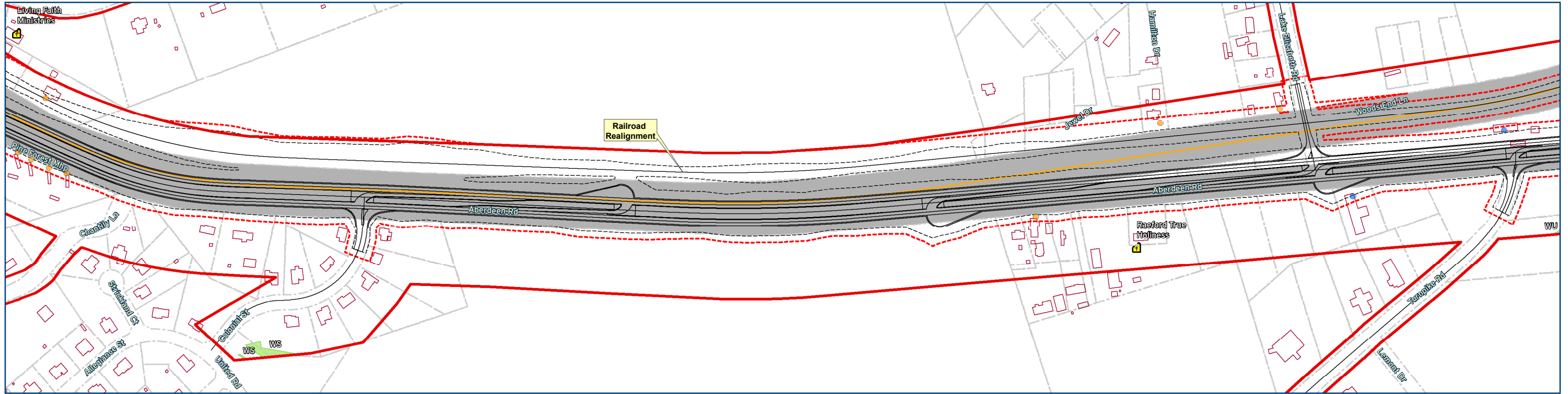
	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	<p>Potential Impacts</p> Business Church Cemetery Community Facility Home Home - Septic UST	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 15</p>



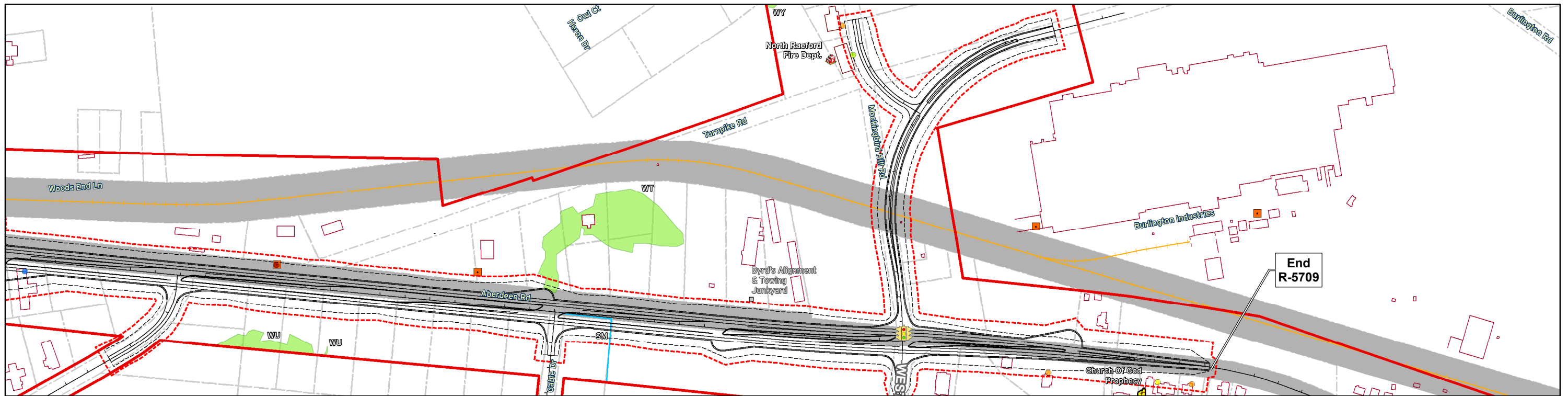
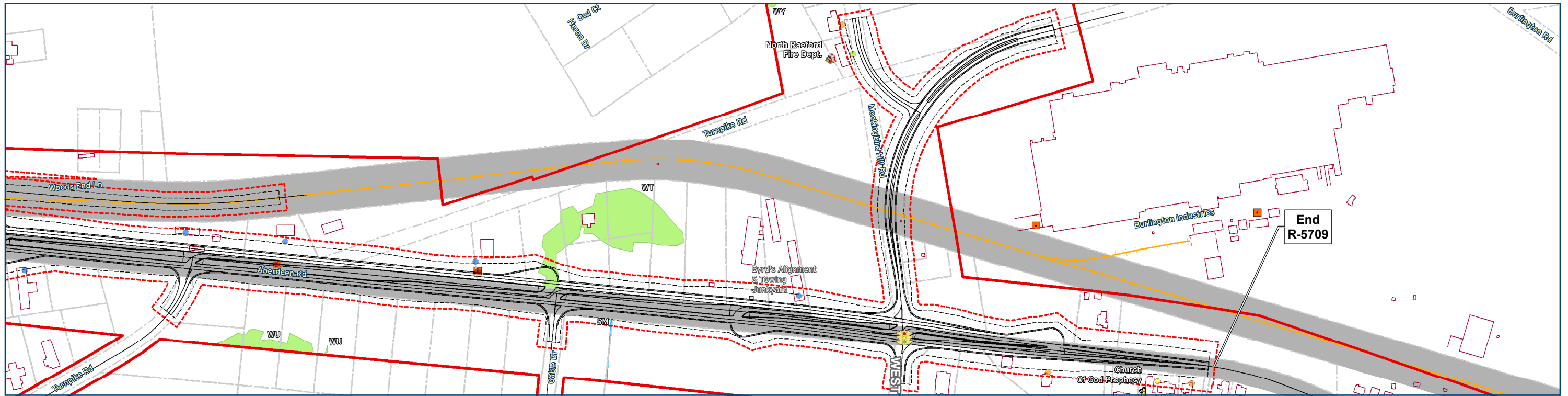
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	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	<p>Potential Impacts</p> Business Church Cemetery Community Facility Home Home - Septic UST	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 17</p>



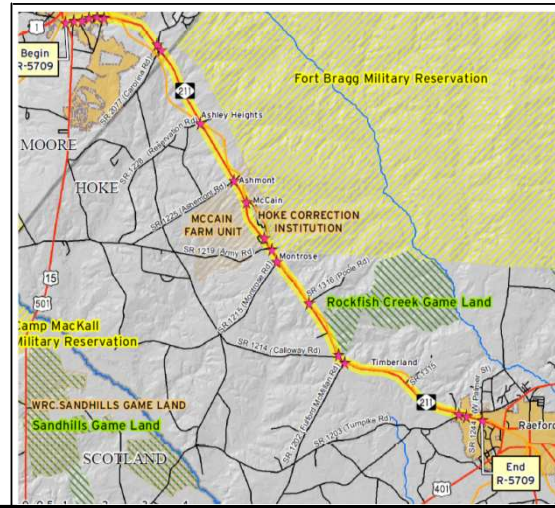
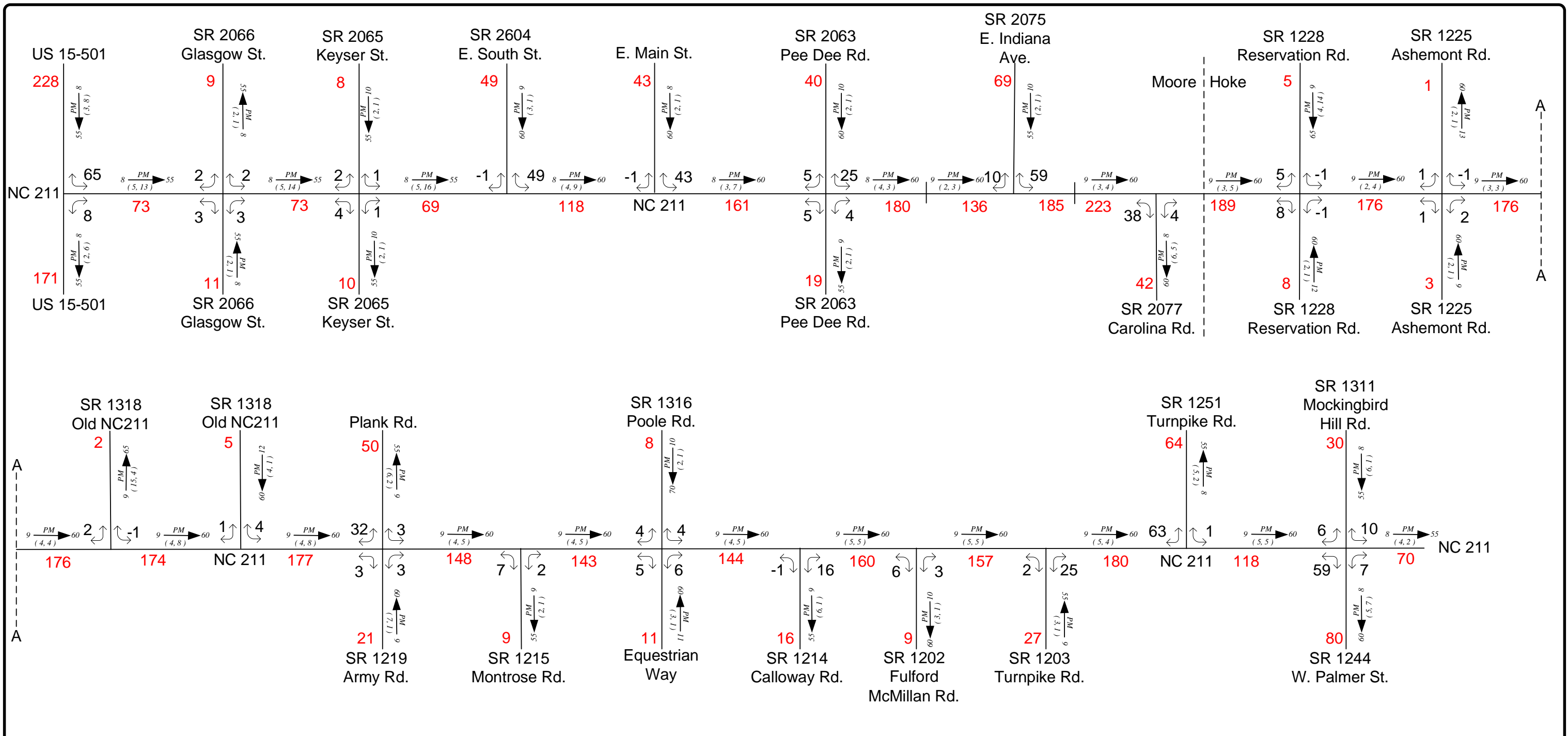
	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	<p>Potential Impacts</p> <ul style="list-style-type: none"> Business Church Cemetery Community Facility Home Home - Septic UST 	<p style="text-align: center;">ALTERNATIVES NC 211</p> <p style="text-align: center;">FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFERD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p style="text-align: center;">FIGURE 18</p>
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	Study Area SS + 25' & Proposed ROW Proposed Slopestakes County Line Existing Railroad Alignment Existing Right-Of-Way Existing Building Foundations	Ft. Bragg Limits Fire Station School NHP Property Conservation Properties	Hazardous Waste Site Junkyard UST Cemetery Church Parcel Boundaries	Delineated Streams Delineated Ponds Delineated Wetlands Estimated Stream Estimated Wetland USGS Streams	Potential Impacts Business Church Cemetery Community Facility Home Home - Septic UST	<p>ALTERNATIVES NC 211 FROM US 15 - 501 IN ABERDEEN TO SR 1244 - SR 1311 IN RAEFORD, MOORE, AND HOKE COUNTIES STIP PROJECT R-5709</p>	<p>FIGURE 19</p>

Appendix C

Traffic Volumes

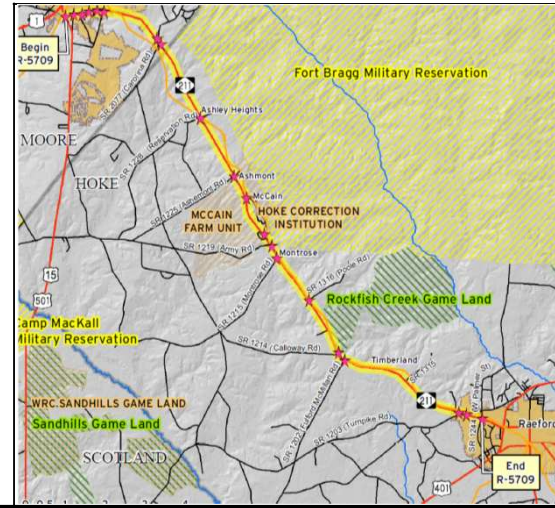
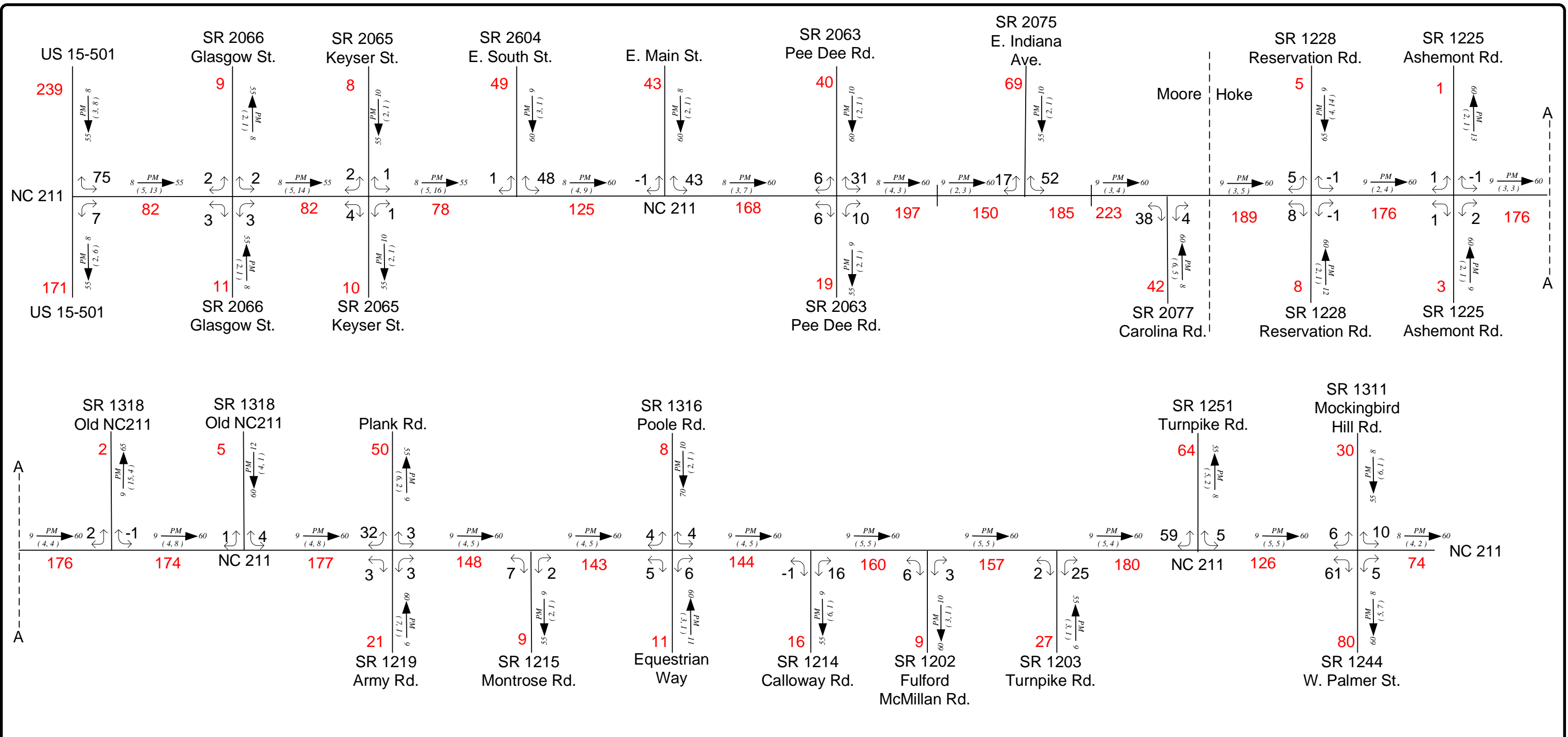


2040 No Build

LEGEND

- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- X Movement Prohibited
- Proposed Roadway
- DHV $\frac{PM}{(d, t)} \rightarrow D$ Design Hourly Volume (%) = K30
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

TIP: R-5709	WBS: 50205.1.1
COUNTY: Moore-Hoke	DIVISION: 8
DATE: 12-2015	
PREPARED BY: Chris McKoy	
LOCATION: NC 211	
PROJECT: Widen and improvements to NC-211	



2040 Build

LEGEND

- ### No. of Vehicles Per Day (VPD) in 100s
- 1- Less than 50 VPD
- X Movement Prohibited
- Proposed Roadway
- DHV $\frac{PM}{(d, t)} \rightarrow D$ Design Hourly Volume (%) = K30
- PM PM Peak Period
- D Peak Hour Directional Split (%)
- Indicates Direction of D
- (d, t) Duals, TT-STs (%)

TIP: R-5709	WBS: 50205.1.1
COUNTY: Moore-Hoke	DIVISION: 8
DATE: 12-2015	
PREPARED BY: Chris McKoy	
LOCATION: NC 211	
PROJECT: Widen and improvements to NC-211	

Appendix D

Preliminary Hydraulic Recommendations for Major Structures

Appendix E

Proposed Vertical and Horizontal Alignment Correction Locations

	Station	Mile Marker	Horiz. Deficiency	Vert. Deficiency	Curve Description	Other info.	Kvalue	
50 mph dsn speed.	102+46.71			45 mph	Crest	~ 1' undercut	61	
	135+55.14			35 mph	Sag	~ 2' fill	49	
	140+47.00			45 mph	Crest	~ 1' undercut	61	
60 mph design speed	167+87.21			25 mph	Sag	~ 13' fill	26	
	176+99.26			45 mph	Crest	~ 1.5' undercut	61	
	182+93.31			20 mph	Sag	~ 2' fill	17	
	183+67.41			25 mph	Crest		12	
	208+13.56			30 mph	Sag	~ 14.5' fill	37	
	212+68.58			50 mph	Crest		84	
	231+93.22			50 mph	Sag	~ 1' fill	96	
	256+26.29			50 mph	Crest	~ 1' undercut	84	
	262+41.44			40 mph	Crest	~ .75' undercut	44	
	270+30.48			50 mph	Sag	~ .1' fill	96	
	293+35.56			40 mph	Crest	~ 5' undercut	44	
	300+25.90			50 mph	Sag	~ 2' fill	96	
	308+51.28			40 mph	Sag	~ 2' fill	64	
	335+43.62			45 mph	Sag	~ 3' fill	79	
	356+06.72			50 mph	Sag	~ 1' fill	96	
	412+68.90			55 mph	Sag	~ .5' fill	115	
	448+00.55			50 mph	Crest	~ 1' undercut	84	
	483+38.96			55 mph	Crest	~ .5' undercut	114	
	496+17.52			50 mph	Sag	~ 2.5' fill	96	
	510+89.40			50 mph	Crest	~ 3' undercut	84	
	550+48.83			50 mph	Crest	~ 2.5' undercut	84	
	558+04.33			55 mph	Sag	~ 1' fill	115	
	563+67.99			40 mph	Sag	~ 2.25' fill	64	
	568+25.04			50 mph	Crest	~ 1.25' undercut	84	
	570+66.44			50 mph	Crest		84	
	573+18.78			50 mph	Sag	~ .5' fill	96	
	577+36.30			50 mph	Crest	~ 1' undercut	84	
	590+83.92			40 mph	Crest	~ 1.25' undercut	44	
	595+28.44			50 mph	Sag	~ 1' fill	96	
	612+72.90			50 mph		Horizontal	RR to left	
	714+75.28				45 mph	Sag	~ 2' fill	79
	723+11.20				50 mph	Crest	~ 2.5' undercut	84
729+00.65				50 mph	Sag	~ 1' fill	96	
732+65.97				50 mph	Crest	~ 1' undercut	84	
762+52.45				50 mph	Crest	~ 2.5' undercut	84	

Appendix F

Concurrence Form

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 2 Revisited - Detailed Study Alternatives Carried Forward
and
Concurrence Point No. 2A - Bridging Decisions and Alignment Review

STIP Project: R-5709

Project Name/Description: NC 211, from US 15-501 in Aberdeen to SR 1244 (West Palmer Street) / SR 1311 (Mockingbird Hill Road) in Raeford, Moore and Hoke Counties. Widen to multi-lanes.

Alternatives: The alternatives to be studied in detail include the following options. Selected alternatives are circled, alternatives to be dropped from consideration are stricken through, and options selected at the June 2017 CP 2 Meeting are shaded.

Section No.	Widening Side		Description/Comments
1:	N	S	
2A:	N	S	NC 211 at-grade RR crossing
2B:	N	S	NC 211 bridges over RR
3A:	N		Realign Indiana Ave east to Carolina Rd
4:	N	S	
5:		S	
6B:	N	S	Realign Reservation Rd, provide two intersections with NC 211
6C:		S	Realign NC 211 and Reservation Rd, provide bridges over RR
6D:		S	Realign NC 211, provide bridges over RR
7:	N	S	
8:		S	
9:	N	S	
10-11:	N	S	
12:		S	
13:		S	
14:		S	
15:	N	S	

Bridging Decisions and Alignment Review: The project includes no bridges over jurisdictional features; however, new bridges are proposed in Sections 2 and 6 over the railroad. The alignment is illustrated in Figures 1-19 (Appendix B) of the Merger Meeting Handout.

The Project Team has concurred on this date of **January 16, 2019**, on the above-mentioned preliminary alternatives to be studied in detail for STIP Project R-5709.

USACE _____

HPO _____

USEPA _____

NCDOT _____

USFWS _____

LRRPO _____

NCWRC _____

TARPO _____

NCDWR _____

FAMPO _____