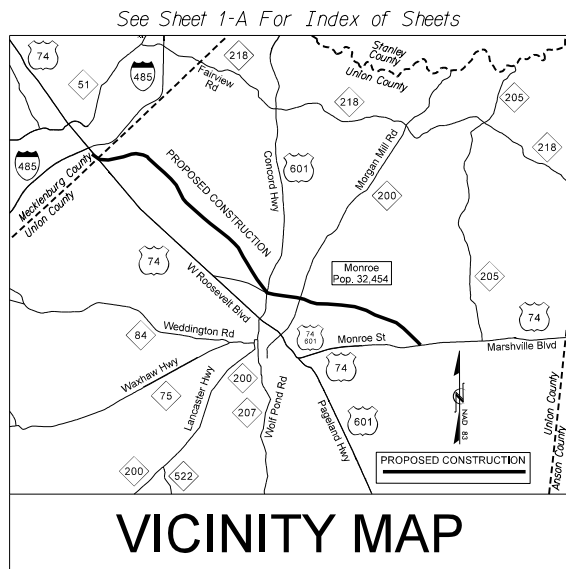


09/08/09

TIP PROJECT: R-3329 / R-2559

CONTRACT: C202587



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# MECKLENBURG & UNION COUNTY

LOCATION: US 74 BYPASS FROM US 74 JUST EAST OF I-485 NEAR MATTHEWS AND STALLINGS TO US 74 JUST EAST OF WINGATE AND WEST OF MARSHVILLE

TYPE OF WORK: DESIGN-BUILD WETLAND AND STREAM IMPACTS

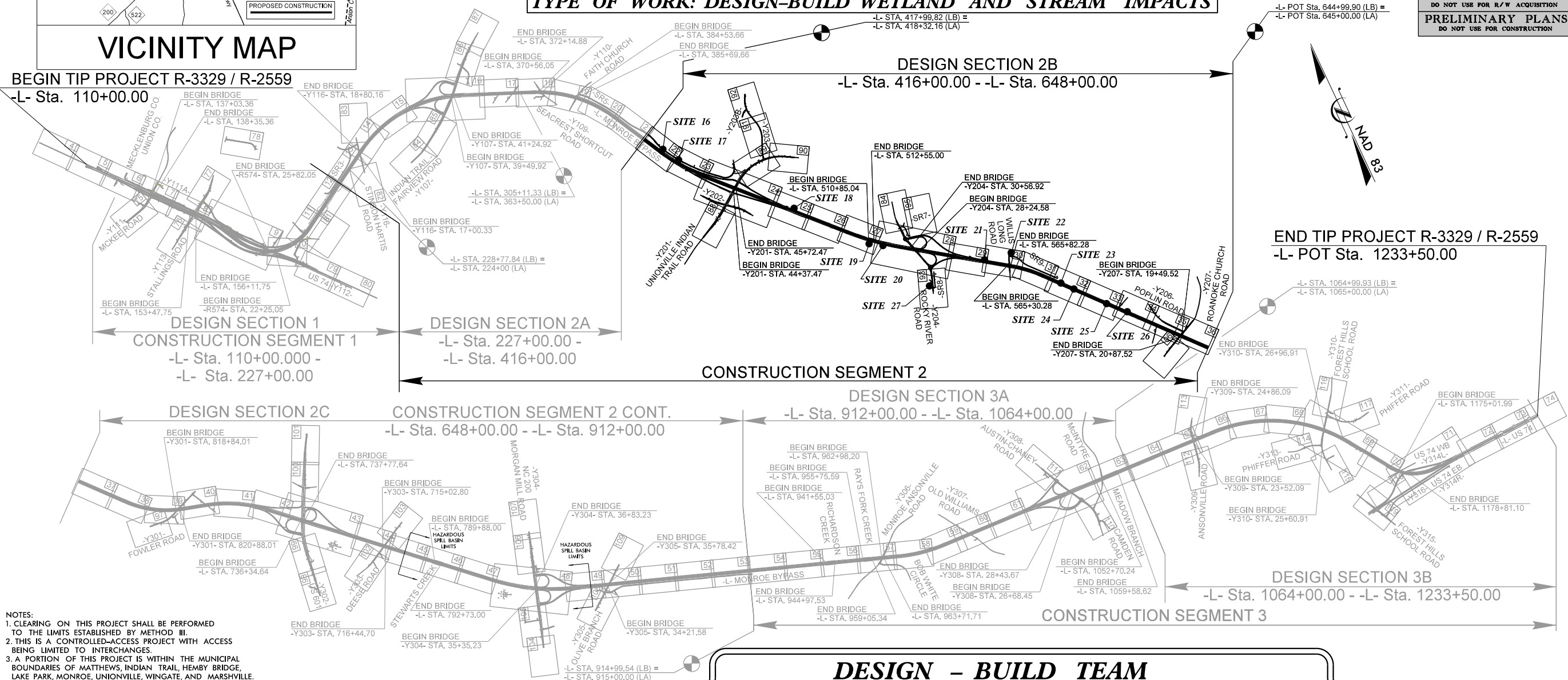
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3329 /R-2559	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34533.5.TA1			

PERMIT DRAWING  
SHEET 69 OF 267

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

BEGIN TIP PROJECT R-3329 / R-2559

-L- Sta. 110+00.00



END TIP PROJECT R-3329 / R-2559

-L- POT Sta. 1233+50.00

- NOTES:
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
  - THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
  - A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF MATTHEWS, INDIAN TRAIL, HEMBY BRIDGE, LAKE PARK, MONROE, UNIONVILLE, WINGATE, AND MARSHVILLE.

GRAPHIC SCALES



DESIGN DATA

ADT 2013 = 64,100  
ADT 2035 = 95,600  
DHV = 8%  
D = 55%  
T = 18%\*  
V = 70 mph

\*(TTST 11% + DUAL 7%)  
FUNCTIONAL CLASS.: FREEWAY

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3329 /R-2559..... 18.1 mi  
LENGTH STRUCTURE TIP PROJECT R-3329 /R-2559..... \*1.6 mi  
TOTAL LENGTH TIP PROJECT R-3329 /R-2559..... 19.7 mi

\* LENGTH OF STRUCTURES BASED ON WB LANES

NCDOT CONTACT: K. ZAK HAMIDI, PE

## DESIGN - BUILD TEAM

PLANS PREPARED BY :



RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE, SUITE 350  
RALEIGH, NORTH CAROLINA 27609  
NC LICENSE NO. F-0112

2006 STANDARD SPECIFICATIONS

LETTING DATE:

OCTOBER 28, 2010

J.T. Peacock, Jr., P.E.  
PROJECT ENGINEER

Stephen E. Roberts, P.E.  
PROJECT DESIGN ENGINEER

CONTRACTOR :



HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_  
ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_  
P.E.

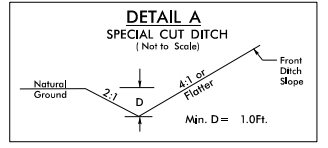
\$\$\$TIME\$\$\$\$  
 2011/01/20  
 Environmental\Drawings\Section2B\R-3329\_r-2559\_HYD\_PRM\_sec2b\_tsh.dgn  
 11/1/2011  
 keys



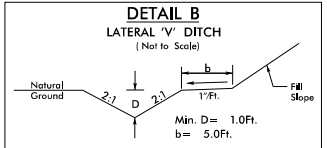
**INCOMPLETE PLANS**  
DO NOT USE FOR A/W ACQUISITION

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

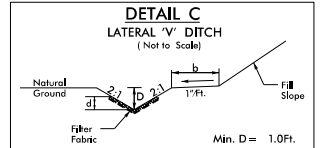
**PERMIT DRAWING**  
SHEET 70 OF 267



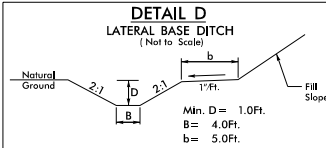
- L- STA. 424+50 TO STA. 426+00 LT
- L- STA. 441+00 TO STA. 454+00 RT
- L- STA. 442+50 TO STA. 444+50 LT
- L- NRB- STA. 449+00 TO STA. 450+00 LT
- L- STA. 463+50 TO STA. 469+00 RT
- L- STA. 465+50 TO STA. 469+00 LT
- L- STA. 494+75 TO STA. 496+00 LT
- L- STA. 496+50 TO STA. 497+50 RT
- L- STA. 531+00 TO STA. 534+00 RT
- L- STA. 532+00 TO STA. 536+00 LT
- L- STA. 539+00 TO STA. 543+00 LT
- L- STA. 539+00 TO STA. 542+50 RT
- L- STA. 545+50 TO STA. 550+00 LT
- L- STA. 575+50 TO STA. 600+00 RT
- L- STA. 583+00 TO STA. 585+00 LT
- L- STA. 582+50 TO STA. 584+00 RT
- L- STA. 588+00 TO STA. 590+50 RT
- L- STA. 592+50 TO STA. 595+00 LT
- L- STA. 593+00 TO STA. 595+50 RT
- L- STA. 598+00 TO STA. 598+68 RT
- L- STA. 599+00 TO STA. 600+00 RT
- L- STA. 605+45 TO STA. 612+00 RT
- L- STA. 606+20 TO STA. 612+00 LT
- L- STA. 618+50 TO STA. 620+00 LT
- L- STA. 618+50 TO STA. 619+50 RT
- L- STA. 634+50 TO STA. 635+50 LT
- L- STA. 634+50 TO STA. 635+50 RT
- QRA- STA. 17+50 TO STA. 20+00 LT
- QRA- STA. 19+50 TO STA. 20+00 RT
- QRA- STA. 25+50 TO STA. 28+00 RT
- QLD- STA. 10+10 TO STA. 12+12 RT
- QLD- STA. 16+85 TO STA. 17+35 RT
- QRD- STA. 15+00 TO STA. 19+00 RT
- SR5- STA. 44+14 TO STA. 47+21 RT
- SR5- STA. 79+00 TO STA. 83+25 RT
- SR5- STA. 79+00 TO STA. 82+95 LT
- SR7- STA. 13+23 TO STA. 15+50 RT
- SR8- STA. 10+50 TO STA. 15+42 LT
- Y201- STA. 22+11 TO STA. 26+50 RT
- Y201- STA. 52+00 TO STA. 54+00 RT
- Y201- STA. 66+50 TO STA. 73+26 LT
- Y201- STA. 72+50 TO STA. 73+08 RT
- Y202- STA. 8+83 TO STA. 9+50 RT
- Y202- STA. 8+90 TO STA. 9+50 LT
- Y202- STA. 13+50 TO STA. 15+00 LT
- Y202- STA. 19+00 TO STA. 21+00 RT
- Y202- STA. 19+50 TO STA. 21+00 LT
- Y202- STA. 23+00 TO STA. 24+00 RT
- Y202- STA. 28+00 TO STA. 29+70 RT
- Y202- STA. 28+75 TO STA. 29+75 LT
- Y203- STA. 18+00 TO STA. 19+50 RT
- Y203- STA. 23+50 TO STA. 29+50 RT
- Y203- STA. 35+00 TO STA. 36+92 RT
- Y203- STA. 35+00 TO STA. 37+03 LT
- Y203B- STA. 12+50 TO STA. 13+64 LT
- Y203B- STA. 12+25 TO STA. 13+40 RT
- Y204- STA. 11+00 TO STA. 12+00 RT
- Y204- STA. 12+50 TO STA. 15+50 RT
- Y204- STA. 15+50 TO STA. 18+00 LT
- Y204- STA. 42+00 TO STA. 43+04 RT
- Y204- STA. 42+00 TO STA. 42+84 LT
- Y208- STA. 13+00 TO STA. 14+25 RT
- Y208- STA. 17+00 TO STA. 18+00 RT
- Y204\_DET- STA. 20+34.66 TO STA. 21+84.66 RT



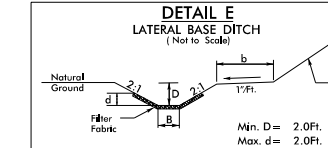
- L- STA. 431+50 TO STA. 433+62 RT
- L- STA. 513+00 TO STA. 515+00 RT
- L- STA. 558+00 TO STA. 559+10 RT
- L- STA. 566+50 TO STA. 569+50 RT
- L- STA. 566+50 TO STA. 572+00 LT
- L- STA. 573+00 TO STA. 575+00 RT
- L- STA. 584+50 TO STA. 586+00 RT
- L- STA. 590+50 TO STA. 593+00 RT
- L- STA. 591+18 TO STA. 591+70 LT
- L- STA. 604+25 TO STA. 605+45 RT
- L- STA. 605+00 TO STA. 606+20 LT
- L- STA. 612+00 TO STA. 614+00 RT
- L- STA. 614+03 TO STA. 615+00 LT
- L- STA. 638+37 TO STA. 639+50 RT
- QRA- STA. 20+50 TO STA. 25+50 LT
- QRA- STA. 28+00 TO STA. 28+76 LT
- QRD- STA. 19+00 TO STA. 19+71 LT
- QRD- STA. 19+00 TO STA. 19+41 RT
- SR5- STA. 78+25 TO STA. 79+00 RT
- SR9- STA. 15+00 TO STA. 19+10 RT
- SR9- STA. 15+66 TO STA. 18+59 LT
- Y201- STA. 26+75 TO STA. 27+50 RT
- Y201- STA. 48+50 TO STA. 48+87 LT
- Y202- STA. 17+00 TO STA. 17+85 LT
- Y203- STA. 15+67 TO STA. 18+00 RT
- Y204- STA. 36+00 TO STA. 39+00 RT
- Y207- STA. 14+00 TO STA. 15+00 LT



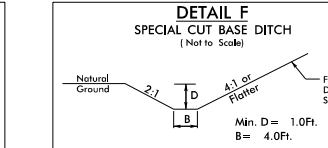
Type of Liner = Class B Rip-Rap  
DETAIL C NOT USED IN SECTION 2B



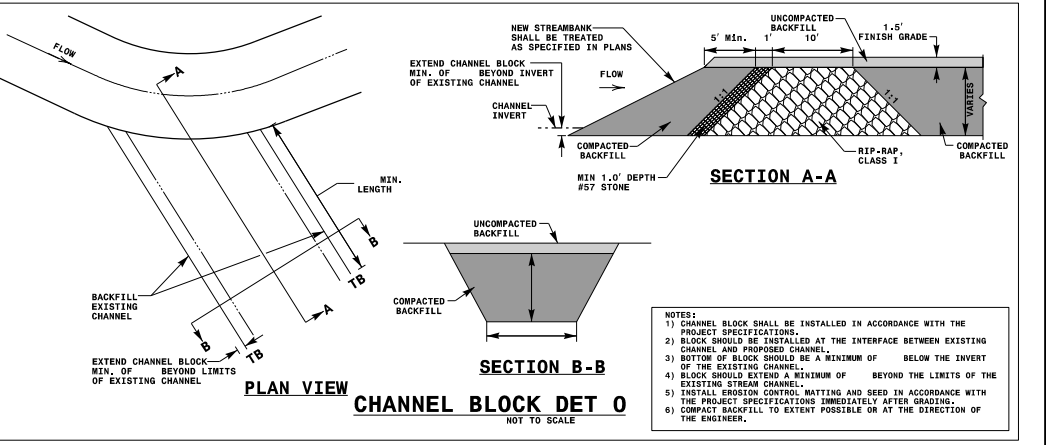
- L- STA. 414+00 TO STA. 431+50 RT
- L- STA. 437+00 TO STA. 444+00 RT
- L- STA. 473+50 TO STA. 474+62 LT
- L- STA. 476+00 TO STA. 488+00 LT
- L- STA. 519+25 TO STA. 524+00 RT
- L- STA. 524+50 TO STA. 525+00 LT
- L- STA. 536+00 TO STA. 539+00 LT
- L- STA. 537+86 TO STA. 539+00 RT
- L- STA. 553+93 TO STA. 554+50 RT
- L- STA. 554+50 TO STA. 556+00 LT
- L- STA. 555+50 TO STA. 558+00 RT
- L- STA. 559+10 TO STA. 562+32 RT
- L- STA. 560+00 TO STA. 561+61 LT
- L- STA. 584+00 TO STA. 586+00 RT
- L- STA. 598+00 TO STA. 600+20 LT
- L- STA. 613+05 TO STA. 614+03 LT
- L- STA. 619+50 TO STA. 621+50 RT
- L- STA. 620+50 TO STA. 624+50 LT
- L- STA. 628+00 TO STA. 632+50 RT
- L- STA. 631+50 TO STA. 633+50 LT
- L- STA. 637+70 TO STA. 640+00 LT
- NRD- STA. 29+50 TO STA. 30+90 RT
- QLA- STA. 12+05 TO STA. 16+50 LT
- QRA- STA. 20+00 TO STA. 24+46 RT
- QRD- STA. 19+71 TO STA. 20+50 LT
- SR5- STA. 76+85 TO STA. 78+50 RT
- Y201- STA. 28+50 TO STA. 34+75 LT
- Y201- STA. 48+50 TO STA. 52+00 LT
- Y201- STA. 48+87 TO STA. 50+00 LT
- Y203- STA. 10+70 TO STA. 18+00 LT
- Y204- STA. 23+50 TO STA. 25+99 RT
- Y206- STA. 15+50 TO STA. 17+50 LT
- Y207- STA. 15+00 TO STA. 18+84 LT
- Y207- STA. 17+00 TO STA. 19+50 RT



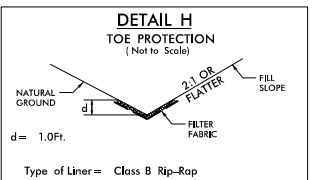
- L- STA. 433+62 TO STA. 435+50 RT
- L- STA. 444+00 TO STA. 445+50 RT
- L- STA. 474+62 TO STA. 476+00 LT
- L- STA. 477+00 TO STA. 484+00 RT
- L- STA. 524+00 TO STA. 525+50 RT
- L- STA. 585+50 TO STA. 587+37 RT
- SR5- STA. 55+75 TO STA. 57+06 LT
- Y206- STA. 24+67 TO STA. 25+50 LT



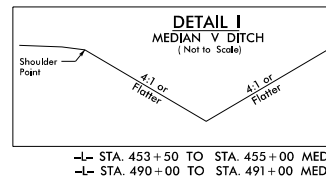
- L- STA. 435+50 TO STA. 437+00 RT
- L- STA. 470+50 TO STA. 473+50 LT
- L- STA. 472+50 TO STA. 477+00 RT
- L- STA. 554+50 TO STA. 555+50 RT
- SR5- STA. 78+50 TO STA. 79+00 RT
- Y201- STA. 21+90 TO STA. 28+50 LT
- Y203B- STA. 10+50 TO STA. 12+50 LT
- Y206- STA. 25+50 TO STA. 27+16 LT



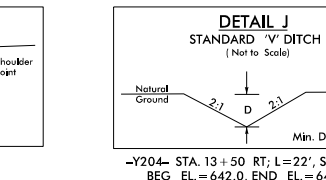
NOTES:  
1) CHANNEL BLOCK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.  
2) BLOCK SHOULD BE INSTALLED AT THE INTERFACE BETWEEN EXISTING CHANNEL AND PROPOSED CHANNEL.  
3) BOTTOM OF BLOCK SHOULD BE A MINIMUM OF 1' BELOW THE INVERT OF THE EXISTING CHANNEL.  
4) BLOCK SHOULD EXTEND A MINIMUM OF 10' BEYOND THE LIMITS OF THE EXISTING CHANNEL.  
5) INSTALL EROSION CONTROL MATTING AND SEED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS IMMEDIATELY AFTER GRADING.  
6) COMPACT BACKFILL TO EXTENT POSSIBLE OR AT THE DIRECTION OF THE ENGINEER.



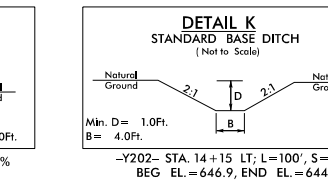
Type of Liner = Class B Rip-Rap  
DETAIL H NOT USED IN SECTION 2B



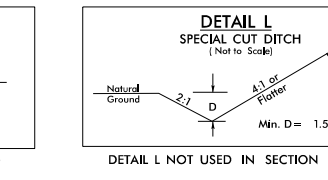
- L- STA. 453+50 TO STA. 455+00 MED
- L- STA. 490+00 TO STA. 491+00 MED
- L- STA. 530+00 TO STA. 532+50 MED
- L- STA. 583+00 TO STA. 585+00 MED
- L- STA. 588+00 TO STA. 592+50 MED
- L- STA. 608+50 TO STA. 610+50 MED
- L- STA. 618+50 TO STA. 622+50 MED
- L- STA. 634+50 TO STA. 635+50 MED



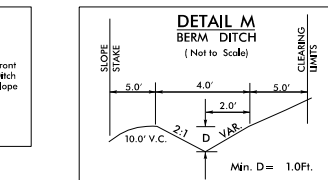
- Y204- STA. 13+50 RT, L=22', S=4.5%  
BEG EL.=642.0, END EL.=641.0
- Y204- STA. 17+00 TO STA. 17+24 RT  
L=38', S=2.1%, BEG EL.=643.8, END EL.=643.0
- SR5- STA. 64+88 LT, L=110', S=0.8%  
BEG EL.=637.9, END EL.=637.0
- SR8- STA. 16+28 TO STA. 16+57 RT  
L=54', S=2.4%, BEG EL.=645.3, END EL.=644.0



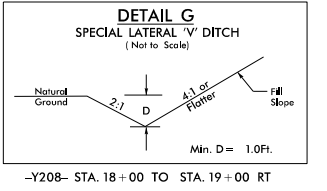
- Y202- STA. 14+15 LT, L=100', S=2.5%  
BEG EL.=646.9, END EL.=644.4
- Y202- STA. 14+20 RT, L=273', S=0.3%  
BEG EL.=644.0, END EL.=643.3
- Y202- STA. 28+75 LT, L=100', S=0.5%  
BEG EL.=651.7, END EL.=651.2
- Y202- STA. 28+75 RT, L=100', S=6.1%  
BEG EL.=658.1, END EL.=652.0
- L- STA. 629+50 LT, L=80', S=4.2%  
BEG EL.=592.4, END EL.=589.0
- L- STA. 631+50 LT, L=55', S=2.9%  
BEG EL.=590.8, END EL.=589.2
- Y201- STA. 26+75 RT, L=115', S=0.3%  
BEG EL.=634.4, END EL.=634.1
- L- STA. 556+00 LT, L=230', S=0.4%  
BEG EL.=622.9, END EL.=622.0
- L- STA. 569+25 LT TO -SR9- 15+75 RT, L=105', S=1.7%, BEG EL.=616.5, END EL.=614.5
- QRA- STA. 28+76 TO STA. 28+82 LT, L=18', S=0.6%, BEG EL.=621.0, END EL.=620.9
- SR5- STA. 78+25 LT, L=192', S=0.7%  
BEG EL.=639.3, END EL.=638.0
- L- STA. 553+12 RT, L=112', S=6.6%  
BEG EL.=631.7, END EL.=624.3



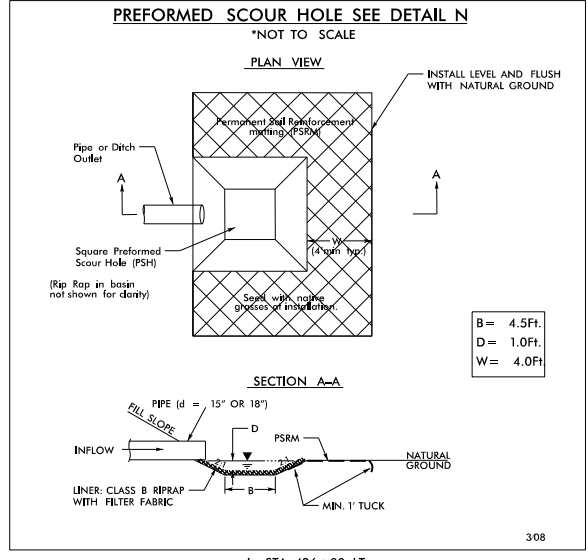
DETAIL L NOT USED IN SECTION 2B



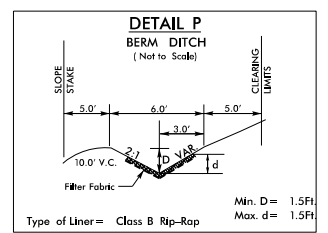
- L- STA. 615+00 TO STA. 618+00 RT
- L- STA. 532+00 TO STA. 534+40 RT



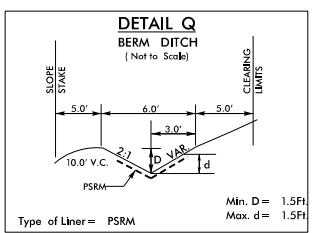
-Y208- STA. 18+00 TO STA. 19+00 RT



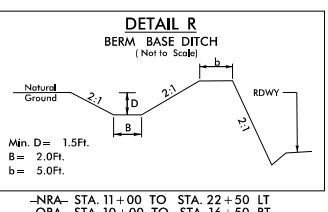
- L- STA. 426+00 LT
- L- STA. 484+95 RT



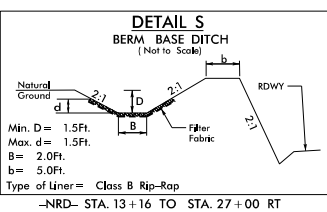
Type of Liner = Class B Rip-Rap  
DETAIL P NOT USED IN SECTION 2B



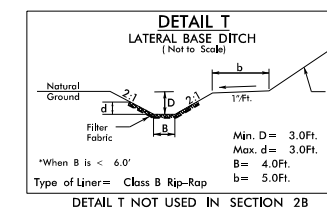
Type of Liner = PSRM  
DETAIL Q NOT USED IN SECTION 2B



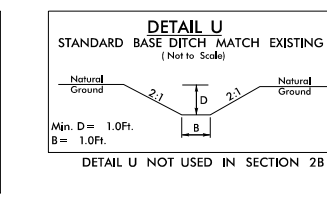
- NRA- STA. 11+00 TO STA. 22+50 LT
- QRA- STA. 10+00 TO STA. 16+50 RT
- L- STA. 550+50 TO STA. 551+25 LT
- L- STA. 547+00 TO STA. 553+93 RT



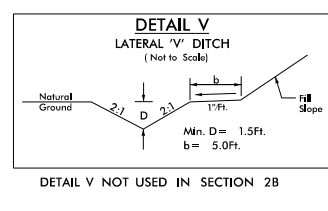
- NRD- STA. 13+16 TO STA. 27+00 RT



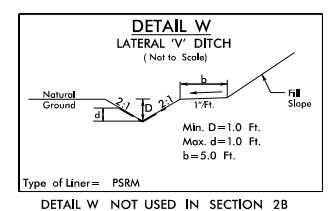
\*When B is < 6.0'  
Type of Liner = Class B Rip-Rap  
DETAIL T NOT USED IN SECTION 2B



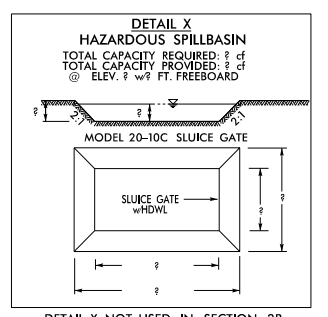
DETAIL U NOT USED IN SECTION 2B



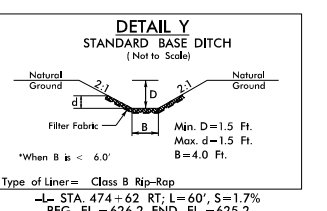
DETAIL V NOT USED IN SECTION 2B



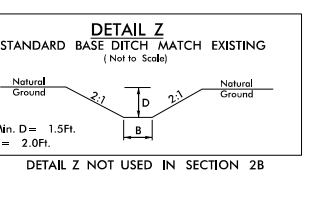
Type of Liner = PSRM  
DETAIL W NOT USED IN SECTION 2B



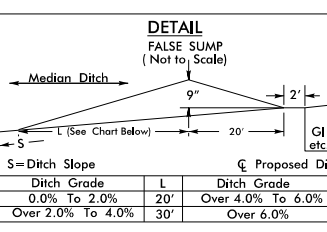
DETAIL X NOT USED IN SECTION 2B



- L- STA. 474+62 RT, L=60', S=1.7%  
BEG EL.=626.2, END EL.=625.2
- QRA- STA. 24+46 RT, L=218', S=2.3%  
BEG EL.=620.9, END EL.=615.8
- Y201- STA. 28+15 LT, L=100', S=5.9%  
BEG EL.=640.7, END EL.=634.8
- Y202- STA. 48+25 LT, L=196', S=3.2%  
BEG EL.=646.0, END EL.=639.8



DETAIL Z NOT USED IN SECTION 2B



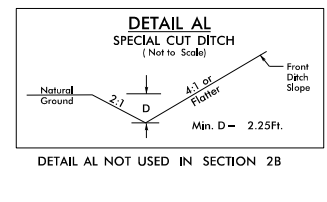
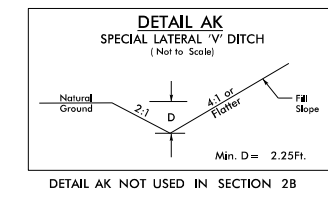
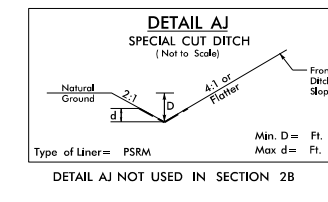
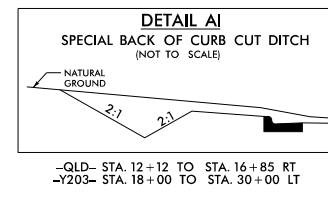
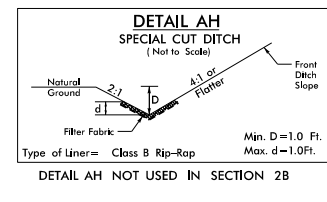
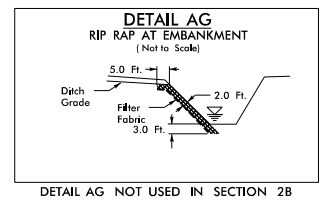
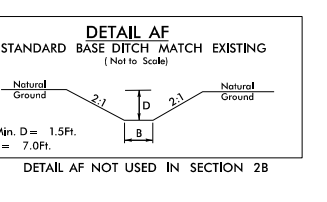
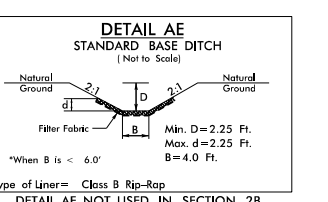
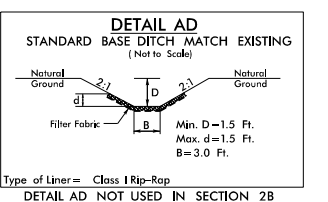
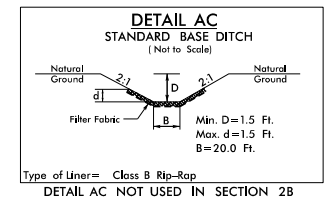
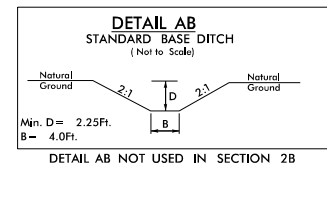
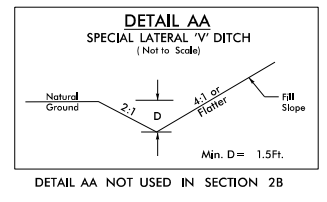
B:17/99

R:\Auditing\PERMITS\_Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRRM\_DitchDet\_Sec02B.dgn

8/29/2014



PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 2B-21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PERMIT DRAWING</b> <b>SHEET 71 OF 267</b>	



### DETAIL AN RIP-RAPPED ENERGY DISSIPATOR BASIN

**\*NOTE A:** IF EXIT VELOCITY OF BASIN IS SPECIFIED, EXTEND BASIN AS REQUIRED TO OBTAIN SUFFICIENT CROSS SECTIONAL AREA AT SECTION A-A SUCH THAT Q des / (CROSS SECTION AREA AT SEC. A-A) = SPECIFIED VELOCITY.

**\*NOTE B:** WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIP-RAP IN FLOOR OF BASIN SHOULD BE AT SAME ELEVATION OR LOWER THAN NATURAL CHANNEL BOTTOM AT SEC. A-A. PROVIDE SMOOTH TRANSITION FROM END OF APRON TO NATURAL CHANNEL WIDTH.

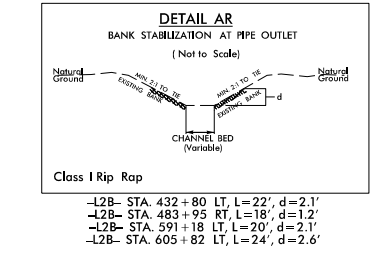
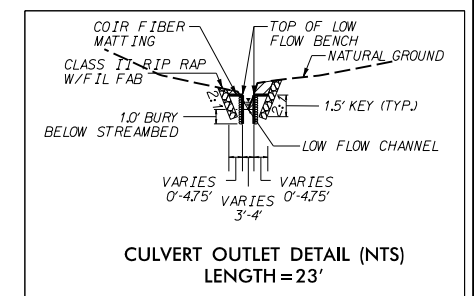
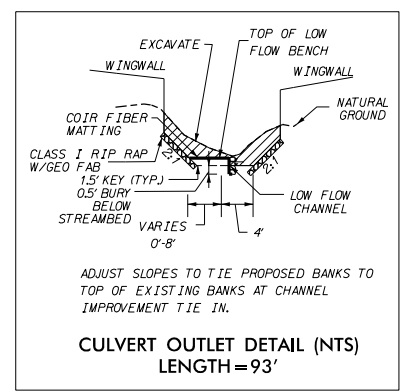
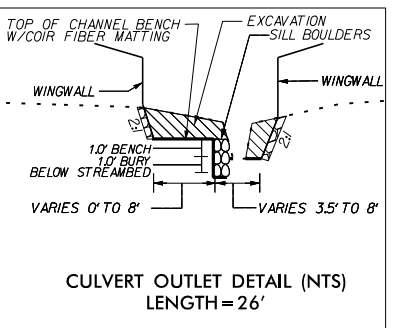
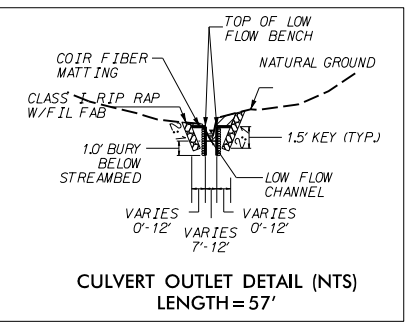
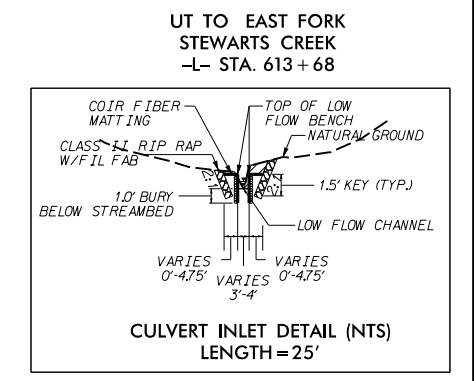
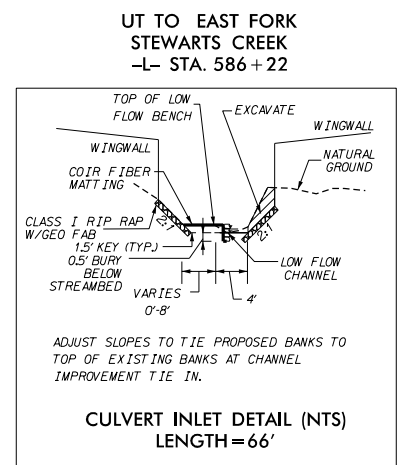
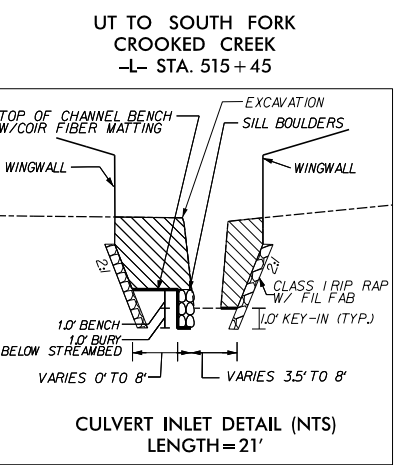
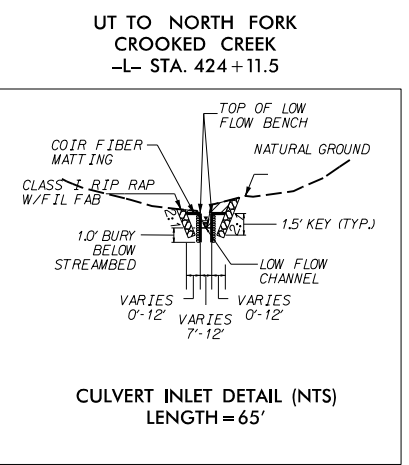
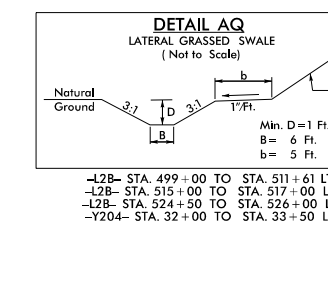
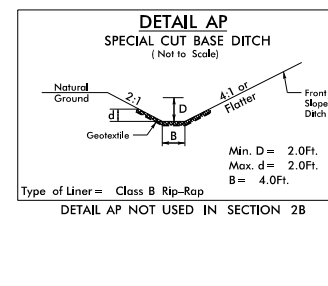
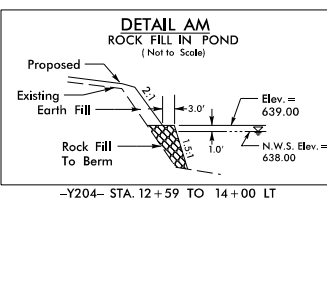
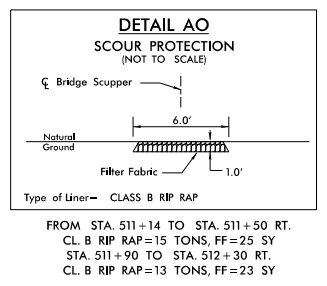
DIM	RIP RAP BASIN #							
A	1	2	3	4	5	6	7	8
B								
C								
D								
E								
F								
G								
H								

BASIN #	LOCATION (AT OUTLET)
1	
2	
3	
4	
5	
6	
7	
8	

**\*ALL DIMENSIONS APPROXIMATE IN FEET**

**505**

DETAIL AN NOT USED IN SECTION 2B



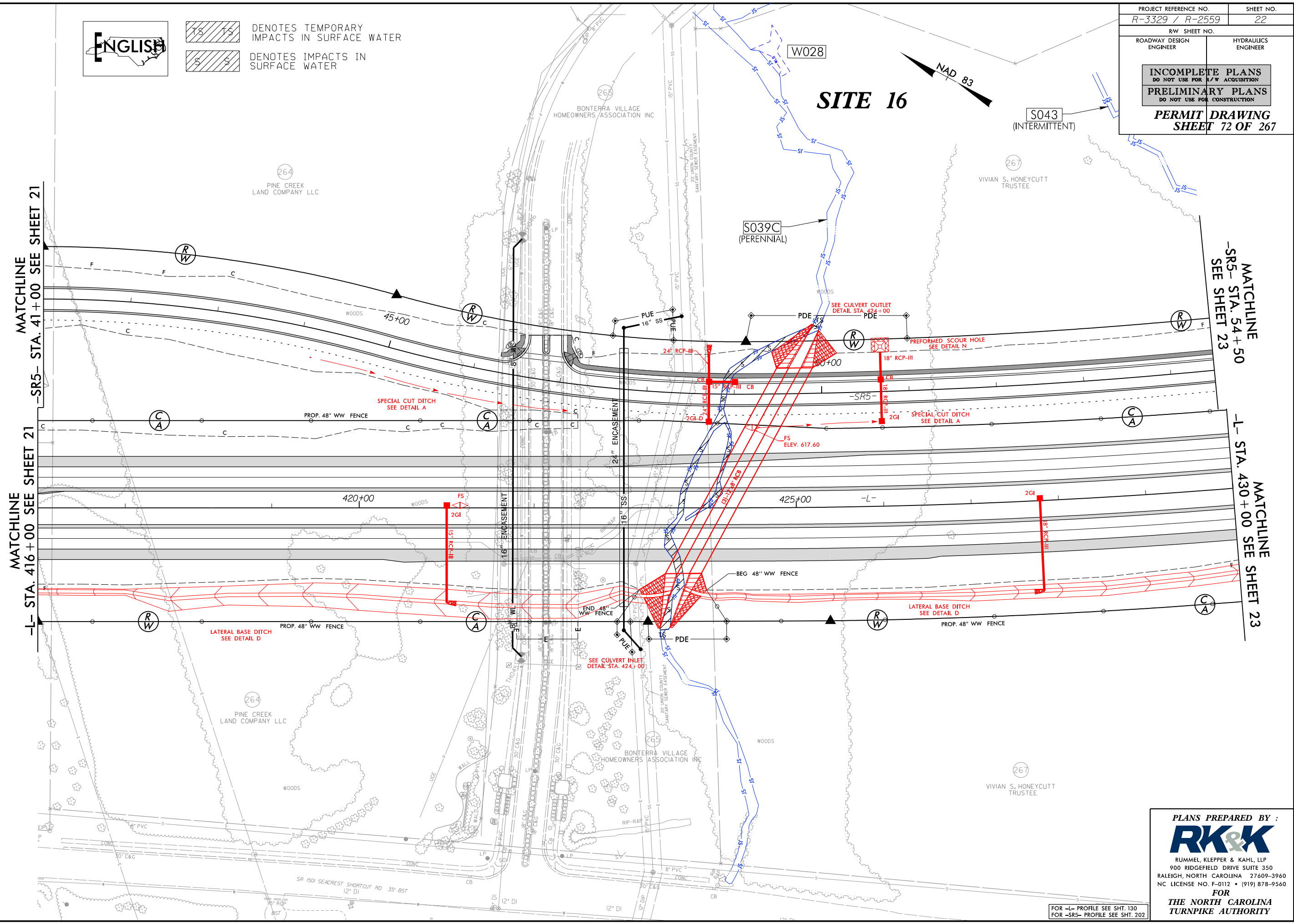
8/17/99  
 R:\Hudson\lics\PERMITS\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRRM\_DitchDet\_Sec02B\_2.dgn  
 8/30/2014

8/17/99  
\\hrc\planning\Drawings\Section2B\R3329\_R2559\_HYD\_PRR\_WET\_PSH022.dgn



TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
S S DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 72 OF 267	



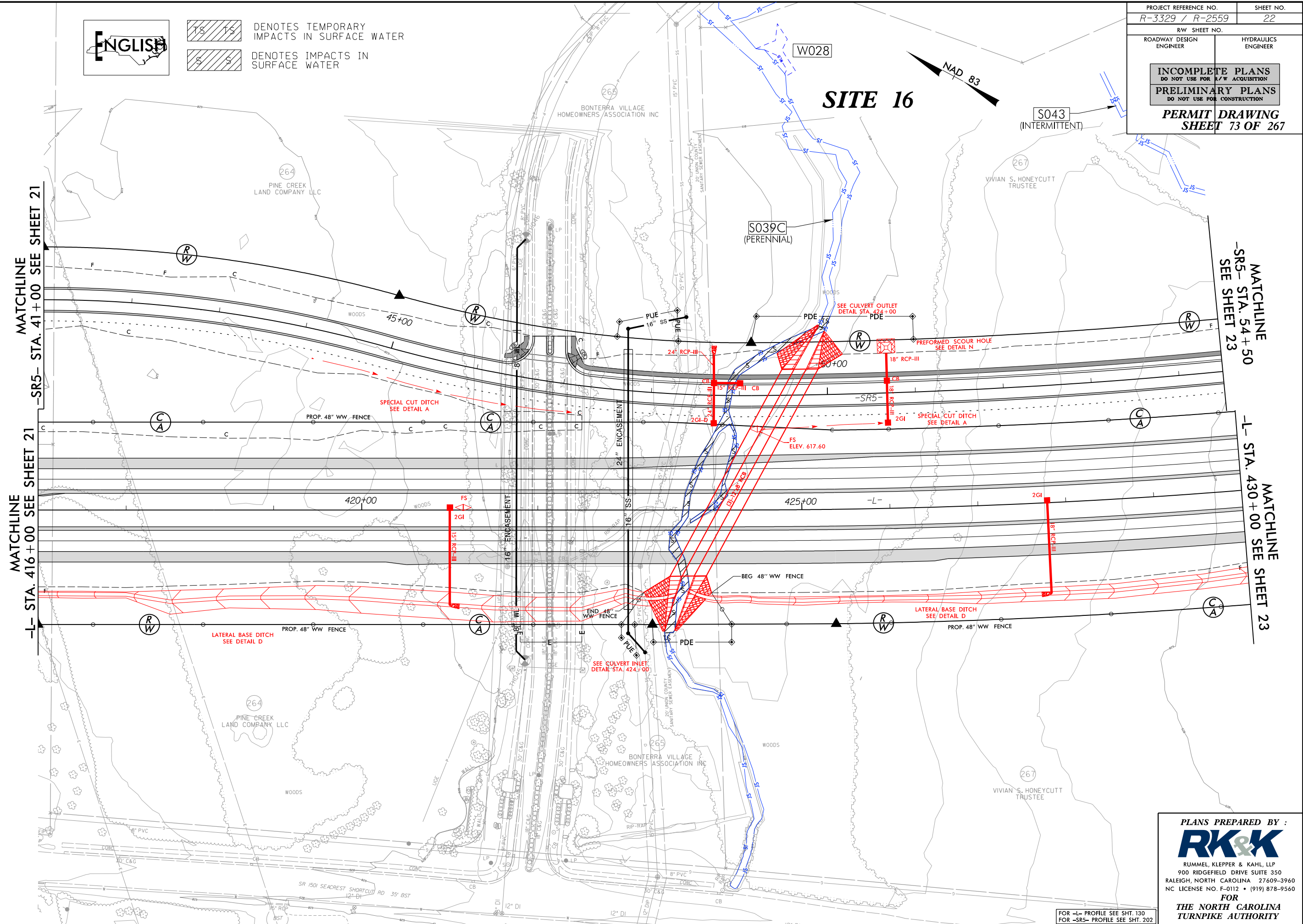
FOR -L- PROFILE SEE SHT. 130  
FOR -SR5- PROFILE SEE SHT. 202

PLANS PREPARED BY :  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560  
FOR  
THE NORTH CAROLINA  
TURNPIKE AUTHORITY

PROJECT REFERENCE NO. R-3329 / R-2559		SHEET NO. 22	
RW SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			
<b>PERMIT DRAWING</b> <b>SHEET 73 OF 267</b>			



DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 DENOTES IMPACTS IN SURFACE WATER



MATCHLINE  
-SR5- STA. 41+00 SEE SHEET 21

MATCHLINE  
-L- STA. 416+00 SEE SHEET 21

MATCHLINE  
-SR5- STA. 54+50 SEE SHEET 23

MATCHLINE  
-L- STA. 430+00 SEE SHEET 23



8/17/99  
 C:\Users\james\Documents\Drawings\Section2B\R3329\_R2559\_HYD\_PRRM\_WET\_PSH022.cmn.dgn  
 \$\$\$\$\$\$TIME\$\$\$\$\$\$  
 R:\Users\james\Documents\Drawings\Section2B\R3329\_R2559\_HYD\_PRRM\_WET\_PSH022.cmn.dgn

**PLANS PREPARED BY :**  
  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560  
**FOR**  
**THE NORTH CAROLINA**  
**TURNPIKE AUTHORITY**

FOR -L- PROFILE SEE SHT. 130  
 FOR -SR5- PROFILE SEE SHT. 202

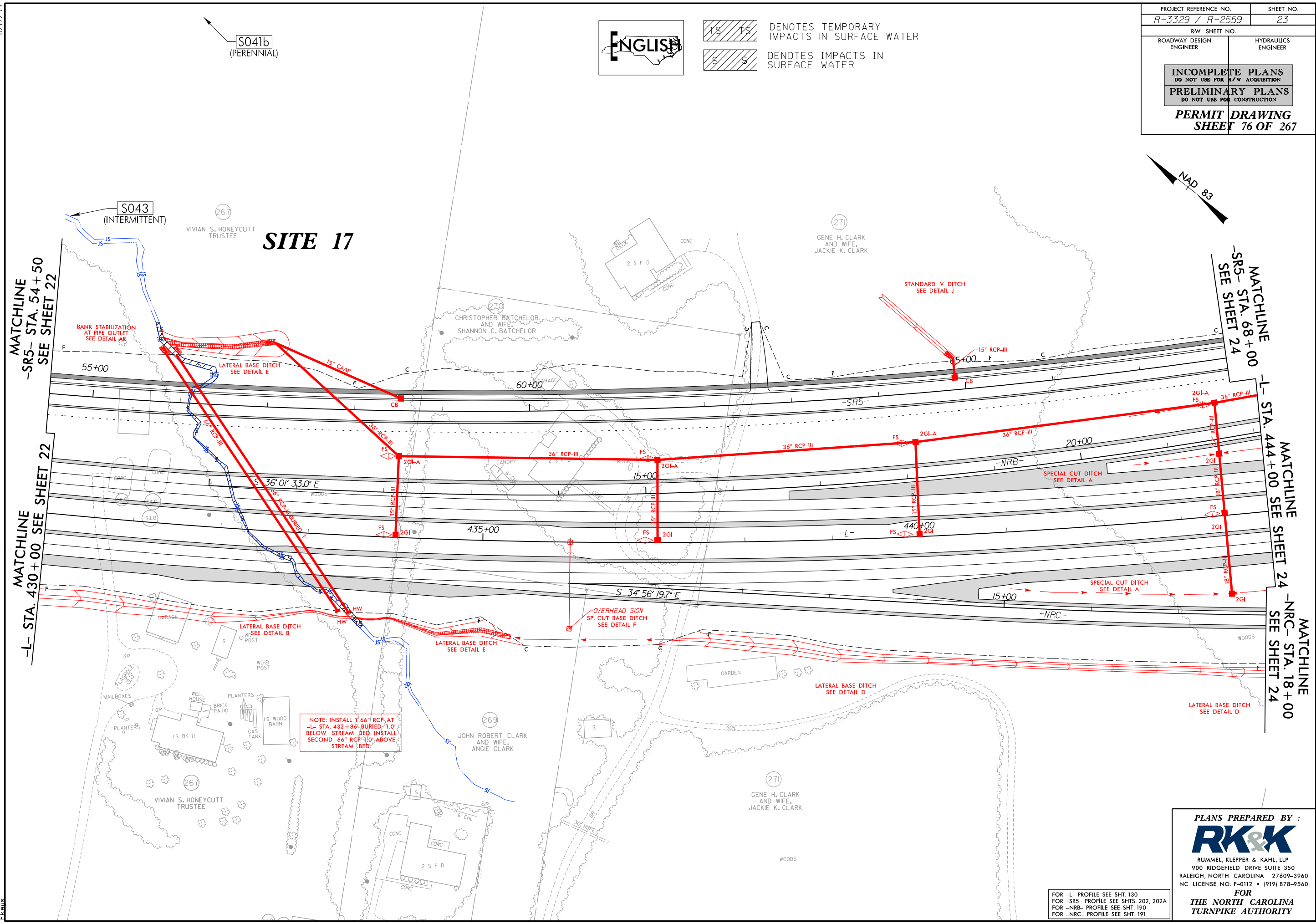
PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PERMIT DRAWING</b> SHEET 76 OF 267	




 DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 DENOTES IMPACTS IN SURFACE WATER

S041b  
(PERENNIAL)

8/17/99  
 C:\Users\Public\Documents\Drawings\Environmental\Drawings\Section2B\Drawings\Hyd\PRM\_WET\_PSH023.dgn  
 \$\$\$\$\$\$TIME\$\$\$\$\$\$  
 \$\$\$\$\$\$DATE\$\$\$\$\$\$  
 \$\$\$\$\$\$USER\$\$\$\$\$\$



FOR -L- PROFILE SEE SHT. 130  
 FOR -SR5- PROFILE SEE SHTS. 202, 202A  
 FOR -NRB- PROFILE SEE SHT. 190  
 FOR -NRC- PROFILE SEE SHT. 191

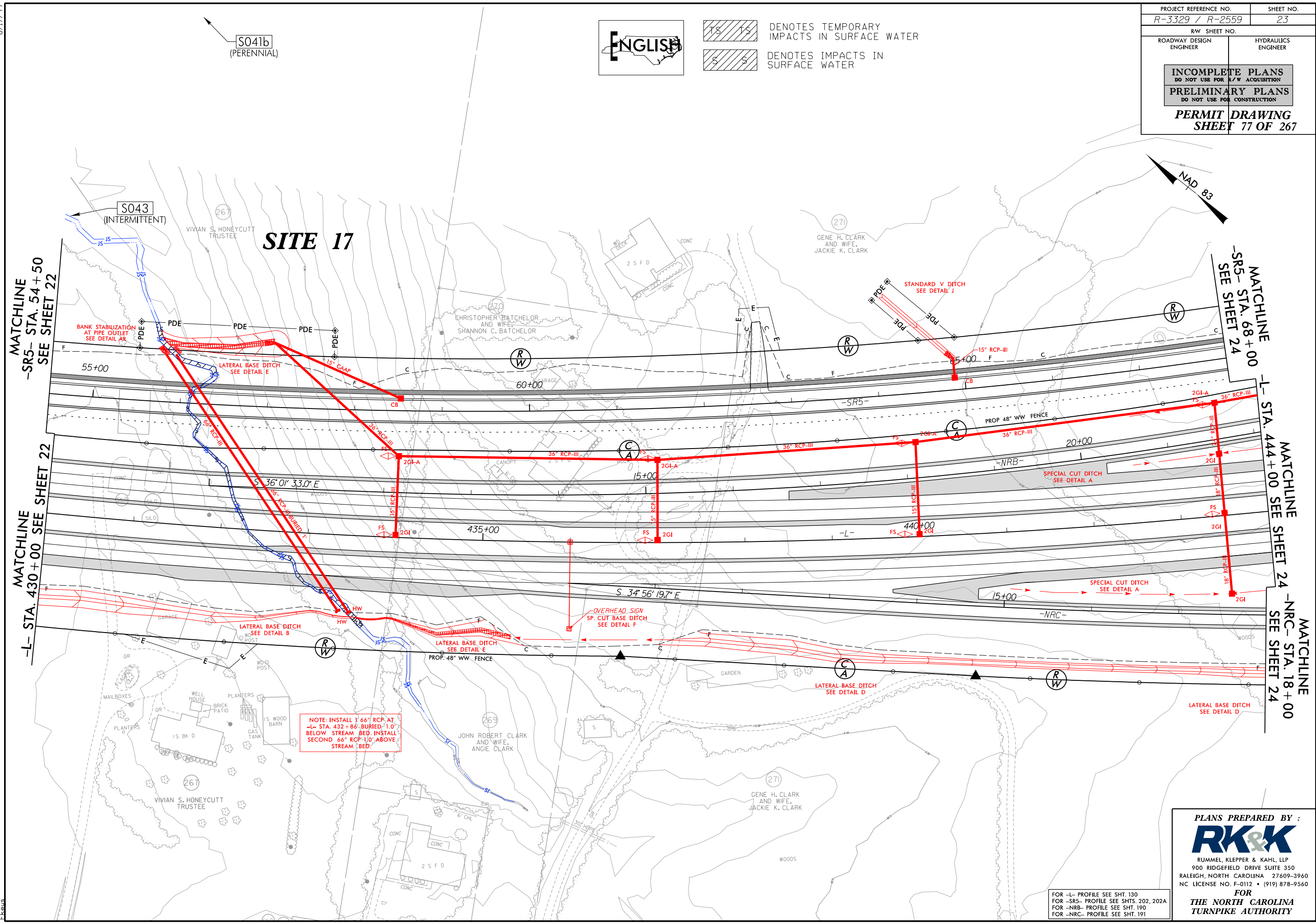
**PLANS PREPARED BY :**  
  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560  
**FOR**  
**THE NORTH CAROLINA**  
**TURNPIKE AUTHORITY**

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PERMIT DRAWING</b> SHEET 77 OF 267	



DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 DENOTES IMPACTS IN SURFACE WATER

S041b  
(PERENNIAL)




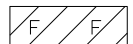

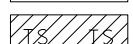
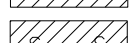
8/17/99  
 C:\Users\james\Documents\Drawings\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRM\_WET\_PSH023.com.dgn  
 \$\$\$\$\$\$TIME\$\$\$\$\$  
 \$\$\$\$\$\$DATE\$\$\$\$\$

NOTE: INSTALL 1' 66" RCP AT  
 -L- STA. 432+86 BURIED 1.0'  
 BELOW STREAM BED. INSTALL  
 SECOND 66" RCP 1.0' ABOVE  
 STREAM BED.

FOR -L- PROFILE SEE SHT. 130  
 FOR -SR5- PROFILE SEE SHTS. 202, 202A  
 FOR -NRB- PROFILE SEE SHT. 190  
 FOR -NRC- PROFILE SEE SHT. 191

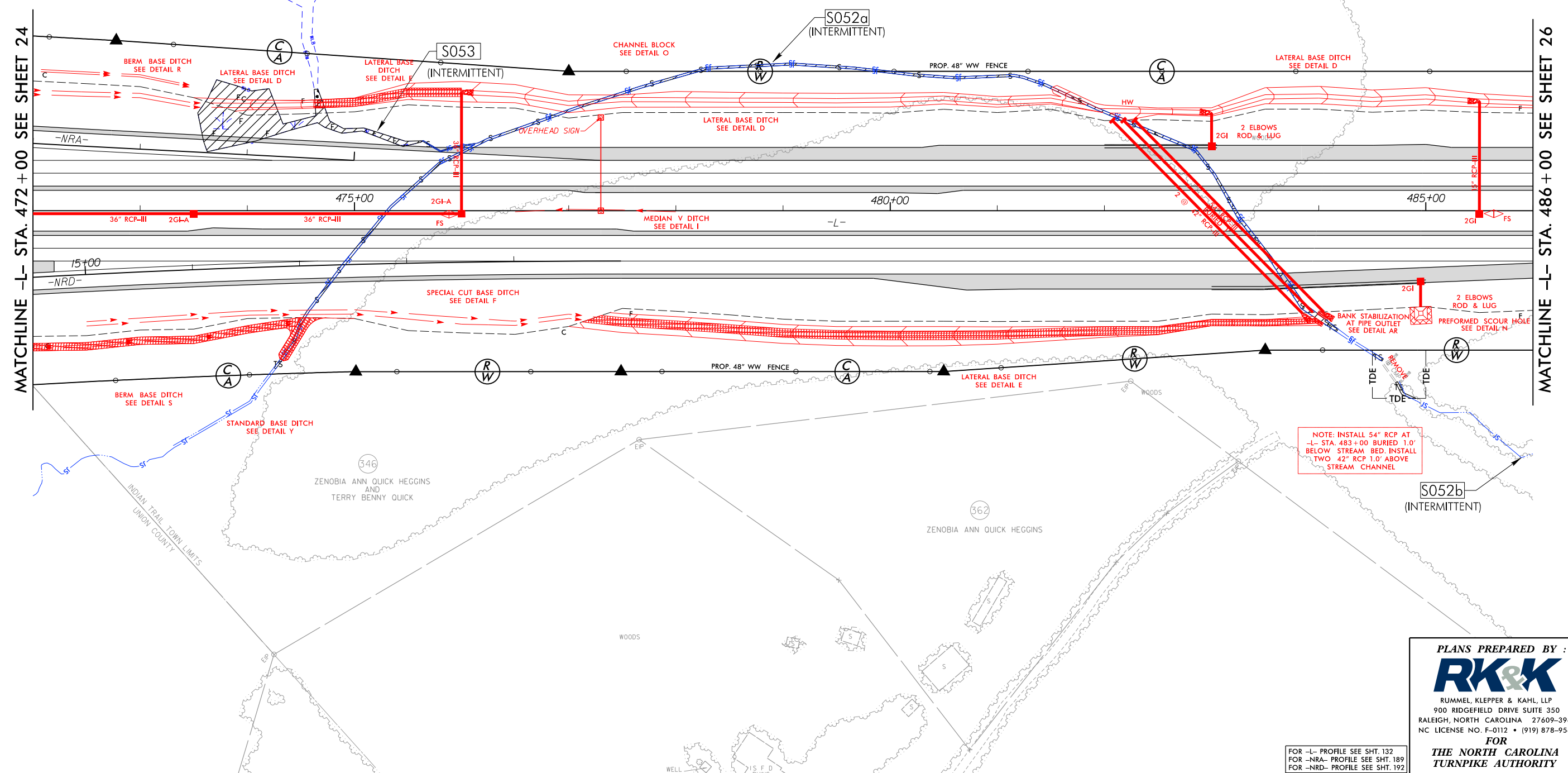
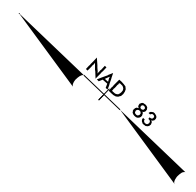
PLANS PREPARED BY :  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560  
 FOR  
**THE NORTH CAROLINA**  
**TURNPIKE AUTHORITY**


8/17/99  
 C:\Users\jme\Documents\Drawings\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRR\_WET\_PSH025.dgn  
 \$\$\$\$TIME\$\$\$\$  
 R:\Hydrolics\PERMITS\_Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRR\_WET\_PSH025.dgn

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

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PERMIT DRAWING</b> <b>SHEET 80 OF 267</b>	

# SITE 18



**PLANS PREPARED BY :**  
  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560  
 FOR  
**THE NORTH CAROLINA TURNPIKE AUTHORITY**

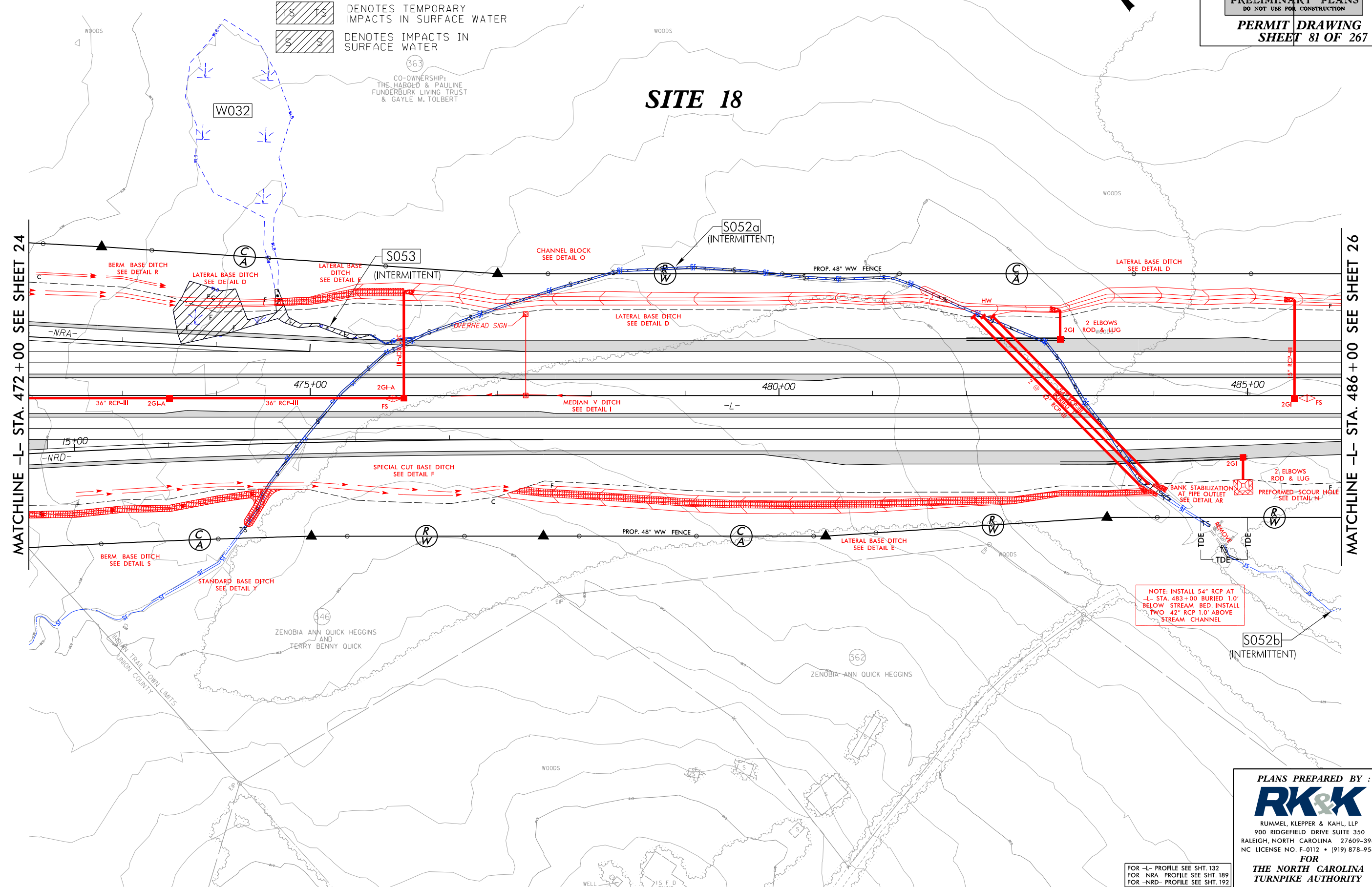
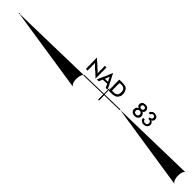
FOR -L- PROFILE SEE SHT. 132  
 FOR -NRA- PROFILE SEE SHT. 189  
 FOR -NRD- PROFILE SEE SHT. 192



8/17/99  
 C:\Users\jme\Documents\Drawings\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRR\_WET\_PSH0255.cmn.dgn  
 \$\$\$\$TIME\$\$\$\$  
 \$\$\$\$DATE\$\$\$\$  
 \$\$\$\$USER\$\$\$\$

- ENGLISH**
- DENOTES EXCAVATION IN WETLAND
  - DENOTES FILL IN WETLAND
  - DENOTES MECHANIZED CLEARING
  - DENOTES TEMPORARY IMPACTS IN SURFACE WATER
  - DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 81 OF 267	



MATCHLINE -L- STA. 472 + 00 SEE SHEET 24

MATCHLINE -L- STA. 486 + 00 SEE SHEET 26

NOTE: INSTALL 54\"/>

PLANS PREPARED BY :

RK&K

RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

FOR  
**THE NORTH CAROLINA  
 TURNPIKE AUTHORITY**

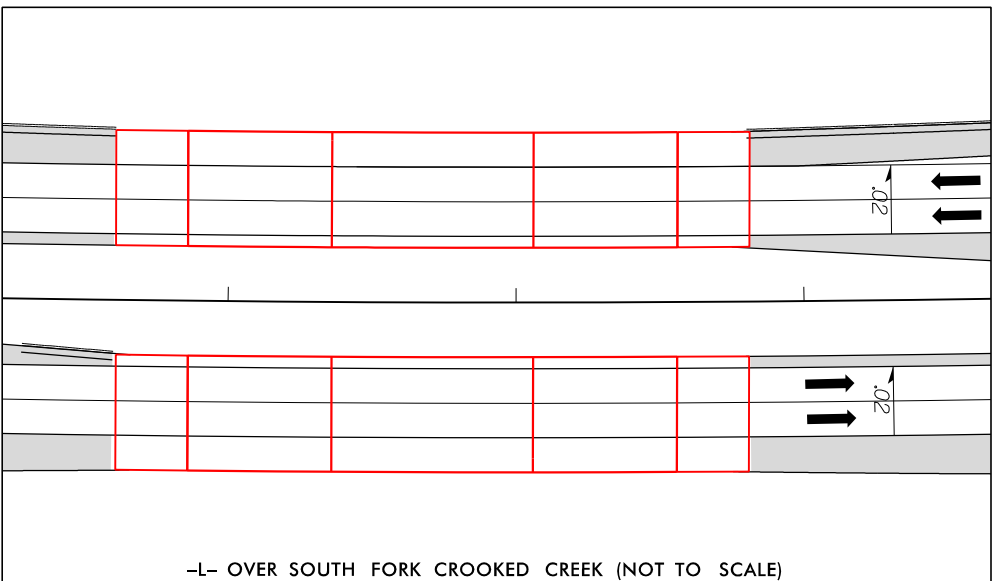
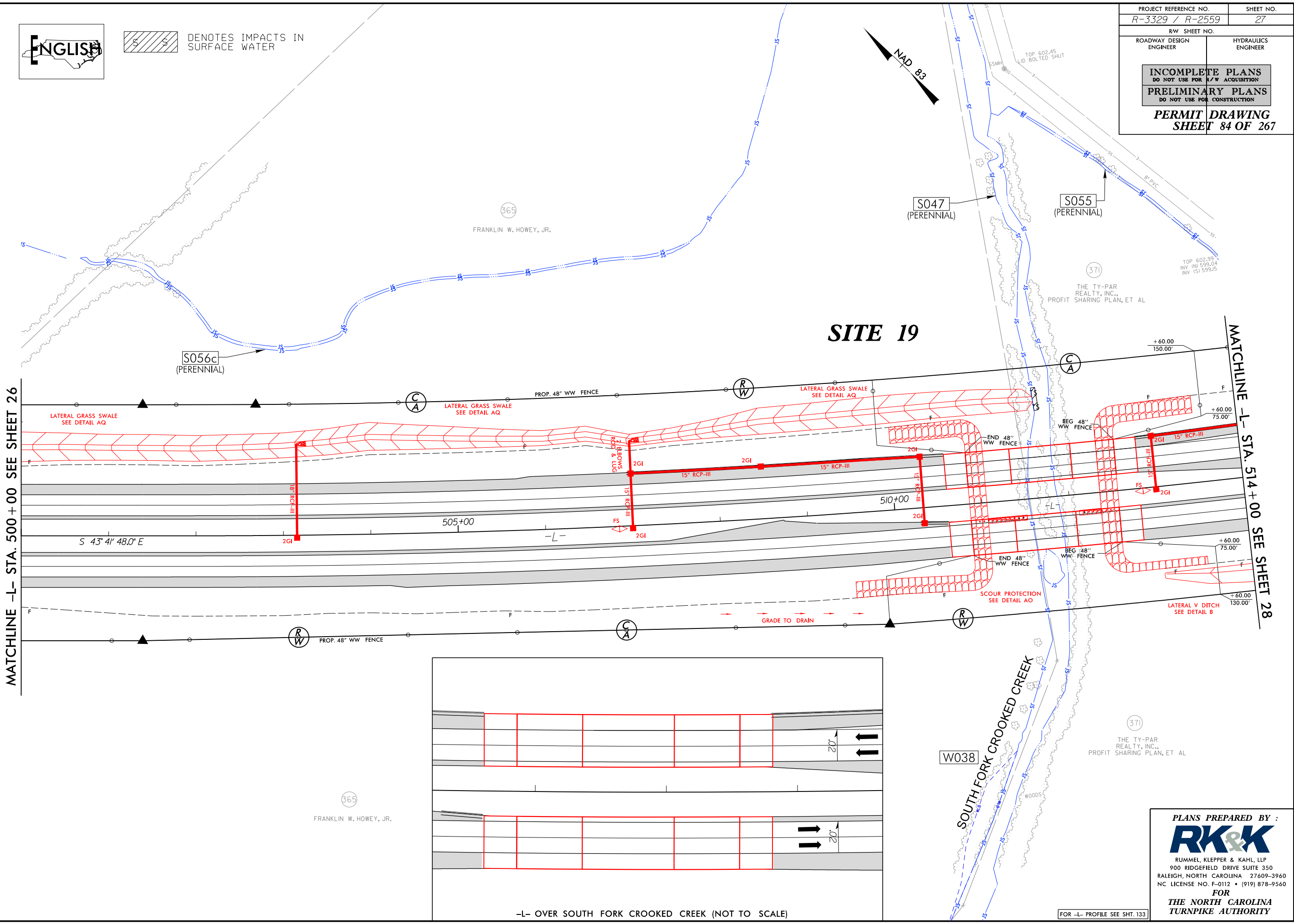
FOR -L- PROFILE SEE SHT. 132  
 FOR -NRA- PROFILE SEE SHT. 189  
 FOR -NRD- PROFILE SEE SHT. 192

8/17/99  
C:\Users\Public\Documents\Drawings\Section2B\3329\_R2559\_HYD\_PRM\_WET\_PSH027.dgn  
\$\$\$\$\$TIME\$\$\$\$\$  
R:\Hydrolics\PERMITS\Environmental\Drawings\Section2B\3329\_R2559\_HYD\_PRM\_WET\_PSH027.dgn



DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 27
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 84 OF 267	



-L- OVER SOUTH FORK CROOKED CREEK (NOT TO SCALE)

PLANS PREPARED BY :  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560  
FOR  
THE NORTH CAROLINA  
TURNPIKE AUTHORITY

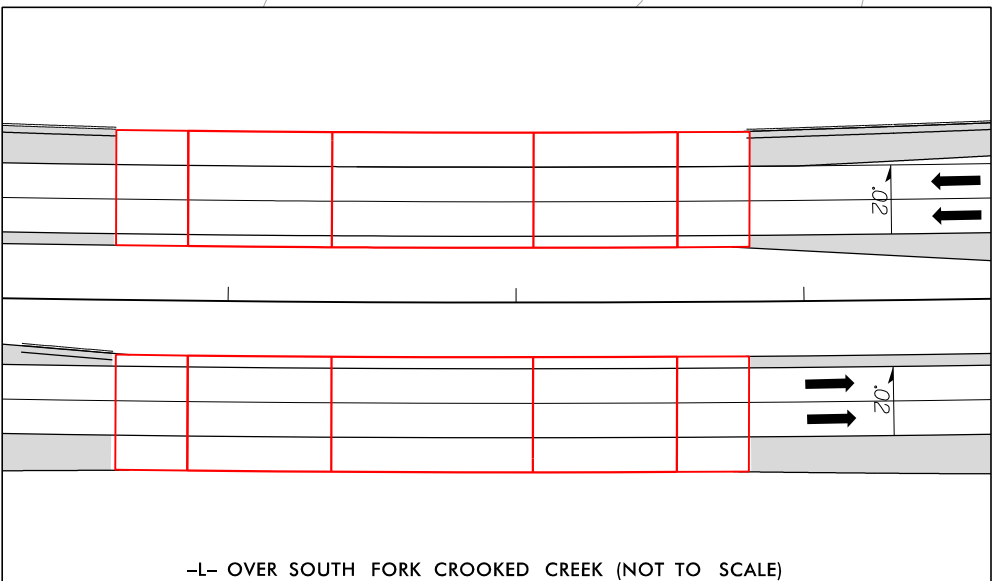
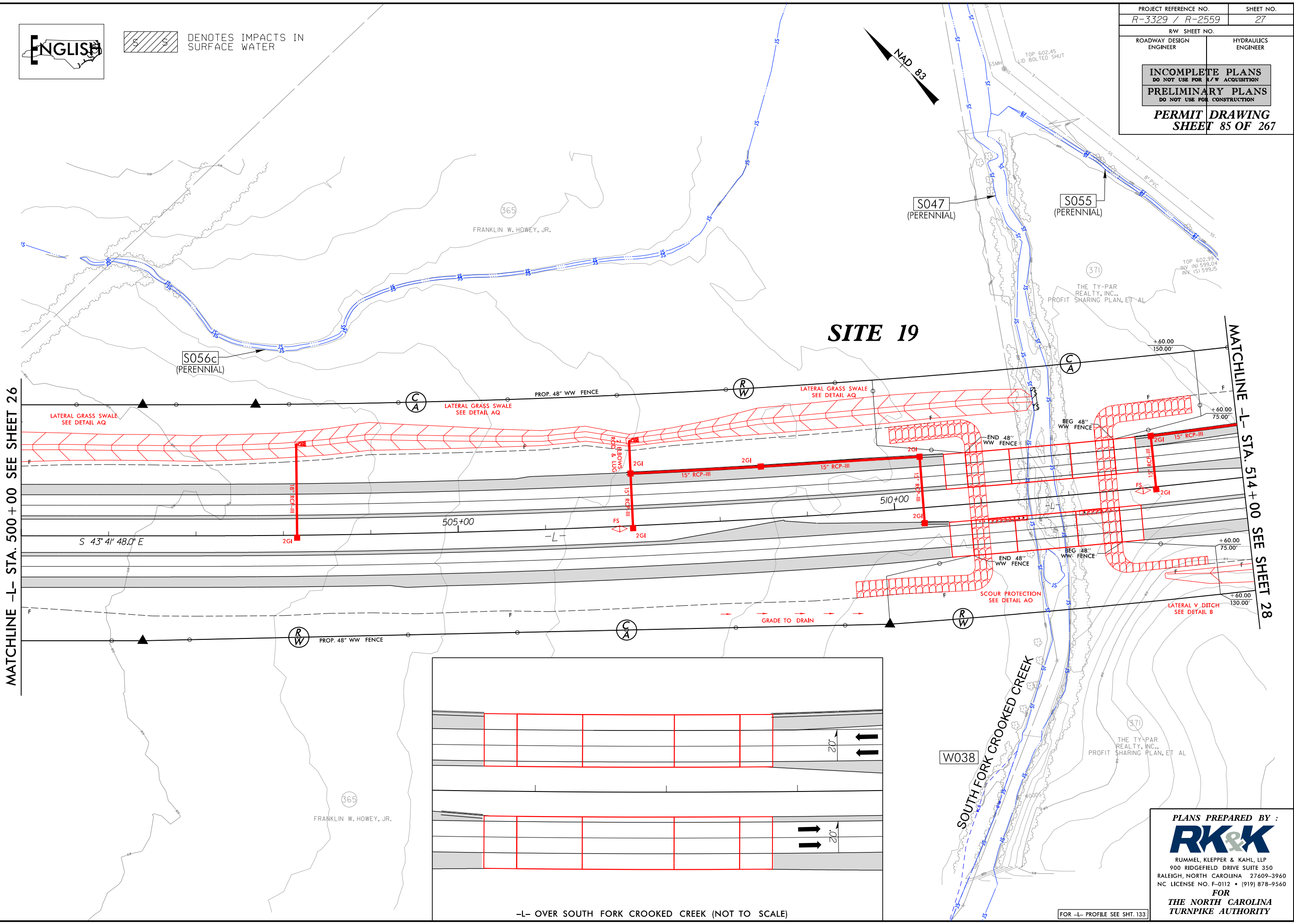
FOR -L- PROFILE SEE SHT. 133

8/17/99  
C:\Users\Public\Documents\Drawings\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRR\_WET\_PSH027\_con.dgn  
\$\$\$\$\$TIME\$\$\$\$\$  
R:\Hydro\Public\PERMITS\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRR\_WET\_PSH027\_con.dgn



DENOTES IMPACTS IN SURFACE WATER

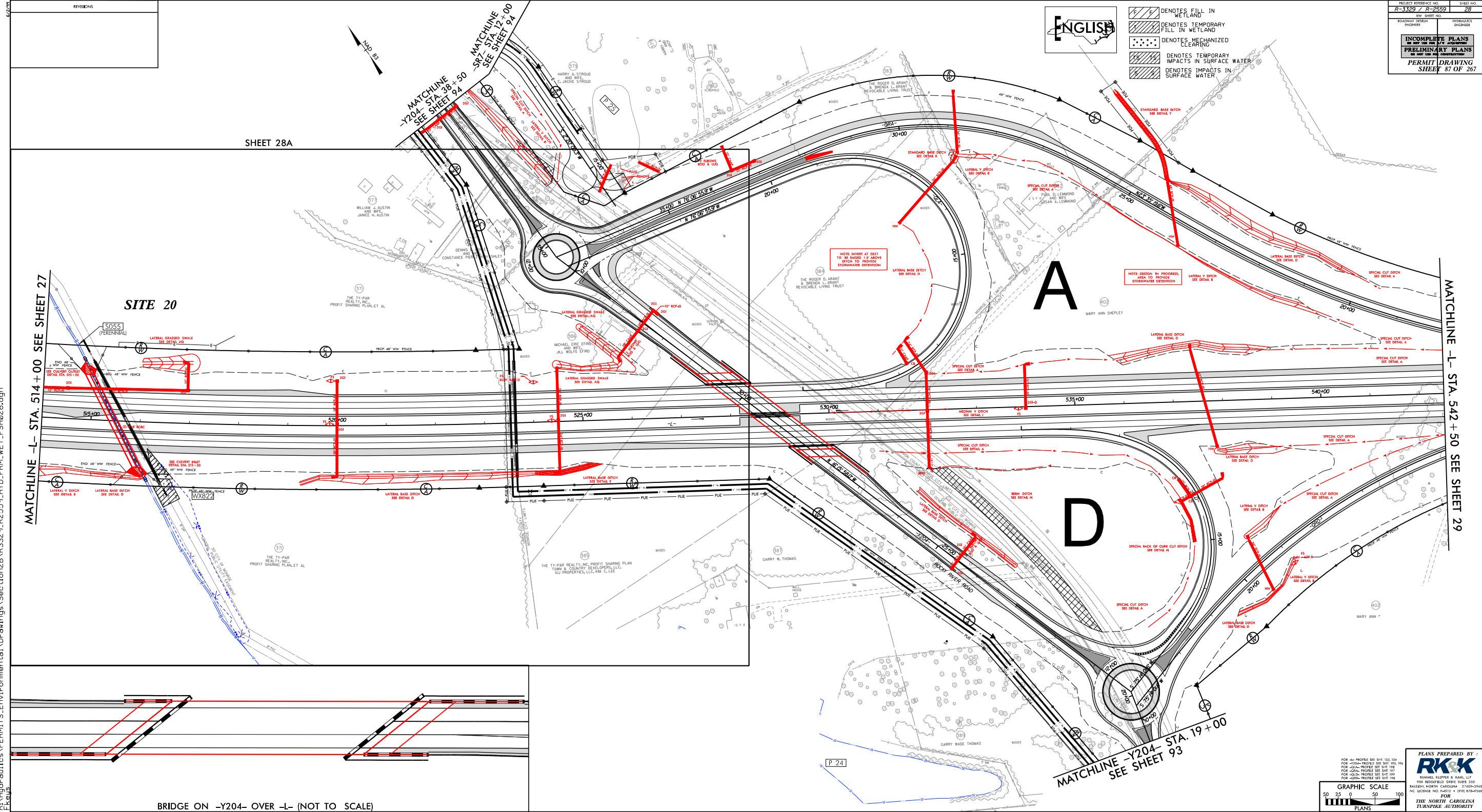
PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 27
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
PERMIT DRAWING SHEET 85 OF 267	



-L- OVER SOUTH FORK CROOKED CREEK (NOT TO SCALE)

FOR -L- PROFILE SEE SHT. 133

PLANS PREPARED BY :  
**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
NC LICENSE NO. F-0112 • (919) 878-9560  
FOR  
THE NORTH CAROLINA  
TURNPIKE AUTHORITY



NO.	DESCRIPTION

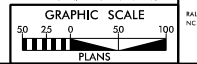


	DENOTES FILL IN WETLAND
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. <b>R-3329 / R-2559</b>	SHEET NO. <b>28</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PRELIMINARY PLANS</b> PERMIT DRAWING SHEET 87 OF 267	

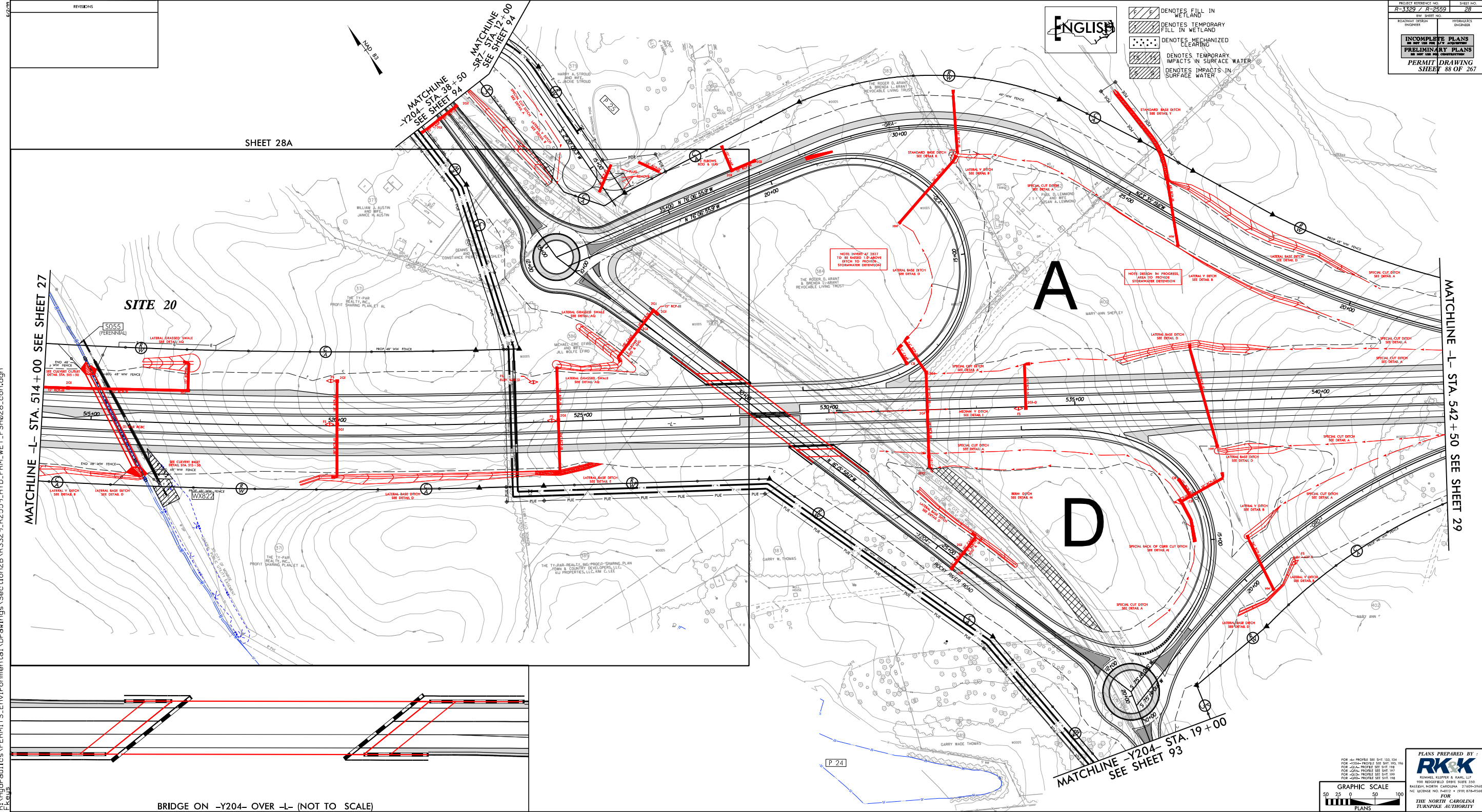
\$\$\$\$\$\$TIME\$\$\$\$\$  
 9/30/2014  
 R:\Highways\Permits\Environmental\Drawings\Section2B\VR3329\_R2559\_HYD\_PRM\_WET\_PSH028.dgn  
 P:\Users\pkus

BRIDGE ON -Y204- OVER -L- (NOT TO SCALE)



PLANS PREPARED BY:  
**RK&K**  
 RUSSELL KLEPPER & KAHN, LLP  
 100 WOODFIELD DRIVE SUITE 330  
 RALEIGH, NORTH CAROLINA 27609-3940  
 NC LICENSE NO. 44517 - CIVIL ENGINEER  
 FOR THE NORTH CAROLINA TURNPIKE AUTHORITY

FOR ALL PROFILES SEE SHEET 103, 104  
 FOR 20'-0" PROFILES SEE SHEET 193, 194  
 FOR 30'-0" PROFILES SEE SHEET 195  
 FOR 40'-0" PROFILES SEE SHEET 197  
 FOR 50'-0" PROFILES SEE SHEET 199  
 FOR 60'-0" PROFILES SEE SHEET 199



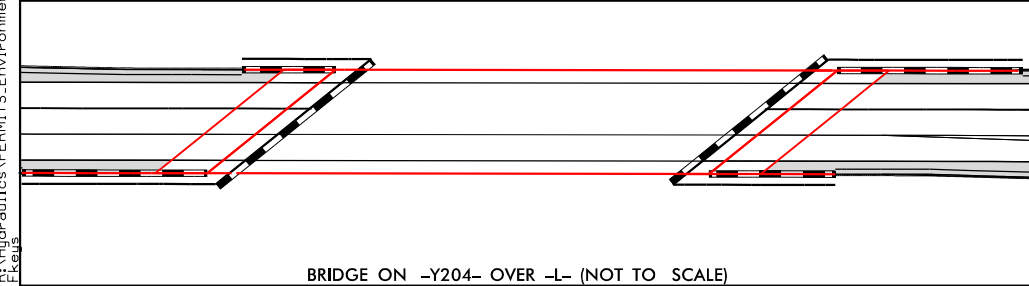
NO.	REVISIONS



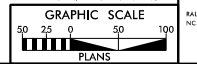
	DENOTES FILL IN WETLAND
	DENOTES TEMPORARY FILL IN WETLAND
	DENOTES MECHANIZED CLEARING
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PRELIMINARY PLANS</b> PERMIT DRAWING SHEET 28 OF 267	

\$\$\$\$\$\$TIME\$\$\$\$\$\$  
 9/30/2014  
 P:\Highways\PERMITS\Environmental\Drawings\Section2B\VR3329\_R2559\_HYD\_PRM\_WET\_PSH028\_com.dgn  
 P:\Users\pkus

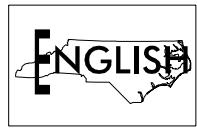


BRIDGE ON -Y204- OVER -L- (NOT TO SCALE)



PLANS PREPARED BY:  
**RK&K**  
 RUSSELL KLEPPER & KAHN, L.P.  
 909 WOODFIELD DRIVE SUITE 130  
 RALEIGH, NORTH CAROLINA 27609-3940  
 NC LICENSE NO. 14617 - CIVIL ENGINEER  
 FOR THE NORTH CAROLINA  
 TURNPIKE AUTHORITY

FOR ALL PROFILES SEE SHEET 103, 104  
 FOR STATION PROFILES SEE SHEET 193, 194  
 FOR STATION PROFILES SEE SHEET 195  
 FOR STATION PROFILES SEE SHEET 197  
 FOR STATION PROFILES SEE SHEET 199  
 FOR STATION PROFILES SEE SHEET 199

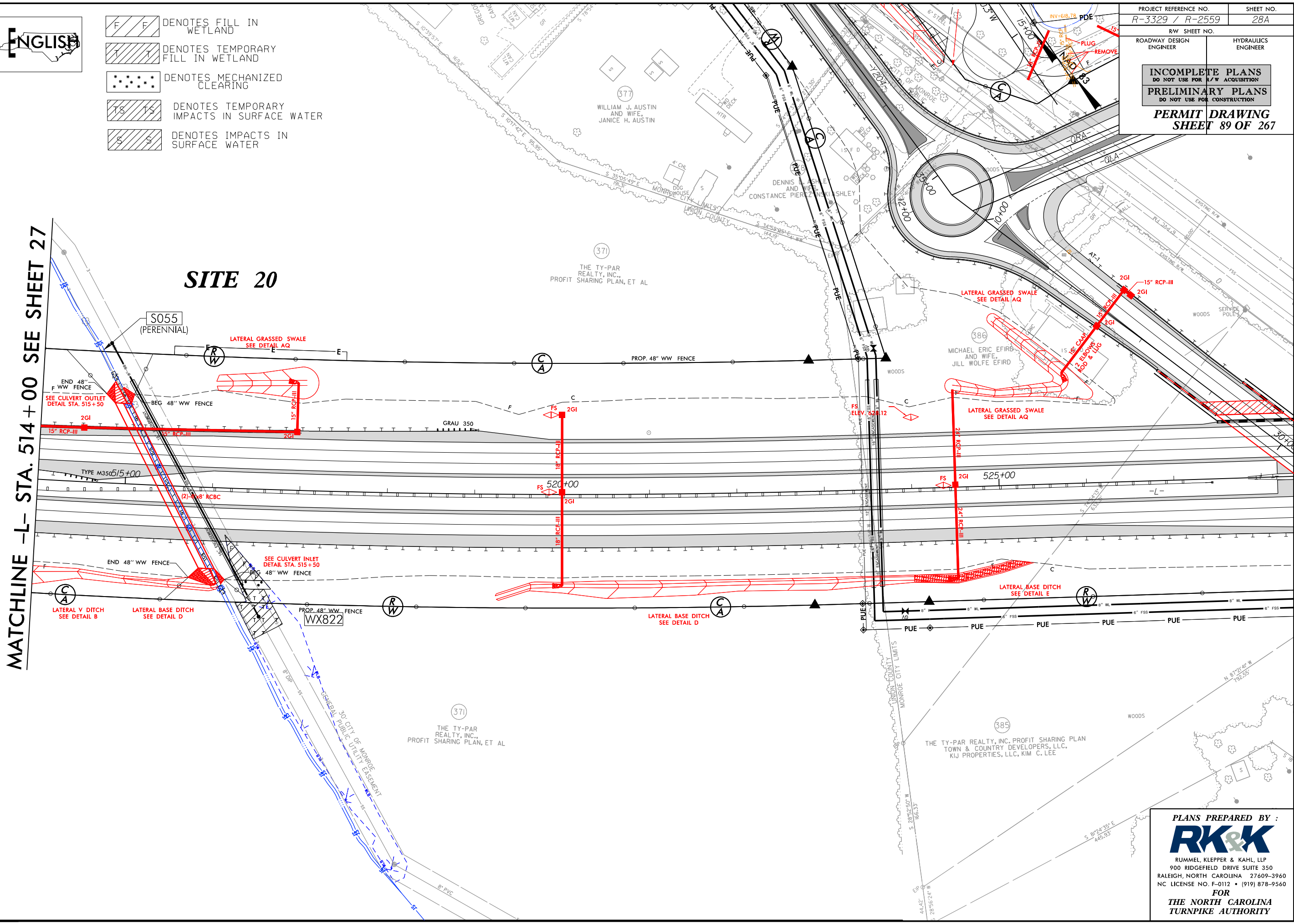


- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 28A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
<b>PERMIT DRAWING</b> SHEET 89 OF 267	

MATCHLINE -L- STA. 514+00 SEE SHEET 27

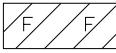
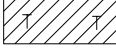

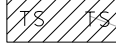
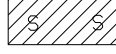
## SITE 20



R:\Hydro\bu\lics\PERMITS\_Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRM\_WET\_PSH028A.dgn

PLANS PREPARED BY :  
**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560  
 FOR  
**THE NORTH CAROLINA**  
**TURNPIKE AUTHORITY**

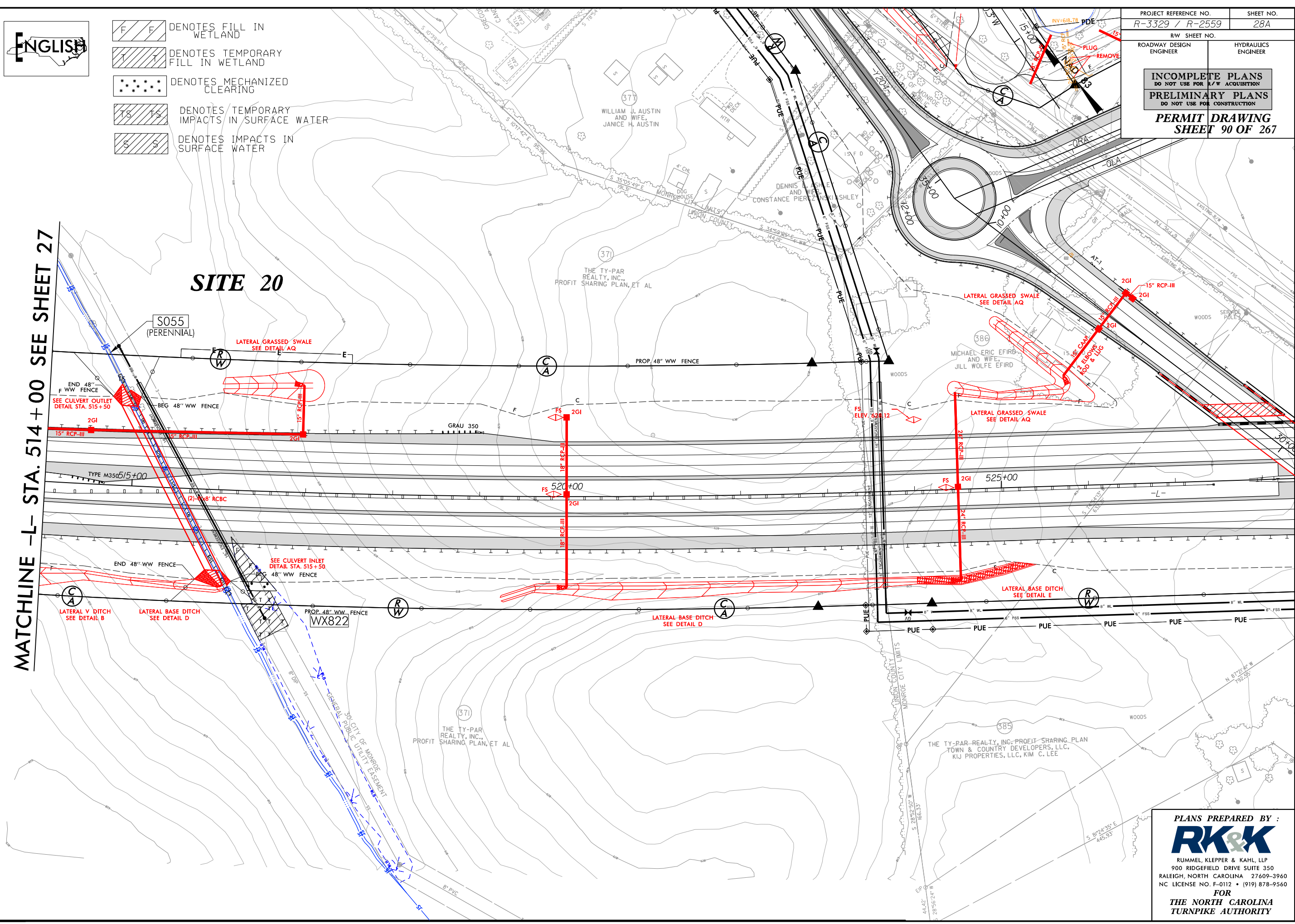


-  DENOTES FILL IN WETLAND
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES IMPACTS IN SURFACE WATER

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 28A
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION <b>PERMIT DRAWING</b> <b>SHEET 90 OF 267</b>	

MATCHLINE -L- STA. 514+00 SEE SHEET 27

**SITE 20**



R:\30\2014\3014\Drawings\Environmental\Drawings\Section2B\R3329\_R2559\_HYD\_PRM\_WET\_PSH028A.con.dgn

PLANS PREPARED BY :

**RK&K**

RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

FOR  
**THE NORTH CAROLINA**  
**TURNPIKE AUTHORITY**