

BRIDGING DECISIONS AND ALIGNMENT REVIEW

US 158 (SHORTCUT ROAD), FROM EAST OF NC 34 (SHAWBORO ROAD) AT BELCROSS TO NC 168 (CARATOKE HIGHWAY) CAMDEN - CURRITUCK COUNTIES TIP PROJECT R-2574

PURPOSE OF THIS MEETING

The purpose of today's meeting is to discuss bridge locations, preliminary alignments, and reach concurrence on bridging decisions and alignment review for Concurrence Point 2A (CP2A).

PROJECT DESCRIPTION

TIP Project R-2574 is included in the 2016-2025 North Carolina State Transportation Improvement Program (STIP). The project extends from NC 34 at Belcross in Camden County to NC 168 in Currituck County, a distance of approximately 10.6 miles (Figure 1A). Proposed improvements include four 12-foot travel lanes, a 46-foot median and 8-foot grassed shoulders (4-foot paved).

PROJECT SCHEDULE

The project is included in the 2016-2025 STIP and is programmed for planning and environmental studies. Right of way acquisition and construction are unfunded.

PROJECT PURPOSE

Formal concurrence on the purpose of the project (CP 1) was reached at a NEPA/404 Merger Team meeting held on September 19, 2013. Team members agreed on the following purpose statement for the project: The purpose of the proposed project is to improve mobility and increase the roadway carrying capacity of US 158 in the project area to support both regional transportation needs and hurricane evacuation.

ALTERNATIVES FOR DETAILED STUDY

Formal concurrence on the alternatives for detailed study (CP 2) was reached at a NEPA/404 Merger Team meeting held on December 18, 2014. North side, south side, or best fit widening alternatives have been considered within six sections of the project in order to analyze potential impacts. Team members agreed on the detailed study alternatives described in Table 1. Preliminary impacts are described in Table 2.

Table 1. Alternatives for Detailed Study

Section No.	Figure 2 Sheet	Section Description	Length (miles)	Widening Alternative		
				North Side	South Side	Best Fit
1	1, 2	West end of project to just west of SR 1135	1.5		✓	
2	2, 3	Just west of SR 1135 in Camden County to 0.6 mile west of the western SR 1148 intersection in Currituck County	0.7			✓
3	3, 4, 5, 6, 7	0.6 mile west of the western SR 1148 intersection to 0.7 mile east of the eastern SR 1148 intersection	3.5	✓		✓
4	7, 8, 9	0.7 mile east of the eastern SR 1148 intersection to 0.1 mile east of Maple Road	1.4		✓	
5	9, 10, 11	0.1 mile east of Maple Road to 0.2 mile west of Will Poyner Lane	1.1		✓	
6	11, 12	0.2 mile west of Will Poyner Lane to east end of project	1.6		✓	✓

BRIDGING DECISIONS AND ALIGNMENT REVIEW

CP 2A consists of the identification of potential impacts to jurisdictional areas including streams, wetlands and other surface waters based on the preliminary design. CP 2A also includes a discussion of NCDOT hydraulic requirements and potential bridging locations being proposed at major stream or wetland crossings. Water resources in the study area are part of the Pasquotank River basin. Based on a preliminary hydraulic study, six crossings require structures that are greater than 72 inches wide (see Figure 1B). All other crossings can be contained in smaller pipes or culverts. The structure locations are described in Table 3 and shown on Figures 1B, 2, 3, and 4. Based on preliminary designs, impacts to streams and wetlands in these structure locations are described in Table 3. Jurisdictional areas have been surveyed and mapped using GPS. The impact area is defined as the slope stakes plus a 25-foot clearing area.

Table 2: Detailed Study Alternatives Comparison

Impact	Section								
	1	2		3		4	5	6	
	South	North	Best Fit	North	Best Fit	South	South	South	Best Fit
Residential Relocations	1	2	0	12	9	0	3	21	16
Business Relocations	0	0	0	1	0	0	1	1	1
Non-Profit Relocations *	0	0	0	0	1	0	1	1	1
Total Relocations	1	2	0	13	10	0	5	23	18
Historic Properties (Adverse Effect)	No	No	No	No	No	No	No	No	No
Community Facilities **	0	0	0	0	0	0	2	0	0
Great Swamp Natural Heritage Area (acres)	0	0	0	0.64	0.63	41.8	0	0	0
North River Game Land (acres)	0	0	0	0	0	9.0	< 0.1	0	0
Wetlands (acres)	0	10.8	10.8	0.1	0.3	19.3	0.1	0.3	0.4
Streams (linear feet)	0	0	0	275	244	0	156	0	0
Surface Water (acres) ***	0	3.7	3.7	1.0	0.7	14.2	0.1	0.4	0.6

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

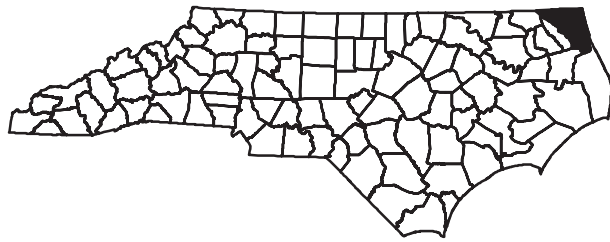
** Community facilities that right of way would be required from, though they would not be relocated.

*** Tributaries to waters of the United States.

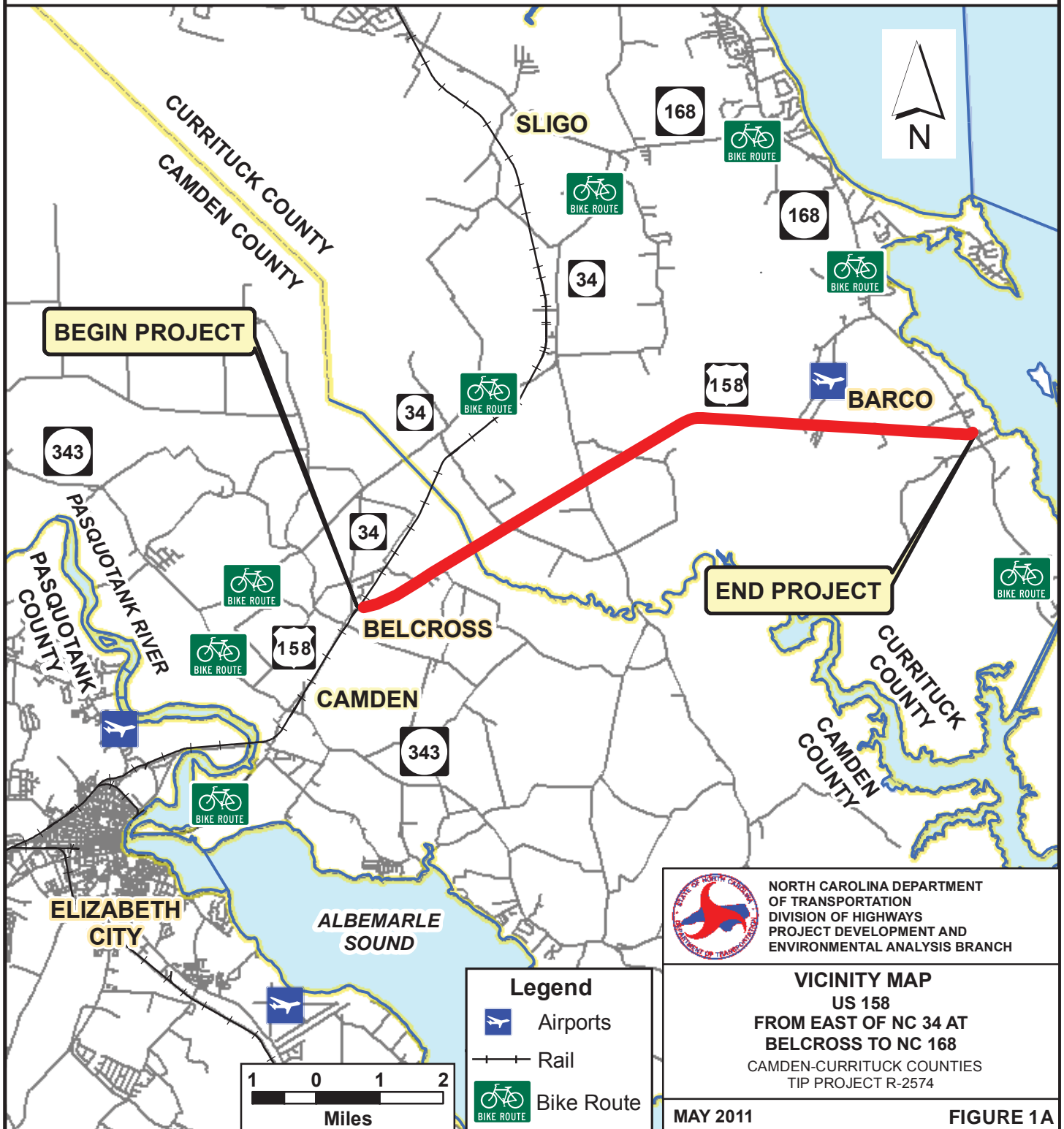
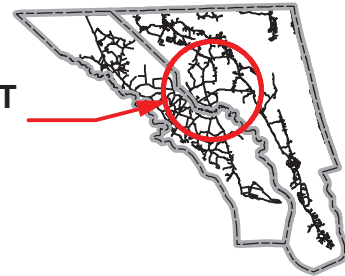
Table 3. Recommended Major Drainage Structures

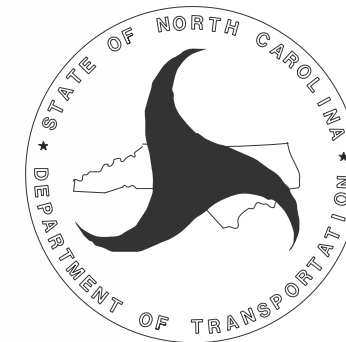
SITE NUMBER	LOCATION	STREAM/ WETLAND INFORMATION				EXISTING STRUCTURE	PROPOSED STRUCTURE	PROPOSED 4-LANE WIDENING
		STREAM NAME / NCDWR INDEX # / CLASSIFICATION	NRTR MAP ID	NCWAM CLASSIFICATION	NCDWQ WETLAND RATING	STRUCTURE NO. SIZE, TYPE	STRUCTURE SIZE, TYPE	POTENTIAL STREAM (LF) OR WETLAND (AC) IMPACT
1	Section 2 - 0.6 mile east of SR 1135 Figure 2 - Sheet 2 Figure 3 - Sheet 1	Run Swamp Canal	WC/ WU	Riverine Swamp Forest	96	Bridge #1, 1 span, 42' x 45' cored slab bridge	Replace with 2 @ 36' x 90' bridges (6480 sf) (North Side Alignment)	WC (5.7) WU (0.8)
							Replace with 2 @ 36' x 90' bridges (6480 sf) (Best Fit Alignment)	WC (4.7) WU (1.6)
2	Section 2 - 0.8 mile east of SR 1206 Figure 2 - Sheet 3 Figure 3 - Sheet 2	Run Swamp Canal	WC/ WU	Riverine Swamp Forest	96	Bridge #9, 2 span, 28' x 70' cored slab bridge	Replace with 2 @ 36' x 110' bridges (7920 sf) (North Side Alignment)	WC (2.1) WU (2.2)
							Replace with 2 @ 36' x 110' bridges (7920 sf) (Best Fit Alignment)	WC (1.8) WU (4.5)
3	Section 3 - 0.8 miles east of SR 1148 Figure 2 - Sheet 4 Figure 3 - Sheet 3	Drainage Canal #1 Index # 30-2-1 Perennial - C; SW	SA	n/a	n/a	Culvert #P005, 117"x79" CMP	Replace with 2 @ 9' x 7' RCBC (North Side Alignment)	SA (276)
							Replace with 2 @ 9' x 7' RCBC (Best Fit Alignment)	SA (336)
4A	Section 4 - 3.9 miles west of NC 168 Figure 2 - Sheet 7 Figure 3 - Sheet 4	Great Swamp	WI/ WR	Riverine Swamp Forest	96	2 @ 60" CMP	Retain and extend existing by 142' (South Side Alignment)	WI (1.5) WR (4.5)
4B	Section 4 - 3.6 miles west of NC 168 Figure 2 - Sheet 8 Figure 3 - Sheet 5	Great Swamp	WI/ WR	Riverine Swamp Forest	96	2 @ 72" CMP	Retain and extend existing by 67' (South Side Alignment)	WI (0.1) WR (7.9)
4C	Section 4 - 3.3 miles west of NC 168 Figure 2 - Sheet 9 Figure 3 - Sheet 6	Great Swamp	WI/ WR	Riverine Swamp Forest	96	2 @ 72" CMP	Retain and extend existing by 105' (South Side Alignment)	WI (0.1) WR (4.8)

NOTES:
CMP = Corrugated Metal Pipe; RCBC = Reinforced Concrete Box Culvert
Stream/wetland impacts are measured 25 feet beyond slopestakes.



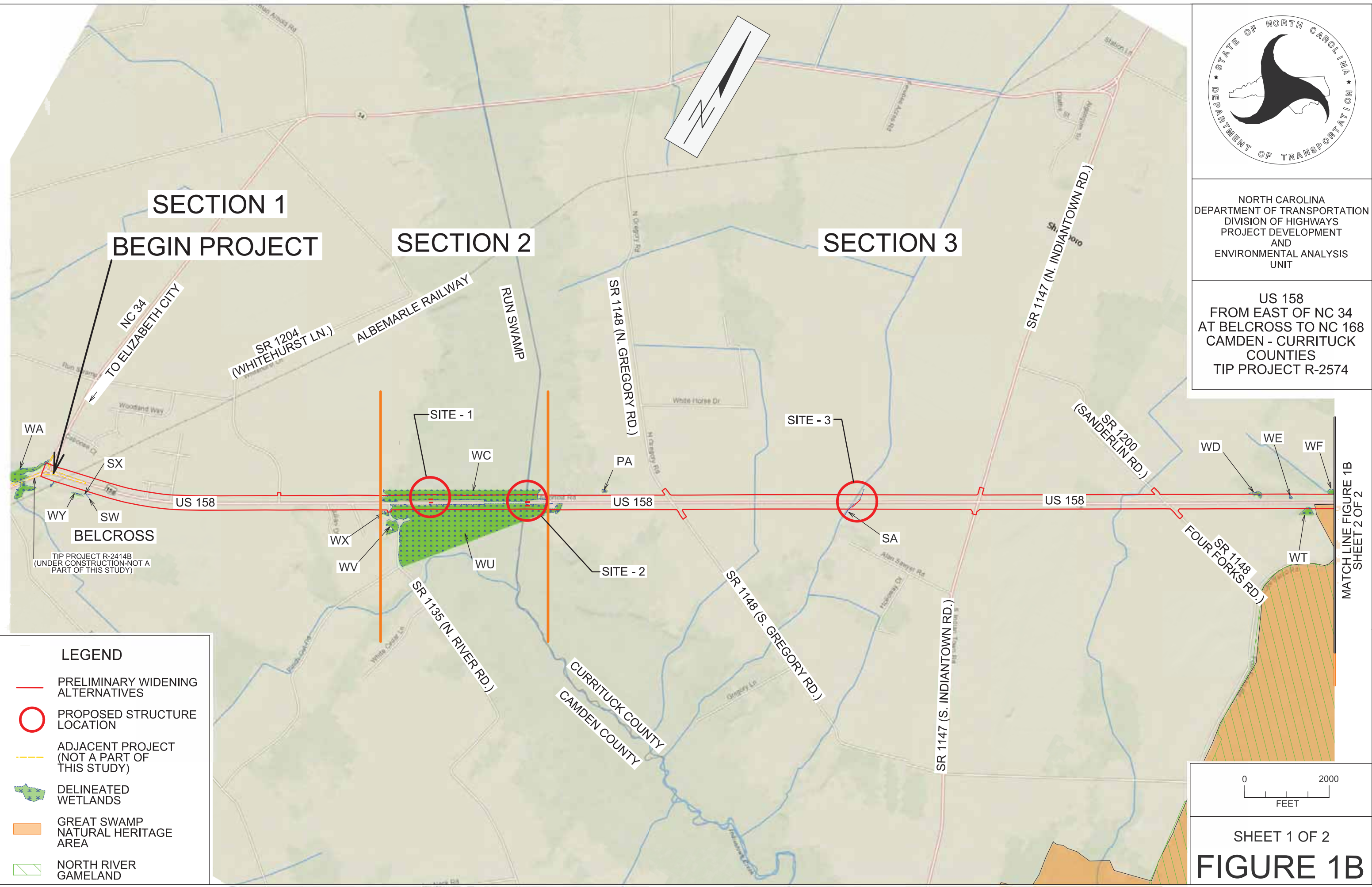
PROJECT
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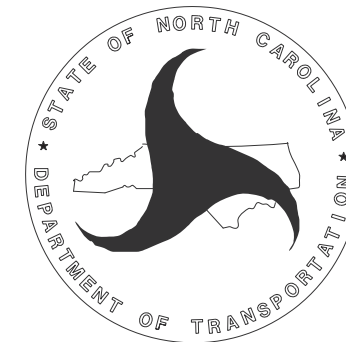
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MATCH LINE FIGURE 1B
SHEET 2 OF 2

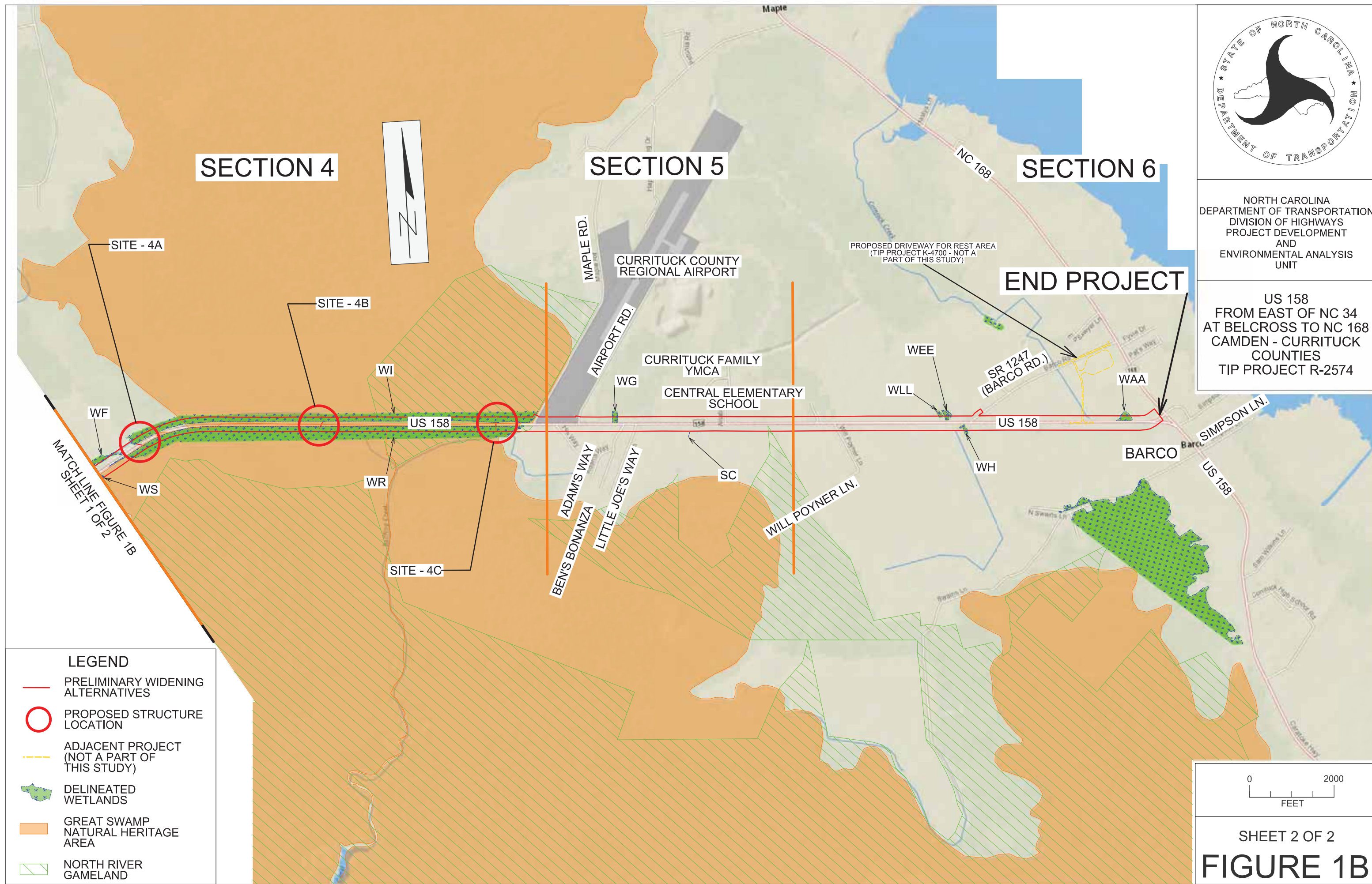
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SHEET 1 OF 2
FIGURE 1B



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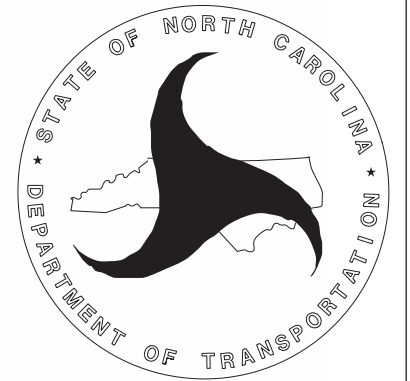
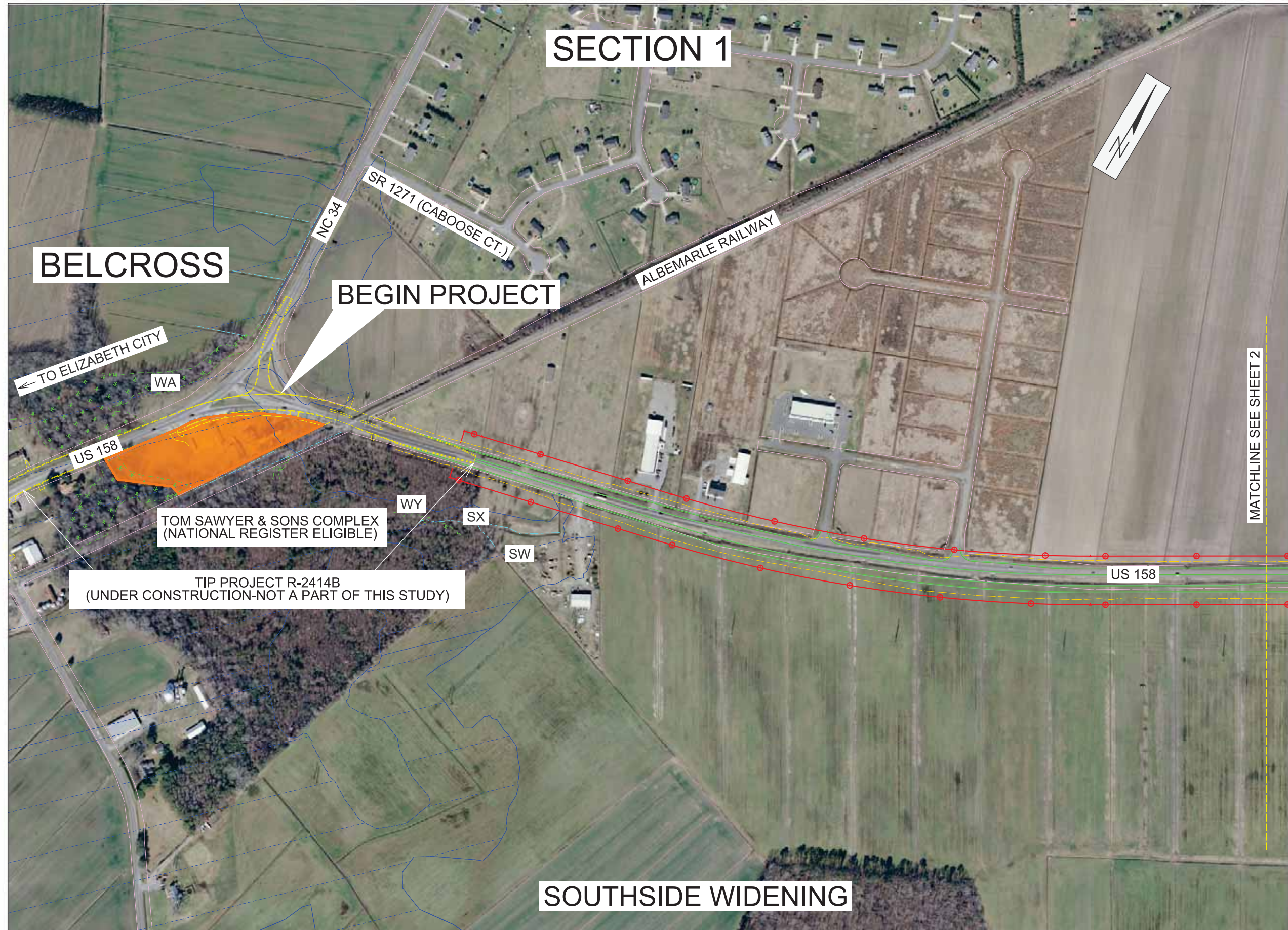


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SHEET 2 OF 2
FIGURE 1B



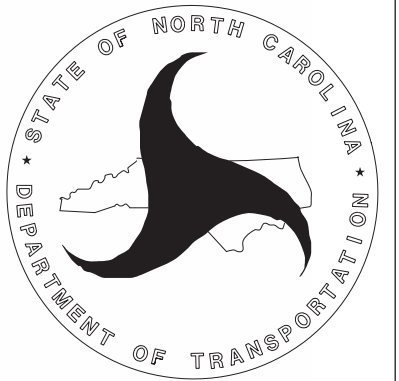
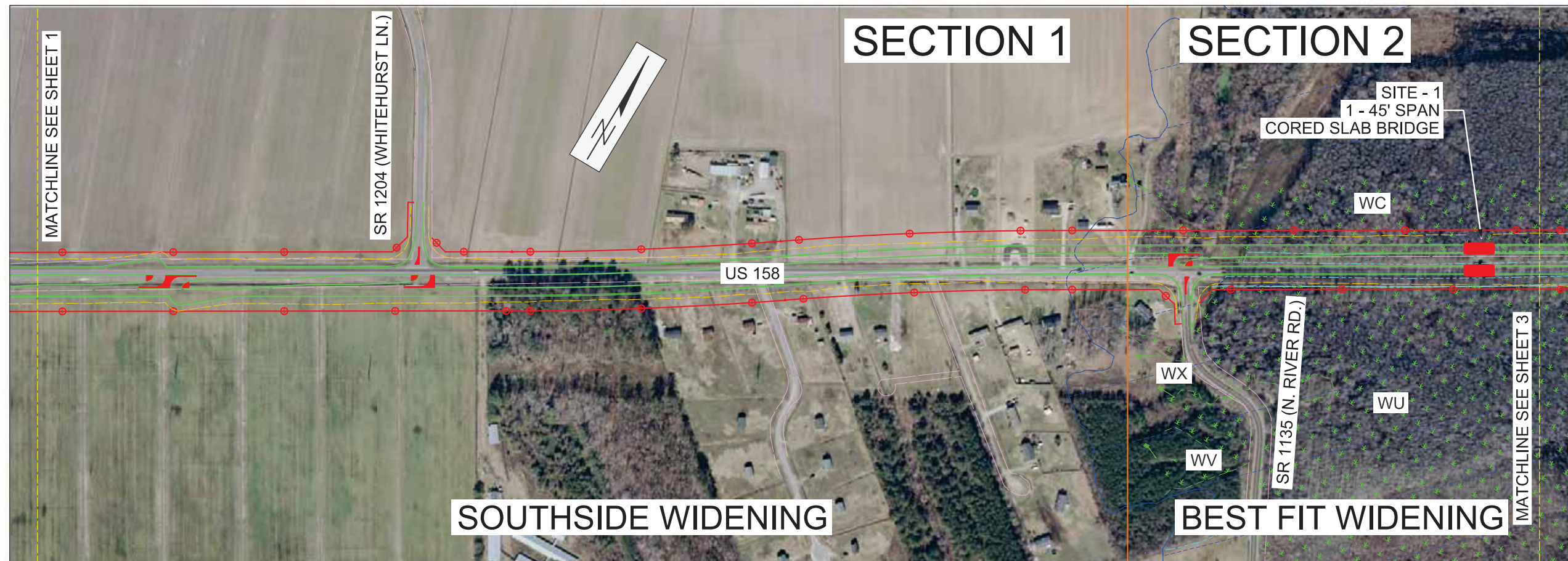
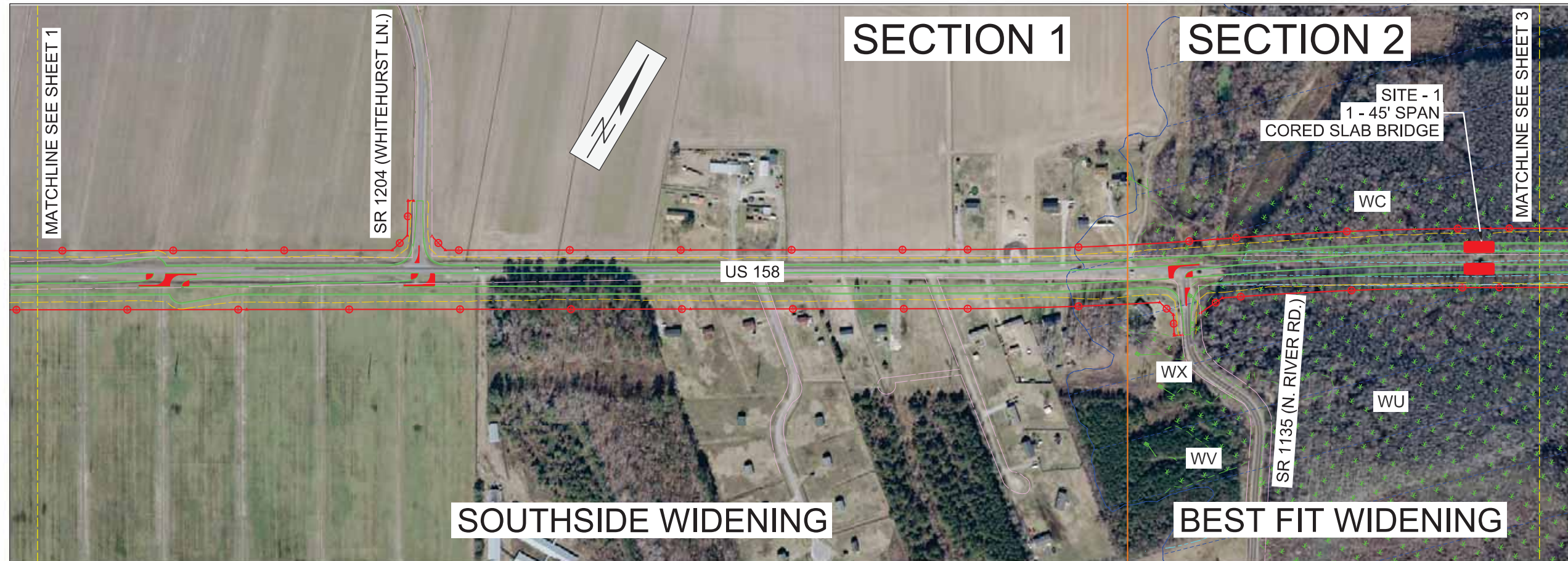
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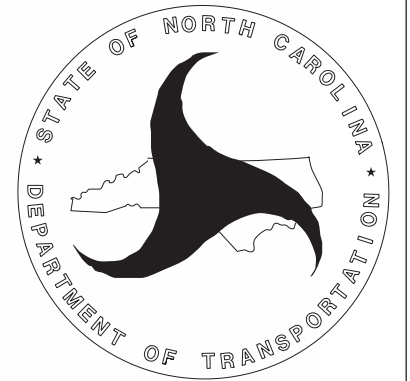
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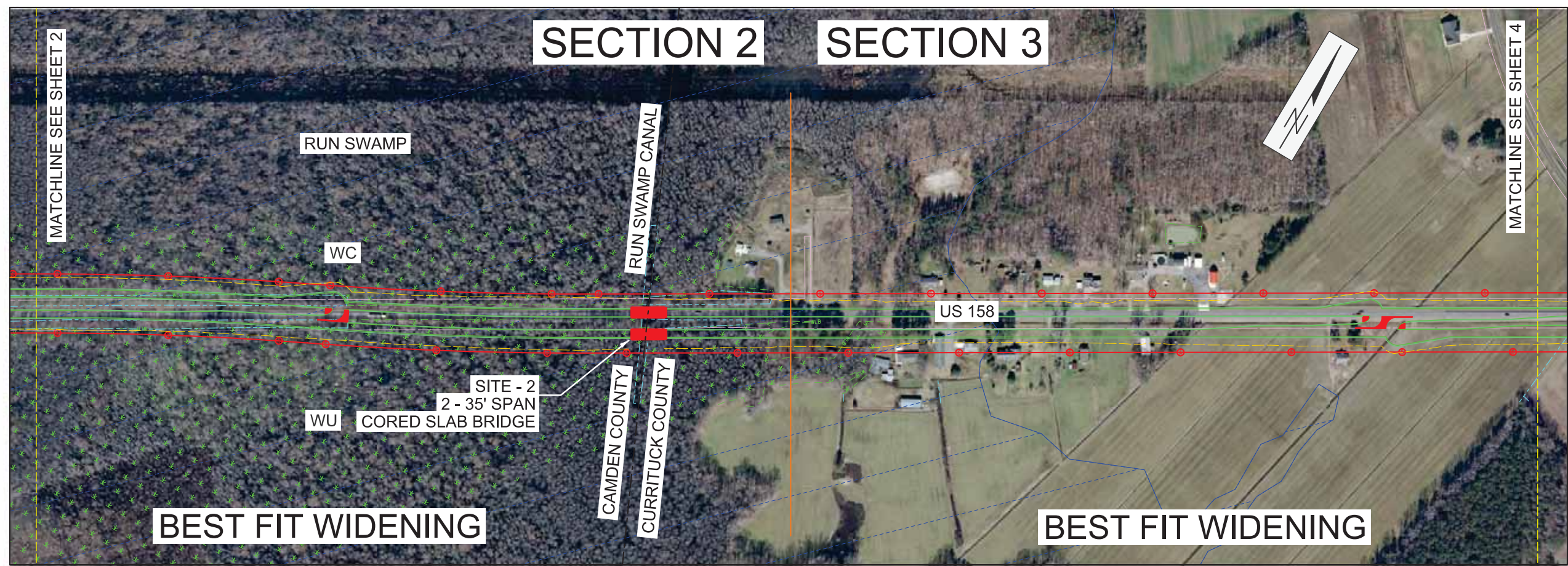
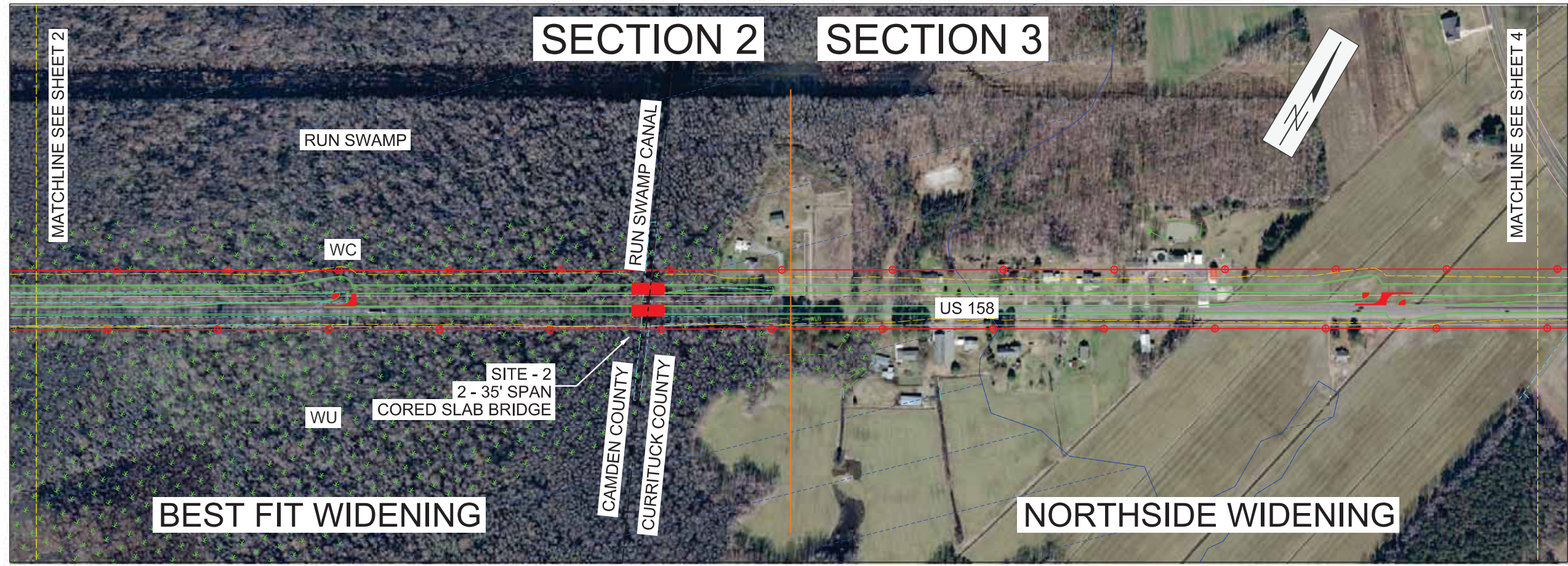


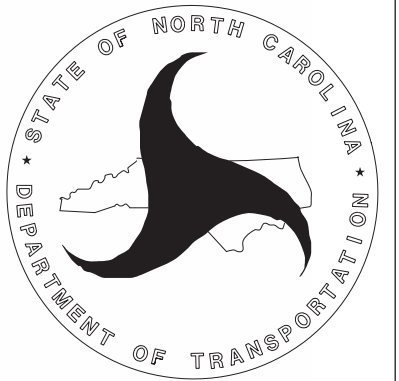
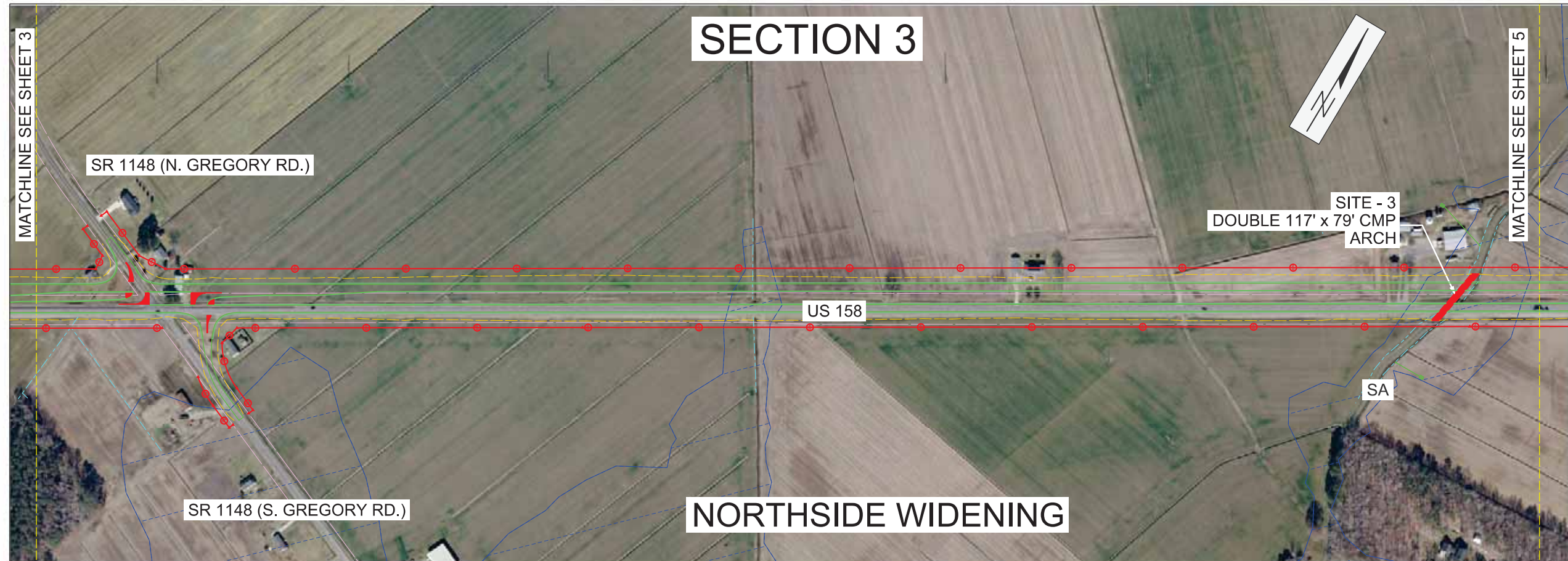
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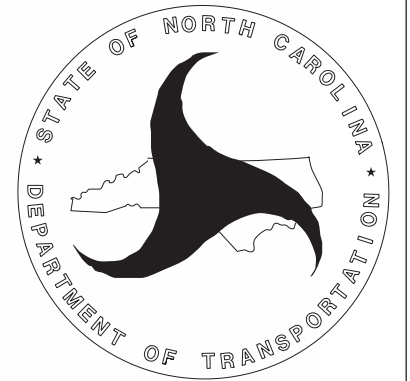
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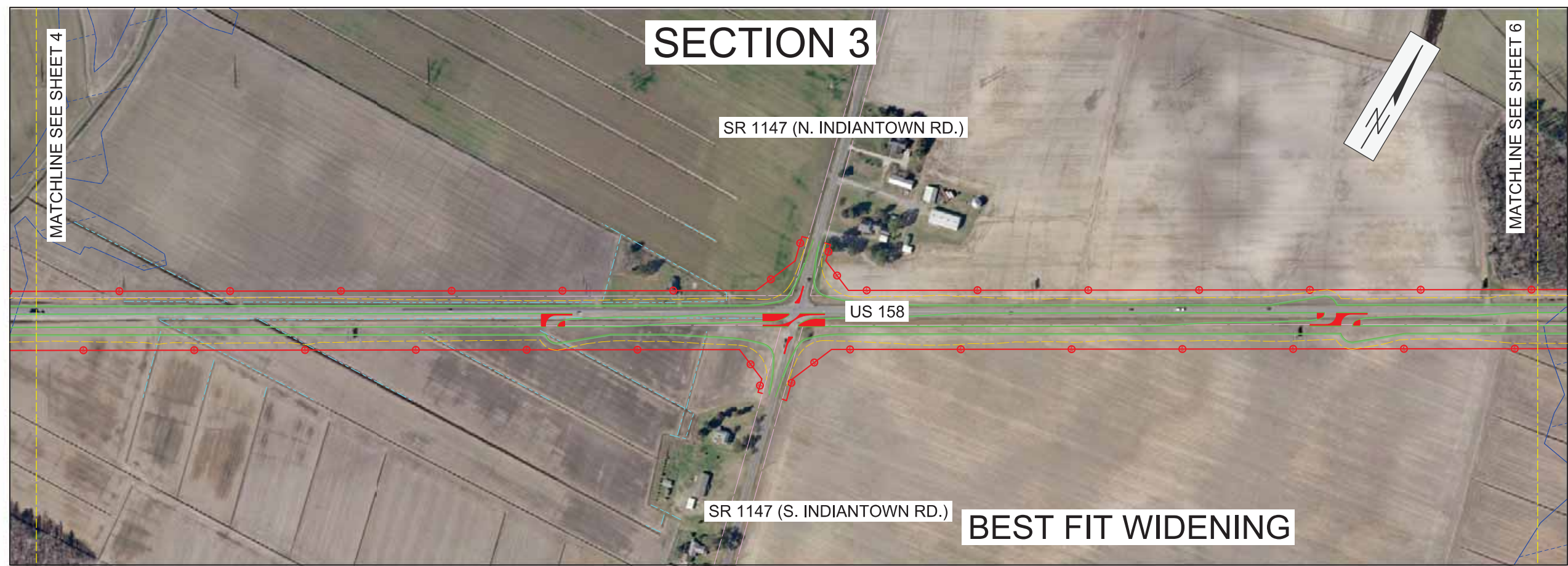
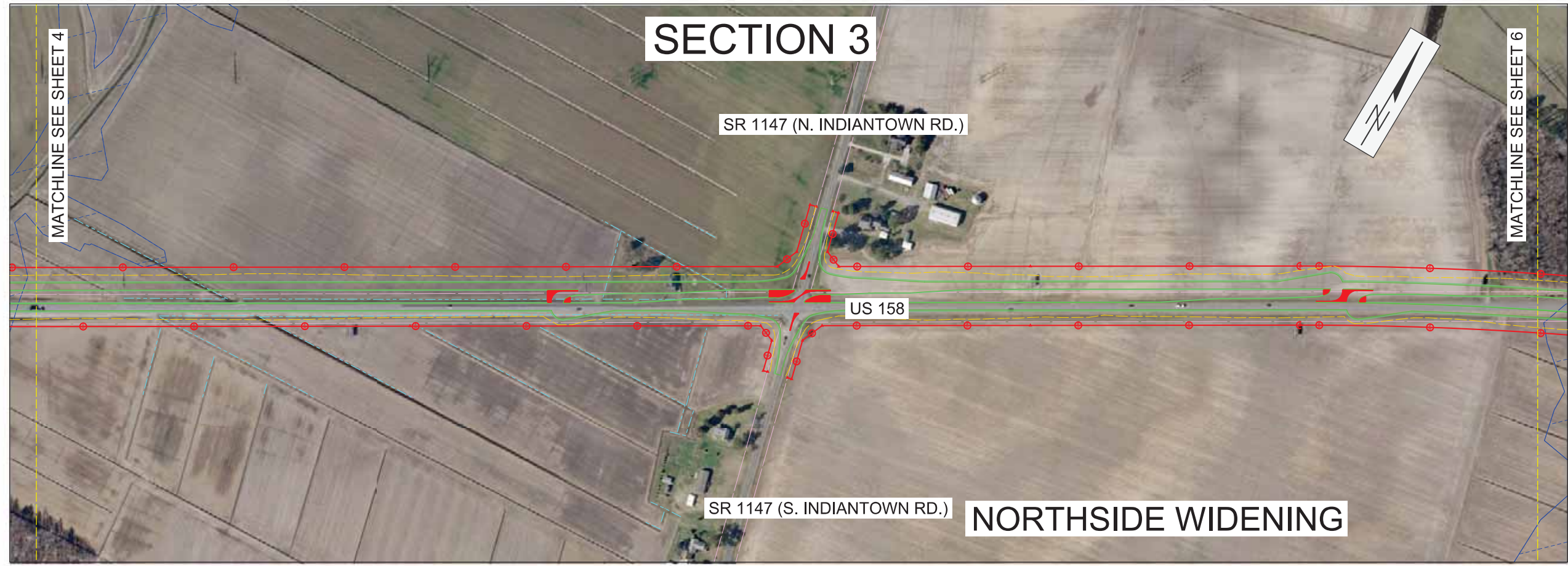
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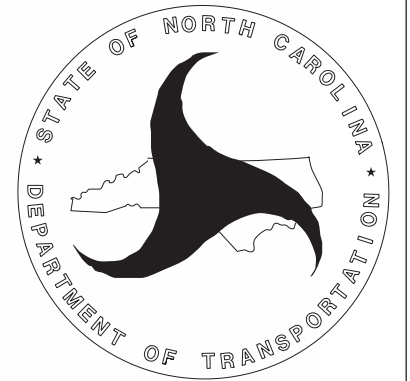
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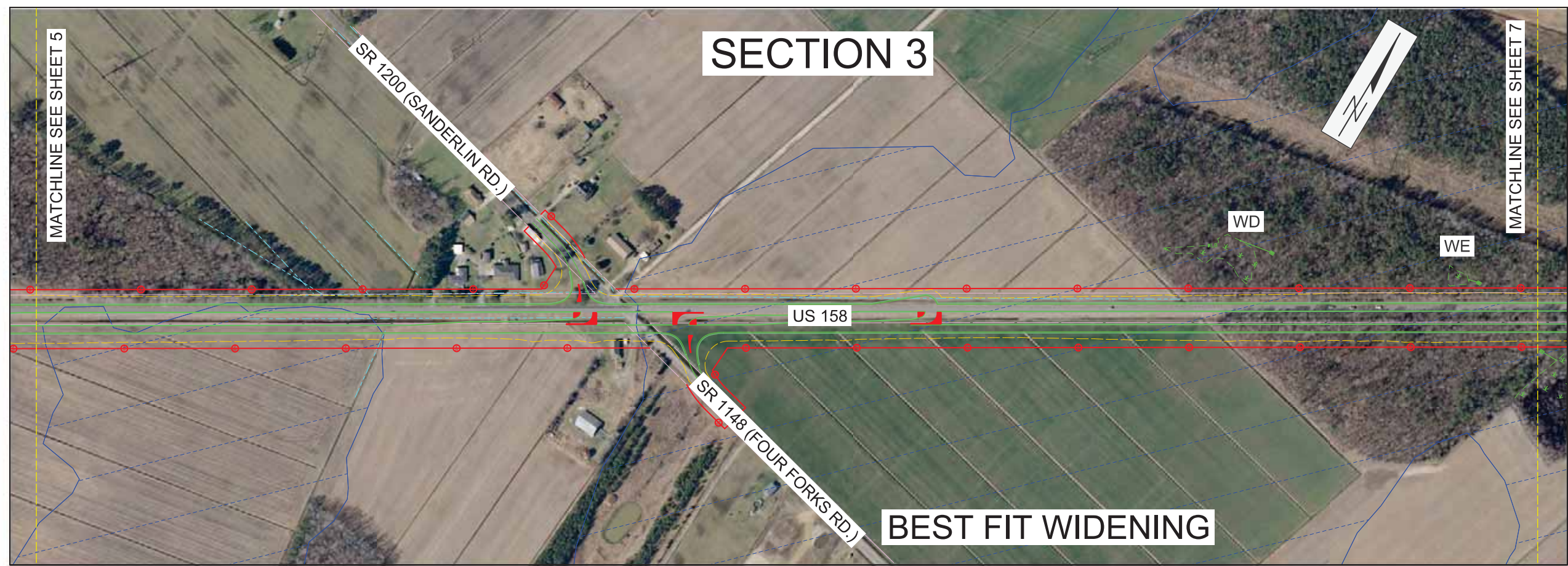
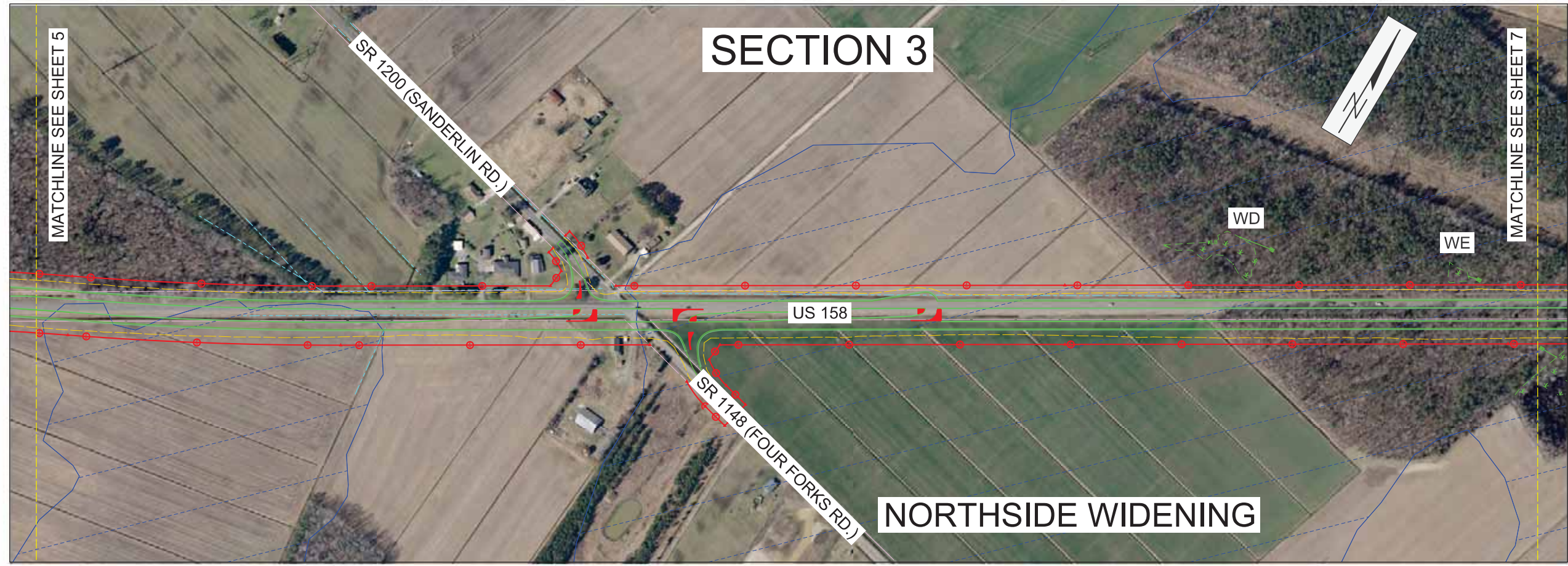
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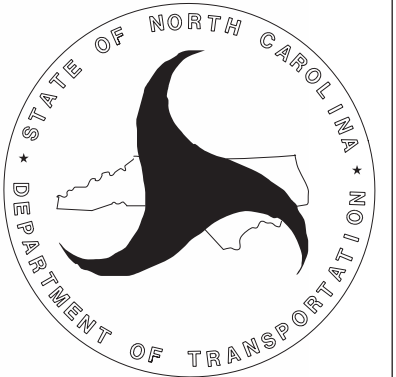
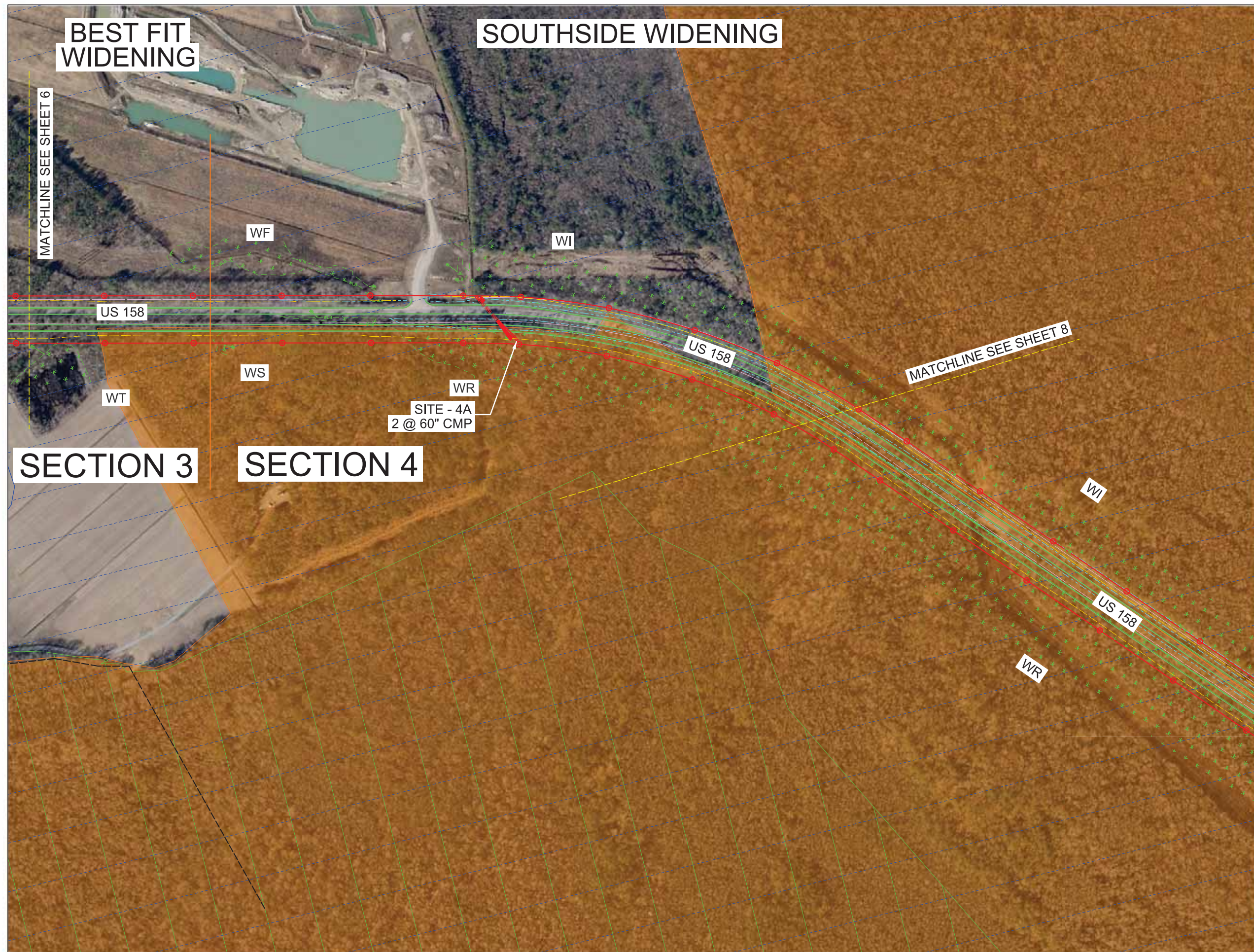
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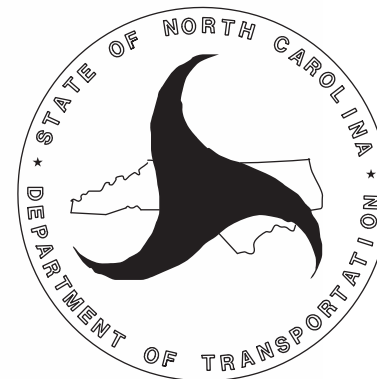
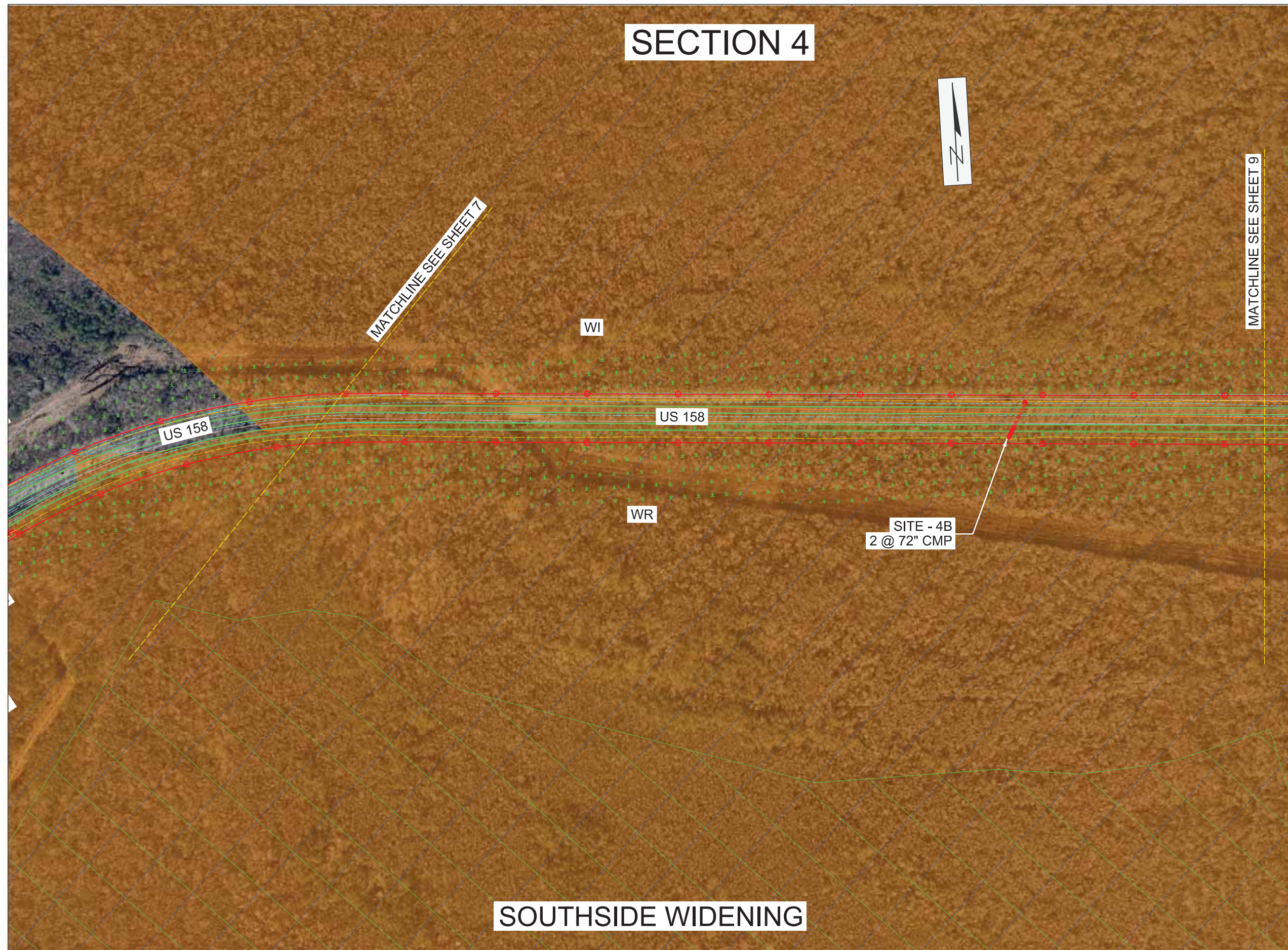


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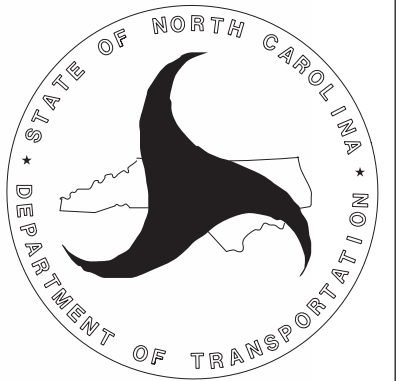
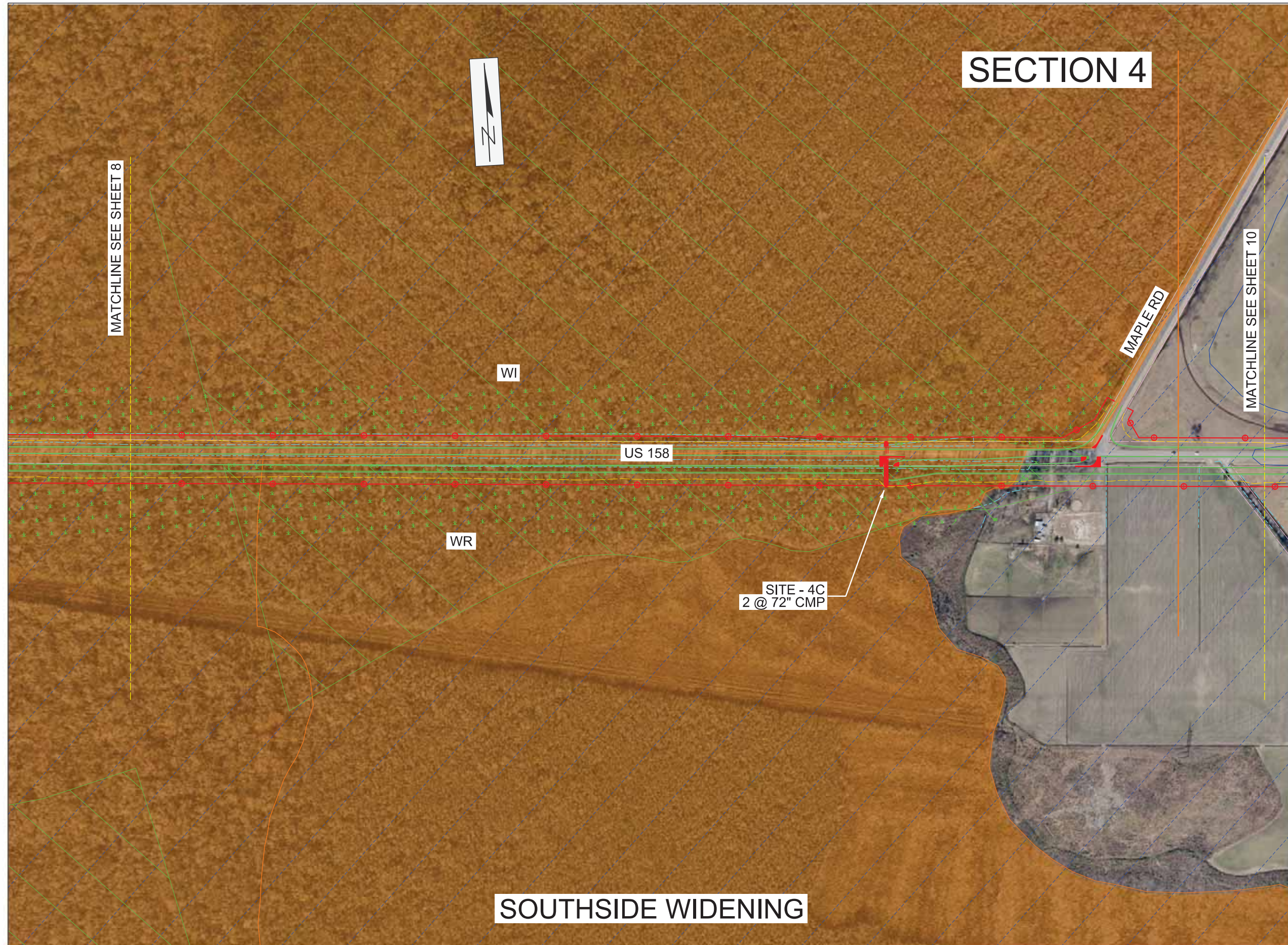
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FIGURE 2

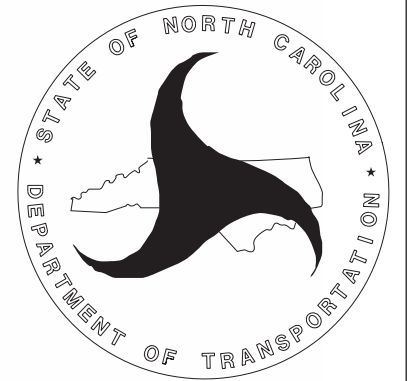
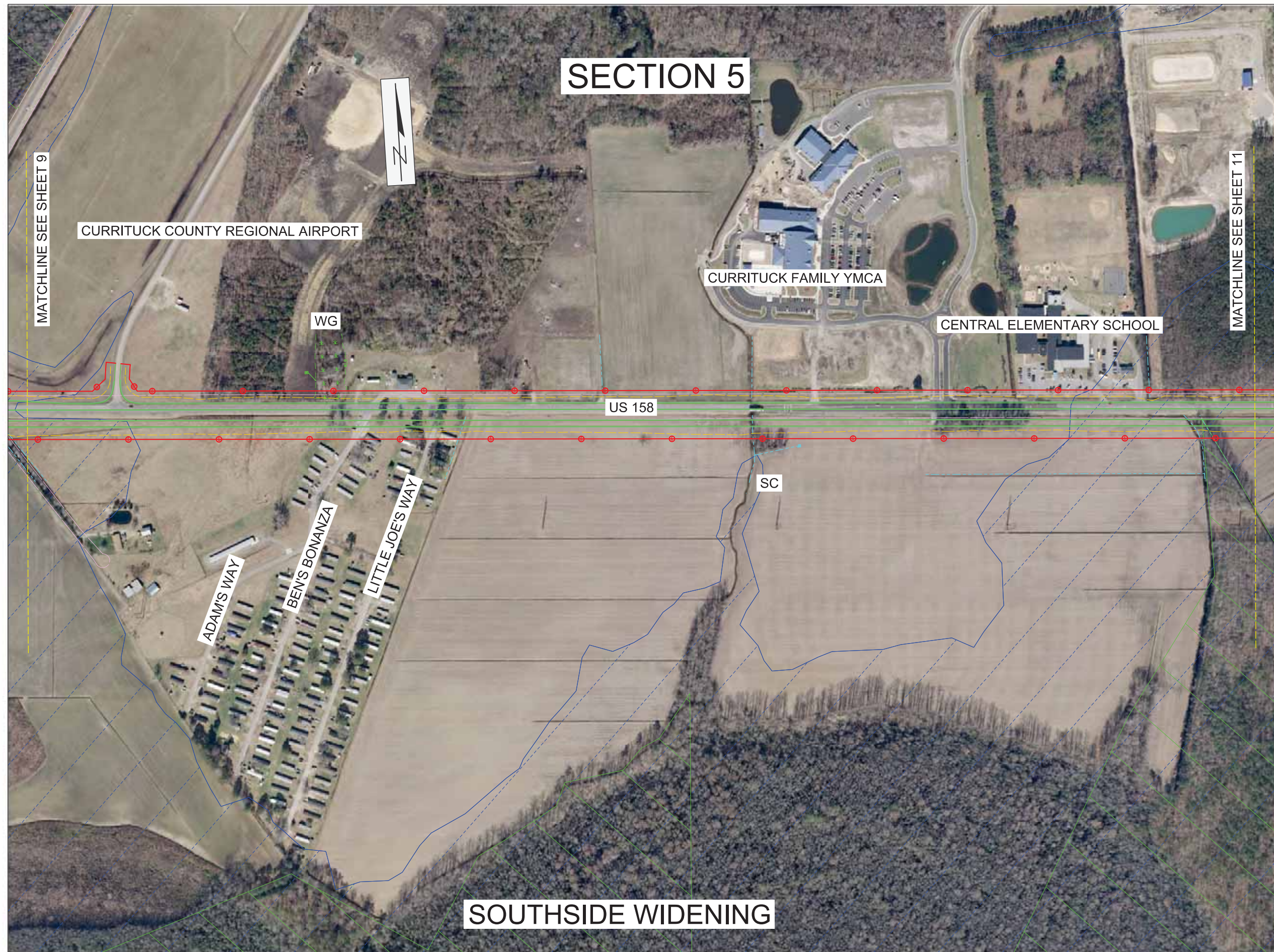


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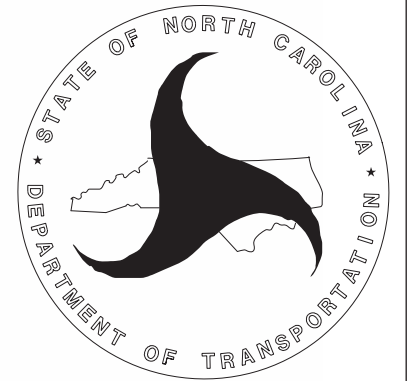


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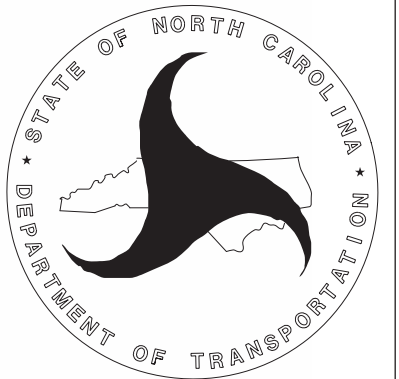
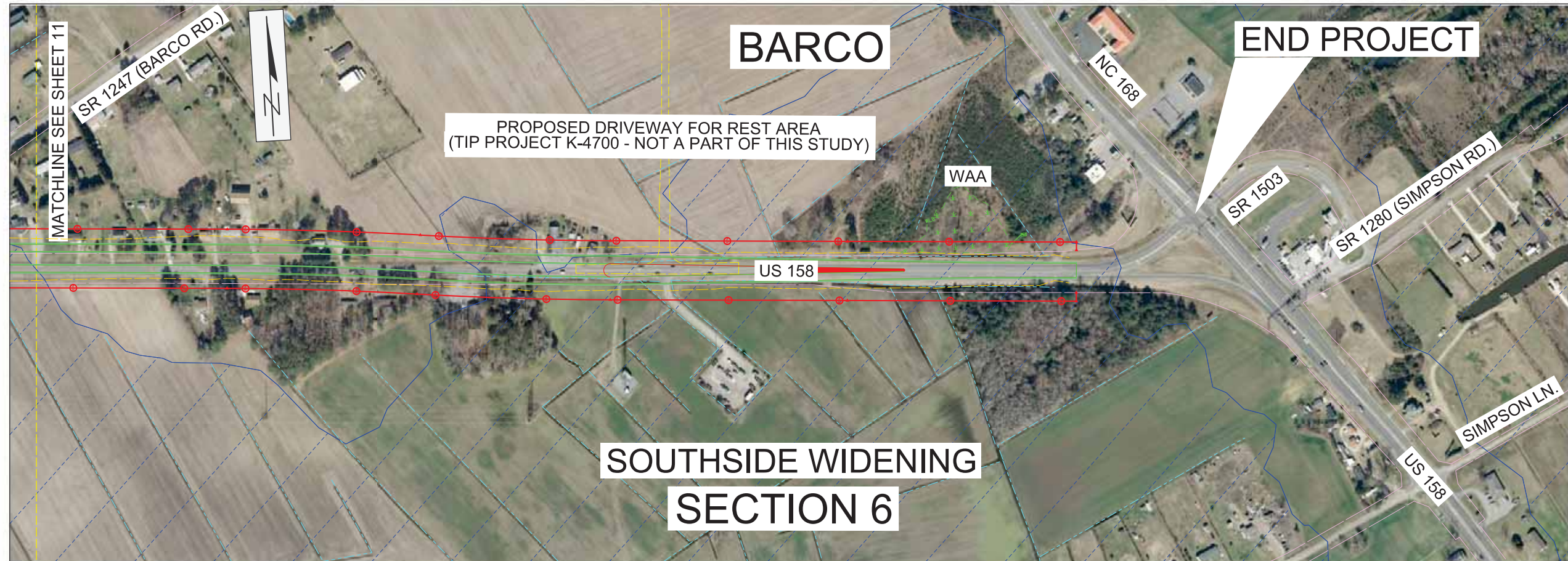
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FIGURE 2





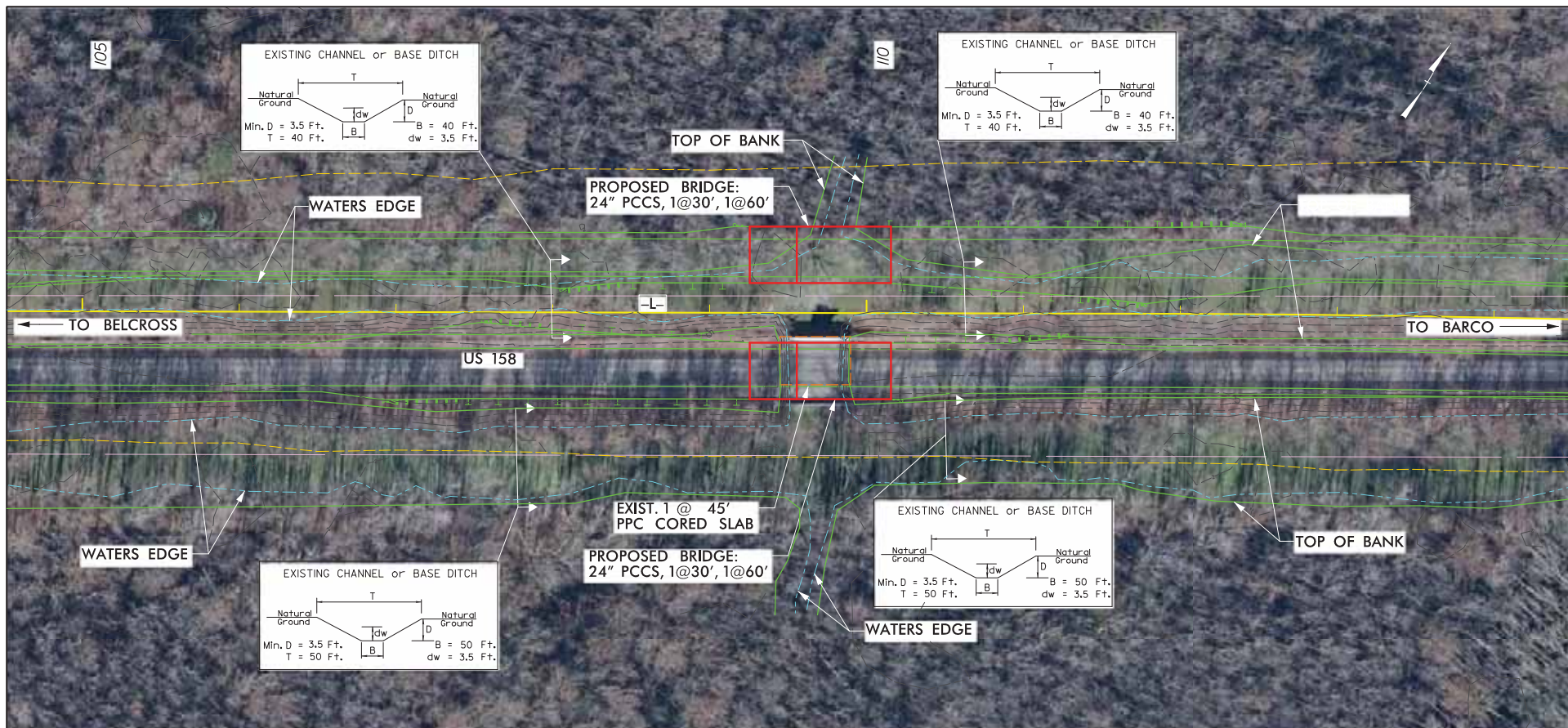
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COUNTIES
TIP PROJECT R-2574

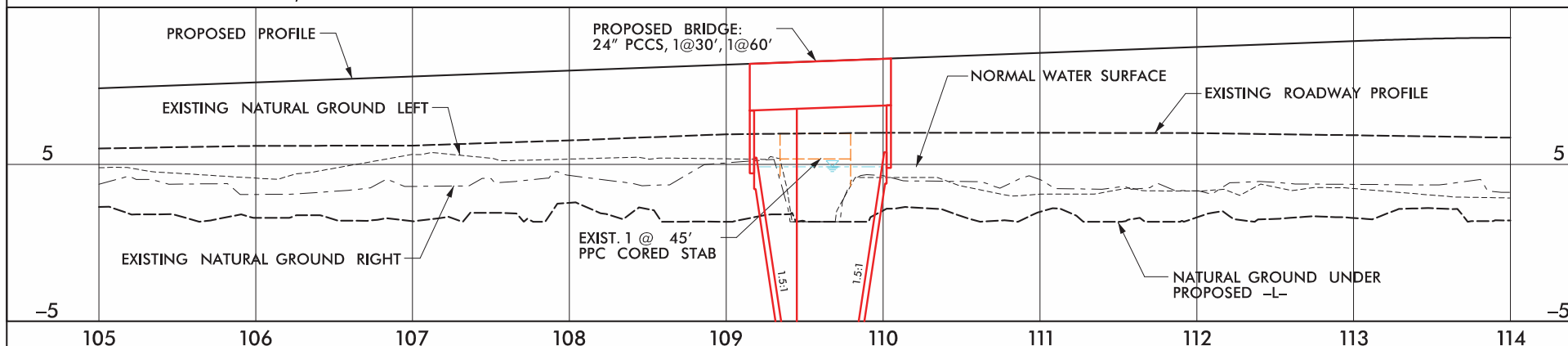
LEGEND

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

0 FEET 400



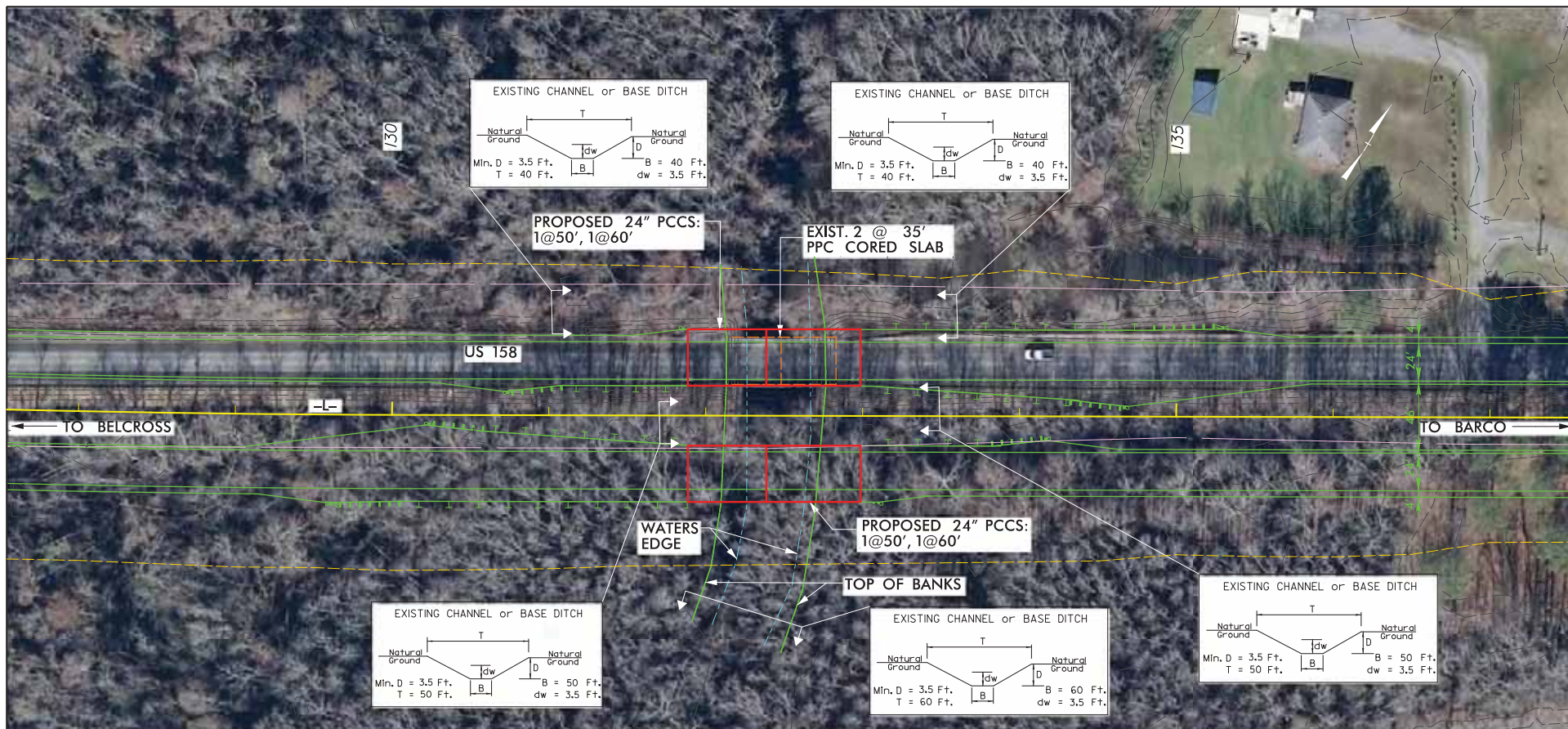
SCALE:
1" = 100' HORIZ, 1" = 10' VERT.



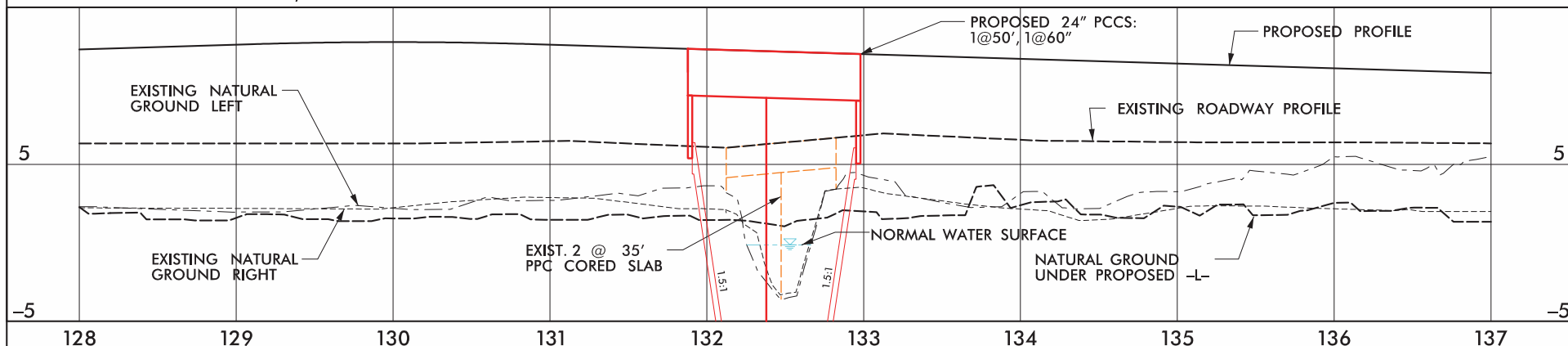
R-2574: SITE - 1 BRIDGE NO. 1 (CAMDEN)

SHEET 1 OF 6
FIGURE 3

BY: ICA ENGINEERING, INC.
DATE: JULY 2015



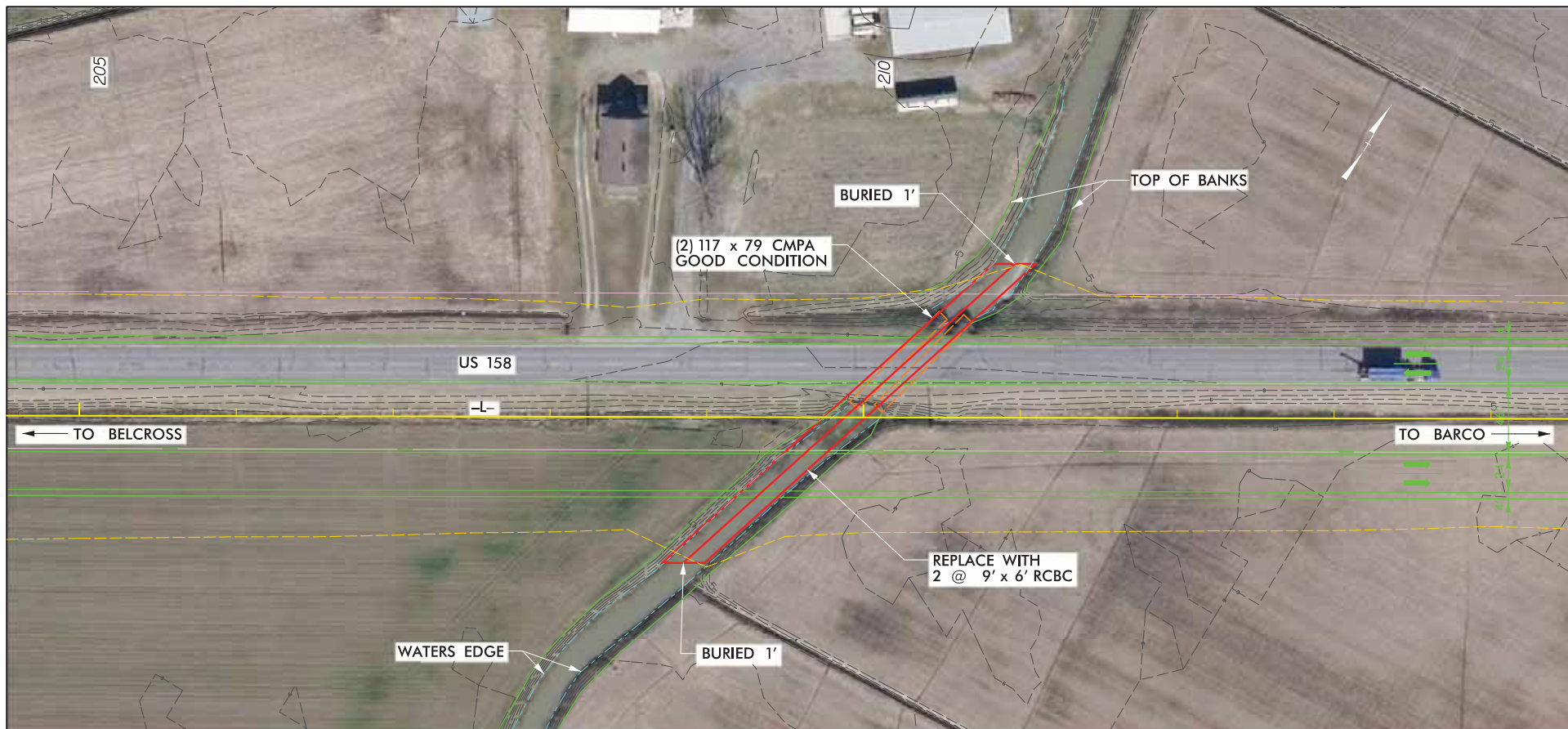
SCALE:
1" = 100' HORIZ, 1" = 10' VERT.



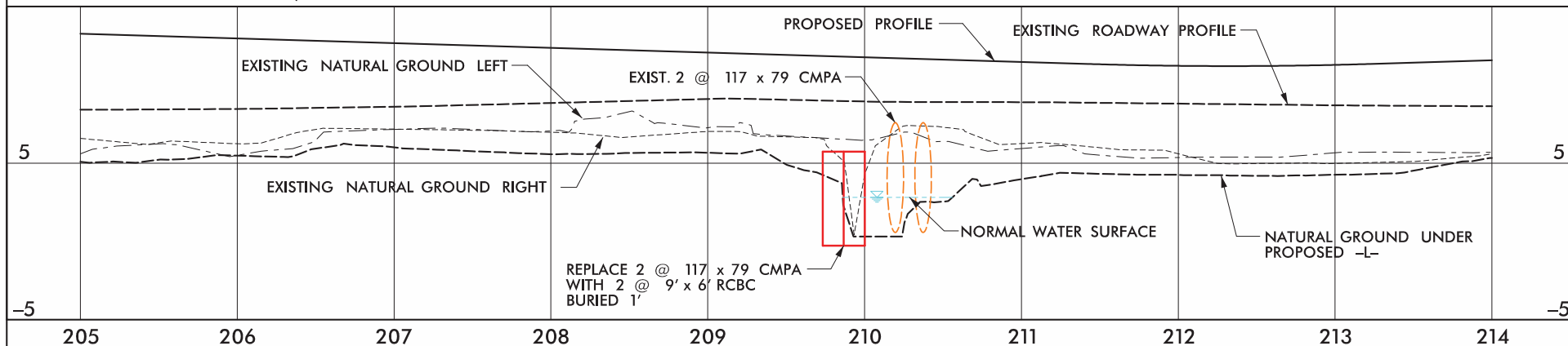
R-2574: SITE - 2
BRIDGE NO. 9 (CAMDEN)

SHEET 2 OF 6
FIGURE 3

BY: ICA ENGINEERING, INC.
DATE: JULY 2015



SCALE:
1" = 100' HORIZ, 1" = 10' VERT.



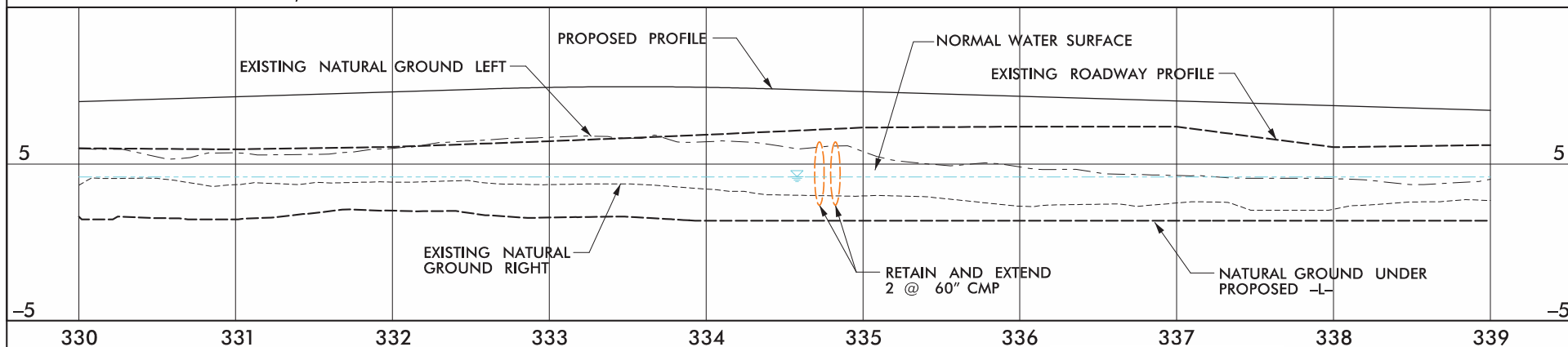
R-2574: SITE - 3
DOUBLE 117 x 79 CMPA

FIGURE 3
SHEET 3 OF 6

BY: ICA ENGINEERING, INC.
DATE: JULY 2015



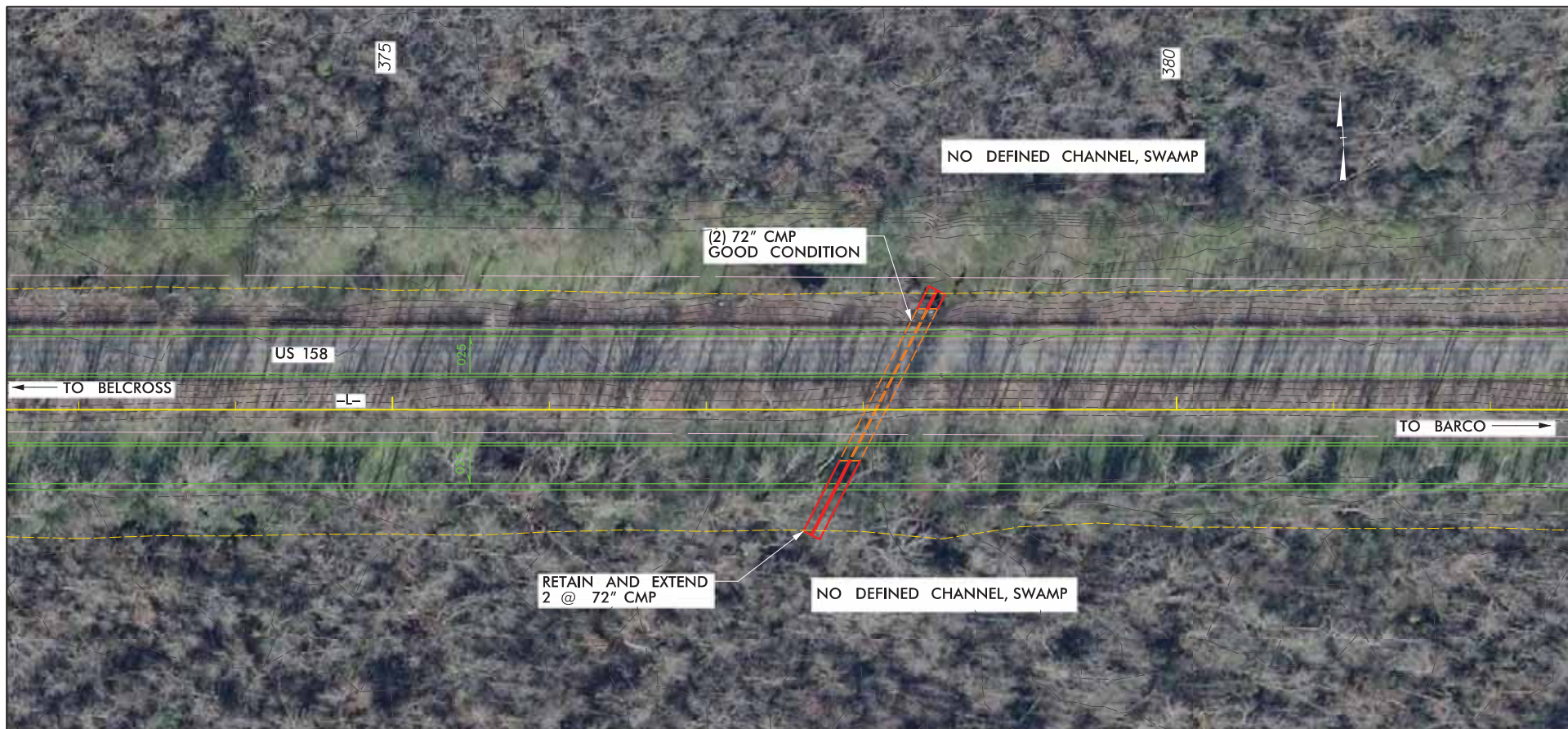
SCALE:
1" = 100' HORIZ, 1" = 10' VERT.



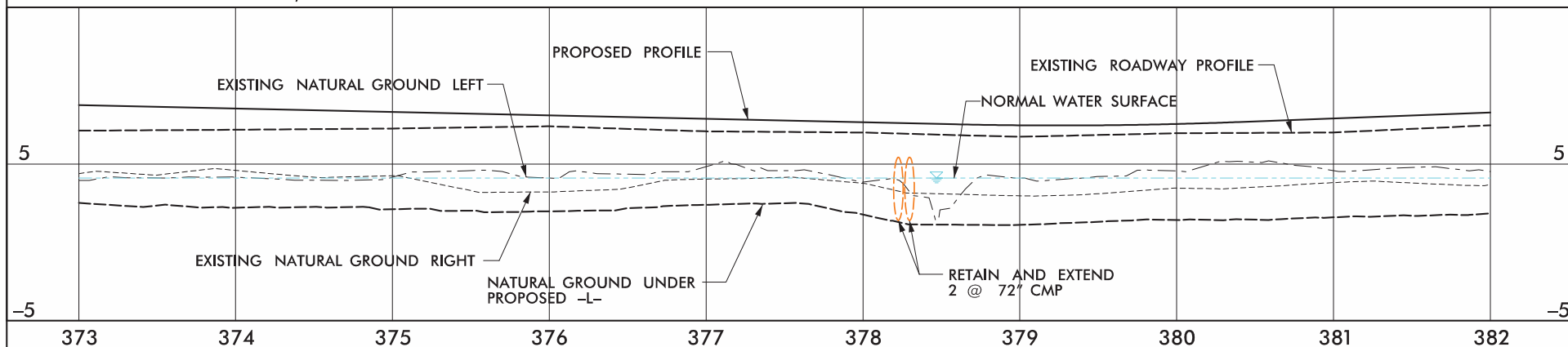
R-2574: SITE - 4A
2 @ 60" CMP

SHEET 4 OF 6
FIGURE 3

BY: ICA ENGINEERING, INC.
DATE: JULY 2015



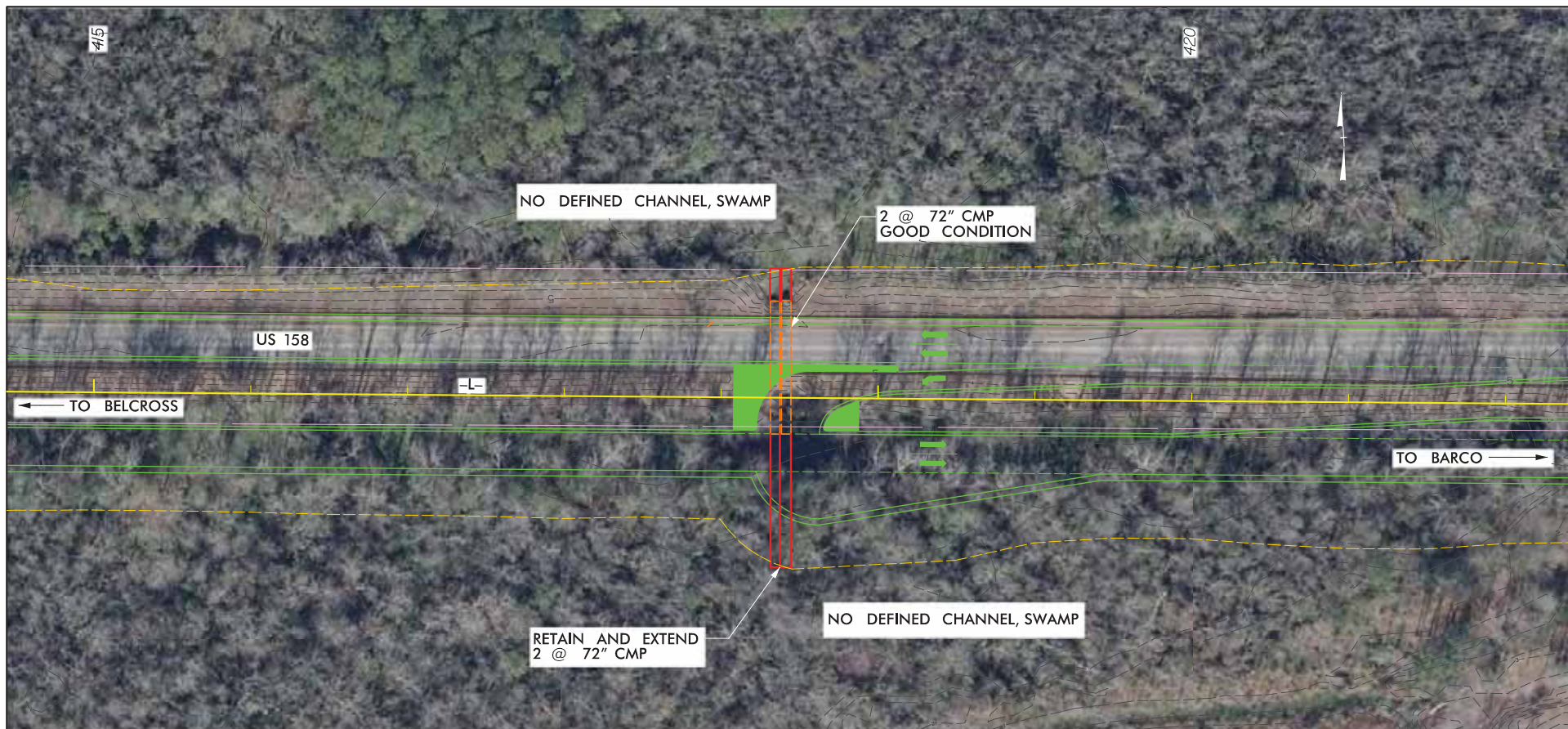
SCALE:
1" = 100' HORIZ, 1" = 10' VERT.



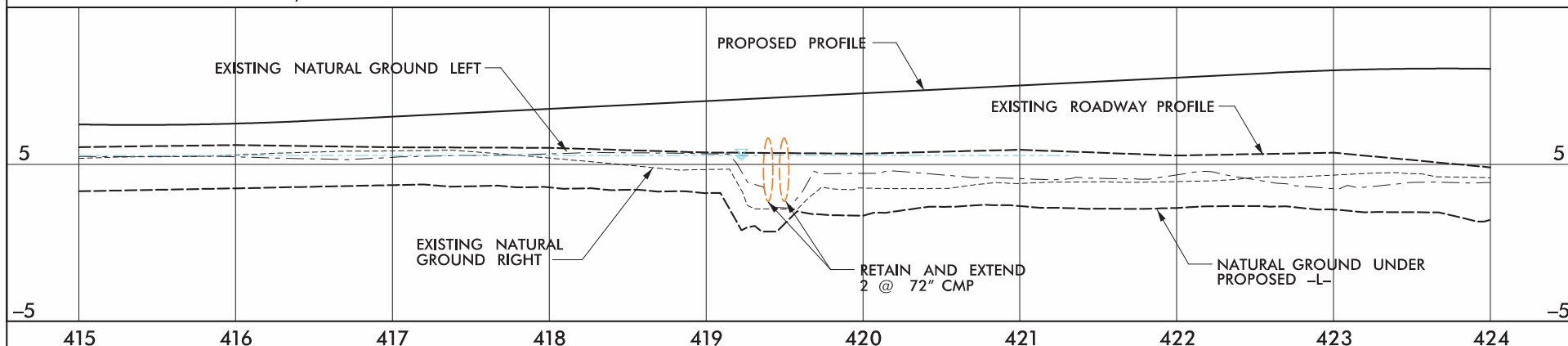
R-2574: SITE - 4B
2 @ 72" CMP

SHEET 5 OF 6
FIGURE 3

BY: ICA ENGINEERING, INC.
DATE: JULY 2015



SCALE:
1" = 100' HORIZ, 1" = 10' VERT.



R-2574: SITE - 4C
2 @ 72" CMP

SHEET 6 OF 6
FIGURE 3

BY: ICA ENGINEERING, INC.
DATE: JULY 2015

Site #1 – HWY 158



Looking Downstream of Structure



Looking West at Downstream Structure

Site #2 – HWY US 158



Looking South at Downstream Structure



Looking West at Downstream Structure

Site #3 – HWY US 158



Looking at Downstream Structure



Looking Downstream

Site #4 – HWY US 158



Looking West at Upstream Structure (4A)



Looking West at Downstream Structure (4A)

Site #4 – HWY US 158



Looking at Downstream Structure (4B)



Looking at Upstream Structure (4B)

Site #4 – HWY US 158



Looking at Upstream Structure (4C)



Looking at Downstream Structure (4C)