
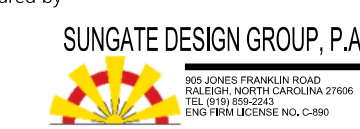


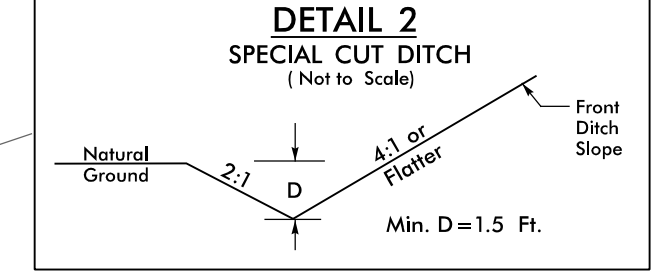
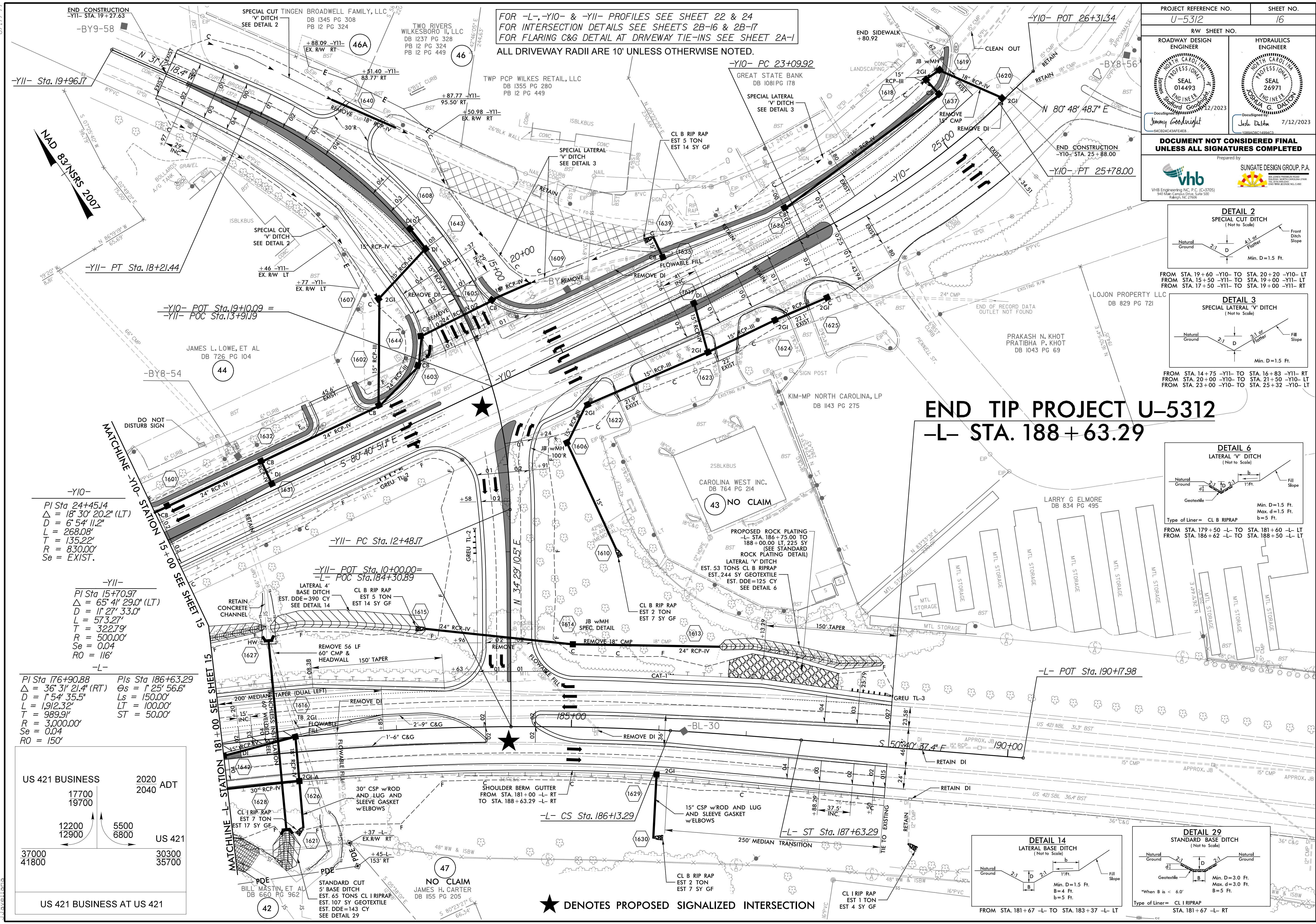
PROJECT REFERENCE NO. U-5312		SHEET NO. 16	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		SEAL 014493 NORTH CAROLINA PROFESSIONAL ENGINEER JIMMY GOODRIGHT 12/2/2023	
		SEAL 24971 NORTH CAROLINA PROFESSIONAL ENGINEER JOSH DUBO 7/12/2023	

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

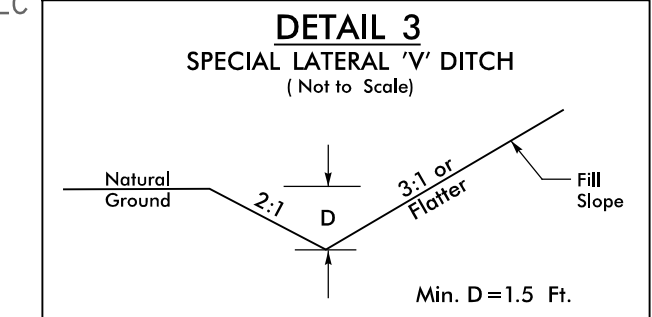
Prepared by  
 **vhb**  
 VHB Engineering NC, P.C. (C-3705)  
 9401 Main Central Drive, Suite 500  
 Raleigh, NC 27606

 **SUNGATE DESIGN GROUP, P.A.**  
 10800 BIRCHMOUNT RD  
 RALEIGH, NC 27615

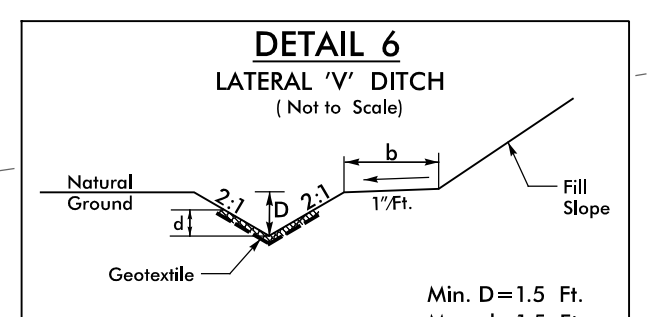
FOR -L-, -Y10- & -Y11- PROFILES SEE SHEET 22 & 24  
 FOR INTERSECTION DETAILS SEE SHEETS 2B-16 & 2B-17  
 FOR FLARING C&G DETAIL AT DRIVEWAY TIE-INS SEE SHEET 2A-1  
 ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.



FROM STA. 19+60 -Y10- TO STA. 20+20 -Y10- LT  
 FROM STA. 15+50 -Y11- TO STA. 19+00 -Y11- LT  
 FROM STA. 17+50 -Y11- TO STA. 19+00 -Y11- RT



FROM STA. 14+75 -Y11- TO STA. 16+83 -Y11- RT  
 FROM STA. 20+00 -Y10- TO STA. 21+50 -Y10- LT  
 FROM STA. 23+00 -Y10- TO STA. 25+32 -Y10- LT



Type of Liner = CL B RIPRAP  
 FROM STA. 179+50 -L- TO STA. 181+60 -L- LT  
 FROM STA. 186+62 -L- TO STA. 188+50 -L- LT

# END TIP PROJECT U-5312

## -L- STA. 188+63.29

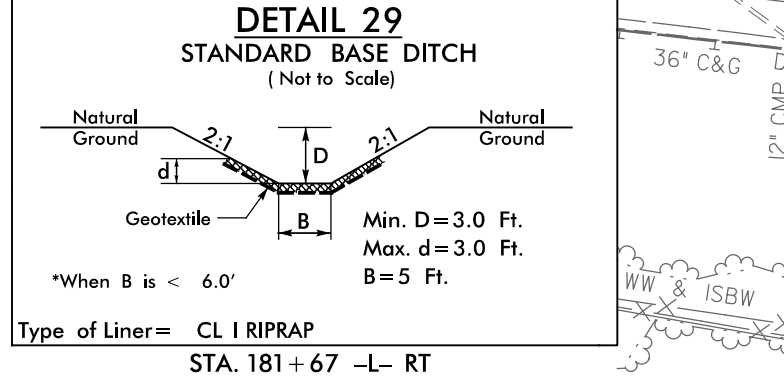
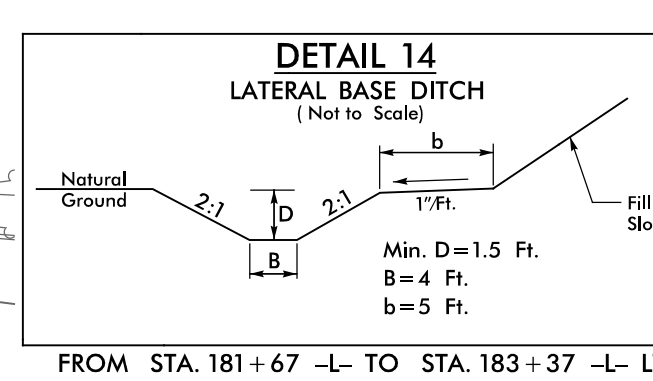
**-Y10-**  
 PI Sta 24+45.14  
 $\Delta = 18' 30" 20.2' (LT)$   
 $D = 6' 54" 11.2'$   
 $L = 268.08'$   
 $T = 135.22'$   
 $R = 830.00'$   
 $Se = EXIST.$

**-Y11-**  
 PI Sta 15+70.97  
 $\Delta = 65' 4" 29.0' (LT)$   
 $D = 1' 27" 33.0"$   
 $L = 573.27'$   
 $T = 322.79'$   
 $R = 500.00'$   
 $Se = 0.04$   
 $RO = 116'$

**-L-**  
 PI Sta 176+90.88  
 $\Delta = 36' 3" 21.4' (RT)$   
 $D = 1' 54" 35.5"$   
 $L = 1912.32'$   
 $T = 989.91'$   
 $R = 3,000.00'$   
 $Se = 0.04$   
 $RO = 150'$

**PIs Sta 186+63.29**  
 $\Theta_s = 1' 25" 56.6"$   
 $L_s = 150.00'$   
 $LT = 100.00'$   
 $ST = 50.00'$

US 421 BUSINESS	2020 ADT
17700	19700
12200	5500
12900	6800
	US 421
37000	30300
41800	35700
US 421 BUSINESS AT US 421	



★ DENOTES PROPOSED SIGNALIZED INTERSECTION