

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

Is this supplemental information that needs to be sent to the Corps? *

- ☒ Yes
- ☐ No

Project Contact Information

Name:

NCDOT

Who is submitting the information?

Email Address: *

driffey@ncdot.gov

Project Information

Existing ID #: *

0

20170001 (no dashes)

Existing Version: *

0

1

Project Name: *

R-5705A - NC 55 from South of SR1532 to North of NC 210 in Harnett County

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#:

R-5705A

WBS#:

46377.1.2

(Applies to DOT projects only)

County (ies) *

Please upload all files that need to be submitted.

[Click the upload button or drag and drop files here to attach document](#)

R-5705A Revised Individual Harnett_Wake March 1 22.75MB
2022.pdf

[Only pdf or kmz files are accepted.](#)

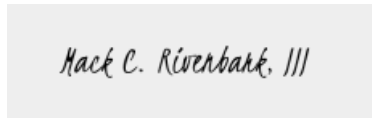
Describe the attachments or add comments:

A Phased Permit Application for R-5705, in Harnett & Wake Counties was submitted on 12/21/2021. R-5705A Permit Sites 31, 32, and 33 have been removed due to a design change to no longer proceed with the -Y7A- alignment. Permit drawings 63 to 69 of 71 have been removed and proposed impact tables have been revised to not include Permit Sites 31, 32, and 33. No other changes associated with the -Y7A- design change affects any other Permit Sites.

* ☒ 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: *



Submittal Date: 3/1/2022

[Is filled in automatically once submitted.](#)

R-5705A Application Revision Update

NCDOT has made a design change and no longer plans to proceed with the -Y7A- Alignment. The design change eliminates permit Sites 31, 32, and 33 from R-5705A. Wetland and stream impacts have been recalculated and reduced due to the removal of these three sites. Revised Tables 2, 8, 9, and 16 are included below for R-5705A (HUC 03030004).

SUMMARY OF IMPACTS

For R-5705A, proposed impacts to jurisdictional areas total 6.59 acres of permanent wetland impacts, 302 acres of temporary wetland impacts, 1,624 linear feet (lf) of permanent stream impacts (including 119 lf of bank stabilization), 374 linear feet of temporary stream impacts, and 6.79 acres of permanent surface water impacts. There will also be 0.15 acres of temporary fill in wetlands in hand clearing areas for erosion control devices.

Revised Table 2. R-5705A Jurisdictional Resources Impacts

Impact Type	Wetlands (ac)		Ponds (ac)	Streams (lf)		
	Perm	Temp		Perm.	Temp.	Bank Stab.
Cape Fear River Basin (HUC 03030004)	4.55	2.31	6.58	1,305	250	119
Cape Fear River Basin (HUC 03030006)	2.04	0.64	0.21	200	51	0

Impact revisions are denoted in bold font.

Revised Table 8. R-5705A Wetland Impacts

Permit Drawing Site Number	NRTR Label	Impact Type	Wetland Type	Permanent Impacts (ac.)	Temporary Impacts (ac.)
1	WCJ	Hand Clearing	Riparian		0.001
2	WCG	Fill	Riparian	0.02	
2	WCG	Excavation	Riparian	0.003	
2	WCG	Hand Clearing	Riparian		0.03
4	WCH	Fill	Riparian	0.22	
4	WCH	Excavation	Riparian	0.10	
4	WCH	Mechanized Clearing	Riparian	0.07	
4	WCH	Hand Clearing	Riparian		0.06
5	WCF	Fill	Riparian	0.05	
5	WCF	Hand Clearing	Riparian		0.01
9	WCE	Fill	Riparian	0.04	
9	WCE	Hand Clearing	Riparian		0.002
10	WCD	Fill	Riparian	0.09	
10	WCD	Excavation	Riparian	0.05	
10	WCD	Hand Clearing	Riparian	0.04	0.04
11	WCC	Fill	Riparian	1.11	
11	WCC	Excavation	Riparian	0.10	
11	WCC	Hand Clearing	Riparian		0.35
12	WCE	Fill	Riparian	0.09	0.91
12	WCE	Excavation	Riparian	0.04	
12	WCE	Hand Clearing	Riparian		0.09
13	WCA	Hand Clearing	Riparian		0.02
14*	WBZ	Fill	Riparian	0.004	
14*	WBZ	Hand Clearing	Riparian		0.02
15*	WBW	Fill	Riparian	0.97	
15*	WBW	Excavation	Riparian	0.34	
15*	WBW	Hand Clearing	Riparian		0.32
16*	WBX	Excavation	Riparian	0.005	
16*	WBX	Hand Clearing	Riparian		0.02
17*	WBV	Fill	Riparian	0.66	
17*	WBV	Excavation	Riparian	0.06	
17*	WBV	Hand Clearing	Riparian		0.17
19	WBU	Fill	Riparian	0.05	
19	WBU	Hand Clearing	Riparian		0.01
20	WBT	Fill	Riparian	0.08	
20	WBT	Excavation	Riparian	0.06	
20	WBT	Mechanized Clearing	Riparian	0.02	
20	WBT	Hand Clearing	Riparian		0.02
21	WBS	Fill	Riparian	0.06	
21	WBS	Excavation	Riparian	0.04	
21	WBS	Hand Clearing	Riparian		0.03
22	WBQ	Fill	Riparian	0.04	
22	WBQ	Excavation	Riparian	0.03	
22	WBQ	Hand Clearing	Riparian		0.005
23	WBP	Fill	Riparian	0.02	
23	WBP	Excavation	Riparian	0.02	
23	WBP	Hand Clearing	Riparian		0.02
24	WBN	Fill	Riparian	0.07	

Revised Table 8. R-5705A Wetland Impacts (cont.)

Permit Drawing Site Number	NRTR Label	Impact Type	Wetland Type	Permanent Impacts (ac.)	Temporary Impacts (ac)
24	WBN	Excavation	Riparian	0.05	
24	WBN	Mechanized Clearing	Riparian	0.03	
24	WBN	Hand Clearing	Riparian		0.17
25	WBK	Fill	Riparian	0.31	
25	WBK	Excavation	Riparian	0.06	
25	WBK	Mechanized Clearing	Riparian	0.03	
25	WBK	Hand Clearing	Riparian		0.16
26	WBM	Fill	Riparian	0.004	
26	WBM	Hand Clearing	Riparian		0.02
27	WBL	Fill	Riparian	0.18	
27	WBL	Excavation	Riparian	0.05	
27	WBL	Mechanized Clearing	Riparian	0.006	
27	WBL	Hand Clearing	Riparian		0.02
29	WBO	Fill	Riparian	0.35	
29	WBO	Excavation	Riparian		0.04
29	WBO	Mechanized Clearing	Riparian	0.05	
29	WBO	Hand Clearing	Riparian		0.04
30	WBJ	Fill	Riparian	0.96	
30	WBJ	Hand Clearing	Riparian		0.14
Utilities Site 1	WCE	Hand Clearing	Riparian		0.01
Utilities Site 2*	WBZ	Hand Clearing	Riparian		0.11
Utilities Site 3	WBN	Hand Clearing	Riparian		0.11
Total Impacts				6.59	2.95
HUC 03030004 Impact Total				4.55	2.31
Hand Clearing					1.40
Total Requiring Mitigation				4.55	
HUC03030006 Impact Total				2.04	
Hand Clearing					0.64
Total Requiring Mitigation				2.04	

* Impacts in HUC 03030006 **Impact revisions are denoted in bold font.**

Revised Table 9. R-5705A Surface Waters Impacts

Permit Drawing Site Number	NRTR Label	Impact Type	Permanent Surface Water Impacts		Temporary Surface Water Impacts	Stream Flow
			Ponds (ac)	Streams (lf)	Streams (lf)	
1	SAP	RCP			30	Intermittent
2	East Buies Creek	RCBC		34	10	Perennial
3	SAO	Fill		116	10	Perennial
4	East Buies Creek	RCBC		51		Perennial
4	East Buies Creek	Stabilization		49	10	Perennial
6	SAL	RCP		268	30	Perennial
7	SAM	RCP		30		Intermittent
8	PJ	RCP	0.95			N/A
11	Buies Creek	Fill		224	86	Perennial
15*	SAJ	RCP		102	35	Intermittent
15*	PT	RCP	0.21			N/A
16*	SAJ	RCP		57	9	Intermittent
18*	SAI	RCP		41	7	Intermittent
19	PS	Fill	0.23			N/A
20	SAH	RCP		204	31	Perennial
20	SAH	Stabilization		12	14	Perennial
24	SAG	RCBC		154	33	Perennial
25	PQ	RCBC	0.35			N/A
27	PO	RCBC	5.05			N/A
28	SAQ	Stabilization		19	15	Perennial
30	SAS	RCP		224	20	Intermittent
Total Impact:			6.79	1585	340	
HUC 03030004						
Ponds			6.58			
Bank Stabilization				80	39	
Intermittent Streams				254	50	
Perennial Streams				1051	200	
Total Requiring Mitigation				1305		
HUC 03030006						
Ponds			0.21			
Intermittent Streams				200	51	
Total Requiring Mitigation				200		

*Impacts in HUC 03030006 **Impact revisions are denoted in bold font.**

Compensatory Mitigation

NCDOT has acquired compensatory mitigation for unavoidable impacts from the NCDMS for R-5705A (Table 16). These impacts occur in HUCs 03030004 and 03030006. The total USACE stream and wetland mitigation requirements exceed the NCDWR stream and wetland mitigation requirements; therefore, NCDOT has requested that NCDMS provide compensatory mitigation for R-5705A permanent stream impacts and permanent riparian wetland impacts at a 2:1 ratio. The original mitigation proposed was for 6.87 acres of wetlands and 1,836 linear feet of streams. The revised mitigation proposed is for 6.59 acres

of wetland and 1,505 linear feet of streams. The proposed mitigation has been reduced for wetlands by 0.28 acres and 331 linear feet for streams.

Revised Table 16. R-5705A Proposed Compensatory Mitigation

Mitigation Type	Riparian Wetlands (ac)	Streams (lf)
Cape Fear River Basin (HUC 03030004)	4.55	1,305
Cape Fear River Basin (HUC 03030006)	2.04	200

Impact revisions are denoted in bold font.



North Carolina Department of Transportation

 Highway Stormwater Program
 STORMWATER MANAGEMENT PLAN
 FOR NCDOT PROJECTS


(Version 2.08; Released April 2018)

WBS Element: 46377.1.2 TIP No.: R-5705A County(ies): Harnett Page 1 of 2

General Project Information

WBS Element:	46377.1.2	TIP Number:	R-5705A	Project Type:	New Location	Date:	1/3/2021
NCDOT Contact:	Nicole Hackler, PE			Contractor / Designer:	Kimley-Horn & Associates		
	Address:	1000 Birch Ridge Drive 1582 Mail Service Center Raleigh NC 27699			Address:	One Bank of America Plaza 421 Fayetteville St, STE 600 Raleigh, NC 27601	
	Phone:	919-707-6029			Phone:	919-677-2000	
	Email:	nmhackler@ncdot.gov			Email:	dan.robinson@kimley-horn.com	
City/Town:	Angier			County(ies):	Harnett		
River Basin(s):	Cape Fear			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	4.364 miles	Surrounding Land Use:	Widening: Rural farmland; New location: Rural farmland, forests					
	Proposed Project			Existing Site				
Project Built-Upon Area (ac.)	51.2	ac.	14.3	ac.				
Typical Cross Section Description:	Widening Section: 4 lanes divided (2 lanes each way) with 4' paved shoulder -12' lane widths, 6:1 outside ditch front slopes with 4:1 back slopes. Raised grass median with 1'-6" curb and gutter, raised concrete islands for turn lanes. New location section: Same as above except 4'-10' varied paved shoulders			2 lanes with paved shoulder and grass ditches - 11' lane widths, 2-4' paved shoulder, 3:1 side slopes or flatter				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	27100	Year:	2045	Existing:	15900	Year:	2022

General Project Narrative: (Description of Minimization of Water Quality Impacts)	This is a Central managed project. Existing drainage patterns have been maintained to the best extent practical. -Direct discharges are avoided where possible. Some pipe outlets have been moved to outlet right before wetlands to avoid impacts. -3:1 slopes with guardrail used for all culvert crossings (the use of 2:1 slopes is not feasible due to Geotech conditions and slope stability). -Erosion control basins have been placed outside of all wetland boundaries. -Vegetated conveyances used throughout the project, many of which which meet swale standards, will have a positive water quality benefit. These were used instead of closed system conveyance to the maximum extent practical. -Excluded driveways/driveway fill from access points that were in wetland areas. -Hand clearing proposed at all wetland locations except for 2 areas where clean water diversions will impact the wetland. -Culvert barrels with sills will be back filled with native material. Native material will consist of material that is excavated from the stream bed or floodplain at the project site during culvert construction. Native material is subject to approval by the engineer and may be subject to permit conditions. -Riprap pads used at the outlet of any open pipe. -Where conditions dictated, ditches were stopped before wetland boundaries with a riprap pad at the end to slow down velocities. -Where a ditch was already running through a wetland and was pushed out in proposed condition, the proposed ditch was designed with slope reduced and base widths increased as much as possible to get velocities down close to or below 2 ft/s. -All box culverts have slopes of less than 1% so there is no need for sills. This should help reduce velocities at culvert outlets. -Bank stabilization and outlet improvements have been proposed at box culverts to minimize erosion. -The pond being drained at site 27 will have a proposed channel with constructed banks and floodplain to match pre-dam conditions and low flow stream conditions as much as possible.
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Waterbody Information

Surface Water Body (1):	UT to East Buies Creek		NCDWR Stream Index No.:	18-18-1-(2)		
NCDWR Surface Water Classification for Water Body	Primary Classification:	Water Supply IV (WS-IV)				
	Supplemental Classification:	None				
Other Stream Classification:						
Impairments:						
Aquatic T&E Species?	Comments:					
NRTR Stream ID:	SAU, SAP, SAO, SAL, SAM			Buffer Rules in Effect:	N/A	
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	N/A	Dissipator Pads Provided in Buffer?	N/A	
Deck Drains Discharge Over Water Body?	N/A	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

 (Version 2.08; Released April 2018) North Carolina Department of Transportation Highway Stormwater Program STORMWATER MANAGEMENT PLAN FOR NCDOT PROJECTS 										
WBS Element: 46377.1.2		TIP No.: R-5705A		County(ies): Harnett			Page 2 of 2			
Additional Waterbody Information										
Surface Water Body (2):		East Buies Creek		NCDWR Stream Index No.:		18-18-1-(2)				
NCDWR Surface Water Classification for Water Body			Primary Classification:		Water Supply IV (WS-IV)					
			Supplemental Classification:		None					
Other Stream Classification:										
Impairments:										
Aquatic T&E Species?		Comments:								
NRTR Stream ID:		East Buies Creek				Buffer Rules in Effect:		N/A		
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?				Dissipator Pads Provided in Buffer?		
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
		(If yes, provide justification in the General Project Narrative)								
Surface Water Body (3):		Buies Creek		NCDWR Stream Index No.:		18-18				
NCDWR Surface Water Classification for Water Body			Primary Classification:		Water Supply IV (WS-IV)					
			Supplemental Classification:		None					
Other Stream Classification:										
Impairments:										
Aquatic T&E Species?		Comments:								
NRTR Stream ID:		Buies Creek				Buffer Rules in Effect:		N/A		
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		N/A		Dissipator Pads Provided in Buffer?		
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
		(If yes, provide justification in the General Project Narrative)								
Surface Water Body (4):		UT to Black River		NCDWR Stream Index No.:		18-68-12-1a				
NCDWR Surface Water Classification for Water Body			Primary Classification:		Class C					
			Supplemental Classification:		Swamp Waters (Sw)					
Other Stream Classification:										
Impairments:										
Aquatic T&E Species?		Comments:								
NRTR Stream ID:		SAJ, SAI				Buffer Rules in Effect:		N/A		
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		N/A		Dissipator Pads Provided in Buffer?		
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
		(If yes, provide justification in the General Project Narrative)								
Surface Water Body (5):		UT to West Buies Creek		NCDWR Stream Index No.:		18-18-2-(1)				
NCDWR Surface Water Classification for Water Body			Primary Classification:		Class C					
			Supplemental Classification:		None					
Other Stream Classification:										
Impairments:										
Aquatic T&E Species?		Comments:								
NRTR Stream ID:		SAH, SAG, SAQ				Buffer Rules in Effect:		N/A		
Project Includes Bridge Spanning Water Body?		No		Deck Drains Discharge Over Buffer?		N/A		Dissipator Pads Provided in Buffer?		
Deck Drains Discharge Over Water Body?		N/A		(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)				
		(If yes, provide justification in the General Project Narrative)								

2/24/2022

CONTRACT:

ROW PLANS

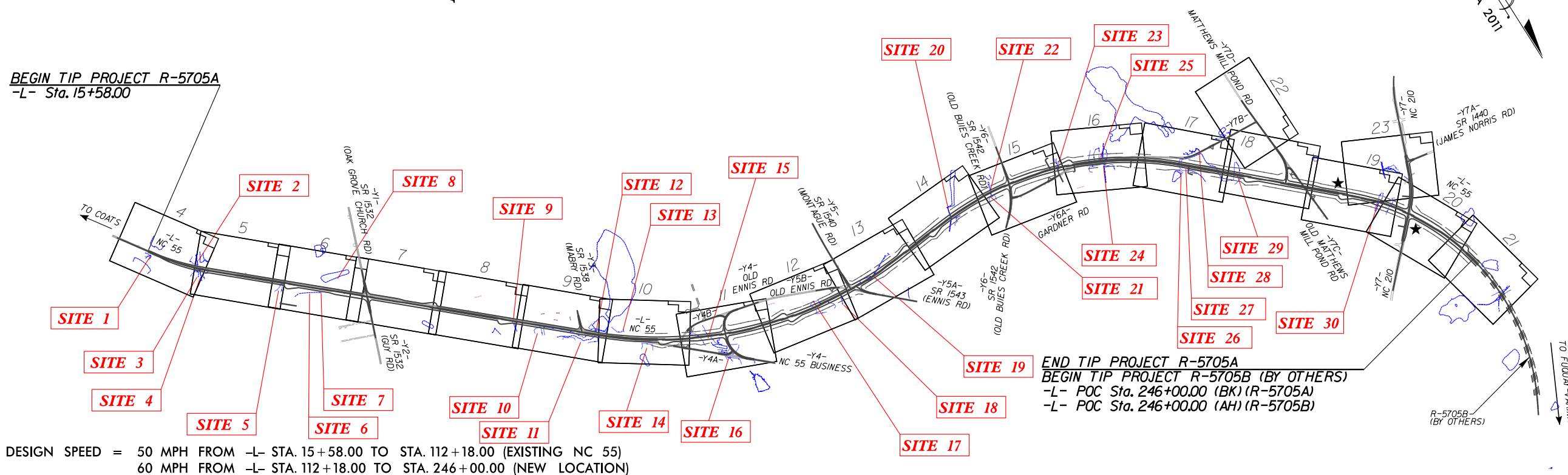
HARNETT COUNTY

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS AND CULVERTS

WETLAND & SURFACE WATER IMPACTS PERMIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5705A	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46377.1.2		P.E.	
46377.2.1		RIGHT-OF-WAY	
46377.2.5		UTILITIES	

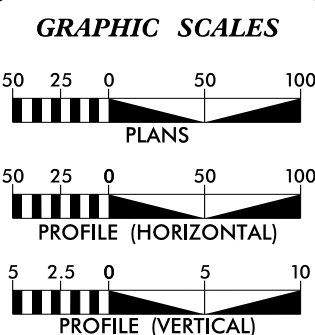
PERMIT DRAWING
SHEET 1 OF 64



** DESIGN SPEED = 50 MPH FROM -L- STA. 15+58.00 TO STA. 112+18.00 (EXISTING NC 55)
60 MPH FROM -L- STA. 112+18.00 TO STA. 246+00.00 (NEW LOCATION)

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO ONE DRIVEWAY PER PARCEL AND FULL-CONTROL AT U-TURN BULBS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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



DESIGN DATA

AADT 2022 =	15,900
AADT 2045 =	27,100
K =	9%
D =	60%
T =	4%*
** V =	50/60 MPH
* (TTST 1% + DUAL 3%)	

**FUNCTIONAL
CLASSIFICATION:
MINOR ARTERIAL
REGIONAL TIER**

LENGTH ROADWAY TIP PROJECT R-5705A = 4.364 MILES

LETTING DATE:
MARCH 2023

NICOLE M. HACKLER, P.E.
SENIOR PROJECT MANAGER
NCDOT PROJECT MANAGEMENT UNIT

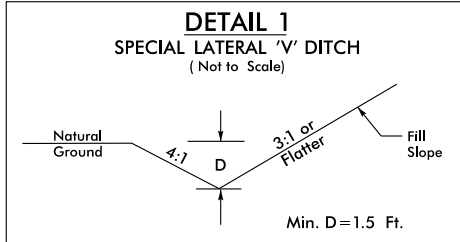
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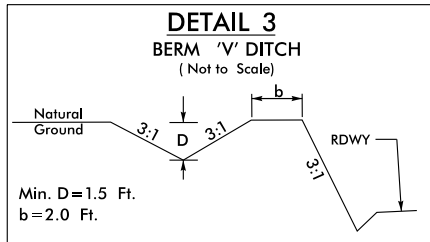
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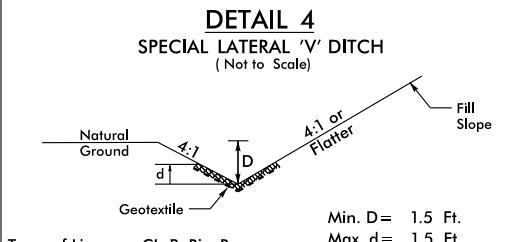




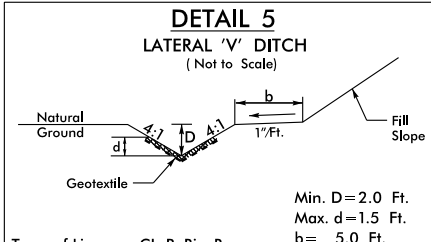
FROM STA. 21+00 TO STA. 23+00 -L- RT
FROM STA. 26+85 TO STA. 28+75 -L- LT
FROM STA. 26+70 TO STA. 31+00 -L- RT
FROM STA. 53+50 TO STA. 59+30 -L- RT
FROM STA. 53+09 TO STA. 57+00 -L- LT
FROM STA. 63+30 TO STA. 64+81 -L- RT
FROM STA. 68+50 TO STA. 72+50 -L- RT
FROM STA. 76+00 TO STA. 77+20 -L- RT
FROM STA. 74+50 TO STA. 76+75 -L- LT
FROM STA. 78+50 TO STA. 80+50 -L- RT
FROM STA. 91+50 TO STA. 94+50 -L- RT
FROM STA. 93+00 TO STA. 96+00 -L- LT
FROM STA. 104+50 TO STA. 109+50 -L- RT
FROM STA. 108+40 TO STA. 110+00 -L- LT
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FROM STA. 132+50 TO STA. 133+50 -L- LT
FROM STA. 133+00 TO STA. 134+80 -L- RT
FROM STA. 134+58 TO STA. 140+00 -L- LT
FROM STA. 136+20 TO STA. 142+50 -L- RT
FROM STA. 151+00 TO STA. 153+20 -L- LT
FROM STA. 164+00 TO STA. 164+80 -L- RT
FROM STA. 178+50 TO STA. 180+50 -L- RT
FROM STA. 182+50 TO STA. 186+20 -L- LT
FROM STA. 198+25 TO STA. 201+50 -L- LT
FROM STA. 233+35 TO STA. 234+40 -L- LT
FROM STA. 233+90 TO STA. 235+00 -L- RT
FROM STA. 216+74 TO STA. 221+50 -L- RT
FROM STA. 224+50 TO STA. 227+30 -L- RT
FROM STA. 13+55 TO STA. 14+05 -Y1- LT
FROM STA. 10+70 TO STA. 13+50 -Y2- RT
FROM STA. 19+76 TO STA. 21+73 -Y5- LT
FROM STA. 13+50 TO STA. 15+40 -Y6- LT
FROM STA. 24+70 TO STA. 27+45 -Y7- RT
FROM STA. 29+00 TO STA. 31+95 -Y7- LT



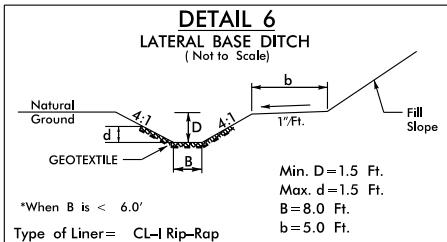
FROM STA. 16+28 TO STA. 17+55 -L- RT
FROM STA. 186+50 TO STA. 188+70 -L- RT
FROM STA. 190+00 TO STA. 190+50 -L- RT



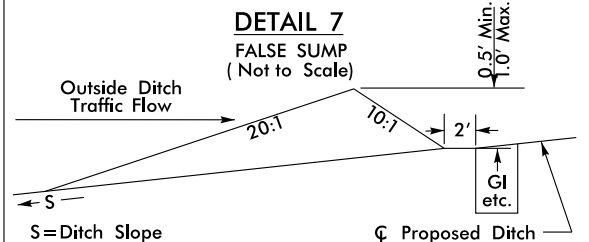
FROM STA. 90+50 TO STA. 91+50 -L- RT
FROM STA. 27+45 TO STA. 29+00 -Y7- LT



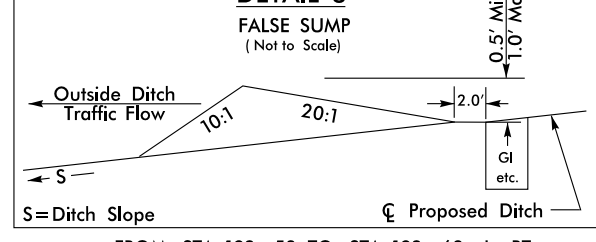
FROM STA. 24+06 TO STA. 26+30 -L- LT.



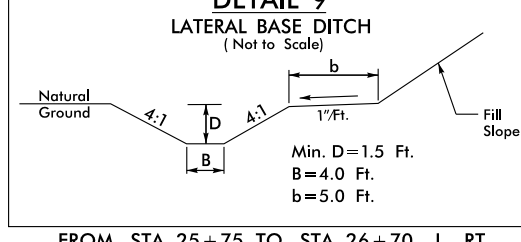
FROM STA. 23+00 TO STA. 24+88 -L- RT.



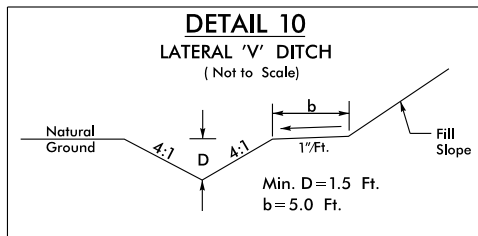
FROM STA. 47+33 TO STA. 47+48 -L- RT
FROM STA. 51+40 TO STA. 51+55 -L- RT
FROM STA. 50+00 TO STA. 50+15 -L- RT
FROM STA. 81+54 TO STA. 81+69 -L- LT
FROM STA. 83+54 TO STA. 83+69 -L- LT
FROM STA. 84+02 TO STA. 84+17 -L- LT
FROM STA. 86+04 TO STA. 86+19 -L- LT
FROM STA. 183+83 TO STA. 183+98 -L- RT



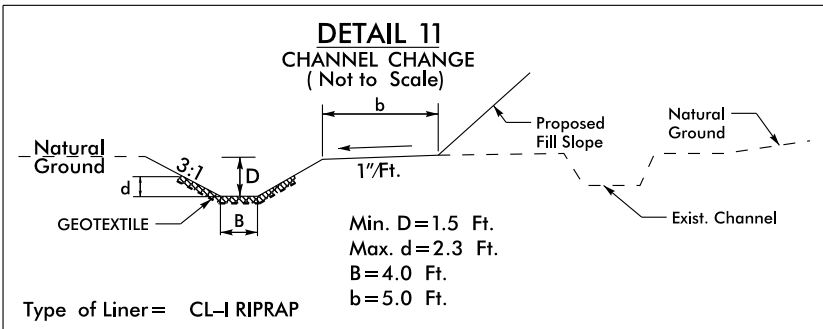
FROM STA. 192+53 TO STA. 192+68 -L- RT
FROM STA. 194+52 TO STA. 194+67 -L- RT
FROM STA. 207+33 TO STA. 207+48 -L- LT
FROM STA. 204+83 TO STA. 204+98 -L- LT
FROM STA. 11+24 TO STA. 11+39 -Y2- LT
FROM STA. 12+00 TO STA. 12+15 -Y2- LT



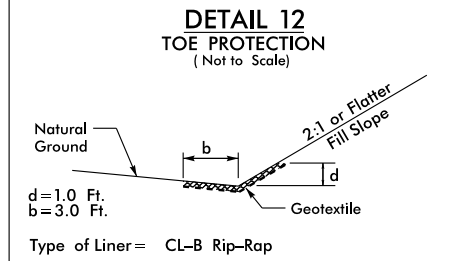
FROM STA. 25+75 TO STA. 26+70 -L- RT.



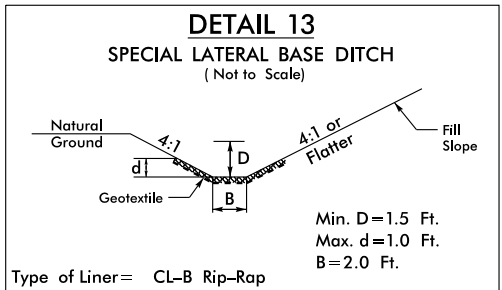
FROM STA. 153+20 TO STA. 154+75 -L- RT.



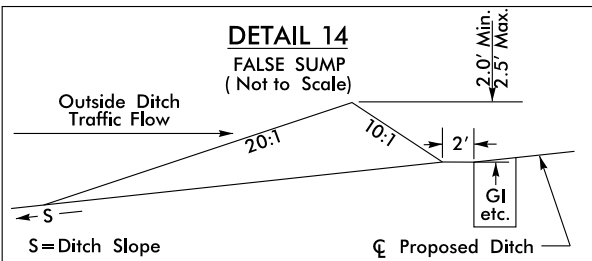
FROM STA. 42+50 TO STA. 43+50 -L- RT



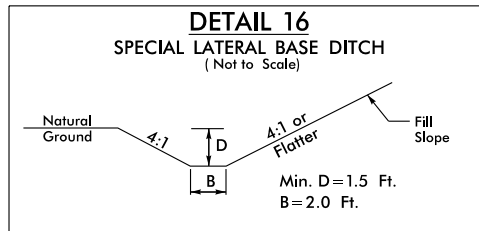
FROM STA. 44+00 TO STA. 45+68 -L- RT.
FROM STA. 161+07 TO STA. 162+43 -L- LT
FROM STA. 196+65 TO STA. 197+50 -L- RT
FROM STA. 227+95 TO STA. 230+45 -L- RT



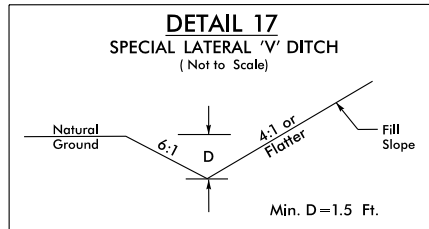
FROM STA. 72+00 TO STA. 73+02 -L- LT.



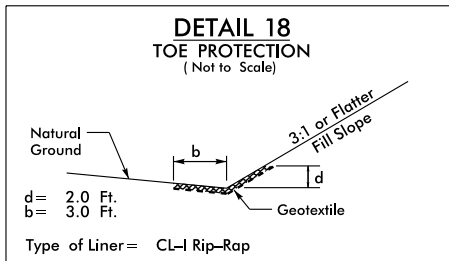
FROM STA. 77+22 TO STA. 77+82 -L- LT
FROM STA. 122+18 TO STA. 122+78 -L- LT
FROM STA. 124+85 TO STA. 125+45 -L- LT
FROM STA. 126+00 TO STA. 126+60 -L- LT



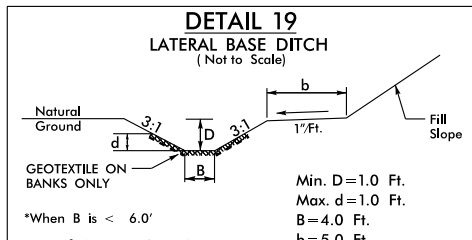
FROM STA. 72+50 TO STA. 73+25 -L- RT
FROM STA. 151+50 TO STA. 153+75 -L- RT
FROM STA. 154+05 TO STA. 156+50 -L- RT
FROM STA. 178+00 TO STA. 179+00 -L- LT



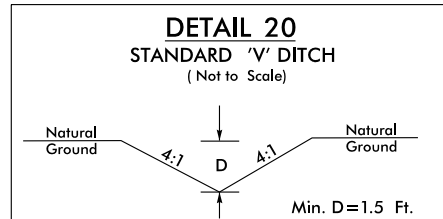
FROM STA. 82+50 TO STA. 85+00 -L- LT.
FROM STA. 146+50 TO STA. 148+50 -L- LT



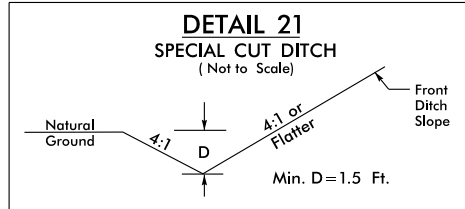
FROM STA. 88+15 TO STA. 90+40 -L- RT.
FROM STA. 90+48 TO STA. 90+58 -L- RT.



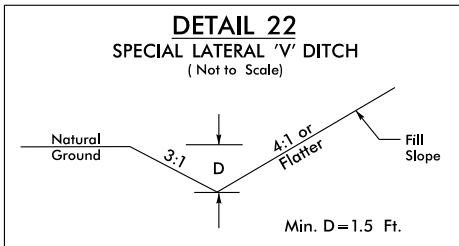
FROM STA. 85+50 TO STA. 88+05 -L- RT



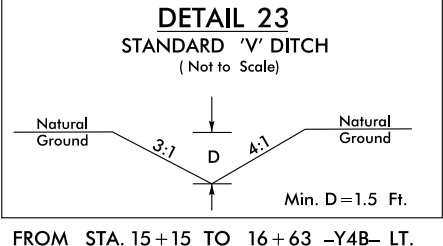
FROM STA. 100+25 TO STA. 101+50 -L- RT
AT STA. 64+81 RT



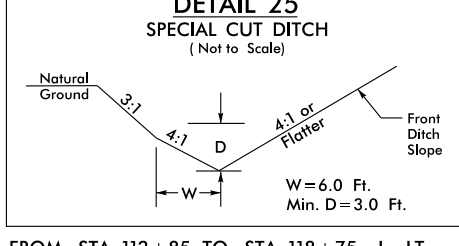
FROM STA. 103+50 TO STA. 104+50 -L- RT
FROM STA. 159+50 TO STA. 160+50 -L- RT
FROM STA. 177+50 TO STA. 178+50 -L- RT
FROM STA. 209+65 TO STA. 211+00 -L- RT
FROM STA. 23+50 TO STA. 24+50 -Y4- LT
FROM STA. 10+30 TO STA. 11+00 -Y6A- RT
FROM STA. 34+00 TO STA. 36+00 -Y7- LT



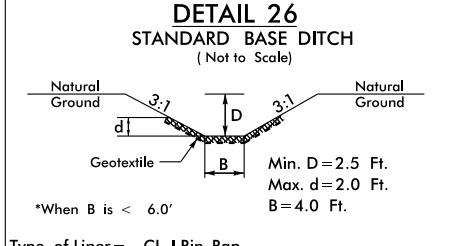
FROM STA. 130+09 TO STA. 132+50 -L- LT
FROM STA. 10+88 TO STA. 12+85 -Y3- RT
FROM STA. 10+88 TO STA. 12+95 -Y3- LT
FROM STA. 13+13 TO STA. 15+00 -Y4- LT
FROM STA. 16+00 TO STA. 16+63 -Y4B- LT
FROM STA. 10+65 TO STA. 13+50 -Y5A- RT
FROM STA. 17+65 TO STA. 22+44 -Y6- RT
FROM STA. 17+50 TO STA. 22+00 -Y6- LT



FROM STA. 15+15 TO STA. 16+63 -Y4B- LT.



FROM STA. 112+85 TO STA. 118+75 -L- LT.
FROM STA. 121+00 TO STA. 123+18 -L- LT.
FROM STA. 190+00 TO STA. 192+50 -L- RT.
FROM STA. 211+00 TO STA. 212+00 -L- RT.

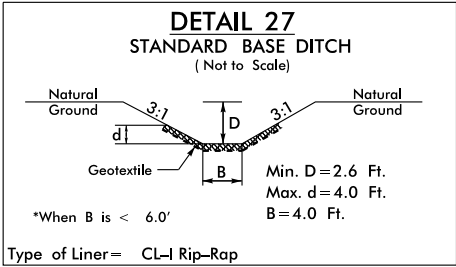


Type of Liner= CL-I Rip-Rap
AT STA. 45+00 -L- LT (EST. 70 L.F.)
AT STA. 108+30 -L- LT (EST. 90 L.F.)

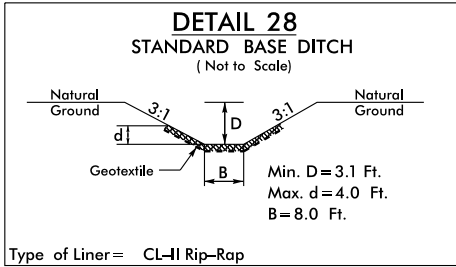
Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

**PERMIT DRAWING
SHEET 3 OF 64**

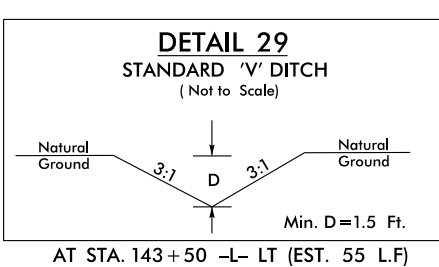
PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		2D-2	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



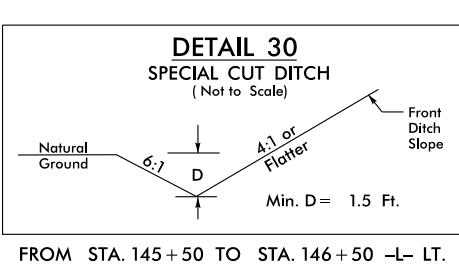
Type of Liner= CL-I Rip-Rap
AT STA. 22+30 -Y4- RT. (EST. 50 L.F.)



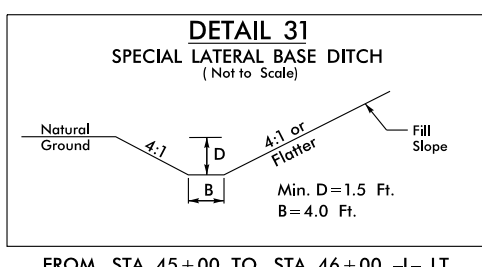
Type of Liner= CL-II Rip-Rap
AT STA. 19+25 -Y4A- RT. (EST. 50 L.F.)



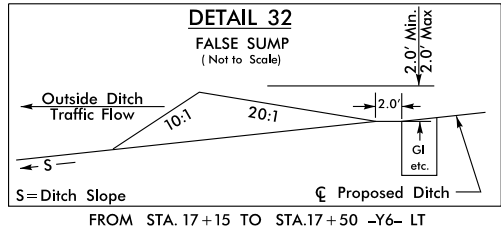
AT STA. 143+50 -L- LT (EST. 55 L.F.)
AT STA. 18+50 -Y6A- LT (EST. 50 L.F.)



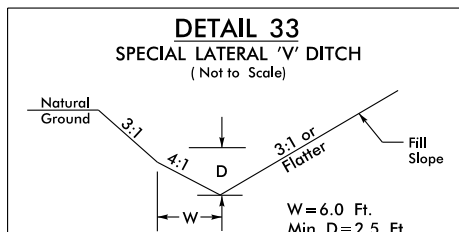
FROM STA. 145+50 TO STA. 146+50 -L- LT.



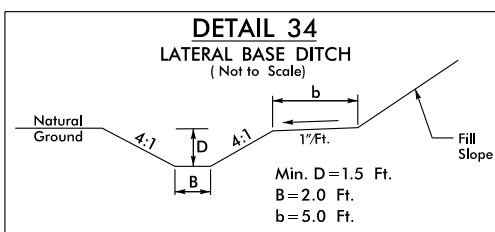
FROM STA. 45+00 TO STA. 46+00 -L- LT
FROM STA. 92+25 TO STA. 93+00 -L- LT
FROM STA. 160+50 TO STA. 161+80 -L- RT
FROM STA. 161+80 TO STA. 164+00 -L- RT
FROM STA. 173+00 TO STA. 173+65 -L- RT
FROM STA. 202+50 TO STA. 203+80 -L- LT
FROM STA. 203+80 TO STA. 205+00 -L- LT
FROM STA. 10+50 TO STA. 13+15 -Y1- LT
FROM STA. 22+00 TO STA. 23+50 -Y4- LT



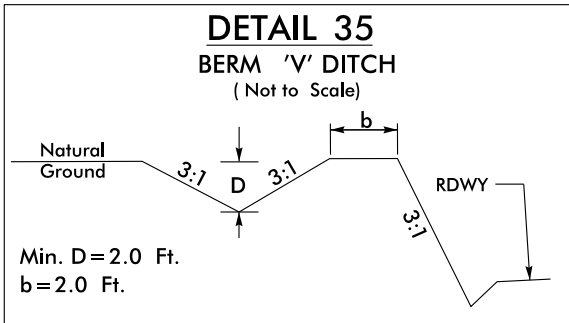
FROM STA. 17+15 TO STA. 17+50 -Y6- LT



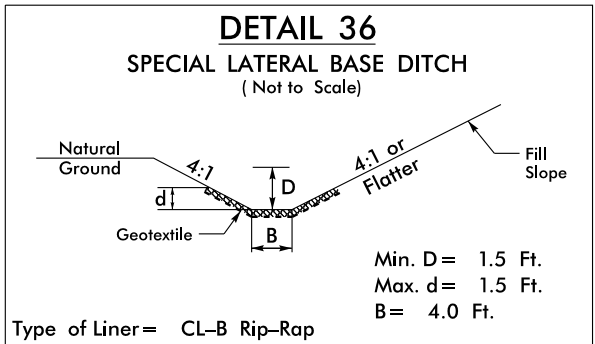
FROM STA. 166+10 TO STA. 170+00 -L- RT
FROM STA. 194+50 TO STA. 195+50 -L- RT



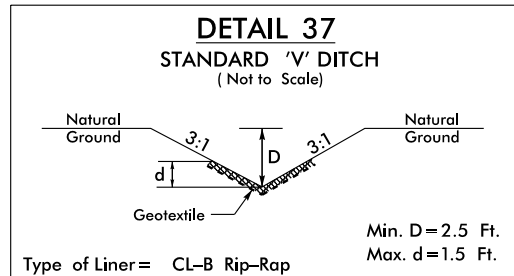
FROM STA. 179+00 TO STA. 181+50 -L- LT.



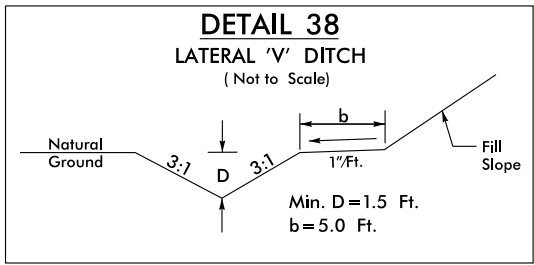
FROM STA. 190+50 TO STA. 192+50 -L- RT.



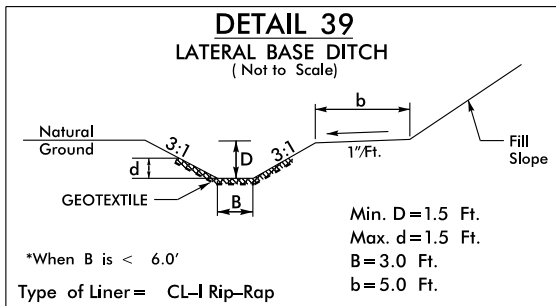
Type of Liner= CL-B Rip-Rap
FROM STA. 20+00 TO STA. 22+00 -Y4- LT



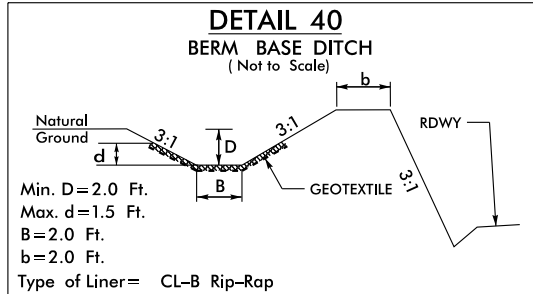
FROM -L- STA. 132+50 LT. TO
-Y5B- STA. 13+90 LT. (EST. 64 L.F.,
HEAD DITCH THROUGH -Y5B-)



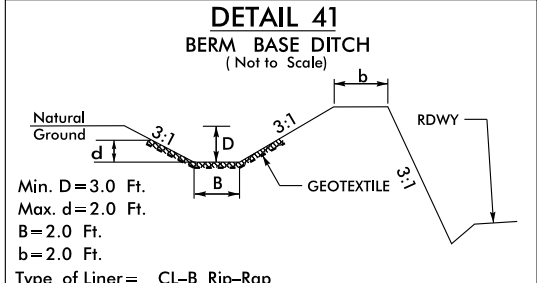
FROM STA. 132+10 TO STA. 133+00 -L- RT



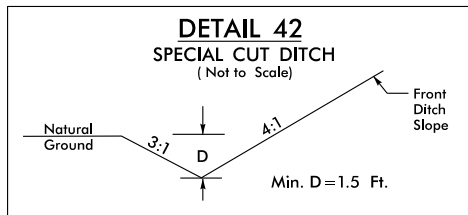
FROM STA. 197+50 TO STA. 198+90 -L- RT



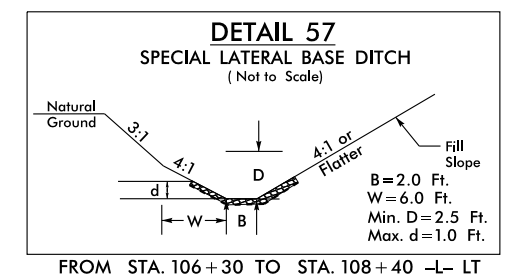
FROM STA. 205+00 TO STA. 205+50 -L- LT.
FROM STA. 208+50 TO STA. 211+30 -L- LT.



FROM STA. 207+50 TO STA. 208+50 -L- LT.



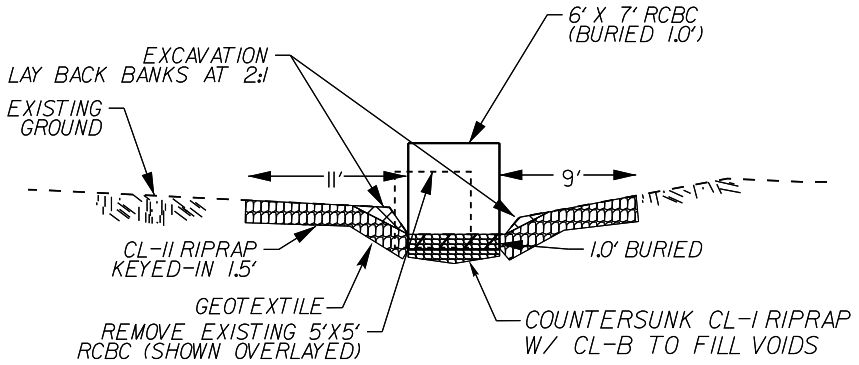
FROM STA. 18+50 TO STA. 19+20 -L- RT
FROM STA. 18+50 TO STA. 19+20 -L- LT



PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		2D-4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
</			

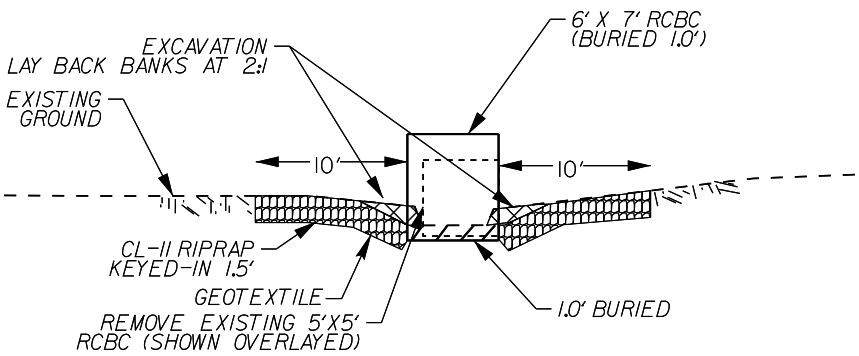
PERMIT DRAWING
SHEET 5 OF 64

DETAIL 58 TYPICAL OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



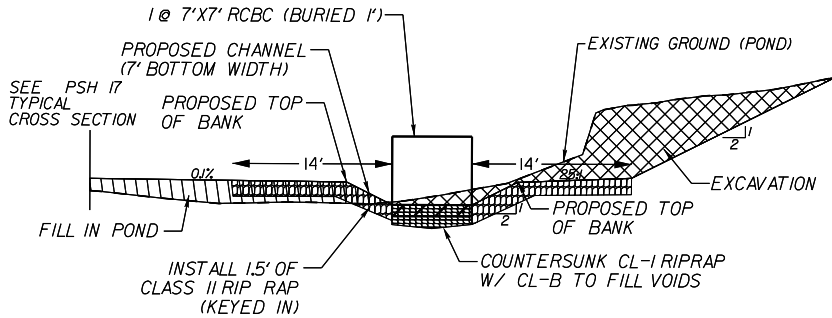
APPROX. STA. 24+10 -L- LT

DETAIL 59 TYPICAL - INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE

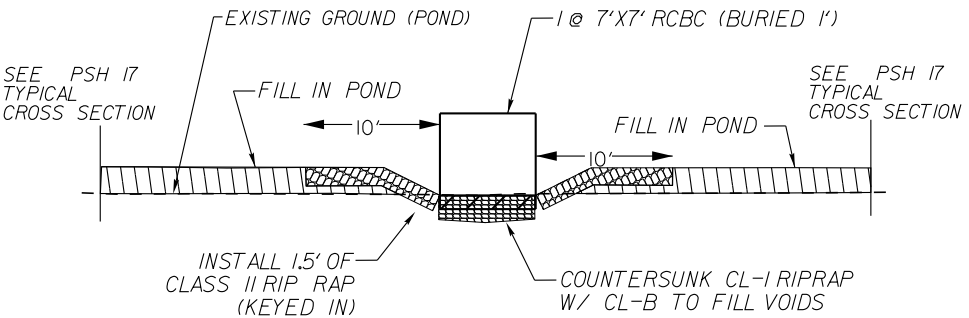


APPROX. STA. 24+70 TO 25+00 -L- RT

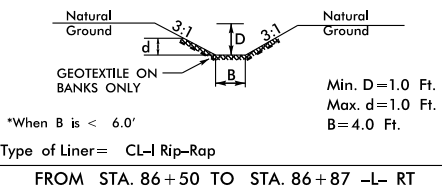
DETAIL 60 TYPICAL OUTLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE



DETAIL 61 TYPICAL - INLET CHANNEL IMPROVEMENTS
LOOKING DOWNSTREAM
NOT TO SCALE

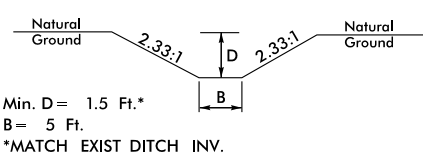


DETAIL 62
STANDARD BASE DITCH
(Not to Scale)



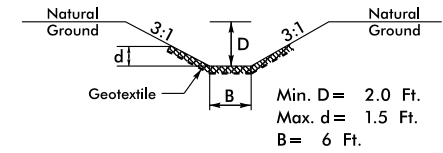
FROM STA. 86+50 TO STA. 86+87 -L- RT

DETAIL 63
STANDARD BASE DITCH
(Not to Scale)



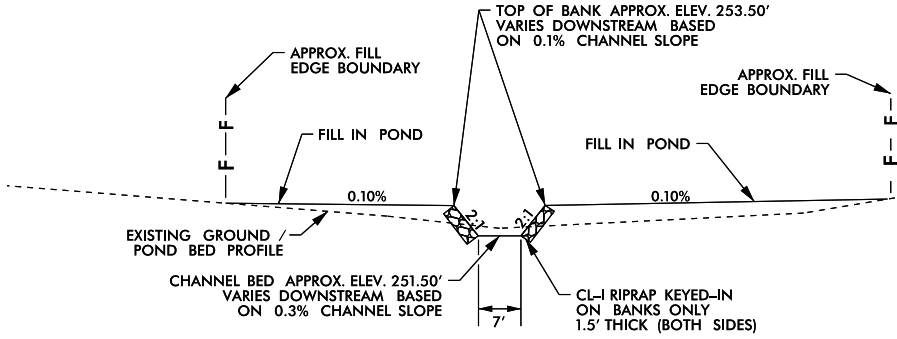
STA. 174+10 -L- LT (EST. 78 L.F.)

DETAIL 64
STANDARD BASE DITCH
(Not to Scale)



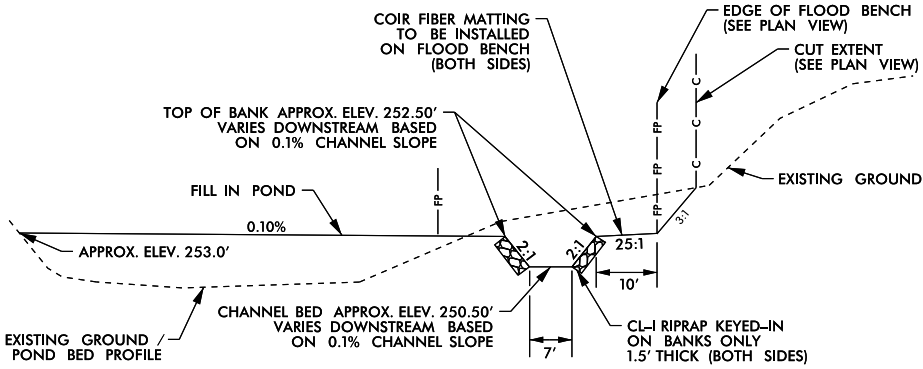
STA. 162+53 -L- LT (EST. 73 L.F.)

DETAIL TYPICAL SECTION P1



NOT TO SCALE

DETAIL TYPICAL SECTION P2



NOT TO SCALE

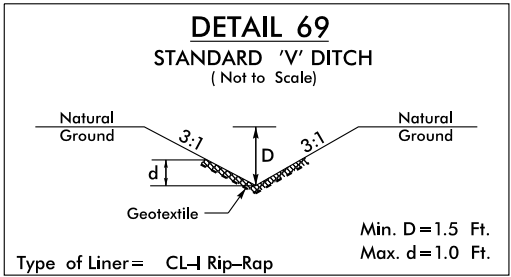
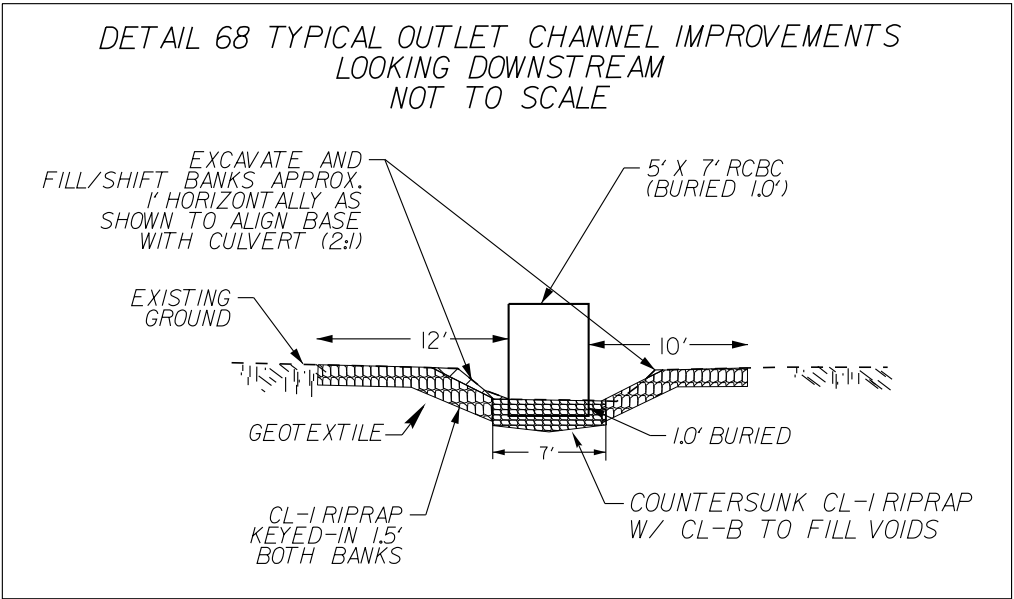
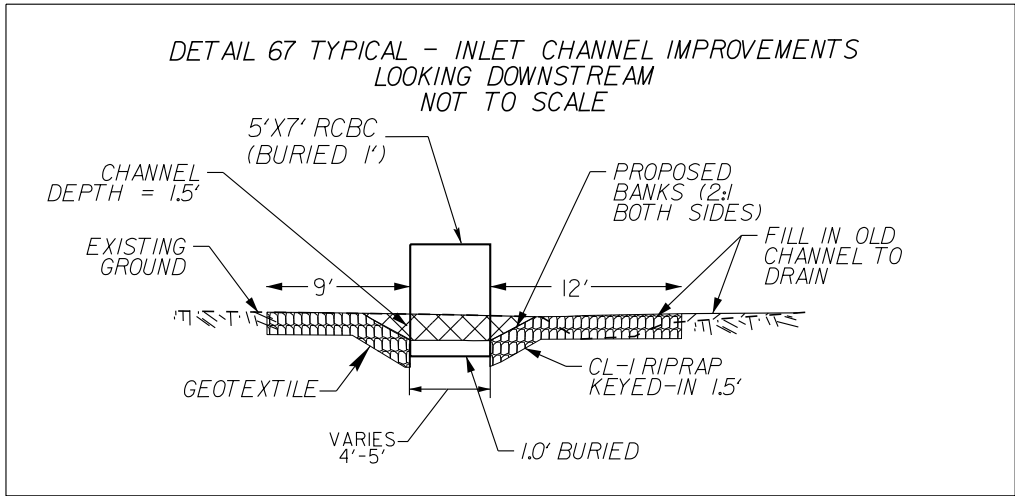
REVISIONS

5/14/99

12/30/2021

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	R-5705A		2D-5	
	R/W SHEET NO.			
	ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
	DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

PERMIT DRAWING
SHEET 6 OF 64



FROM STA. 20+80 TO STA. 23+30 -Y7B- LT
(EQUATES TO: -L- LT. STA. 195+00 TO STA. 197+26)

REVISIONS

5/14/99

12/30/2021

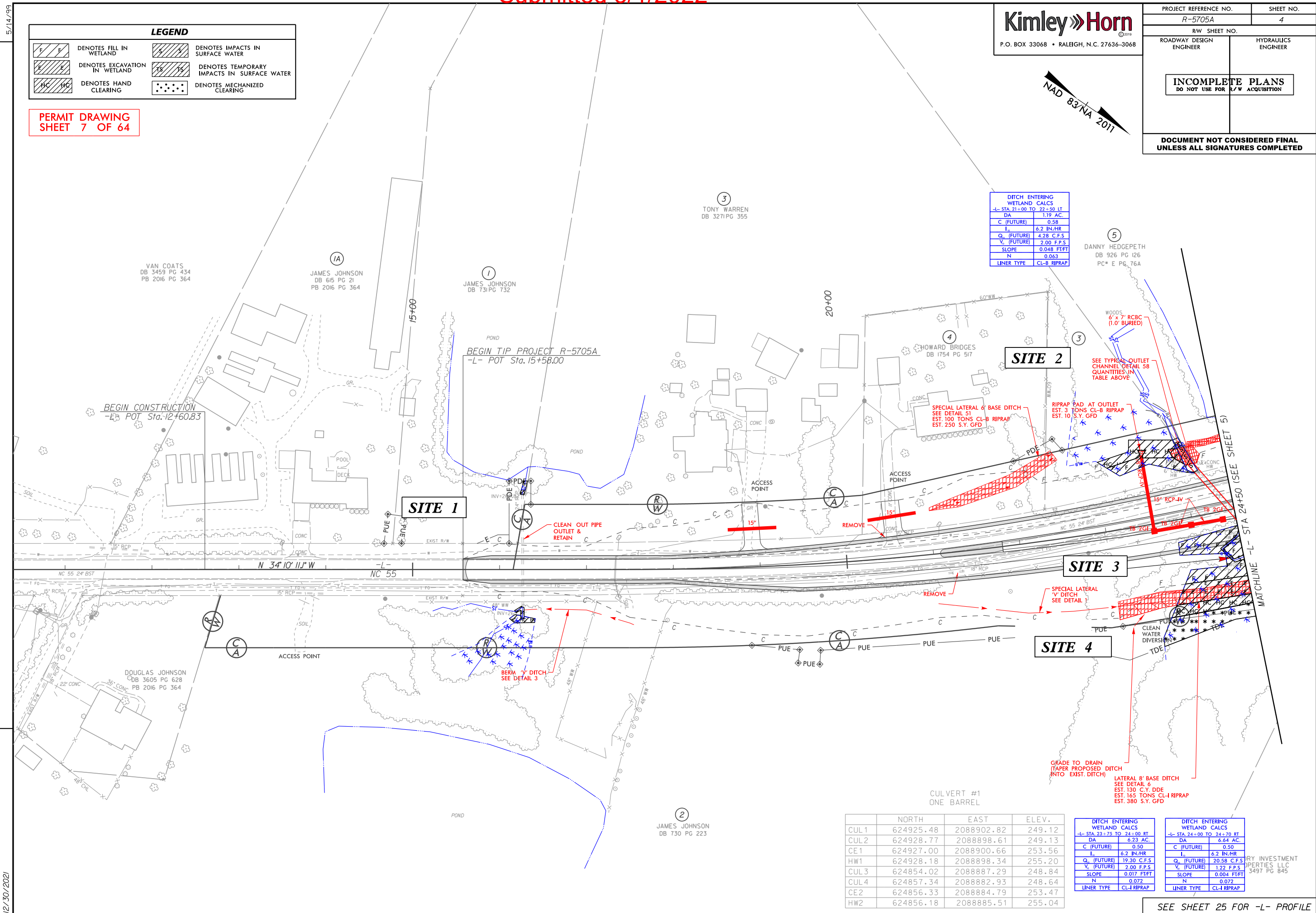
PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 7 OF 64



REVISIONS



DITCH ENTERING WETLAND CALCS	
-L- STA. 21+00 TO 22+50 LT.	DA 1.19 AC
C (FUTURE)	0.58
I _s	6.2 IN./HR
Q _s (FUTURE)	4.28 C.F.S
V _s (FUTURE)	2.00 F.P.S
SLOPE	0.048 FT/FT
N	0.063
LINER TYPE	CL-B RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 24+00 TO 24+70 RT.	DA 6.64 AC
C (FUTURE)	0.50
I _s	6.2 IN./HR
Q _s (FUTURE)	20.58 C.F.S
V _s (FUTURE)	1.22 F.P.S
SLOPE	0.004 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

	NORTH	EAST	ELEV.
CUL1	624925.48	2088902.82	249.12
CUL2	624928.77	2088898.61	249.13
CE1	624927.00	2088900.66	253.56
HW1	624928.18	2088898.34	255.20
CUL3	624854.02	2088887.29	248.84
CUL4	624857.34	2088882.93	248.64
CE2	624856.33	2088884.79	253.47
HW2	624856.18	2088885.51	255.04

DITCH ENTERING WETLAND CALCS	
-L- STA. 23+75 TO 24+00 RT.	DA 6.23 AC
C (FUTURE)	0.50
I _s	6.2 IN./HR
Q _s (FUTURE)	19.30 C.F.S
V _s (FUTURE)	2.00 F.P.S
SLOPE	0.017 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 24+00 TO 24+70 RT.	DA 6.64 AC
C (FUTURE)	0.50
I _s	6.2 IN./HR
Q _s (FUTURE)	20.58 C.F.S
V _s (FUTURE)	1.22 F.P.S
SLOPE	0.004 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

SEE SHEET 25 FOR -L- PROFILE

5/14/99

12/30/2021

PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 8 OF 64



DITCH ENTERING WETLAND CALCS	
-L- STA. 21+00 TO 22+50 LT.	
DA	1.19 AC
C (FUTURE)	0.58
I _s	6.2 IN./HR
Q _s (FUTURE)	4.28 C.F.S
V _s (FUTURE)	2.00 F.P.S
SLOPE	0.048 FT/FT
N	0.063
LINER TYPE	CL-B RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 24+00 TO 24+70 RT.	
DA	6.64 AC
C (FUTURE)	0.50
I _s	6.2 IN./HR
Q _s (FUTURE)	19.30 C.F.S
V _s (FUTURE)	20.58 C.F.S
SLOPE	0.004 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

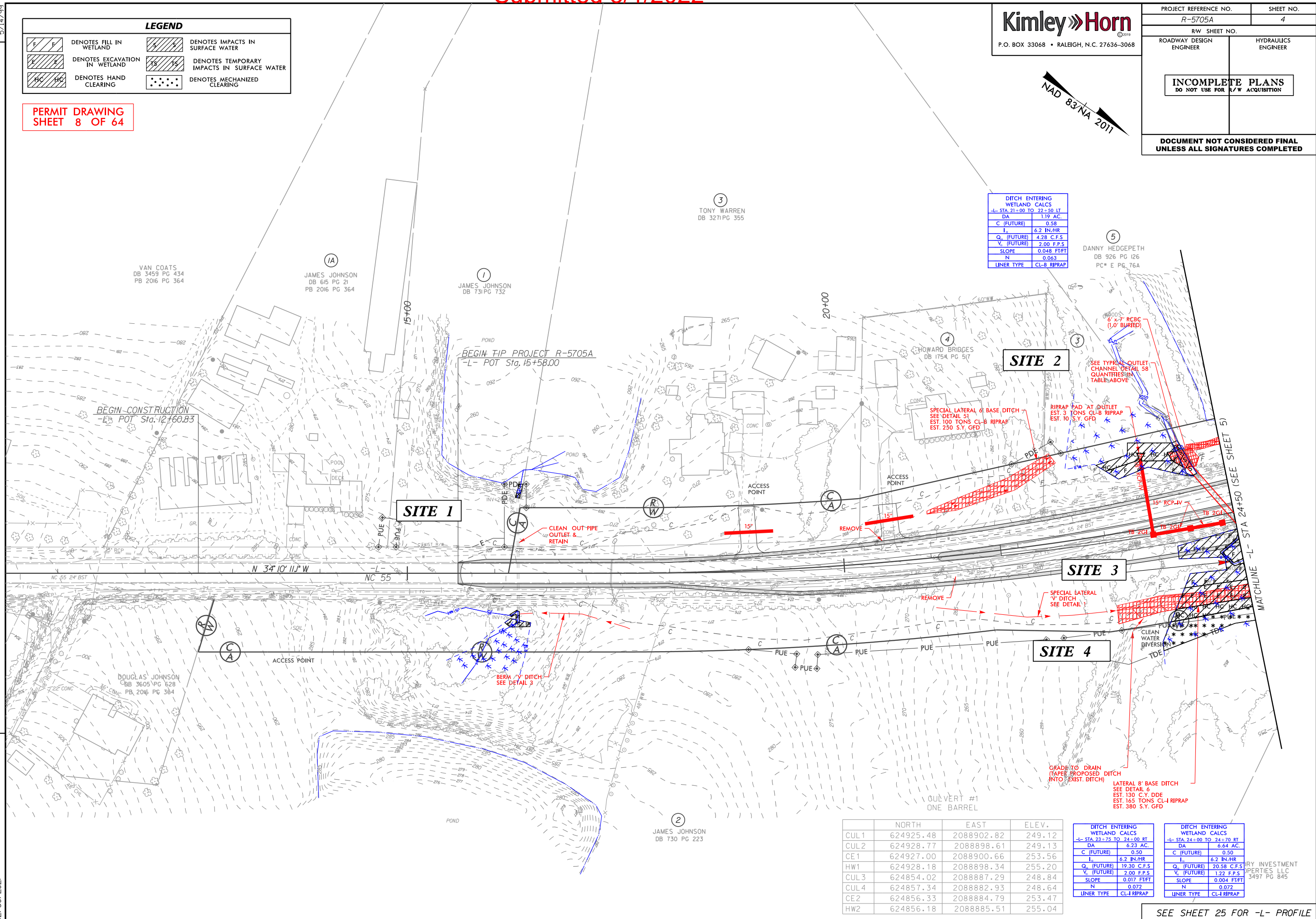
DITCH ENTERING WETLAND CALCS	
-L- STA. 23+75 TO 24+00 RT.	
DA	6.23 AC
C (FUTURE)	0.50
I _s	6.2 IN./HR
Q _s (FUTURE)	19.30 C.F.S
V _s (FUTURE)	20.58 C.F.S
SLOPE	0.017 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

	NORTH	EAST	ELEV.
CUL1	624925.48	2088902.82	249.12
CUL2	624928.77	2088898.61	249.13
CE1	624927.00	2088900.66	253.56
HW1	624928.18	2088898.34	255.20
CUL3	624854.02	2088887.29	248.84
CUL4	624857.34	2088882.93	248.64
CE2	624856.33	2088884.79	253.47
HW2	624856.18	2088885.51	255.04

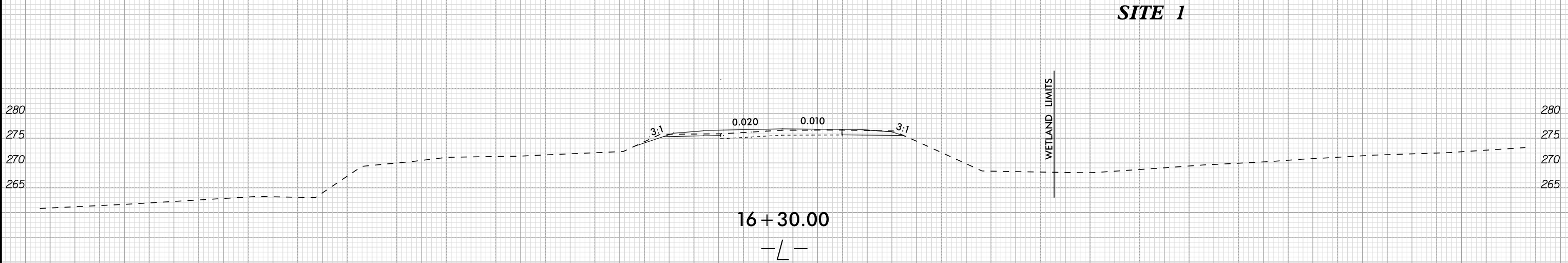
REVISIONS

5/14/99

12/30/2021



PERMIT DRAWING
SHEET 9 OF 64



5/14/99

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

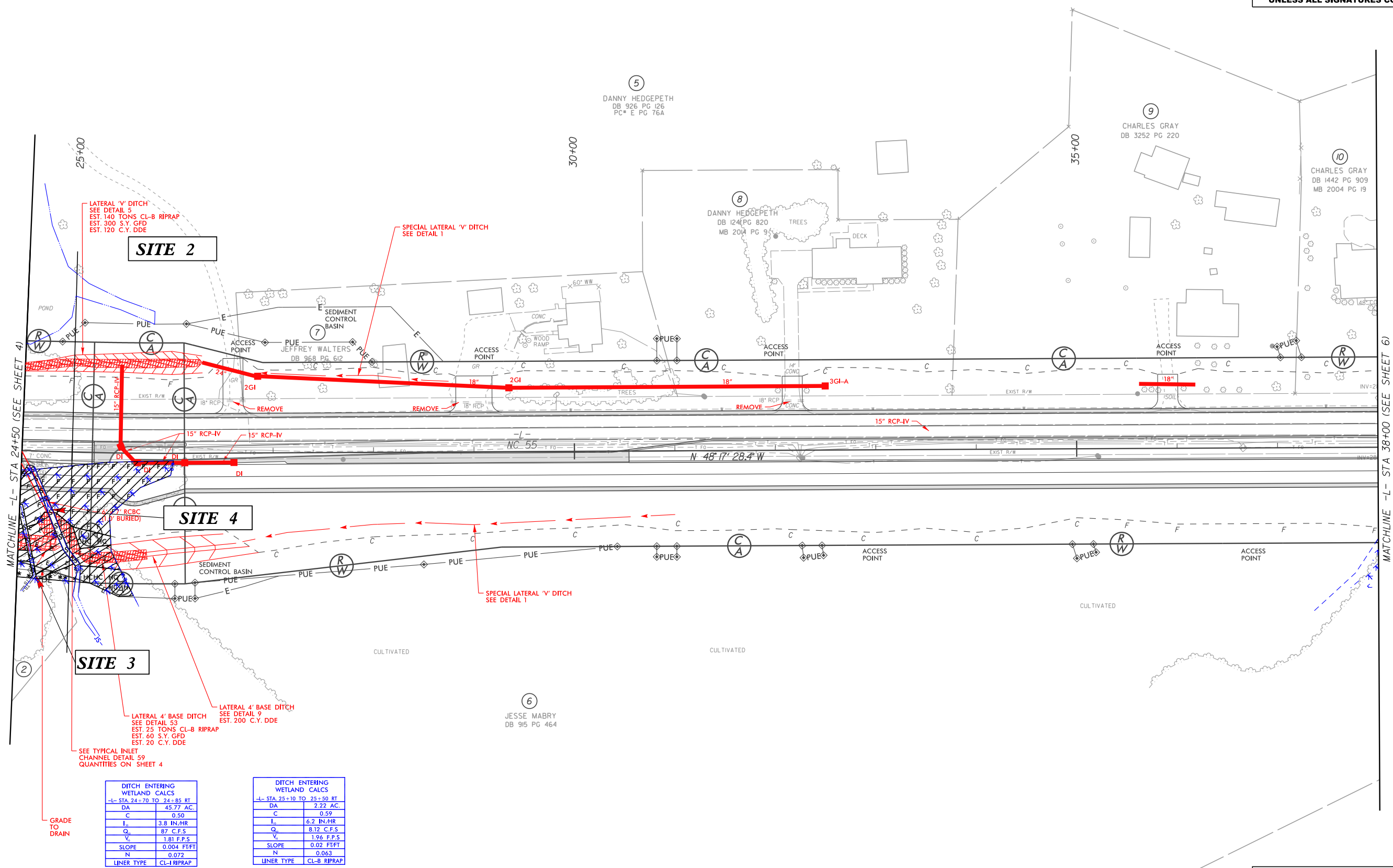
PERMIT DRAWING
SHEET 10 OF 64

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NAD 83/NA 2011

PROJECT REFERENCE NO.		SHEET NO.
R-5705A		5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

REVISIONS



SITE 3

SITE 4

SITE 2

LATERAL 4' BASE DITCH
SEE DETAIL 53
EST. 25 TONS CL-B RIPRAP
EST. 60 S.Y. GFD
EST. 20 C.Y. DDE

LATERAL 4' BASE DITCH
SEE DETAIL 9
EST. 200 C.Y. DDE

SEE TYPICAL INLET
CHANNEL DETAIL 59
QUANTITIES ON SHEET 4

DITCH ENTERING WETLAND CALCS	
-L- STA. 24+70 TO 24+85 RT.	
DA	45.77 AC.
C	0.59
I _{in}	3.8 IN./HR
Q _{in}	87 C.F.S
V _{in}	1.81 F.P.S
SLOPE	0.004 FT/FT
N	0.072
LINER TYPE	CL-B RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 25+10 TO 25+50 RT.	
DA	2.72 AC.
C	0.59
I _{in}	6.2 IN./HR
Q _{in}	8.12 C.F.S
V _{in}	1.96 F.P.S
SLOPE	0.02 FT/FT
N	0.063
LINER TYPE	CL-B RIPRAP

SEE SHEET 25 FOR -L- PROFILE

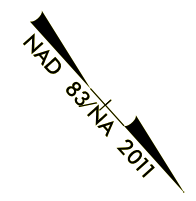
12/30/2021

5/14/99

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

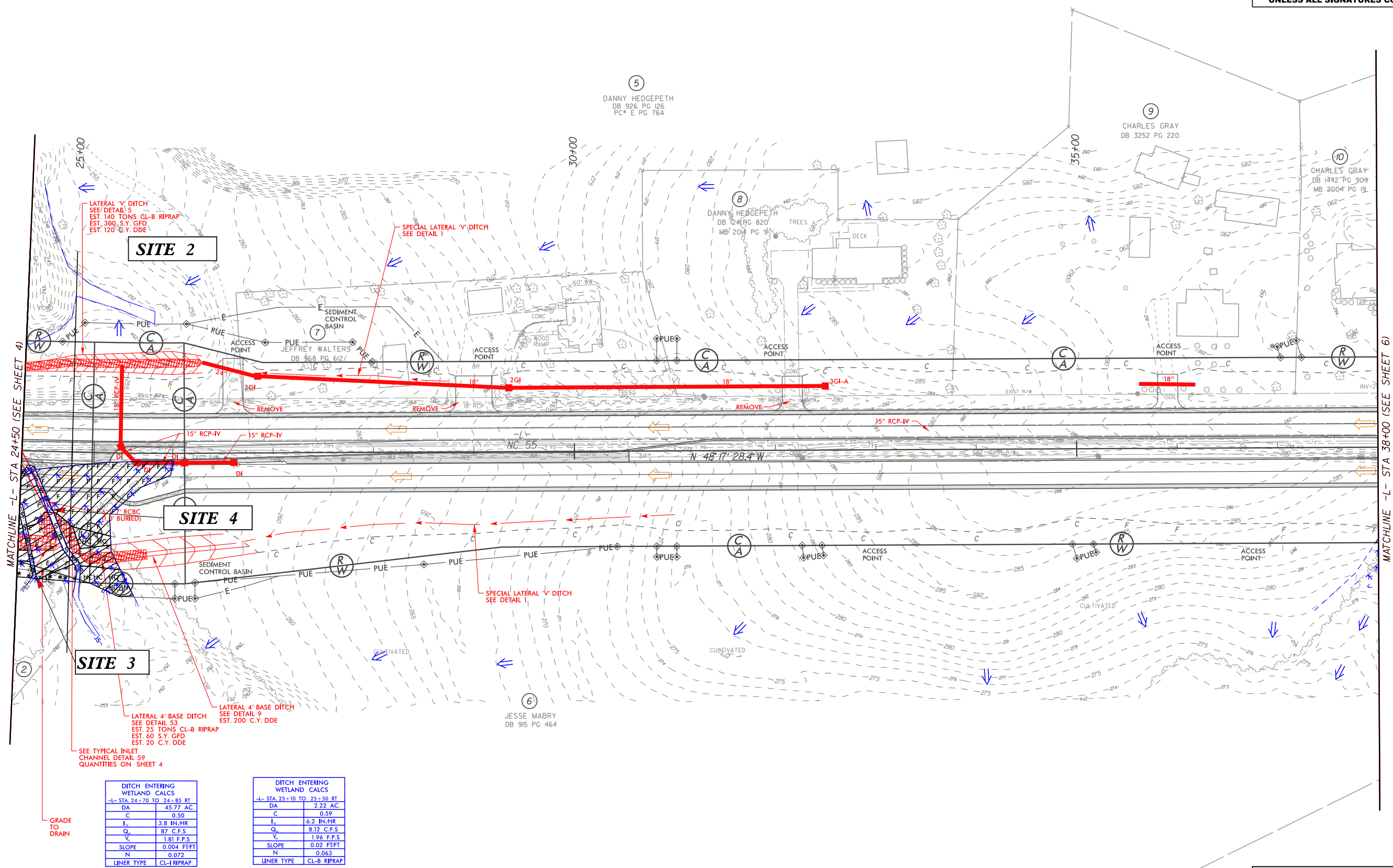
PERMIT DRAWING
SHEET 11 OF 64

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PROJECT REFERENCE NO.		SHEET NO.
R-5705A		5
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

REVISIONS



DITCH ENTERING WETLAND CALCS	
-L- STA. 24+70 TO 24+85 RT.	
DA	45.77 AC.
C	0.50
I _{in}	3.8 IN./HR
Q _{in}	87 C.F.S
V _{in}	1.81 F.P.S
SLOPE	0.004 FT/FT
N	0.072
LINER TYPE	CL-1 RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 25+10 TO 25+50 RT.	
DA	2.72 AC.
C	0.59
I _{in}	6.2 IN./HR
Q _{in}	8.12 C.F.S
V _{in}	1.96 F.P.S
SLOPE	0.02 FT/FT
N	0.063
LINER TYPE	CL-B RIPRAP

SEE SHEET 25 FOR -L- PROFILE

12/30/2021

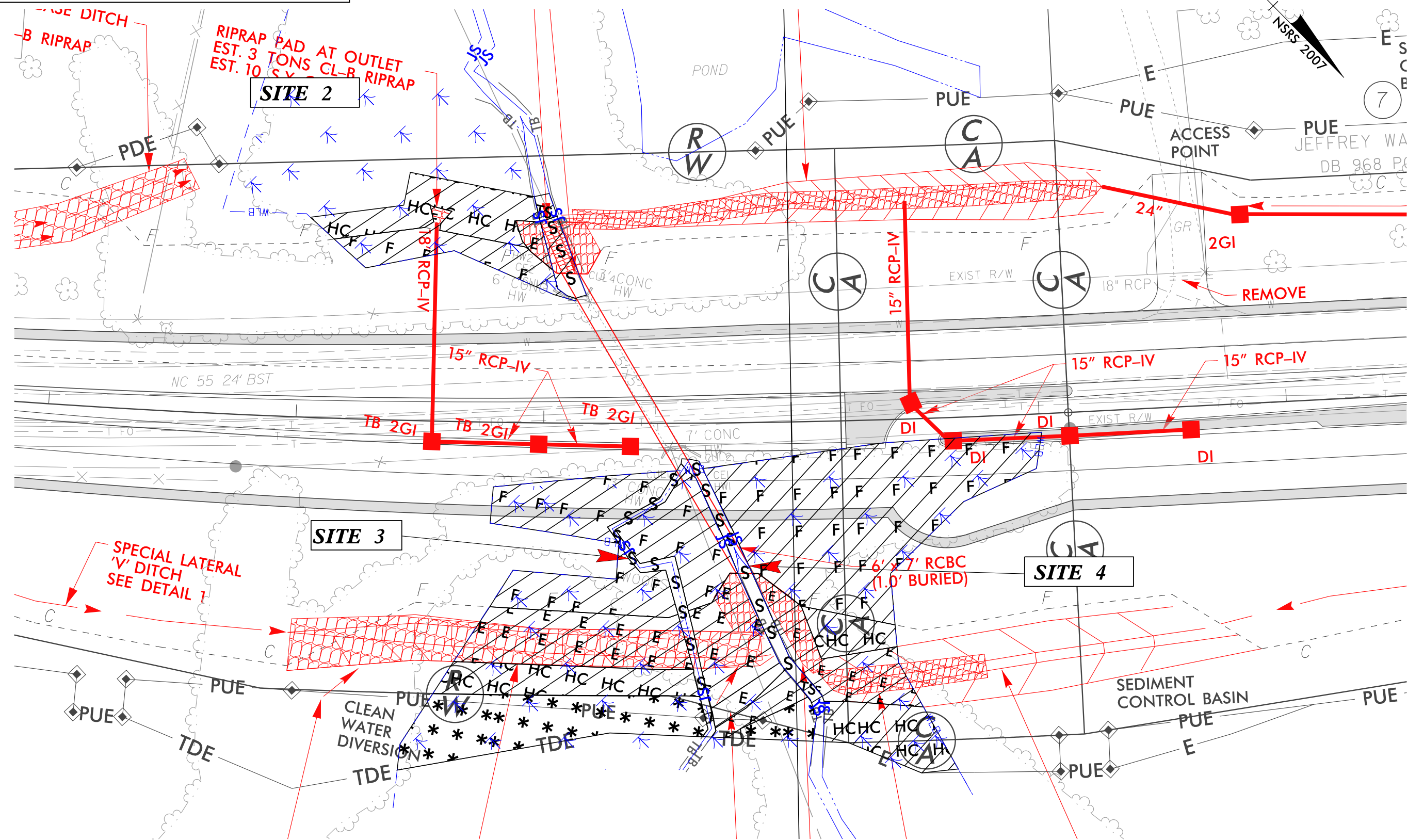
WETLAND AND STREAM IMPACTS

SITE IMPACT ZOOM: 1"=40'

PROJECT REFERENCE NO. R-5705A SHEET NO. 4A/5A

PERMIT DRAWING
SHEET 12 OF 64

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

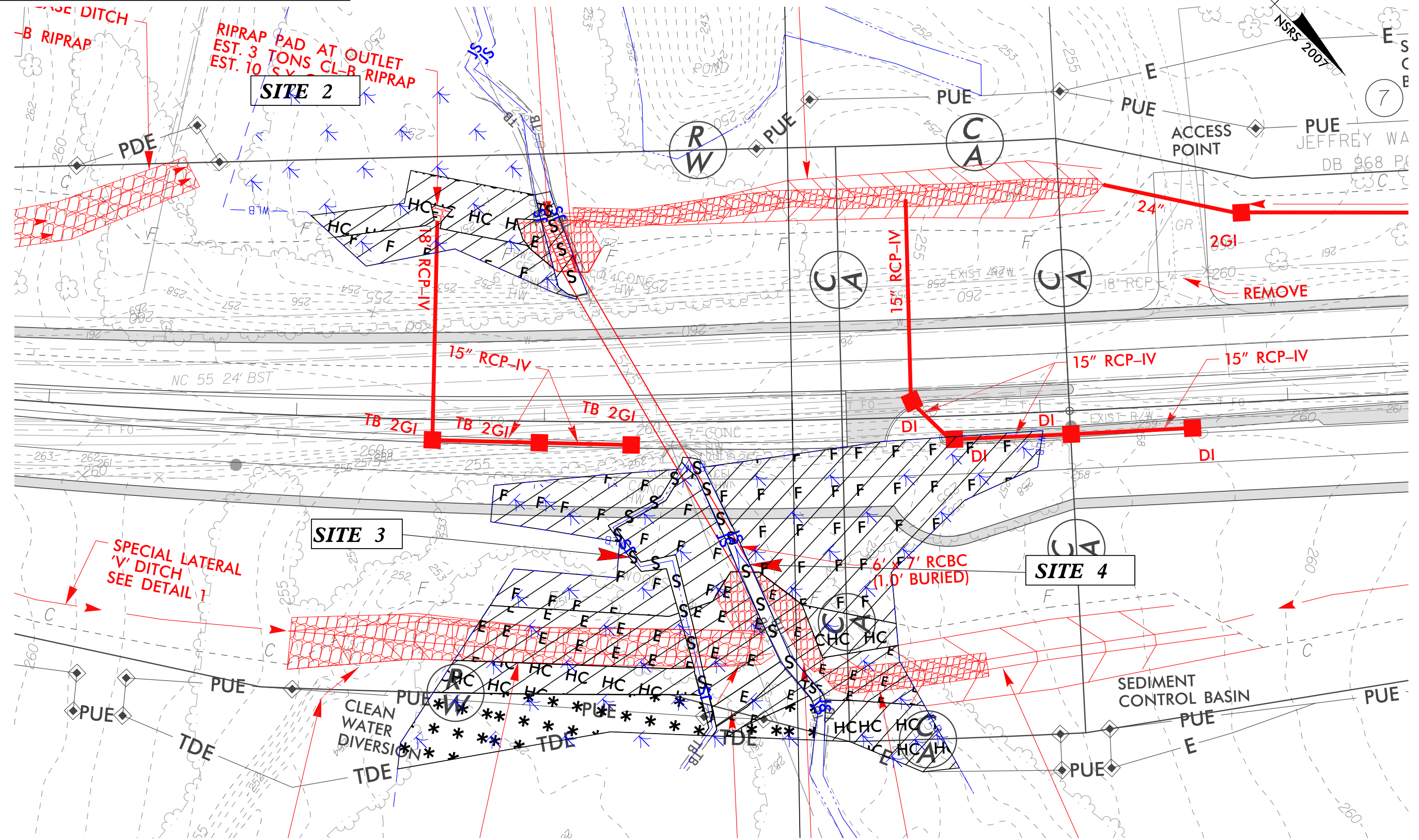


SITES 2,3,4

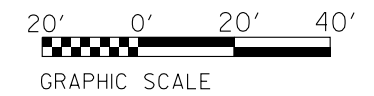
WETLAND AND STREAM IMPACTS

SITE IMPACT ZOOM: 1"=40'

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING



SITES 2,3,4

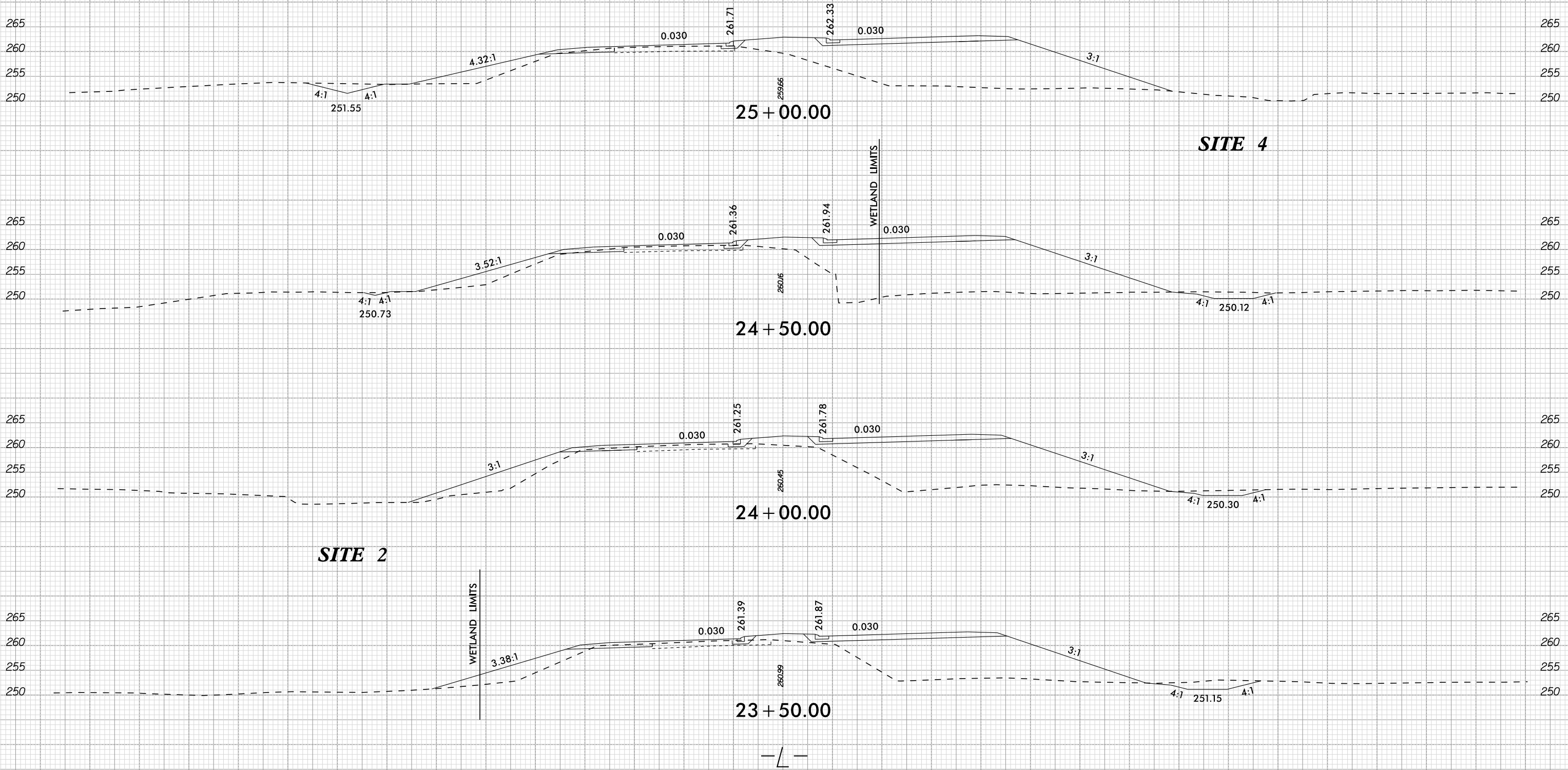


REVISIONS

12/30/2021

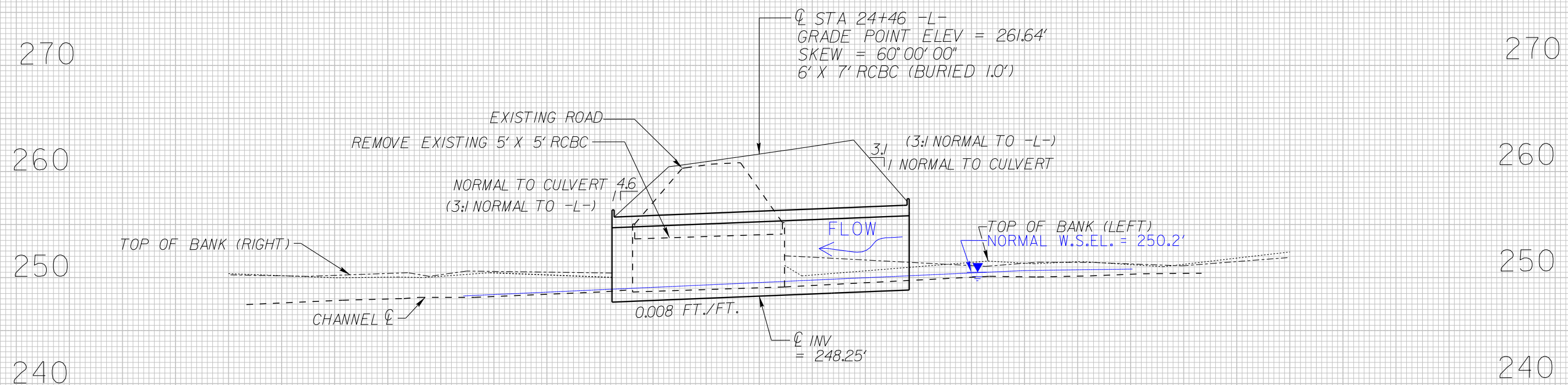
PERMIT DRAWING
SHEET 14 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -



PERMIT DRAWING
SHEET 15 OF 64

SITE 2,3,4



5/14/99

LEGEND



DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)



DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 16 OF 64

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PROJECT REFERENCE NO. R-5705A		SHEET NO. 6			
RW SHEET NO.		HYDRAULICS ENGINEER			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER			
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION					
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					

REVISIONS

The main site plan illustrates a proposed development area with four primary sites labeled SITE 5, SITE 6, SITE 7, and SITE 8. The plan includes detailed engineering specifications for various infrastructure elements:

- Site 5:** Features a riprap pad at an outlet, 3 tons of CL-B riprap, and 11 S.Y. of GFD.
- Site 6:** Includes a channel change (4.0' base) with 150 C.Y. of DDE, 95 tons of CL-B riprap, and 210 S.Y. of GFD.
- Site 7:** Shows a toe protection detail with 40 tons of CL-B riprap and 130 S.Y. of GFD.
- Site 8:** Features a drain pad with a 4.0' base, 15 tons of CL-B riprap, and 150 S.Y. of GFD.

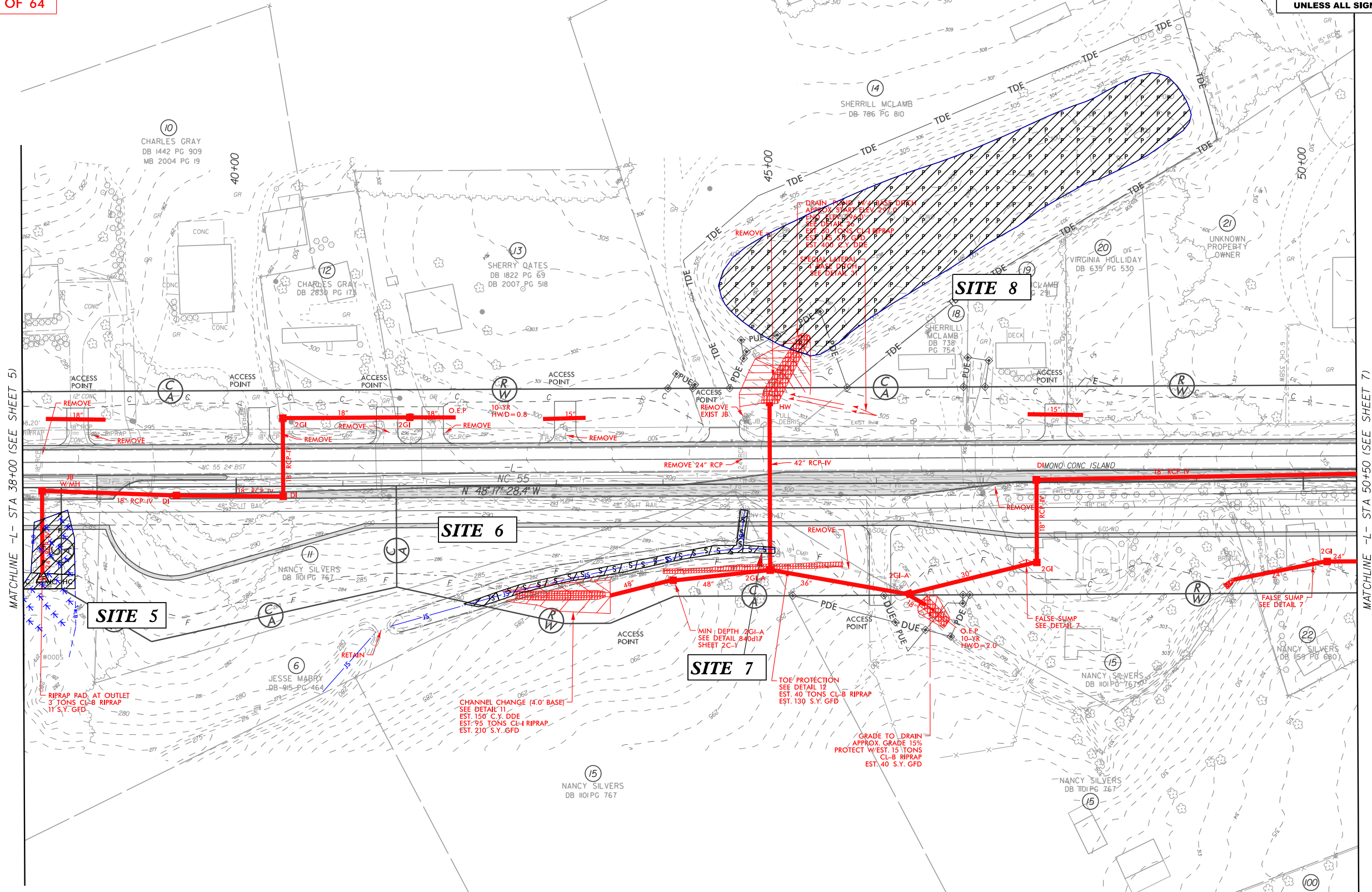
The plan also depicts various other features such as access points, property lines (e.g., Charles Gray, Sherry Oates, Virginia Holliday, Nancy Silvers, Jesse Mabry), and infrastructure like roads (NC 55, NC 55A), rail lines (48" split rail), and ponds. Matchlines are provided for sheets 5 and 7.

12/30/2021

PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

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

PERMIT DRAWING
SHEET 17 OF 64



REVISIONS

5/14/99

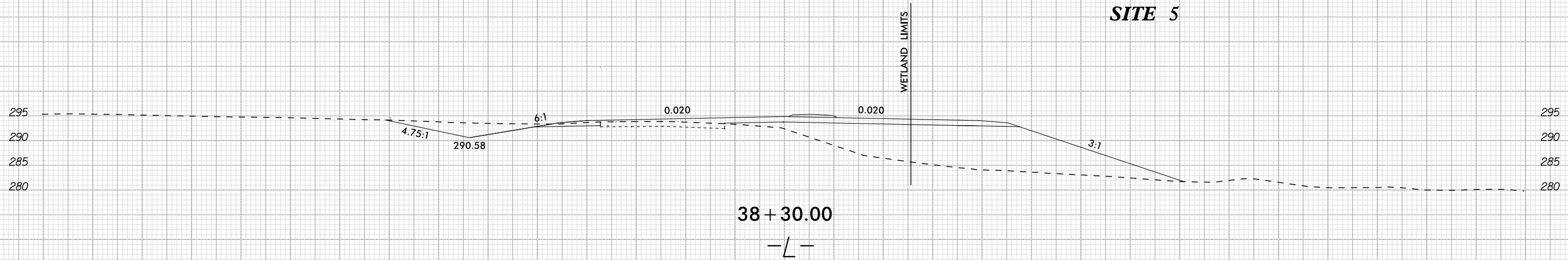
12/30/2021

PERMIT DRAWING
SHEET 18 OF 64



PROJ. REFERENCE NO.
R-5705A

SHEET NO.
PERMIT SHEET - OF -



5/14/99

LEGEND

DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

PERMIT DRAWING
SHEET 19 OF 64

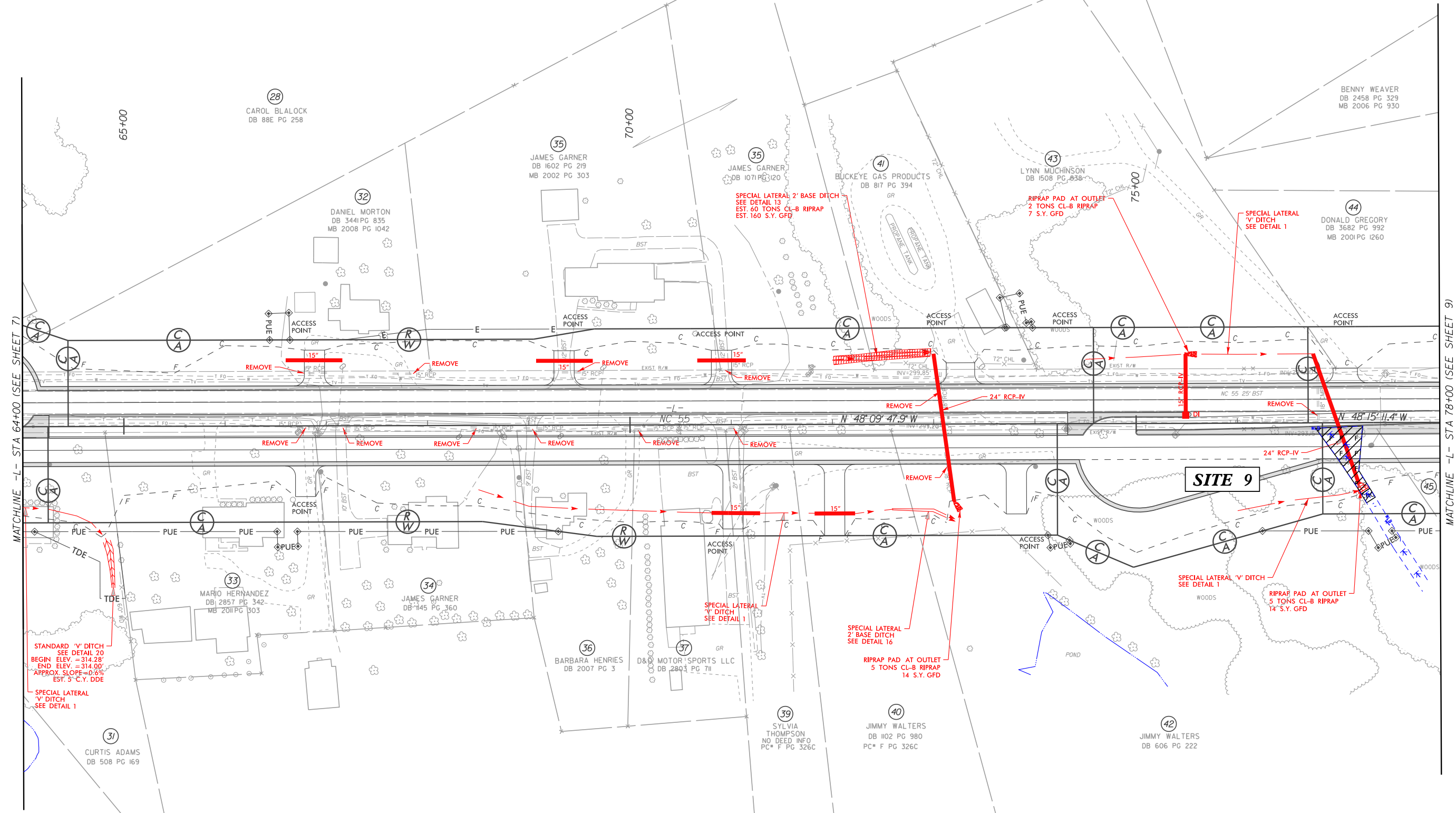
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PROJECT REFERENCE NO.		SHEET NO.
R-5705A		8
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

REVISIONS



SEE SHEET 2B-1 FOR INTERSECTION DETAIL
SEE SHEET 27 FOR -L- PROFILE

12/30/2021

5/14/99

LEGEND

DENOTES FILL IN WETLAND

DENOTES HAND CLEARING

PERMIT DRAWING
SHEET 20 OF 64

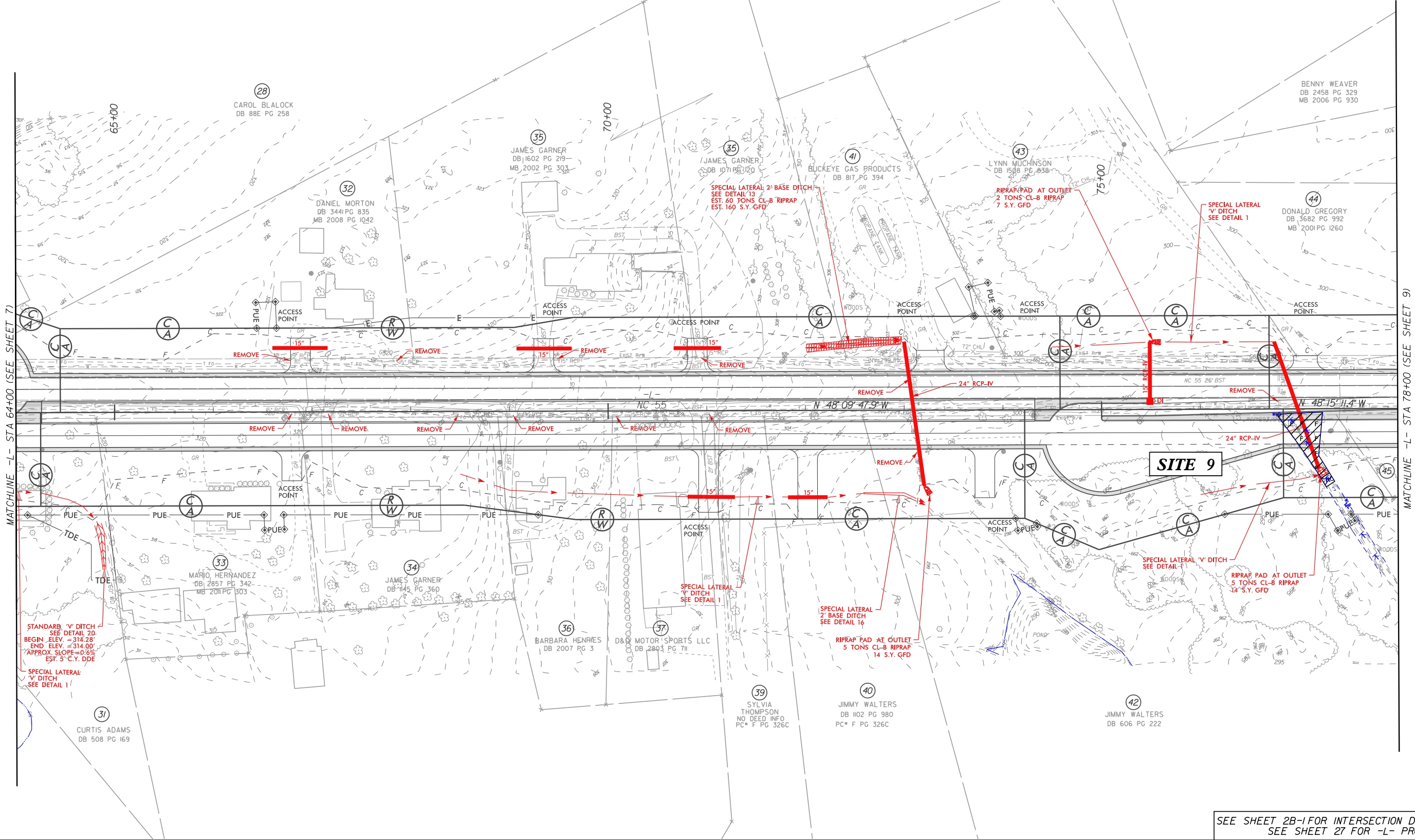
Kimley»Horn

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PROJECT REFERENCE NO. <i>R-5705A</i>		SHEET NO. <i>8</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

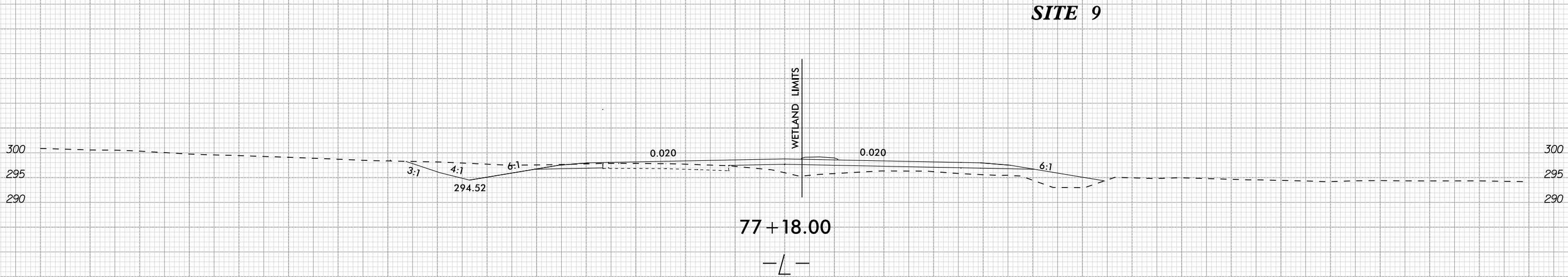
REVISIONS



SEE SHEET 2B-1 FOR INTERSECTION DETAIL
SEE SHEET 27 FOR -L- PROFILE

12/30/2021

PERMIT DRAWING
SHEET 21 OF 64



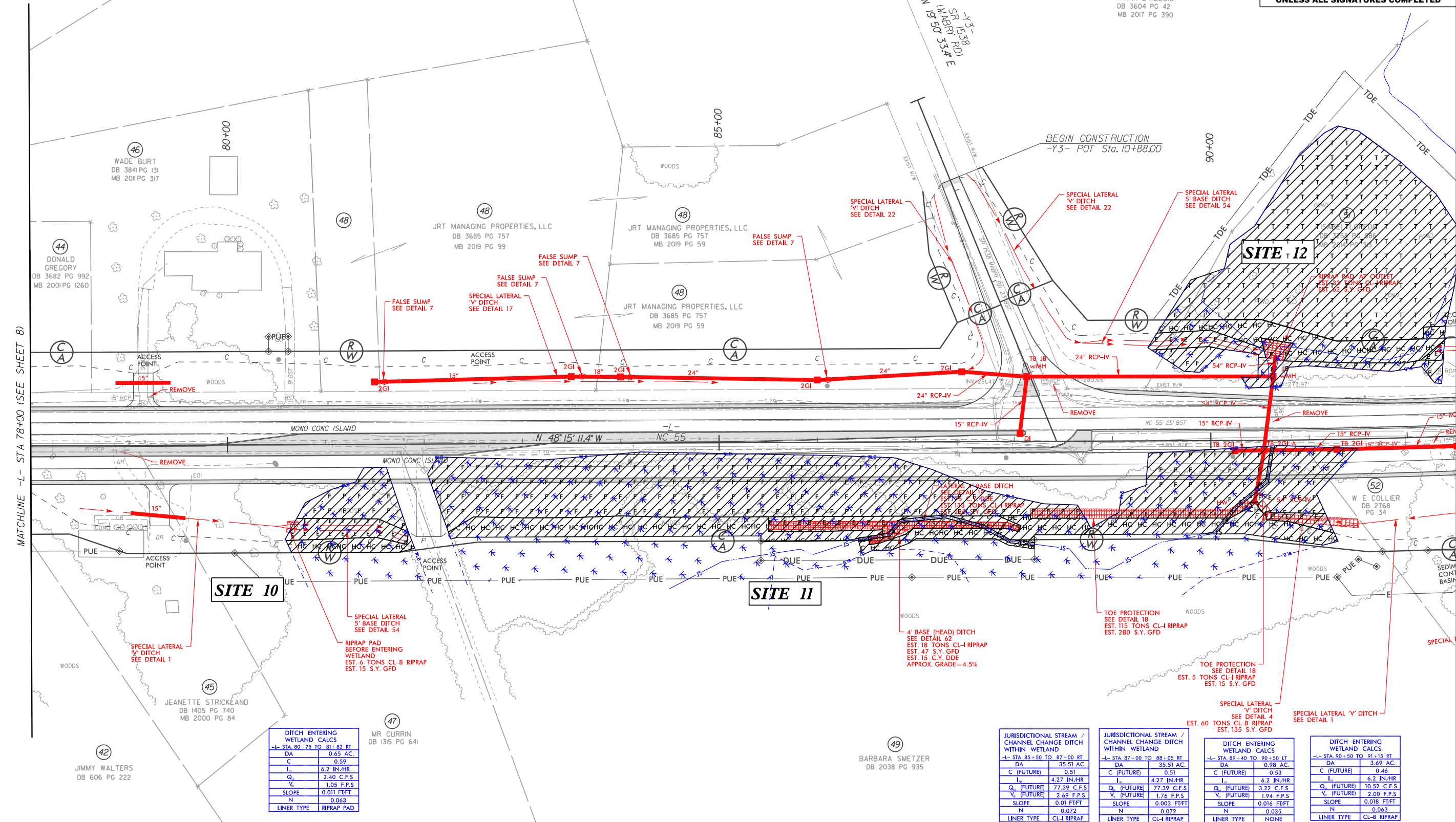
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 22 OF 64



50
FRANK D'ALELIO
DB 3604 PG 42
MB 2017 PG 390



MATCHLINE -L- STA 78+00 (SEE SHEET 8)

DITCH ENTERING WETLAND CALCS	
-L- STA. 80+75 TO 81+82 RT	
DA	0.65 AC.
C	0.59
I ₀	6.2 IN./HR
Q ₀	2.40 C.F.S
V ₀	1.05 F.P.S
SLOPE	0.011 FT/FT
N	0.063
LINER TYPE	RIPRAP PAD

47
MR CURRIN
DB 1315 PG 641

49
BARBARA SMETZER
DB 2038 PG 935

JURISDICTIONAL STREAM / CHANNEL CHANGE DITCH WITHIN WETLAND	
-L- STA. 85+50 TO 87+00 RT	
DA	35.51 AC.
C (FUTURE)	0.51
I ₀	4.27 IN./HR
Q ₀ (FUTURE)	77.39 C.F.S
V ₀ (FUTURE)	2.69 F.P.S
SLOPE	0.01 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

JURISDICTIONAL STREAM / CHANNEL CHANGE DITCH WITHIN WETLAND	
-L- STA. 87+00 TO 88+05 RT	
DA	35.51 AC.
C (FUTURE)	0.53
I ₀	4.27 IN./HR
Q ₀ (FUTURE)	77.39 C.F.S
V ₀ (FUTURE)	1.76 F.P.S
SLOPE	0.003 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 89+40 TO 90+50 LT	
DA	0.98 AC.
C (FUTURE)	0.53
I ₀	6.2 IN./HR
Q ₀ (FUTURE)	3.22 C.F.S
V ₀ (FUTURE)	1.94 F.P.S
SLOPE	0.018 FT/FT
N	0.035
LINER TYPE	NONE

DITCH ENTERING WETLAND CALCS	
-L- STA. 90+50 TO 91+15 RT	
DA	3.69 AC.
C (FUTURE)	0.46
I ₀	6.2 IN./HR
Q ₀ (FUTURE)	10.52 C.F.S
V ₀ (FUTURE)	2.00 F.P.S
SLOPE	0.018 FT/FT
N	0.063
LINER TYPE	CL-B RIPRAP

SEE SHEET 2B-1 & 2B-2 FOR INTERSECTION DETAIL
SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 34 FOR -Y3- PROFILE

REVISIONS

5/14/99

12/30/2021

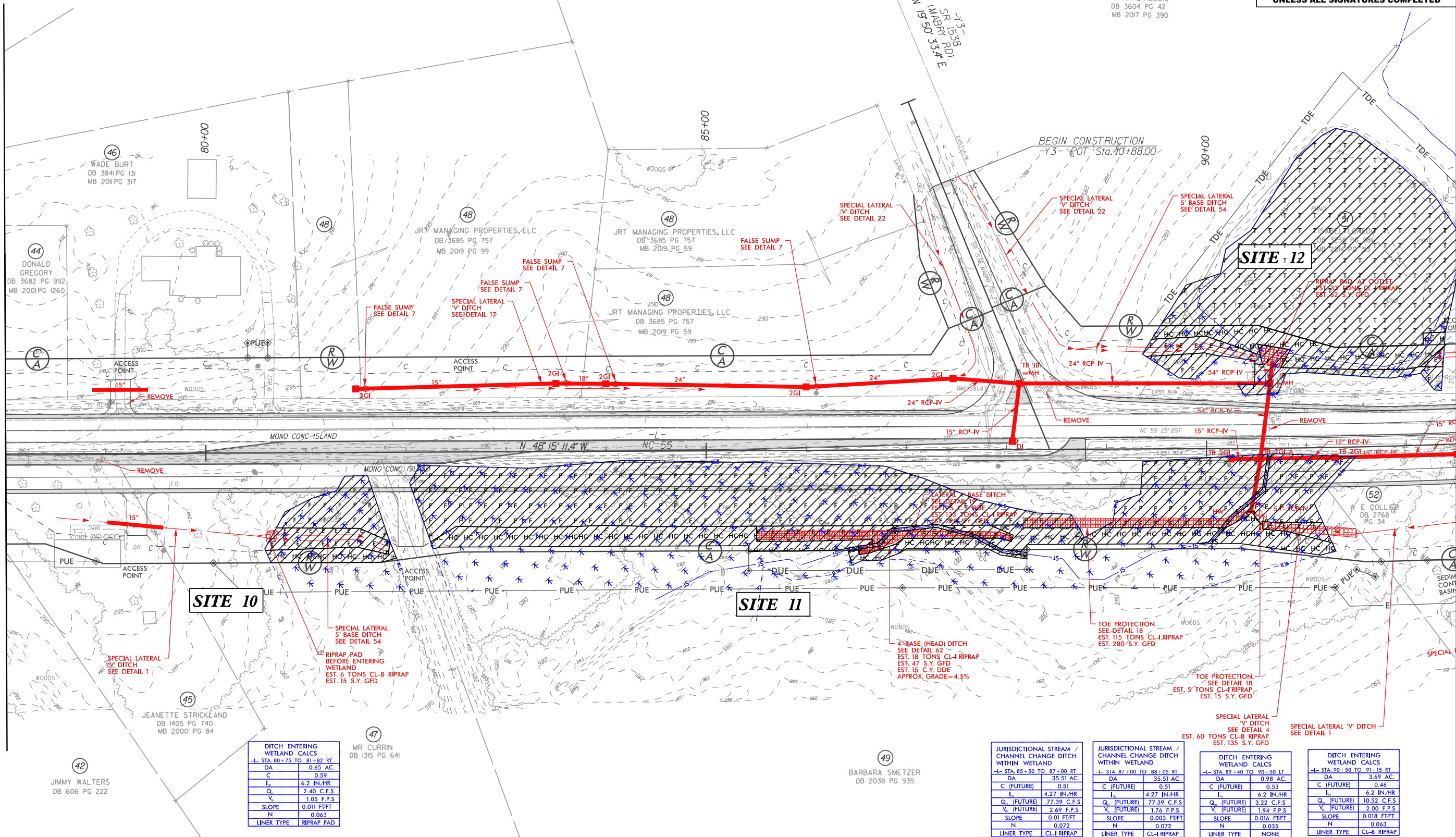
PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		9	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES TEMPORARY FILL IN WETLAND

PERMIT DRAWING
SHEET 23 OF 64



MATCHLINE -L- STA 78+00 (SEE SHEET 8)



DITCH ENTERING WETLAND CALCS	
-L- STA. 80+75 TO 81+82 RT.	
DA	0.65 AC.
C	0.59
I ₀	6.2 IN./HR.
Q ₀	2.40 C.F.S.
V ₀	1.05 F.P.S.
SLOPE	0.011 FT/FT
N	0.063
LINER TYPE	RIPRAP PAD

47	MR CURRIN DB 1315 PG 641
----	-----------------------------

49	BARBARA SMETZER DB 2038 PG 935
----	-----------------------------------

JURISDICTIONAL STREAM / CHANNEL CHANGE DITCH WITHIN WETLAND	
-L- STA. 85+50 TO 87+00 RT.	
DA	35.51 AC.
C (FUTURE)	0.51
I ₀	4.27 IN./HR.
Q ₀ (FUTURE)	77.39 C.F.S.
V ₀ (FUTURE)	2.69 F.P.S.
SLOPE	0.01 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

JURISDICTIONAL STREAM / CHANNEL CHANGE DITCH WITHIN WETLAND	
-L- STA. 87+00 TO 88+05 RT.	
DA	35.51 AC.
C (FUTURE)	0.51
I ₀	4.27 IN./HR.
Q ₀ (FUTURE)	77.39 C.F.S.
V ₀ (FUTURE)	1.76 F.P.S.
SLOPE	0.003 FT/FT
N	0.072
LINER TYPE	CL-I RIPRAP

DITCH ENTERING WETLAND CALCS	
-L- STA. 89+40 TO 90+50 LT.	
DA	0.98 AC.
C (FUTURE)	0.53
I ₀	6.2 IN./HR.
Q ₀ (FUTURE)	3.22 C.F.S.
V ₀ (FUTURE)	1.94 F.P.S.
SLOPE	0.018 FT/FT
N	0.035
LINER TYPE	NONE

DITCH ENTERING WETLAND CALCS	
-L- STA. 90+50 TO 91+15 RT.	
DA	3.69 AC.
C (FUTURE)	0.46
I ₀	6.2 IN./HR.
Q ₀ (FUTURE)	10.52 C.F.S.
V ₀ (FUTURE)	2.00 F.P.S.
SLOPE	0.018 FT/FT
N	0.063
LINER TYPE	CL-B RIPRAP

SEE SHEET 2B-1 & 2B-2 FOR INTERSECTION DETAIL
SEE SHEET 27 FOR -L- PROFILE
SEE SHEET 34 FOR -Y3- PROFILE

REVISIONS

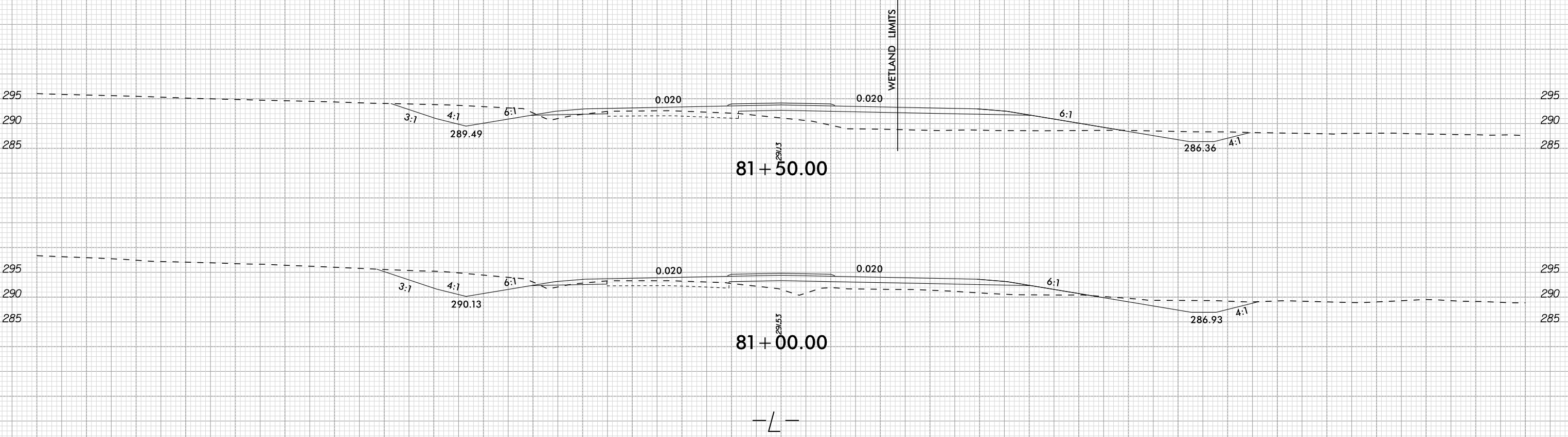
5/14/99

12/30/2021

PERMIT DRAWING
SHEET 24 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -

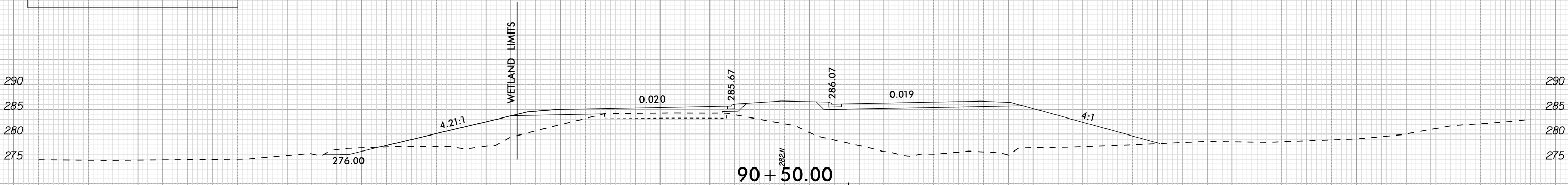
SITE 10



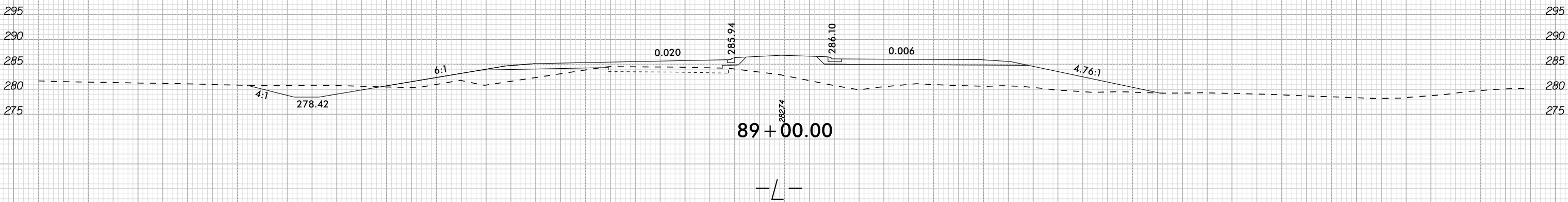
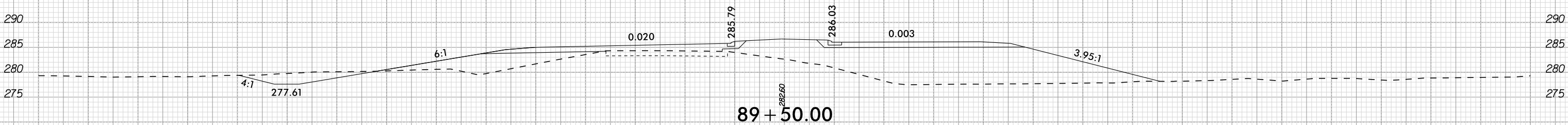
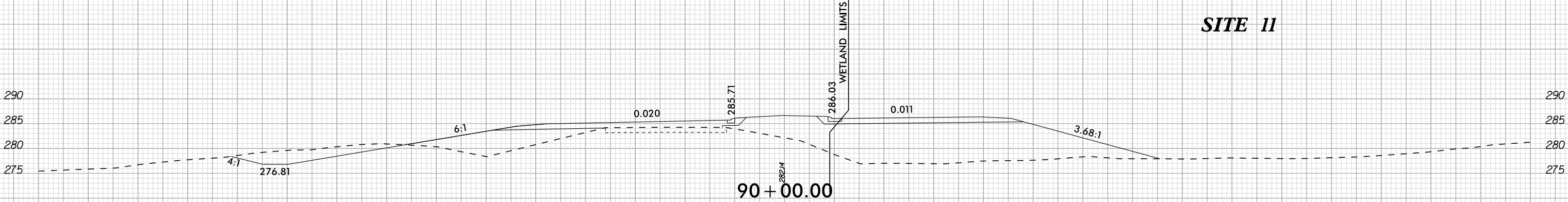
PERMIT DRAWING
SHEET 25 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -

SITE 12



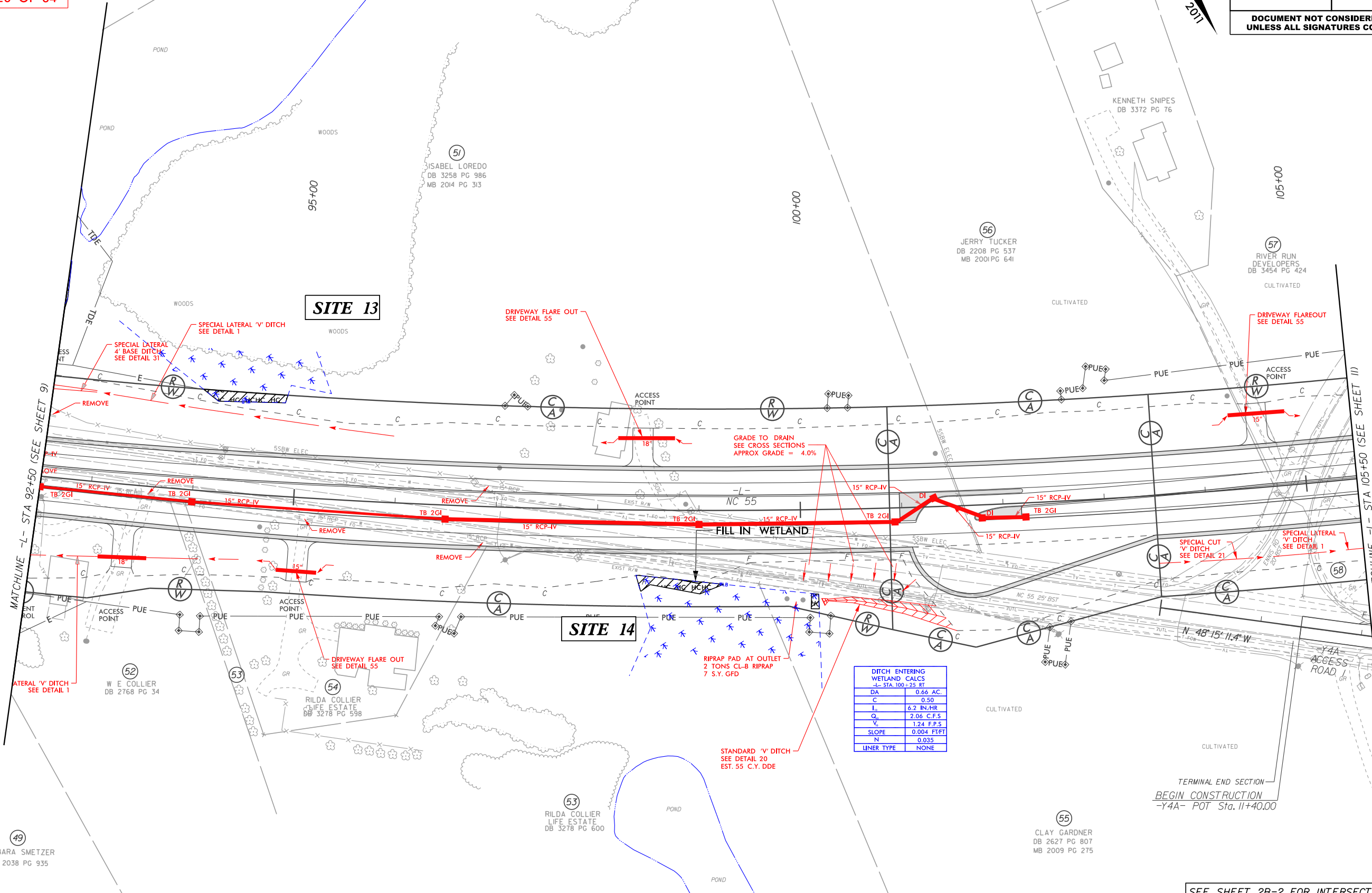
SITE 11



PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		10	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND	
	DENOTES FILL IN WETLAND
	DENOTES HAND CLEARING

PERMIT DRAWING
SHEET 26 OF 64



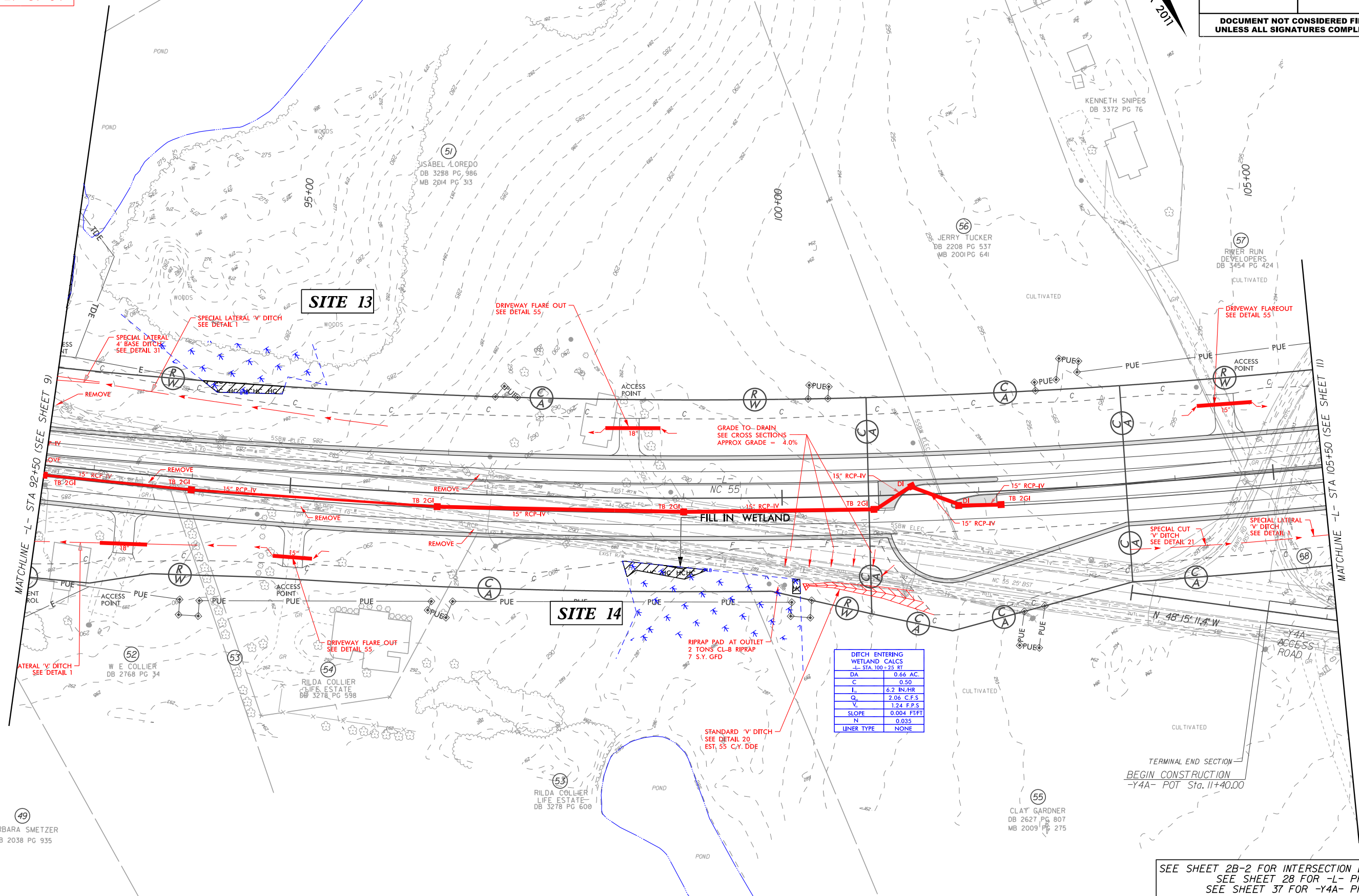
DITCH ENTERING WETLAND CALCS	
DA	0.66 AC.
C	0.50
I	6.2 IN./HR
Q	2.06 C.F.S
V	1.24 F.P.S
SLOPE	0.004 FT/FT
N	0.035
LINER TYPE	NONE

TERMINAL END SECTION
BEGIN CONSTRUCTION
-Y4A- POT Sta. 11+40.00

SEE SHEET 2B-2 FOR INTERSECTION DETAIL
SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 37 FOR -Y4A- PROFILE

PERMIT DRAWING
SHEET 27 OF 64

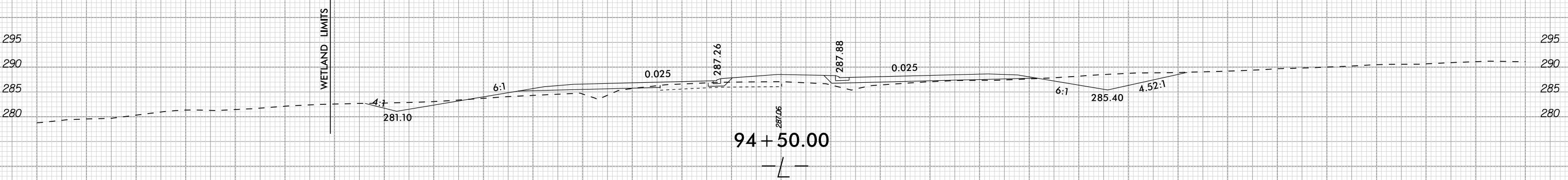
PROJECT REFERENCE NO.	SHEET NO.
R-5705A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



SEE SHEET 2B-2 FOR INTERSECTION DETAIL
SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 37 FOR -Y4A- PROFILE

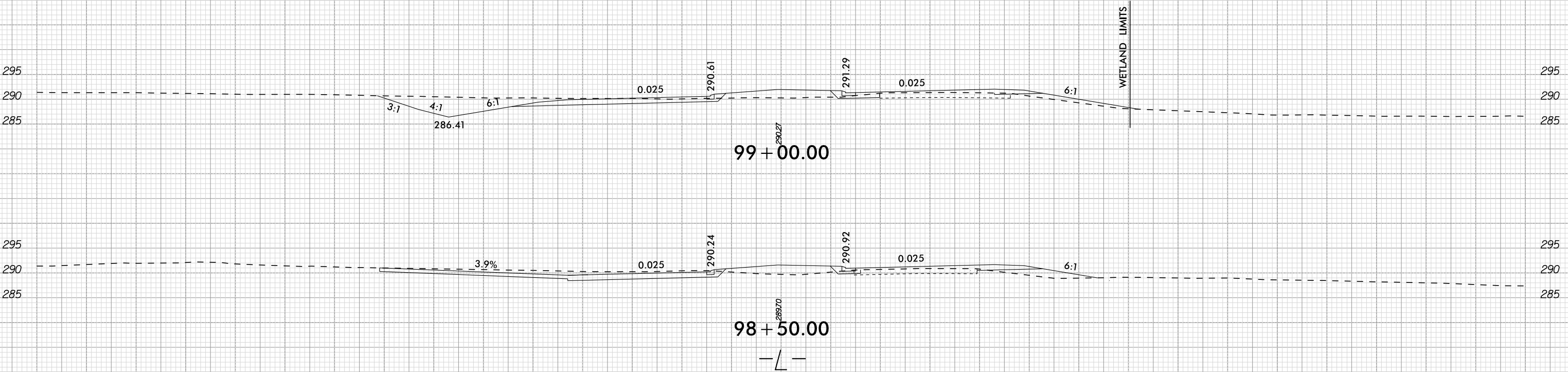
PERMIT DRAWING
SHEET 28 OF 64

SITE 13



PERMIT DRAWING
SHEET 29 OF 64

SITE 14

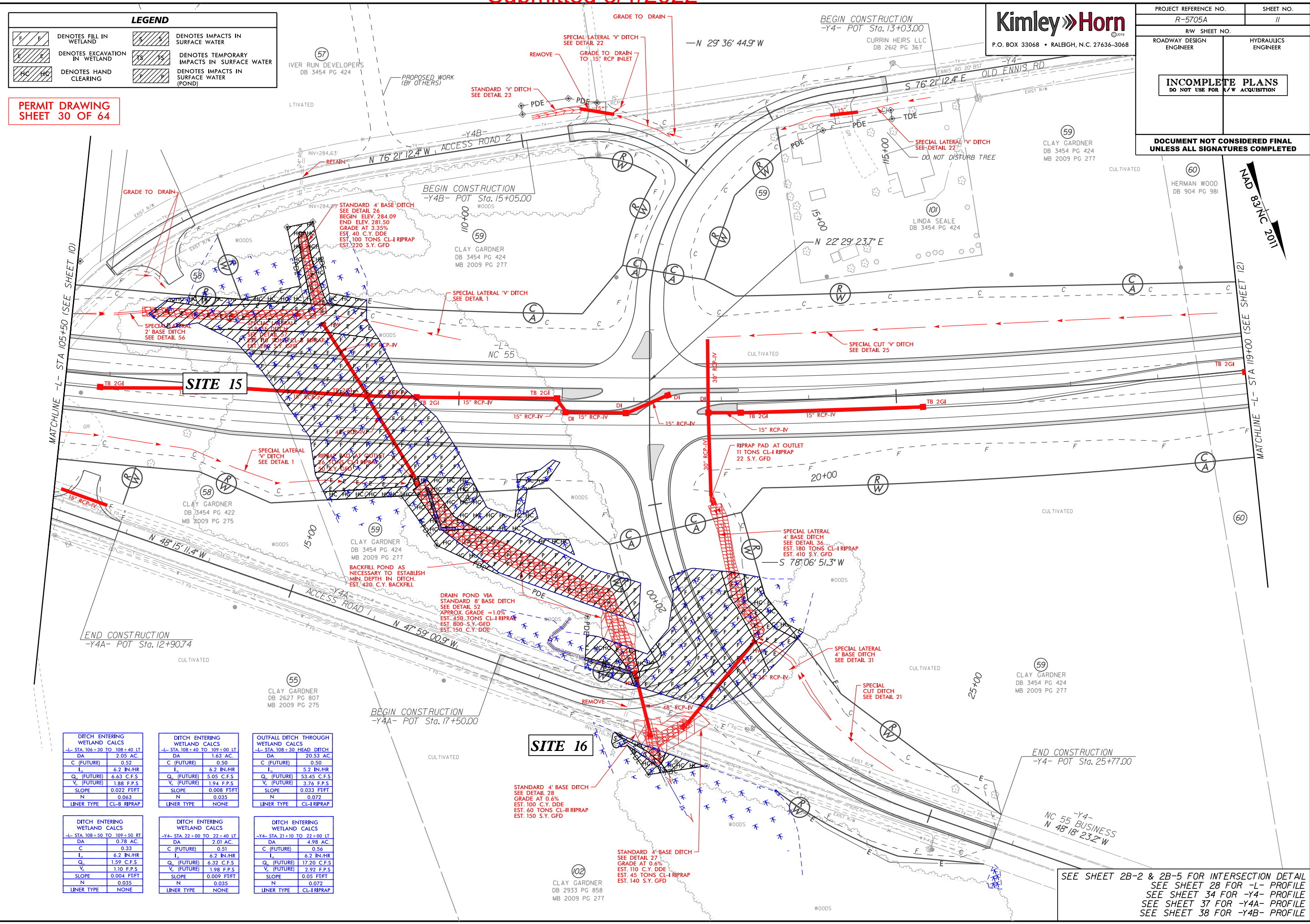


LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING
SHEET 30 OF 64

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PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		II	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS	OUTFALL DITCH THROUGH WETLAND CALCS
-L- STA 106+30 TO 108+40 LT	-L- STA 108+40 TO 109+00 LT	-L- STA 108+30 HEAD DITCH
DA 2.05 AC.	DA 1.63 AC.	DA 20.53 AC.
C (FUTURE) 0.52	C (FUTURE) 0.50	C (FUTURE) 0.50
I _u 6.2 IN./HR	I _u 6.2 IN./HR	I _u 5.2 IN./HR
Q _u (FUTURE) 6.63 C.F.S	Q _u (FUTURE) 5.05 C.F.S	Q _u (FUTURE) 53.45 C.F.S
V _u (FUTURE) 1.88 F.P.S	V _u (FUTURE) 1.94 F.P.S	V _u (FUTURE) 3.76 F.P.S
SLOPE 0.022 FT/FT	SLOPE 0.008 FT/FT	SLOPE 0.033 FT/FT
N 0.043	N 0.035	N 0.072
LINER TYPE CL-B RIPRAP	LINER TYPE NONE	LINER TYPE CL-I RIPRAP

DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS
-L- STA 108+50 TO 109+50 RT	-Y4- STA 22+00 TO 22+40 LT	-Y4- STA 21+10 TO 22+00 LT
DA 0.78 AC.	DA 2.01 AC.	DA 4.98 AC.
C 0.33	C (FUTURE) 0.51	C (FUTURE) 0.56
I _u 6.2 IN./HR	I _u 6.2 IN./HR	I _u 6.2 IN./HR
Q _u 1.59 C.F.S	Q _u (FUTURE) 6.32 C.F.S	Q _u (FUTURE) 17.20 C.F.S
V _u 1.10 F.P.S	V _u (FUTURE) 1.98 F.P.S	V _u (FUTURE) 2.92 F.P.S
SLOPE 0.004 FT/FT	SLOPE 0.009 FT/FT	SLOPE 0.05 FT/FT
N 0.035	N 0.035	N 0.072
LINER TYPE NONE	LINER TYPE NONE	LINER TYPE CL-I RIPRAP

DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS
-L- STA 106+30 TO 108+40 LT	-L- STA 108+40 TO 109+00 LT	-L- STA 108+30 HEAD DITCH
DA 2.05 AC.	DA 1.63 AC.	DA 20.53 AC.
C (FUTURE) 0.52	C (FUTURE) 0.50	C (FUTURE) 0.50
I _u 6.2 IN./HR	I _u 6.2 IN./HR	I _u 5.2 IN./HR
Q _u (FUTURE) 6.63 C.F.S	Q _u (FUTURE) 5.05 C.F.S	Q _u (FUTURE) 53.45 C.F.S
V _u (FUTURE) 1.88 F.P.S	V _u (FUTURE) 1.94 F.P.S	V _u (FUTURE) 3.76 F.P.S
SLOPE 0.022 FT/FT	SLOPE 0.008 FT/FT	SLOPE 0.033 FT/FT
N 0.043	N 0.035	N 0.072
LINER TYPE CL-B RIPRAP	LINER TYPE NONE	LINER TYPE CL-I RIPRAP

SEE SHEET 2B-2 & 2B-5 FOR INTERSECTION DETAIL
SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 34 FOR -Y4- PROFILE
SEE SHEET 37 FOR -Y4A- PROFILE
SEE SHEET 38 FOR -Y4B- PROFILE

5/14/99

LEGEND

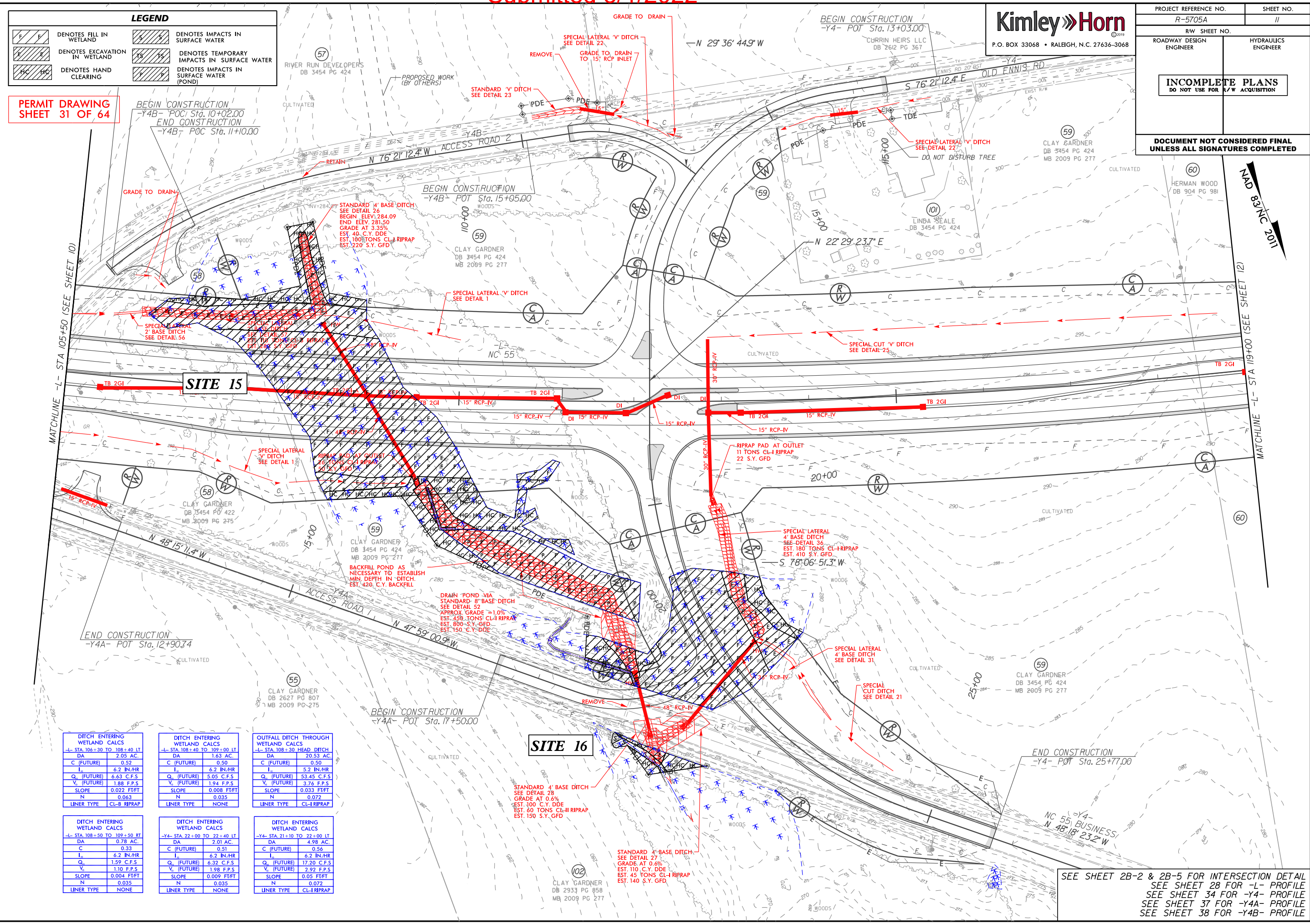
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING
SHEET 31 OF 64

Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. R-5705A		SHEET NO. II	
RW SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REVISIONS



DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS	OUTFALL DITCH THROUGH WETLAND CALCS
-L- STA 106+30 TO 108+40 LT	-L- STA 108+40 TO 109+00 LT	-L- STA 108+30 HEAD DITCH
DA 2.05 AC.	DA 1.63 AC.	DA 20.53 AC.
C (FUTURE) 0.52	C (FUTURE) 0.50	C (FUTURE) 0.50
I _h 6.2 IN./HR	I _h 6.2 IN./HR	I _h 5.2 IN./HR
Q _h (FUTURE) 6.63 C.F.S	Q _h (FUTURE) 5.05 C.F.S	Q _h (FUTURE) 53.45 C.F.S
V _h (FUTURE) 1.88 F.P.S	V _h (FUTURE) 1.94 F.P.S	V _h (FUTURE) 3.26 F.P.S
SLOPE 0.022 FT/FT	SLOPE 0.008 FT/FT	SLOPE 0.033 FT/FT
N 0.043	N 0.035	N 0.072
LINER TYPE CL-B RIPRAP	LINER TYPE NONE	LINER TYPE CL-I RIPRAP

DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS
-L- STA 108+50 TO 109+50 RT	-Y4- STA 22+00 TO 22+40 LT	-Y4- STA 21+10 TO 22+00 LT
DA 0.78 AC.	DA 2.01 AC.	DA 4.98 AC.
C 0.33	C (FUTURE) 0.51	C (FUTURE) 0.56
I _h 6.2 IN./HR	I _h 6.2 IN./HR	I _h 6.2 IN./HR
Q _h (FUTURE) 1.59 C.F.S	Q _h (FUTURE) 6.32 C.F.S	Q _h (FUTURE) 17.20 C.F.S
V _h (FUTURE) 1.10 F.P.S	V _h (FUTURE) 1.98 F.P.S	V _h (FUTURE) 2.92 F.P.S
SLOPE 0.004 FT/FT	SLOPE 0.009 FT/FT	SLOPE 0.05 FT/FT
N 0.035	N 0.035	N 0.072
LINER TYPE NONE	LINER TYPE NONE	LINER TYPE CL-I RIPRAP

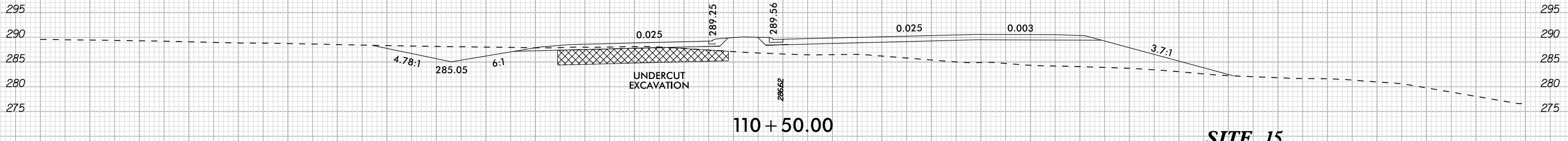
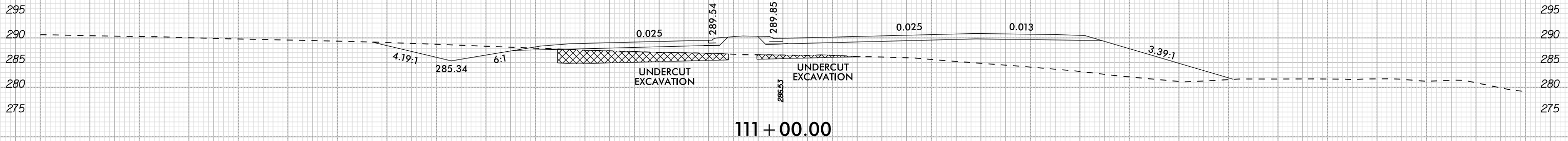
DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS	DITCH ENTERING WETLAND CALCS
-Y4- STA 22+00 TO 22+40 LT	-Y4- STA 21+10 TO 22+00 LT	-Y4- STA 21+10 TO 22+00 LT
DA 2.01 AC.	DA 4.98 AC.	DA 4.98 AC.
C (FUTURE) 0.51	C (FUTURE) 0.56	C (FUTURE) 0.56
I _h 6.2 IN./HR	I _h 6.2 IN./HR	I _h 6.2 IN./HR
Q _h (FUTURE) 6.32 C.F.S	Q _h (FUTURE) 17.20 C.F.S	Q _h (FUTURE) 17.20 C.F.S
V _h (FUTURE) 1.98 F.P.S	V _h (FUTURE) 2.92 F.P.S	V _h (FUTURE) 2.92 F.P.S
SLOPE 0.009 FT/FT	SLOPE 0.05 FT/FT	SLOPE 0.05 FT/FT
N 0.035	N 0.072	N 0.072
LINER TYPE NONE	LINER TYPE CL-I RIPRAP	LINER TYPE CL-I RIPRAP

SEE SHEET 2B-2 & 2B-5 FOR INTERSECTION DETAIL
SEE SHEET 28 FOR -L- PROFILE
SEE SHEET 34 FOR -Y4- PROFILE
SEE SHEET 37 FOR -Y4A- PROFILE
SEE SHEET 38 FOR -Y4B- PROFILE

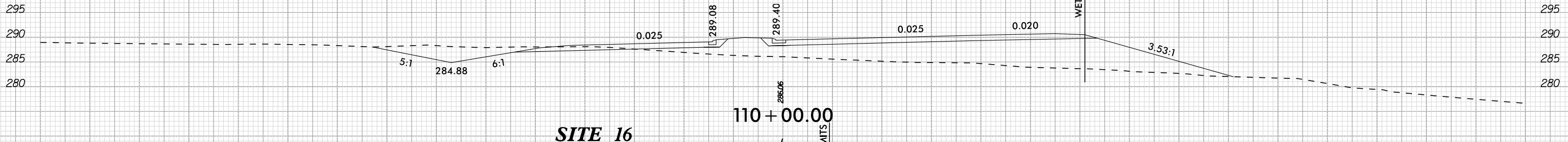
12/30/2021

PERMIT DRAWING
SHEET 32 OF 64

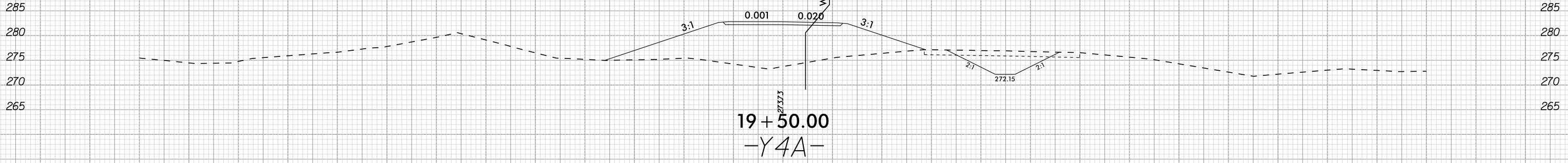
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	R-5705A	PERMIT SHEET - OF -



SITE 15



SITE 16



5/14/99

LEGEND

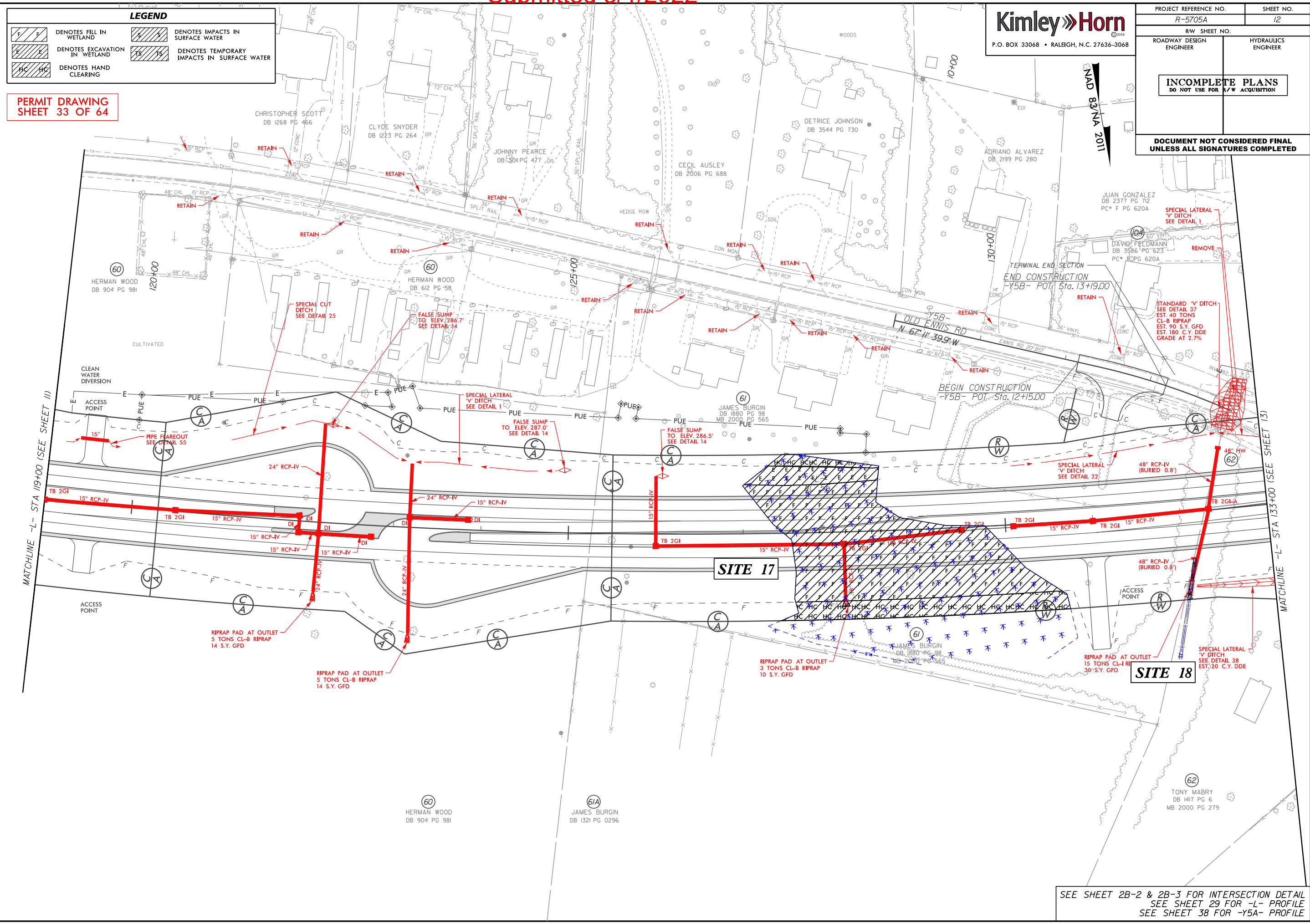
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		

PERMIT DRAWING
SHEET 33 OF 64

Kimley»Horn
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PROJECT REFERENCE NO. <i>R-5705A</i>		SHEET NO. <i>12</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REVISIONS



SEE SHEET 2B-2 & 2B-3 FOR INTERSECTION DETAIL
SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 38 FOR -Y5A- PROFILE

12/30/2021

5/14/99

LEGEND

	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		

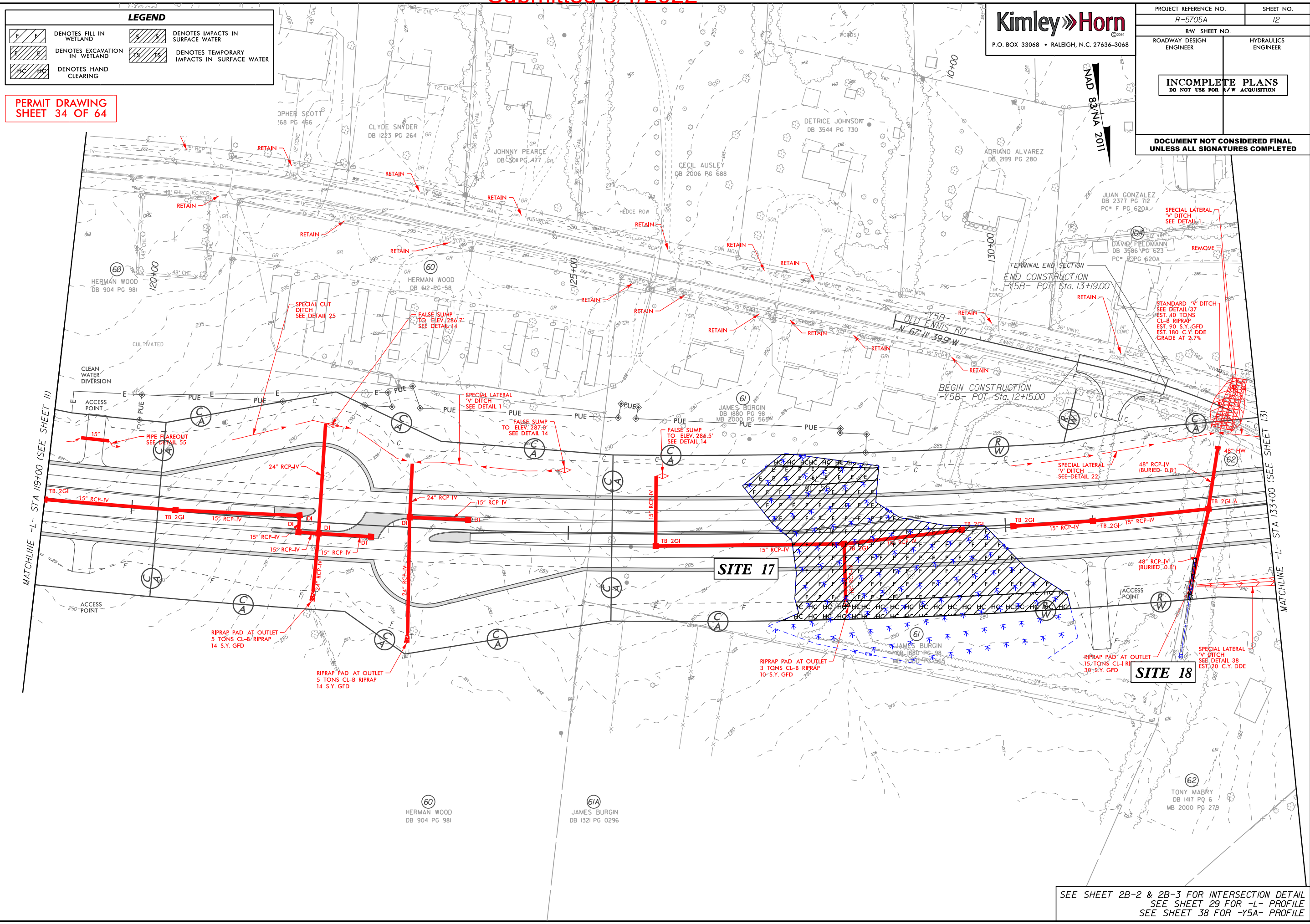
PERMIT DRAWING
SHEET 34 OF 64

Kimley»Horn

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PROJECT REFERENCE NO. <i>R-5705A</i>		SHEET NO. <i>12</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REVISIONS

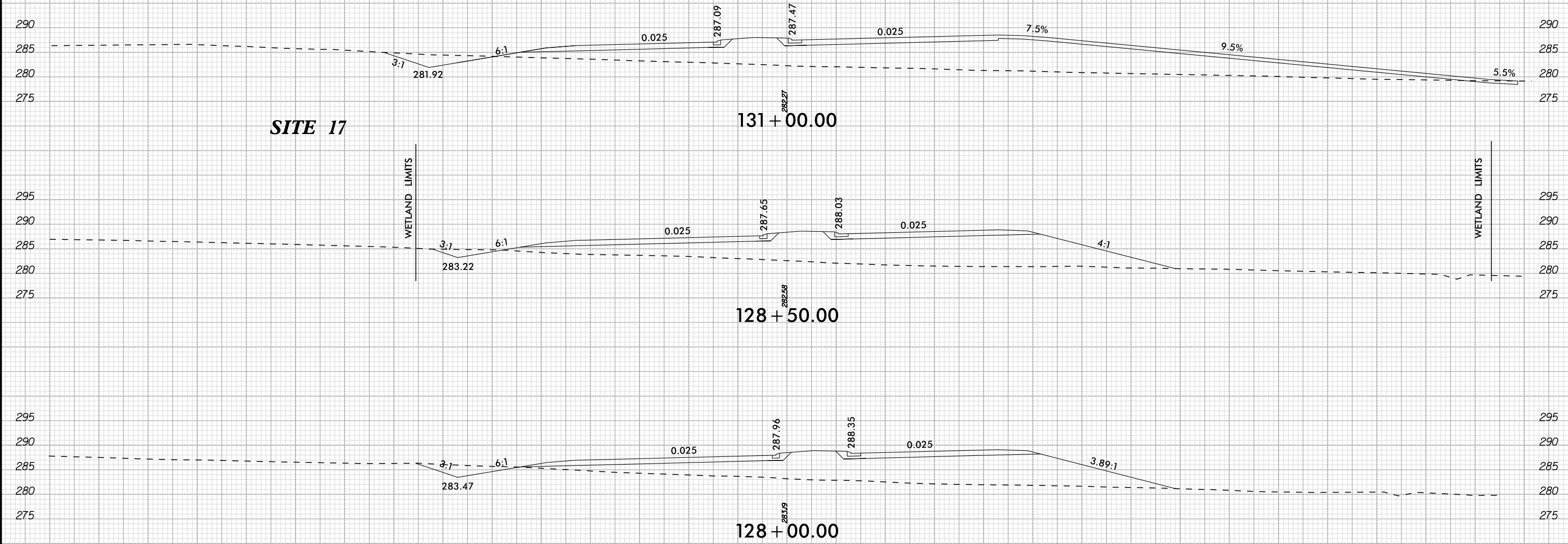


SEE SHEET 2B-2 & 2B-3 FOR INTERSECTION DETAIL
SEE SHEET 29 FOR -L- PROFILE
SEE SHEET 38 FOR -Y5A- PROFILE

12/30/2021

PERMIT DRAWING
SHEET 35 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -



PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		13	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND

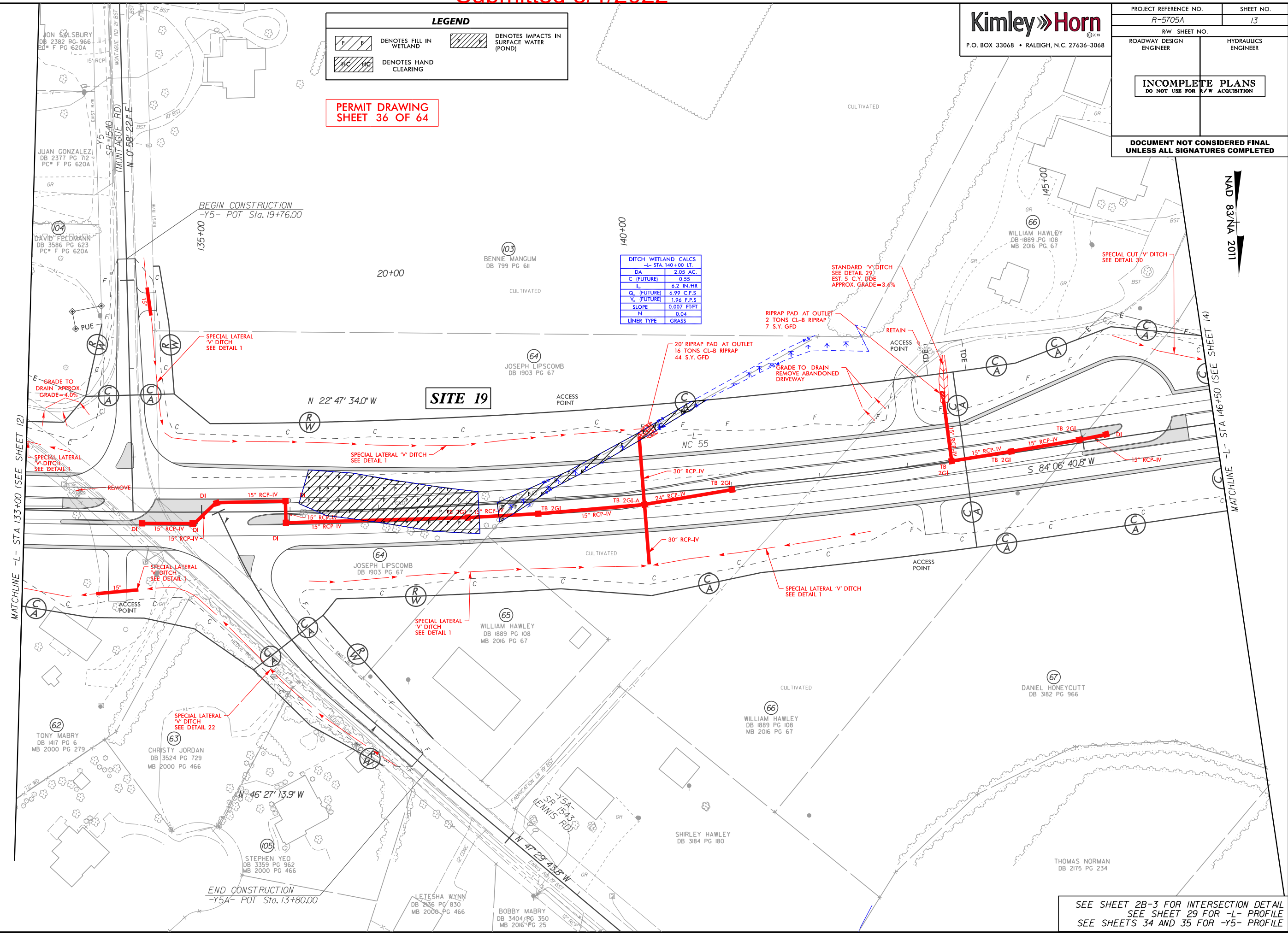
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER (POND)
	DENOTES HAND CLEARING		

PERMIT DRAWING
SHEET 36 OF 64

DITCH WETLAND CALCS
-L- STA 140+00 LT.

DA	2.05 AC.
C (FUTURE)	0.55
I _u	6.2 IN./HR
Q _u (FUTURE)	6.99 C.F.S
V _u (FUTURE)	1.96 F.F.T
SLOPE	0.007 FIFT
N	0.04
LINER TYPE	GRASS

NAD 83/NA 2011



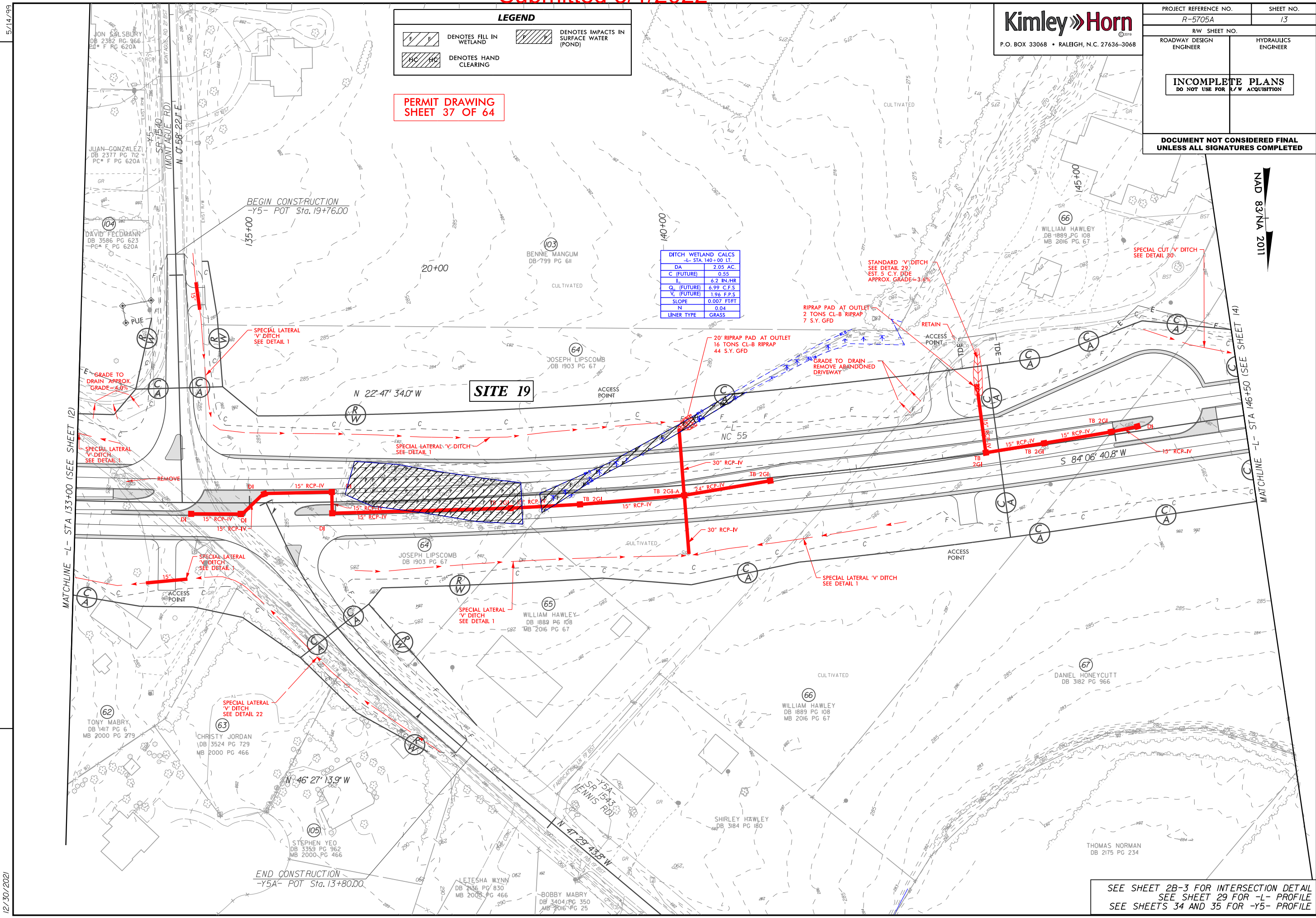
SEE SHEET 2B-3 FOR INTERSECTION DETAIL
SEE SHEET 29 FOR -L- PROFILE
SEE SHEETS 34 AND 35 FOR -Y5- PROFILE

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

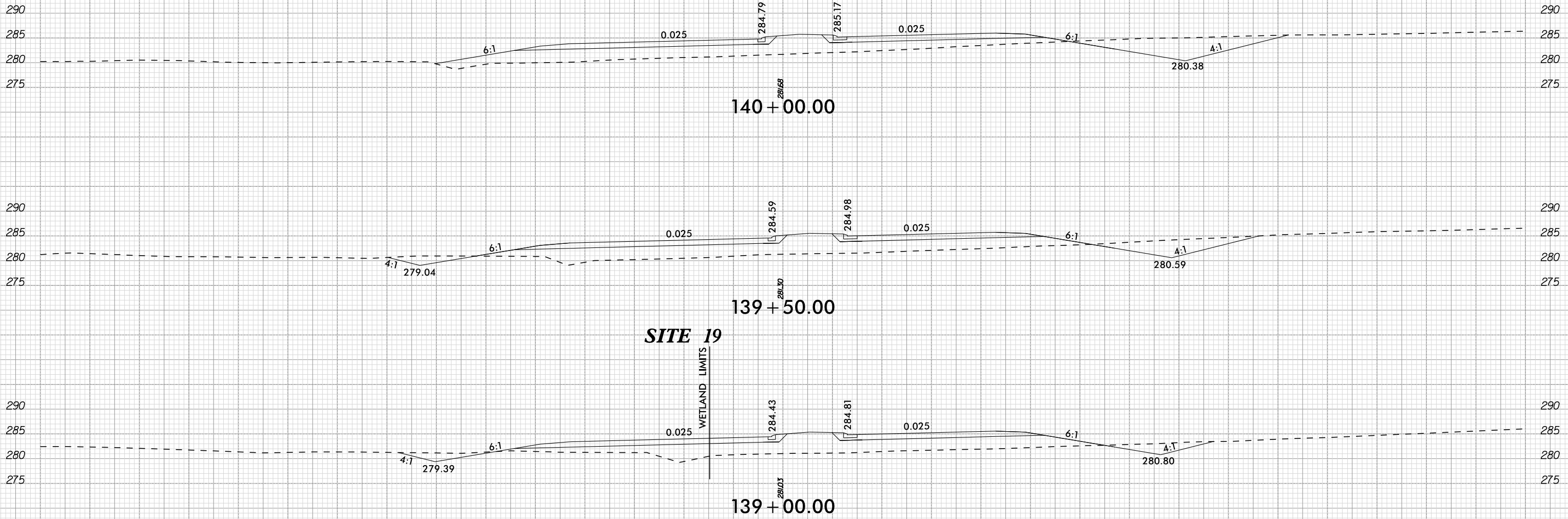
NAD 83/NA 2011

SEE SHEET 2B-3 FOR INTERSECTION DETAIL
SEE SHEET 29 FOR -L- PROFILE
SEE SHEETS 34 AND 35 FOR -Y5- PROFILE



PERMIT DRAWING
SHEET 38 OF 64

0510	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -

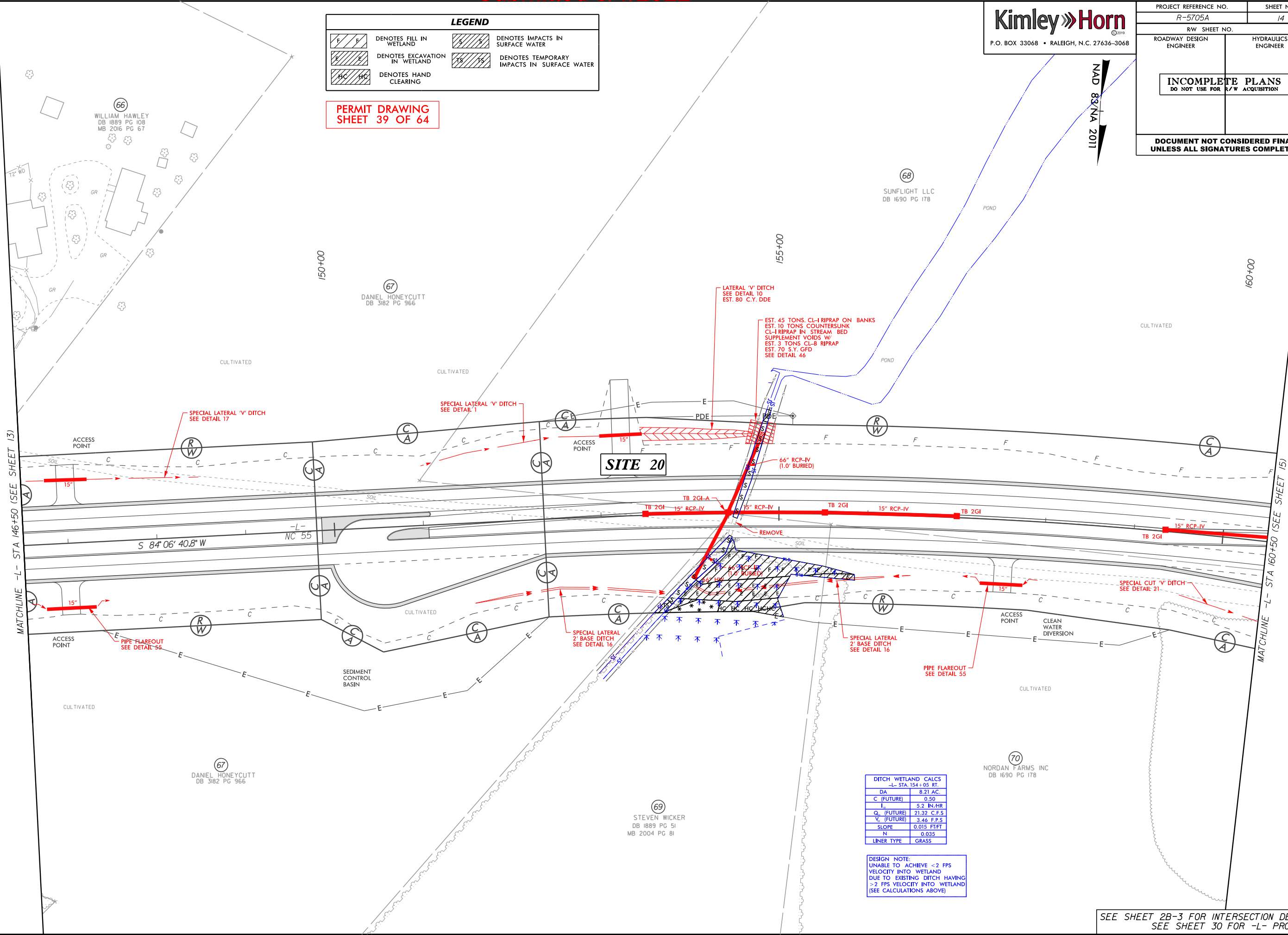


PROJECT REFERENCE NO. R-5705A		SHEET NO. 14	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		

PERMIT DRAWING
SHEET 39 OF 64

REVISIONS



DITCH WETLAND CALCS	
-L- STA 154+05 RT.	
DA	8.21 AC.
C (FUTURE)	0.50
I _u	5.2 IN./HR
Q _u (FUTURE)	21.32 C.F.S
V _u (FUTURE)	3.46 F.P.S
SLOPE	0.015 FT/FT
N	0.035
LINER TYPE	GRASS

DESIGN NOTE:
UNABLE TO ACHIEVE <2 FPS
VELOCITY INTO WETLAND
DUE TO EXISTING DITCH HAVING
>2 FPS VELOCITY INTO WETLAND
(SEE CALCULATIONS ABOVE)

SEE SHEET 2B-3 FOR INTERSECTION DETAIL
SEE SHEET 30 FOR -L- PROFILE

5/14/99

12/30/2021

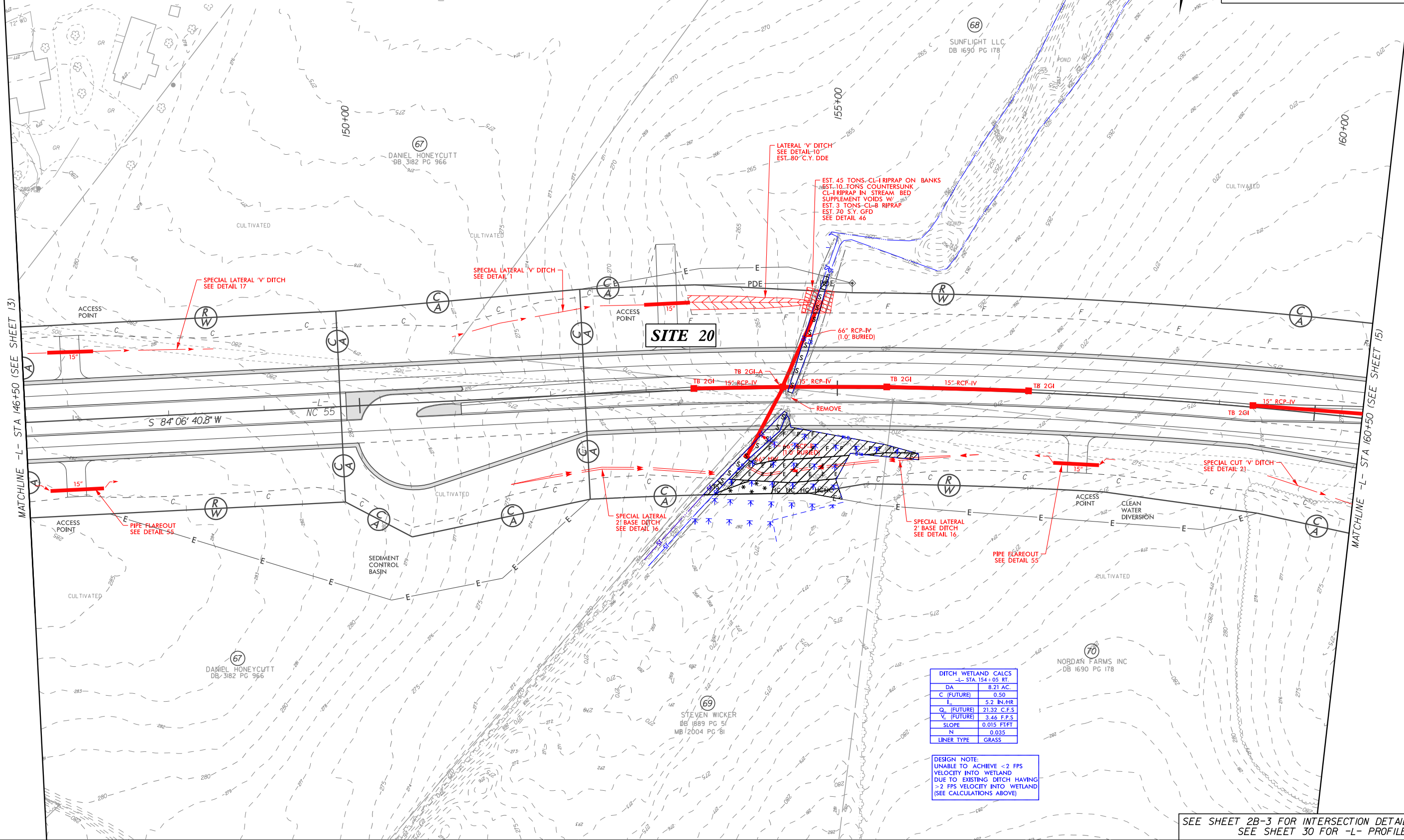
LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		

PERMIT DRAWING
SHEET 40 OF 64

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PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		14	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



DITCH WETLAND CALCS	
DA	8.21 AC.
C (FUTURE)	0.50
I	5.2 IN./HR
Q _v (FUTURE)	21.32 C.F.S
V _s (FUTURE)	3.46 F.P.S
SLOPE	0.015 FT/FT
N	0.035
LINER TYPE	GRASS

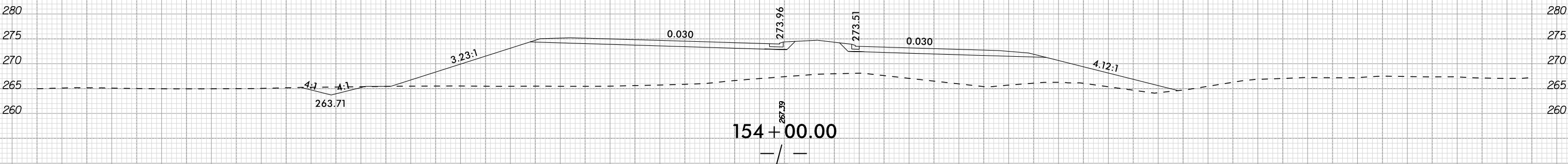
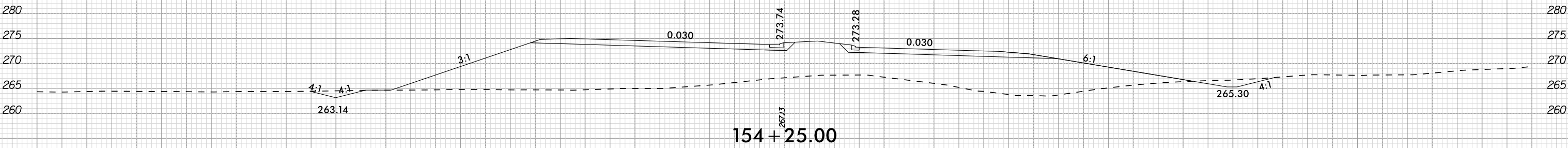
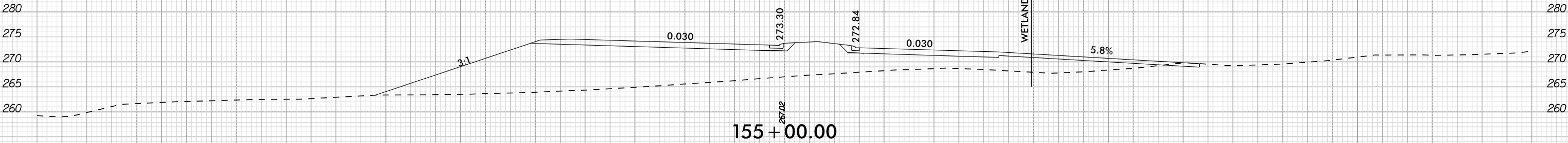
DESIGN NOTE:
UNABLE TO ACHIEVE <2 FPS
VELOCITY INTO WETLAND
DUE TO EXISTING DITCH HAVING
>2 FPS VELOCITY INTO WETLAND
(SEE CALCULATIONS ABOVE)

SEE SHEET 2B-3 FOR INTERSECTION DETAIL
SEE SHEET 30 FOR -L- PROFILE

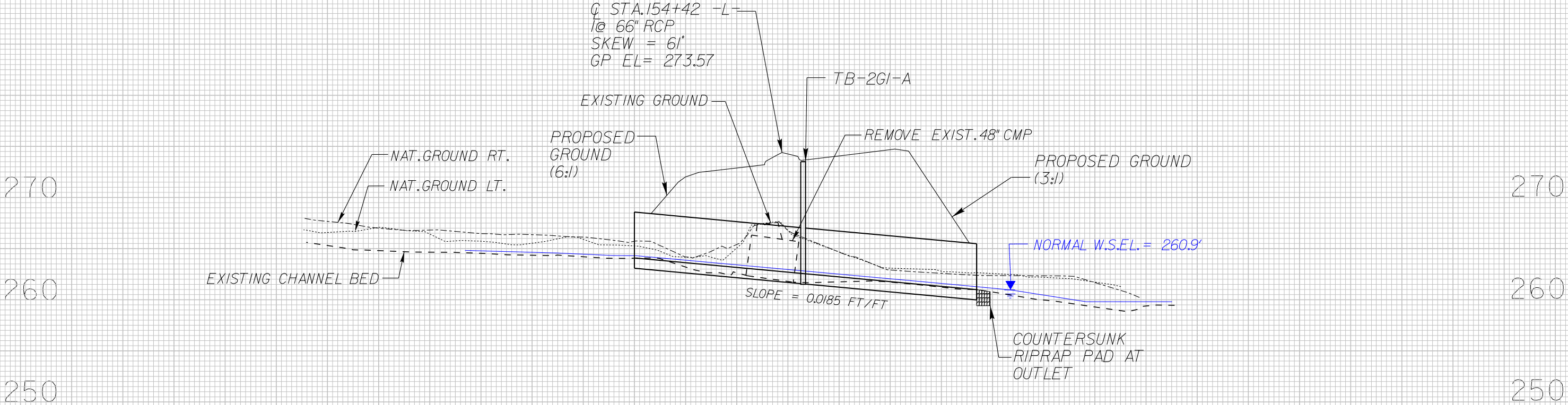
PERMIT DRAWING
SHEET 41 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -

SITE 20



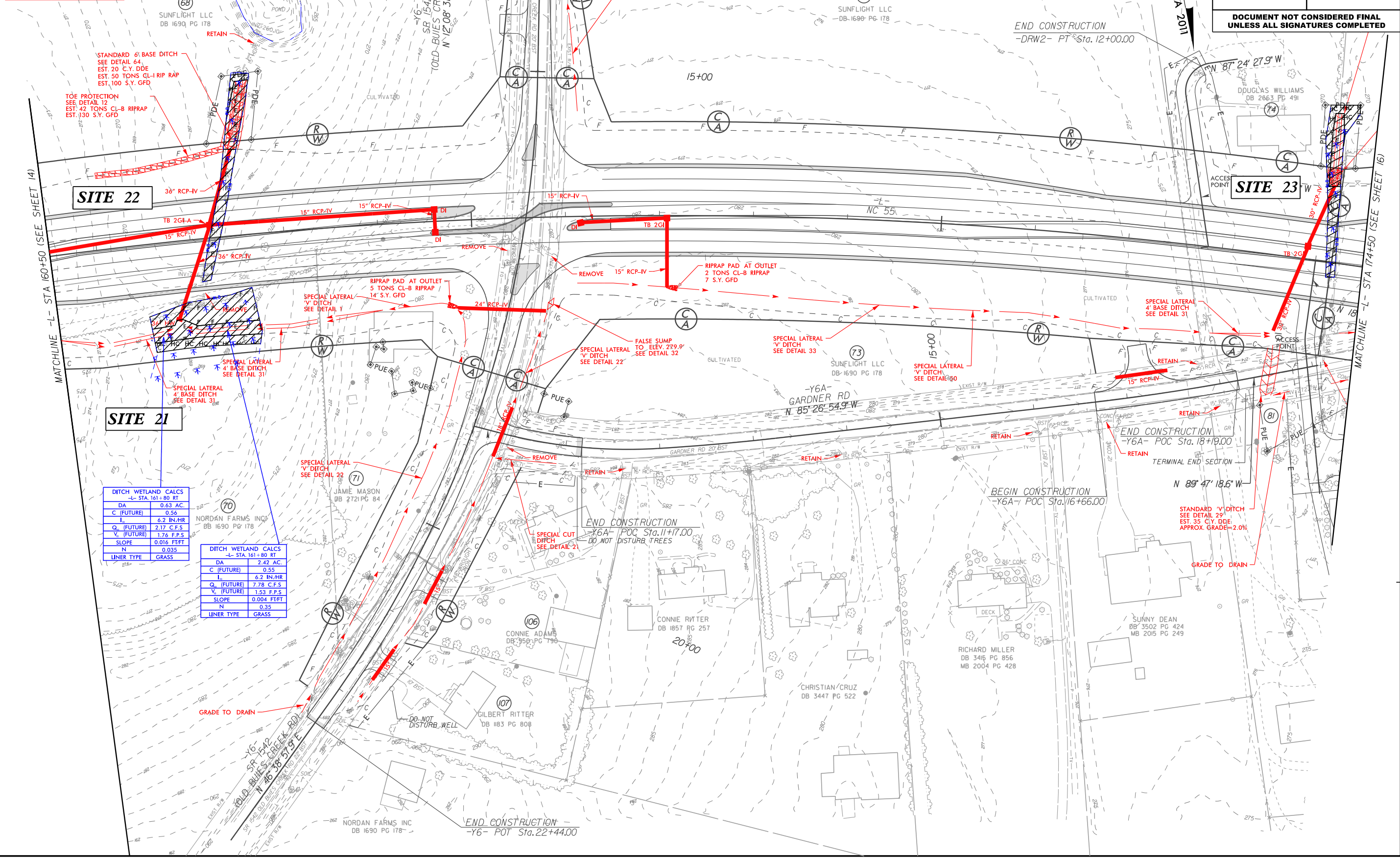
SITE 20



PROJECT REFERENCE NO. <i>R-5705A</i>		SHEET NO. <i>15</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES EXCAVATION IN WETLAND
	DENOTES HAND CLEARING		

PERMIT DRAWING
SHEET 44 OF 64



DITCH WETLAND CALCS	
DA	0.63 AC.
C (FUTURE)	0.56
Q (FUTURE)	6.2 IN./HR
V (FUTURE)	2.17 C.F.S
SLOPE	1.74 F.F.S
N	0.016 FT/FT
LINER TYPE	GRASS

DITCH WETLAND CALCS	
DA	2.42 AC.
C (FUTURE)	0.55
Q (FUTURE)	6.2 IN./HR
V (FUTURE)	7.78 C.F.S
SLOPE	1.63 F.F.S
N	0.004 FT/FT
LINER TYPE	GRASS

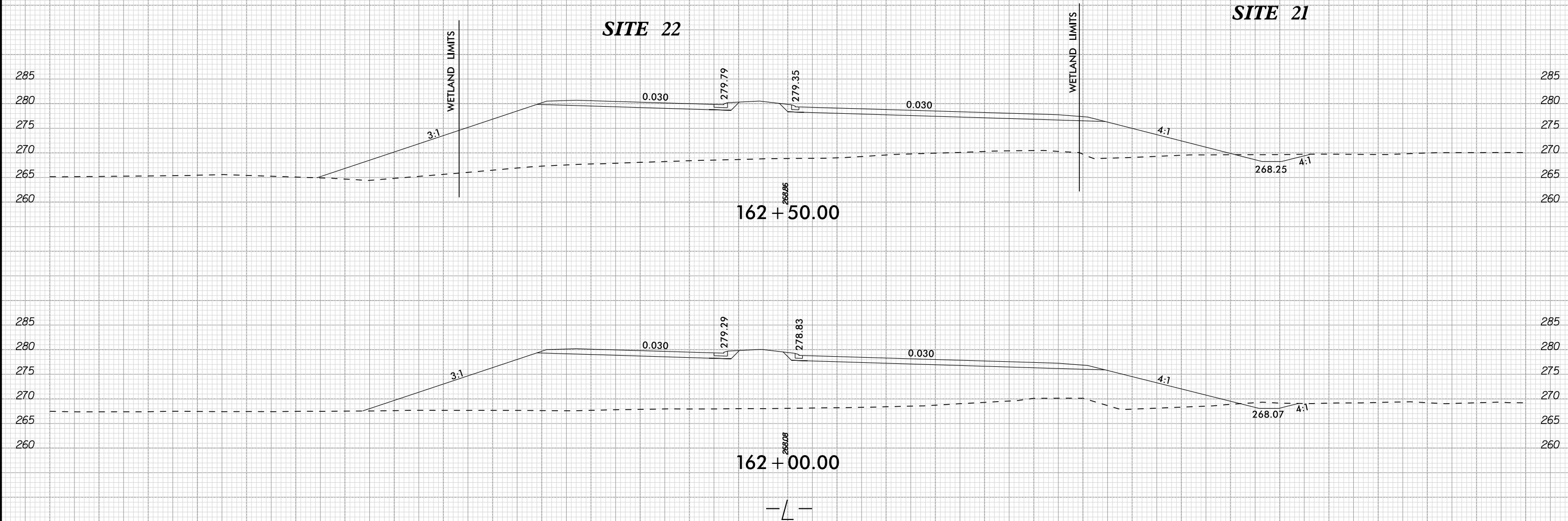
REVISIONS

5/14/99

12/30/2021

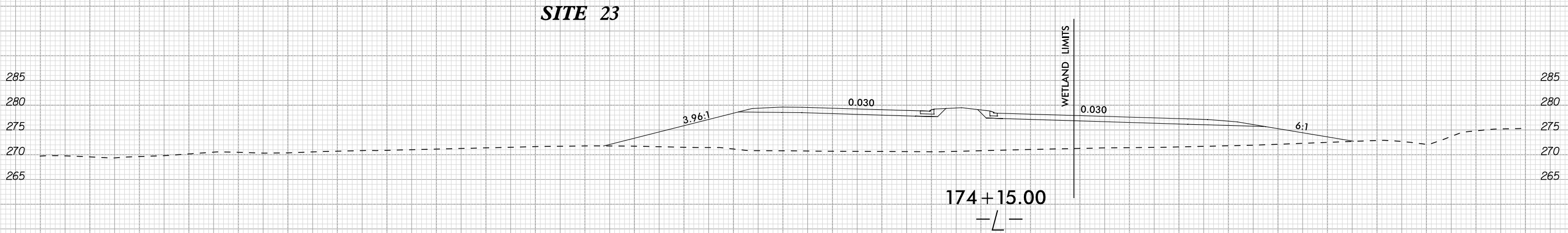
PERMIT DRAWING
SHEET 45 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -



PERMIT DRAWING
SHEET 46 OF 64

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5705A	PERMIT SHEET - OF -



5/14/99

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING
SHEET 47 OF 64

Kimley»Horn

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PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		16	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REALIGN AND WIDEN EXISTING DITCH TO PROPERTY LINE
MATCH EXISTING DITCH INVERT ELEVATIONS
SEE DETAIL 63
EST 10 CY DDE

175+00

(76)
ILLIAM TYSON
DB 1446 PG 986

(78)
DAVID GARDNER
DB 1085 PG 714

SITE 25

DITCH WETLAND CALCS	
-L- STA 181+50 LT.	
DA	1.32 AC.
C (FUTURE)	0.43
I ₁	6.2 IN./HR
Q ₁ (FUTURE)	3.48 C.F.S.
V ₁ (FUTURE)	1.5 F.P.S.
SLOPE	0.005 FT/FT
N	0.035
LINER TYPE	GRASS

DITCH WETLAND CALCS	
-L- STA 182+50 LT.	
DA	0.74 AC.
C (FUTURE)	0.34
I ₁	6.2 IN./HR
Q ₁ (FUTURE)	1.55 C.F.S.
V ₁ (FUTURE)	1.8 F.P.S.
SLOPE	0.015 FT/FT
N	0.035
LINER TYPE	GRASS

PROPOSED SINGLE GATE,
47" HIGH, 12" WIDE, 12" OPENING
STA 182+00 TO 182+12 LT

RIPRAP PAD AT OUTLET
2 TONS CL-B RIPRAP
7 S.Y. GFD

SPECIAL LATERAL
"V" DITCH
SEE DETAIL 1

PIPE FLAREOUT
SEE DETAIL 55

MATCHLINE -L- STA 174+50 (SEE SHEET 15)

54° 36.2' E
G.T.D.

N 22° 04' 22.0" E

SPECIAL LATERAL
2" BASE DITCH
SEE DETAIL 16

SPECIAL CUT
"V" DITCH
SEE DETAIL 21

S 76° 53' 18.3" E
END CONSTRUCTION
-DRW4- POT Sta. 11+26.90

SITE 24

DITCH WETLAND CALCS	
-L- STA 180+50 RT.	
DA	1.51 AC.
C (FUTURE)	0.53
I ₁	6.2 IN./HR
Q ₁ (FUTURE)	4.94 C.F.S.
V ₁ (FUTURE)	1.31 F.P.S.
SLOPE	0.003 FT/FT
N	0.035
LINER TYPE	GRASS

RIPRAP PAD AT OUTLET
2 TONS CL-B RIPRAP
7 S.Y. GFD

FALSE SUMP
SEE DETAIL 7

TYPICAL INLET
IMPROVEMENTS
SEE DETAIL 67 &
QUANTITIES IN
TABLE ABOVE
GRADE CHANNEL
AT 1.0%

END CONSTRUCTION
-DRW5- POT Sta. 11+07.00

15" CSP
WELBOWS

B.D.O.

BERM "V" DITCH
SEE DETAIL 3

MATCHLINE -L- STA 188+00 (SEE SHEET 17)

N 5° 24' 08.4" E
END CONSTRUCTION
-DRW3- POT Sta. 12+38.00

CONTRACTOR SHALL COORDINATE
DRIVEWAY REPLACEMENT LIMITS
WITH THE PROPERTY OWNER.
CONTRACTOR TO ADJUST AS
DIRECTED BY THE ENGINEER.

SEE SHEET 2B-4 FOR INTERSECTION DETAIL
SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 40 FOR -DRW3- PROFILE
SEE SHEET 40 FOR -DRW4- PROFILE

REVISIONS

12/30/2021

5/14/99

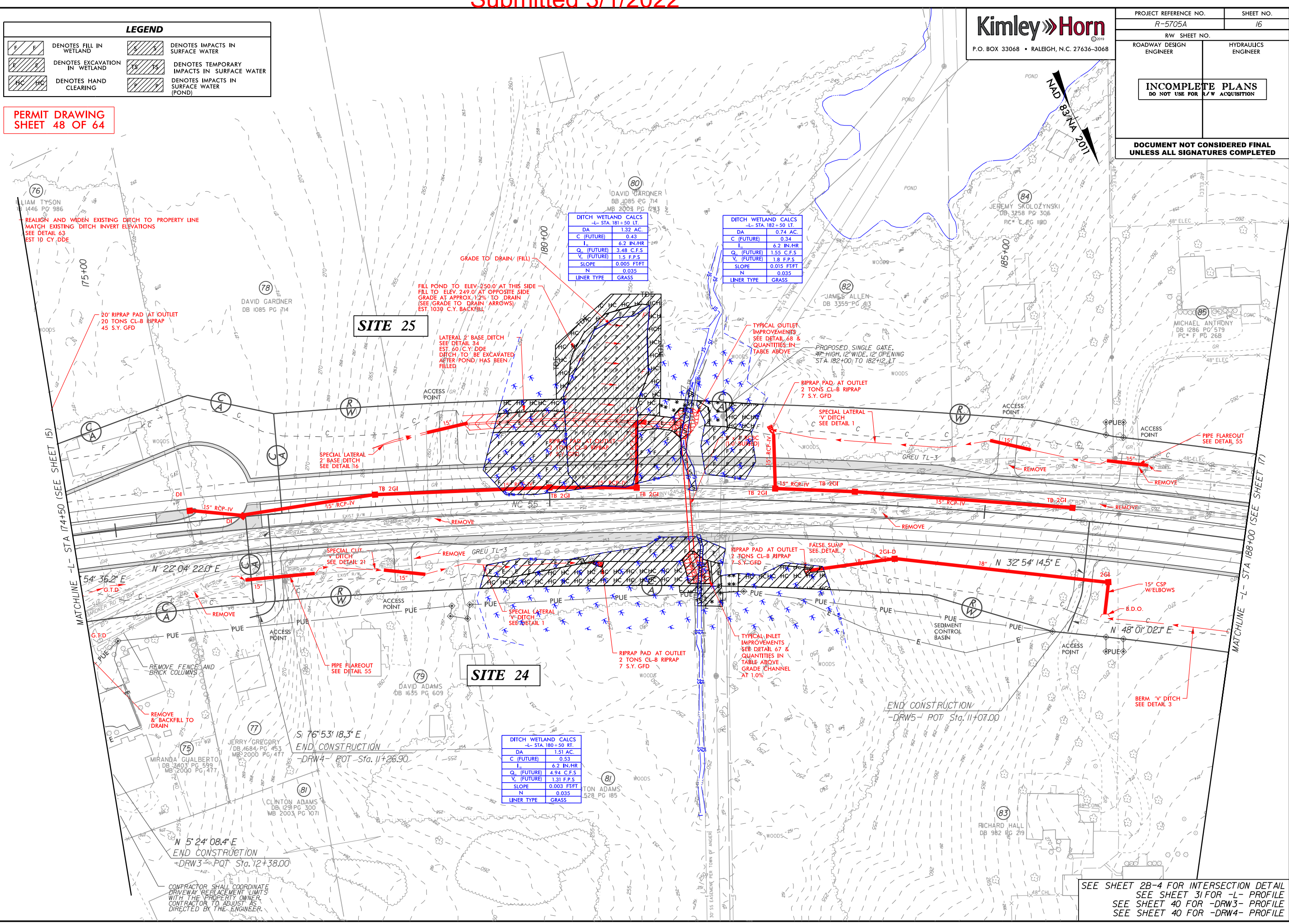
LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING
SHEET 48 OF 64

Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. <i>R-5705A</i>		SHEET NO. <i>16</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

REVISIONS



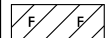
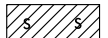
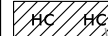
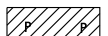
SEE SHEET 2B-4 FOR INTERSECTION DETAIL
SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 40 FOR -DRW3- PROFILE
SEE SHEET 40 FOR -DRW4- PROFILE

12/30/2021

WETLAND AND STREAM IMPACTS

SITE IMPACT ZOOM: 1"=40'

PERMIT DRAWING
SHEET 49 OF 64

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

SITE 25

LATERAL 2' BASE DITCH
SEE DETAIL 34
EST. 60 C.Y. DDE
DITCH TO BE EXCAVATED
AFTER POND HAS BEEN
FILLED

TYPICAL OUTLET
IMPROVEMENTS
SEE DETAIL 68 &
QUANTITIES IN
TABLE ABOVE

RIPRAP PAD AT OUTLET
2 TONS CL-B RIPRAP
7 S.Y. GFD

SPECIAL LATERAL
'V' DITCH
SEE DETAIL 1

RIPRAP PAD AT OUTLET
2 TONS CL-B RIPRAP
7 S.Y. GFD

5' x 5' RCBC
(1.0' BURIED)

SITE 24

RIPRAP PAD AT OUTLET
2 TONS CL-B RIPRAP
7 S.Y. GFD

FALSE SUMP
SEE DETAIL 7

SITE 24,25

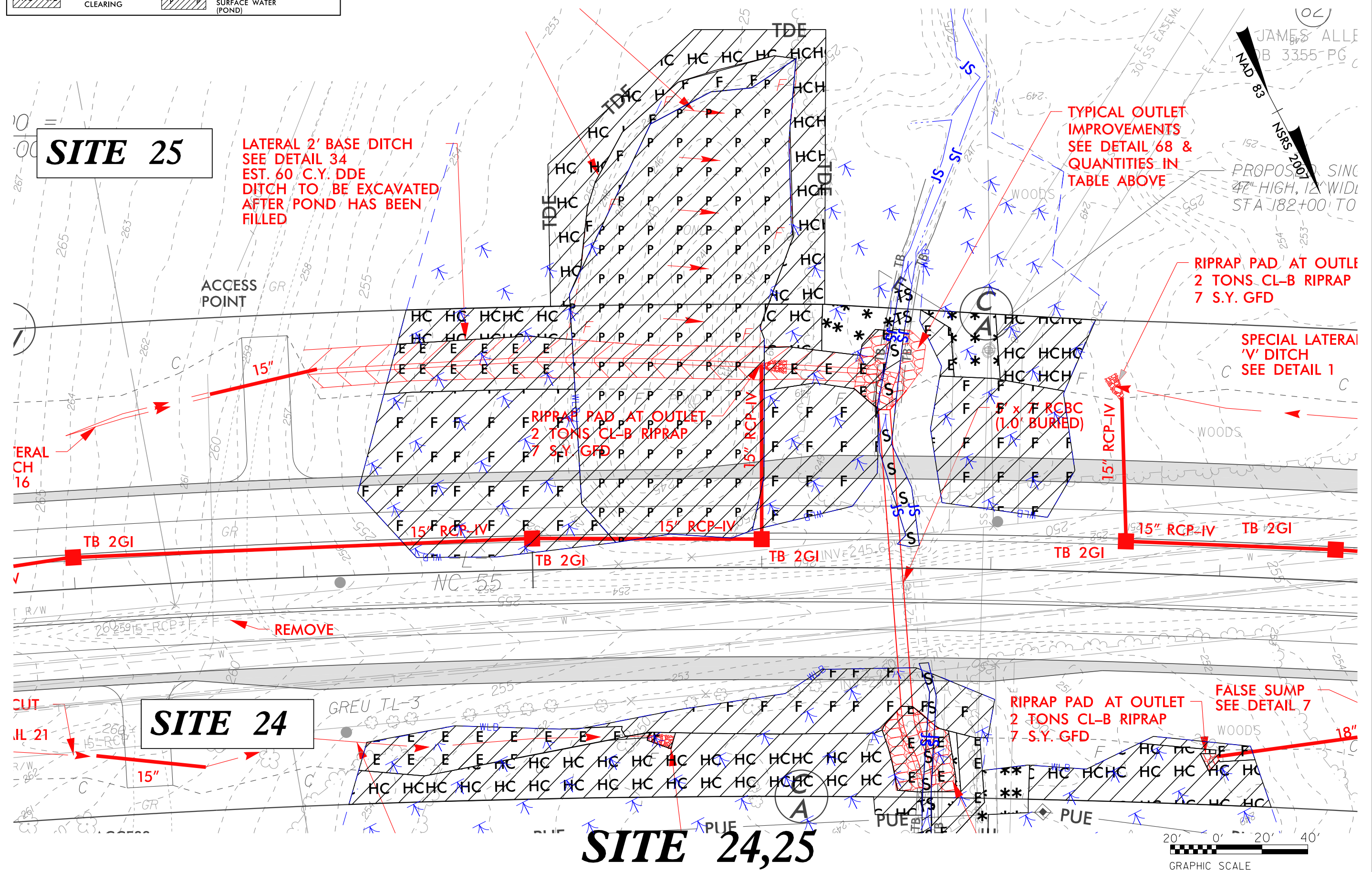


WETLAND AND STREAM IMPACTS

SITE IMPACT ZOOM: 1"=40'

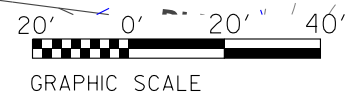
PERMIT DRAWING
SHEET 50 OF 64

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)



REVISIONS

12/30/2021



The image displays four cross-section diagrams of a road project, showing the existing ground profile (dashed line), the proposed road profile (solid line), and the wetland limits (vertical line). The diagrams are labeled with stationing: 182+00.00, 181+50.00, 181+00.00, and 180+50.00. The diagrams show a road profile with a 3:1 slope on the left and a 3:1 slope on the right. The road is labeled 'SITE 25' and 'SITE 24'. The diagrams also show 'WETLAND LIMITS' and 'FILL IN POND (SEE REDLINE PLANS)'.

Diagram 1: Station 182+00.00

- Existing Ground: 245.00
- Proposed Road Profile: 257.00 (left), 256.20 (right)
- Slope: 3:1 (left), 3:1 (right)
- Wetland Limits: 253.44

Diagram 2: Station 181+50.00

- Existing Ground: 245.00
- Proposed Road Profile: 257.39 (left), 256.57 (right)
- Slope: 3:1 (left), 3:1 (right)
- Wetland Limits: 253.33

Diagram 3: Station 181+00.00

- Existing Ground: 245.00
- Proposed Road Profile: 247.25 (left), 257.86 (left), 257.04 (right)
- Slope: 4:1 (left), 3:1 (left), 3:1 (right)
- Wetland Limits: 250.70
- Fill in Pond: (SEE REDLINE PLANS)

Diagram 4: Station 180+50.00

- Existing Ground: 245.00
- Proposed Road Profile: 258.53 (left), 258.51 (left), 257.69 (right)
- Slope: 4:1 (left), 3:1 (left), 3:1 (right)
- Wetland Limits: 250.72
- Fill in Pond: (SEE REDLINE PLANS)

Diagram 5: Station 180+00.00

- Existing Ground: 245.00
- Proposed Road Profile: 249.40 (left), 259.34 (left), 258.52 (right), 250.05 (right)
- Slope: 4:1 (left), 3.52:1 (left), 3:1 (right)
- Wetland Limits: 252.38
- Fill in Pond: (SEE REDLINE PLANS)

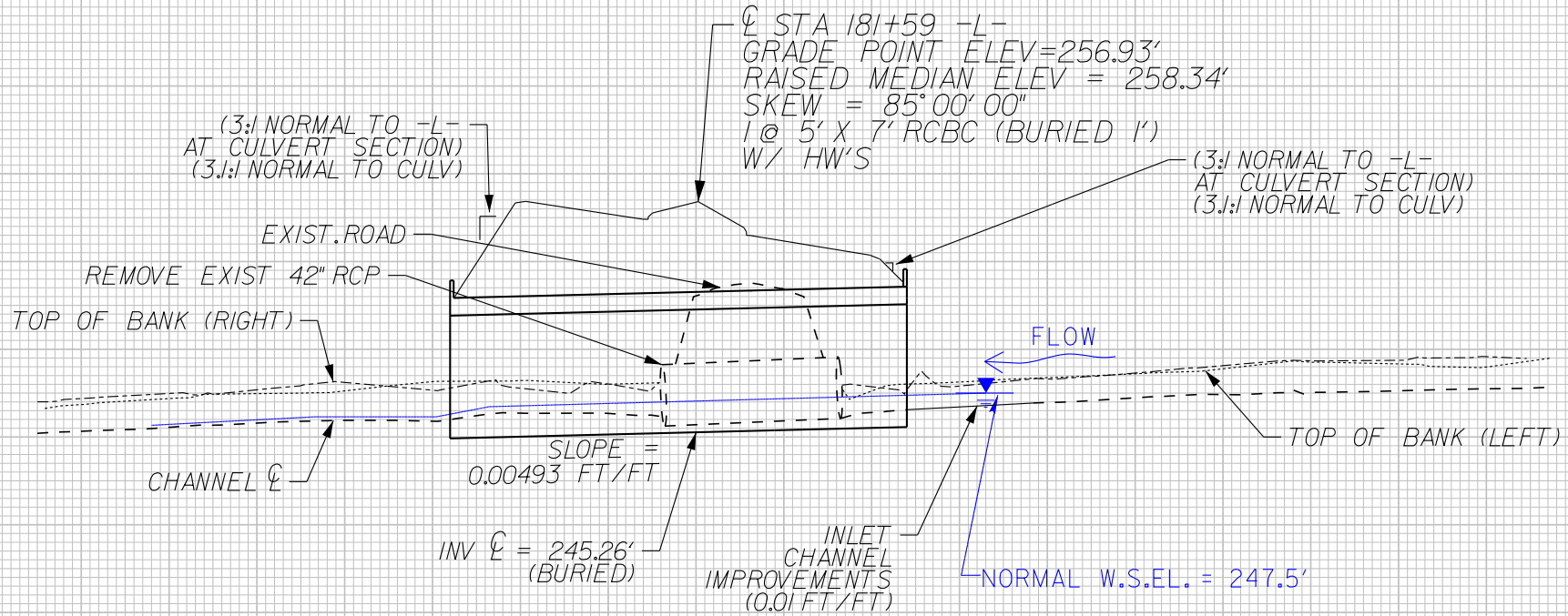
PERMIT DRAWING
SHEET 52 OF 64

SITE 24,25

260

250

240



260

250

240

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

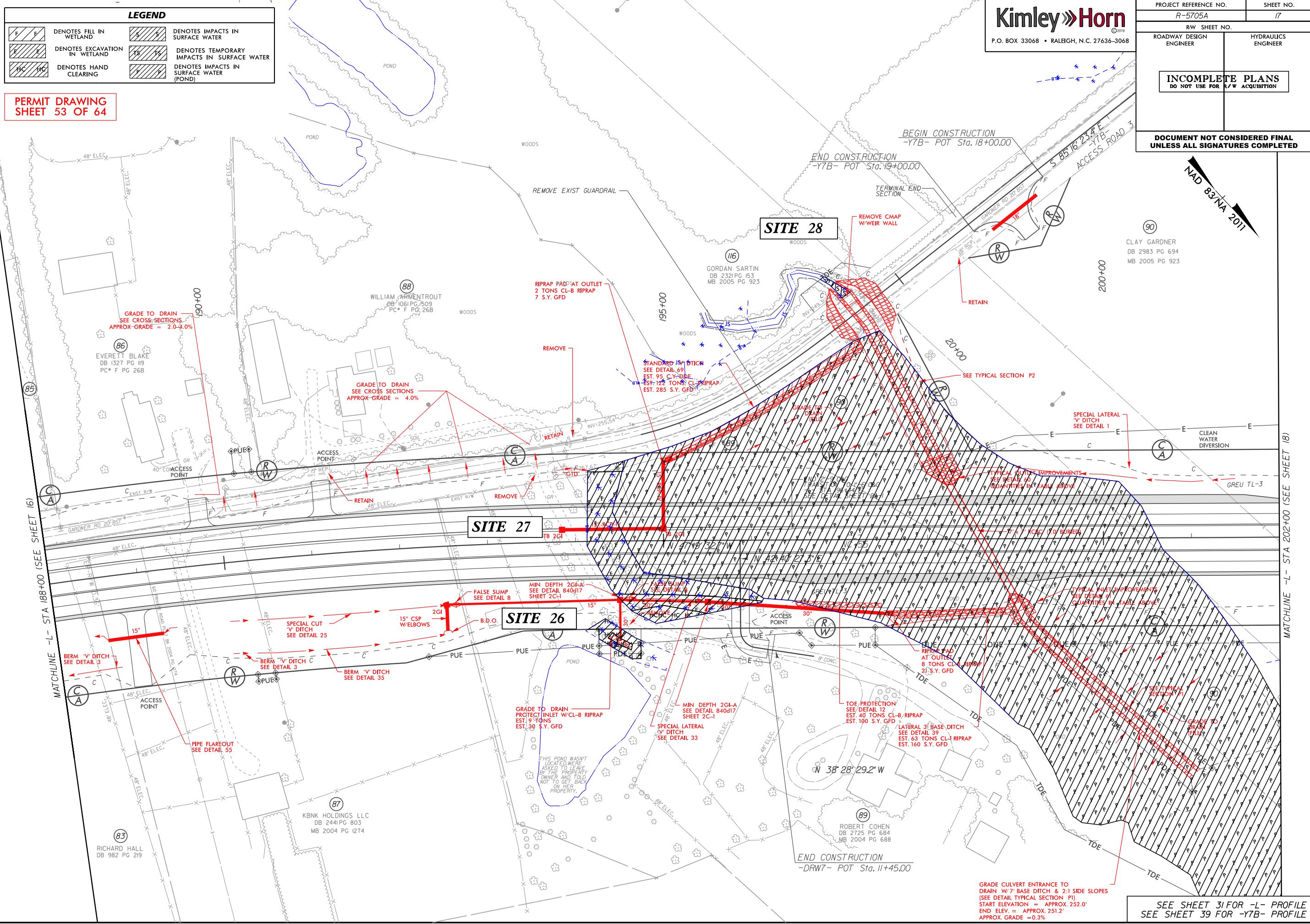
PERMIT DRAWING
SHEET 53 OF 64

Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		17	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



CLAY GARDNER
DB 2983 PG 694
MB 2005 PG 923



GRADE CULVERT ENTRANCE TO
DRAIN W/7" BASE DITCH & 2:1 SIDE SLOPES
(SEE DETAIL TYPICAL SECTION P1)
START ELEVATION = APPROX. 252.0'
END ELEV. = APPROX. 251.2'
APPROX. GRADE = 0.3%

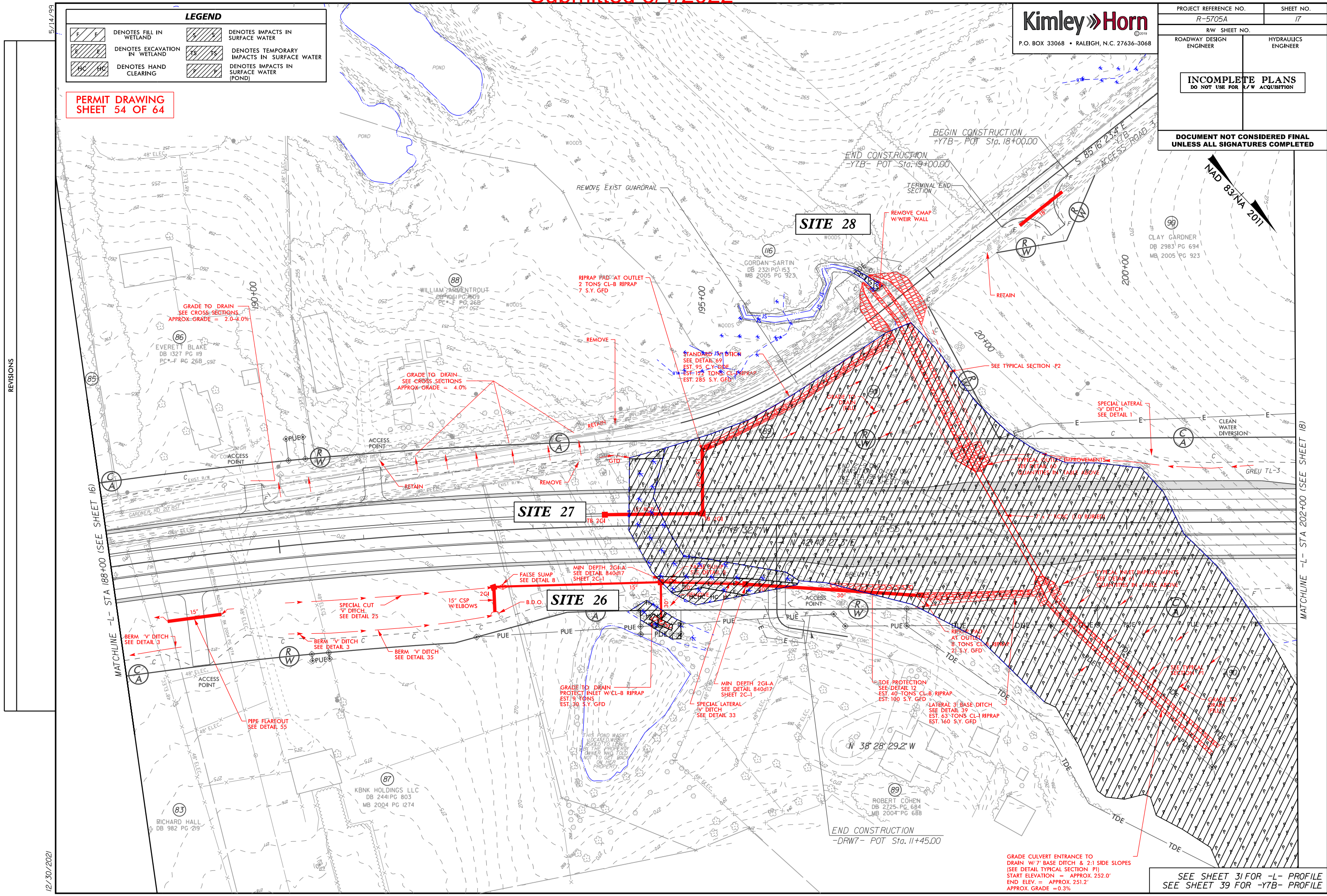
SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 39 FOR -YTB- PROFILE

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES EXCAVATION IN WETLAND		DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES IMPACTS IN SURFACE WATER (POND)

PERMIT DRAWING
SHEET 54 OF 64

Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO. <i>R-5705A</i>		SHEET NO. <i>17</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



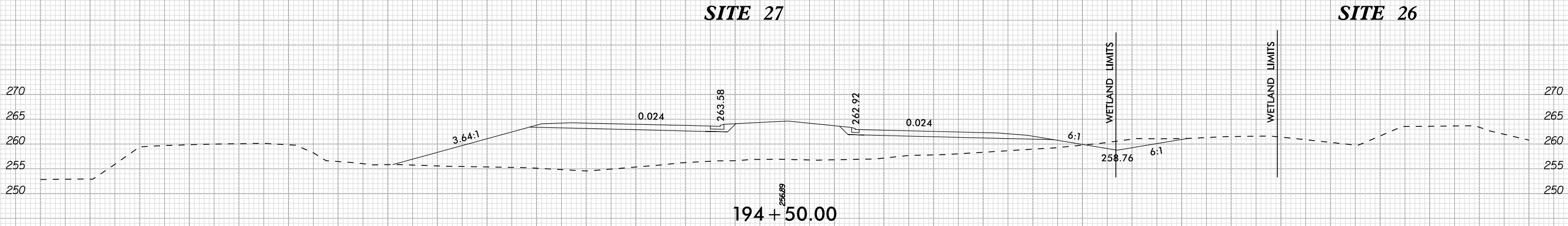
REVISIONS

12/30/2021

GRADE CULVERT ENTRANCE TO DRAIN W/7" BASE DITCH & 2:1 SIDE SLOPES (SEE DETAIL TYPICAL SECTION P1) START ELEVATION = APPROX. 252.0' END ELEV. = APPROX. 251.2' APPROX. GRADE = 0.3%

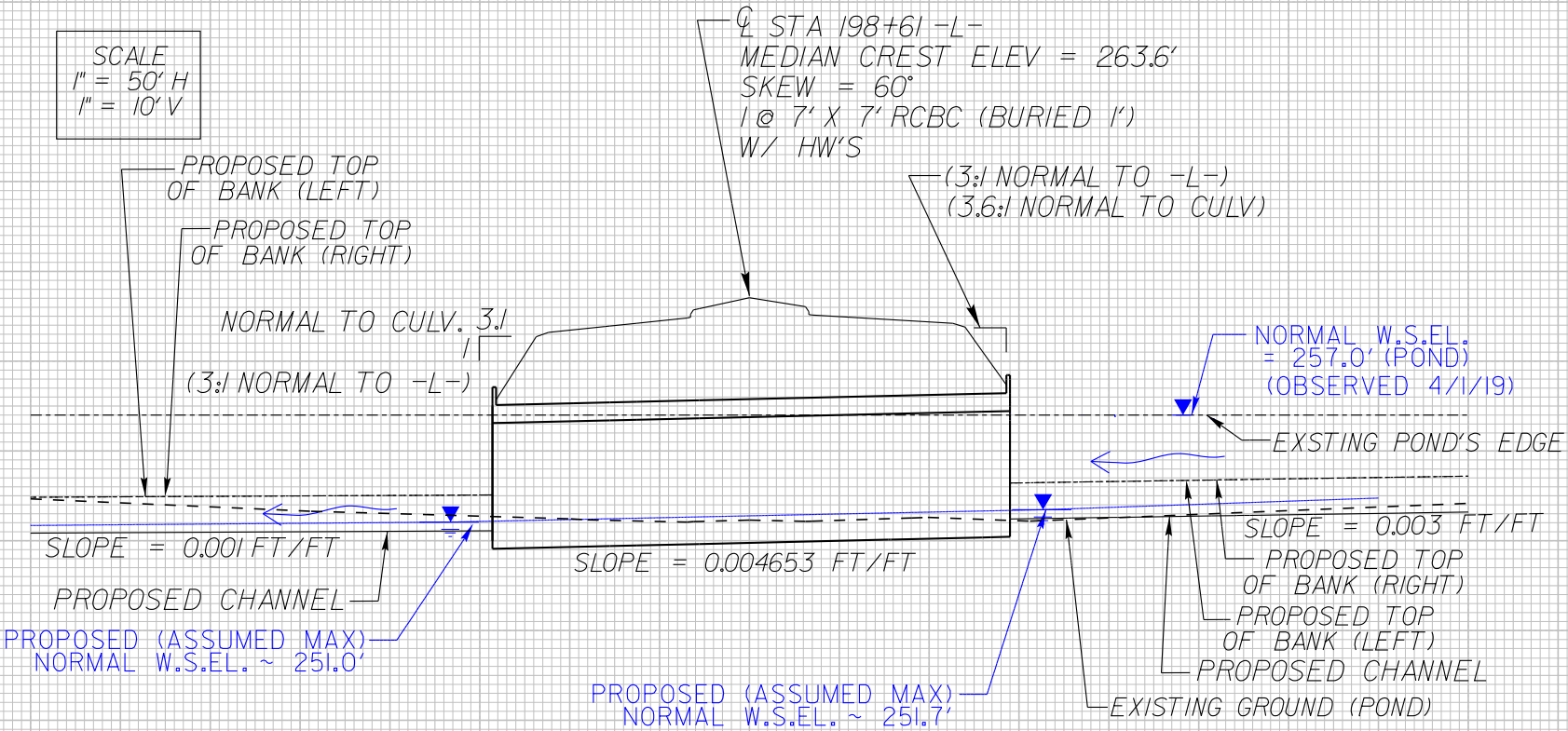
SEE SHEET 31 FOR -L- PROFILE
SEE SHEET 39 FOR -YTB- PROFILE

PERMIT DRAWING
SHEET 55 OF 64



PERMIT DRAWING
SHEET 56 OF 64

SITE 27,28



5/14/99

LEGEND			
	DENOTES FILL IN WETLAND		DENOTES EXCAVATION IN WETLAND
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 57 OF 64

Kimley»Horn
P.O. BOX 33068 • RALEIGH, N.C. 27636-3068

PROJECT REFERENCE NO.		SHEET NO.
R-5705A		18
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

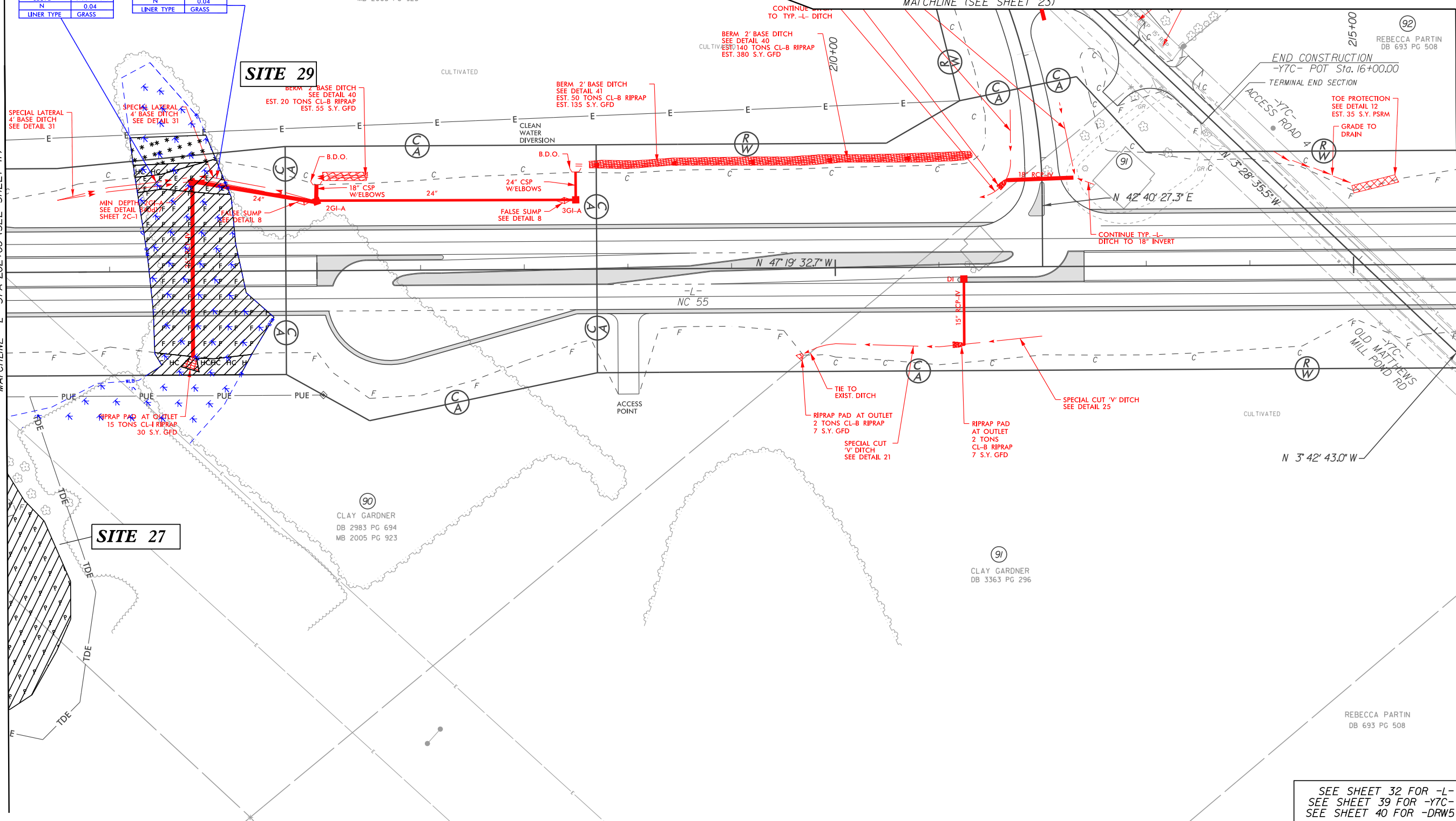


DITCH WETLAND CALCS	
-L- STA. 203+80 LT.	
DA	1.60 AC.
C (FUTURE)	0.50
I _u	6.2 IN./HR.
Q _u (FUTURE)	4.96 C.F.S.
V _u (FUTURE)	1.37 F.P.S.
SLOPE	0.004 FT/FT
N	0.04
LINER TYPE	GRASS

DITCH WETLAND CALCS	
-L- STA. 203+80 LT.	
DA	0.36 AC.
C (FUTURE)	0.50
I _u	6.2 IN./HR.
Q _u (FUTURE)	1.12 C.F.S.
V _u (FUTURE)	1.98 F.P.S.
SLOPE	0.055 FT/FT
N	0.04
LINER TYPE	GRASS

SITE 29

MATCHLINE -L- STA 202+00 (SEE SHEET 17)



MATCHLINE -L- STA 216+00 (SEE SHEET 19)

SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 39 FOR -YTC- PROFILE
SEE SHEET 40 FOR -DRW5 PROFILE

REVISIONS

12/30/2021

5/14/99

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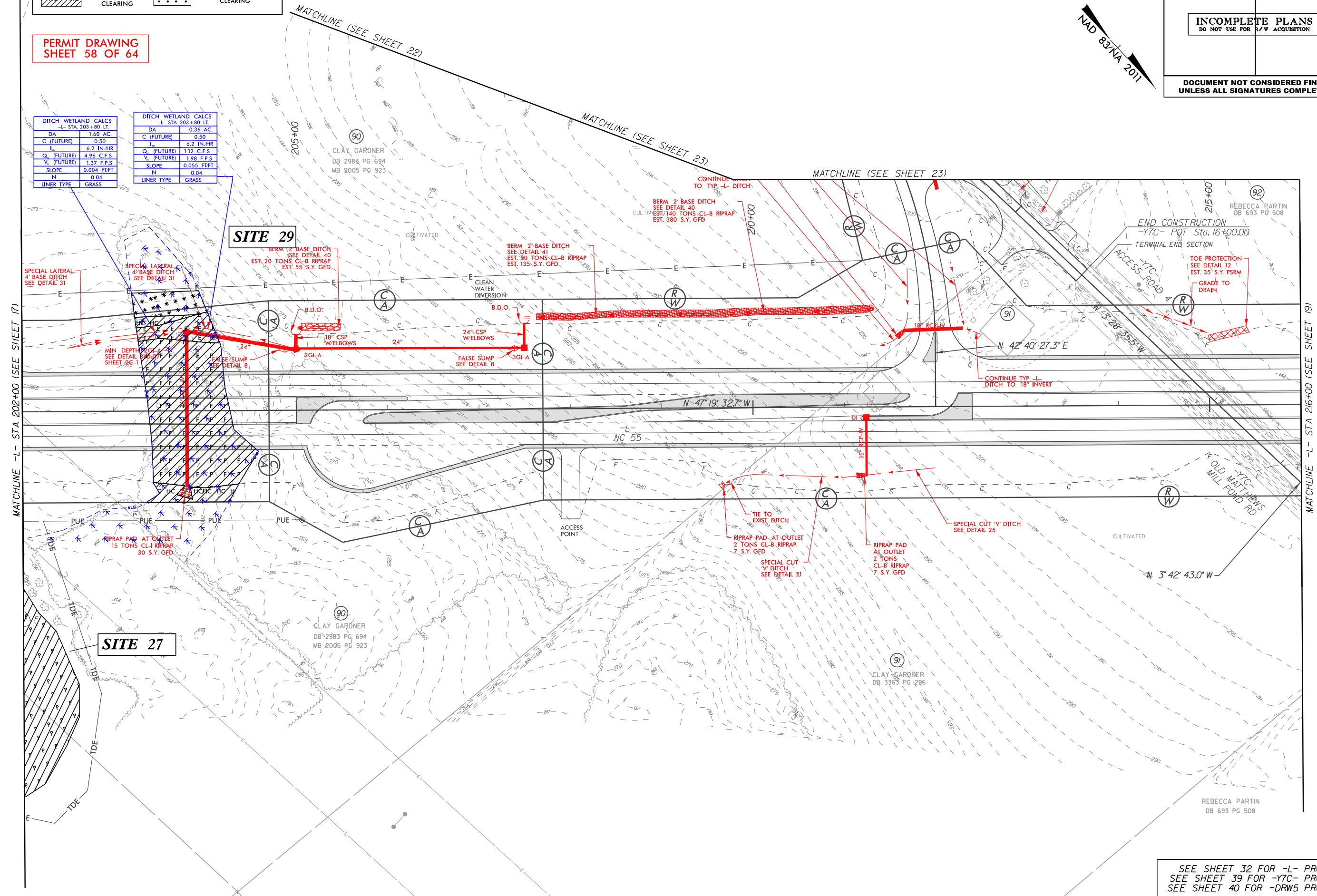
PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		18	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



LEGEND			
	DENOTES FILL IN WETLAND		DENOTES EXCAVATION IN WETLAND
	DENOTES HAND CLEARING		DENOTES MECHANIZED CLEARING

PERMIT DRAWING
SHEET 58 OF 64

DITCH WETLAND CALCS		DITCH WETLAND CALCS	
-L- STA. 203+80 LT.		-L- STA. 203+80 LT.	
DA	1.60 AC.	DA	0.36 AC.
C (FUTURE)	0.50	C (FUTURE)	0.50
I _u	6.2 IN./HR.	I _u	6.2 IN./HR.
Q _u (FUTURE)	4.96 C.F.S.	Q _u (FUTURE)	1.12 C.F.S.
V _u (FUTURE)	1.37 F.P.S.	V _u (FUTURE)	1.98 F.P.S.
SLOPE	0.004 FT/FT	SLOPE	0.005 FT/FT
N	0.04	N	0.04
LINER TYPE	GRASS	LINER TYPE	GRASS



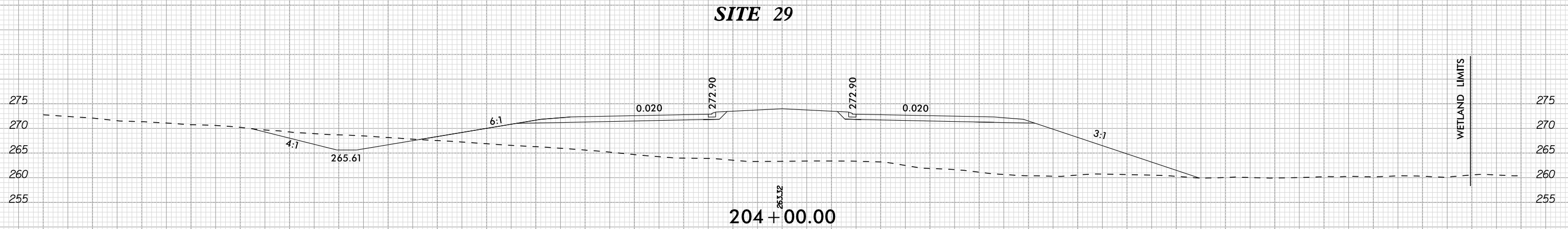
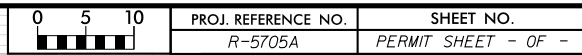
REVISIONS

SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 39 FOR -YTC- PROFILE
SEE SHEET 40 FOR -DRW5 PROFILE

12/30/2021

Submitted 3/1/2022

PERMIT DRAWING
SHEET 59 OF 64

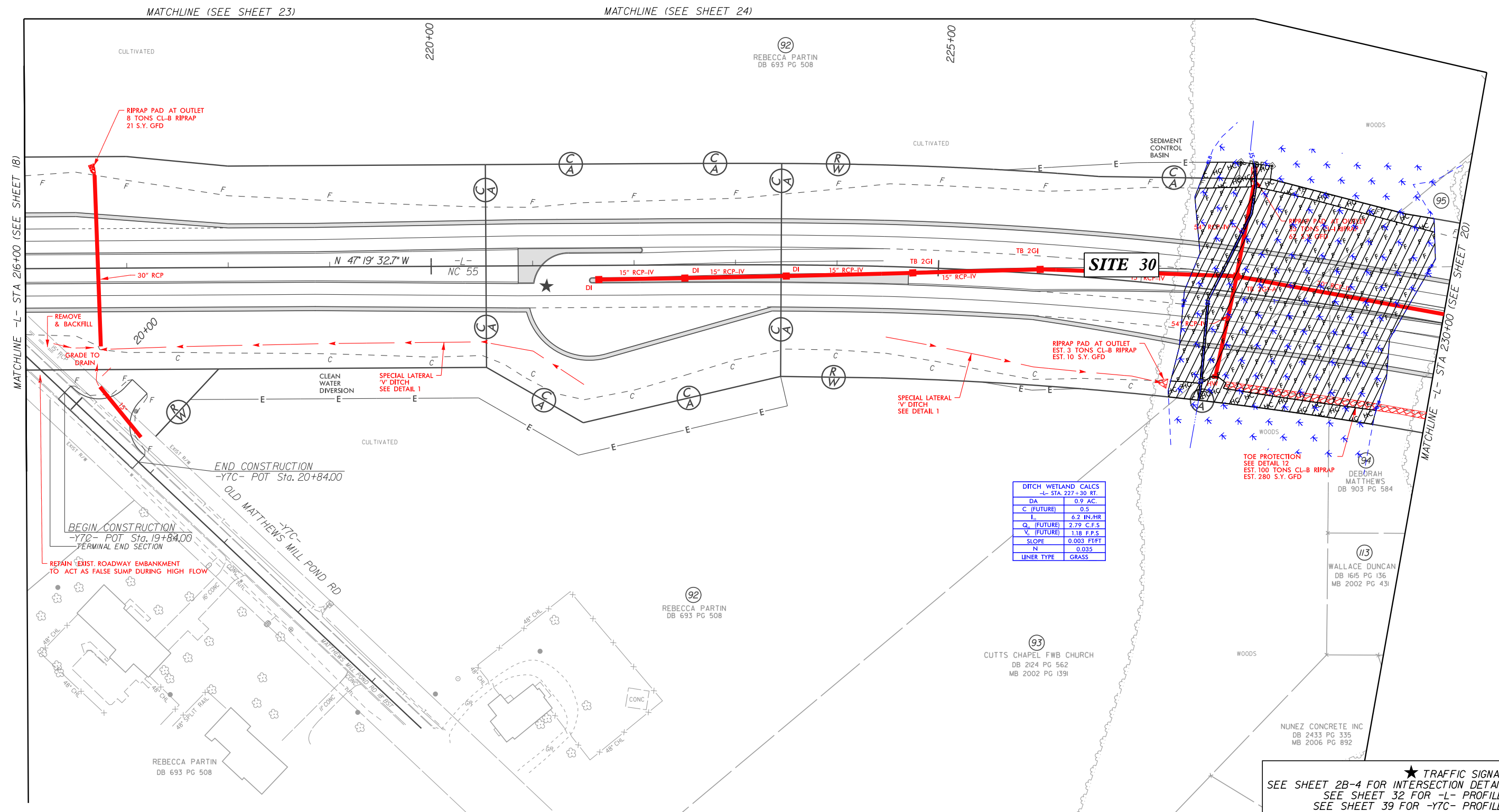


12/30/2021

PERMIT DRAWING
SHEET 60 OF 64

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-5705A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

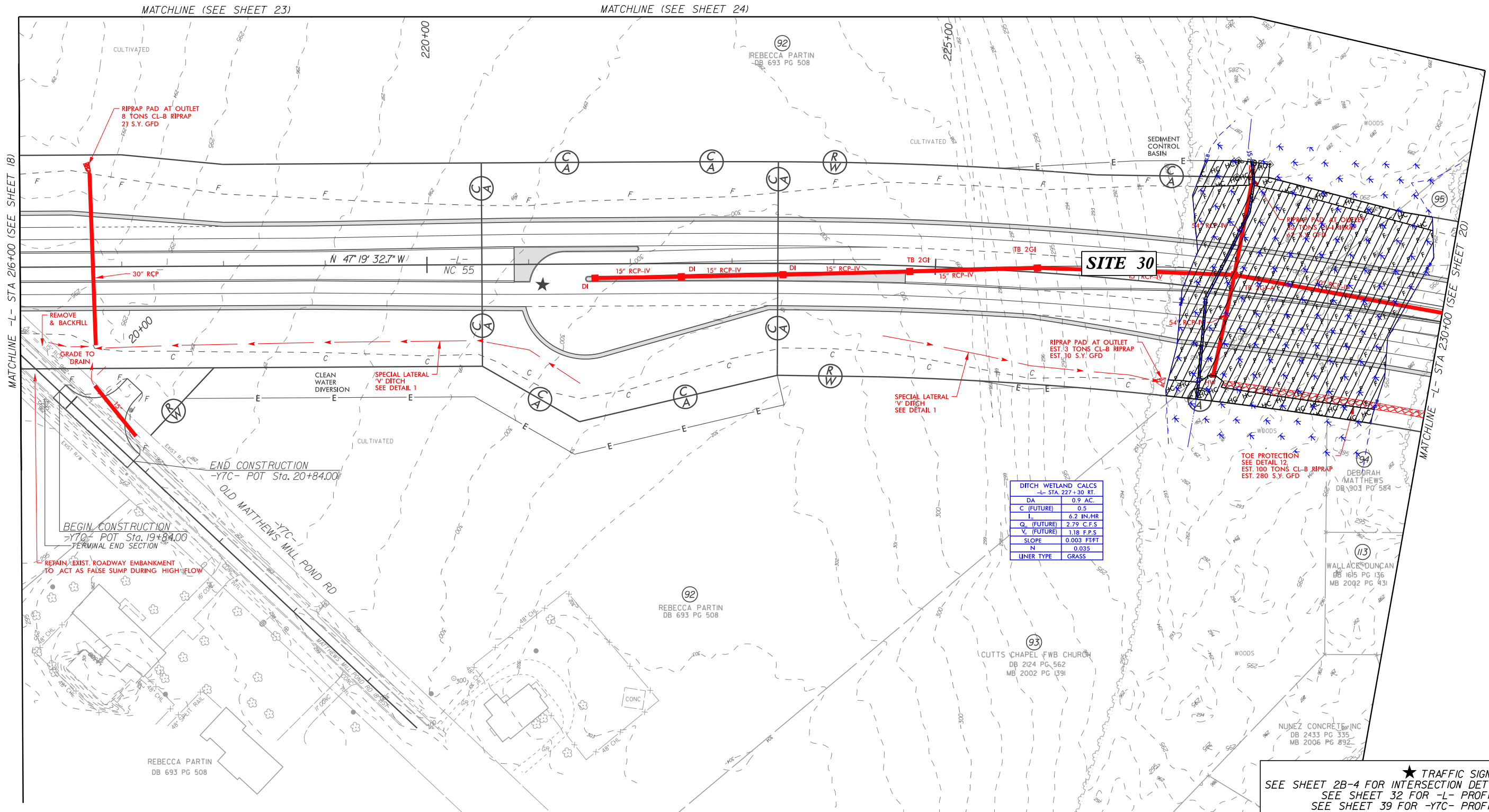


PROJECT REFERENCE NO.		SHEET NO.	
R-5705A		19	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

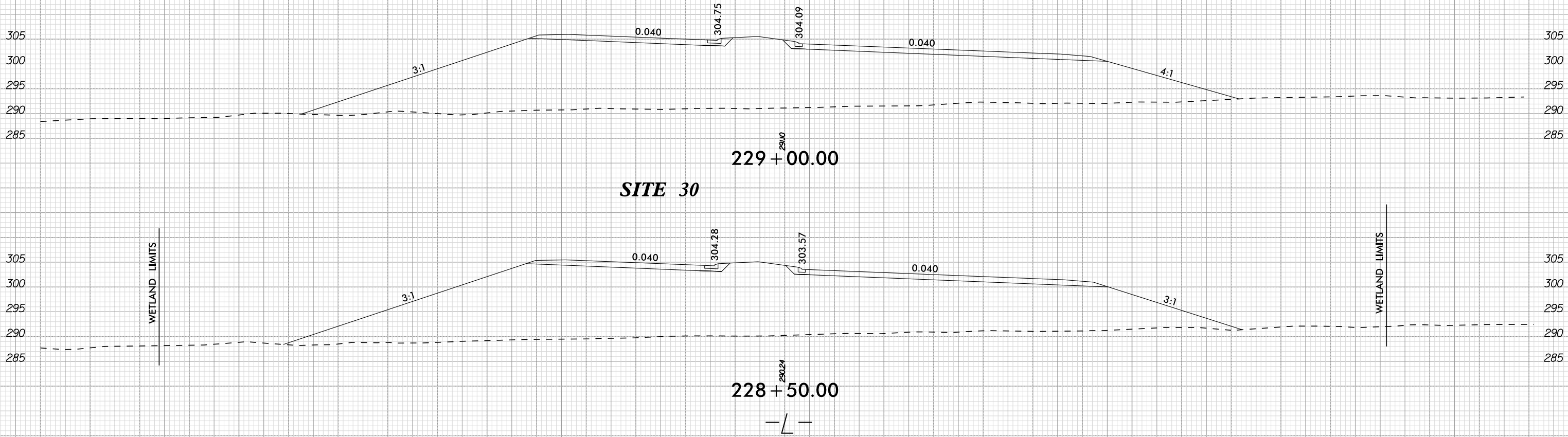


LEGEND			
	DENOTES FILL IN WETLAND		DENOTES IMPACTS IN SURFACE WATER
	DENOTES HAND CLEARING		DENOTES TEMPORARY IMPACTS IN SURFACE WATER

PERMIT DRAWING
SHEET 61 OF 64



★ TRAFFIC SIGNAL
SEE SHEET 2B-4 FOR INTERSECTION DETAIL
SEE SHEET 32 FOR -L- PROFILE
SEE SHEET 39 FOR -YTC- PROFILE



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)
1	-L- 16+20 to 16+40 LT/RT	24" RCP					< 0.01		< 0.01		30	
2	-L- 23+03 to 24+16 LT/RT	6' x 7' RCBC	0.02		< 0.01		0.03	< 0.01	< 0.01	34	10	
3	-L- 24+28 to 24+54 RT	Roadway Fill						0.01	< 0.01	116	10	
4	-L- 24+54 to 24+83 RT	6' x 7' RCBC	0.22		0.10	0.07	0.06	< 0.01		51		
4	-L- 24+83 to 25+09 RT	Bank Stabilization						< 0.01	< 0.01	49	10	
5	-L- 37+97 to 38+48 RT	24" RCP	0.05				0.01					
6	-L- 42+50 to 44+74 RT	42" RCP						0.05	< 0.01	268	30	
7	-L- 44+74 to 45+04 RT	42" RCP						< 0.01	< 0.01	30		
8	-L- 44+50 to 49+00 LT	42" RCP						0.95				
9	-L- 76+77 to 77+38 RT	24" RCP	0.04				< 0.01					
10	-L- 80+58 to 81+90 RT	Roadway Fill	0.09		0.05		0.04					
11	-L- 82+04 to 91+50 RT	Roadway Fill	1.11		0.10		0.35	0.01	< 0.01	224	86	
12	-L- 89+35 to 92+38 LT	54" RCP	0.09	0.91	0.04		0.09					
13	-L- 94+02 to 94+88 LT	Roadway Fill					0.02					
14	-L- 98+38 to 99+24 RT	Roadway Fill	< 0.01				0.02					
15	-L- 106+38 to 113+76 LT/RT	48" RCP	0.97		0.34		0.32	< 0.01	< 0.01	102	35	
15	-L- 106+38 to 113+76 LT/RT	48" RCP						0.21				
16	-Y4A- 18+96 to 19+58 RT	48" RCP			< 0.01		0.02	0.01	< 0.01	57	9	
17	-L- 127+00 to 130+67 RT/LT	Roadway Fill	0.66		0.06		0.17					
18	-L- 132+03 to 132+13 RT	48" RCP						< 0.01	< 0.01	41	7	
19	-L- 136+18 to 140+48 RT	Roadway Fill	0.05				0.01					
19	-L- 136+18 to 140+48 RT	Roadway Fill						0.23				
20	-L- 153+56 to 154+84 RT/LT	66" RCP	0.08		0.06	0.02	0.02	0.04	< 0.01	204	31	
20	-L- 154+84 LT	Bank Stabilization						< 0.01	< 0.01	12	14	
TOTALS*:			3.36	0.91	0.76	0.09	1.17	1.53	0.03	1186	270	0

*Rounded totals are sum of actual impacts

NOTES:

0.055 acres of mechanized clearing on Site 4 is for clean water diversion erosion control feature

0.008 acres of mech. clearing on Site 4 is for temporary excavation associated with a temporary pipe for culvert phasing (shown as "E" hatching on plans but quantified as mechanized clearing in this table)

0.91 acres of temporary fill in wetland on Site 12 is being used to quantify the impact for the potential that the ponded water in the wetland will need to be temporarily drained during construction

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

09-13-2021

Harnett

R-5705A

46377.1.2

SHEET63OF64

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)
21	-L- 161+48 to 162+68 RT	36" RCP	0.06		0.04		0.03					
22	-L- 162+58 to 162+77 LT	36" RCP	0.04		0.03		< 0.01					
23	-L- 173+93 to 174+24 LT	30" RCP	0.02		0.02		0.02					
24	-L- 179+18 to 183+23 RT	5' x 7' RCBC	0.07		0.05	0.03	0.17	0.02	< 0.01	154	33	
25	-L- 179+25 to 182+36 LT	5' x 7' RCBC	0.31		0.06	0.03	0.16					
25	-L- 179+25 to 182+36 LT	5' x 7' RCBC						0.35				
26	-L- 194+11 to 194+75 RT	30" RCP	< 0.01				0.02					
27	-L- 194+13 to 202+60 RT/LT	Roadway Fill	0.18		0.05	< 0.01	0.02					
27	-L- 194+13 to 202+60 RT/LT	7' x 7' RCBC						5.05				
28	-Y7B- 20+53 to 20+69 RT	Bank Stabilization						< 0.01	< 0.01	19	15	
29	-L- 203+22 to 204+58 RT/LT	36" RCP	0.35		0.04	0.05	0.04					
30	-L- 227+38 to 229+82 RT/LT	54" RCP	0.96				0.14	0.02	< 0.01	224	20	
SHEET TOTALS*:			1.99		0.29	0.11	0.61	5.44	< 0.01	397	68	0
PROJECT TOTALS*:			5.35	0.91	1.05	0.20	1.78	6.97	0.03	1583	338	

*Rounded totals are sum of actual impacts

NOTES:

0.006 Acres of mechanized clearing on site 27 represents remnant wetland piece which will have significantly less supporting hydrology post-construction. The plans still call for hand clearing per guidance from 4B meeting

0.004 acres of mechanized clearing on Site 20 is for temporary excavation associated with culvert construction and phasing (shown as "E" hatching on plans but quantified as mechanized clearing in this table)

0.012 acres of mechanized clearing on Site 24 is for temporary excavation associated with culvert construction and phasing (shown as "E" hatching on plans but quantified as mechanized clearing in this table)

0.005 acres of mechanized clearing on Site 25 is for temporary excavation associated with culvert construction and phasing (shown as "E" hatching on plans but quantified as mechanized clearing in this table)

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

REV 02/24/2022

Harnett

R-5705A

46377.1.2

SHEET64OF64