Project Submittal Interim Form

Updated September 4, 2020

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Project Type: *

- ( ) For the Record Only (Courtesy Copy)
- ( ) New Project
- (•) Modification/New Project with Existing ID
- ( ) More Information Response
- ( ) Other Agency Comments
- ( ) Pre-Application Submittal
- ( ) Re-Issuance\Renewal Request
- ( ) Stream or Buffer Appeal

Project Contact Information

Name: Deanna Riffey

Who is submitting the information?

Email Address: * driffey@ncdot.gov

Project Information

Existing ID #: *

20190214

20170001 (no dashes)

Existing Version: *

4

1

Project Name: * Widening of I-95 to Eight lanes from South of SR 1832 (Murphy Road) to South of SR 1811 (Bud Hawkins Road)

Is this a public transportation project? *

- (•) Yes
- ( ) No

Is this a DOT project? *

- (•) Yes
- ( ) No

Is the project located within a NC DCM Area of Environmental Concern (AEC)? *

( ) Yes (•) No ( ) Unknown

TIP#: I-5986A

WBS#: 47532.3.2

(Applies to DOT projects only)

County (ies) *

Cumberland

Please upload all files that need to be submited.

Click the upload button or drag and drop files here to attach document

I-5986A Individual Modification Cumberland County February 1 2022.pdf 31.85MB

Only pdf or kmz files are accepted.

Describe the attachments or add comments:

Cover letter for modification request, DMS acceptance letter, revised permit drawings..

* ☑ By checking the box and signing box below, I certify that:

- I, the project proponent, hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief.
- I, the project proponent, hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I agree that submission of this online form is a “transaction” subject to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the “Uniform Electronic Transactions Act”);
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the online form.

Signature: * Mack C. Riverbank, III

Submittal Date: 2/1/2022

Is filled in automatically once submitted.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

February 1, 2022

U.S. Army Corps of Engineers
Regulatory Field Office
69 Darlington Avenue
Wilmington, NC 28403

Attn: Liz Hair
Regulatory Project Manager

Subject: Revised Modification Request for Section 404 Individual Permit, and Modification Request for Section 401 Water Quality Certification and Neuse Riparian Buffer Authorization for the Widening of I-95 to Eight lanes from South of SR 1832 (Murphy Road – Exit 56) to South of SR 1811 (Bud Hawkins Road – Exit 70), in Cumberland County, STIP No. I-5986A. WBS 47532.3.2.

References: USACE Section 404 Authorization SAW-2018-02276 issued July 19, 2019. Modification issued November 24, 2020.
NCDWR Water Quality Certification Number 4187 and Neuse River Riparian Buffer Authorization 20190214 issued May 30, 2019 (revised July 8, 2019). Modifications issued November 6, 2020 (20190214 v2), and November 5, 2021 (20190214 v4)

Dear Ms. Hair:

As you are aware, the North Carolina Department of Transportation (NCDOT) is constructing the Subject Project in accordance with referenced federal and state permits. We are revising the previously submitted Section 404 Individual Permit Modification Request (October 18, 2021) and requesting modification of the Section 401 Individual Water Quality Certification (issued on November 5, 2021) due to design changes in three areas: Murphy Road Final Design, right-of-way (ROW) adjustments, and utility easements.

Murphy Road Final Design. As noted in the September 2, 2020, Permit Modification request and as referenced in the Permit Drawings Review Meeting (Merger 4C) on May 13, 2020, the final design for replacing the reinforced concrete box culvert (RCBC) conveying Reese Creek under I-95 and Murphy Road with bridges was not complete and would subsequently require a permit modification.

An approximate construction footprint and the associated jurisdictional impacts were included in the original application. However, as the bridge design has progressed, the center line alignment had to slightly increase to provide additional clearance, which resulted in changes in the surrounding alignments and changes to impacts at Sites 1, 2, 3, and 4. Further, the jurisdictional delineations were not complete along Murphy Road during the initial modification request submittal, resulting in impacts that were

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LOCATION:
CENTURY CENTER, BUILDING A
1000 BIRCH RIDGE DRIVE
RALEIGH NC, 27610-4328

heretofore unknown (new impact Site 57). The impact types are detailed in the provided summary tables and the overall changes at each site are provided below.

ROW Adjustments. The ROW was adjusted from the time of the original application that has resulted in surface water impacts to two ponds, PH and PI. There were no previous impacts to these ponds, so they have been incorporated into Site 30 and summarized below (Table 20-A). This revision was made based on the NCDOT's desire to have a continuous ROW through the area, rather than having the ROW cut in to avoid the ponds. Per standard guidance from NCDOT Hydraulics Unit, there should not be open water within the ROW due to safety concerns. Therefore, the portion of these ponds within the ROW needs to be filled.

Utility Easements. When the utilities relocations were incorporated into the design, there were multiple areas where easements were needed that extended outside of the original study area and jurisdictional delineations. The Design-Build team conducted additional wetland and stream delineations in each of these areas which resulted in impacts at three new sites: Sites 58, 59, and 60. Additionally, Sites 15 and 16 require more temporary fill in wetlands in order to provide access to these sites.

Site 1.

- 0.001 acre decrease in temporary surface water impacts

Site 2.

- 0.101 acre increase in permanent fill in wetlands
- 0.001 acre decrease in temporary fill in wetlands
- 0.068 acre increase in mechanized clearing in wetlands
- 62 linear feet increase in permanent stream impacts
- 37 linear feet decrease in temporary stream impacts

Site 3.

- 0.071 acre increase in permanent fill in wetlands
- 0.050 acre increase in temporary fill in wetlands
- 0.096 acre increase in mechanized clearing in wetlands
- 48 linear feet increase in temporary stream impacts

Site 4.

- 0.003 acre increase in permanent fill in wetlands.
- 0.002 acre decrease in temporary fill in wetlands
- 1 linear foot increase in temporary stream impacts

Site 15.

- 0.132 acre increase in temporary fill in wetlands

Site 16.

- 0.073 acre increase in temporary fill in wetlands

Site 30. These impacts are due to ROW adjustment:

- 0.139 acre increase in permanent fill in surface waters (ponds)
- 0.104 acre increase in temporary fill in surface waters (ponds)

Site 57. This is a new impact site associated with the Reese Creek redesign.

Site 57. This is a new impact site associated with the Reese Creek redesign.

- 0.226 acre in permanent fill in wetlands.
- 0.066 acre in temporary fill in wetlands
- 0.139 acre in mechanized clearing in wetlands
- 78 linear feet in temporary stream impacts

Site 58. This is a new impact site associated with previously unidentified utility easement

- 0.101 acre in hand clearing in wetlands

Site 59. This is a new impact site associated with previously unidentified utility easement (hand clearing) and roadway fill (mechanized clearing)

- 0.006 acre in mechanized clearing in wetlands
- 0.289 acre in hand clearing in wetlands

Site 60. This is a new impact site associated with previously unidentified utility easement

- 0.050 acre in hand clearing in wetlands

Summary of Impacts

The summary tables, provided in the September 2, 2020 application package, have been updated with the additional impacts below. Impact numbers that have changed are in bold. The surface water impacts to the ponds are included in the permit drawing impact tables only.

Revised Table 1. Summary of Water Resources Impacted

Section	Design Stage	Proposed LET	Total # of Wetlands Impacted**	Total # of Streams Impacted**	Buffer Rule Impact (Y/N)
I-5986B - Section 1 (I-5877)	Final	FY 2019	6	8	No
I-5986B - Section 2 (I-5878)	Preliminary*	FY 2021	3	4	No
I-5986B - Section 3 (I-5883)	Preliminary*	FY 2021	8	9	No
I-5986B - Section 4 (Johnston County)	Preliminary*	FY 2021	6	6	Yes
I-5986A (Cumberland County)	Final	FY 2019	**54**	16	No
		Totals:	**77**	43	

* Preliminary impacts were determined by measuring 25' outside of preliminary slope stake limits.
** Features may be impacted at more than one Permit Site

Revised Table 2. I-5986 Summary of Wetland Impacts

Section	Design Stage	Total Wetland Impact Area (ac)	Impacts Requiring Mitigation (ac)
I-5986B - Section 1 (I-5877)	Final	1.351	1.351
I-5986B - Section 2 (I-5878)	Preliminary*	1.811	1.811
I-5986B - Section 3 (I-5883)	Preliminary*	0.915	0.915
I-5986B - Section 4 (Johnston County)	Preliminary*	2.444	2.444
I-5986A (Cumberland County)	Final**	**13.144**	**13.144**
	Totals:	**19.665**	**19.665**

* Preliminary impacts were determined by measuring 25' outside of preliminary slope stake limits.
** Permanent impact total only (fill, excavation, and mechanized clearing)

Revised Table 3. I-5986 Summary of Stream Impacts

Section	Design Stage	Total Stream Impact (lf)	Impacts Requiring Mitigation (lf)
I-5986B - Section 1 (I-5877)	Final	1,465	1,208
I-5986B - Section 2 (I-5878)	Preliminary*	641	606
I-5986B - Section 3 (I-5883)	Preliminary*	1,539	1,433
I-5986B - Section 4 (Johnston County)	Preliminary*	923	859
I-5986A (Cumberland County)	Final**	**1,799**	**1,380**
	Totals:	**6,367**	**5,486**

* Preliminary impacts were determined by measuring 25' outside of preliminary slope stake limits.
** Permanent impact total only (fill, structure/bank stabilization)

Revised Tables 19 and 20 summarize the updated impacts to jurisdictional water resources based on this requested modification to I-5986A. Site numbers for each table correspond with the site numbers shown on the permit drawings included with this modification request. The stream and wetland labels correspond to the NRTRs as noted in the tables. As new Sites 57, 58, and 59 fall within the Upper Cape Fear Subbasin, they have been added to the end of those impact sites (after Site 34). New Site 60 falls within the Black River Subbasin and has been added to the corresponding section of Table 19.

Also included in Revised Table 19 are impacts to jurisdictional resources due to utility relocations. The utility impacts are limited to hand clearing in wetlands associated with relocating aerial power lines at seven sites. These sites are noted with asterisks in Revised Table 19.

Revised Table 19. I-5986A Wetland Impacts

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
Subbasin Upper Cape Fear (HUC 03030004)						
2	WCB	Riparian	Fill, 66" WSP	**0.103**	**0.028**	Yes
2	WCB	Riparian	Mechanized Clearing	**0.068**		
2	WCC	Riparian	Fill, 66" RCP	0.001	0.009	Yes
3	WA	Riparian	Pipe Clean Out		**0.003**	No
3	WA	Riparian	Pipe Clean Out/ Roadway Fill	0.001	**0.003**	Yes
3	WA	Riparian	Mechanized Clearing	**0.048**		Yes
3	WB	Riparian	Roadway Fill	**0.067**		Yes
3	WB	Riparian	Mechanized Clearing	**0.066**		Yes
3	WA/WB	Riparian	RCBC Removal	**0.003**	**0.044**	
3	WA	Riparian	Fill, 42" RCP	**0.001**	**0.012**	Yes
4	WA	Riparian	Fill, 36" WSP	**0.005**	**0.025**	Yes
4	WC	Riparian	Fill, 36" WSP	0.001	0.033	Yes
5	WB	Riparian	Fill, 66" WSP	0.009	0.034	Yes
6	WD	Non-Riparian	Fill, 30" WSP	0.001	0.039	Yes
6	WB	Riparian	Fill, 30" WSP	0.004	0.050	Yes
7	WH	Non-Riparian	Fill	0.231		Yes
8	WE	Non-Riparian	Excavation	0.024		Yes
9	WF	Non-Riparian	Fill	0.135		Yes

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
9	WF	Non-Riparian	Excavation	0.021		Yes
10	WI	Non-Riparian	Fill	0.076		Yes
11	WJ	Non-Riparian	Fill	0.531		Yes
11	WJ	Non-Riparian	Mechanized Clearing	0.045		Yes
12	WL	Riparian	Fill	0.204	0.066	Yes
12	WL	Riparian	Excavation	0.020		Yes
12	WL	Riparian	Mechanized Clearing	0.143		Yes
13	WR	Non-Riparian	Fill	0.020		Yes
13	WR	Non-Riparian	Mechanized Clearing	0.013		Yes
14	WR	Non-Riparian	Mechanized Clearing	0.001		Yes
14	WR	Non-Riparian	Fill		0.021	No
15	WO	Riparian	Fill, 42" RCP	0.004		Yes
15	WO	Riparian	Mechanized Clearing	0.006		Yes
15	WO	Riparian	Fill	0.001		Yes
15	WO	Riparian	Mechanized Clearing	0.006		Yes
15	WO	Riparian	Fill, 66" RCP	0.136	0.034	Yes
15	WO	Riparian	Mechanized Clearing	0.165		Yes
15	WO	Riparian	Fill, 54" WSP	0.001	**0.169**	Yes
15	WO	Riparian	Fill	0.019		Yes
15	WO	Riparian	Mechanized Clearing	0.053		Yes
16	WN	Riparian	Fill, 54" WSP	0.006	**0.098**	Yes
16	WN	Riparian	Fill	0.035		
16	WN	Riparian	Mechanized Clearing	0.042		Yes
16*	WN	Riparian	Hand Clearing		0.373	No
17	WQ	Non-Riparian	Fill	0.057		Yes
17	WQ	Non-Riparian	Mechanized Clearing	0.072		Yes
17	WQ	Non-Riparian	Fill	0.002	0.009	Yes
18	WP	Riparian	Fill, 60" RCP, 66" RCP	0.106	0.002	Yes
18	WP	Riparian	Mechanized Clearing	0.066		Yes
18	WP	Riparian	Fill, 66" WSP	0.001	0.004	Yes
19	WCG	Non-Riparian	Fill	0.857		Yes
20	WX	Riparian	Fill	0.402		Yes

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
20	WX	Riparian	Mechanized Clearing	0.034		Yes
21	WV	Riparian	Fill	0.225		Yes
21	WV	Riparian	Mechanized Clearing	0.020		Yes
21*	WV	Riparian	Hand Clearing		0.072	No
22	WW	Riparian	Fill	2.663		Yes
22	WW	Riparian	Mechanized Clearing	0.176		Yes
22*	WW	Riparian	Hand Clearing		0.204	No
24	WZ/WY	Riparian	Fill, 3@10'X8' RCBC	0.056	0.047	Yes
24	WZ/WY	Riparian	Excavation	0.089		Yes
24	WZ/WY	Riparian	Mechanized Clearing	0.080		Yes
24	WY	Riparian	Fill		0.004	Yes
24	WY	Riparian	Mechanized Clearing	0.002		Yes
24	WZ	Riparian	Fill		0.010	No
24	WY	Riparian	Fill		0.005	No
25	WAB	Non-Riparian	Excavation, Fill, 10'X7' RCBC	0.003	0.002	Yes
25	WAB	Non-Riparian	Fill		0.008	No
26	WAC	Non-Riparian	Fill	0.654	0.017	Yes
26	WAC	Non-Riparian	Mechanized Clearing	0.151		Yes
27	WAF	Non-Riparian	Fill	0.284		Yes
28	WAG	Non-Riparian	Fill	0.047	0.005	Yes
28	WAG	Non-Riparian	Mechanized Clearing	0.039		Yes
28*	WAG	Non-Riparian	Hand Clearing		0.224	No
29	WAH	Non-Riparian	Fill, 2@ 48” RCP		0.009	No
29	WAH	Non-Riparian	Excavation	0.027		Yes
30	WAK/WAI	Riparian	Fill, 12'X6' RCBC	0.008	0.074	Yes
30	WAK/WAI	Riparian	Excavation	0.090		Yes
30	WAI	Riparian	Fill	0.488		Yes
30	WAI	Riparian	Excavation	0.012		Yes
30	WAI	Riparian	Mechanized Clearing	0.037		Yes
30	WAK	Riparian	Fill	0.624		Yes
30	WAK	Riparian	Mechanized Clearing	0.015		Yes
30	WAK	Riparian	Fill		0.014	No

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
30*	WAK	Riparian	Hand Clearing		0.058	No
30*	WAL	Non-Riparian	Hand Clearing		0.196	No
31	WAM	Non-Riparian	Fill	0.042		Yes
31	WAM	Non-Riparian	Mechanized Clearing	0.019		Yes
32	WAN	Non-Riparian	Fill	0.081		Yes
32	WAN	Non-Riparian	Mechanized Clearing	0.080		Yes
33	WAP/WAQ	Riparian	Fill, 8'x8' Culvert		0.010	No
34	WAS	Riparian	Fill, 10'X7' RCBC		0.025	No
34	WAS	Riparian	Mechanized Clearing	0.002		Yes
57	WA/WCC	Riparian	Fill	**0.226**	**0.066**	
57	WA/WCC	Riparian	Mechanized Clearing	**0.139**		Yes
58*	WC	Riparian	Hand Clearing		**0.101**	No
59	WD	Non-Riparian	Mechanized Clearing	**0.006**		Yes
59*	WD	Non-Riparian	Hand Clearing		**0.289**	No
Totals HUC 03030004		Total Riparian		**6.779**	**1.665**	
		Total Non-Riparian		**3.519**	**0.819**	
		Grand Total		**10.298**	**2.496**	
Subbasin Black River (HUC 03030006)						
35	WAT	Non-Riparian	Fill	0.016	0.005	Yes
35	WAT	Non-Riparian	Mechanized Clearing	0.044		Yes
36	WAU	Non-Riparian	Mechanized Clearing	0.007		Yes
37	WAW	Riparian	Fill, 72" RCP	0.225	0.029	Yes
37	WAW	Riparian	Mechanized Clearing	0.137		Yes
38	WAX	Riparian	Fill		0.006	No
40	WAY	Non-Riparian	Fill, 2@30" RCP	0.001	0.001	Yes
41	WAZ	Riparian	Fill		0.011	No
42	WAZ	Riparian	Fill, Bridge	0.385	0.020	Yes
42	WAZ	Riparian	Excavation	0.043		Yes
42	WAZ	Riparian	Mechanized Clearing	0.207		Yes
42	WAZ	Riparian	Hand Clearing		0.038	No
43	WAZ	Riparian	Fill	0.090		Yes
43	WAZ	Riparian	Mechanized Clearing	0.053		Yes
44	WAZ	Riparian	Fill		0.006	No

Permit Drawing Site Number	NRTR Label	Wetland Type	Impact Type	Permanent Impacts (ac)	Temporary Impacts (ac)	Mitigation Required
45	WBB	Non-Riparian	Mechanized Clearing	0.017		Yes
46	WBC	Non-Riparian	Fill, 2@ 42" RCP	0.004		Yes
46	WBC	Non-Riparian	Excavation	0.002		Yes
46	WBC	Non-Riparian	Mechanized Clearing	0.028		Yes
47*	WBD	Riparian	Hand Clearing		0.092	No
47*	WBE	Riparian	Hand Clearing		0.048	No
48	WCK	Riparian	Fill, Plug Exist 18" RCP		0.002	No
50	WCJ	Riparian	Fill	0.011		Yes
50	WCJ	Riparian	Mechanized Clearing	0.043		Yes
51	WCI	Non-Riparian	Fill	0.114		Yes
51	WCI	Non-Riparian	Mechanized Clearing	0.109		Yes
52	WT	Riparian	Fill	0.002	0.006	Yes
53	WU	Non-Riparian	Fill	0.267		Yes
53	WU	Non-Riparian	Mechanized Clearing	0.108		Yes
54A	WS	Riparian	Pipe Clean Out		0.008	No
54B	WS	Riparian	Pipe Clean Out		0.005	No
54C	WS	Riparian	Pipe Clean Out		0.005	No
55	WCE	Non-Riparian	Fill	0.635		Yes
55	WCE	Non-Riparian	Mechanized Clearing	0.220		Yes
56	WCE	Non-Riparian	Fill	0.013		Yes
56	WCE	Non-Riparian	Mechanized Clearing	0.065		Yes
60*	WE	Riparian	Hand Clearing		**0.050**	No
Totals HUC 03030006		Total Riparian		1.196	**0.326**	
		Total Non-Riparian		1.650	0.006	
		Grand Total		2.846	**0.332**	
I-5986A Section Totals		Total Riparian		**7.975**	**1.991**	
		Total Non-Riparian		**5.169**	**0.825**	
		Grand Total		**13.144**	**2.816**	

* Impacts due to utility relocation.

Revised impacts are in bold

Revised Table 20. I-5986A Stream Impacts

Permit Drawing Site Number	Impact Type	NRTR Label	Classification (from NRTR)	Permanent (ac)	Temporary (ac)	Permanent (lf)	Temporary (lf)	Mitigation Required
Cape Fear River Basin – Subbasin Upper Cape Fear (HUC 03030004)								
1	Bank Stabilization	DC	Perennial	0.001	**0.001**	8	20	No
2	Headwall, 66" WSP	SV-2	Perennial	**0.006**	**0.001**	**35**	**10**	Yes
2	Headwall, 66" WSP	SV-1	Perennial	**0.022**	**0.003**	**52**	**13**	Yes
3	Removal of RCBC	Reese Creek	Perennial		**0.048**		**48**	No
4	30" WSP	SA	Perennial	0.004	0.003	18	**24**	Yes
9	2@36" RCP	SB	Intermittent	0.011	0.001	63	10	No
15	Roadway Fill, 66" RCP	Baker Swamp	Perennial	0.018		60		Yes
16	54” WSP Structure Stabilization	Baker Swamp	Perennial	0.004	0.013	15	34	No
18	Roadway Fill, 60" RCP, 66" RCP	Baker Swamp	Perennial	0.010	0.006	23	13	Yes
18	66" WSP Structure Stabilization	Baker Swamp	Perennial	0.007	0.012	22	28	No
23	2@ 8'x8' RCBC	SC	Perennial	0.063	0.006	270	38	Yes
24	3@ 10'x8' RCBC, Roadway Fill	SD	Perennial	0.128	0.058	197	26	Yes
25	10'x7' RCBC	SE	Intermittent	0.017	0.003	135	25	No
30	12'x6' RCBC	SF	Perennial	0.030	0.003	103	8	Yes
33	8'x8' Culvert	SG	Perennial	0.051	0.011	211	99	Yes
34	10'x7' RCBC	SH	Perennial	0.031	0.004	174	30	Yes
57	Roadway Fill	Reese Creek	Perennial		**0.045**		**78**	No
Subbasin Black River (HUC 03030006)								
37	72" RCP, Roadway Fill	SI	Perennial	0.003	0.003	26	20	Yes
37	Structure Stabilization	SI	Perennial	0.003		25		No
39	7'x7' RCBC	SJ	Intermittent	0.025	0.008	101	40	No
42	Bridge Construction	Black River	Perennial	0.003	0.266	16	246	Yes
47	72" RCP	SK	Intermittent	0.063	0.007	180	24	Yes
49	2@8'x8' RCBC Ext	SY	Perennial	0.009		15		Yes
49	Bank Stabilization	SY	Perennial	0.029	0.005	50	8	No
Totals HUC 03030004	Total Stream Impact			**0.403**	**0.218**	**1386**	**504**	
	Total Perennial Stream Impact			**0.375**	**0.215**	**1188**	**469**	
	Total Intermittent Stream Impact			0.028	0.004	198	35	
	Total Bank/Structure Stabilization Impacts			0.020	0.037	**45**	**82**	
	Total Perennial Mitigatable			**0.341**	**-**	**1143**	**-**	
	Total Intermittent Mitigable			**-**	**-**	**-**	**-**	
	Total Mitigable			**0.341**	**-**	**1143**	**-**	
Totals HUC 03030006	Total Stream Impact			0.135	0.289	413	338	
	Total Perennial Stream Impact			0.047	0.274	132	274	
	Total Intermittent Stream Impact			0.088	0.015	281	64	
	Total Bank/Structure Stabilization Impacts			0.032	0.005	75	8	
	Total Perennial Mitigable			0.015	**-**	57	**-**	
	Total Intermittent Mitigable			0.063	**-**	180	**-**	

Permit Drawing Site Number	Impact Type	NRTR Label	Classification (from NRTR)	Permanent (ac)	Temporary (ac)	Permanent (lf)	Temporary (lf)	Mitigation Required
	Total Mitigable			0.078	-	237	-	
I-5986A Section Totals	Total Stream Impact			**0.538**	**0.508**	**1799**	**842**	
	Total Perennial Stream Impact			**0.422**	**0.488**	**1320**	**743**	
	Total Intermittent Stream Impact			0.116	0.019	479	99	
	Total Bank/Structure Stabilization Impacts			**0.045**	**0.035**	**120**	**90**	
	Total Perennial Mitigable			**0.356**	**-**	**1200**	**-**	
	Total Intermittent Mitigable			0.063	-	180	-	
	Total Mitigable			**0.419**	**-**	**1380**	**-**	

Impact numbers that have changed are in bold

Table 20-A. I-5986A Open Water Impacts

Permit Drawing Site Number	Impact Type	NRTR Label	Classification (from NRTR)	Permanent (ac)	Temporary (ac)	Permanent (lf)	Temporary (lf)	Mitigation Required
Cape Fear River Basin – Subbasin Upper Cape Fear (HUC 03030004)								
30	Rock Fill	PH	Open Water	**0.134**	**0.100**	-	-	No
30	Rock Fill	PI	Open Water	**0.005**	**0.004**	**-**	**-**	No
Total Open Water				**0.139**	**0.104**			

Compensatory Mitigation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. Compensatory mitigation requirements for I-5986A jurisdictional features are summarized below in Revised Table 24. The unavoidable impacts to Waters of the U.S. will be offset by compensatory mitigation provided by NCDMS at ratios of 2:1 for wetland and stream impacts. There will be no mitigation proposed for permanent impacts to streams impacted by bank stabilization.

A revised NCDMS acceptance letter dated January 20, 2022, has been received and is included with this permit modification request for I-5986A. Table 24 has been revised to reflect the changes requested in this modification letter. The change in mitigation is indicted in parentheses.

Revised Table 24. I-5986A (Final Design) Jurisdictional Feature Mitigation Summary

HUC Location	Stream (lf)	Wetlands (ac)	
		Riparian	Non-Riparian
03030004	**1,143** (+ 81)	**6.779** (+ 0.704)	**3.519** (+0.006)
03030006	237	1.196	1.650
Total	**1,380** (+ 81)	**7.975** (+ 0.704)	**5.169** (+0.006)
Grand Total	**1,380** (+ 81)	**13.144** (+0.710)	

REGULATORY APPROVALS

Section 404: NCDOT requests modification to the USACE Individual 404 Permit for the project as required for the above-described activities.

Section 401: We are also requesting modification of the Section 401 Individual Water Quality Certification only, there are no changes in the Neuse Riparian Buffer Authorization. We are providing this request to NCDWR for their approval.

A copy of the permit modification application and its distribution list will be posted at https://xfer.services.ncdot.gov/pdea/PermApps/.

If you have any questions or need additional information, please contact Deanna Riffey, driffey@ncdot.gov, 919-707-6151.

Sincerely,

DocuSigned by:
Mack C. Rivenbark III
AAAD1248B309416...

for Philip S. Harris, III, P.E., C.P.M.
Environment Analysis Unit Head

cc: NCDOT Permit Application Standard Distribution List

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MARC RECKTENWALD
Director

NORTH CAROLINA
Environmental Quality

January 20, 2022

Mr. Philip S. Harris, P.E., CPM
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: DMS Mitigation Acceptance Letter:

I-5986A, I-95 Improvements, Cumberland County

References: USACE 404 Individual Permit issued November 25, 2020 (USACE Action ID 2018-02276)

NCDWR 401 Water Quality Certification issued November 6, 2020 (NCDWR ID 2019-0214)

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the additional compensatory mitigation for the subject project. Based on the information supplied by you on October 4, 2021 and January 14, 2022, the additional impacts are located in CU 03030004 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Table 1 – Additional Impacts (feet / acres)

Cape Fear 03030004 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	81.000	0.704	0.006	0	0	0

*NOTE: Some of the stream impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details.

This additional impact and associated mitigation needs were not projected by the NCDOT in the 2021 impact data. DMS is currently providing stream and wetland mitigation for the impacts associated with this project located in cataloging units 03030004 and 03030006 of the Cape Fear River basin as required by the 404 and 401 permits issued in November 2020, as shown in the below table (in mitigation credits)

Table 2 – Current Permitted Impacts and Associated Mitigation Requirements provided by DMS (based on issued permits) and Revised Anticipated Impacts (based on mitigation request)

Impact Service Area	Impact Type	Total Permitted Impacts (feet / acre / sq ft)	Mitigation Provided by DMS per Issued Permits (Credits)	Additional Impact (for approval)	Revised Total Impacts*
Cape Fear 03030004	Stream	1,062.000	2,124.000	**81.000**	1,143.000
	Riparian Wetland	6.075	12.150	**0.704**	6.779
	Non-Riparian Wetland	3.513	7.026	**0.006**	3.519
Cape Fear 03030006	Stream	237.000	474.000	0.000	237.000
	Riparian Wetland	1.196	2.392	0.000	1.196
	Non-Riparian Wetland	1.650	3.300	0.000	1.650

*Some of the additional stream and/or wetland impacts may be proposed to be mitigated at a 1:1 mitigation ratio. See permit application for details. DMS will provide the amount of mitigation as determined by the regulatory agencies.

DMS commits to implementing additional sufficient compensatory stream and wetland mitigation credits to offset the additional impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-707-8420.

Sincerely,

Elizabeth Harmon

James B. Stanfill
Asset Management Supervisor

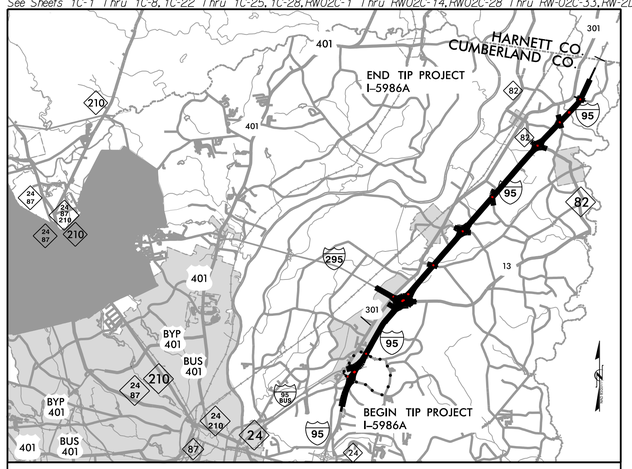
cc: Mr. Monte Matthews, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, Division of Water Resources, Wetlands/401 Unit
File: I-5986A Mod Revised

09/08/99

TIP PROJECT: I-5986A

CONTRACT: C204283

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Thru 1C-8, 1C-22 Thru 1C-25, 1C-28, RW02C-1 Thru RW02C-14, RW02C-28 Thru RW-02C-33, RW-2D-1 Thru RW-02D-2 For Survey Control Sheets



VICINITY MAP (NTS) OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.

CUMBERLAND COUNTY

LOCATION: I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES

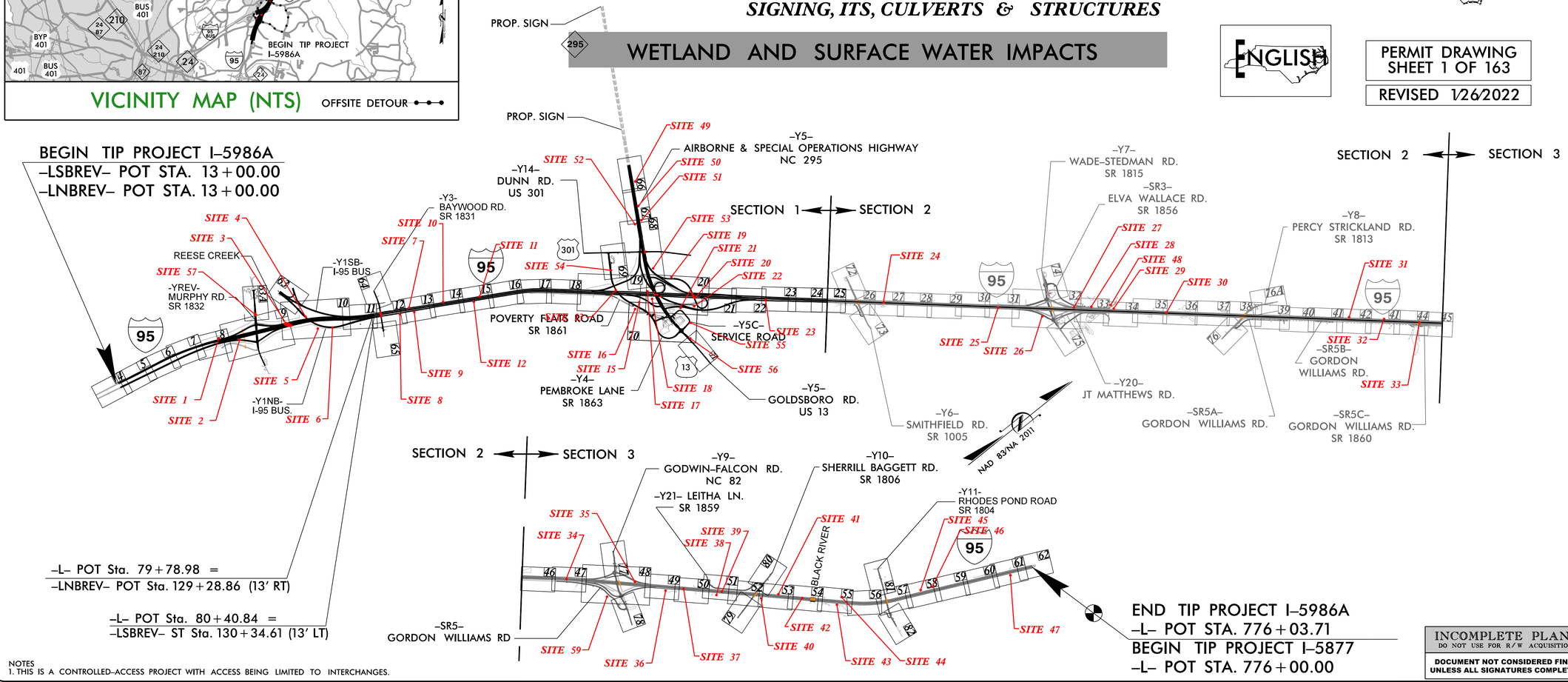
PROP. SIGN 295

WETLAND AND SURFACE WATER IMPACTS

ENGLISH

PERMIT DRAWING SHEET 1 OF 163

REVISED 1/26/2022



NOTES
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS 50 25 0 50 100
PROFILE (HORIZONTAL) 50 25 0 50 100
PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.331 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.066 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.397 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER - DESIGN-BUILD UNIT

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE: AUGUST 20, 2019

Michael T. Merritt, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

1/27/2022
R:\Hydraulics\PERMITS_Environmental\Drawings\Final\I-5986A_Hyd_TSH.dgn
aburke

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-1

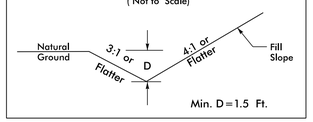
HYDRAULICS DESIGN ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 2 OF 163

REVISED 1/26/2022

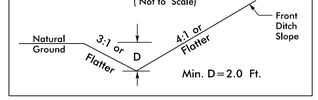
DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.

–L– STA. 210+50 TO STA. 212+25 RT
–Y5RPD– STA. 10+90 TO STA. 12+00 LT
–Y3– STA. 22+00 TO STA. 24+00 RT
–Y4– STA. 50+00 TO STA. 55+00 LT
–Y4– STA. 61+00 TO STA. 65+49 LT
–Y4A– STA. 10+54 TO STA. 13+50 RT
–Y5– STA. 65+00 TO STA. 68+00 RT
–Y5– STA. 85+50 TO STA. 86+50 LT
–Y5– STA. 85+00 TO STA. 89+00 RT
–Y55PUR– STA. 19+49 TO STA. 22+03 LT
–SR5C_DET– STA. 12+70 TO STA. 13+10 RT
–SR5C_DET– STA. 15+00 TO STA. 16+32 RT
–YRPAREV– STA. 17+94 TO STA. 20+00 RT
–Y1NB– STA. 44+50 TO STA. 46+50 RT
–LSBREV_DET– STA. 22+41 TO STA. 22+91 RT
–LNBREV_DET– STA. 12+32 TO STA. 20+82 LT

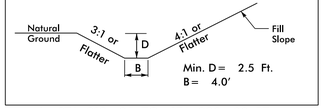
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



Min. D=2.0 Ft.

–L– STA. 103+00 TO STA. 107+72 LT
–L– STA. 138+50 TO STA. 186+00 RT
–L– STA. 232+00 TO STA. 239+00 LT
–L– STA. 256+00 TO STA. 269+00 LT
–L– STA. 232+50 TO STA. 241+50 RT
–L– STA. 245+00 TO STA. 249+00 RT
–Y5FLY– STA. 82+33 TO STA. 85+77 RT
–Y5SPURA– STA. 10+46 TO STA. 16+99 LT
–Y5RPA– STA. 36+85 TO STA. 37+50 LT
–Y5RPA– STA. 34+49 TO STA. 36+85 RT
–L– STA. 227+00 TO STA. 232+50 RT
–Y5LPD– STA. 12+79 TO STA. 14+50 LT
–Y5C– STA. 25+00 TO STA. 26+42 RT
–Y5C– STA. 24+50 TO STA. 25+92 LT
–L– STA. 221+58 TO STA. 232+00 LT
–LNBREV– STA. 50+73 TO STA. 54+69 LT
–YRPCREV– STA. 13+30 TO STA. 18+87 RT
–LNBREV– STA. 69+17 TO STA. 76+67 RT
–LSBREV– STA. 68+50 TO STA. 77+50 LT
–LNBREV– STA. 79+17 TO STA. 80+67 RT
–YRPAREV– STA. 15+74 TO STA. 17+30 RT
–LSBREV– STA. 79+50 TO STA. 82+15 LT
–Y1NB– STA. 46+50 TO STA. 59+00 RT
–Y1NB– STA. 45+20 TO STA. 48+00 LT
–LSBREV_DET– STA. 22+91 TO STA. 26+92 RT
–LSBREV_DET– STA. 26+42 TO STA. 28+43 LT
–LNBREV_DET– STA. 75+85 TO STA. 83+86 LT, *3:1

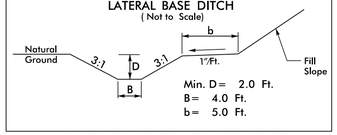
DETAIL C
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.5 Ft.
B= 4.0'

–L– STA. 212+25 TO STA. 220+00 RT
–L– STA. 208+50 TO STA. 215+00 LT
–Y5B– STA. 10+44 TO STA. 12+50 RT
–Y5FLY– STA. 66+80 TO STA. 70+00 LT
–Y5FLY– STA. 63+50 TO STA. 66+80 RT
–LSBREV– STA. 112+50 TO STA. 128+50 LT

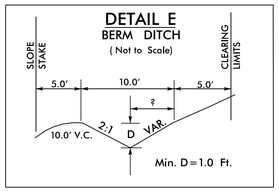
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Min. D= 2.0 Ft.
B= 4.0 Ft.
b= 5.0 Ft.

–L– STA. 90+50 TO STA. 100+28 RT
–L– STA. 162+00 TO STA. 165+50 LT
–L– STA. 247+00 TO STA. 251+50 RT
–L– STA. 252+00 TO STA. 256+00 LT
–L– STA. 253+00 TO STA. 255+00 RT
–Y5LPD– STA. 26+50 TO STA. 30+65 RT

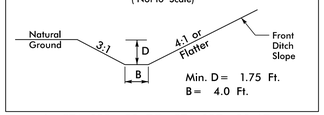
DETAIL E
BERM DITCH
(Not to Scale)



Min. D=1.0 Ft.

DETAIL NOT USED IN SECTION 1

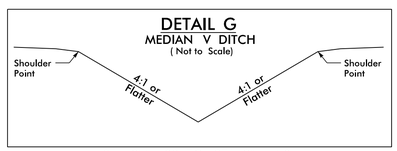
DETAIL F
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D= 1.75 Ft.
B= 4.0 Ft.

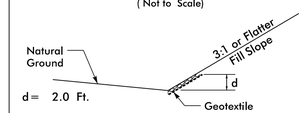
–L– STA. 132+50 TO STA. 137+00 LT
–L– STA. 159+00 TO STA. 162+00 LT
–L– STA. 165+50 TO STA. 167+00 LT
–L– STA. 223+11 TO STA. 226+23 RT
–L– STA. 239+00 TO STA. 247+00 LT
–L– STA. 255+00 TO STA. 269+00 RT
–Y5B– STA. 12+50 TO STA. 17+50 RT

DETAIL G
MEDIAN V DITCH
(Not to Scale)



–L– STA. 215+00 TO STA. 217+50 LT
–Y5– STA. 83+50 TO STA. 85+50 LT
–Y5RPA– STA. 45+00 TO STA. 49+00 LT
–LNBREV– STA. 54+69 TO STA. 62+16 LT
–LNBREV– STA. 82+67 TO STA. 84+17 RT
–LSBREV– STA. 82+15 TO STA. 83+00 LT
–LSBREV– STA. 103+00 TO STA. 112+50 RT

DETAIL H
TOE PROTECTION
(Not to Scale)

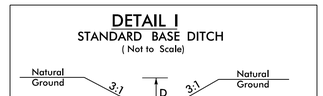


d= 2.0 Ft.

Type of Liner= CL B Rip-Rap

–L– STA. 121+50 TO STA. 127+90 RT
–L– STA. 186+71 TO STA. 187+92 LT
–L– STA. 198+60 TO STA. 203+00 RT
–L– STA. 199+36 TO STA. 202+57 LT
–Y4– STA. 40+82 TO STA. 43+12 LT
–Y4– STA. 40+38 TO STA. 41+90 RT
–Y5LPD– STA. 19+00 TO STA. 21+00 RT
–Y5LPD– STA. 20+21 TO STA. 24+50 LT
–Y5FLY– STA. 59+20 TO STA. 62+59 LT
–Y5RPD– STA. 15+00 TO STA. 24+34 RT
–Y5C– STA. 12+83 TO STA. 17+66 LT
–Y5C– STA. 12+64 TO STA. 17+88 RT
–Y5B– STA. 13+20 TO STA. 17+18 LT
–Y5RPC– STA. 13+37 TO STA. 21+33 RT
–Y5LPD– STA. 38+47 TO STA. 39+75 LT
–Y5LPD– STA. 37+76 TO STA. 39+18 RT
–Y5RPA– STA. 42+36 TO STA. 44+00 RT
–Y5– STA. 47+87 TO STA. 50+88 LT
–Y5– STA. 55+85 TO STA. 65+25 LT
–Y5– STA. 64+30 TO STA. 64+55 RT
–Y5– STA. 107+80 TO STA. 109+51 RT
–Y5LPD– STA. 44+31 TO STA. 48+12 RT
–YRPCREV– STA. 21+65 TO STA. 24+64 RT
–YREV– STA. 24+38 TO STA. 26+57 RT

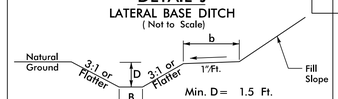
DETAIL I
STANDARD BASE DITCH
(Not to Scale)



Min. D= 2.0 Ft.
B= 4.0 Ft.

–Y5LPD– STA. 13+78 RT, L=285',
BEG. ELEV=131.67', END ELEV=130.90', S=0.3%

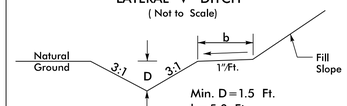
DETAIL J
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= SEE BELOW
b= 5.0 Ft.

–L– STA. 90+50 TO STA. 94+00 LT, B=4'
–L– STA. 118+50 TO STA. 121+12 LT, B=4'
–L– STA. 130+00 TO STA. 132+50 LT, B=4'
–L– STA. 137+00 TO STA. 138+00 LT, B=4'
–L– STA. 138+50 TO STA. 147+00 LT, B=4'
–L– STA. 147+00 TO STA. 154+50 LT, B=4'
–LNBREV– STA. 80+67 TO STA. 82+67 RT, B=4.0'
–YREV– STA. 20+38 TO STA. 21+67 RT, B=4.0'

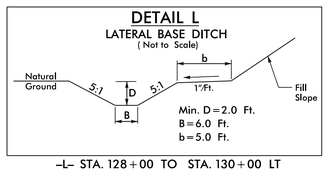
DETAIL K
LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5 Ft.
b=5.0 Ft.

–L– STA. 89+00 TO STA. 90+50 RT
–L– STA. 112+50 TO STA. 113+81 RT
–L– STA. 129+00 TO STA. 131+50 RT
–L– STA. 138+00 TO STA. 138+50 LT
–L– STA. 154+50 TO STA. 158+87 LT
–L– STA. 249+00 TO STA. 253+00 RT
–Y5C– STA. 19+38 TO STA. 24+50 LT
–Y5– STA. 42+00 TO STA. 45+51 LT
–Y5– STA. 64+50 TO STA. 68+50 LT
–Y5– STA. 70+02 TO STA. 76+21 LT
–Y5– STA. 70+00 TO STA. 73+64 RT
–YRPDREV– STA. 15+68 TO STA. 18+50 RT

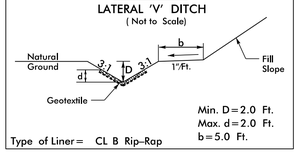
DETAIL L
LATERAL BASE DITCH
(Not to Scale)



Min. D=2.0 Ft.
B=6.0 Ft.
b=5.0 Ft.

–L– STA. 128+00 TO STA. 130+00 LT

DETAIL M
LATERAL 'V' DITCH
(Not to Scale)

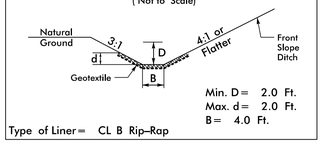


Min. D=2.0 Ft.
Max. d=2.0 Ft.
b=5.0 Ft.

Type of Liner= CL B Rip-Rap

–Y5RPD– STA. 12+93 TO STA. 15+40 RT

DETAIL N
SPECIAL CUT BASE DITCH
(Not to Scale)

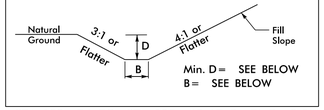


Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 4.0 Ft.

Type of Liner= CL B Rip-Rap

–L– STA. 107+72 TO STA. 109+00 LT, D=1.0'

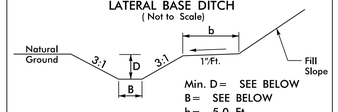
DETAIL O
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= SEE BELOW
B= SEE BELOW

–L– STA. 192+74 TO STA. 195+45 LT, B=7', D=2.0'
–Y4– STA. 42+00 TO STA. 61+50 RT, B=4', D=3.5'
–Y4– STA. 61+50 TO STA. 64+64 RT, B=4', D=2.75'
–LSBREV– STA. 51+50 TO STA. 53+50 LT, B=11', D=1.75'

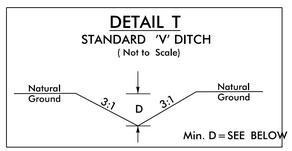
DETAIL P
LATERAL BASE DITCH
(Not to Scale)



Min. D= SEE BELOW
B= SEE BELOW
b= 5.0 Ft.

–Y3– STA. 18+50 TO STA. 19+15 LT, B=4', D=1.00'
–L– STA. 128+00 TO STA. 129+00 RT, B=4', D=1.00'
–Y5– STA. 65+00 TO STA. 68+50 LT, B=4', D=1.00'

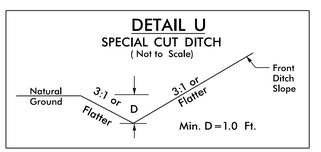
DETAIL T
STANDARD 'V' DITCH
(Not to Scale)



Min. D=SEE BELOW

–Y5LPA– STA. 18+75, L=50', S=4.8%, D=1.0'
BEG. ELEV=144.45, END ELEV=142.05, M=3
–L– STA. 186+00 RT, L=200', S=0.3%, D=2.5'
BEG. ELEV=125.00, END ELEV=124.40'
–SR5C_DET– STA. 13+10 TO STA. 14+00, L=90', S=0.02%, D=1.0'
BEG. ELEV=140.43, END ELEV=140.41
–Y1NB– STA. 44+50, L=53', S=0.8%, D=1.5'
BEG. ELEV=119.98, END ELEV=119.56, M=3.5

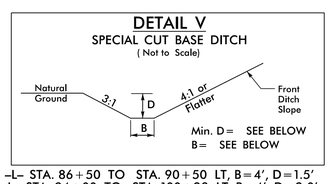
DETAIL U
SPECIAL CUT DITCH
(Not to Scale)



Min. D=1.0 Ft.

–L– STA. 102+12 TO STA. 103+00 LT
–L– STA. 111+00 TO STA. 112+50 RT
–L– STA. 113+81 TO STA. 118+50 LT
–L– STA. 131+50 TO STA. 132+50 RT
–L– STA. 169+00 TO STA. 173+00 LT
–L– STA. 232+50 TO STA. 241+50 RT

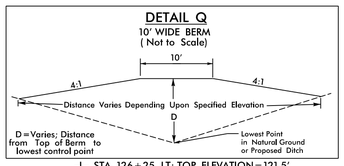
DETAIL V
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D= SEE BELOW
B= SEE BELOW

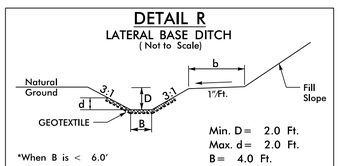
–L– STA. 86+50 TO STA. 90+50 LT, B=4', D=1.5'
–L– STA. 94+00 TO STA. 100+28 LT, B=4', D=2.0'
–L– STA. 100+28 TO STA. 102+12 LT, B=4', D=1.0'
–L– STA. 109+00 TO STA. 113+81 LT, B=4', D=1.5'
–L– STA. 195+45 TO STA. 199+55 LT, B=7', D=1.0'

DETAIL Q
10' WIDE BERM
(Not to Scale)



–L– STA. 126+25 LT; TOP ELEVATION=121.5'
–L– STA. 138+00 LT; TOP ELEVATION=128.5'
–L– STA. 154+50 LT; TOP ELEVATION=132.0'
–LSBREV– 97+00 TO 98+50 RT (TOP WIDTH VARIES), TOP ELEV=111.0'

DETAIL R
LATERAL BASE DITCH
(Not to Scale)



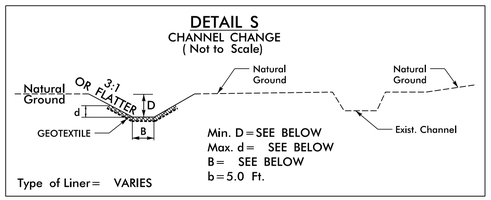
Min. D= 2.0 Ft.
Max. d= 2.0 Ft.
B= 4.0 Ft.
b= 5.0 Ft.

*When B is < 6.0'

Type of Liner= CL B Rip-Rap

–L– STA. 158+87 TO STA. 159+00 LT, D=1.5'
–Y3– STA. 22+50 TO STA. 24+75 LT, B=4', D=2.0'

DETAIL S
CHANNEL CHANGE
(Not to Scale)

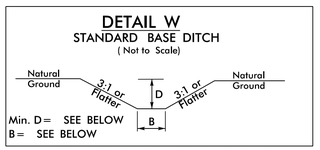


Min. D=SEE BELOW
Max. d= SEE BELOW
B= SEE BELOW
b=5.0 Ft.

Type of Liner= VARIES

DETAIL NOT USED IN SECTION 1

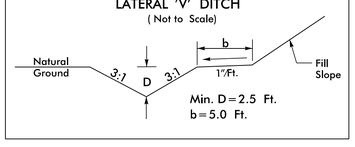
DETAIL W
STANDARD BASE DITCH
(Not to Scale)



Min. D= SEE BELOW
B= SEE BELOW

–L– STA. 128+00 RT, L=94 B=8', D=2.5'
BEG. ELEV=117.39 END ELEV=117.15, S=0.26%, M=6.0
–L– STA. 138+50 RT, L=41, B=6', D=2.0'
BEG. ELEV=122.78 END ELEV=122.45, S=0.80%, M=6.0
–L– STA. 113+81 RT, L=35, B=3', D=2.0'
BEG. ELEV=122.50 END ELEV=122.36, S=0.40%, M=3.0
–L– STA. 100+28 RT, L=22, B=6', D=2.5'
BEG. ELEV=121.50 END ELEV=121.43, S=0.33%, M=6.0
–L– STA. 107+72 RT, L= 70, B=3', D=2.0'
BEG. ELEV=120.09 END ELEV=120.30, S=0.30%, M=6.0
–L– STA. 121+12 RT, L=54', B=3', D=3.0'
BEG. ELEV=115.95 END ELEV=115.80, S=0.28%, M=5.5
–L– STA. 160+29 RT, L= 69, B=12', D=3.0',
BEG. ELEV=124.74 END ELEV=124.63, S=0.16%, M=3.0
–Y5– STA. 104+47 TO STA. 106+50 LT, B=10', D=2.25'
BEG. ELEV=126.60, END ELEV=127.08, S=0.24%, M=3.0
–L– STA. 215+50 LT, L=76', B=4', D=1.25'
BEG. ELEV=-=127.55, END ELEV=127.30, S=0.33%, M=3.0
–LNBREV– STA. 107+10 TO STA. 107+71 RT, B=4', D=1.25'
BEG. ELEV=113.08, END ELEV=112.90, S=0.3%, M=3.0
–LNBREV– STA. 107+71 TO STA. 108+52 RT, B=4', D=1.0'
BEG. ELEV=112.90, END ELEV=115.18, S=2.9%, M=3.0

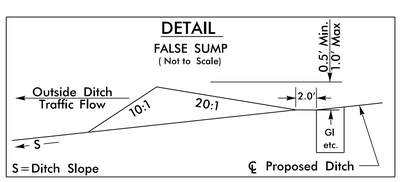
DETAIL X
LATERAL 'V' DITCH
(Not to Scale)



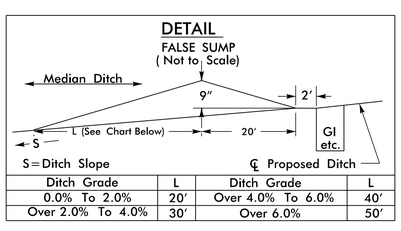
Min. D=2.5 Ft.
b=5.0 Ft.

DETAIL NOT USED IN SECTION 1

DETAIL
FALSE SUMP
(Not to Scale)

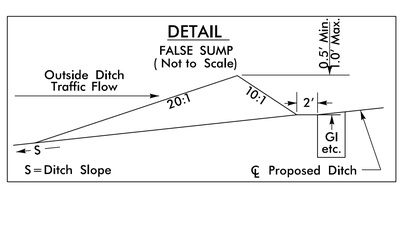


DETAIL
FALSE SUMP
(Not to Scale)



Ditch Grade	L	Ditch Grade	L
0.0% To 2.0%	20'	Over 4.0% To 6.0%	40'
Over 2.0% To 4.0%	30'	Over 6.0%	50'

DETAIL
FALSE SUMP
(Not to Scale)



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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-2

HYDRAULICS DESIGN ENGINEER

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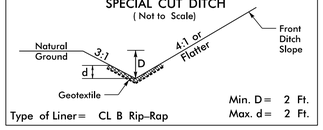
REVISED 1/26/2022

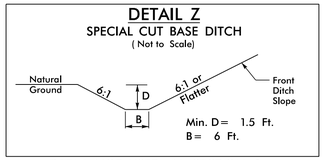
DETAIL Y
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 2 Ft.
Max. d = 2 Ft.
Type of Liner = CL B Rip–Rap

–LSBREV– STA. 128+50 TO STA. 129+50 LT

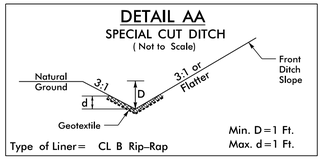
DETAIL Z
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.
B = 6 Ft.

DETAIL NOT USED IN SECTION 1

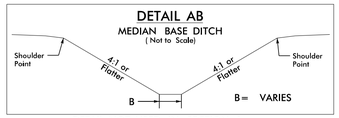
DETAIL AA
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = CL B Rip–Rap

–Y5FLY– STA. 80+14.68 TO STA. 82+33.14

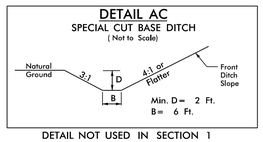
DETAIL AB
MEDIAN BASE DITCH
(Not to Scale)



B = VARIES

DETAIL NOT USED IN SECTION 1

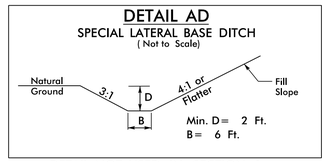
DETAIL AC
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D = 2 Ft.
B = 6 Ft.

DETAIL NOT USED IN SECTION 1

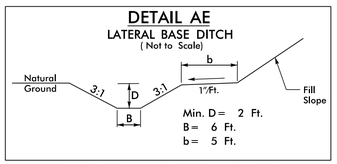
DETAIL AD
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2 Ft.
B = 6 Ft.

DETAIL NOT USED IN SECTION 1

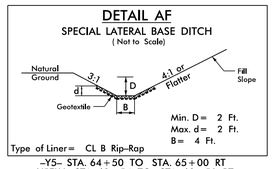
DETAIL AE
LATERAL BASE DITCH
(Not to Scale)



Min. D = 2 Ft.
B = 6 Ft.
b = 5 Ft.

DETAIL NOT USED IN SECTION 1

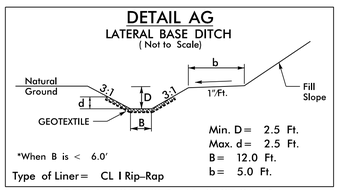
DETAIL AF
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 2 Ft.
Max. d = 2 Ft.
B = 4 Ft.
Type of Liner = CL B Rip–Rap

–Y5– STA. 64+50 TO STA. 65+00 RT
–Y5FLY– STA. 62+54 TO STA. 63+50 RT

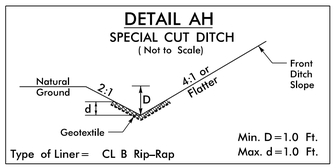
DETAIL AG
LATERAL BASE DITCH
(Not to Scale)



Min. D = 2.5 Ft.
Max. d = 2.5 Ft.
B = 12.0 Ft.
b = 5.0 Ft.
*When B is < 6.0'
Type of Liner = CL I Rip–Rap

DETAIL NOT USED IN SECTION 1

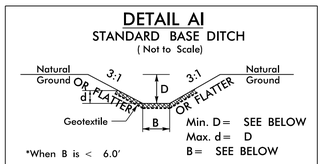
DETAIL AH
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
Type of Liner = CL B Rip–Rap

DETAIL NOT USED IN SECTION 1

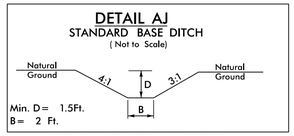
DETAIL AI
STANDARD BASE DITCH
(Not to Scale)



Min. D = SEE BELOW
Max. d = D
B = SEE BELOW
*When B is < 6.0'
Type of Liner = CL B Rip–Rap

–L– STA. 121+12 RT, L=54', B=3', D=3.0'
BEG. ELEV=115.95 END ELEV=115.80, S=0.28%, M=5.5
–Y1SB– STA. 18+56 TO 21+90 RT, L=334' B=4', D=2.5'
BEG. ELEV=119.34 END ELEV=115.4, S=1.2% M=3.0

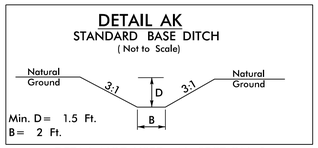
DETAIL AJ
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.5Ft.
B = 2 Ft.

DETAIL NOT USED IN SECTION 1

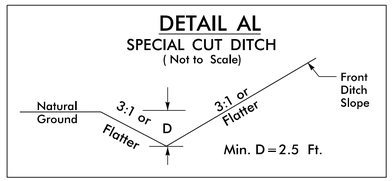
DETAIL AK
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.5 Ft.
B = 2 Ft.

DETAIL NOT USED IN SECTION 1

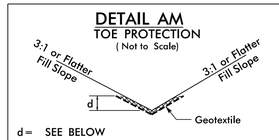
DETAIL AL
SPECIAL CUT DITCH
(Not to Scale)



Min. D = 2.5 Ft.

DETAIL NOT USED IN SECTION 1

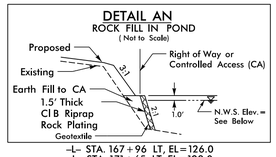
DETAIL AM
TOE PROTECTION
(Not to Scale)



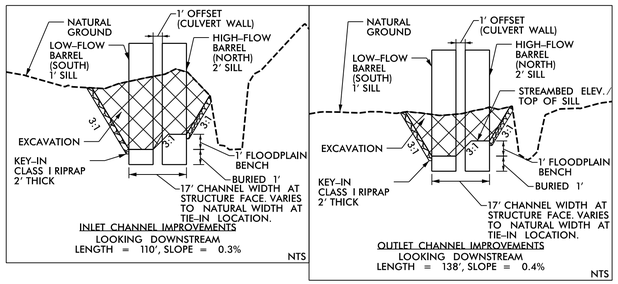
d = SEE BELOW
Type of Liner = B Rip–Rap

DETAIL NOT USED IN SECTION 1

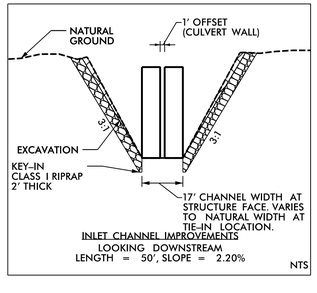
DETAIL AN
ROCK FILL IN POND
(Not to Scale)



–L– STA. 167+96 LT, EL=126.0
–L– STA. 171+65 LT, EL=128.0



CULVERT INLET AND OUTLET DETAILS
–L– STA 252+34.5



CULVERT INLET DETAIL
–Y5– STA 45+24

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	2D-1 - Reese
	HYDRAULICS DESIGN ENGINEER

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SHEET 3A OF 163

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Submitted 2/1/2022

8/17/99

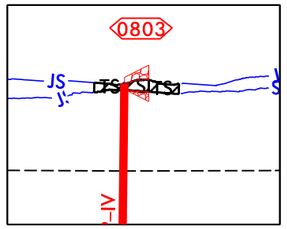
25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER



INSET A

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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SHEET 8 OF 163

REVISED 1/26/2022

NAD 83/NA 2011

SITE 1

DC

5 TONS CL B RIPRAP
W14 SY GEOTEXTILE
ON BANKS ONLY

SEE INSET A

RETAIN EXISTING C/A FENCE

PROP. NOISE WALL NW1B

EXISTING R/W

SPECIAL LATERAL
11' BASE DITCH
SEE DETAIL O

MATCHLINE
-LSBREV- STA. 53+00.00
SEE SHEET 7

MATCHLINE
-LSBREV- STA. 65+00.00
SEE SHEET 9

MATCHLINE
-LNBREV- STA. 53+00.00
SEE SHEET 7

MATCHLINE
-LNBREV- STA. 65+00.00
SEE SHEET 9

VAR BST

I-95 SBL VAR BST

I-95 NBL 38' BST

10' BST

55+00

60+00

65+00

-BL- 96

-BL- 97

N 24°59'11.0" E

N 26°19'48.2" E

REMOVE DI
CONC

DI

PLUG & FILL EXIST. 24" RCP W/FLOWABLE FILL

24" RCP -LV-

0803
2GID-WSS

0801
2GJB-WSS
FS

MEDIAN V DITCH
SEE DETAIL G

SPECIAL CUT DITCH
SEE DETAIL B

RETAIN EXISTING C/A FENCE

R/W MON

NON-IMPACTED BILLBOARD
-LNB- STATION 55+62 RT
MILEMARKER 54.1

BILLBOARD

CITY OF EASTOVER

SR 1833 SANDEROSA RD 27' BST

24" C&G

EXISTING R/W

FOR -LNBREV- PROFILE SEE SHT. 86
FOR -LSBREV- PROFILE SEE SHT. 86
FOR -YRPBREV- PROFILE SEE SHT. 145A
FOR -YRPCREV- PROFILE SEE SHT. 145B

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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1/26/2022
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Submitted 2/1/2022

8/17/99

25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

INSET A

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 9 OF 163

REVISED 1/26/2022

NAD 83/NA 2011

SITE 1

MATCHLINE -LNBREV- STA. 53+00.00 SEE SHEET 7

MATCHLINE -LSBREV- STA. 53+00.00 SEE SHEET 7

MATCHLINE -LNBREV- STA. 65+00.00 SEE SHEET 9

MATCHLINE -LSBREV- STA. 65+00.00 SEE SHEET 9

RETAIN EXISTING C/A FENCE

PROP. NOISE WALL NW1B

SPECIAL LATERAL 11' BASE DITCH SEE DETAIL O

DC

5 TONS CL B RIPRAP W/14 SY GEOTEXTILE ON BANKS ONLY

SEE INSET A

0803

JS

SF

24" RCP LV

55+00

60+00

65+00

N 24°59'11.0" E

N 26°19'48.2" E

MEDIAN V DITCH SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL B

REMOVE DI

PLUG & FILL W/FLOWABLE FILL

DI

CONC

0802 2GIB-WSS

FS

VAR BST

I-95 SBL VAR BST

95 NBL 38' BST

10' BST

24' C&G BST

SR 1833 SANDEROSA RD 27' BST

EXISTING R/W

R/W MON

BILLBOARD

NON-IMPACTED BILLBOARD
-LNB- STATION 55+62 RT
MILEMARKER 54.1

CITY OF EASTOVER

FOR -LNBREV- PROFILE SEE SHT. 86
FOR -LSBREV- PROFILE SEE SHT. 86
FOR -YRPBREV- PROFILE SEE SHT. 145A
FOR -YRPCREV- PROFILE SEE SHT. 145B

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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1/27/2022
Plotted by: bulicsv
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Submitted 2/1/2022

REVISIONS

PROJECT REFERENCE NO. | SHEET NO.

RW SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 10 OF 163

REVISED 1/26/2022

INSET A

CLASS I RIP RAP

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET B

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET C

INSET D

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 63A

END PROPOSED GRADE
BEGIN OVERLAY -YREV- POC Sta. 28+00.00

END CONSTRUCTION
END OVERLAY
-YREV- POC Sta. 39+00.00

MATCHLINE -LSBREV- STA. 65+00.00 SEE SHEET 8

MATCHLINE -LNBREV- STA. 65+00.00 SEE SHEET 8

MATCHLINE -LSBREV- STA. 89+75.00 SEE SHEET 10

MATCHLINE -LNBREV- STA. 90+00.00 SEE SHEET 10

SITE 2 | SV–1 | WCC

SITE 57 | WCC

SITE 3 | WA

SITE 2 | SV–2 | WCB

SV–3 | WCA

WB

A

B

C

D

RETAIN EXISTING C/A FENCE

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

SCALE FOR INSET: 50 25 0 50 100

SCALE: 100 50 0 100 200

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

MURPHY RD

AUTRY, MARGARET MURPHY & HEIRS
DB 24903 PG 59
PB 131 PG 172

RK&K

Submitted 2/1/2022

REVISIONS

PROJECT REFERENCE NO. | SHEET NO.
R/W SHEET NO.
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 11 OF 163

REVISED 1/26/2022

INSET A

CLASS I RIP RAP

RIPRAP HATCHING REMOVED TO SHOW IMPACT

SITE 2

SV-1

WCE

RETAIN EXISTING C/A FENCE

SEE INSET A

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 63A

END PROPOSED GRADE
BEGIN OVERLAY -YREV- POC Sta. 28+00.00

SITE 57

WCC

INSET C

SITE 3

WA

SEE INSET C

RETAIN EXISTING C/A FENCE

SEE INSET D

MATCHLINE -LSBREV- STA. 65+00.00 SEE SHEET 8

MATCHLINE -LNBREV- STA. 65+00.00 SEE SHEET 8

MATCHLINE -LSBREV- STA. 89+75.00 SEE SHEET 10

MATCHLINE -LNBREV- STA. 90+00.00 SEE SHEET 10

A

B

C

D

WB

SEE INSET B

RETAIN EXISTING C/A FENCE

SV-2

SITE 2

WCB

SV-3

WCA

INSET B

STEEL

RETAIN

RIPRAP HATCHING REMOVED TO SHOW IMPACT

INSET D

RETAIN

RETAIN EXISTING C/A FENCE

END CONSTRUCTION
END OVERLAY
-YREV- POC Sta. 39+00.00

MURPHY RD

AUTRY, MARGARET MURPHY & HEIRS
DB 24913 PG 59
PB 131 PG 172

50 25 0 50 100
SCALE FOR INSET

100 50 0 100 200
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES MECHANIZED CLEARING

RKK

Submitted 2/1/2022

5/14/99

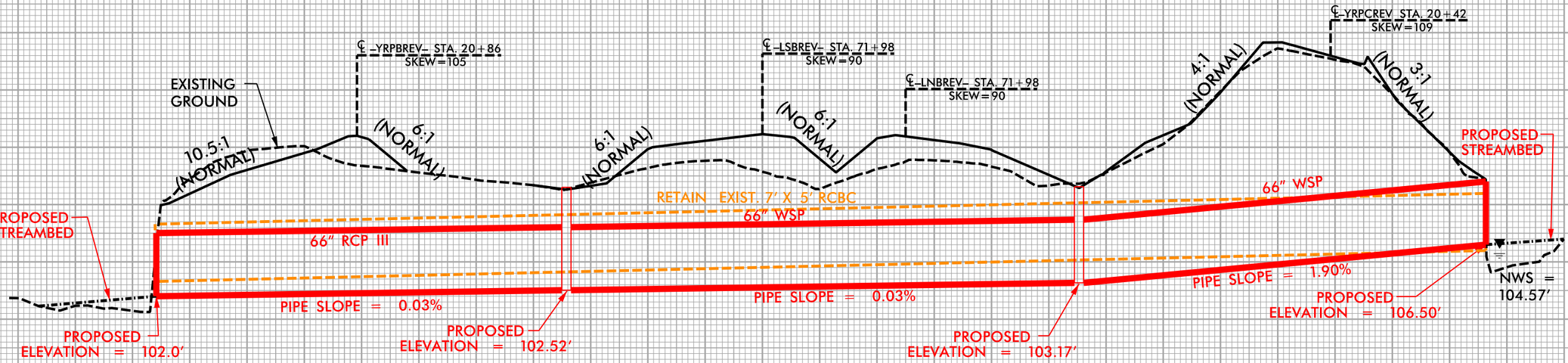
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 2
–LSBREV– STA. 71+98

PERMIT DRAWING
SHEET 12 OF 163

REVISED 1/26/2022

ENGLISH



TRENCHLESS INSTALLATION 66" WELDED STEEL AND 66" RCP–III
(not buried)
(length = 569')

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Submitted 2/1/2022

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING
SHEET 13 OF 163

REVISED 1/26/2022

THIS SHEET INTENTIONALLY LEFT BLANK

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1/26/2022
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aburke

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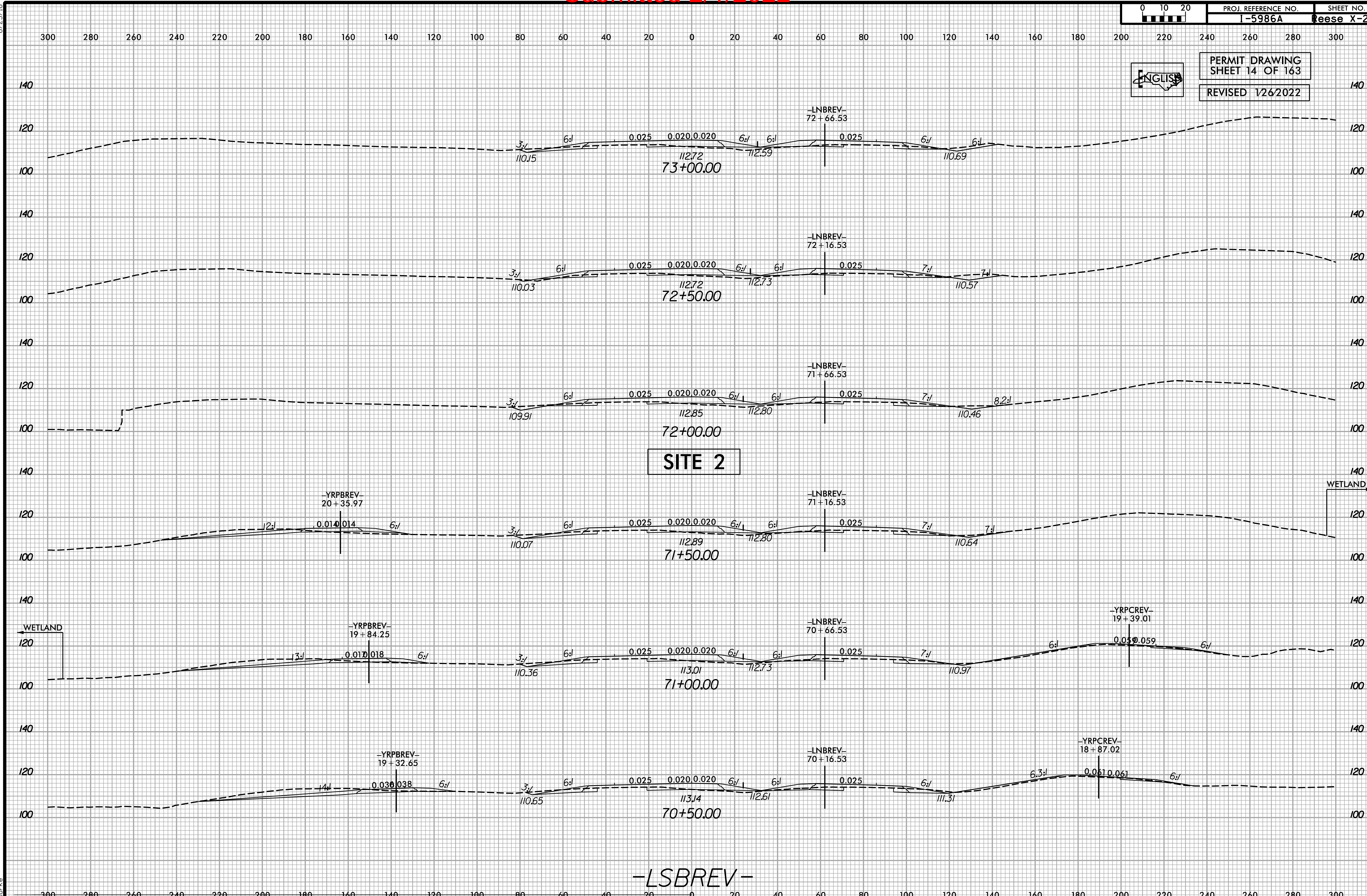

6/23/16

1/26/2022
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aburke

6/23/16

0 10 20

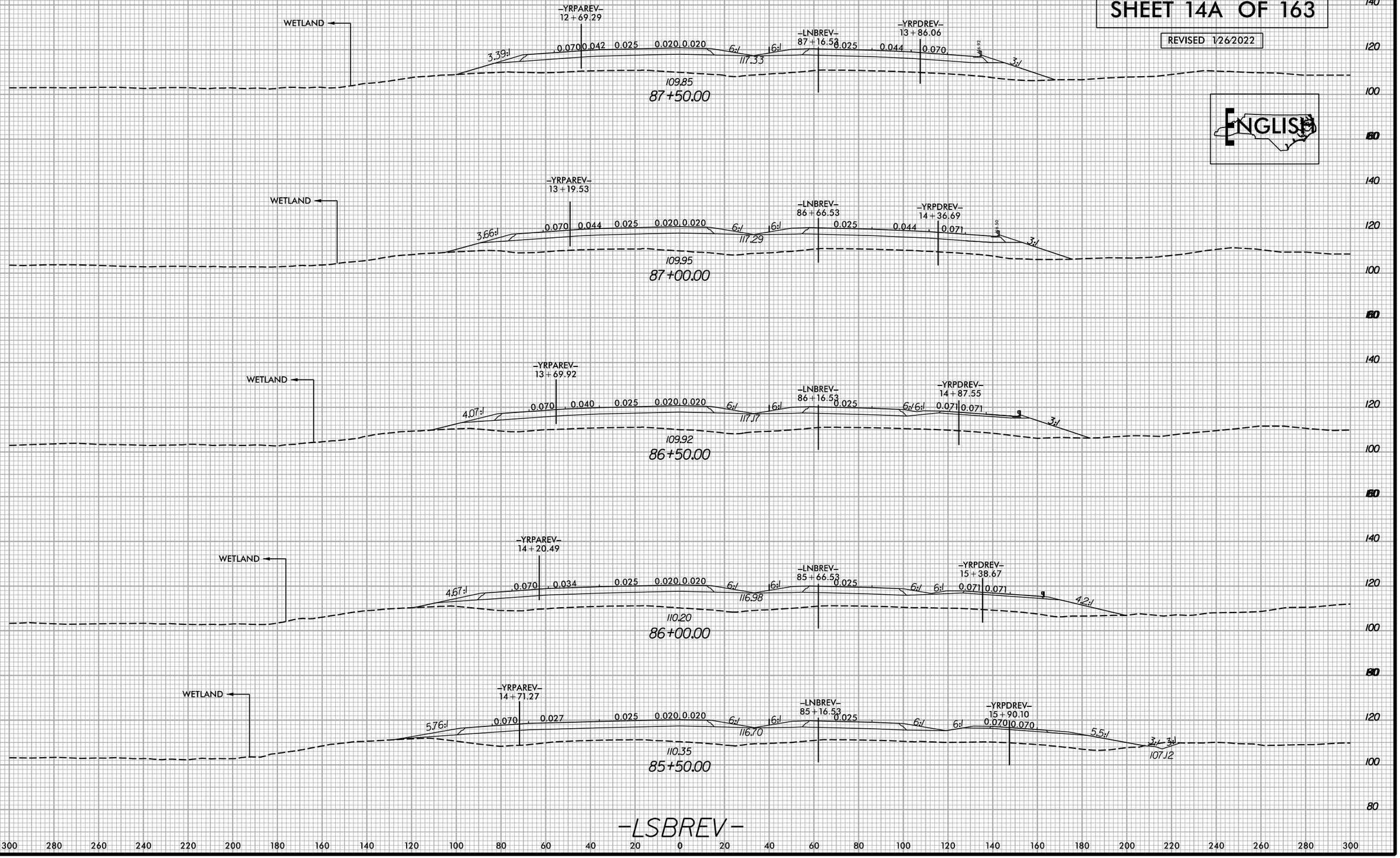
PROJ. REFERENCE NO.	SHEET NO.
I-5986A	Reese X-26

SITE 3

PERMIT DRAWING
SHEET 14A OF 163

REVISED 1/26/2022

ENGLISH



Submitted 2/1/2022

6/23/16

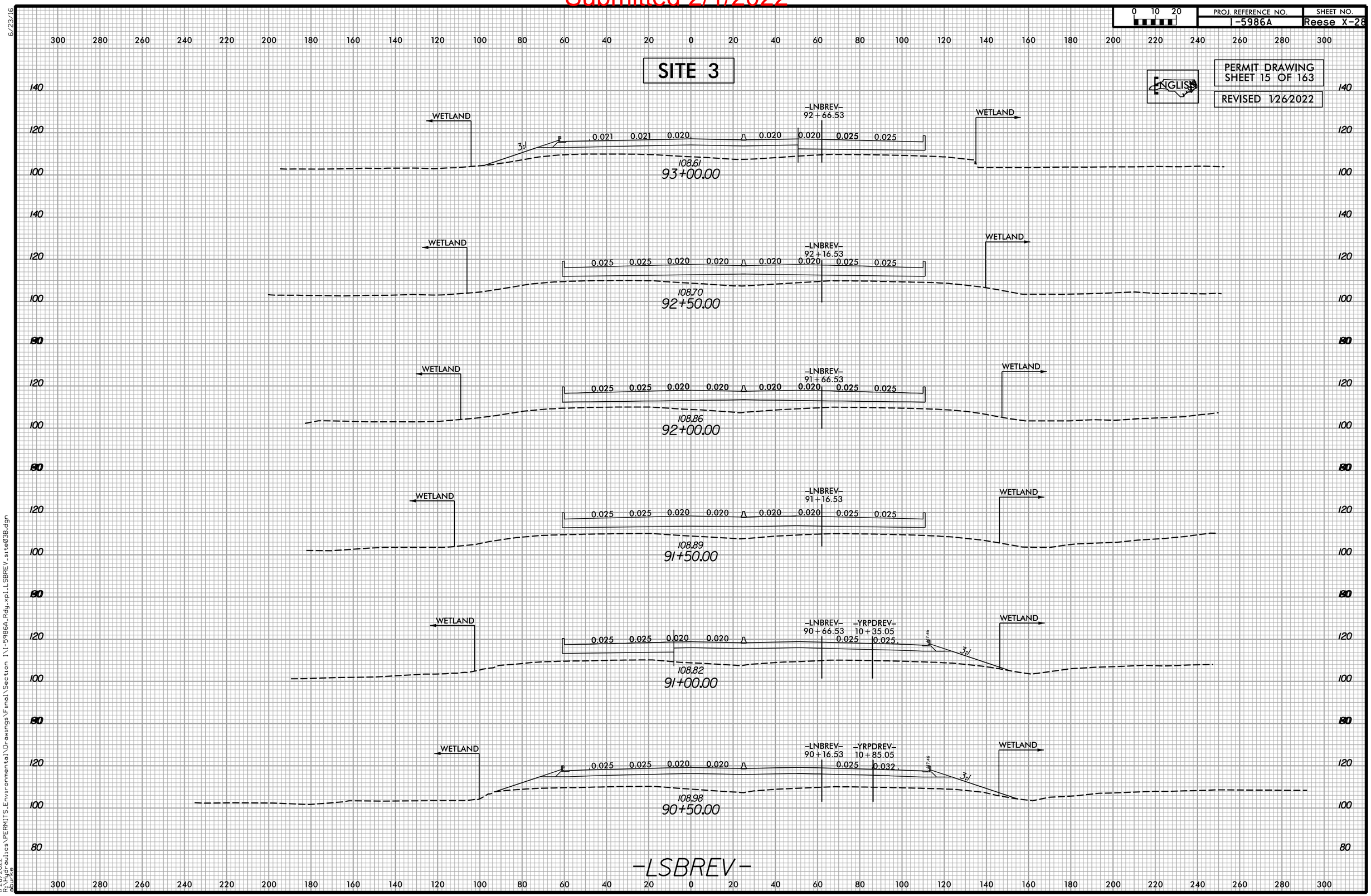
0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	Reese X-28

SITE 3

ENGLISH

PERMIT DRAWING
SHEET 15 OF 163

REVISED 1/26/2022



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dburge

Submitted 2/1/2022

REVISIONS

INSET A

MATCHLINE -Y1SB- STA. 35+00.00 SEE SHEET 63

MATCHLINE -Y1NB- STA. 20+00.00 SEE SHEET 63

INSET C

INSET D

INSET E

INSET B

SCALE FOR INSET 50 25 0 50 100

SCALE 100 50 0 100 200

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. 7-5986A | SHEET NO. 10

R/W SHEET NO. | ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2011

PERMIT DRAWING SHEET 16 OF 163

REVISED 1/26/2022

SITE 4 SA

WC

SEE INSET C

SEE INSET B

SITE 4

WA

Reese Creek–1

SITE 3

RETAIN EXISTING C/A FENCE

SEE INSET A

SEE INSET G

MATCHLINE -LSBREV- STA. 89+75.00 SEE SHEET 9

MATCHLINE -LNBREV- STA. 90+00.00 SEE SHEET 9

SEE INSET H

Reese Creek–2

SITE 3

INSET H

WB

SITE 5

SEE INSET D

INSET F

SITE 6

SEE INSET F

SITE 6

WD

SEE INSET E

I–95 BUS

RETAIN EXISTING C/A FENCE

RETAIN EXISTING C/A FENCE

INSET G

MATCHLINE -LSBREV- 116+00.00 SEE SHEET 11

MATCHLINE -LNBREV- 117+50.00 SEE SHEET 11

MATCHLINE -Y1NB- 45+00.00 SEE SHEET 11

GRAPHIC SCALE 50 25 0 50 100 PLANS

TRAFFIC DIAGRAM ADT 2018 ADT 2040

FOR –LNBREV– PROFILE SEE SHTS. 88 THRU 90
FOR –LSBREV– PROFILE SEE SHTS. 88 THRU 90
FOR –YRPAREV– PROFILE SEE SHT. 145
FOR –YRPDREV– PROFILE SEE SHT. 145
FOR –Y1NB– PROFILE SEE SHTS. 146 THRU 147
FOR –Y1SB– PROFILE SEE SHT. 148
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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R:\Highway\Projects\PERMITS_Exports\Sheets\Overall Sections 11x17\5986A_Overall Sections.dgn 1/26/2022

Submitted 2/1/2022

REVISIONS

INSET A

INSET B

INSET C

INSET D

INSET E

INSET F

INSET G

INSET H

MATCHLINE -Y1SB- STA. 35+00.00 SEE SHEET 63

MATCHLINE -Y1NB- STA. 20+00.00 SEE SHEET 63

MATCHLINE -LSBREV- STA. 89+75.00 SEE SHEET 9

MATCHLINE -LNBREV- STA. 90+00.00 SEE SHEET 9

MATCHLINE -LNBREV- STA. 119+00.00 SEE SHEET 11

MATCHLINE -LSBREV- STA. 119+00.00 SEE SHEET 11

MATCHLINE -LYNB- STA. 45+00.00 SEE SHEET 11

SCALE FOR INSET 50 25 0 50 100

SCALE 100 50 0 100 200

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. 7-95864

SHEET NO. 10

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/96 - 2011

PERMIT DRAWING SHEET 17 OF 163

REVISED 1/26/2022

Reese Creek–1

Reese Creek–2

SITE 3

SITE 4

SITE 5

SITE 6

SA

WA

WB

WC

WD

RETAIN EXISTING C/A FENCE

SEE INSET A

SEE INSET B

SEE INSET C

SEE INSET D

SEE INSET E

SEE INSET F

SEE INSET G

SEE INSET H

I-95 BUS

REMOVE EX. C/A FENCE SEE DETAIL A

GRAPHIC SCALE 50 25 0 50 100 IN FEET

PLANS

TRAFFIC DIAGRAM ADT 2018 ADT 2040

FOR –LNBREV– PROFILE SEE SHTS. 88 THRU 90
FOR –LSBREV– PROFILE SEE SHTS. 88 THRU 90
FOR –YRPAREV– PROFILE SEE SHT. 145
FOR –YRPDREV– PROFILE SEE SHT. 145
FOR –LYNB– PROFILE SEE SHTS. 146 THRU 147
FOR –Y1SB– PROFILE SEE SHT. 148

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	88
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGLISH

PERMIT DRAWING
SHEET 17A OF 163

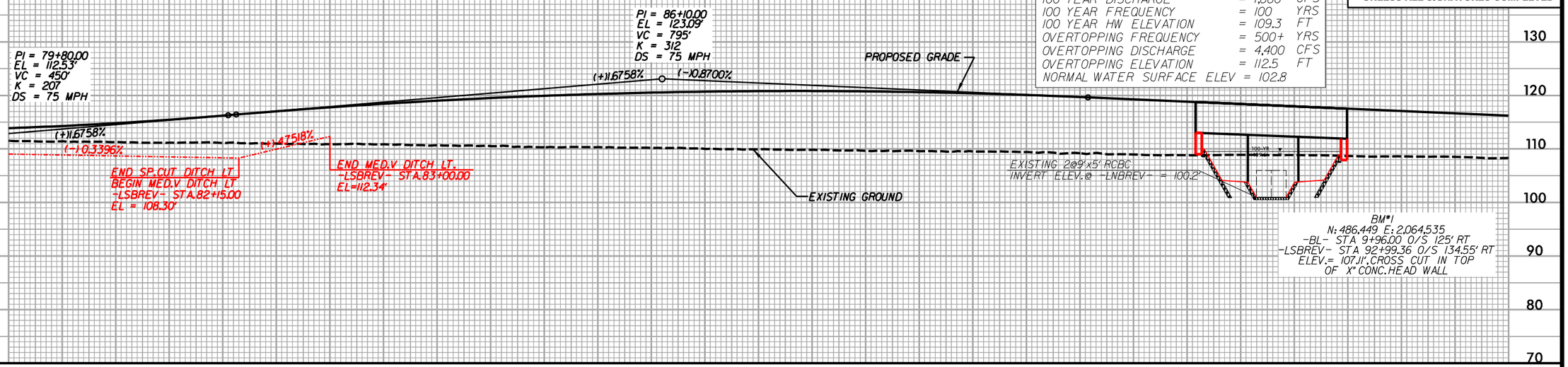
REVISED 1/26/2022

SITE 03

-LSBREV-

BRIDGE HYDRAULIC DATA
Sta. 91+75 -LSBREV-

DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 1,880	CFS
DESIGN HW ELEVATION	= 109.3	FT
100 YEAR DISCHARGE	= 1,880	CFS
100 YEAR FREQUENCY	= 100	YRS
100 YEAR HW ELEVATION	= 109.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 4,400	CFS
OVERTOPPING ELEVATION	= 112.5	FT
NORMAL WATER SURFACE ELEV	= 102.8	

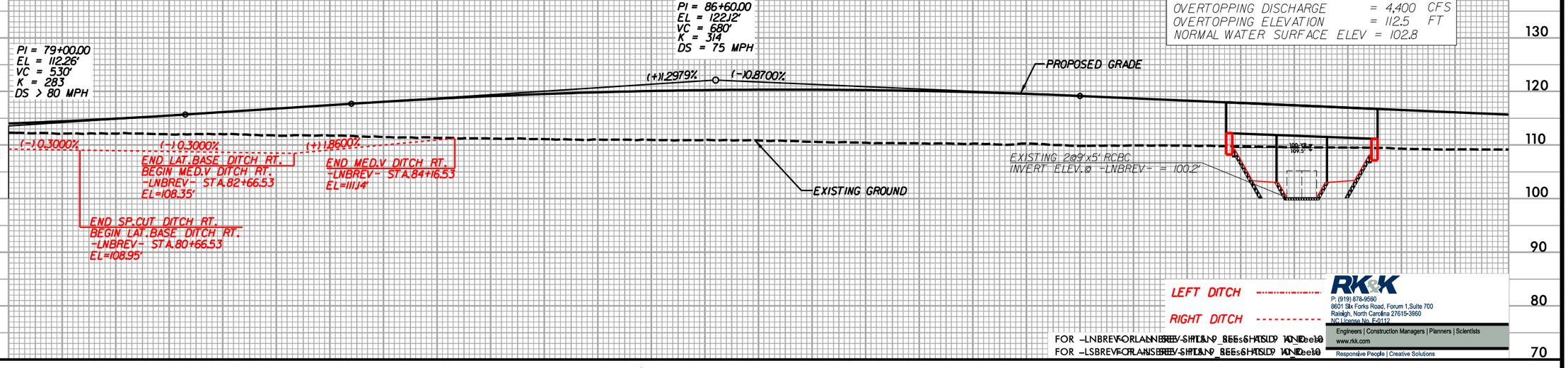


BM#1
N: 486,449 E: 2,064,535
-BL- STA 9+96.00 O/S 125' RT
-LSBREV- STA 92+99.36 O/S 134.55' RT
ELEV.= 107.11', CROSS CUT IN TOP
OF X" CONC. HEAD WALL

-LNBREV-

BRIDGE HYDRAULIC DATA
Sta. 92+05 -LNBREV-

DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 1,880	CFS
DESIGN HW ELEVATION	= 109.3	FT
100 YEAR DISCHARGE	= 1,880	CFS
100 YEAR FREQUENCY	= 100	YRS
100 YEAR HW ELEVATION	= 109.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 4,400	CFS
OVERTOPPING ELEVATION	= 112.5	FT
NORMAL WATER SURFACE ELEV	= 102.8	



LEFT DITCH

RIGHT DITCH

FOR -LNBREV- SEE SHEETS 9 AND 10
FOR -LSBREV- SEE SHEETS 9 AND 10

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5/14/99

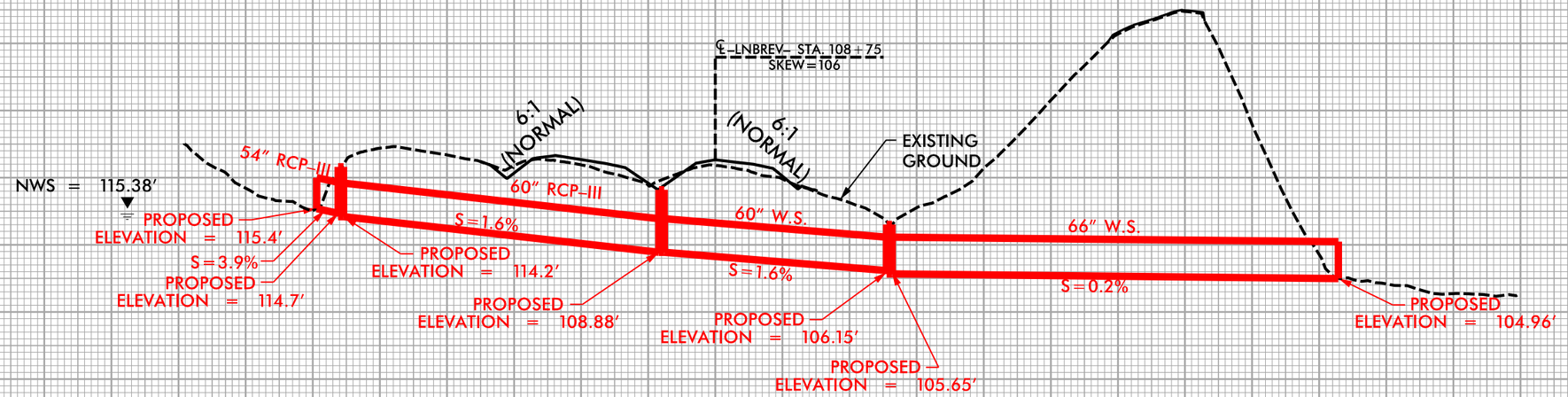
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SITE 5
–LNBREV– STA. 108 + 75

PERMIT DRAWING
SHEET 18 OF 163

REVISED 1/26/2022

ENGLISH



54" RCP–III, 60" RCP–III, TRENCHLESS INSTALLATION 60" WELDED STEEL, & TRENCHLESS INSTALLATION 66" WELDED STEEL
(not buried)
(length = 744')

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2/1/2022

6/23/16

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-36

SITE 4

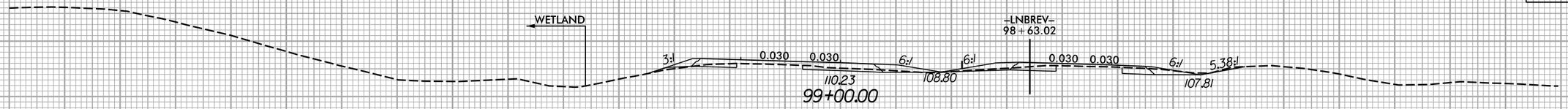
PERMIT DRAWING
SHEET 19 OF 163

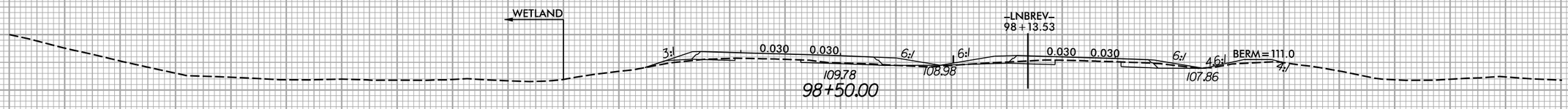
REVISED 1/26/2022

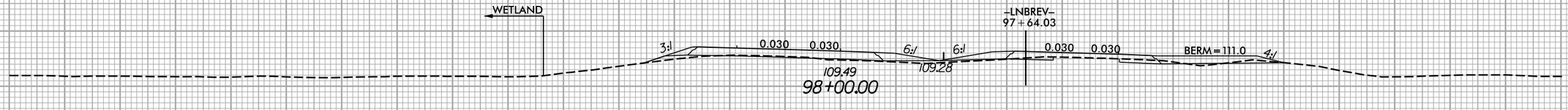
ENGLISH

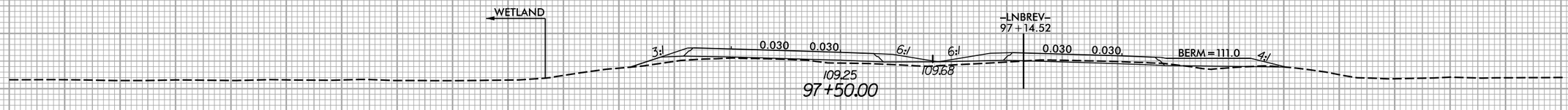
300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

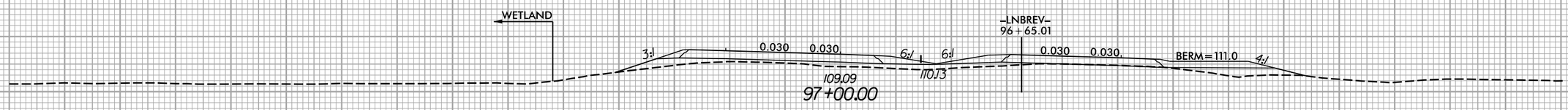
140 120 100 80

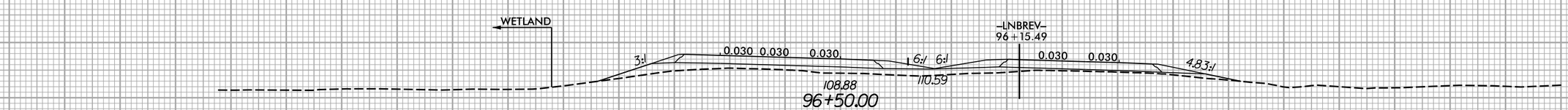












–LSBREV–

Submitted 2/1/2022

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 20 OF 163

REVISED 1/26/2022

MATCHLINE -Y3- STA. 17+00.00 SEE SHEET 64

MATCHLINE -LSBREV- 130+00.00 SEE SHEET 11

MATCHLINE -L- STA. 93+00.00 SEE SHEET 13

MATCHLINE -Y3- STA. 25+00.00 SEE SHEET 65

NAD 83/NA 2011

SITE 7

SITE 8

WH

WE

RETAIN EXISTING C/A FENCE

LATERAL 4' BASE DITCH SEE DETAIL P

10' DITCH TAPER TO 30" INLET

1220 2 TONS CL B RIPRAP W/7 SY GEO FAB

NON-IMPACTED BILLBOARD -L- STATION 86+50 LT MILEMARKER 55.6

NON-IMPACTED BILLBOARD -L- STATION 92+00 LT MILEMARKER 55.7

NON-IMPACTED BILLBOARD -L- STATION 92+50 RT MILEMARKER 55.7

LATERAL 4' BASE DITCH SEE DETAIL J

SPECIAL CUT 4' BASE DITCH SEE DETAIL V

LATERAL 'Y' DITCH SEE DETAIL K

LATERAL 4' BASE DITCH SEE DETAIL D

LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL R LINE ENTIRE SIDE SLOPE ALONG POND ACCESS ROAD

SP. LATERAL DITCH SEE DETAIL A

1219 8 TONS CL B RIPRAP W/21 SY GEO FAB

1223 2 TONS CL B RIPRAP W/7 SY GEO FAB

15" CSP 2 ELBOWS

REMOVE PIPE

REMOVE CB

REMOVE JB

REMOVE DI

PLUG & FILL WITH FLOWABLE FILL

STRUCTURE BURIED STRUCTURE AND PIPES DRAWN IN APPROXIMATE LOCATION FROM PROJECT: 8.1347412

PROP. NOISE WALL NW2

ACCESS AND UTILITY EASEMENT PB 124 PG 127

N 29°29'55.2" E

S 60°34'21.5" E

N 29°33'04" E 724.67'

N 23°25'56" W 317.79'

N 52°26'36" W 322.31'

BAYWOOD RD

POND

SCALE 50 25 0 50 100

ENGLISH

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

FOR –LSBREV– PROFILE SEE SHT. 91
FOR –LLT SEC1– PROFILE SEE SHT. 92
FOR –LRT SEC1– PROFILE SEE SHT. 92
FOR –Y1NB– PROFILE SEE SHT. 147
FOR –Y3– PROFILE SEE SHT. 149
FOR DITCH DETAILS SEE SHTS. 2D–1 THRU 2D–2

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K:\TIP Studies\PERMITS_Environmental\Drawings\Final\Section 1\I-5986A_hyd_prm_psh12.dgn
2/7/2022

Submitted 2/1/2022

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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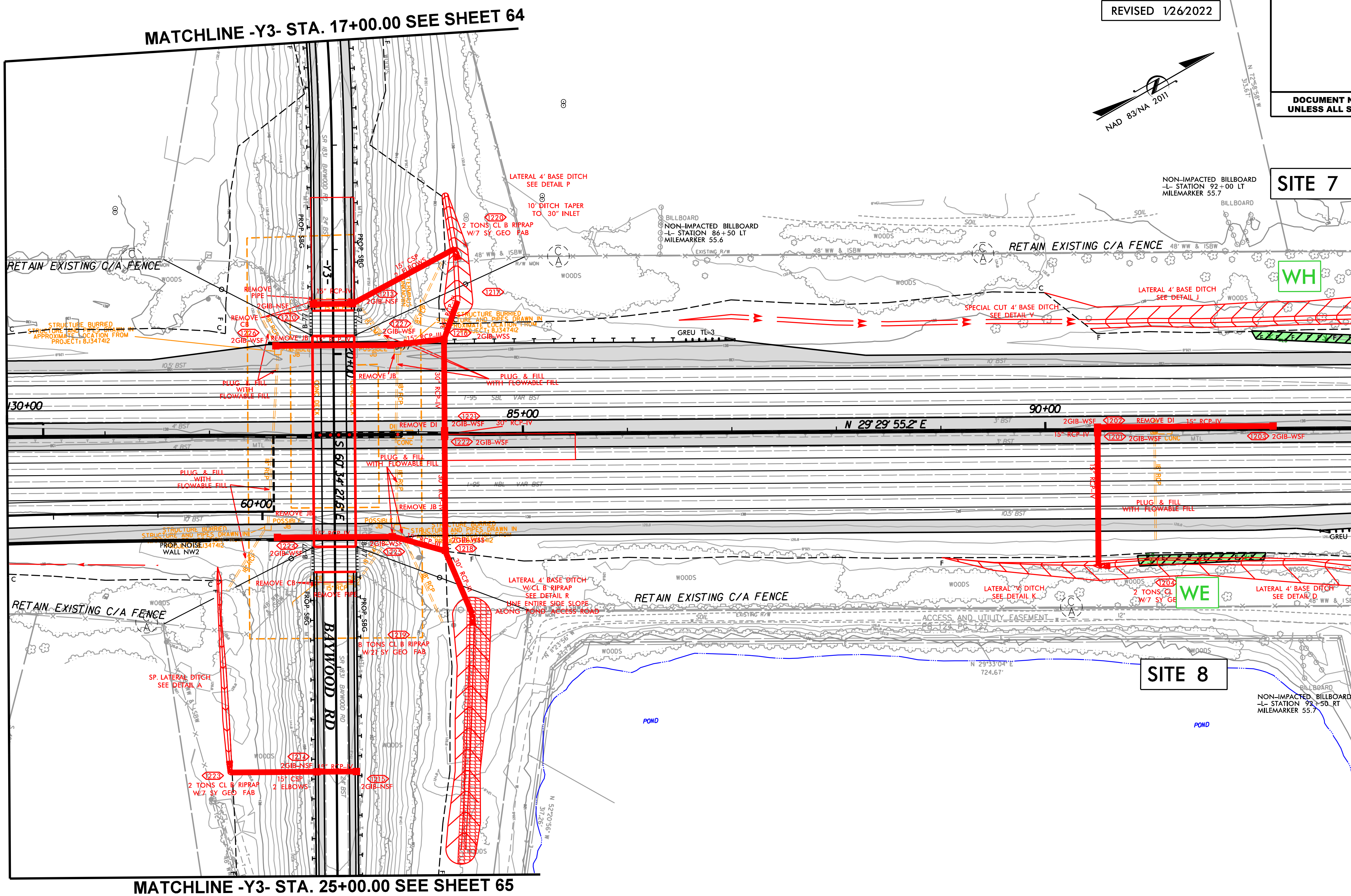
PERMIT DRAWING SHEET 21 OF 163

REVISED 1/26/2022



MATCHLINE -Y3- STA. 17+00.00 SEE SHEET 64
MATCHLINE -Y3- STA. 25+00.00 SEE SHEET 65
MATCHLINE -LSBREV- 130+00.00 SEE SHEET 11
MATCHLINE -L- STA. 93+00.00 SEE SHEET 13
NAD 83/NA 2011
SITE 7
SITE 8
WH
WE
RETAIN EXISTING C/A FENCE
BAYWOOD RD
N 29°29'55.2" E
85+00
90+00
60+00
130+00
LATERAL 4' BASE DITCH SEE DETAIL P
10' DITCH TAPER TO 30" INLET
2 TONS CL B RIPRAP W/7 SY GEO FAB
NON-IMPACTED BILLBOARD -L- STATION 86+50 LT MILEMARKER 55.6
NON-IMPACTED BILLBOARD -L- STATION 92+00 LT MILEMARKER 55.7
NON-IMPACTED BILLBOARD -L- STATION 92+50 RT MILEMARKER 55.7
LATERAL 4' BASE DITCH SEE DETAIL J
SPECIAL CUT 4' BASE DITCH SEE DETAIL V
PLUG & FILL WITH FLOWABLE FILL
REMOVE JB
REMOVE DI
REMOVE CB
LATERAL 4' BASE DITCH W/CL B RIPRAP SEE DETAIL R
LINE ENTIRE SIDE SLOPE ALONG POND ACCESS ROAD
LATERAL 'V' DITCH SEE DETAIL K
LATERAL 4' BASE DITCH SEE DETAIL D
8 TONS CL B RIPRAP W/21 SY GEO FAB
SP. LATERAL DITCH SEE DETAIL A
2 TONS CL B RIPRAP W/7 SY GEO FAB
ACCESS AND UTILITY EASEMENT
POND
PROP. NOISE WALL NW2

DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

FOR -LSBREV- PROFILE SEE SHT. 91
FOR -LLT SEC1- PROFILE SEE SHT. 92
FOR -LRT SEC1- PROFILE SEE SHT. 92
FOR -YINB- PROFILE SEE SHT. 147
FOR -Y3- PROFILE SEE SHT. 149
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

PROJECT REFERENCE NO. I-5986 | SHEET NO. 19
R/W SHEET NO.
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 36 OF 163

REVISED 1/26/2022

MATCHLINE -Y4- 21+00.00 SEE SHEET 69

MATCHLINE -Y5RRB- 22+00.00 SEE SHEET 68

MATCHLINE -L- STA. 171+00.00 SEE SHEET 18

MATCHLINE -L- STA. 198+50.00 SEE SHEET 20

MATCHLINE -Y5RPC- STA. 16+50.00 SEE SHEET 20

MATCHLINE -Y4- STA. 39+00.00 SEE SHEET 70

INSET A

INSET F

INSET E

INSET B

INSET D

INSET C

SITE 54C

SITE 13

SITE 14

SITE 15

SITE 16

SEE INSET A

SEE INSET F

SEE INSET E

SEE INSET B

SEE INSET C

SEE INSET D

WS

WR

WM

WN

WO

B

C

BAKER SWAMP

RETAIN EXISTING C/A FENCE

RETAIN EXISTING FENCE

PROP.WOVEN WIRE FENCE

PROP.WOVEN WIRE

PROP.WOV

PIPE CLEAN OUT

TB JB w/MH

20 TONS CL I RIPRAP W/39 SY GEOFAB

33 TONS CL I RIPRAP W/62 SY GEOFAB

TRENCHLESS INSTALLATION

HW

SCALE FOR INSET

50 0 50 100

SCALE

100 50 0 100 200

ENGLISH

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES TEMPORARY FILL IN WETLAND

FOR -LLT SEC1- PROFILE SEE SHTS. 98 THRU 100
FOR -LRT SEC1- PROFILE SEE SHTS. 98 THRU 100
FOR -Y4- PROFILE SEE SHTS. 150 THRU 151
FOR -Y5RPB- PROFILE SEE SHTS. 164 THRU 165
FOR -Y5RPC- PROFILE SEE SHTS. 166
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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REVISIONS

PROJECT REFERENCE NO. I-5986 | SHEET NO. 19
R/W SHEET NO.
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 37 OF 163

REVISED 1/26/2022

MATCHLINE -Y4- 21+00.00 SEE SHEET 69

MATCHLINE -Y5RPB- 22+00.00 SEE SHEET 68

MATCHLINE -L- STA. 171+00.00 SEE SHEET 18

MATCHLINE -L- STA. 198+50.00 SEE SHEET 20

MATCHLINE -Y4- STA. 39+00.00 SEE SHEET 70

MATCHLINE -Y5RPC- STA. 16+50.00 SEE SHEET 20

INSET A

INSET F

INSET E

INSET B

INSET D

INSET C

SITE 54C

SITE 14

SITE 13

SITE 15

SITE 16

SEE INSET A

SEE INSET F

SEE INSET B

SEE INSET E

SEE INSET C

SEE INSET D

RETAIN EXISTING C/A FENCE

RETAIN EXISTING FENCE

PROP. WOVEN WIRE FENCE

PROP. CHAIN LINK FENCE

PROP. 4' PERMANENT FENCE

BAKER SWAMP 1

WS WR WM WN WO

B C

SCALE FOR INSET

SCALE

ENGLISH

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES TEMPORARY FILL IN WETLAND

FOR -LLT SECL- PROFILE SEE SHTS. 98 THRU 100
FOR -LRT SECL- PROFILE SEE SHTS. 98 THRU 100
FOR -Y4- PROFILE SEE SHTS. 150 THRU 151
FOR -Y5RPB- PROFILE SEE SHTS. 164 THRU 165
FOR -Y5RPC- PROFILE SEE SHTS. 166
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 79 OF 163

REVISED 1/26/2022

50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER (POND)
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NA 2011

MATCHLINE -L- STA. 428+00.00 SEE SHEET 35

MATCHLINE -L- STA. 442+00.00 SEE SHEET 37

SITE 30

WAL

PROP.WOVEN WIRE FENCE

REMOVE EXISTING FENCE

SP. LAT BASE DITCH SEE DETAIL C

SP. CUT BASE DITCH SEE DETAIL F

PH

ROCK FILL IN POND SEE DETAIL AN

POND

WAK

PLUG & FILL W/FLOWABLE FILL

REMOVE 10' OF 24" RCP

REMOVE DI

24" RCP-IV

15" RCP-IV

18" RCP-IV

2GIA-WSF

2GIB-WSF

CONC PAVED DITCH

430+00

435+00

440+00

N 40° 50' 03.2" E

I-95 SBL 37' BST

I-95 NBL 37' BST

WAI

SITE 30

REMOVE EXISTING FENCE

PROP.WOVEN WIRE FENCE

SEE DETAIL H

WAJ

SP. CUT BASE DITCH SEE DETAIL Z

SP. CUT BASE DITCH SEE DETAIL F

ROCK FILL IN POND SEE DETAIL AN

PI

Q10=33.8 cfs
V10=2.00 ft/s

FOR -LLT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR -LRT_SEC2- PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D-3 THRU 2D-4

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8/17/99

SCALE 50 25 0 50 100

ENGLISH

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING SHEET 80 OF 163

REVISED 1/26/2022

NAD 83/NA 2011

MATCHLINE -L- STA. 428+00.00 SEE SHEET 35

MATCHLINE -L- STA. 442+00.00 SEE SHEET 37

SITE 30

SITE 30

SITE 30

WAL

WAK

WAI

WAJ

PH

PI

PROP.WOVEN WIRE FENCE

REMOVE EXISTING FENCE

ROCK FILL IN POND SEE DETAIL AN

SP. LAT. BASE DITCH SEE DETAIL C

SP. CUT BASE DITCH SEE DETAIL F

SP. CUT BASE DITCH SEE DETAIL Z

PROJECT NO. SEE DETAIL H

PLUG & FILL W/FLOWABLE FILL

REMOVE 10' OF 24" RCP

REMOVE 10' OF 18" RCP

REMOVE DI

FES

430+00

435+00

440+00

N 40° 50' 03.2" E

Q10=33.8 cfs
V10=2.00 ft/s

FOR –LLT_SEC2– PROFILE SEE SHTS. 117 THRU 118
FOR –LRT_SEC2– PROFILE SEE SHTS. 117 THRU 118
FOR DITCH DETAILS SEE SHTS. 2D–3 THRU 2D–4

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Submitted 2/1/2022

REVISIONS

TRAFFIC DIAGRAM
ADT 2018
ADT 2040
GOOSHA-FALCON ROAD (NC 82)

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 96 OF 163

REVISED 1/26/2022

MATCHLINE -Y9A- STA. 18+00.00 SEE SHEET 77

MATCHLINE -L- STA. 577+00.00 SEE SHEET 47

MATCHLINE -SR5- STA. 21+95.00 SEE SHEET 47

MATCHLINE -L- STA. 605+00.00 SEE SHEET 49

MATCHLINE -SR5- STA. 38+50.00 SEE SHEET 78

MATCHLINE -Y9C- STA. 12+00.00 SEE SHEET 78

INSET A

INSET B

SITE 35

SITE 59

WAT

WD

A

B

C

D

SCALE FOR INSET
50 0 50 100

SCALE
100 50 0 100 200

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

FOR BRIDGE SKETCH SEE SHT. 2A–7

FOR CROSS–SECTION LAYOUT SEE SHTS. 2B–1 THRU 2B–3

TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

FOR –L– PROFILES SEE SHTS. 129 THRU 131
FOR –Y9A– PROFILE SEE SHT. 187
FOR –Y9B– PROFILE SEE SHT. 187
FOR –Y9C– PROFILE SEE SHT. 188
FOR –Y9RPA– PROFILE SEE SHT. 189
FOR –Y9RPB– PROFILE SEE SHT. 190
FOR –Y9RPC– PROFILE SEE SHT. 191
FOR –Y9RPD– PROFILE SEE SHT. 192
FOR –RAB_Y9AB– PROFILE SEE SHT. 188
FOR –RAB_Y9BC– PROFILE SEE SHT. 188
FOR –SR5– PROFILE SEE SHTS. 196 & 197

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REVISIONS

TRAFFIC DIAGRAM
ADT 2018
ADT 2040
GOSHEN-FALCON ROAD (NC 82)

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 97 OF 163

REVISED 1/26/2022

MATCHLINE -Y9A- STA. 18+00.00 SEE SHEET 77

MATCHLINE -L- STA. 577+00.00 SEE SHEET 47

MATCHLINE -SR5- STA 21+95.00 SEE SHEET 47

MATCHLINE -L- STA. 605+00.00 SEE SHEET 49

MATCHLINE -SR5- STA. 38+50.00 SEE SHEET 78

MATCHLINE -Y9C- STA. 12+00.00 SEE SHEET 78

INSET A

INSET B

SEE INSET A

SEE INSET B

SITE 35

SITE 59

WAT

WD

A

B

C

D

STANDARD BASE DITCH SEE DETAIL I

SPECIAL CUT DITCH SEE DETAIL B

SPECIAL CUT BASE DITCH SEE DETAIL F

SPECIAL LATERAL BASE DITCH SEE DETAIL C

LATERAL SPREAD BASE DITCH SEE DETAIL AG

PROP. FENCE WOVEN WIRE

PROP. FENCE BARB WIRE

WOODS

GRASS TO DRAIN

50 0 50 100
SCALE FOR INSET

100 50 0 100 200
SCALE

ENGLISH

DENOTES TEMPORARY FILL IN WETLAND

DENOTES MECHANIZED CLEARING

FOR BRIDGE SKETCH SEE SHT. 2A-7

FOR CROSS-SECTION LAYOUT SEE SHTS. 2B-1 THRU 2B-3

TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

FOR -L- PROFILES SEE SHTS. 129 THRU 131
FOR -Y9A- PROFILE SEE SHT. 187
FOR -Y9B- PROFILE SEE SHT. 187
FOR -Y9C- PROFILE SEE SHT. 188
FOR -Y9RPA- PROFILE SEE SHT. 189
FOR -Y9RPB- PROFILE SEE SHT. 190
FOR -Y9RPC- PROFILE SEE SHT. 191
FOR -Y9RPD- PROFILE SEE SHT. 192
FOR -RAB_Y9AB- PROFILE SEE SHT. 188
FOR -RAB_Y9BC- PROFILE SEE SHT. 188
FOR -SR5- PROFILE SEE SHTS. 196 & 197

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6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A SECTION 3	X-113

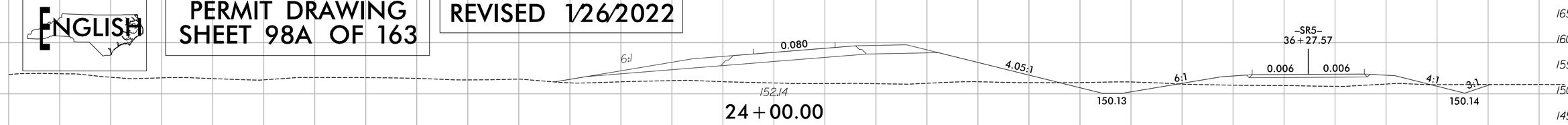
ENGLISH

PERMIT DRAWING
SHEET 98A OF 163

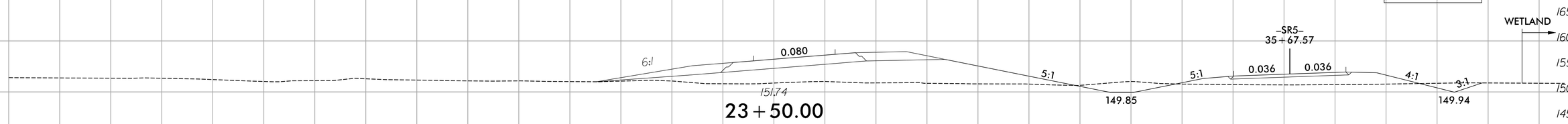
REVISED 1/26/2022

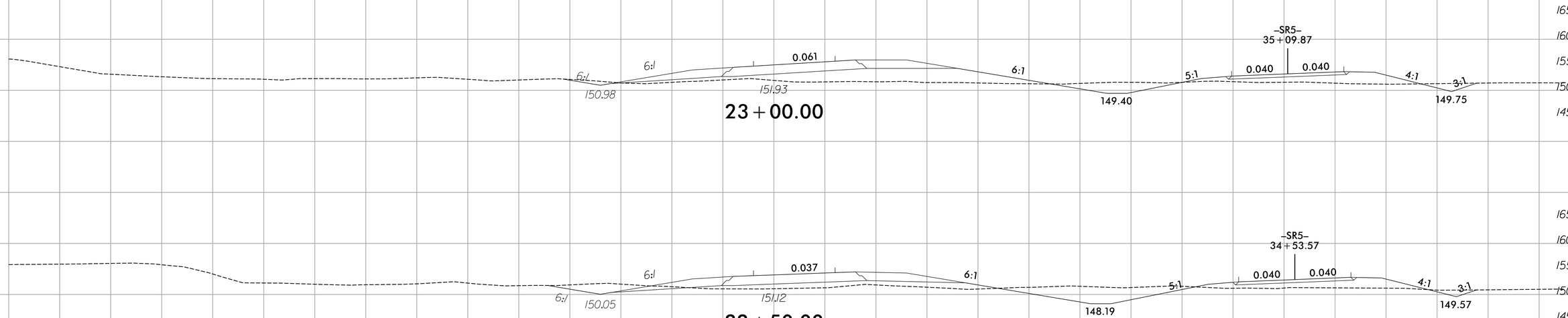
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

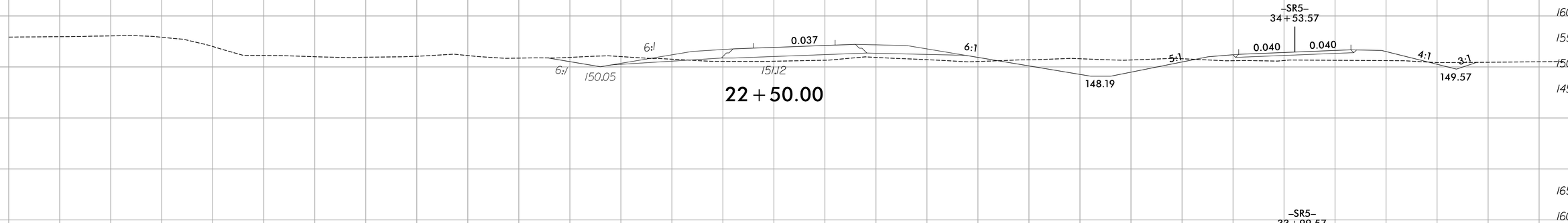
165 160 155 150 145



SITE 59







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–Y9RPC–

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Submitted 2/1/2022

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	63A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

NAD 83/NA 2011

PERMIT DRAWING
SHEET 134A OF 163

REVISED 1/26/2022

RANK DEV INC
DB 9845 PG 703
PB 122 PG 193

BREWER, RANDY V
DB 10254 PG 388
PB 137 PG 112

INSET A

SR 1838 DUNN RD VAR BST

SR 1832 MURPHY RD VAR BST

500' MEDIAN TAPER

WA

SITE 57

SEE INSET A

1 TONS CL B RIPRAP
W/5 SY GEOFAB

2GIB-NSF

15" RCP-III

GREU TL-3

15+00

20+00

25+00

+00.00

S 55°16'09"E

RETAIN EXISTING C/A FENCE

REMOVE

RETAIN

15" CSP
2 ELBOWS

2 TONS CL B RIPRAP
W/7 SY GEOFAB

LATERAL 4' BASE DITCH
SEE DETAIL J

Q10=7.94 cfs
V10=1.82 fps

Q10=10.30 cfs
V10=0.82 fps

TOE PROTECTION
W/CL B RIPRAP
SEE DETAIL H

SEE INSET B

EXISTING
2@9'x5' RCBC
TO BE REMOVED

1 TON CL B RIPRAP
W/5 SY GEOFAB

WCC

SITE 57

MWMP INVESTMENTS LLC
DB 5038 PG 486

EARTH PETROLEUM CORP
DB 6258 PG 173
PB 113 PG 11

BIJU, MINI; PATEL, MAMTA
DB 10032 PG 849
PB 130 PG 190

BIJU, MINI; PATEL, MAMTA
DB 8972 PG 661
PB 130 PG 190

INSET B

MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 9

FOR -YREV- PROFILE SEE SHT. 144

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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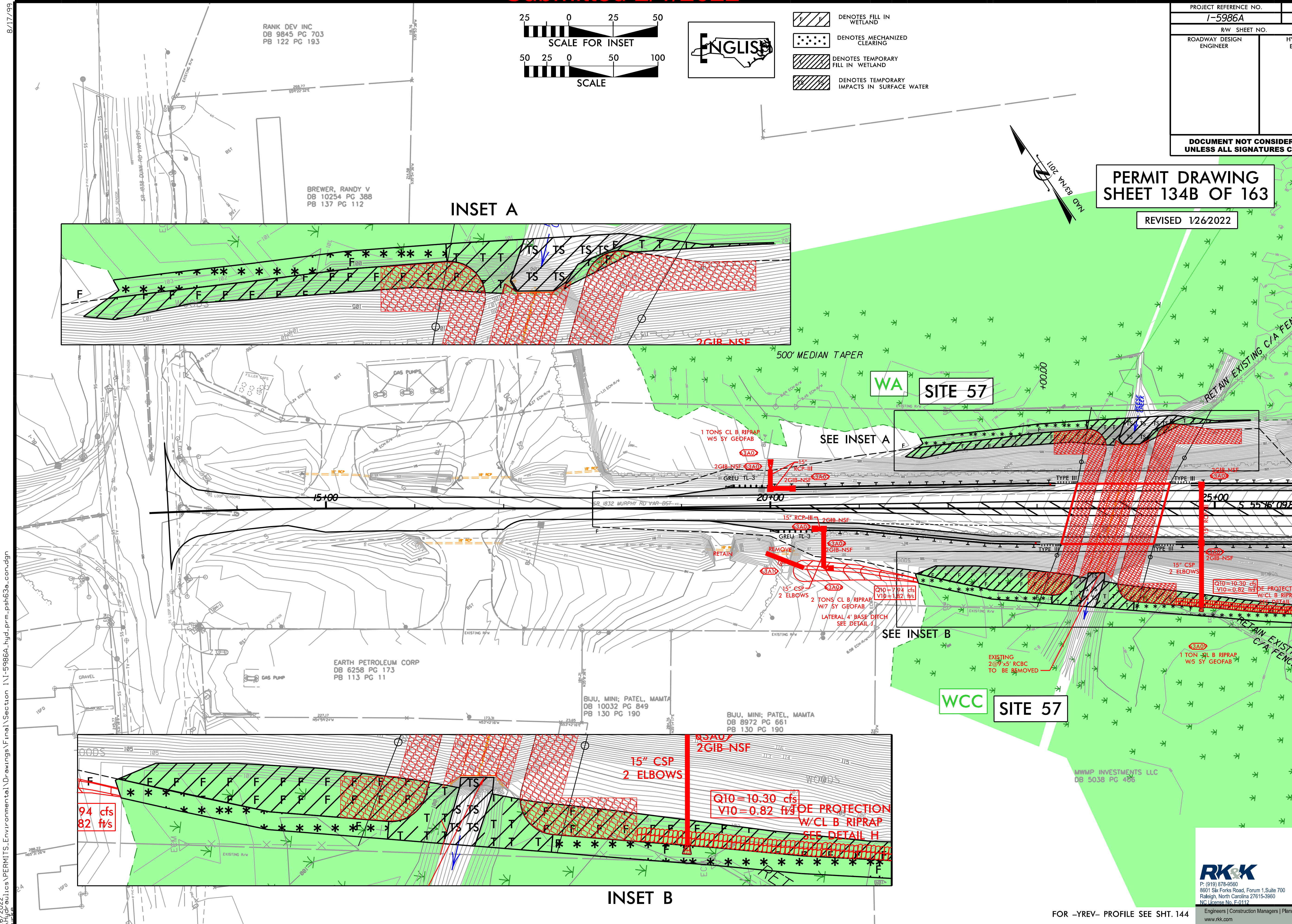
PROJECT REFERENCE NO.	SHEET NO.
I-5986A	63A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 134B OF 163

REVISED 1/26/2022



SCALE FOR INSET
SCALE
ENGLISH
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES TEMPORARY FILL IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
NAD 83/NA 2011
INSET A
INSET B
SEE INSET A
SEE INSET B
WA
SITE 57
WCC
SITE 57
500' MEDIAN TAPER
RETAIN EXISTING C/A FENCE
MATCHLINE -YREV- STA. 26+00.00 SEE SHEET 9
15" CSP 2 ELBOWS
Q10 = 10.30 cfs
V10 = 0.82 ft/s
TOE PROTECTION W/CL B RIPRAP SEE DETAIL H
2GIB-NSF
EXISTING 2@9'x5' RCBC TO BE REMOVED
1 TON CL B RIPRAP W/5 SY GEOFAB
BREWER, RANDY V DB 10254 PG 388 PB 137 PG 112
RANK DEV INC DB 9845 PG 703 PB 122 PG 193
EARTH PETROLEUM CORP DB 6258 PG 173 PB 113 PG 11
BIJU, MINI; PATEL, MAMTA DB 10032 PG 849 PB 130 PG 190
BIJU, MINI; PATEL, MAMTA DB 8972 PG 661 PB 130 PG 190
MWMP INVESTMENTS LLC DB 5038 PG 466

FOR -YREV- PROFILE SEE SHT. 144

FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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8/17/99

1/26/2022
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Submitted 2/1/2022

PROJECT REFERENCE NO. I-5986A | SHEET NO. 144

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

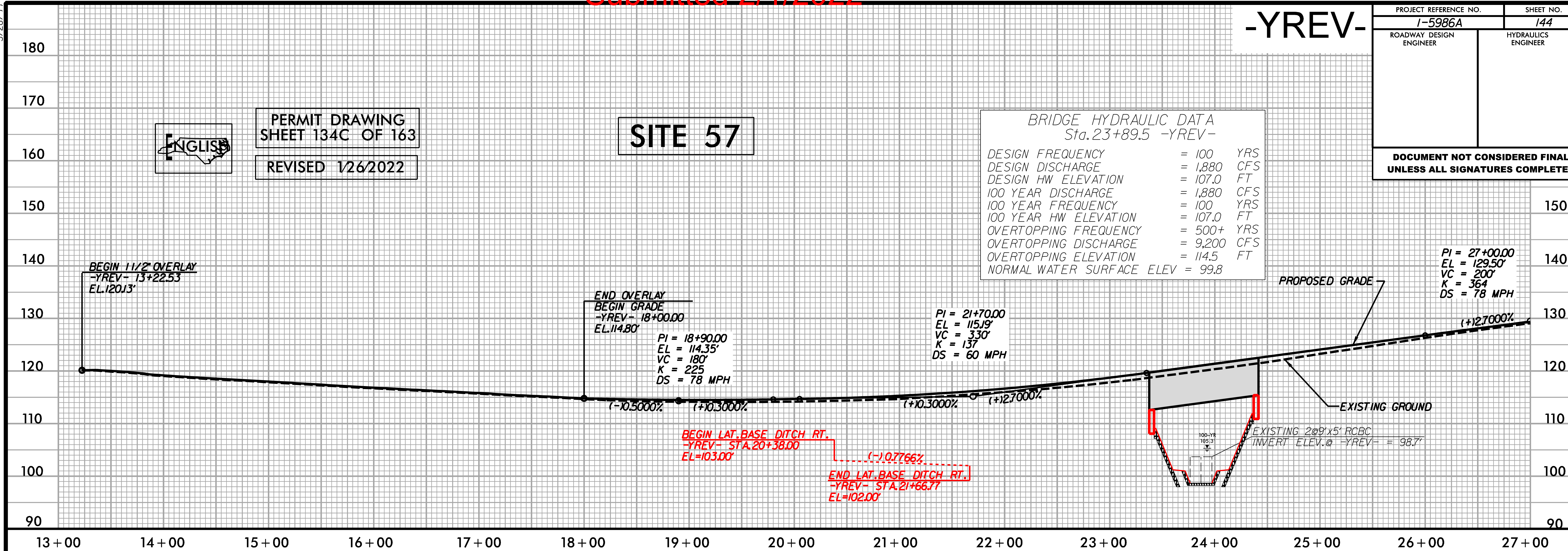
-YREV-

PERMIT DRAWING SHEET 134C OF 163

REVISED 1/26/2022

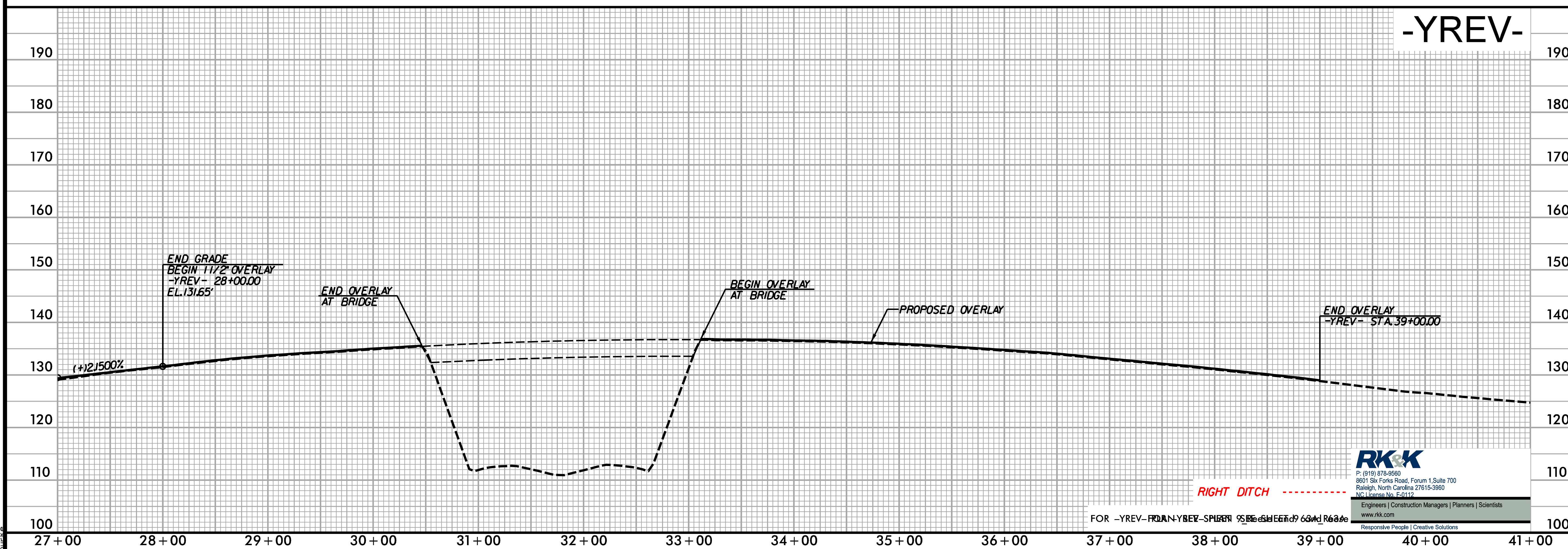
ENGLISH

SITE 57



BRIDGE HYDRAULIC DATA Sta.23+89.5 -YREV-		
DESIGN FREQUENCY	= 100	YRS
DESIGN DISCHARGE	= 1,880	CFS
DESIGN HW ELEVATION	= 107.0	FT
100 YEAR DISCHARGE	= 1,880	CFS
100 YEAR FREQUENCY	= 100	YRS
100 YEAR HW ELEVATION	= 107.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 9,200	CFS
OVERTOPPING ELEVATION	= 114.5	FT
NORMAL WATER SURFACE ELEV	= 99.8	

-YREV-



FOR -YREV- PLAN SEE SHEET 9 and 63A

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6/23/16

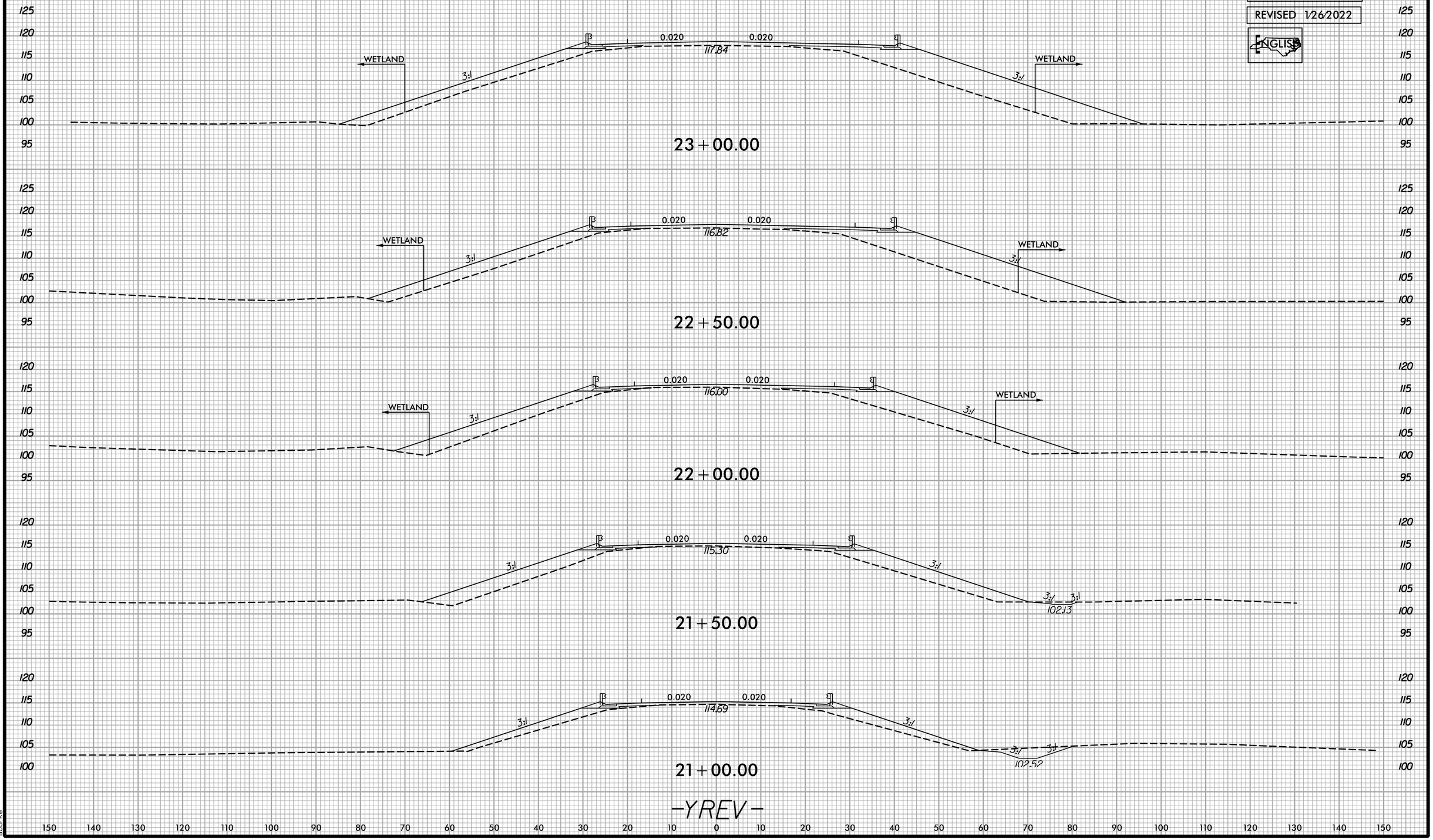
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	I-5986A	S1 X-283

SITE 57

PERMIT DRAWING
SHEET 134D OF 163

REVISED 1/26/2022

ENGLISH



1/27/2022
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REVISIONS

50 0 50 100
SCALE FOR INSET

100 0 100 200
SCALE

ENGLISH

DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

DENOTES TEMPORARY FILL IN WETLAND

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	70
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 149 OF 163

REVISED 1/26/2022

MATCHLINE -Y4- STA. 39+00.00 SEE SHEET 19

INSET A

WO

SITE 15

WN

SITE 16

PEMBROKE LN.

DESIGN SUBJECT TO CHANGE PENDING COORDINATION WITH THE DEVELOPER

REMOVE EXISTING PAVED SHOULDER AND WIDEN WITH FULL DEPTH PAVEMENT

MATCHLINE -YS1- STA. 105+00.00 SEE SHEET 20

WV

WCE

SITE 55

SITE 56

MATCHLINE -YSB- STA. 15+00.00 SEE SHEET 71

INSET A

EXISTING SBG

TOE PROTECTION W/CL B RIPRAP SEE DETAIL H

PLUG & FILL W/FLOWABLE FILL

REMOVE SYSTEM

PEMBROKE LN.

NOTE: ALL DRIVES ARE 16' WIDE WITH 10' RADII UNLESS OTHERWISE NOTED

PAVEMENT REMOVAL

CONCRETE TRUCK APRON

FOR –DR3– PROFILE SEE SHT. 152
FOR –Y4– PROFILE SEE SHT. 151
FOR –Y4A– PROFILE SEE SHT. 152
FOR –YS1T– PROFILE SEE SHT. 158
FOR –YSRT– PROFILE SEE SHT. 158
FOR –YSA– PROFILE SEE SHT. 159
FOR –YSB– PROFILE SEE SHT. 159
FOR –YSC– PROFILE SEE SHT. 160
FOR –YSRAB– PROFILE SEE SHT. 160
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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PROJECT REFERENCE NO.	SHEET NO.
I-5986A	70

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 150 OF 163

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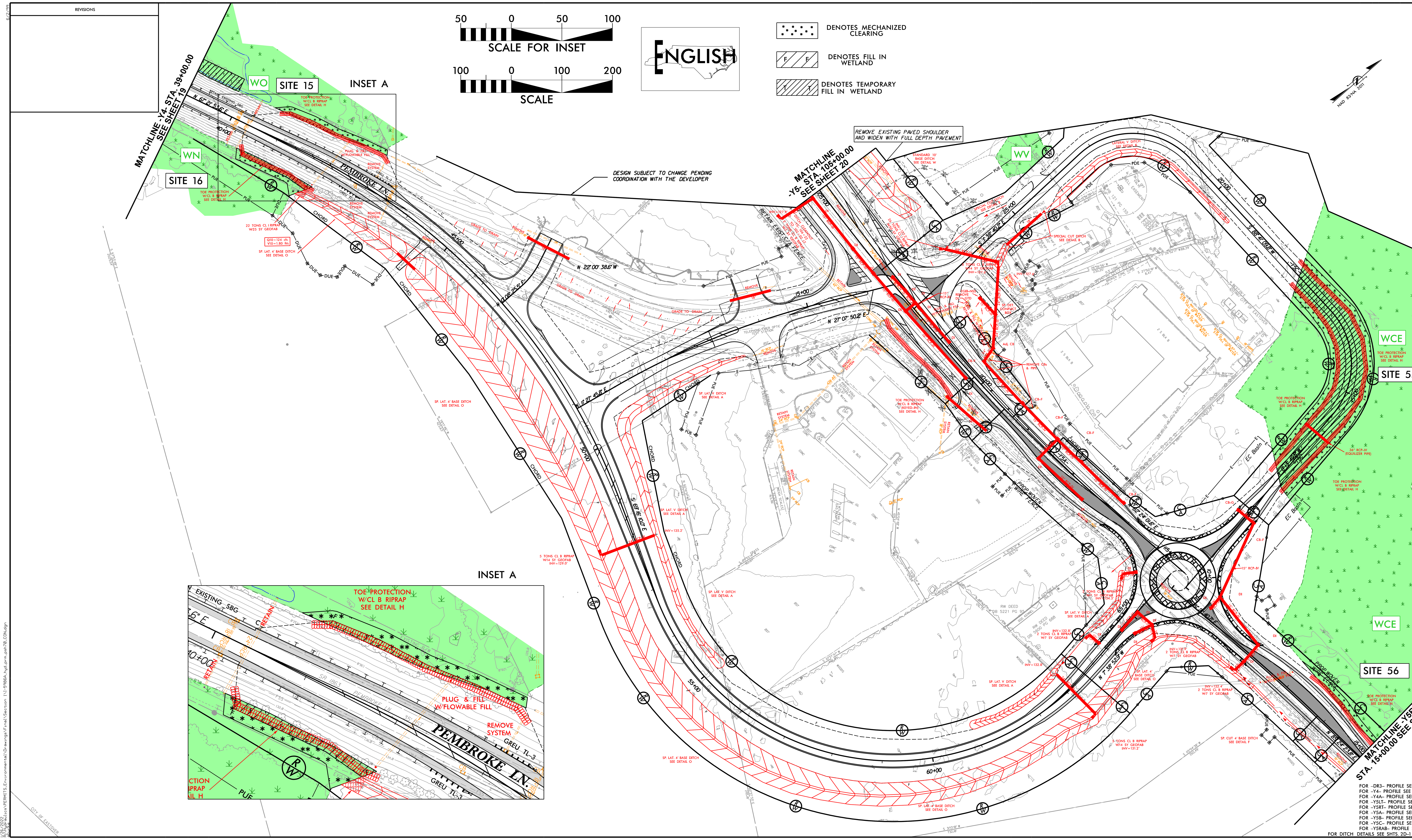

NOTE: ALL DRIVES ARE 16′ WIDE WITH 10′ RADII UNLESS OTHERWISE NOTED

PAVEMENT REMOVAL

CONCRETE TRUCK APRON

FOR -DR3- PROFILE SEE SHT. 152
FOR -Y4- PROFILE SEE SHT. 151
FOR -Y4A- PROFILE SEE SHT. 152
FOR -Y5LT- PROFILE SEE SHT. 158
FOR -Y5RT- PROFILE SEE SHT. 158
FOR -Y5A- PROFILE SEE SHT. 159
FOR -Y5B- PROFILE SEE SHT. 159
FOR -Y5C- PROFILE SEE SHT. 160
FOR -Y5RAB- PROFILE SEE SHT. 160
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	-LSBREV- 61+00 LT	Bank Stabilization: DC						0.001	0.001	8	20	
2	-LSBREV- 71+80 LT	Headwall, 66" RCP: SV-1, WCC	0.001	0.009				0.022	0.003	52	13	
	-LNBREV- 71+47 RT	Headwall, 66" WSP: SV-2, WCB	0.017	0.028				0.006	0.001	35	10	
	-YRPCREV- 22+50 RT	Roadway Fill: WCB	0.086			0.068						
3	-LSBREV- 89+48 LT	Pipe clean out: WA		0.003								
	-LSBREV- 94+48 LT	Pipe clean out, Roadway Fill: WA	0.001	0.003		0.048						
	-LNBREV- 90+00 RT	Roadway Fill: WB	0.067			0.066						
	-LSBREV- 90+77 LT/RT	RCBC Removal: WA, WB, Reese Creek	0.003	0.044					0.048		48	
	-LSBREV- 85+48 LT	42" RCP: WA	0.001	0.012								
4	-LSBREV- 99+00 LT	36" WSP: WA	0.005	0.025								
	-LSBREV- 101+10 LT	36" WSP: WC, SA	0.001	0.033				0.004	0.003	18	24	
5	-YINB- 33+00 RT	66" WSP: WB	0.009	0.034								
6	-YINB- 39+39 LT	30" WSP: WD	0.001	0.039								
	-YINB- 38+02 RT	30" WSP: WB	0.004	0.050								
7	-L- 92+02 - 100+05 LT	Roadway Fill: WH	0.231									
8	-L- 90+87 - 91+10 RT	Ditch: WE			0.024							
TOTALS:			**0.427**	**0.280**	**0.024**	**0.182**	**0.000**	**0.033**	**0.056**	**113**	**115**	**0**

REVISED 1/26/2022

NOTES:

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DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877

Submitted 2/1/2022

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
9	-L- 94+37 - 100+20 RT	Roadway Fill, Ditch: WF	0.135		0.021							
	-L- 100+28 RT	2 @ 36" RCP: SB						0.011	0.001	63	10	
10	-L- 108+26 - 114+34 LT	Roadway Fill: WI	0.076									
11	-L- 118+98 - 133+53 LT	Roadway Fill: WJ	0.531			0.045						
12	-L- 121+32 - 127+67 RT	Roadway Fill, Ditches: WL	0.204	0.066	0.020	0.143						
13	-L- 186+79 - 187+53 LT	Roadway Fill: WR	0.020			0.013						
14	-L- 192+15 - 193+26 LT	Ditch: WR		0.021		0.001						
15	-L- 190+05 RT	42" RCP: WO	0.004			0.006						
	-L- 192+05 RT	Roadway Fill: WO	0.001			0.006						
	-Y5RPC- 13+02 - 21+32 RT	Roadway Fill, 66" RCP: Baker Swamp 2, WO	0.136	0.034		0.165		0.018		60		
	-Y4- 37+50 LT	54" WSP: WO	0.001	0.169								
	-Y4- 40+69 to 43+01 LT	Prop Roadway Fill: WO	0.019			0.053						
TOTALS:			**1.127**	**0.290**	**0.041**	**0.432**	**0.000**	**0.029**	**0.001**	**123**	**10**	**0**

REVISED 1/26/2022

NOTES:

NC DEPARTMENT OF TRANSPORTATION
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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
16	-Y4- 36+25 RT	54" WSP: Baker Swamp 1, WN Structure Stabilization	0.006	0.098				0.004	0.013	15	34	
	-Y4- 40+32 to 42+06 RT	Roadway Fill: WN	0.035			0.042						
17	-L- 199+16 - 200+49 LT	Prop Roadway Fill - WQ	0.057			0.072						
	-L- 201+67 LT	Rip Rap Outlet Pad - WQ	0.002	0.009								
18	-L- 198+56 - 203+59 RT	Roadway Fill, 60" RCP, 66" RCP: Baker Swamp 3, WP	0.106	0.002		0.066		0.010	0.006	23	13	
	-Y5- 99+16 LT	66" WSP: Baker Swamp 3, WP Structure Stabilization	0.001	0.004				0.007	0.012	22	28	
19	-Y5LPD- 37+73 - 40+14 LT & RT	Roadway Fill: WCG*	0.857									
20	-Y5LPD- 22+86 - 24+53 LT & RT	Roadway Fill: WX	0.402			0.034						
21	-Y5RPD- 14+97 - 18+86 RT	Roadway Fill: WV	0.225			0.020						
22	-Y5FLY- 57+08 - 62+55 LT & RT & -Y5LPD- 18+96 - 21+42 LT & RT	Roadway Fill: WW**	2.663			0.176						
23	-L- 252+34	2 @ 8'x8' RCBC: SC-1, SC-2						0.063	0.006	270	38	
TOTALS:			**4.354**	**0.113**	**0.000**	**0.410**	**0.000**	**0.084**	**0.037**	**330**	**113**	**0**

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NOTES:

* Site 19: Area shown in impact table is a total take. Actual impact area is 0.772 acres.

** Site 22: Area shown in impact table is a total take inside -Y5LPD-. Actual impact area is 2.610 acres.

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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
24	-L- 304+15	3 @ 10'x8' RCBC, Roadway Fill, Ditch: SD-1, SD-2, WZ, WY	0.056	0.047	0.089	0.080		0.128	0.058	197	26	
	-L- 302+20 RT	Roadway Fill, Ditch: WY		0.004		0.002						
	-L- 306+80 LT	Ditch: WZ		0.010								
	-L- 307+30 RT	Ditch: WY		0.005								
25	-L- 355+00	10'x7' RCBC: SE-1, SE-2, WAB		0.002	0.003			0.017	0.003	135	25	
	-L- 357+75 RT	Ditch: WAB		0.008								
26	-Y7RPC- 17+51 - 24+28 Lt & RT	Roadway Fill: WAC	0.654	0.017		0.151						
27	-Y7RPA 16+97 RT - -L- 392+99 LT	Roadway Fill: WAF	0.284									
28	-SR3 - 34+13 - 35+87 LT	Roadway Fill: WAG	0.047	0.005		0.039						
29	-L- 405+65 LT	2 @ 48" RCP, Ditch: WAH		0.009	0.027							
30	-L- 422+50	12'x6' RCBC: SF, WAK, WAI	0.008	0.074	0.090			0.030	0.003	103	8	
	-L- 422+46 - 437+14 RT	Roadway Fill, Ditch: WAI	0.488		0.012	0.037						
	-L- 422+85 - 436+87 LT	Roadway Fill: WAK	0.624			0.015						
	-L- 425+50 LT	Ditch: WAK		0.014								
	-L- 436+72 - 439+41 LT	Rock Fill: PH						0.134	0.100			
	-L- 439+44 RT	Rock Fill: PI						0.005	0.004			
TOTALS:			**2.161**	**0.195**	**0.221**	**0.324**	**0.000**	**0.314**	**0.168**	**435**	**59**	**0**

NOTES:

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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
31	-L- 508+50 - 509+37 LT	Roadway Fill: WAM	0.042			0.019						
32	-L- 522+79 - 528+68 LT	Roadway Fill: WAN	0.081			0.080						
33	-L- 540+45	8'x8' Culvert: SG-1, SG-2, SG-3, WAP, WAQ		0.010				0.051	0.011	211	99	
34	-L- 574+64	10'x7' RCBC: SH-1, SH-2		0.025		0.002		0.031	0.004	174	30	
35	-L- 602+70 - 606+71 LT	Prop Roadway Fill: WAT	0.016			0.044						
	-Y9RPA- 15+85 RT	Ditch: WAT		0.005								
36	-L- 618+01 - 618+41 RT	Ditch: WAU				0.007						
37	-L- 622+64 to 626+94 LT	72" RCP, Roadway Fill: SI-1, SI-2, WAW, WAV	0.225	0.029		0.137		0.003	0.003	26	20	
		Structure Stabilization: SI-1						0.003		25		
38	-L- 640+26 to 640+69 RT	Ditch: WAX		0.006								
TOTALS:			**0.364**	**0.075**	**0.000**	**0.289**	**0.000**	**0.088**	**0.018**	**436**	**149**	**0**

NOTES:

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NC DEPARTMENT OF TRANSPORTATION
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I-5986A / I-5877

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WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
39	-L- 642+88	7'x7' RCBC: SJ-1, SJ-2						0.025	0.008	101	40	
40	-L- 660+20 RT	2 @ 30" RCP: WAY	0.001	0.001								
41	-L- 667+00 LT	Ditch: WAZ		0.011								
42	-L- 669+88 - 684+49 LT & RT	Bridge: Black River, WAZ *	0.385	0.020	0.043	0.207	0.038	0.003	0.266	16	246	
43	-L- 692+28 - 694+59 RT	Roadway Fill: WAZ	0.090			0.053						
44	-L- 695+05 LT	Ditch: WAZ		0.006								
45	-L- 731+00 LT	Roadway Cut: WBB				0.017						
46	-L- 735+80 LT	2 @ 42" RCP: WBC	0.004		0.002	0.028						
47	-L- 766+40	72" RCP: SK-1, SK-2						0.063	0.007	180	24	
48	-L- 403+25 LT	Plug & Fill Exist. 18" RCP: WAG		0.002								
TOTALS:			**0.480**	**0.040**	**0.045**	**0.305**	**0.038**	**0.091**	**0.281**	**297**	**310**	**0**

REVISED 1/26/2022

NOTES:
* Black River bridge bents
  - 2 sets of interior bents in the water
  - 23 piles per bent
  - 20" diameter piles= 2.2sqft permanent surface water impact per pile
  - **Total: 101.2sqft permanent surface water impact (included in the Site 42 number above)**

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49	-Y5- 45+24 LT	2 @ 8'x8' RCBC Ext: SY-2						0.009		15		
		Bank Stabilization						0.029	0.005	50	8	
50	-Y5- 51+81 - 56+63 LT	Roadway Fill: WCJ	0.011			0.043						
51	-Y5- 60+52 - 65+24 LT	Roadway Fill: WCI	0.114			0.109						
52	-Y5- 64+45 RT	Ditch: WT	0.002	0.006								
53	-Y5RPA- 44+43 - 54+38 LT	Roadway Fill: WU	0.267			0.108						
54A	-Y4- 16+88 LT	Pipe clean out: WS		0.008								
54B	-Y4- 19+00 LT	Pipe clean out: WS		0.005								
54C	-Y4- 21+67 LT	Pipe clean out: WS		0.005								
55	-Y5C- 12+74 - 17+83 LT & RT	Roadway Fill: WCE	0.635			0.220						
56	-Y5B- 12+86 - 16+54 LT	Roadway Fill: WCE	0.013			0.065						
57	-YREV- 24+05 LT/RT	Roadway Fill: WA, WCC, Reese Creek	0.226	0.066		0.139			0.045		78	
59	-SR5- 35+25 - 35+75 RT	Roadway Fill: WD				0.006						
TOTALS:			**1.268**	**0.090**	**0.000**	**0.690**	**0.000**	**0.038**	**0.050**	**65**	**86**	**0**

NOTES:

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NC DEPARTMENT OF TRANSPORTATION
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Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
TOTALS for 156:			**0.427**	**0.280**	**0.024**	**0.182**	**0.000**	**0.033**	**0.056**	**113**	**115**	**0**
TOTALS for 157:			**1.127**	**0.290**	**0.041**	**0.432**	**0.000**	**0.029**	**0.001**	**123**	**10**	**0**
TOTALS for 158:			**4.354**	**0.113**	**0.000**	**0.410**	**0.000**	**0.084**	**0.037**	**330**	**113**	**0**
TOTALS for 159:			**2.161**	**0.195**	**0.221**	**0.324**	**0.000**	**0.314**	**0.168**	**435**	**59**	**0**
TOTALS for 160:			**0.364**	**0.075**	**0.000**	**0.289**	**0.000**	**0.088**	**0.018**	**436**	**149**	**0**
TOTALS for 161:			**0.480**	**0.040**	**0.045**	**0.305**	**0.038**	**0.091**	**0.281**	**297**	**310**	**0**
TOTALS for 162:			**1.268**	**0.090**	**0.000**	**0.690**	**0.000**	**0.038**	**0.050**	**65**	**86**	**0**
GRAND TOTAL FOR PROJECT:			**10.181**	**1.083**	**0.331**	**2.632**	**0.038**	**0.677**	**0.611**	**1799**	**842**	**0**

NOTES:

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
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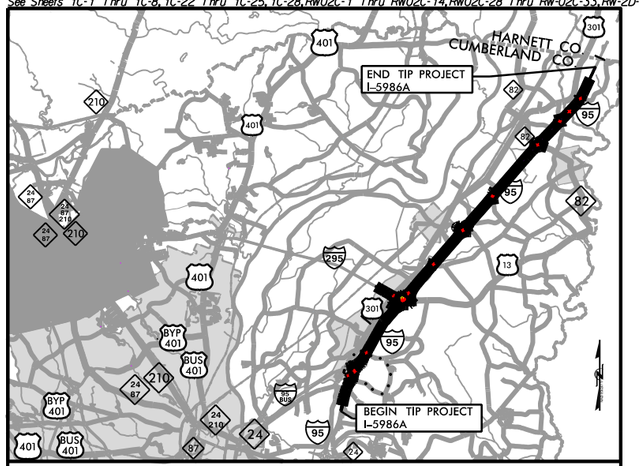
09/08/99

CONTRACT: C204283 TIP PROJECT: I-5986A

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See Sheets 1C-1 Thru 1C-8, 1C-22 Thru 1C-25, 1C-28, RW02C-1 Thru RW02C-14, RW02C-28 Thru RW-02C-33, RW-2D-1 Thru RW-02D-2 For Survey Control Sheets



VICINITY MAP (NTS) OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5986A	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
47532.2.2	NHP-0095(057)	R/W
47532.3.2	NHP-0095(057)	PE, UTIL., CONST.

LOCATION: *I-95 WIDENING FROM SOUTH OF SR 1832 (MURPHY ROAD- EXIT 55) TO SOUTH OF SR 1811 (BUD HAWKINS ROAD-EXIT 70)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, LIGHTING, SIGNING, ITS, CULVERTS & STRUCTURES*

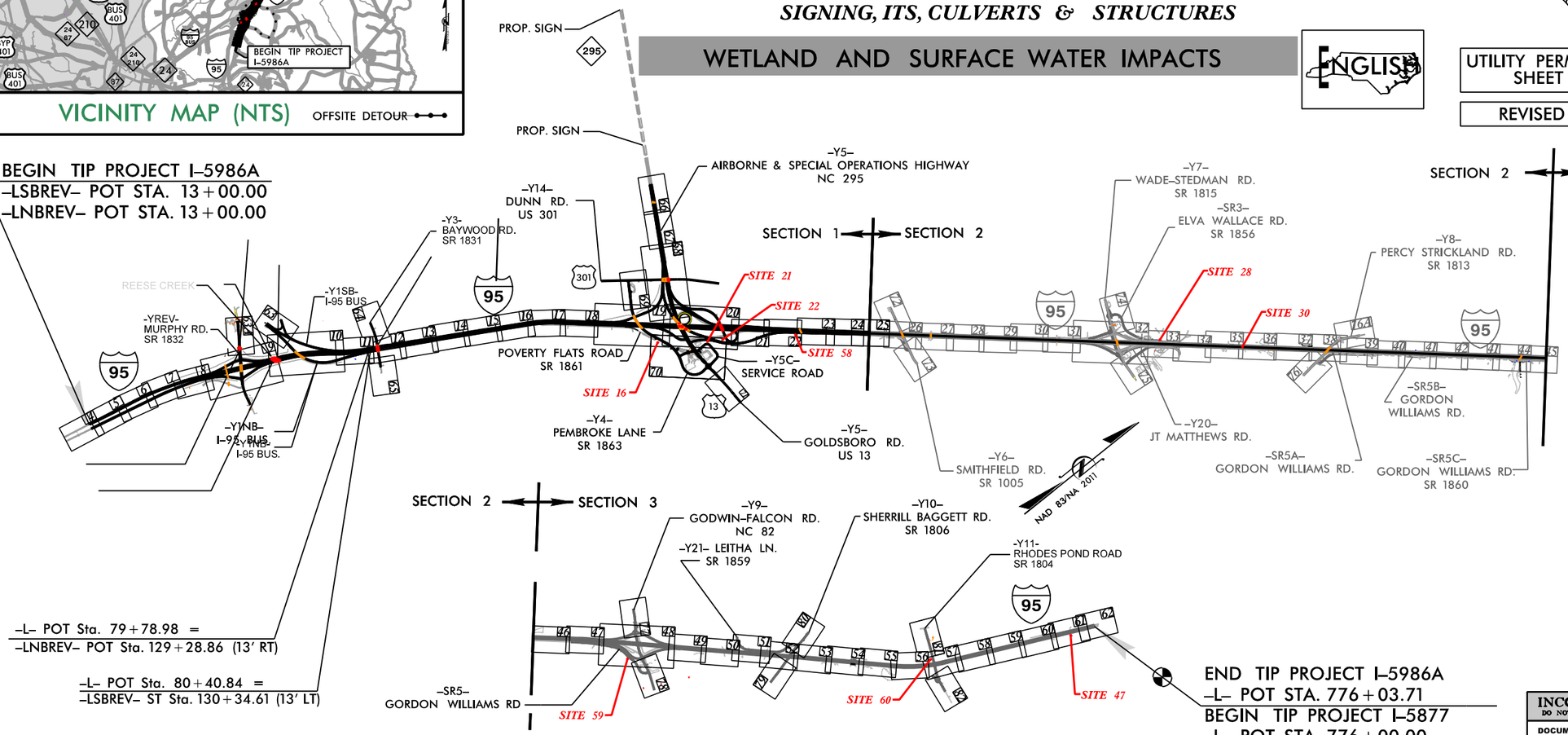
WETLAND AND SURFACE WATER IMPACTS

ENGLISH

UTILITY PERMIT DRAWING
SHEET 1 OF 18

REVISED 1/26/2022

BEGIN TIP PROJECT I-5986A
-LSBREV- POT STA. 13+00.00
-LNBREV- POT STA. 13+00.00



-L- POT Sta. 79+78.98 =
-LNBREV- POT Sta. 129+28.86 (13' RT)

-L- POT Sta. 80+40.84 =
-LSBREV- ST Sta. 130+34.61 (13' LT)

END TIP PROJECT I-5986A
-L- POT STA. 776+03.71
BEGIN TIP PROJECT I-5877
-L- POT STA. 776+00.00

NOTES
1. THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2018 = 56,700
ADT 2040 = 73,800
K = 55%
D = 7%
T = 18% *
V = 75 MPH

FUNC CLASS: INTERSTATE
* (TTST 13% + DUALS 5%)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-5986A.....15.331 MILES
LENGTH STRUCTURE TIP PROJECT I-5986A.....0.066 MILES
TOTAL LENGTH TIP PROJECT I-5986A.....15.397 MILES

NCDOT CONTACT

Michael Penney, PE
PROJECT ENGINEER - DESIGN-BUILD UNIT

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 SIX FORKS ROAD, FORUM 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

LETTING DATE:
AUGUST 20, 2019

Michael T. Merritt, PE
PROJECT ENGINEER

Anthony A. Houser, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

This document originally issued and sealed by Matthew L. Cook 27434 on 10-25-21. This medium shall not be considered a certified document. P.E.

SIGNATURE:

ROADWAY DESIGN ENGINEER

This document originally issued and sealed by Anthony A. Houser 18494 on 10-26-21. This medium shall not be considered a certified document. P.E.

SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

1/27/2022
R:\Hydraulics\PERMITS_Environmental\Drawings\Utilities\I-5986A_Hyd_UTL_TSH.dgn
dburke

UTILITY PERMIT DRAWING
SHEET 5A OF 18

REVISED 1/26/2022

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

MATCHLINE -L- STA. 239+00.00 SEE SHEET 21

MATCHLINE -Y5FLYREV- STA. 80+00.00 SEE SHEET 21

MATCHLINE -L- STA. 252+00.00 SEE SHEET 23

-Y5RPA- PC Sta. 10+00.00=
-L- POT Sta. 242+45.66 (61' LT)

-Y5FLY- CS Sta. 87+62.30

-Y5FLY- ST Sta. 89+62.30=
-L- POT Sta. 248+84.70 (73' RT)

NAD 83/NA 2011

G. C. TAYLOR, III
LIFE ESTATE RESERVED TO
G. C. TAYLOR JR
RACHEL M TAYLOR

DB 3586 PG 390
PB 72 PG 46

TART AND TART, INC
DB 4490 PG 310

CHORD

PROP. SIGN

PROP.WOVEN WIRE FENCE

REMOVE EXISTING FENCE

PROP.MEDIAN BARRIER

300' TAPER LANE

+50.00

+45.00
200.00', 240.00' LT

PDE

TIE FENCE TO CULVERT WING WALL

2 TONS CL B RIPRAP W/7 SY GEO FAB 2203

SPECIAL CUT 4' BASE DITCH SEE DETAIL F

LATERAL 4' BASE DITCH SEE DETAIL D

3 TONS CL B RIPRAP W/10 SY GEO FAB 2208

100' SHLD TAPER

PLUG & FILL W/ FLOWABLE FILL

2GIB-WSF 2201

2GIB-WSF 2202

REMOVE DI 15" RCP-IV

15" RCP-IV 2GIB-WSF 2206

REMOVE DI 18" RCP-IV

2GIB-WSF 2204

2GIB-WSF 2205

2GIB-WSF 2207

26' MEDIAN

240+00

245+00

250+00

-L-

N 40° 50' 46.3" E

SPECIAL CUT DITCH SEE DETAIL U

SPECIAL CUT DITCH SEE DETAIL B

SPECIAL CUT DITCH SEE DETAIL AA

4OTCB 2209

8 TONS CL B RIPRAP W/21 SY GEO FAB 2210

2 TON CL B RIPRAP W/7 SY GEOFAB 2212

LATERAL V DITCH SEE DETAIL K

2GIB-WSF 2211

GREU TL-3

PROP. SBG

40.00' TYP.

+42.30

WC

SEE INSET A

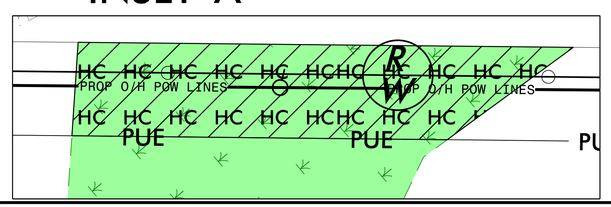
TART AND TART, INC
DB 4490 PG 310

SITE 58

G. C. TAYLOR, III
LIFE ESTATE RESERVED TO
G. C. TAYLOR JR
RACHEL M TAYLOR

DB 3586 PG 390
PB 72 PG 46

INSET A



25 0 25 50
SCALE FOR INSET

50 25 0 50 100
SCALE

ENGLISH

HC HC DENOTES HAND CLEARING

FOR –LLT_SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –LRT_SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –Y5RPA– PROFILE SEE SHT. 161
FOR –Y5FLY– PROFILE SEE SHT. 171
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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UTILITY PERMIT DRAWING
SHEET 5B OF 18

REVISED 1/26/2022

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

8/17/99

MATCHLINE -L- STA. 239+00.00 SEE SHEET 21

MATCHLINE -L- STA. 252+00.00 SEE SHEET 23

MATCHLINE -Y5FLYREV- STA. 80+00.00 SEE SHEET 21

-Y5RPA- PC Sta. 10+00.00=
-L- POT Sta. 242+45.66 (61' LT)

-Y5FLY- CS Sta. 87+62.30

-Y5FLY- ST Sta. 89+62.30=
-L- POT Sta. 248+84.70 (73' RT)

NAD 83/NA 2011

G. C. TAYLOR, III
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RACHEL M TAYLOR

DB 3586 PG 390
PB 72 PG 46

TART AND TART, INC
DB 4490 PG 310

CHORD

PROP. SIGN

PROP.WOVEN WIRE FENCE

REMOVE EXISTING FENCE

PROP.MEDIAN BARRIER

2 TONS CL B RIPRAP W/7 SY GEO FAB <2203>

SPECIAL CUT 4' BASE DITCH SEE DETAIL F

LATERAL 4' BASE DITCH SEE DETAIL D

3 TONS CL B RIPRAP W/10 SY GEO FAB <2208>

TIE FENCE TO CULVERT WING WALL

300' TAPER LANE

100' SHLD TAPER

PLUG & FILL W/ FLOWABLE FILL

15" RCP-IV

18" RCP-IV

REMOVE DI 15" RCP-IV

REMOVE DI 18" RCP-IV

2GIB-WSF <2201>

2GIB-WSF <2202>

2GIB-WSF <2204>

2GIB-WSF <2205>

2GIB-WSF <2206>

2GIB-WSF <2207>

2GIB-WSF <2221>

26' MEDIAN

240+00

245+00

250+00

85+00

N 40° 50' 46.3" E

40.00' TYP.

+42.30

+50.00

SPECIAL CUT DITCH SEE DETAIL U

4OTCB

8 TONS CL B RIPRAP W/21 SY GEO FAB <2210>

SPECIAL CUT DITCH SEE DETAIL B

SPECIAL CUT DITCH SEE DETAIL AA

2 TON CL B RIPRAP W/7 SY GEOFAB <2212>

LATERAL V DITCH SEE DETAIL K

GREU TL-3

PROP. SBG

CAT-1

PROP O/H POW LINES

PUE

WOODS

WC

SEE INSET A

SITE 58

INSET A

SCALE FOR INSET 25 0 25 50

SCALE 50 25 0 50 100

ENGLISH

HC HC DENOTES HAND CLEARING

FOR –LLT_SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –LRT_SEC1– PROFILE SEE SHTS. 103 AND 104
FOR –Y5RPA– PROFILE SEE SHT. 161
FOR –Y5FLY– PROFILE SEE SHT. 171
FOR DITCH DETAILS SEE SHTS. 2D-1 THRU 2D-2

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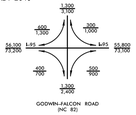

Submitted 2/1/2022

REVISIONS

ALL DRIVEWAY RADII 15′ UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

100 0 100 200
SCALE FOR INSET

200 0 200 400
SCALE

ENGLISH

▨ DENOTES HAND CLEARING

UTILITY PERMIT DRAWING
SHEET 11A OF 18

REVISED 1/26/2022

GRAPHIC SCALE
50 25 0 50 100
PLANS

FOR BRIDGE SKETCH SEE SHT. 2A–7

FOR CROSS–SECTION LAYOUT SEE SHTS. 2B–1 THRU 2B–3

▦ TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D–5 THRU 2D–6

FOR –L– PROFILES SEE SHTS. 129 THRU 131
FOR –Y9A– PROFILE SEE SHT. 187
FOR –Y9B– PROFILE SEE SHT. 187
FOR –Y9C– PROFILE SEE SHT. 188
FOR –Y9RPA– PROFILE SEE SHT. 189
FOR –Y9RPB– PROFILE SEE SHT. 190
FOR –Y9RPC– PROFILE SEE SHT. 191
FOR –Y9RPD– PROFILE SEE SHT. 192
FOR –RAB_Y9AB– PROFILE SEE SHT. 188
FOR –RAB_Y9BC– PROFILE SEE SHT. 188
FOR –SR5– PROFILE SEE SHTS. 196 & 197

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REVISIONS

TRAFFIC DIAGRAM
ADT 2018
ADT 2040
GOODWIN-FALCON ROAD (NC 82)

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

SCALE FOR INSET
100 0 100 200

SCALE
200 0 200 400

ENGLISH

DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	48
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

UTILITY PERMIT DRAWING
SHEET 11B OF 18

REVISED 1/26/2022

GRAPHIC SCALE
50 25 0 50 100
PLANS

MATCHLINE -Y9A- STA. 18+00.00 SEE SHEET 77

MATCHLINE -L- STA. 577+00.00 SEE SHEET 47

MATCHLINE -SR5- STA 214+95.00 SEE SHEET 47

MATCHLINE -L- STA. 605+00.00 SEE SHEET 49

MATCHLINE -Y9C- STA. 12+00.00 SEE SHEET 78

MATCHLINE -SR5- STA. 38+50.00 SEE SHEET 78

A

B

C

D

SITE 59

WD

SEE INSET A

SEE INSET B

INSET A

INSET B

EXISTING UNDERGROUND SPECTRUM CATV ABANDONED IN PLACE

EXISTING AERIAL SPECTRUM TO BE RELOCATED

FOR BRIDGE SKETCH SEE SHT. 2A-7

FOR CROSS-SECTION LAYOUT SEE SHTS. 2B-1 THRU 2B-3

TRUCK APRON

PAVEMENT REMOVAL

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

FOR -L- PROFILES SEE SHTS. 129 THRU 131
FOR -Y9A- PROFILE SEE SHT. 187
FOR -Y9B- PROFILE SEE SHT. 187
FOR -Y9C- PROFILE SEE SHT. 188
FOR -Y9RPA- PROFILE SEE SHT. 189
FOR -Y9RPB- PROFILE SEE SHT. 190
FOR -Y9RPC- PROFILE SEE SHT. 191
FOR -Y9RPD- PROFILE SEE SHT. 192
FOR -RAB_Y9AB- PROFILE SEE SHT. 188
FOR -RAB_Y9BC- PROFILE SEE SHT. 188
FOR -SR5- PROFILE SEE SHTS. 196 & 197

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6/7/2022
C:\Users\PERMITS Environments\Drawings\Utilities\I-5986A_hwd_UTL_pmk8_concept

Submitted 2/1/2022

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	57

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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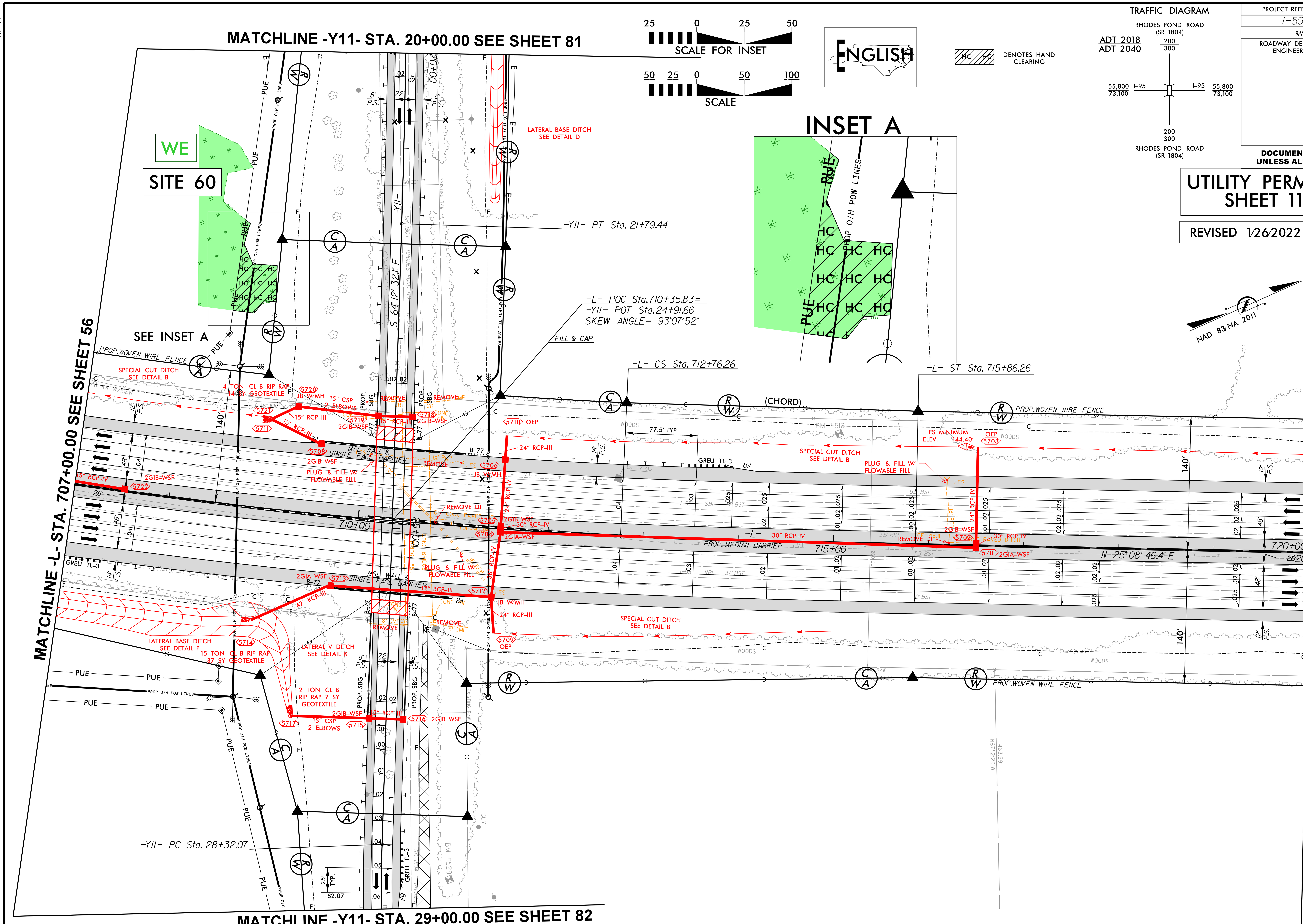
UTILITY PERMIT DRAWING SHEET 11C OF 18

REVISED 1/26/2022



MATCHLINE -Y11- STA. 20+00.00 SEE SHEET 81
MATCHLINE -Y11- STA. 29+00.00 SEE SHEET 82
MATCHLINE -L- STA. 707+00.00 SEE SHEET 56
MATCHLINE -L- STA. 720+00.00 SEE SHEET 58
SCALE FOR INSET
SCALE
ENGLISH
DENOTES HAND CLEARING
TRAFFIC DIAGRAM
RHODES POND ROAD (SR 1804)
ADT 2018
ADT 2040
I-95
55,800
73,100
200
300
INSET A
WE
SITE 60
SEE INSET A
LATERAL BASE DITCH SEE DETAIL D
-Y11- PT Sta. 21+79.44
-L- POC Sta. 710+35.83=
-Y11- POT Sta. 24+91.66
SKEW ANGLE= 93°07'52"
FILL & CAP
-L- CS Sta. 712+76.26
-L- ST Sta. 715+86.26
(CHORD)
PROP. WOVEN WIRE FENCE
SPECIAL CUT DITCH SEE DETAIL B
4 TON CL B RIP RAP 14 SY GEOTEXTILE
15" CSP 2 ELBOWS
15" RCP-III
2GIB-WSF
MSE WALL & SINGLE FACE BARRIER
PLUG & FILL W/ FLOWABLE FILL
REMOVE DI
JB W/MH
24" RCP-III
30" RCP-IV
2GIA-WSF
PROP. MEDIAN BARRIER
FS MINIMUM ELEV. = 144.40'
OEP
77.5' TYP
GREU TL-3
710+00
715+00
720+00
N 25°08' 46.4" E
S 64°12' 32.1" E
LATERAL BASE DITCH SEE DETAIL P
3 TON CL B RIP RAP 37 SY GEOTEXTILE
LATERAL V DITCH SEE DETAIL K
2 TON CL B RIP RAP 7 SY GEOTEXTILE
42" RCP-III
-Y11- PC Sta. 28+32.07
PROP O/H POW LINES
PUE
140'
NAD 83/NA 2011

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.

ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

FOR BRIDGE SKETCH SEE SHT. 2A-8

PAVEMENT REMOVAL

FOR -L- PROFILES SEE SHTS. 138 & 139

FOR -Y11- PROFILE SEE SHT. 194

FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

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Submitted 2/1/2022

PROJECT REFERENCE NO.	SHEET NO.
I-5986A	57

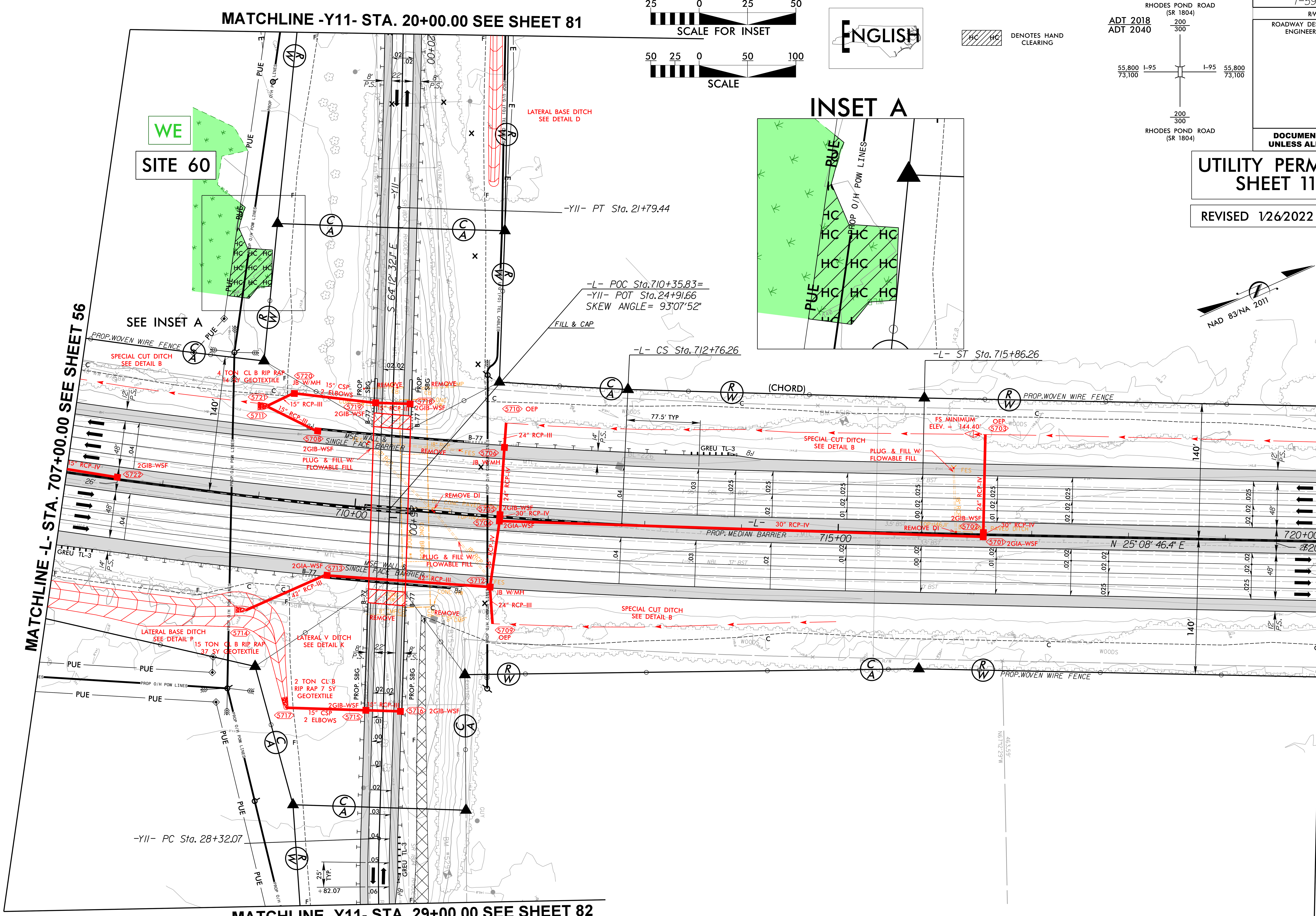
R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

UTILITY PERMIT DRAWING SHEET 11D OF 18

REVISED 1/26/2022



FOR BRIDGE SKETCH SEE SHT. 2A-8

PAVEMENT REMOVAL

FOR -L- PROFILES SEE SHTS. 138 & 139
FOR -Y11- PROFILE SEE SHT. 194
FOR DITCH DETAILS SEE SHTS. 2D-5 THRU 2D-6

ALL EXISTING ROW FENCE TO BE REMOVED UNLESS OTHERWISE LABELED.
ALL DRIVEWAY RADII 15' UNLESS OTHERWISE LABELED.

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Submitted 2/1/2022

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
16	-Y4- 32+97 - 33+91 RT & -Y4- 37+51 - 41+72 RT	Overhead power: WN*					0.373					
21	-Y5C- 23+55 - 24+62 RT	Overhead power: WV					0.072					
22	-Y5FLY- 60+09 - 62+54 RT	Overhead power: WW					0.204					
28	-L- 395+04 - 398+40 LT	Overhead power: WAG*					0.224					
30	-L- 424+05 - 426+04 LT	Overhead power: WAK*					0.058					
	-L- 430+62 - 435+09 LT	Overhead power: WAL*					0.196					
47	-L- 759+32 - 776+24 RT	Overhead power: WBD					0.092					
		Overhead power: WBE*					0.048					
58	-L- 250+03 - 251+64 RT	Overhead power: WC					0.101					
59	-SR5- 30+53 - 37+69 RT	Overhead power, UG telephone, waterline: WD					0.289					
60	-Y11- 21+84 - 22+78 RT	Overhead power: WE					0.050					
TOTALS*:			**0.000**	**0.000**	**0.000**	**0.000**	**1.707**	**0.00**	**0.00**	**0**	**0**	**0**

*Rounded totals are sum of actual impacts

NOTES:

* Denotes proposed 2' diameter power pole will be used at 3.1sqft per pole, permanent fill in wetlands

Site 16: 4 poles= 12.4sqft

Site 28: 1 pole= 3.1sqft

Site 30: 2 poles= 6.2sqft

Site 47: 1 pole= 3.1sqft

Total= 25sqft permanent fill in wetlands

REVISED 1/26/2022

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
8/21/2020
Cumberland / Harnett Counties
I-5986A / I-5877