



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

October 21, 2019

Asheville Regulatory Field Office
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006

ATTN: Ms. Nicholle Braspenickx, NCDOT Coordinator

Subject: Request for Modification of Section 404 Individual Permit and Section 401 Water Quality Certification for the U-2579B Section of the Winston-Salem Northern Beltway, from US 158 to I-40 Business/US 421, Forsyth County, Division 9, WBS 34839.2.10

References: Section 404 Individual Permit – Action ID No. SAW-2009-03183, issued June 17, 2014 and modifications issued July 2, 2014, February 21, 2019, and Section 404 Individual Renewal/ ATF Permit Modification, October 17, 2019
Section 401 Water Quality Certification – NCDWR Project No. 2014090 issued April 11, 2014 and modifications issued July 18, 2014, December 17, 2018, and Section 401 Water Quality Certification Renewal/ATF issued October 15, 2019

Dear Madam:

The North Carolina Department of Transportation (NCDOT) requests a Permit Modification for the Winston -Salem Northern Beltway Eastern Section from US 158 to I-40, B Section of the U-2579 TIP. This project is currently under construction.

This modification request will include revised impacts to Smith Creek (Sites 28 and 23), new impacts to UT Smith Creek (site 28A), and new impacts to two ponds (sites 28B and 28C). Smith Creek is a parallel stream along this section of the Beltway. Due to multiple large storm events, the original proposed roadway has been destabilized, undermining the fill slopes. To correct this situation, NCDOT had determined that the only option for Smith Creek is to relocate away from the road fill. A culvert option was investigated but the length of the culvert will complicate maintenance and inspections (located under a travel lane), have drainage complications, is cost prohibitive, and overall determined to be structurally unsound.

Impact changes for the Smith Creek Relocation:

	Current Permanent Stream (LF)	Current Stream Bank Stabilization (LF)	Current Stream Temporary (LF)	New Permanent Stream (LF)	New Stream Bank Stabilization (LF)	New Stream Temporary (LF)	New Pond De-watering (AC)
Site 23	151	36	121	NC	55	30	
Site 28	598	194	127	2309	120	0	
Site 28A				80			
Site 28B							1.62
Site 28C							6.20

NC = No Change

Sites 28A, 28B, and 28C are new sites for this modification

The total additional new permanent stream impacts requiring mitigation are as follows:

Site 28 1,711 Linear Feet of Stream Impacts

Site 28A 80 Linear Feet of Stream Impacts

Total new permanent requiring mitigation = 1,791 Linear Feet

Bank Stabilization Impact changes are as follows:

Site 23 +19 Linear Feet

Site 28 -74 Linear Feet

Total **reduction** in Bank Stabilization Impacts = **55 Linear Feet**

Temporary impact changes will be as follows:

Site 23 -91 Linear Feet

Site 28 -127 Linear Feet

Total **reduction** in Temporary Impacts = **218 Linear Feet**

There will be new impacts to ponds for this modification. Pond 1 and Pond 2 will be drained to accommodate the relocation of Smith Creek totaling 7.82 acre of impacts.

The total new permanent stream impacts for this modification are 1,736 Linear feet (1,791 LF – 55 LF).

The modification of this permit for the relocation of Smith Creek, will now bring the total stream impacts for the U-2579B Section of the W-S Beltway to:

12,480 linear feet of permanent stream impacts

1,570 linear feet of temporary impacts

The mitigation for new impacts will be determined when the final plans for the relocated stream are complete. This plan will be submitted to the USACE and NCDWR for determination of credits applicable for the Natural Stream Design (NSD) plans for this stream. Currently the proposed NSD is 2,127 linear feet for Smith Creek (Site 28) and 344 linear feet for UT Smith Creek (Site 28A). Once the credit for NSD has been determined, NCDOT will contact DMS for the balance.

Please see the attached revised permit drawings for the relocation of Smith Creek and the corrected permit impact summary sheet. NCDOT is hereby requesting a Modification for this project. If you have any questions, please contact Carla Dagnino at cdagnino@ncdot.gov or (919) 707-6110.

Thank you!

Sincerely,

Carla Dagnino

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



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS



(Version 2.08; Released April 2018)

WBS Element: 34839.1.1 TIP No.: U-2579B County(ies): Forsyth County Page 1 of 2

General Project Information

WBS Element:	34839.1.1	TIP Number:	U-2579B	Project Type:	Roadway Relocation	Date:	10/1/2019
NCDOT Contact:	Amy Euliss		Contractor / Designer:		Kimley-Horn		
	Address:	375 Silas Creek Parkway Winston-Salem NC 27127-7167			Address:	421 Fayetteville Street Suite #600 Raleigh, NC, 27601	
	Phone:	(336) 747-7802			Phone:	(919) 677-2178	
	Email:	aeuliss@ncdot.gov			Email:	dan.robinson@kimley-horn.com	
City/Town:	Winston-Salem			County(ies):	Forsyth		
River Basin(s):	Yadkin-Pee Dee			CAMA County?	No		
Wetlands within Project Limits?	Yes						

Project Description

Project Length (lin. miles or feet):	4.06 miles	Surrounding Land Use:	Rural, Farmland, Suburban Neighborhoods					
Proposed Project				Existing Site				
Project Built-Up Area (ac.)	N/A	ac.	N/A	ac.				
Typical Cross Section Description:	In each direction there will be 3 12-foot lanes plus a 12-foot paved shoulder with a 22-foot grassed median.			N/A				
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	79880 ADT	Year:	2030	Existing:	53560 ADT	Year:	2010

General Project Narrative:
(Description of Minimization of Water Quality Impacts)

9/19/2013 - Orginal Submittal
 Winston-Salem Borthern Bellway (Eastern Section) (Future I-74) from US 158 to I-40 Bus US421: Grassed Swales were used throughout the Project to treat the stormwater. These Grassed Swales have side slopes that are 3:1 or flatter, with many sode slopes being 6:1. have a velocity during the 2-Year Storm or less than 2 feet per second and have a minimum ditch length equivalent to 100 feet per acre of impervious area. In addition to the Grassed Swales, Preformed Scour Holes and Energy Dissipators are used at several locations.

10/1/2019 - Revised Submittal
 Modifications to U-2579B were performed and submitted January 2019. These changes include:
 - Stormdrain revisions
 - Proposed 32' 3 @ 8' x 9' RCBC Downstream Extension (Sta. 45+65 -Y4-)
 - Proposed 41' 3 @ 8' x 9' RCBC Upstream Extension (Sta. 45+65 -Y4-)
 - Smith Creek Stream Relocation (Sta. 47+27 to 67+63 -Y4-)
 - UT to Smith Creek Stream Relocation (Sta. 48+60 -Y4-)

A permit modification was needed for the revisions mentioned above. Included with this revised SMP are updated pipe sizes and flows of two outlets to Preformed Scour Holes (Sta. 43+00 and 46+00). All other stormwater features (swales, filter strip, energy dissipators, etc.) were not modified by these 2019 revisions and are not included with this modification. Refer to original stormwater management plan for other mitigation efforts.

Waterbody Information

Surface Water Body (1):	Smith Creek		NCDWR Stream Index No.:	12-94-12-2-1				
NCDWR Surface Water Classification for Water Body	Primary Classification:	Water Supply III (WS-III)						
	Supplemental Classification:	None						
Other Stream Classification:								
Impairments:	None							
Aquatic T&E Species?	No	Comments:						
NRTR Stream ID:							Buffer Rules in Effect:	N/A
Project Includes Bridge Spanning Water Body?	No	Deck Drains Discharge Over Buffer?	No	Dissipator Pads Provided in Buffer?				No
Deck Drains Discharge Over Water Body?	No	(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)								



**North Carolina Department of Transportation
Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR NCDOT PROJECTS**



(Version 2.08; Released April 2018)

Preformed Scour Holes and Energy Dissipators

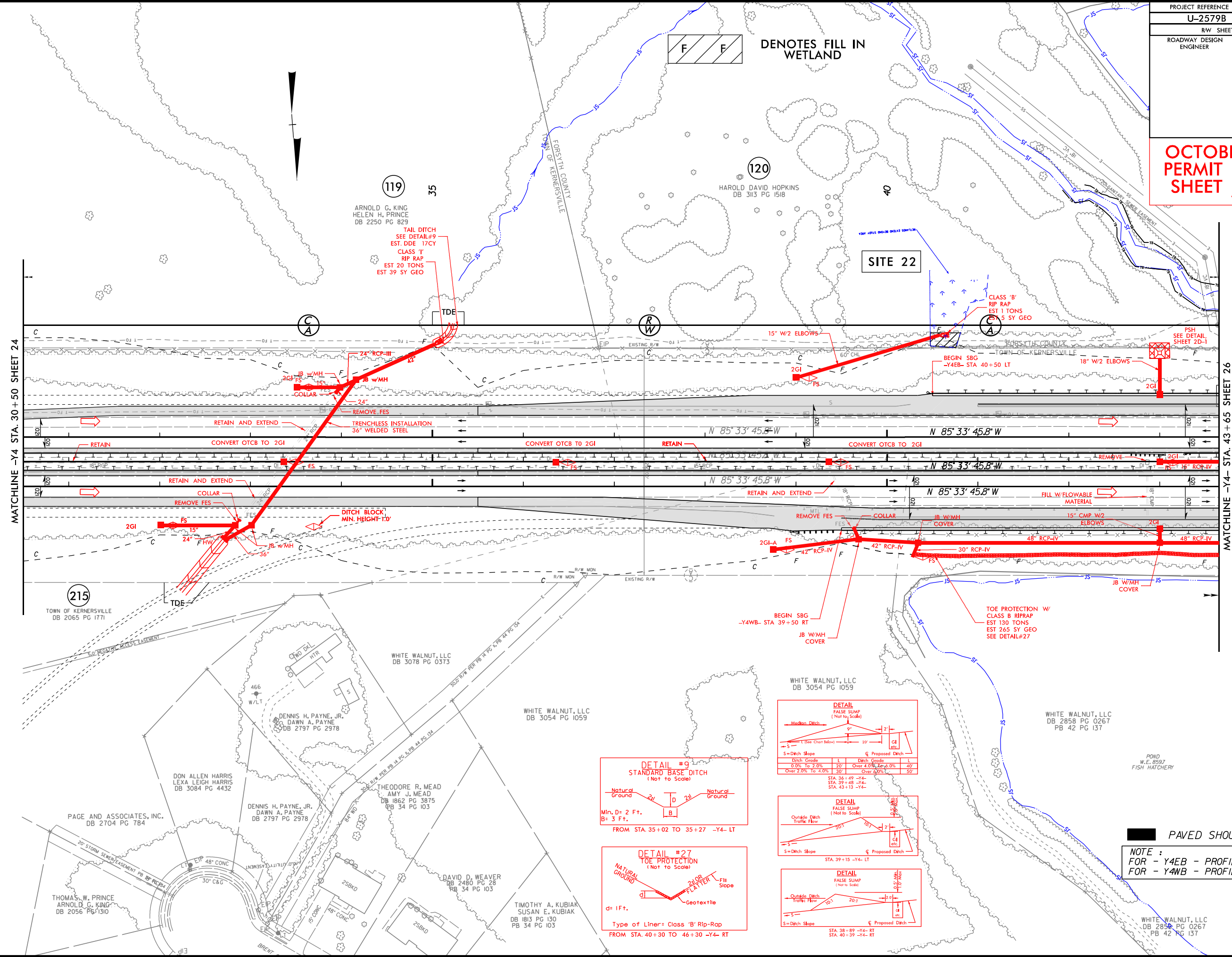
Sheet No.	Station & Coordinates (Road and Non Road Projects)	Surface Water Body	Energy Dissipator Type	Riprap Type	Drainage Area (ac)	Conveyance Structure	Pipe/Structure Dimensions (in)	Q10 (cfs)	V10 (fps)	BMP Associated w/ Buffer Rules?
25	Sta. 43+00 -Y4-		PSH	Class 'B'	0.2	Pipe	18	1.3	9.4	No
26	Sta. 46+00 -Y4-		PSH	Class 'B'	0.3	Pipe	18	1.6	4.1	No

Additional Comments

* Refer to the NCDOT Best Management Practices Toolbox (2014), NCDOT Standards, the Federal Highway Administration (FHWA) Hydraulic Engineering Circular No. 14 (HEC-14), Third Edition, Hydraulic Design of Energy Dissipators for Culverts and Channels (July 2006), as applicable, for design guidance and criteria.

**OCTOBER 1, 2019
PERMIT DRAWING
SHEET 1 OF 10**

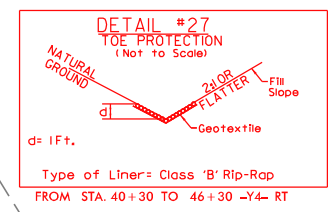
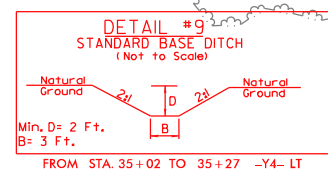
8/17/99



REVISIONS

MATCHLINE -Y4 STA. 30+50 SHEET 24

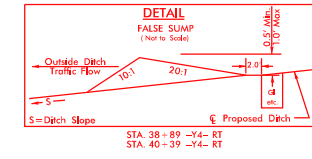
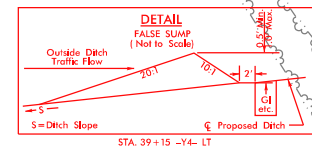
MATCHLINE -Y4- STA. 43+65 SHEET 26



DETAIL FALSE SUMP
(Not to Scale)

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

STA. 34+49 -Y4-
STA. 39+48 -Y4-
STA. 43+13 -Y4-



NOTE :
FOR - Y4EB - PROFILE SEE SHEET 50
FOR - Y4WB - PROFILE SEE SHEET 55

PAVED SHOULDER

PROPERTY OWNERS:

- ARNOLD G. KING, HELEN H. PRINCE, DB 2250 PG 829
- HAROLD DAVID HOPKINS, DB 3113 PG 1518
- ARNOLD G. KING, HELEN H. PRINCE, DB 2056 PG 1310
- DON ALLEN HARRIS, LEXA LEIGH HARRIS, DB 3084 PG 4432
- DENNIS H. PAYNE, JR., DAWN A. PAYNE, DB 2797 PG 2978
- THEODORE R. MEAD, AMY J. MEAD, DB 1862 PG 3875, PB 34 PG 103
- DAVID D. WEAVER, DB 2480 PG 28, PB 34 PG 103
- TIMOTHY A. KUBIAK, SUSAN E. KUBIAK, DB 1813 PG 130, PB 34 PG 103
- WHITE WALNUT, LLC, DB 3078 PG 0373
- WHITE WALNUT, LLC, DB 3054 PG 1059
- WHITE WALNUT, LLC, DB 2858 PG 0267, PB 42 PG 137
- WHITE WALNUT, LLC, DB 2858 PG 0267, PB 42 PG 137
- WHITE WALNUT, LLC, DB 2858 PG 0267, PB 42 PG 137

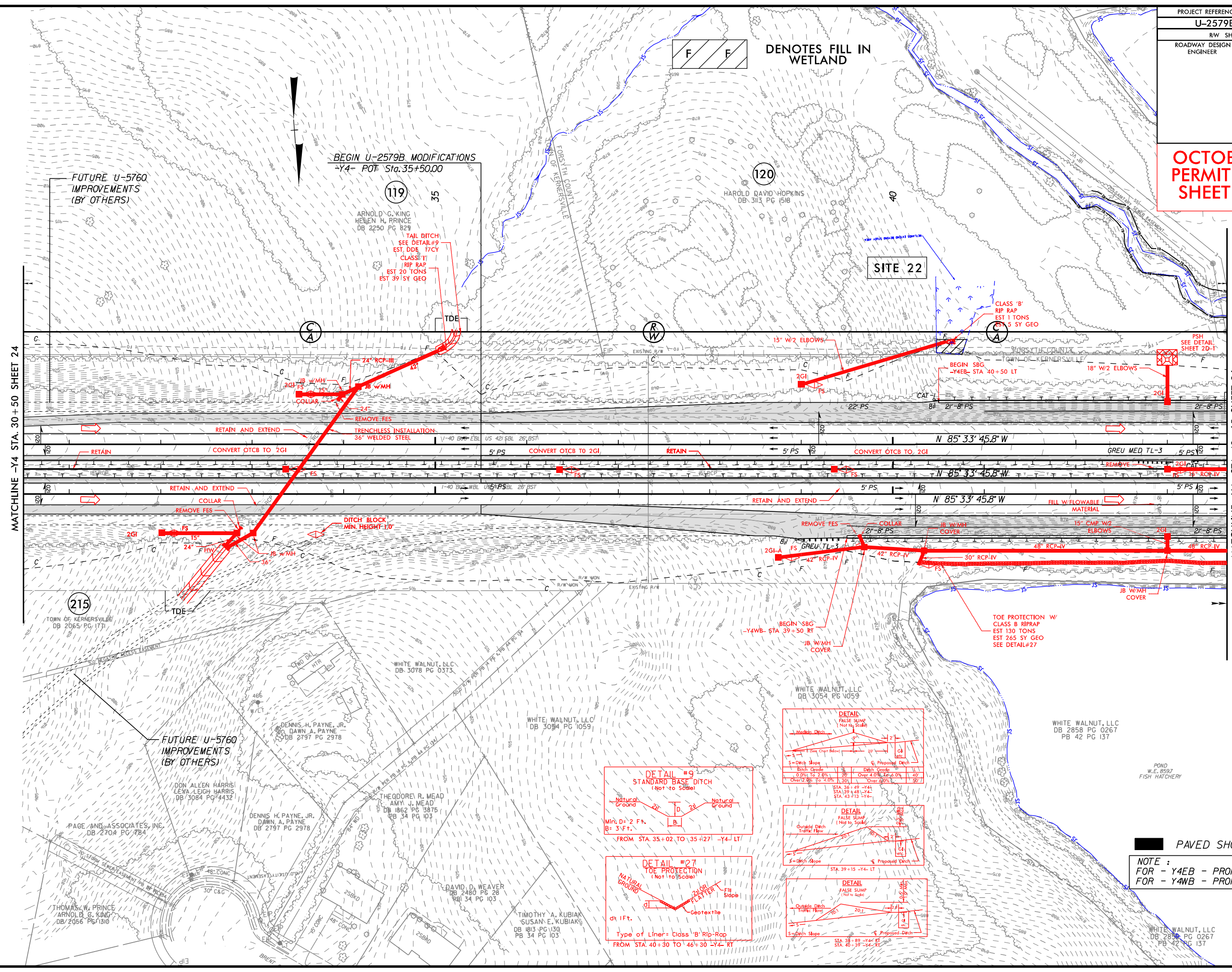
PROJECT REFERENCE NO.	SHEET NO.
U-2579B	25
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**OCTOBER 1, 2019
PERMIT DRAWING
SHEET 2 OF 10**

8/17/99

MATCHLINE -Y4 STA. 30+50 SHEET 24

MATCHLINE -Y4 STA. 43+65 SHEET 26



F F DENOTES FILL IN WETLAND

BEGIN U-2579B MODIFICATIONS
-Y4- POT Sta. 35+50.00

SITE 22

FUTURE U-5760
IMPROVEMENTS
(BY OTHERS)

ARNOLD G. KING
HELEN H. RINCE
DB 2250 PG 829

HAROLD DAVID HOPKINS
DB 3113 PG 1518

CLASS 'B'
RIP RAP
EST 1 TONS
EST 5 SY GEO

PSH
SEE DETAIL
SHEET 2D-1

FUTURE U-5760
IMPROVEMENTS
(BY OTHERS)

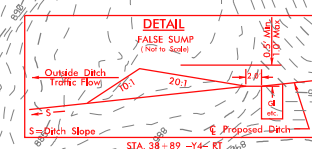
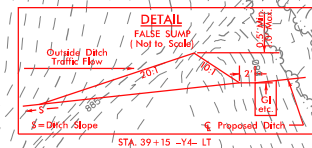
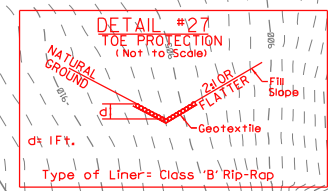
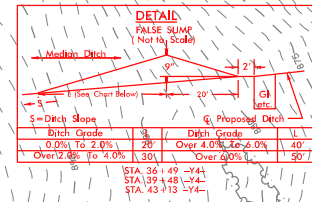
DON ALLEN HARRIS
LEVA LEIGH HARRIS
DB 3084 PG 4432

DENNIS H. PAYNE, JR.
DAWN A. PAYNE
DB 2797 PG 2978

THEODORE R. MEAD
AMY J. MEAD
DB 1862 PG 3875
DB 34 PG 103

DAVID D. WEAVER
DB 2480 PG 28
DB 34 PG 103

TIMOTHY A. KUBIAK
SUSAN E. KUBIAK
DB 1813 PG 139
DB 34 PG 103



NOTE :
FOR - Y4EB - PROFILE SEE SHEET 50
FOR - Y4WB - PROFILE SEE SHEET 55

PAVED SHOULDER

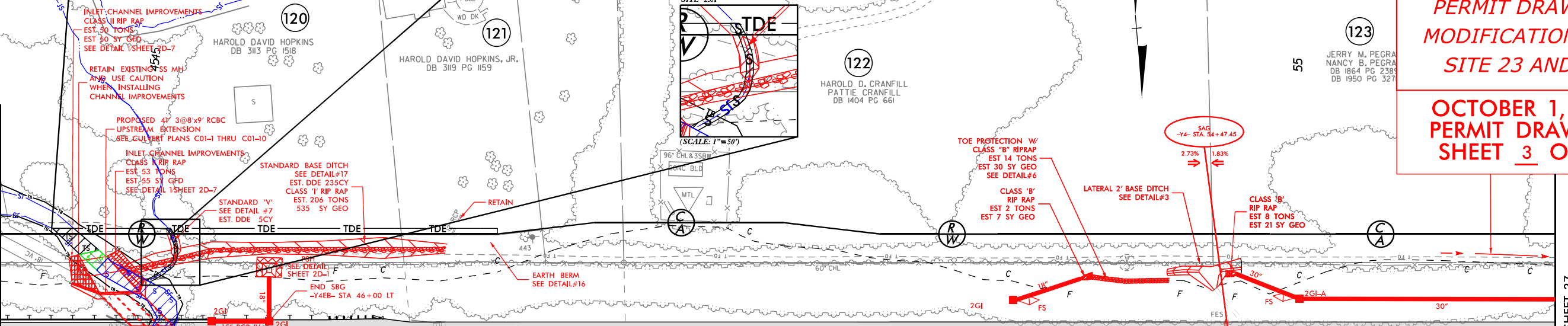
REVISIONS

PERMIT DRAWING MODIFICATION LEGEND

	DENOTES TEMPORARY IMPACTS IN SURFACE WATER		DENOTES IMPACTS IN SURFACE WATER (CULVERT IMPACTS)		DENOTES IMPACTS IN SURFACE WATER (STREAMBANK STABILIZATION)
	DENOTES IMPACTS IN SURFACE WATER (FILL IN STREAM)		DENOTES IMPACTS IN SURFACE WATER (POND)		

SITE 23 (PERMIT MOD)

SITE 23A



PERMIT DRAWING MODIFICATION FOR SITE 23 AND 28

OCTOBER 1, 2019 PERMIT DRAWING SHEET 3 OF 10

MATCHLINE -Y4- STA. 43 + 65 SHEET 25

MATCHLINE -Y4- STA. 57 + 25 SHEET 27

SITE 23B

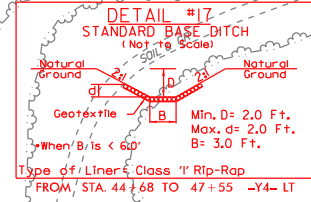
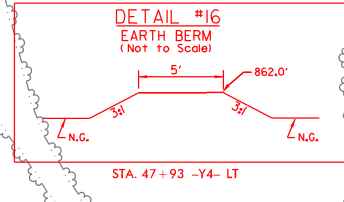
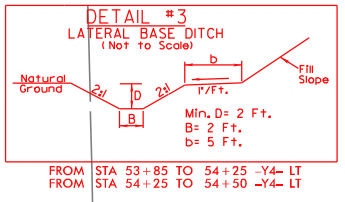
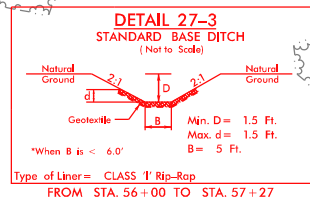
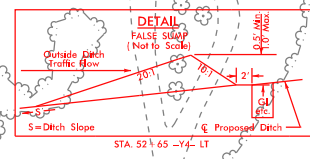
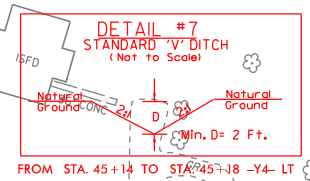
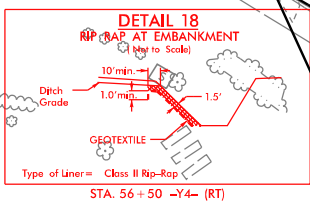
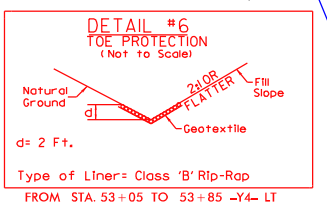
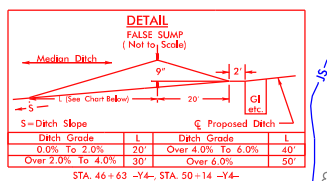
SITE 23 (PERMIT MOD)

SITE 28A (PERMIT MOD)

SITE 28 (PERMIT MOD)

SITE 28C (PERMIT MOD)

SITE 28B (PERMIT MOD)



PAVED SHOULDER

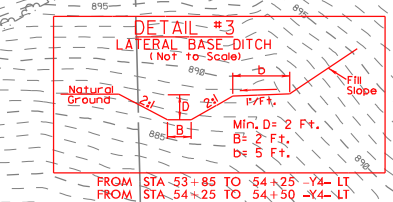
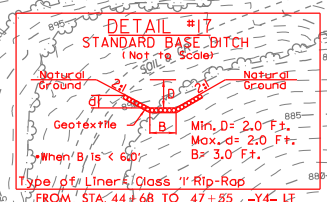
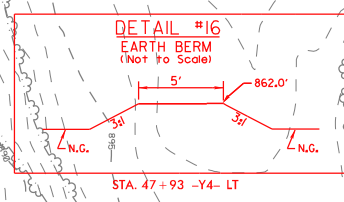
NOTE:
FOR -Y4EB- PROFILE SEE SHEET 50-51
FOR -Y4WB- PROFILE SEE SHEET 55-56

REVISIONS

8/17/99

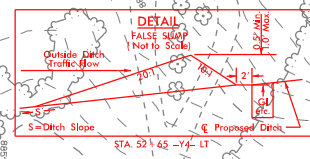
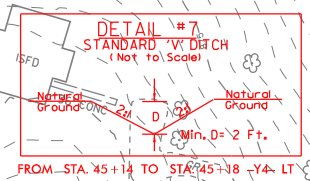
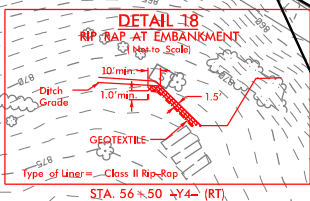
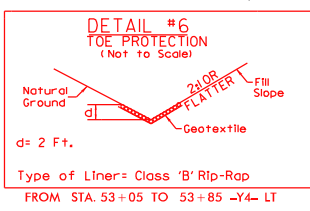
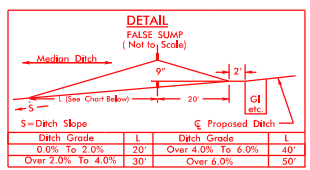
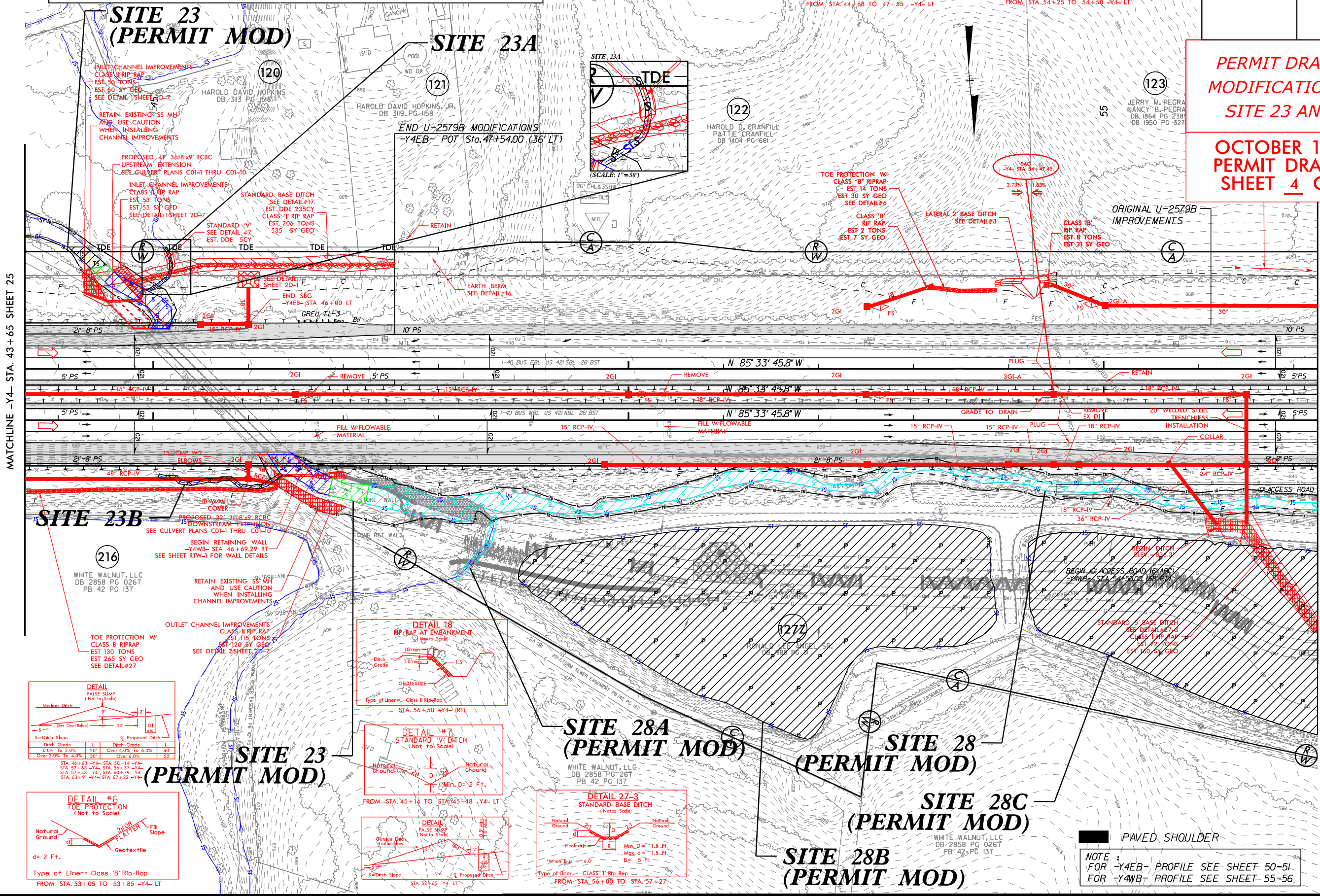
PERMIT DRAWING MODIFICATION LEGEND

	DENOTES TEMPORARY IMPACTS IN SURFACE WATER		DENOTES IMPACTS IN SURFACE WATER (CULVERT IMPACTS)		DENOTES IMPACTS IN SURFACE WATER (STREAMBANK STABILIZATION)
	DENOTES IMPACTS IN SURFACE WATER (FILL IN STREAM)		DENOTES IMPACTS IN SURFACE WATER (POND)		



PERMIT DRAWING MODIFICATION FOR SITE 23 AND 28

OCTOBER 1, 2019 PERMIT DRAWING SHEET 4 OF 10



PAVED SHOULDER

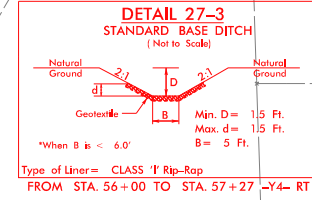
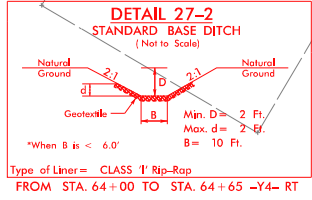
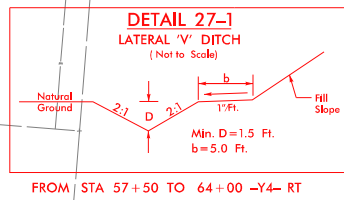
NOTE:
FOR -Y4EB- PROFILE SEE SHEET 50-51
FOR -Y4WB- PROFILE SEE SHEET 55-56

MATCHLINE -Y4- STA. 43 + 65 SHEET 25

MATCHLINE -Y4- STA. 57 + 25 SHEET 27

REVISIONS

8/17/99



PROJECT REFERENCE NO.	SHEET NO.
U-2579B	27
RW DESIGN NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

50' 25' 0' 50' 100'

Y4RPA

Sta 33+05.42	Sta 64+52.40	Sta 64+51.91
Gs = 5'07" 0.4'	Δ = 128' 39" 248'	LT = 5'07" 0.4'
D = 240.00'	D = 4' 0" 208'	Ls = 240.00'
LT = 800.0'	L = 2385.50'	LT = 1600.0'
ST = 80.06'	T = 2767.05'	ST = 800.0'
	R = 14330.00'	
	SE = 0.06'	

Y4RPA

Sta 75+65.20	Sta 80+21.76	Sta 84+71.95
Gs = 2' 07" 32.2'	Δ = 12' 00" 0.00' (RT)	Gs = 2' 07" 32.2'
D = 200.00'	D = 2' 27" 32.2'	Ls = 200.00'
Ls = 133.35'	L = 772.50'	LT = 133.35'
ST = 66.68'	T = 369.9'	ST = 66.68'
	R = 2330.00'	
	SE = 0.05'	

Y4RPA

Sta 11+33.35	Sta 28+67.56	Sta 40+08.43
Gs = 2' 59" 59.2'	Δ = 82' 14" 46.6'	Gs = 2' 59" 59.2'
D = 200.00'	D = 2' 59" 59.2'	Ls = 200.00'
Ls = 133.35'	L = 2742.14'	LT = 133.35'
ST = 66.68'	T = 1667.56'	ST = 66.68'
	R = 1290.00'	
	SE = 0.06'	

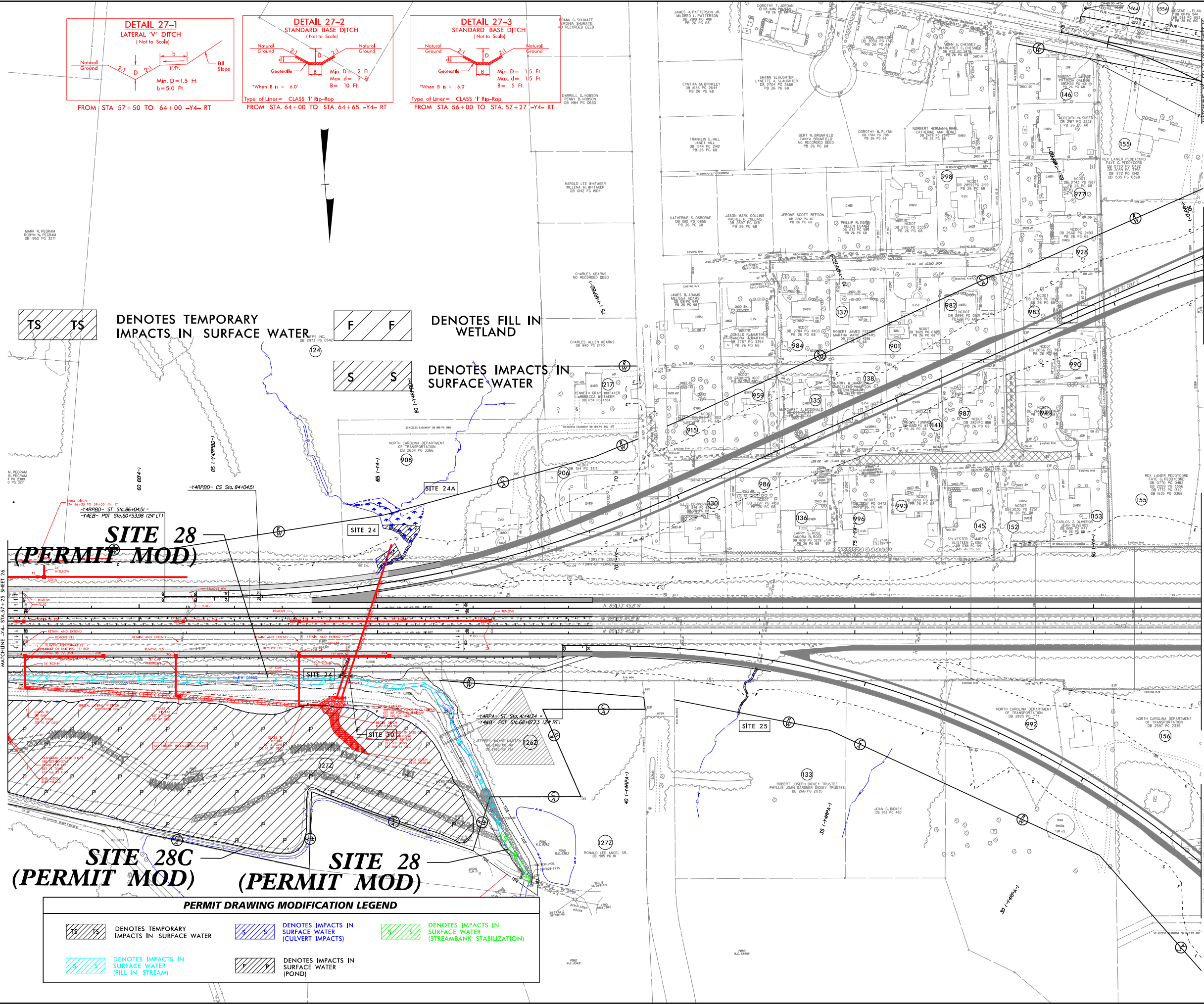
Y5DET

Sta 11+39.44		
Δ = 14' 34" 48.5' (RT)		
D = 5' 15" 23.4'		
L = 277.37'		
T = 135.44'		
R = 1090.00'		

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER



OCTOBER 1, 2019 PERMIT DRAWING SHEET 5 OF 10

PERMIT DRAWING MODIFICATION FOR SITE 23 AND 28

SITE 28 (PERMIT MOD)

SITE 28C (PERMIT MOD)

SITE 24 (PERMIT MOD)

SITE 25

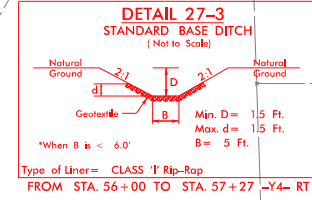
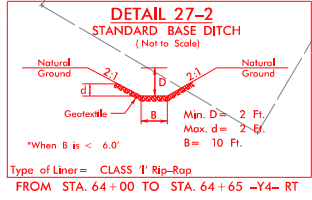
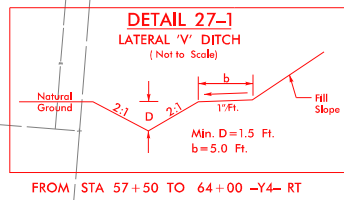
PERMIT DRAWING MODIFICATION LEGEND

	DENOTES TEMPORARY IMPACTS IN SURFACE WATER		DENOTES IMPACTS IN SURFACE WATER (CULVERT IMPACTS)		DENOTES IMPACTS IN SURFACE WATER (STREAMBANK STABILIZATION)
	DENOTES IMPACTS IN SURFACE WATER (FILL IN STREAM)		DENOTES IMPACTS IN SURFACE WATER (POND)		

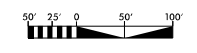
PAVED SHOULDER

PAVEMENT TO BE OBLITERATED

NOTE:
FOR -Y4B- PROFILE, SEE SHEET 51-52
FOR -Y4WB- PROFILE, SEE SHEET 56-57
FOR -Y4RPA- PROFILE, SEE SHEET 70
FOR -Y4RPA- PROFILE, SEE SHEET 75-77
FOR -Y4RPA- PROFILE, SEE SHEET 81
FOR -Y5- PROFILE, SEE SHEET 82
FOR -Y5DET-, SEE SHEET 28-7



PROJECT REFERENCE NO.	SHEET NO.
U-2579B	27
RW DESIGN NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

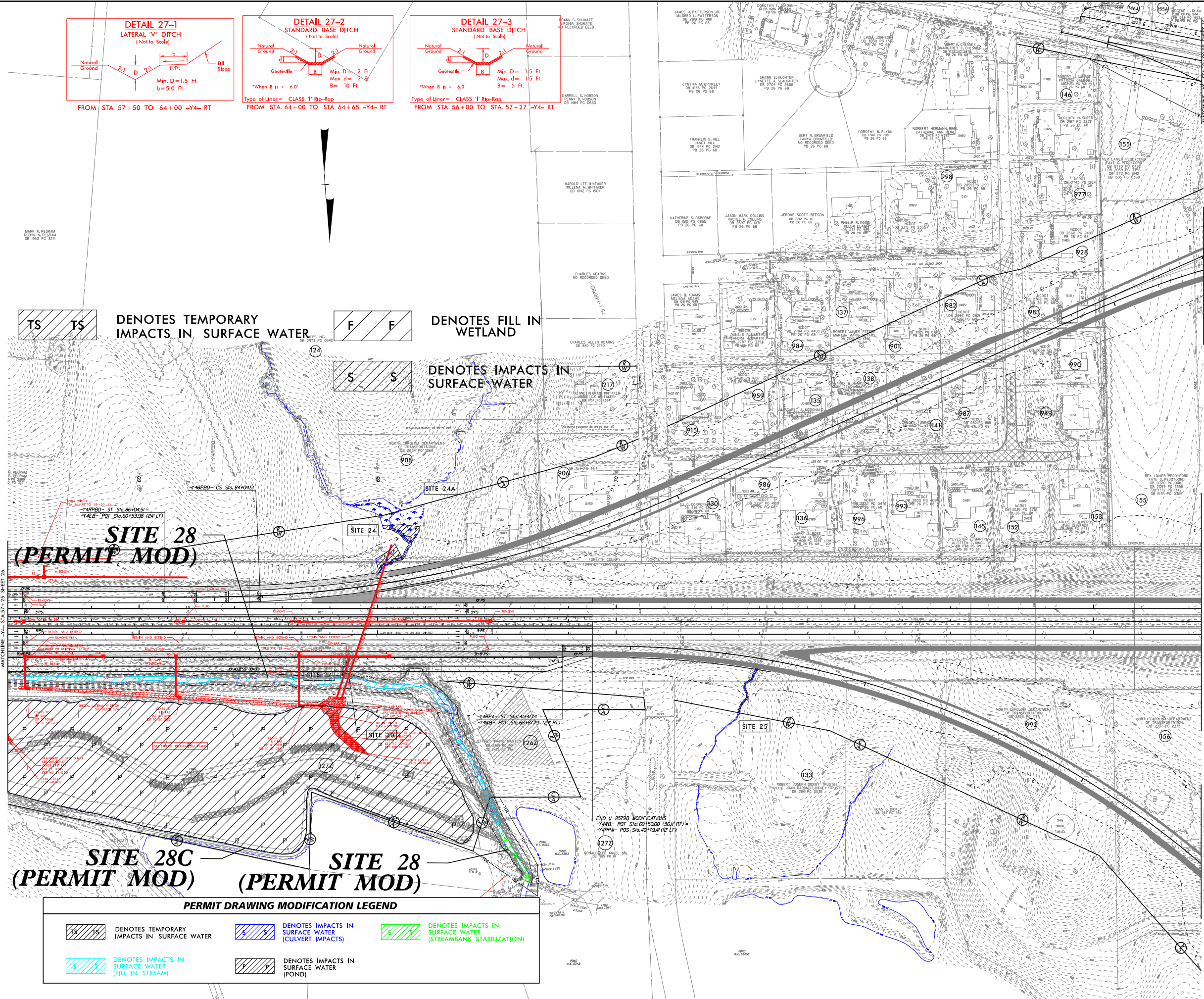


Y4RPRD		
Sta 33+05.42 G _s = 5'07.04' L = 240.00' T = 80.06' SE = 0.06	Sta 64+52.40 G _s = 128'39.24' L = 2,985.50' T = 2767.05' SE = 0.06	Sta 64+51.91 G _s = 5'07.04' L = 240.00' T = 80.06' SE = 0.06
Y4RPRD		
Sta 75+65.20 G _s = 2'27.322' L = 133.35' T = 66.68' SE = 0.06	Sta 80+21.76 G _s = 12'00.000' (RT) L = 2'27.325' T = 389.91' R = 2330.00' SE = 0.06	Sta 84+71.25 G _s = 2'27.322' L = 133.35' T = 66.68' SE = 0.06
Y4RPA		
Sta 11+33.35 G _s = 2'59.592' L = 200.000' T = 133.35' SE = 0.06	Sta 28+67.56 G _s = 82'14.462' (LT) L = 2'59.592' T = 2'41.414' R = 1667.56' SE = 0.06	Sta 40+08.43 G _s = 2'59.592' L = 200.000' T = 133.35' SE = 0.06
Y5DET		
Sta 11+39.44 G _s = 14'34.485' (RT) L = 277.37' T = 139.44' R = 1090.00'		

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER



OCTOBER 1, 2019 PERMIT DRAWING SHEET 6 OF 10

PERMIT DRAWING MODIFICATION FOR SITE 23 AND 28

PERMIT DRAWING MODIFICATION LEGEND

	DENOTES TEMPORARY IMPACTS IN SURFACE WATER		DENOTES IMPACTS IN SURFACE WATER (CULVERT IMPACTS)		DENOTES IMPACTS IN SURFACE WATER (STREAMBANK STABILIZATION)
	DENOTES IMPACTS IN SURFACE WATER (FILL IN STREAM)		DENOTES IMPACTS IN SURFACE WATER (POND)		

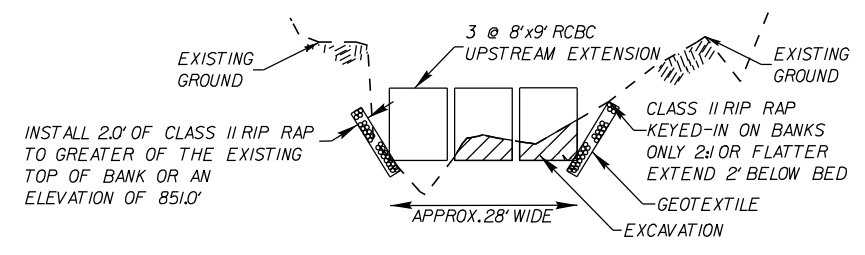
PAVED SHOULDER

PAVEMENT TO BE OBLITERATED

NOTE:
FOR -Y4B- PROFILE, SEE SHEET 51-52
FOR -Y4WB- PROFILE, SEE SHEET 56-57
FOR -Y4RPA- PROFILE, SEE SHEET 70
FOR -Y4RPRD- PROFILE, SEE SHEET 75-77
FOR -Y4RPD- PROFILE, SEE SHEET 81
FOR -Y5- PROFILE, SEE SHEET 82
FOR -Y5DET- SEE SHEET 28-7

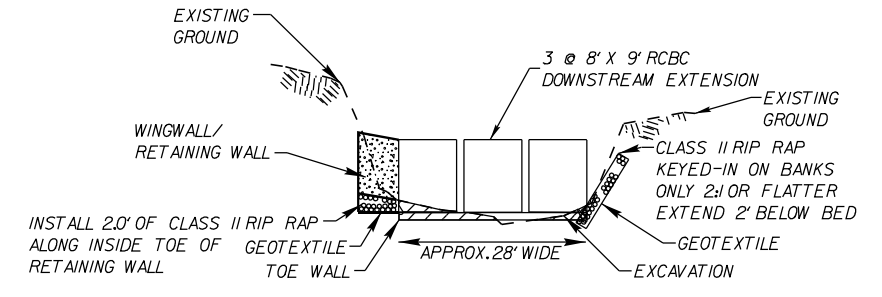
**OCTOBER 1, 2019
PERMIT DRAWING
SHEET 7 OF 10**

DETAIL #1 INLET CHANNEL IMPROVEMENTS



STA. 44 + 70 -Y4- LT

DETAIL #2 OUTLET CHANNEL IMPROVEMENTS



STA. 46 + 50 -Y4- RT

REVISIONS

8/17/99

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER 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)	Permanent SW impacts (ac)	Temporary SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	28+00 -Y-	ROAD FILL	0.03		<0.01	0.02		0.02		142		
2	16+00 -Y1 RPD-	ROAD FILL - INTERMITTENT						0.01		109		
		ROAD FILL - PERENNIAL						0.02		208		
		STREAMBANK STABILIZATION						<0.01	<0.01	10	37	
3	21+56-25+22 -Y1-	2 @ 7' x 6' RCBC						0.06	<0.01	438	33	
3A	17+36-21+53 -Y1-	DETOUR - ROAD FILL							0.08		545	
3B	20+55-21+32 -Y1-	DETOUR - ROAD FILL							0.03		194	
4	501+51-503+21 -L-	ROAD FILL						0.03	<0.01	493	18	
		STREAMBANK STABILIZATION						<0.01	<0.01	9	31	
5	503+85-507+80 -L-	ROAD FILL						0.05	<0.01	740	22	
5A	507+39-509+64 -L-	ROAD FILL						0.01		306		
6	523+00 -L-	ROAD FILL	0.03			<0.01		0.02	<0.01	312	42	
7	527+00 -L-	ROAD FILL	0.52			0.01						
		ROAD FILL - POND						0.59				
8	559-75 -L-	2 @ 10' x 6' RCBC						0.06	<0.01	442	53	
		STREAMBANK STABILIZATION						<0.01	<0.01	58	44	
9	560+75 -L-	ROAD FILL	0.03			0.01						
10	560+50-568+74 -L-	ROAD FILL	0.01					0.07	<0.01	783	22	
10A	566+84-572+75 -L-	ROAD FILL						0.05		684		
11	615+00 -L-	3 @ 10' x 9' RCBC						0.43	0.02	808	57	
11A	19+76-21+44 -Y4RPBD-	CHANNEL CHANGE						0.08	0.01	223	41	
12	15+84-18+86 -Y4RPBD-	CHANNEL CHANGE						0.01	0.02	88	205	
TOTALS:			0.62	0.00	< 0.01	0.05		1.53	0.19	5,853	1,344	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

U-2579 B Forsyth County
Winston Salem Northern Beltway
(Eastern Section) (Future I-74)

SHEET

62

of

64

**OCTOBER 1, 2019
PERMIT DRAWING
SHEET 8 OF 10**

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER 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)	Permanent SW impacts (ac)	Temporary SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
13	20+00-21+40 -Y4RPBD-	ROAD FILL	0.33									
14	629+95-635+90 -L-	ROAD FILL	0.04					0.05		688		
15	636+32-641+55 -L-	ROAD FILL	0.18					0.04		332		
		ROAD FILL-POND						2.38				
15A	644+00-645+00 -L-	ROAD FILL						<0.01		108		
16	643+56-644+61 -L-	ROAD FILL						<0.01		104		
		ROAD FILL-POND						0.16				
17	663+65-667+00 -L-	ROAD FILL	0.09			<0.01		0.06		928		
18	667+15 -L-	3 @ 12' x 10' RCBC						0.06	0.02	377	67	
		STREAMBANK STABILIZATION						0.02	0.01	80	59	
19	668+50 -L-	ROAD FILL	0.47			0.01						
20	687+80-691+59 -L-	ROAD FILL						0.03		163		
		ROAD FILL-POND						0.85				450
21	22+50 -Y1-	ROAD FILL	0.02									
22	40+50 -Y4-	OUTLET PAD	0.01									
23	45+65 -Y4-	CULVERT EXTENSION						0.06	0.01	100	32	
		STREAMBANK STABILIZATION						0.02	0.06	54	89	
23A	44+95-45+18 -Y4-	ROAD FILL						<0.01		57		
23B	45+07-46+34 -Y4-	ROAD FILL						0.01		135		
24	80+73-81+57 -Y4RPBD-	ROAD FILL						0.02		202		
24A	80+50-81+51 -Y4RPBD-	ROAD FILL	0.06									
25	37+31 -Y4RPA-	30" RCP						<0.01		73		
		STREAMBANK STABILIZATION						<0.01	<0.01	21	16	
TOTALS:			1.20			0.02		3.67	0.03	3,268	142	450

11/19/2018 Revisions shown in red text.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

U-2579 B Forsyth County
Winston Salem Northern Beltway
(Eastern Section) (Future I-74)

SHEET 63 of 64

**OCTOBER 1, 2019
PERMIT DRAWING
SHEET 9 OF 10**

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER 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)	Permanent SW impacts (ac)	Temporary SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)	
26	29+16-31+12 -Y4RPC-	ROAD FILL-POND							0.38				
27A	104+63 - 107+53 -Y4-	ROAD FILL							0.02		205		
27B	107+60 -Y4-	42" WELDED STEEL	0.05						0.01	<0.01	130	14	
27C	107+58 - 108+44 -Y4-	30" RCP							<0.01		116		
28	50+50--56+00 -Y4-Rt	STREAMBANK STABILIZATION							0.02	0.15	365	188	
29	145+62 -Y4-	ROAD FILL				<0.01							
30	64+34 -Y4-	STREAMBANK STABILIZATION							<0.01		28		
31	557+28 -L-	STREAMBANK STABILIZATION							<0.01		21		
	2018 Permit Modifications												
23	44+10 to 47+96 -Y4-	3 @ 8' x 9' RCBC Extension							0.06		151		
		STREAMBANK STABILIZATION							0.02	0.01	55	30	
28	47+96 to 56+85 -Y4-	2 @ 10' x 10' RCBC and 1 @ 10' x 8' RCBC							0.51	2309	598	427	2127
		STREAMBANK STABILIZATION							0.02		120		
28A	48+16 to 48+65 Y4	UT to Smith Creek Relocation							0.01		80		344
28B	48+84 to 53+86 Y4	UT to Smith Creek Relocation							1.62				
28C	54+20 to 67+00 Y4	Drain Pond							6.20				
	2019 Permit Modifications												
8A		STREAM RELOCATION									144	40	
SUBTOTALS, THIS PAGE:			0.05			<0.01			8.86	0.01	3,359	84	2471
SUBTOTALS, PAGE 1			0.62		<0.01	0.05			1.53	0.19	5,853	1,344	
SUBTOTALS, PAGE 2			1.20			0.02			3.67	0.03	3,268	142	450
TOTALS:			1.87		<0.01	0.08			14.06	0.23	12,480	1,570	2,921

11/19/2018 Revisions shown in red text.

10/10/2019 Revisions shown in green text.

9/18/2019 Revisions shown in blue text

October 1, 2019
Permit Drawing
Sheet 10 of 10

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

U-2579 B Forsyth County
Winston Salem Northern Beltway
(Eastern Section) (Future I-74)

SHEET 64 of 64