



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

May 22, 2017

Mr. Andy Williams
NCDOT Coordinator
U.S. Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

SUBJECT: Request for Modification of Section 404 Individual Permit and Section 401 Individual Water Quality Certification for the new location facility Asheboro Southern Bypass and Zoo Connector, Asheboro, Randolph County; Division 8; TIP No. R-2536; Debit \$ 570.00 from WBS Element 34450.1.1

Reference: US Army Corps of Engineers (USACE) 404 Permit issued July 22, 2016; Action ID: SAW2002-01260.

NC Division of Water Resources (NCDWR) 401 Water Quality Certification Permit No. 4059 issued May 20, 2016, NCDWR Project No. 20160299, Modified May 20, 2016; WBS Element 34450.3.S1

Dear Mr. Williams:

The project was authorized by the USACE and NCDWR as referenced above. The purpose of this letter is to inform you of changes in the project that required updated design plans and in some instances resulted in changes in impacts for Sections 1, 2, and 3 of R-2536.

Attached is a Permit Modification (Revision Log) table which list by roadway section details of each permit drawing revision/modification. The majority of project design/construction related changes did not result in modifications to impacts to regulated resources. There were four changes that created modifications in the total impacts to streams and wetlands. These are highlighted on the attached and include:

- Section 1: Site 3 – 0.03 acre of additional wetland vegetation hand clearing due to aerial utility impact (approved via email correspondence with NCDWR 11/7/2016 and USACE 11/9/2016).
- Section 1: Site 4B/4C - A reduction of 127 feet of permanent and increase in 20 feet of temporary stream (waters of US) disturbance/filling. Requested to leave existing vegetation along stream banks inside loop and not install rip rap along banks (approved verbally by NCDWR 10/18/2016 and via email correspondence with USACE 1/3/2017).

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
PROFESSIONAL SERVICES MANAGEMENT UNIT
1592 MAIL SERVICE CENTER
RALEIGH, NC 27699-1592

Telephone: (919) 707-7130
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
BUILDING A, SUITE 184
RALEIGH, NC 276

- Section 2: Site 48 – Increase of 6 feet of permanent and a decrease of 6 feet of temporary impacts to a stream (waters of US). The inlet improvement channel excavation extended to just beyond the channel relocation tie in and rip rap on banks was extended to the end of the extended channel excavation.
- Section 3: Site 87 – Increase of 0.1 acre of additional wetland vegetation hand clearing, 19 feet of permanent and 22 feet of temporary stream impacts due to revised transmission line relocation.

The revised permit drawings and wetland impact summary sheet are attached for your files and approval.

Please see the attached NCDMS mitigation acceptance letter reflecting the proposed changes in impacts to the project. Due to the permanent impacts to regulated resources we are requesting a permit modification for the impacts noted. Thank you for your time and assistance with this project. Please contact Jason Dilday at either jldilday@ncdot.gov or (919) 707-6111 if you have any questions or need additional information.

Sincerely,



 Philip S. Harris III, P.E., C.P.M., Manager
Natural Environment Section

cc: NCDOT Permit Application Standard Distribution List

May 18, 2017

Mr. Philip S. Harris III, P.E., CPM
Natural Environment Section, PDEA
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Subject: **R-2536, US 64 – Asheboro Bypass, Randolph County**

Reference: USACE 404 Individual Permit issued on July 22, 2016 (USACE ID 2002-01260)

The purpose of this letter is to notify you that the Division of Mitigation Services (DMS) will provide the stream and wetland mitigation for the subject project. Based on the information supplied by you on May 17, 2017, the stream and wetland impacts are located in CU 03030003 of the Cape Fear River basin and in CUs 03040103 and 03040104 of the Yadkin River basin in the Central Piedmont (CP) Eco-Region, and are as follows:

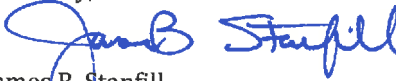
Stream & Wetlands	River Basin	CU Location	Eco-Region	Stream			Wetlands		
				Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh
Impacts	Cape Fear	03030003	CP	0	0	14,279.0	2.98	0	0
Impacts	Yadkin	03040103	CP	0	0	11,521.0	1.24	0	0
Impacts	Yadkin	03040104	CP	0	0	6,089.0	2.21	0	0

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

This acceptance letter replaces the acceptance letters issued on August 26, 2014 and March 23 and June 9 and 14, 2016. Some of these impacts and associated mitigation needs were under projected by the NCDOT in the 2014 impact data. DMS will commit to implement sufficient compensatory stream and riparian wetland mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies using the delivery timeline listed in Section F.3.c.iii of the In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from DMS.

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

Sincerely,



James B. Stanfill
DMS Credit Management Supervisor

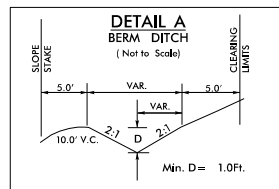
Cc: Mr. David Bailey, USACE – Raleigh Regulatory Field Office
Ms. Amy Chapman, NC Division of Water Resources – Raleigh
File: R-2536 Revised 4



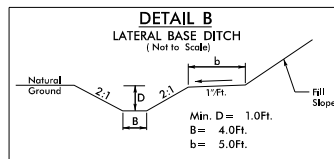
US 64 Bypass, R-2536 Permit Modification (Revision Log)								
5/16/2017 								
	Permit Drawings Sheet #	Nearest Permit Site	Location	Change / Issue	Additional / Less Impact	Date of Change	Permit Drawing Re-Issued	Permit Revision Date
SECTION 1 JMM	2, 3, 4	N/A	N/A	Revised Begin and End stations and Added or Removed ditches from details to match plan and profile.	N/A	11/23/16	Yes	3/30/2017
	8, 9	2	-Y1A-	Roadway and Drainage revised for -Y1A-	N/A	1/11/17	Yes	3/30/2017
	12, 13, 14	3	-SR1-Sta. 19+00	Revised pipe from str. 745 to 744 from CSP to RCP	N/A	11/23/16	Yes	3/30/2017
	12, 13, 14	3	-SR1- Sta. 18+50 RT	Request for additional hand clearing due to aerial utility impact; approved via email correspondence NCDWR 11/7/2016 and USACE 11/9/2016	+0.03 ac Hand Clearing	3/30/17	Yes	3/30/2017
	12, 13, 15	4B	-LPD- Sta. 10+00 LT	Request to leave existing vegetation along stream banks inside loop and not to install rip rap along banks; approved verbally by NCDWR 10/18/2016 and via email correspondence USACE 1/3/2017	-127' Perm. Stream, +20' Temp. Stream	3/30/17	Yes	3/30/2017
	12, 13, 18	6B	-L- Sta 62+40 LT	Added rip rap to Channel Change to match detail.	N/A	11/23/16	Yes	3/30/2017
	23, 24	6C	-L- Sta. 64+00 LT (-RPA- Sta. 21+50 LT)	Added rip rap to Channel Change to match detail.	N/A	11/23/16	Yes	3/30/2017
	23, 24	18B	-FLY- Sta. 45+50	Pipe 5804 revised to tie to str. 0709 and revised to RCP	N/A	11/23/16	Yes	3/30/2017
	25, 26	19	-L- Sta. 44+00 RT	Added rip rap to Channel Change to match detail.	N/A	11/23/16	Yes	3/30/2017
	44, 45	13?	-L- Sta. 182+20 RT	Added str. 1520 at -L- Sta. 182+25 RT and revised pipe 1505 from CSP to RCP	N/A	11/23/16	Yes	3/30/2017
	53, 54	21	-Y2- Sta. 31+15 RT	Extended ditch Detail W to -Y2- Sta. 31+15 RT	N/A	11/23/16	Yes	3/30/2017
SECTION 2 MLC	61, 62, 63	N/A	N/A	Revised Begin and End stations and Added or Removed ditches from details to match plan and profile.	N/A	10/14/16	Yes	3/30/2017
	87, 88	33	-L- Sta. 354+00 LT	Revised Ditch Detail Reference from Detail C (with Cl. B rip rap) to Detail AI (w/out rip rap) from -L- Sta. 353+20 to 354+00 LT.	N/A	10/14/16	Yes	3/30/2017
	94, 95, 96	104	-Y9RPB- Sta. 22+25	Lowered inlet invert of str. 3007 and revised pipe from CSP to RCP	N/A	12/9/16	Yes	3/30/2017
	98, 99	38A, 38B	-L- Sta. 408+00	Added str. 3114 at -L- Sta. 408+00 LT and revised pipe from CSP to RCP	N/A	12/9/16	Yes	3/30/2017
	103, 104	41	-Y10_END- Sta. 19+00 LT	Added rip rap to Standard Base Ditch to match Detail BA.	N/A	10/14/16	Yes	3/30/2017
	103, 104	40	-L- Sta. 433+20 RT	Revised inverts and slopes from -L- Sta. 433+20 to 435+00 RT and added 2' wide berm for ditch depth requirements. Also, revised outlet inverts on pipes at -L- Sta. 433+70 and 435+00 RT.	N/A	10/14/16	Yes	3/30/2017
	119, 120	48	-Y5- Sta. 41+75 LT	Inlet Improvement channel excavation extended to just beyond the Channel Relocation tie in. Rip rap on banks extended to end of extended channel excavation.	+6' Perm. Stream; -6' Temp. Stream	3/30/17	Yes	3/30/2017
SECTION 3 ICA	150, 151, 152	59	-L- Sta. 485+00	Revised location of temp. work/haul bridge (shifted from south of proposed bridge to north of proposed bridge).	No	3/30/17	Yes	3/30/2017
	213, 214, 216	87	-Y17RPD- Sta. 30+00 LT	Revised utility transmission line location. The revised location impacts wetlands WY-C, west of site 87.	+0.1 ac Hand Clearing, +19' Perm. & +22' Temp. Stream	3/30/17	Yes	3/30/2017
	221, 222	95	-Y17- Sta.53+00-58+00	Roadway revision for lane continuity. Taper added along -Y17- and Drainage revised in loop.	N/A	3/30/17	Yes	3/30/2017
	239, 240, 242	100	-Y17- Sta.75+00-84+00	Roadway revision for lane continuity. Median Taper revised and concrete island added near -SRD6-	N/A	3/30/17	Yes	3/30/2017
SUMMARY	248			Summary Table		3/30/17	Yes	3/30/2017
	252			Summary Table		3/30/17	Yes	3/30/2017
	255			Summary Table		3/30/17	Yes	3/30/2017
	257			Summary Table		3/30/17	Yes	3/30/2017

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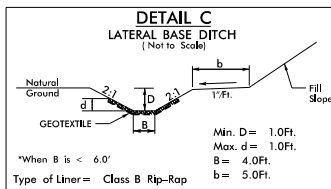
#, text Changes requiring modifications to permit impact numbers (+/-)



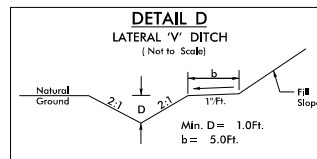
-L- STA. 27+00 TO STA. 28+00 LT
-L- STA. 71+00 TO STA. 72+00 LT
-L- STA. 89+00 TO STA. 90+00 RT
-L- STA. 106+50 TO STA. 110+50 RT
-L- STA. 166+00 TO STA. 169+00 LT
-L- STA. 207+00 TO STA. 210+00 LT
-Y- STA. 25+50 TO STA. 26+65 LT
-Y- STA. 64+00 TO STA. 65+00 RT
-Y2- STA. 74+00 TO STA. 78+22 RT
-Y2- STA. 79+18 TO STA. 82+50 RT



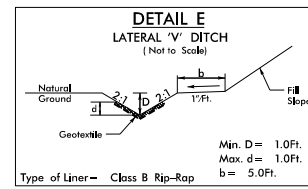
-L- STA. 133+59 TO STA. 137+50 LT
-SR1- STA. 15+25 TO STA. 15+75 LT
-SR1- STA. 18+69 TO STA. 19+50 RT, B=2'
-SR F- STA. 11+00 TO STA. 13+00 LT
-Y2- STA. 28+50 TO STA. 29+00 LT w/PSRM Liner
-Y2RPD- STA. 22+50 TO STA. 23+50 RT
-Y2RPD- STA. 11+87.06 TO STA. 15+35 LT



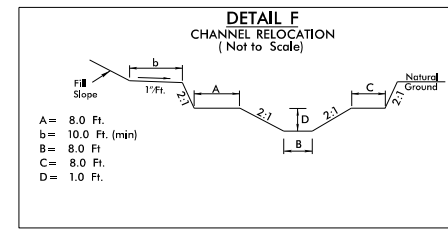
-DR- STA. 10+50 TO STA. 13+65 LT
-DR- STA. 14+25 TO STA. 14+45 LT
-FLY- STA. 19+25 TO STA. 21+25 LT
-FLY- STA. 36+80 TO STA. 37+50 RT
-L- STA. 90+50 TO STA. 92+50 RT
-L- STA. 137+05 TO STA. 138+50 RT
-L- STA. 178+50 TO STA. 181+50 RT
-L- STA. 198+00 TO STA. 198+57 RT
-L- STA. 199+00 TO STA. 200+15 RT
-RPA- STA. 20+50 TO STA. 23+39 RT
-SR1- STA. 19+50 TO STA. 20+97 RT, B=2'
-SR1- STA. 26+80 TO STA. 27+98 RT
-Y- STA. 30+00 TO STA. 34+50 LT
-Y- STA. 38+25 TO STA. 38+50 RT
-Y- STA. 44+75 TO STA. 45+00 LT
-Y- STA. 47+00 TO STA. 47+50 LT
-Y- STA. 58+00 TO STA. 60+30 RT
-Y2- STA. 35+00 TO STA. 36+92 RT
-Y2- STA. 52+00 TO STA. 56+00 LT
-Y2RPD- STA. 20+27 TO STA. 22+50 RT



-DR6- STA. 11+50 TO STA. 12+30 RT
-FLY- STA. 13+66 TO STA. 14+63 RT
-FLY- STA. 41+50 TO STA. 41+66 LT, D=1.25'
-FLY- STA. 43+50 TO STA. 44+85 LT
-L- STA. 31+56 TO STA. 32+50 LT
-L- STA. 33+84 TO STA. 34+00 LT
-L- STA. 168+18 TO STA. 168+50 RT
-L- STA. 182+00 TO STA. 183+57 LT
-L- STA. 182+85 TO STA. 183+00 RT
-RPA- STA. 23+39 TO STA. 24+50 RT
-SR1- STA. 15+75 TO STA. 17+00 LT
-SR1- STA. 20+47 TO STA. 21+97 LT
-SR F- STA. 10+20 TO STA. 11+00 LT
-SR F- STA. 31+00 TO STA. 33+10 LT
-Y- STA. 27+50 TO STA. 28+50 RT
-Y- STA. 37+25 TO STA. 38+25 RT
-Y1- STA. 20+62 TO STA. 22+00 LT
-Y1- STA. 20+63 TO STA. 22+00 RT
-Y1- STA. 31+50 TO STA. 33+00 RT
-Y2- STA. 39+09 TO STA. 40+00 RT
-Y2- STA. 52+50 TO STA. 53+60 RT
-Y2RPD- STA. 26+50 TO STA. 29+95 RT



-FLY- STA. 14+63 TO STA. 15+11 RT
-L- STA. 90+57 TO STA. 90+80 LT
-L- STA. 152+25 TO STA. 152+63 LT, D=1.5', d=1.5'



-L- STA. 66+22.64 TO STA. 71+00.00 RT

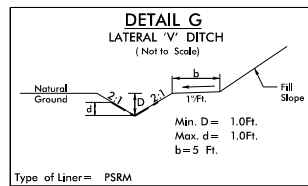
PERMIT DRAWING SHEET 2 OF 257

PROJECT REFERENCE NO.	SHEET NO.
R-2536	2D-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 5/16/2017 REVISED 6/14/2016	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PLANS PREPARED BY :

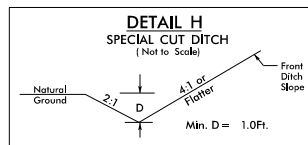
RK&K

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

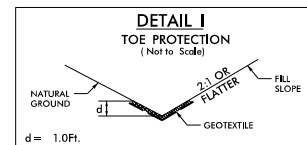


Type of Liner = PSRM

-DR6- STA. 10+37 TO STA. 11+59 LT
-DR6- STA. 10+50 TO STA. 11+50 RT
-FLY- STA. 12+85 TO STA. 13+66 RT
-FLY- STA. 18+00 TO STA. 19+25 LT
-FLY- STA. 31+50 TO STA. 36+80 RT
-FLY- STA. 39+88 TO STA. 41+50 LT
-FLY- STA. 41+66 TO STA. 43+50 LT
-L- STA. 25+78 TO STA. 26+20 LT
-L- STA. 32+50 TO STA. 33+84 LT
-L- STA. 50+64 TO STA. 50+80 RT
-L- STA. 89+50 TO STA. 90+57 LT
-L- STA. 125+00 TO STA. 128+16 LT
-L- STA. 176+50 TO STA. 176+80 LT
-L- STA. 179+45 TO STA. 181+50 LT
-L- STA. 183+00 TO STA. 184+00 RT
-L- STA. 196+50 TO STA. 197+50 LT, D=1.5', d=1.5'
-LPD- STA. 20+75 TO STA. 23+22 LT
-SR1- STA. 11+00 TO STA. 13+00 LT
-SR1- STA. 16+26 TO STA. 17+50 RT
-SR2- STA. 11+40 TO STA. 14+00 RT
-Y- STA. 15+99 TO STA. 16+40 LT
-Y- STA. 28+82 TO STA. 29+38 LT
-Y- STA. 62+00 TO STA. 63+50 RT
-Y- STA. 23+00 TO STA. 24+75 RT
-Y- STA. 24+55 TO STA. 25+50 LT
-Y- STA. 55+76 TO STA. 58+00 RT
-Y2A- STA. 11+15 TO STA. 11+50 LT

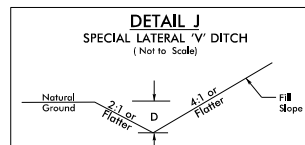


-L- STA. 71+00 TO STA. 72+62 LT
-L- STA. 192+50 TO STA. 195+50 LT
-L- STA. 192+50 TO STA. 196+00 RT
-L- STA. 202+00 TO STA. 203+00 LT
-SR1- STA. 20+97 TO STA. 21+97 RT
-SR C- STA. 10+25 TO STA. 10+50 RT
-SR C- STA. 10+11 TO STA. 10+50 LT
-SR C- STA. 17+00 RT TO STA. 17+05 LT
-SR F- STA. 13+50 TO STA. 16+00 LT
-SR F- STA. 14+00 TO STA. 16+00 RT
-Y- STA. 25+50 TO STA. 27+50 LT
-Y- STA. 63+50 TO STA. 64+33 RT
-Y1- STA. 22+00 TO STA. 24+50 LT
-Y1- STA. 22+00 TO STA. 24+50 RT
-Y2- STA. 21+83 TO STA. 22+00 RT
-Y2- STA. 27+00 TO STA. 29+00 LT
-Y2A- STA. 14+50 TO STA. 15+50 LT

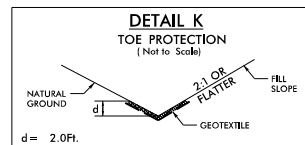


Type of Liner = Class B Rip-Rap

-DR- STA. 14+50 TO STA. 17+50 LT
-L- STA. 34+00 TO STA. 35+50 LT
-L- STA. 62+40 TO STA. 63+20 LT
-L- STA. 64+00 TO STA. 64+35 LT
-L- STA. 156+25 TO STA. 156+60 LT
-L- STA. 176+50 TO STA. 178+50 RT
-L- STA. 183+00 TO STA. 183+50 LT
-LPD- STA. 13+50 TO STA. 14+25 RT
-SR F- STA. 12+50 TO STA. 14+00 RT
-SR F- STA. 13+00 TO STA. 14+00 LT
-Y- STA. 23+55 TO STA. 24+50 LT
-Y- STA. 54+50 TO STA. 55+30 LT

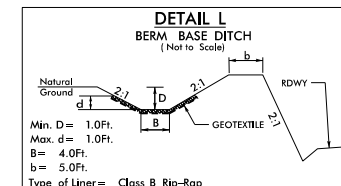


-Y1- STA. 28+50 TO STA. 33+00 LT
-Y1DET- STA. 19+77 TO STA. 21+84 RT



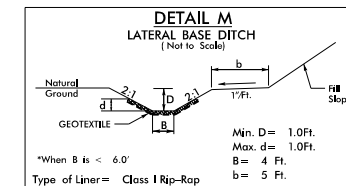
Type of Liner = Class I Rip-Rap

-Y2RPB- STA. 13+15 TO STA. 14+82 LT



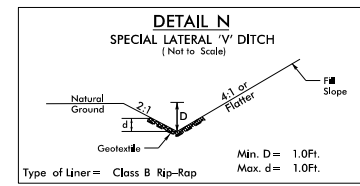
Type of Liner = Class B Rip-Rap

-RPA- STA. 15+20 TO STA. 19+50 RT
-SR F- STA. 16+50 TO STA. 21+00 LT
-Y2RPB- STA. 18+50 TO STA. 20+50 LT
-Y- STA. 39+00 TO STA. 40+00 LT
-Y- STA. 47+50 TO STA. 50+25 LT
-Y- STA. 53+00 TO STA. 54+50 LT

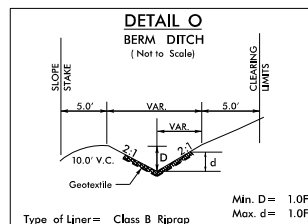


Type of Liner = Class I Rip-Rap

-FLY- STA. 21+25 TO STA. 22+50 LT
-L- STA. 15+96 TO STA. 17+00 RT
-L- STA. 126+50 TO STA. 127+16 RT, D=1.25', d=1.25'
-L- STA. 197+50 TO STA. 199+00 LT
-RPA- STA. 19+00 TO STA. 20+50 RT
-SR1- STA. 14+90 TO STA. 15+25 LT
-Y- STA. 12+81 TO STA. 13+82 LT
-Y2- STA. 29+00 TO STA. 30+47.23 LT
-Y2- STA. 34+50 TO STA. 35+00 RT
-Y2RPB- STA. 18+25 TO STA. 19+00 RT

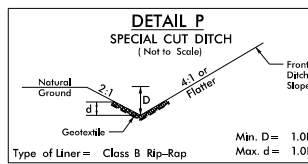


DETAIL NOT USED IN SECTION 1



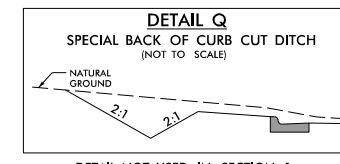
Type of Liner = Class B Riprap

-L- STA. 28+00 TO STA. 29+50 RT
-L- STA. 161+00 TO STA. 166+00 LT
-Y2RPB- STA. 20+50 TO STA. 22+00 LT

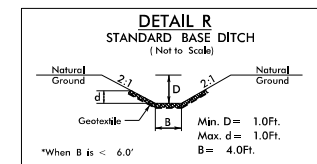


Type of Liner = Class B Rip-Rap

DETAIL NOT USED IN SECTION 1

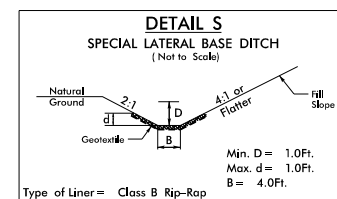


DETAIL NOT USED IN SECTION 1



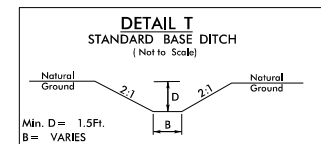
Type of Liner = Class B Rip-Rap

-L- STA. 71+12 RT, L=93', S=2.9%
BEG. ELEV=625.0, END ELEV=622.3
-L- STA. 71+20 RT, L=60', S=0.3%
BEG. ELEV=622.5, END ELEV=622.3
-L- STA. 181+50 RT, L=36', S=1.08%
BEG. ELEV=707.4, END ELEV=707.0
-LPD- STA. 20+73 LT, L=48', S=0.75%, D=2.75',
d=2.75', BEG. ELEV=661.4, END ELEV=661.0
-Y2- STA. 63+50 LT, L=35', S=9.3%
BEG. ELEV=753.3, END ELEV=750.0

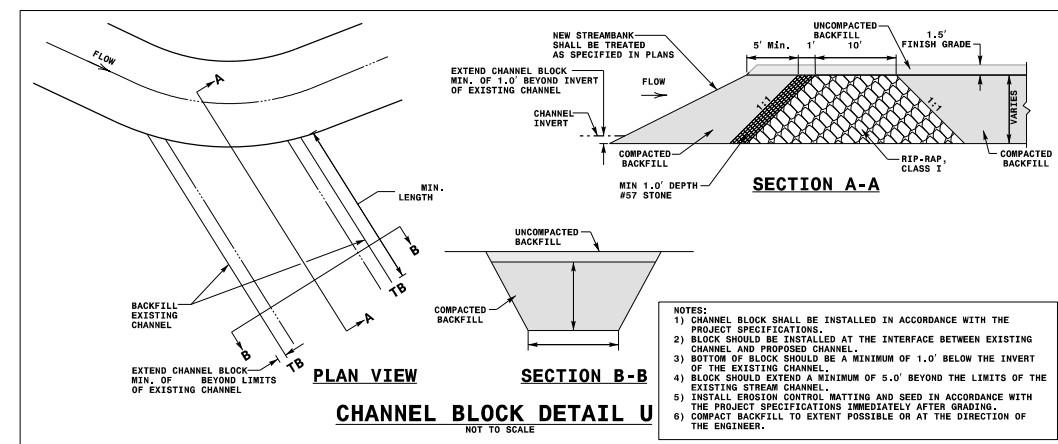


Type of Liner = Class B Rip-Rap

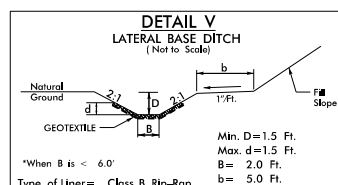
DETAIL NOT USED IN SECTION 1



-L- STA. 81+43 RT, L=90', S=23.6%
BEG. ELEV=754.0, END ELEV=732.68
-Y- STA. 24+75 RT, B=2', L=34', S=0.76%
BEG. ELEV=664.5, END ELEV=664.2

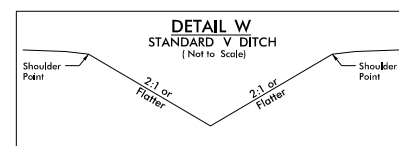


-RPA- STA. 22+76 LT
-L- STA. 62+75 LT
-L- STA. 70+65 RT
-L- STA. 127+21 RT
-L- STA. 176+90 LT
-L- STA. 179+23 LT
-L- STA. 200+15 LT
-Y- STA. 45+55 RT
-Y2- STA. 31+25 RT
-Y2- STA. 53+65 RT

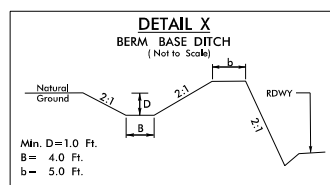


Type of Liner = Class B Rip-Rap

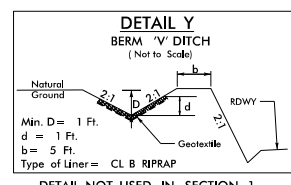
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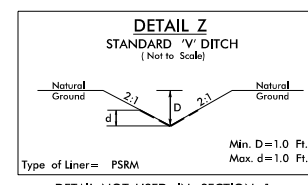
-FLY- STA. 16+99 TO STA. 18+00 LT, S=5.9%
BEG. ELEV=696.0, END ELEV=690.0
-L- STA. 63+00 RT, L=28', S=0.32%
BEG. ELEV=637.11, END ELEV=637.02
-L- STA. 168+20 RT, L=19', S=3.2%
BEG. ELEV=754.6, END ELEV=754.0
-Y- STA. 58+30 TO STA. 58+69 LT, S=4.46%
BEG. ELEV=755.00, END ELEV=753.28
-Y2- STA. 31+15 TO STA. 33+67.86 RT, S=0.3%
BEG. ELEV=696.51, END ELEV=695.75
-Y2- STA. 33+67.86 TO STA. 34+50 RT, S=5.6%
BEG. ELEV=695.75, END ELEV=691.14



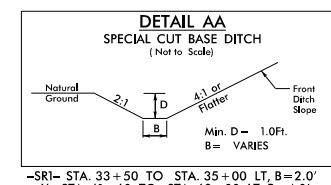
-L- STA. 15+00 TO STA. 18+00 LT
-L- STA. 36+05 TO STA. 40+90 LT
-SR F- STA. 14+25 TO STA. 16+50 LT, S=0.3%
-Y- STA. 21+50 TO STA. 23+50 LT
-Y- STA. 34+50 TO STA. 38+75 LT
-Y2- STA. 65+00 TO STA. 68+00 RT



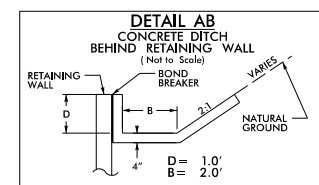
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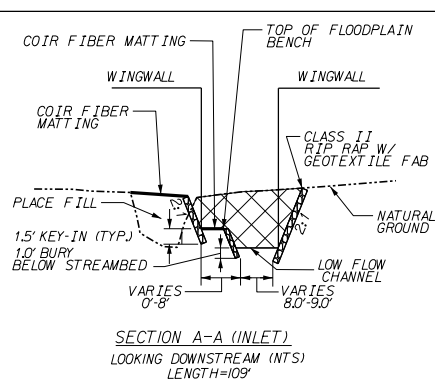
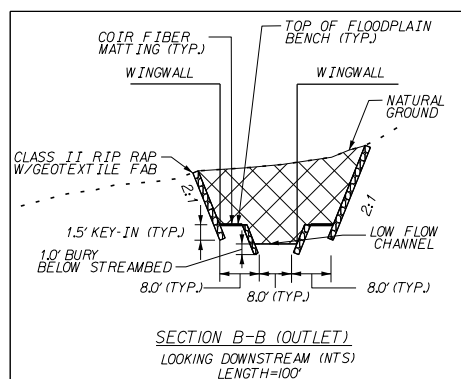
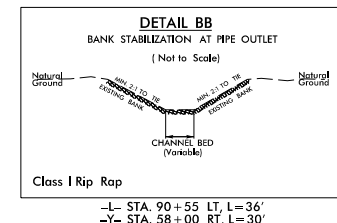
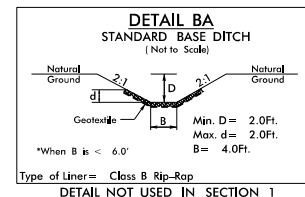
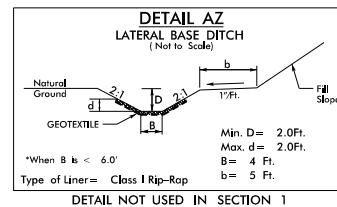
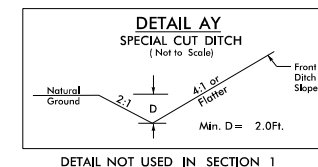
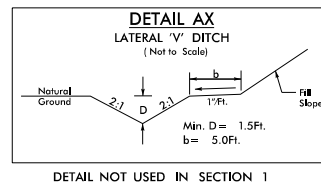
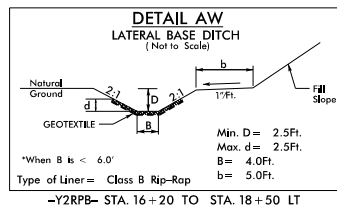
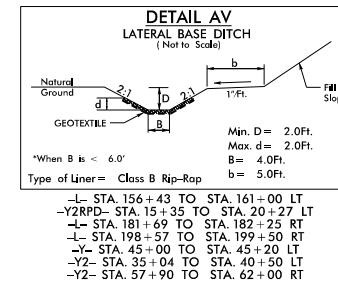
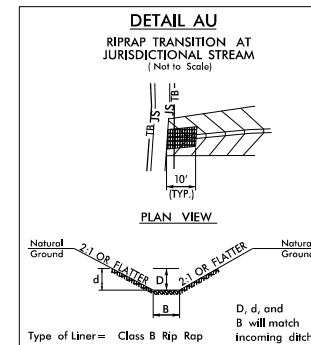
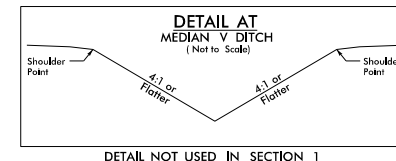
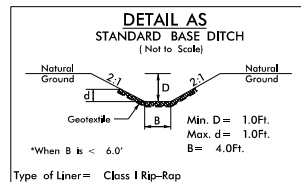
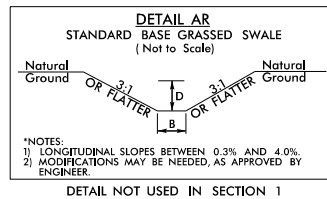
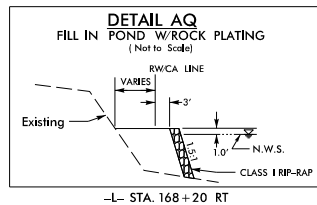
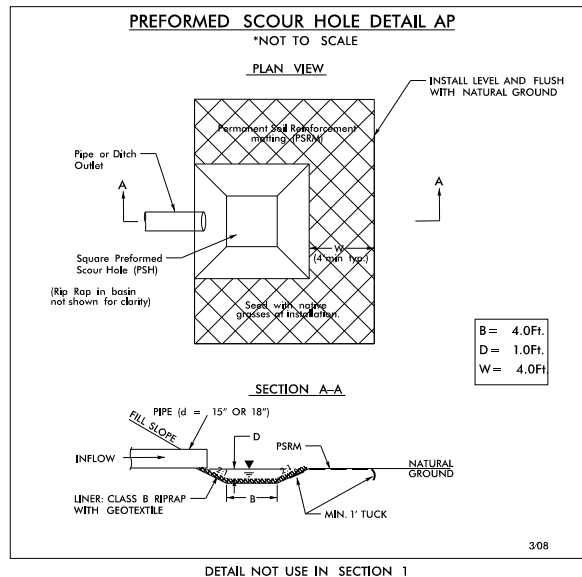
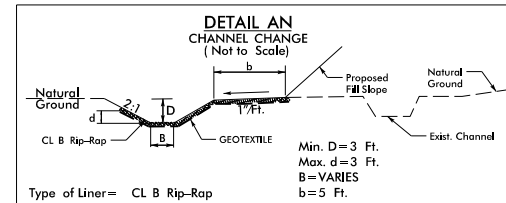
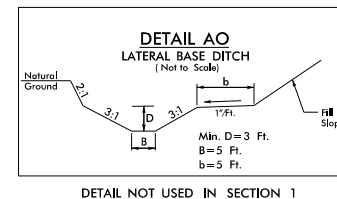
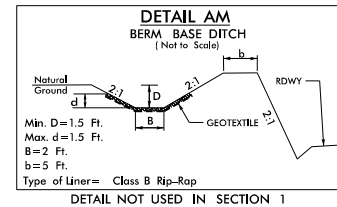
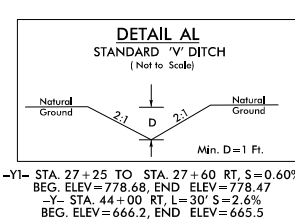
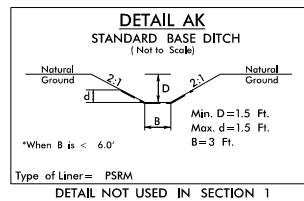
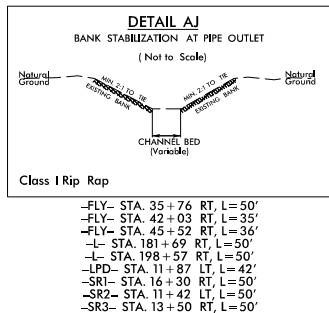
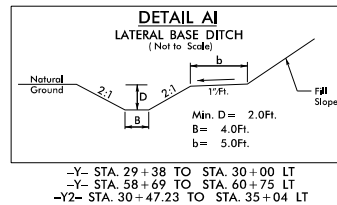
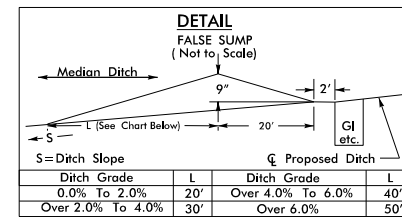
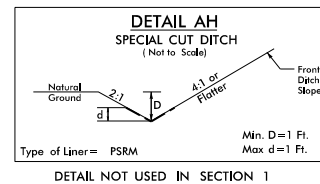
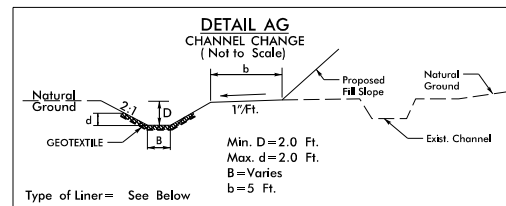
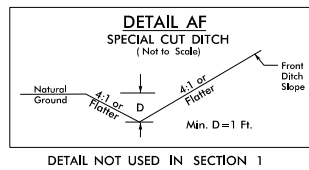
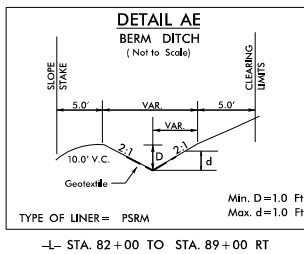
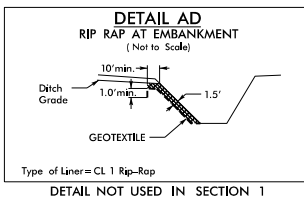
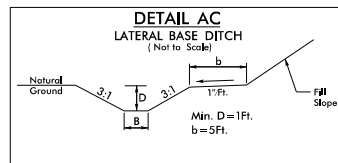
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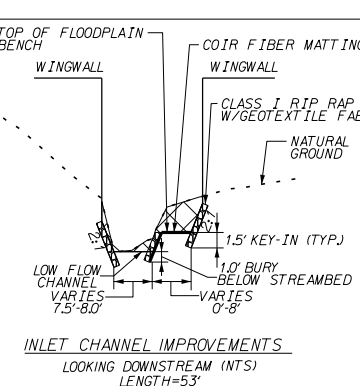
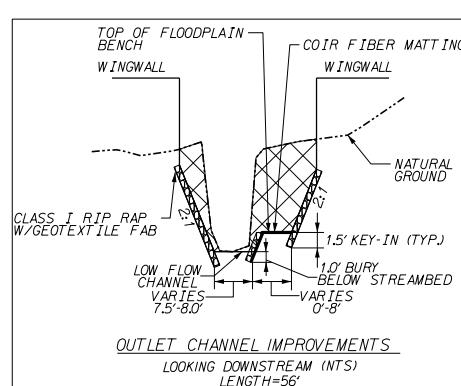
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-Y- STA. 61+60 TO STA. 63+00 LT, B=4.0'



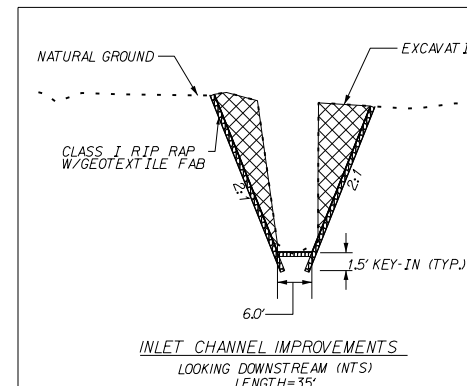
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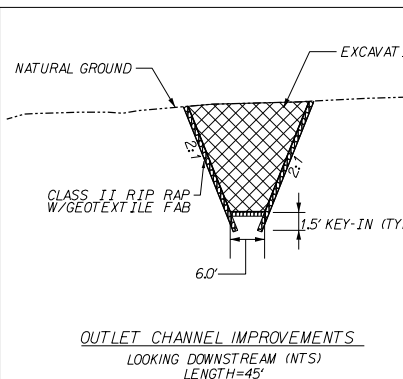
CULVERT INLET/OUTLET DETAILS
-L- STA 65+84



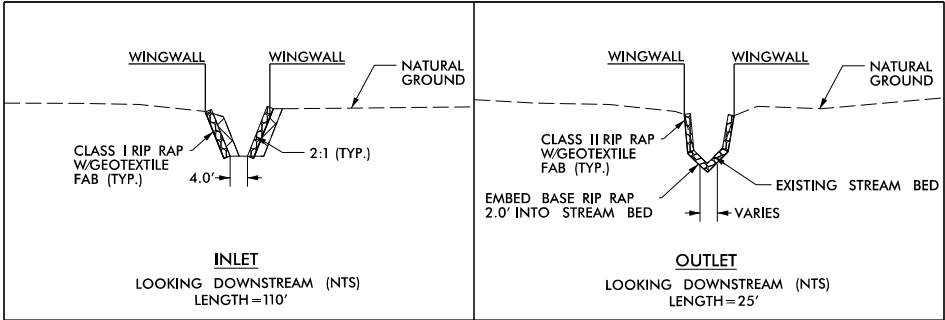
CULVERT INLET/OUTLET DETAILS
-L- STA 153+70



CULVERT INLET/OUTLET DETAILS
-Y2- STA 55+28



PERMIT DRAWING
SHEET 4 OF 257



CULVERT INLETOUTLET DETAIL
-DR- STA 13 + 42

PROJECT REFERENCE NO.	SHEET NO.
R-2536	2D-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 5/16/2017 REVISED 6/14/2016	

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PERMIT DRAWING
SHEET 8 OF 257

NAD 83/95

REVISÉ 5/16/2017

MATCHLINE -L- STA. 23+00 SEE SHEET 5

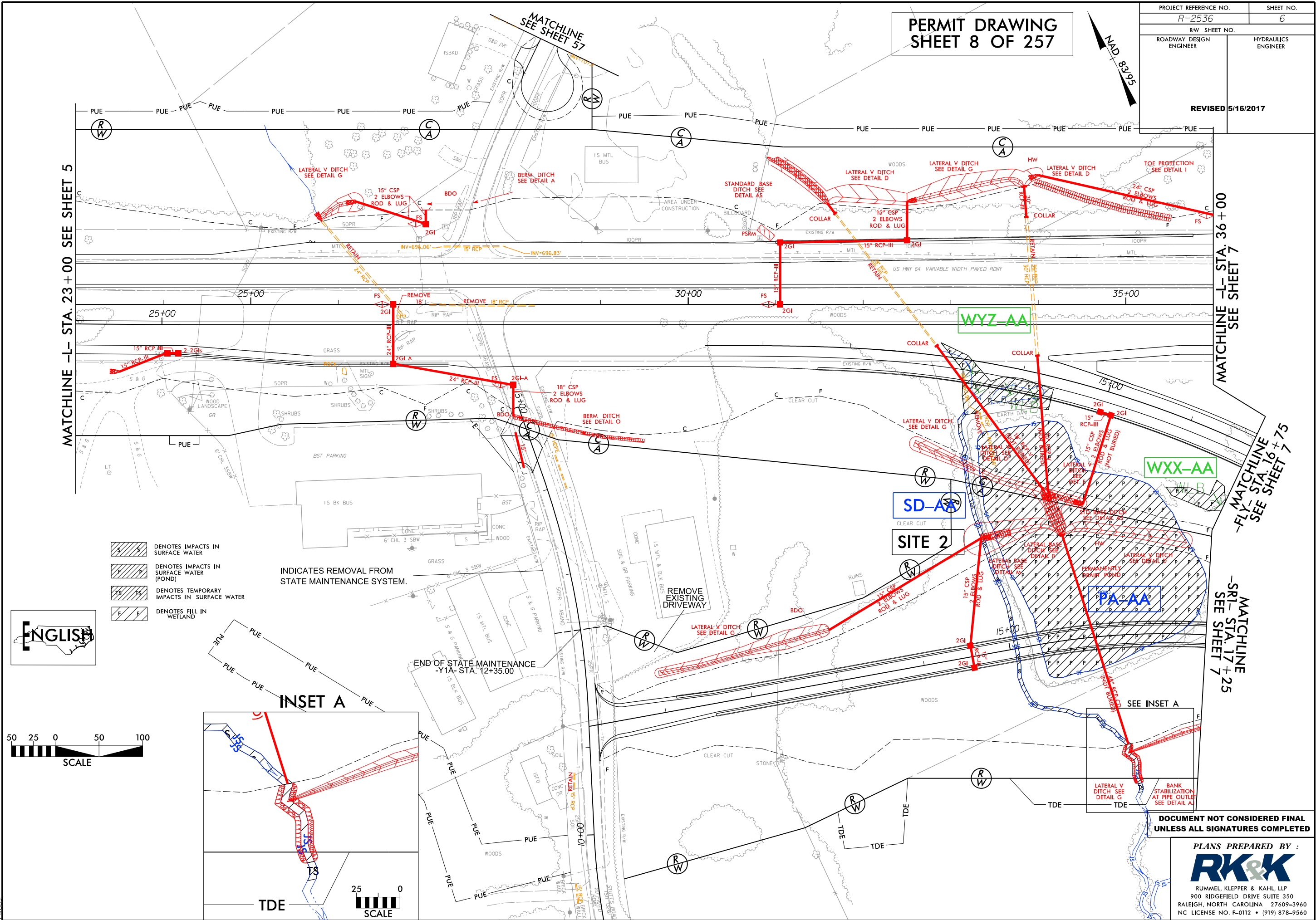
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SEE SHEET 7**

MATCHLINE
-FLY- STA. 16+75
SEE SHEET 7

MATCHLINE
-SR1- STA. 17 + 25
SEE SHEET 7

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8/17/99

5/17/2017
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PERMIT DRAWING
SHEET 9 OF 257

NAD 83/95

REVISED 5/16/2017

MATCHLINE -L- STA. 23+00 SEE SHEET 5

**MATCHLINE -L- STA. 36+00
SEE SHEET 7**

MATCHLINE
-FLY- STA. 16 + 75
SEE SHEET 7

MATCHLINE
-SR1- STA. 17+25
SEE SHEET 7

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

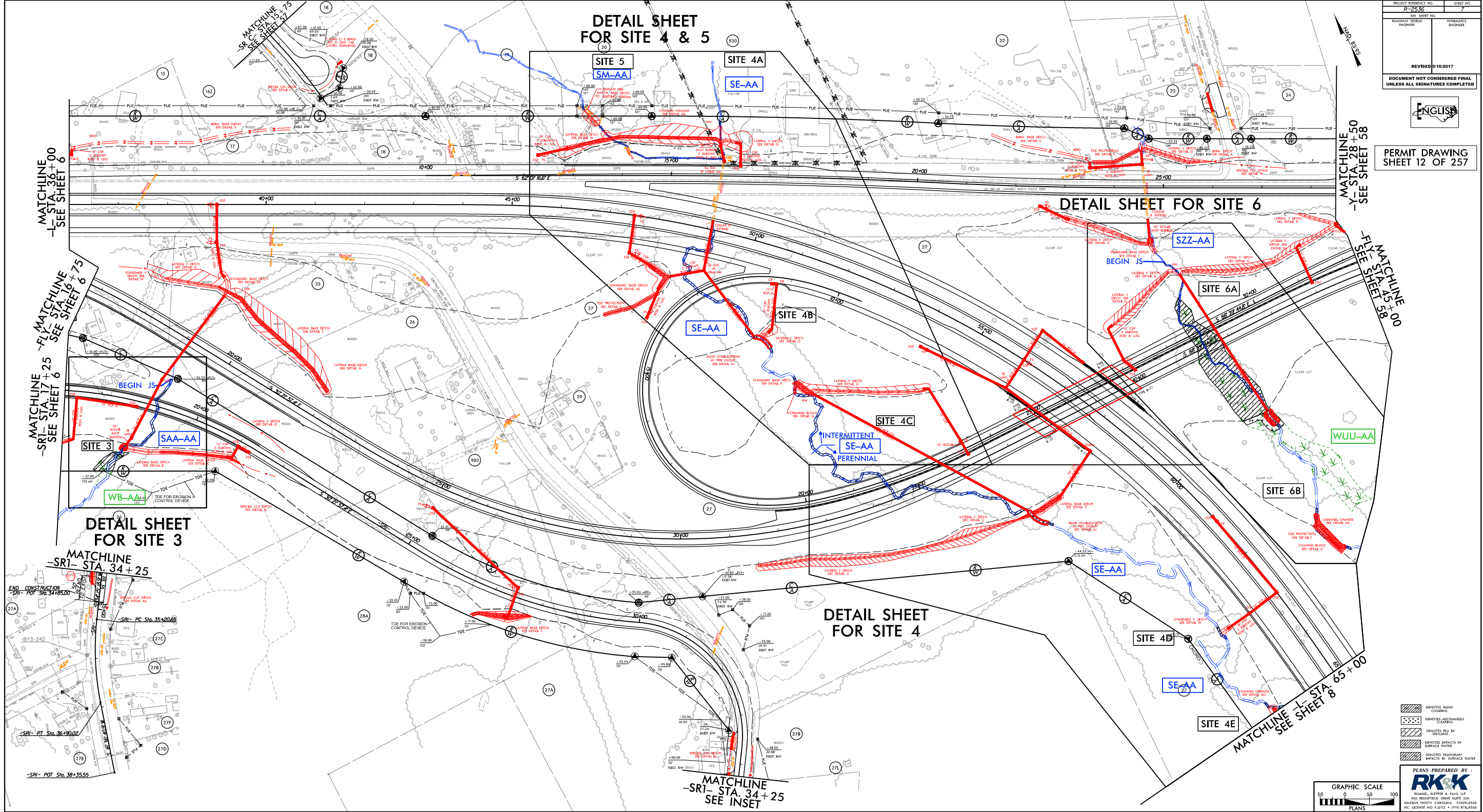
INDICATES REMOVAL FROM
STATE MAINTENANCE SYSTEM.

END OF STATE MAINTENANCE
-Y1A- STA. 12+35.00

~~INSET A~~

TDE

5/17/2017
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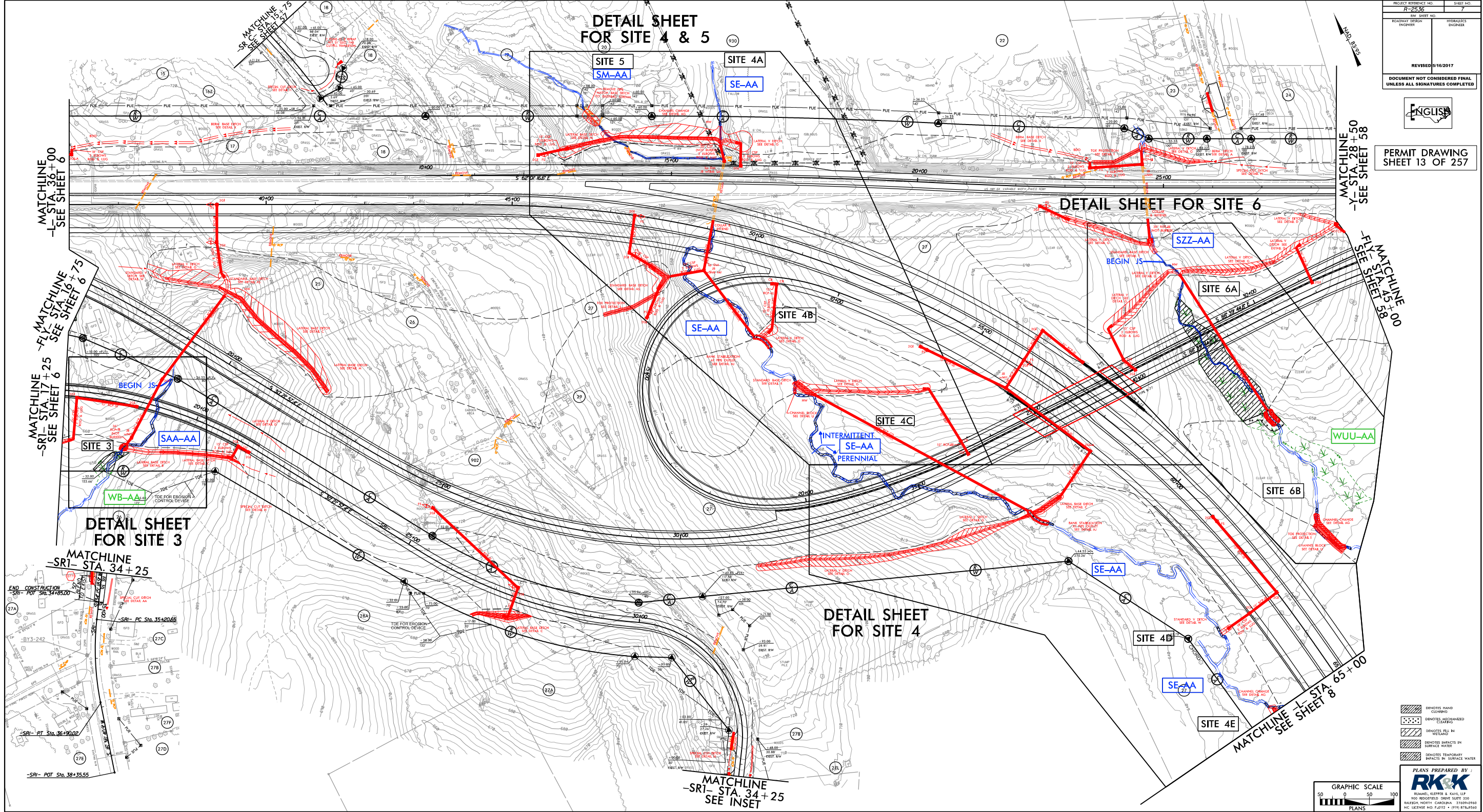
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7-2536	7
REVISED 5/16/2017	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



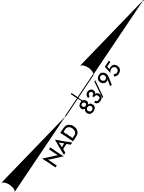
PERMIT DRAWING
SHEET 12 OF 257

DENOTES HAND CLEARING	DENOTES MECHANIZED CLEARING
DENOTES RIL IN WETLAND	DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER	

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DETAIL SHEET FOR SITE 3

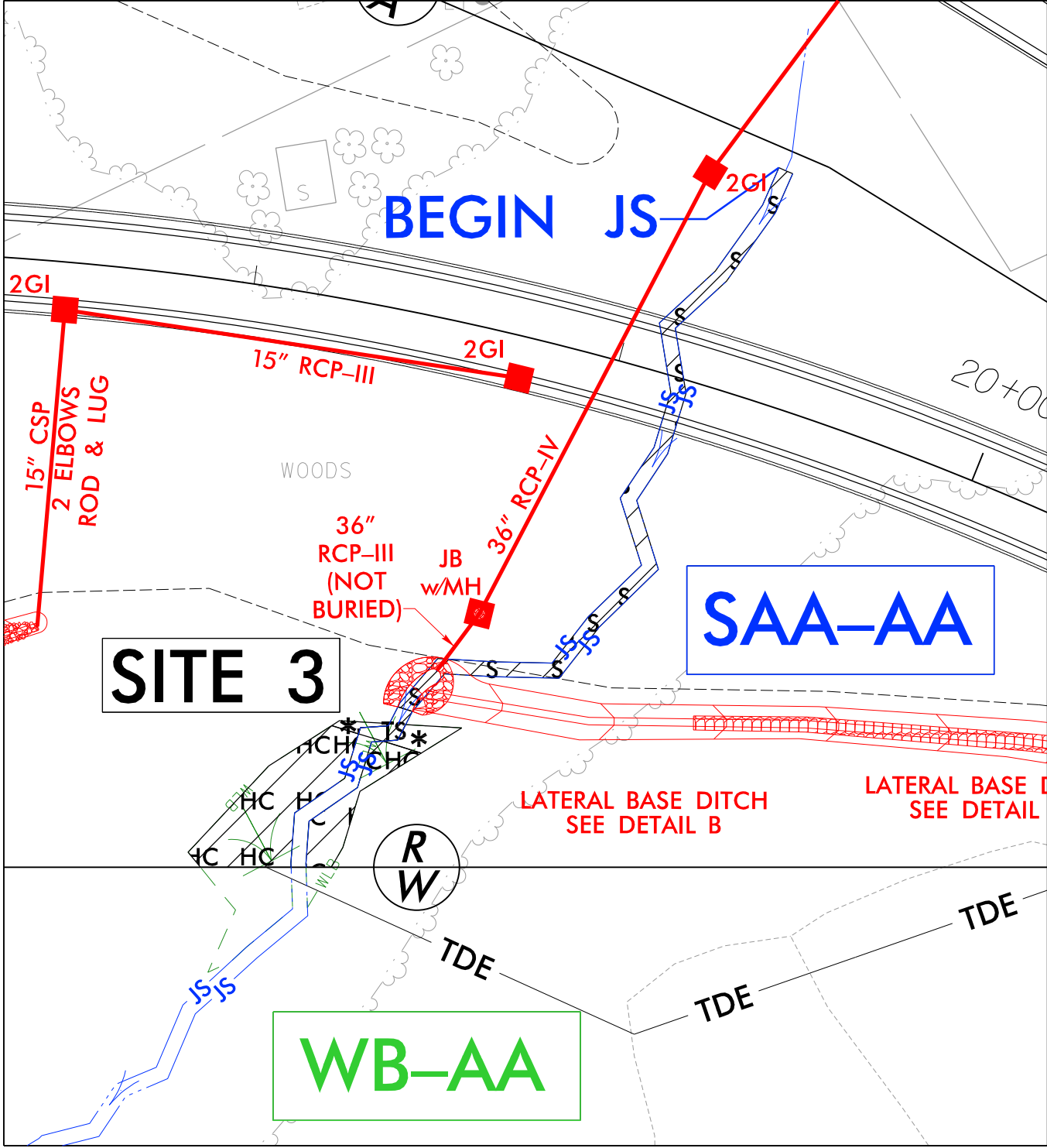


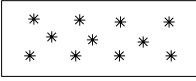
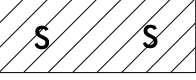
PROJECT REFERENCE NO.	SHEET NO.
R-2536	7A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 5/16/2017	

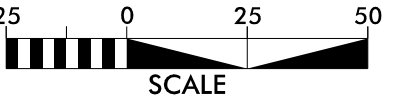
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SHEET 14 OF 257



-  DENOTES HAND CLEARING
-  DENOTES MECHANIZED CLEARING
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

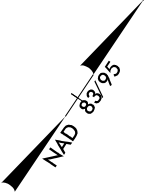


PLANS PREPARED BY :



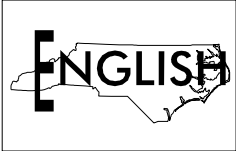
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DETAIL SHEET FOR SITE 6

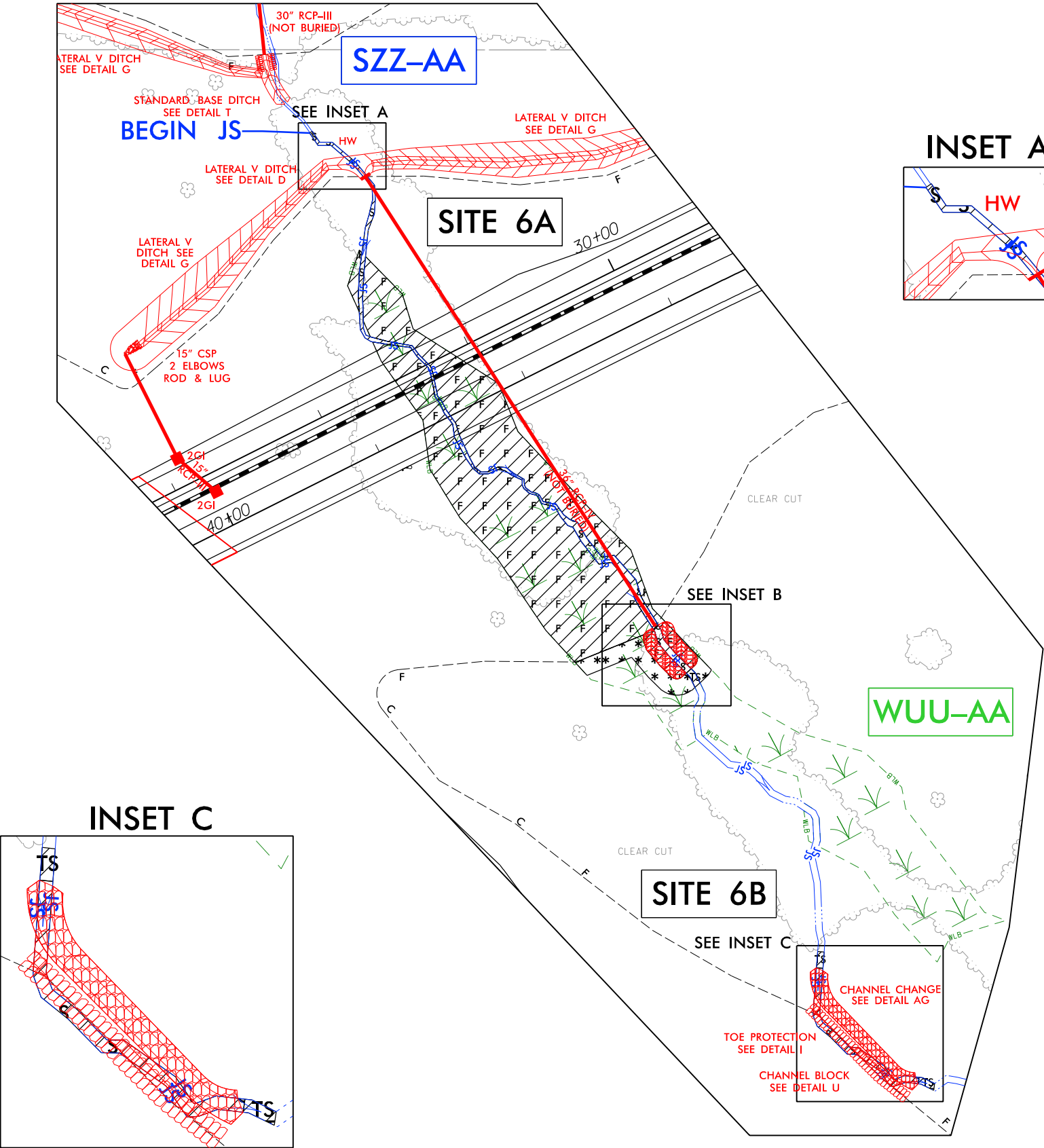


PROJECT REFERENCE NO.	SHEET NO.
R-2536	7D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 5/16/2017	

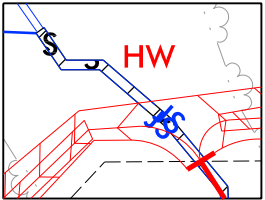
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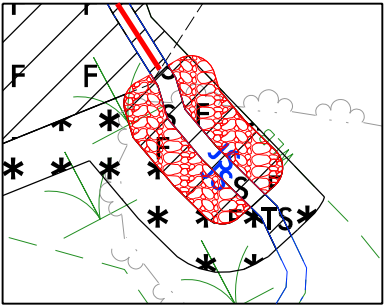
PERMIT DRAWING
SHEET 18 OF 257



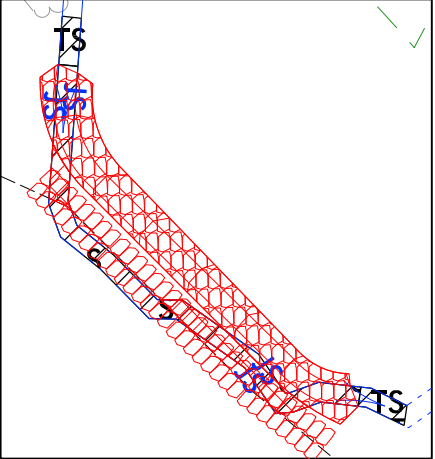
INSET A



INSET B



INSET C



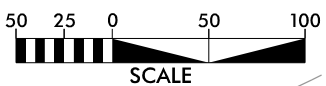
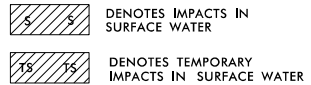
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



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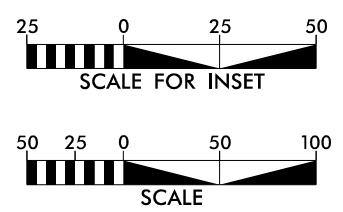


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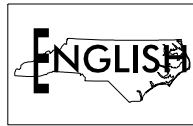
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	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND

NAD 83/95



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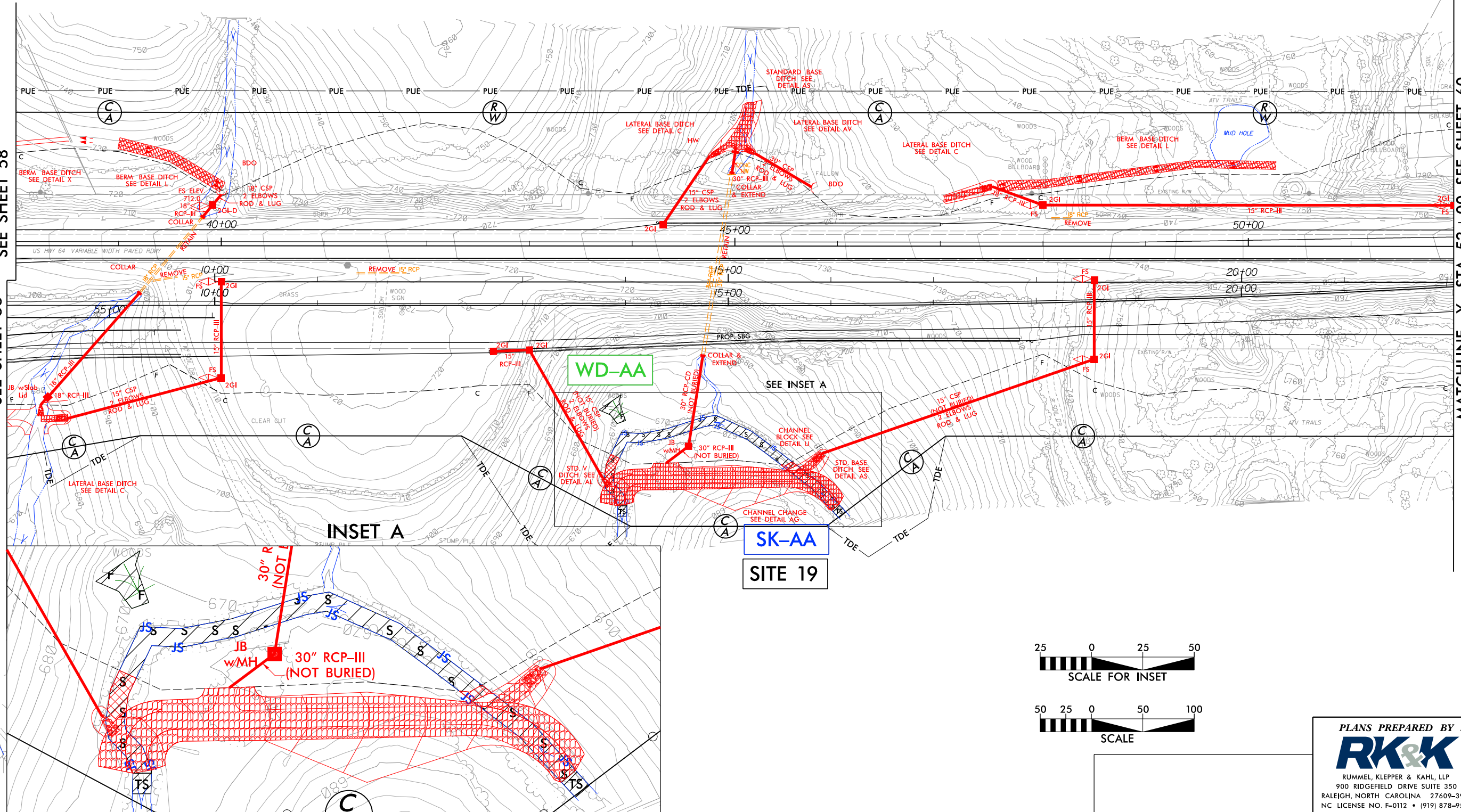
	DENOTES IMPACTS IN SURFACE WATER
	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
	DENOTES FILL IN WETLAND

PERMIT DRAWING
SHEET 26 OF 257

PROJECT REFERENCE NO.		SHEET NO.	
R-2536		59	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
REVISED		5/16/2017	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

MATCHLINE
-FLY- STA. 54 + 00
SEE SHEET 58

MATCHLINE -Y- STA. 52+00 SEE SHEET 60



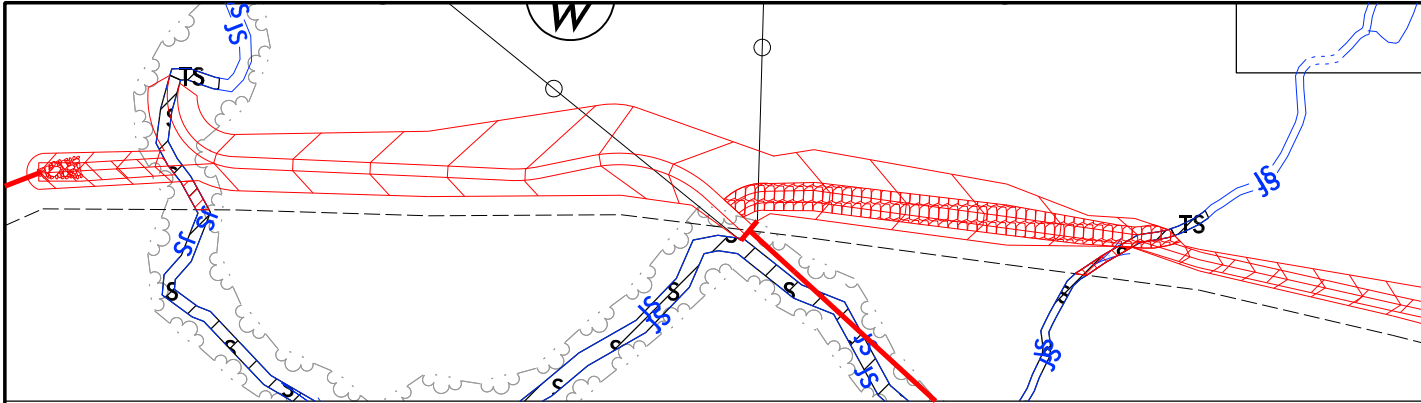
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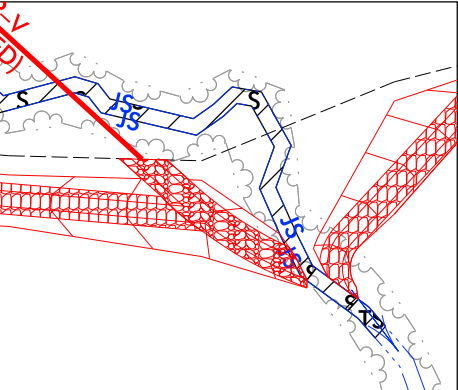
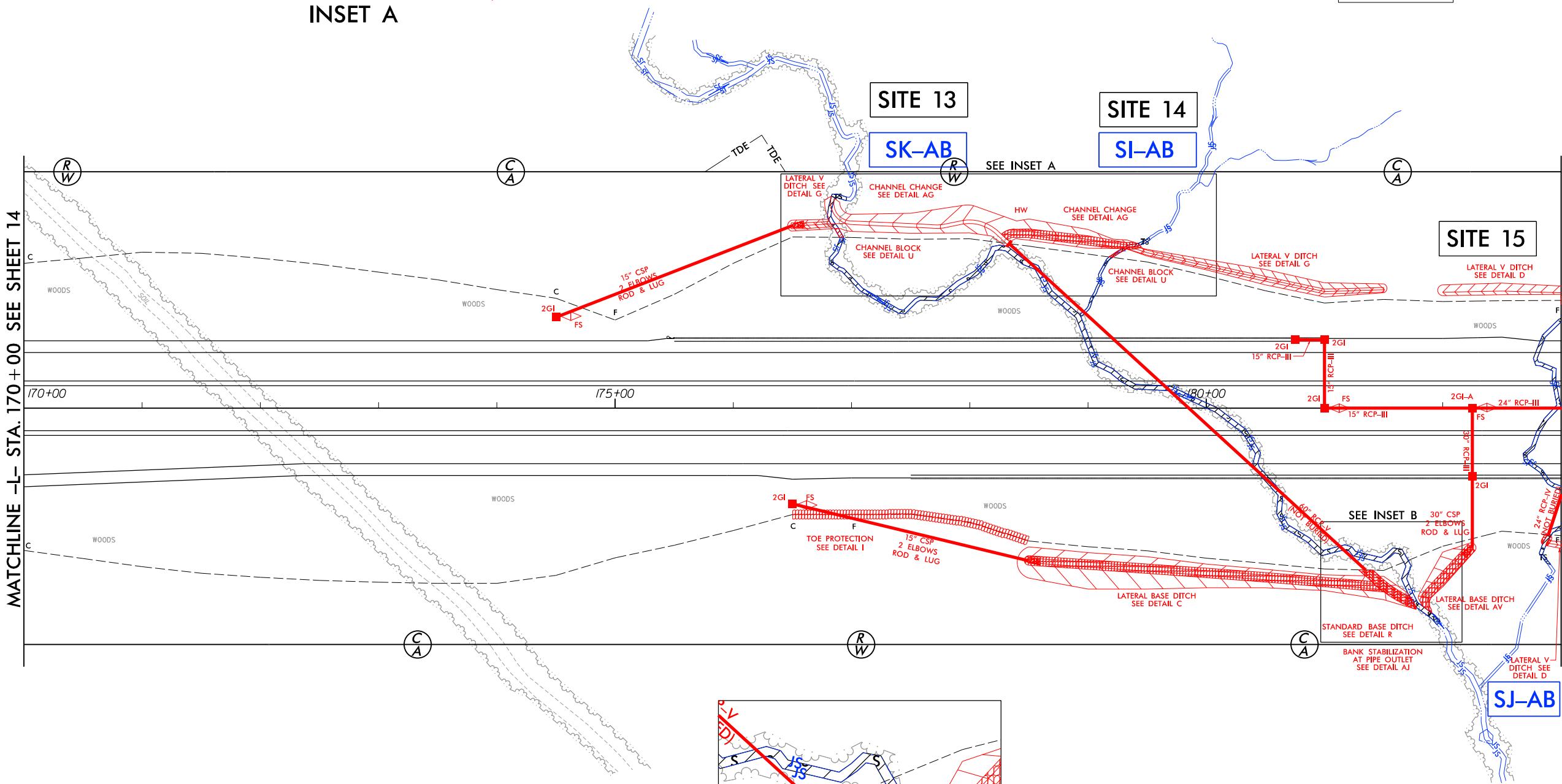
PLANS PREPARED BY :
RK&K
 RUMMEL, KLEPPER & KAHL, LLP
 900 RIDGEFIELD DRIVE SUITE 350
 WEAVER, NORTH CAROLINA 27609-3960
 C LICENSE NO. F-0112 • (919) 878-9560

8/17/99

5/17/2017
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INSET A



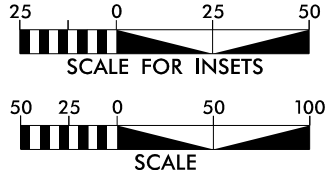
INSET B

PERMIT DRAWING
SHEET 44 OF 257



PROJECT REFERENCE NO. <i>R-2536</i>	SHEET NO. <i>15</i>
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 5/16/2017	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

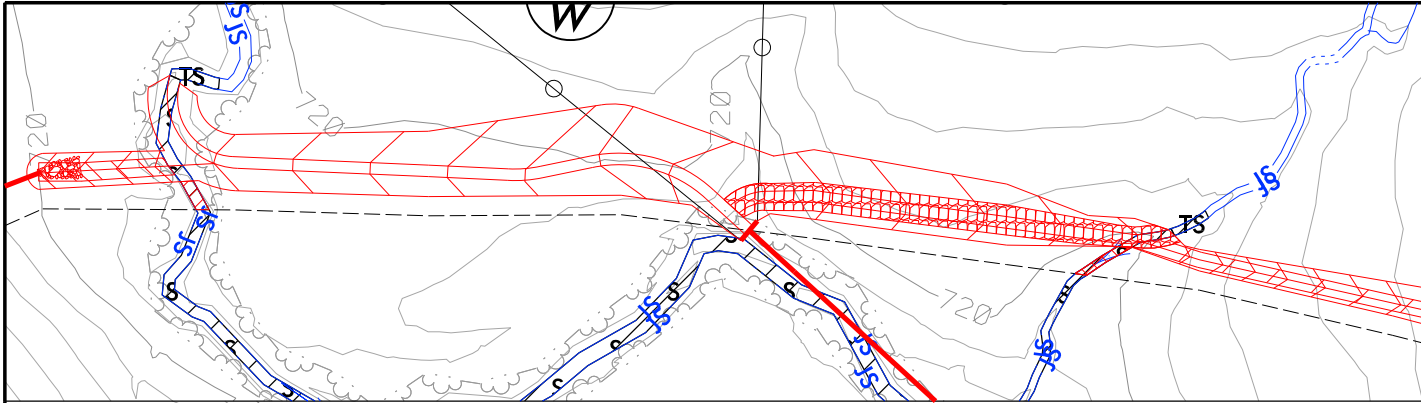
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



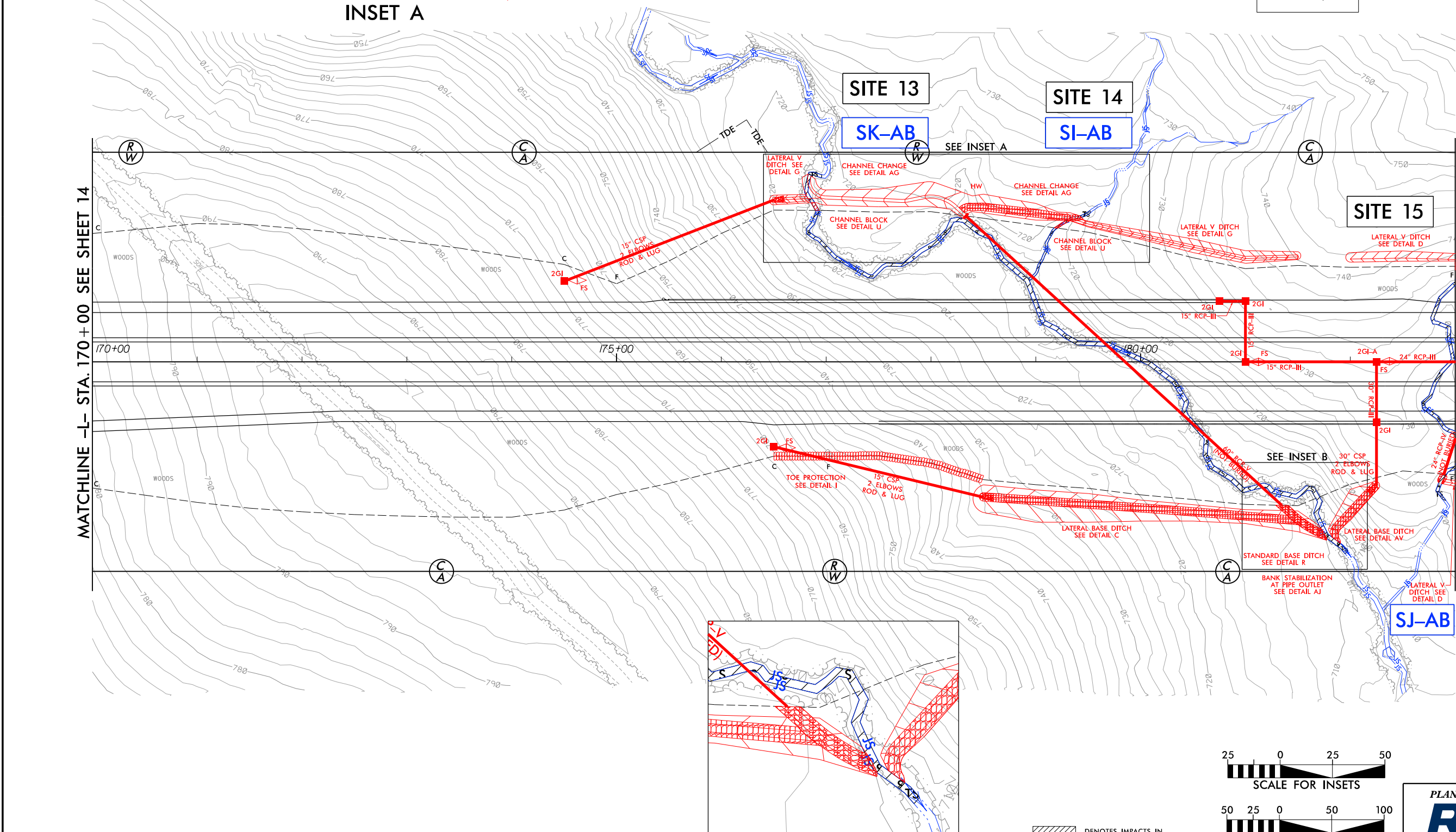
PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
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5/17/2017
R:\Hydraulics\PERMITS\Environmental\Drawings\4C\Section 1B\R2536_PRM1_WET_PSH15.CON.dgn
RKAUS



INSET A



INSET B

PERMIT DRAWING
SHEET 45 OF 257

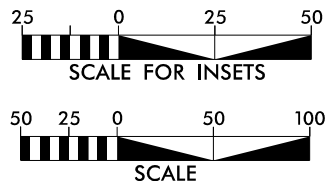


PROJECT REFERENCE NO. <i>R-2536</i>		SHEET NO. <i>15</i>	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		REVISED 5/16/2017	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

MATCHLINE -L- STA. 170+00 SEE SHEET 14

MATCHLINE -L- STA. 183+00 SEE SHEET 16

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



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NAD 83/95

SO-AB/SI-AA

SITE 21 INV=

MATCHLINE -Y2- STA. 37+00 SEE SHEET 13

MATCHLINE -Y2- STA. 24+00 SEE SHEET 63

SITE 21

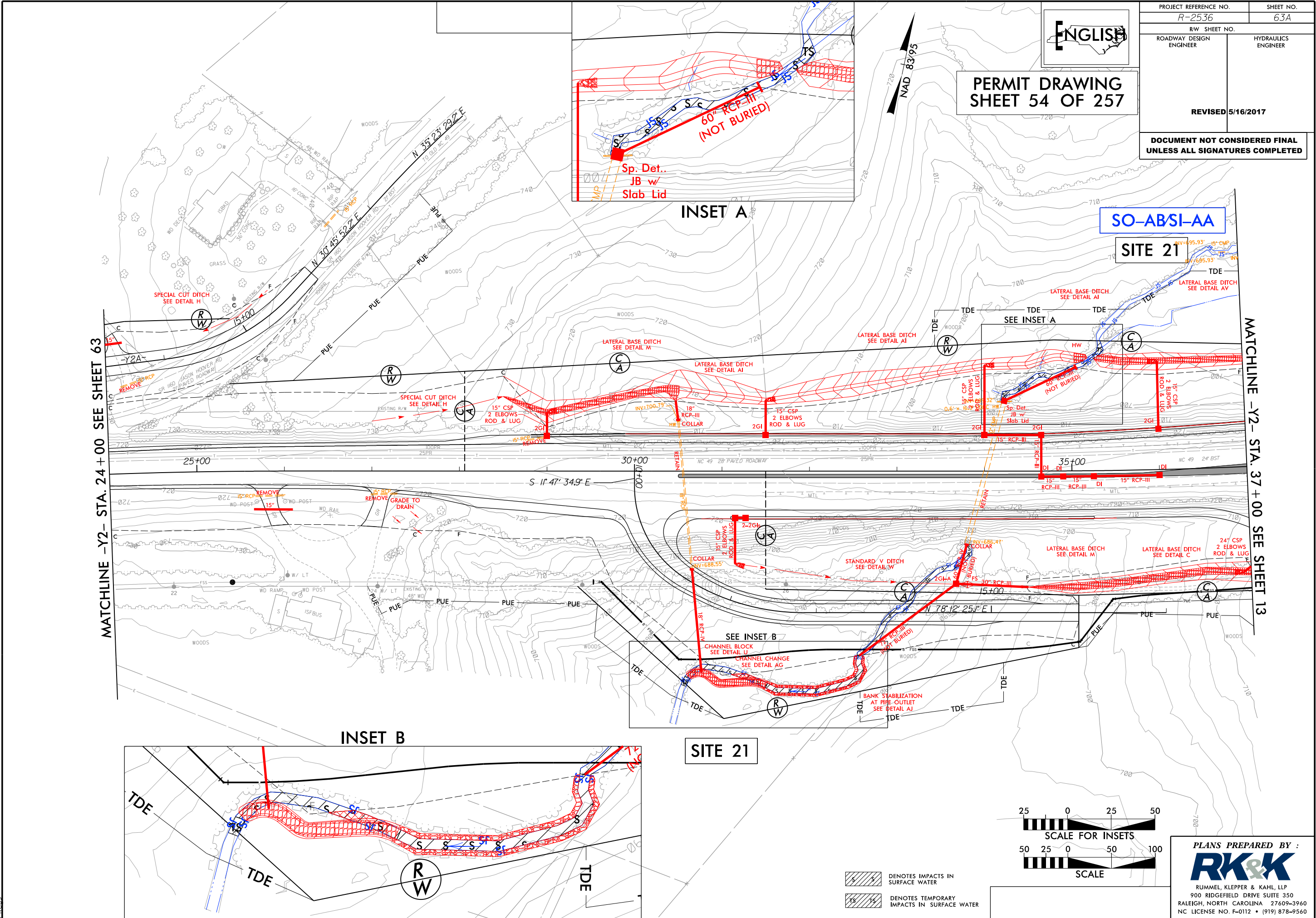
PLANS PREPARED BY :
RK&K
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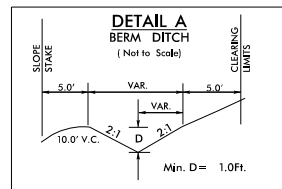
DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

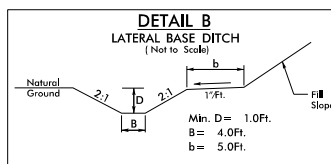
8/17/99

5/17/2017
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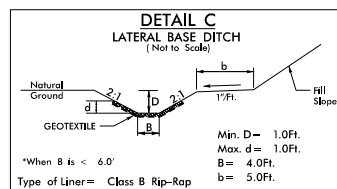




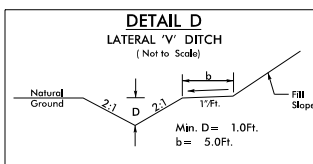
—L— STA. 210+00 TO STA. 212+00 LT
—L— STA. 229+00 TO STA. 230+00 RT
—L— STA. 301+50 TO STA. 303+50 LT
—L— STA. 339+12 TO STA. 340+50 LT
—L— STA. 449+70 TO STA. 451+50 LT
—SR Q— STA. 17+30 TO STA. 20+48.76 RT
—SR Q— STA. 22+48.77 TO STA. 26+81.87 RT
—Y4RPA— STA. 33+40 TO STA. 35+80 RT
—Y5— STA. 18+50 TO STA. 19+50 LT
—Y9FLY— STA. 40+00 TO STA. 44+00 RT
—Y9— STA. 37+75 TO STA. 41+50 LT
—Y9RPD— STA. 19+00 TO STA. 22+00 LT
—Y9RPD— STA. 23+00 TO STA. 25+00 LT



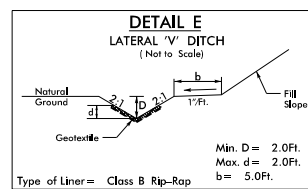
—L— STA. 252+75 TO STA. 254+50 RT
—L— STA. 346+37 TO STA. 347+25 LT
—L— STA. 357+00 TO STA. 359+50 LT
—L— STA. 392+00 TO STA. 393+00 RT
—L— STA. 455+37 TO STA. 455+75 RT
—L— STA. 457+50 TO STA. 460+00 RT
—SERRD1— STA. 14+00 TO STA. 18+00 LT
—SERRD3— STA. 23+00 TO STA. 25+25 LT
—SERRD5— STA. 12+00 TO STA. 15+00 RT
—SR Q— STA. 12+48.76 TO STA. 14+48.76 RT
—SR Q— STA. 20+48.76 TO STA. 20+88 RT
—SR Q— STA. 34+19 TO STA. 37+04 RT
—SR Q— STA. 37+56.54 TO STA. 42+00 RT
—Y4— STA. 38+60 TO STA. 40+50 RT
—Y4LPB— STA. 11+45 TO STA. 20+50 RT
—Y4LPD— STA. 11+41 TO STA. 19+50 RT
—Y4RPD— STA. 21+50 TO STA. 23+23 LT
—Y7— STA. 20+85 TO STA. 23+00 LT
—Y9— STA. 28+53 TO STA. 29+25 RT
—Y9— STA. 30+20 TO STA. 31+50 RT
—Y9— STA. 70+00 TO STA. 73+50 LT
—Y9— STA. 78+50 TO STA. 80+00 RT
—Y9— STA. 78+50 TO STA. 79+00 LT
—Y9B— STA. 12+00 TO STA. 15+00 LT
—Y9C— STA. 11+50 TO STA. 13+55 RT
—Y9FLY— STA. 10+00 TO STA. 11+50 RT
—Y9FLY— STA. 16+50 TO STA. 19+50 LT
—Y9FLY— STA. 20+50 TO STA. 22+80 LT
—Y9LPB— STA. 16+90 TO STA. 19+77 RT
—Y9RPB— STA. 18+90 TO STA. 23+15 RT
—Y9RPC— STA. 19+50 TO STA. 23+50 LT
—Y9RPC— STA. 20+50 TO STA. 23+50 RT



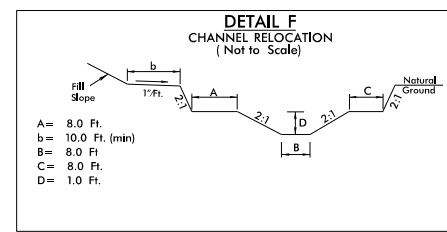
—L— STA. 228+00 TO STA. 229+00 RT
—L— STA. 234+50 TO STA. 235+00 RT
—L— STA. 254+50 TO STA. 261+50 RT
—L— STA. 274+47 TO STA. 277+65 RT
—L— STA. 346+00 TO STA. 346+37 LT
—L— STA. 355+00 TO STA. 357+00 LT
—L— STA. 393+00 TO STA. 396+65 LT
—L— STA. 433+06 TO STA. 435+00 RT
—L— STA. 455+75 TO STA. 457+50 RT
—SERRD1— STA. 18+00 TO STA. 21+67 LT
—SERRD5— STA. 13+85 TO STA. 14+50 RT
—Y4LPD— STA. 10+00 TO STA. 11+41 RT
—Y4RPA— STA. 10+00 TO STA. 13+38 RT
—Y4RPC— STA. 12+50 TO STA. 16+40 RT
—Y4RPD— STA. 13+35 TO STA. 14+71 RT
—Y4RPD— STA. 24+20 TO STA. 25+44 RT
—Y5— STA. 12+21 TO STA. 14+50 LT
—Y5— STA. 12+31.67 TO STA. 15+00 RT
—Y5— STA. 46+50 TO STA. 50+50 LT
—Y9— STA. 16+50 TO STA. 18+20 LT
—Y9— STA. 22+00 TO STA. 24+00 LT
—Y9A— STA. 37+00 TO STA. 38+25 LT
—Y9C— STA. 11+00 TO STA. 13+00 LT
—Y9FLY— STA. 19+50 TO STA. 20+50 LT
—Y9FLY— STA. 50+00 TO STA. 51+15 RT



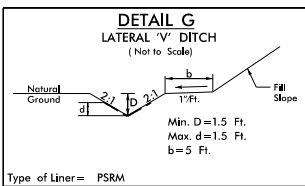
—L— STA. 244+00 TO STA. 245+23 LT
—L— STA. 252+50 TO STA. 253+75 LT
—L— STA. 249+00 TO STA. 249+65 LT
—L— STA. 299+36 TO STA. 301+50 LT
—L— STA. 455+00 TO STA. 455+37 RT
—SERRD3— STA. 40+82 TO STA. 41+87 LT
—SERRD5— STA. 10+00 TO STA. 11+00 LT
—SR 1 DR1— STA. 12+00 TO STA. 15+29 LT
—SR 1 DR1— STA. 12+00 TO STA. 15+29 RT
—SR Q— STA. 46+50 TO STA. 47+50 LT
—Y3 DET— STA. 15+91.75 TO STA. 18+20.50 LT
—Y4— STA. 74+54 TO STA. 80+35 RT
—Y4LPB— STA. 17+20 TO STA. 23+39 RT
—Y4LPB— STA. 18+30 TO STA. 20+00 LT
—Y4LPB— STA. 20+50 TO STA. 23+25 RT
—Y4RPA— STA. 21+50 TO STA. 24+00 RT
—Y4RPB— STA. 14+90 TO STA. 16+25 LT
—Y4RPB— STA. 18+75 TO STA. 20+25 LT
—Y4RPB— STA. 21+25 TO STA. 25+50 LT
—Y4RPB— STA. 30+65 TO STA. 31+60 LT
—Y4RPD— STA. 15+18 TO STA. 16+75 LT
—Y7— STA. 14+50 TO STA. 16+50 RT
—Y8— STA. 10+50 TO STA. 13+00 LT
—Y8— STA. 14+00 TO STA. 15+00 LT
—Y9— STA. 19+90 TO STA. 22+00 LT
—Y9— STA. 44+50 TO STA. 45+25 RT
—Y9— STA. 60+00 TO STA. 60+96 RT
—Y9— STA. 78+00 TO STA. 78+50 RT
—Y9A— STA. 33+50 TO STA. 35+00 RT
—Y10— STA. 11+00 TO STA. 13+50 RT



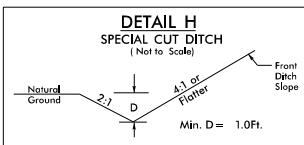
—L— STA. 336+77 TO STA. 337+50 RT
—Y5— STA. 23+00 TO STA. 24+81 LT
—Y5A— STA. 11+00 TO STA. 13+00 LT



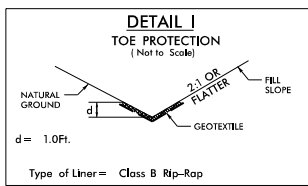
DETAIL NOT USED IN SECTION 2



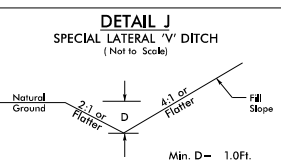
—L— STA. 329+06 TO STA. 333+00 LT
—L— STA. 329+82 TO STA. 333+00 RT
Y3 DET— STA. 15+21.14 TO STA. 15+91.75 LT
—Y9— STA. 16+63 TO STA. 20+00 RT
—Y9— STA. 48+00 TO STA. 48+58 RT
—Y9— STA. 48+00 TO STA. 49+29 LT
—Y9A— STA. 29+00 TO STA. 33+50 RT



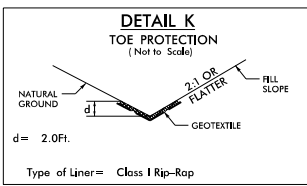
—L— STA. 219+50 TO STA. 227+50 LT
—L— STA. 220+75 TO STA. 226+00 RT
—L— STA. 227+50 TO STA. 249+00 LT
—L— STA. 247+50 TO STA. 249+00 RT
—L— STA. 301+50 TO STA. 307+50 LT
—L— STA. 302+00 TO STA. 303+50 RT
—L— STA. 336+37 TO STA. 339+00 RT
—L— STA. 337+50 TO STA. 339+00 RT
—L— STA. 451+50 TO STA. 455+00 LT
—L— STA. 449+50 TO STA. 453+00 RT
—SERRD1— STA. 21+00 TO STA. 21+41 RT
—SERRD3— STA. 10+00 TO STA. 11+50 LT
—SERRD3— STA. 43+99 TO STA. 45+85 RT
—SR 1— STA. 10+50 TO STA. 14+50 LT
—SR 1— STA. 15+50 TO STA. 18+50 RT
—SR 12— STA. 12+00 TO STA. 14+00 LT
—SR 12— STA. 12+00 TO STA. 14+00 RT
—SR Q— STA. 11+50.47 TO STA. 12+48.76 RT
—SR Q— STA. 14+48.76 TO STA. 15+98.76 RT
—Y3— STA. 10+50 TO STA. 11+50 RT
—Y3— STA. 20+50 TO STA. 20+87 RT
—Y4— STA. 49+00 TO STA. 50+00 RT
—Y4— STA. 50+50 TO STA. 54+50 RT
—Y4— STA. 86+00 TO STA. 86+42 RT
—Y4LPB— STA. 13+50 TO STA. 14+00 LT
—Y4LPC— STA. 23+25 TO STA. 23+85 RT
—Y4RPA— STA. 35+08 TO STA. 36+08 RT
—Y4RPC— STA. 21+00 TO STA. 22+50 LT
—Y4RPC— STA. 21+00 TO STA. 25+00 RT
—Y5— STA. 10+00 TO STA. 11+00 LT
—Y6— STA. 13+00 TO STA. 14+00 LT
—Y6— STA. 15+00 TO STA. 16+00 RT
—Y7— STA. 10+00 TO STA. 10+50 RT
—Y7— STA. 11+00 TO STA. 14+50 RT
—Y7— STA. 23+50 TO STA. 24+30 LT
—Y7— STA. 23+50 TO STA. 24+16 RT
—Y8— STA. 9+75 TO STA. 10+50 LT
—Y8— STA. 9+75 TO STA. 11+00 RT
—Y8— STA. 13+00 TO STA. 14+00 LT
—Y8— STA. 28+00 TO STA. 29+55 RT
—Y9— STA. 34+50 TO STA. 36+50 RT
—Y9— STA. 42+50 TO STA. 44+50 RT
—Y9— STA. 52+00 TO STA. 53+00 RT
—Y9— STA. 52+00 TO STA. 54+50 LT
—Y9— STA. 58+50 TO STA. 60+00 RT
—Y9A— STA. 12+40 TO STA. 14+00 RT
—Y9A— STA. 13+50 TO STA. 14+50 LT
—Y9A— STA. 37+50 TO STA. 39+00 RT
—Y9A— STA. 41+00 TO STA. 42+50 RT
—Y9B— STA. 16+50 TO STA. 18+00 RT
—Y9FLY— STA. 11+50 TO STA. 14+00 RT
—Y9FLY— STA. 40+00 TO STA. 43+00 RT
—Y9RPC— STA. 19+00 TO STA. 19+50 LT
—Y9RPD— STA. 17+00 TO STA. 17+50 LT
—Y10— STA. 23+00 TO STA. 23+99 RT
—Y10A— STA. 15+00 TO STA. 15+74 RT
—Y10END— STA. 14+00 TO STA. 16+00 RT
—Y10END— STA. 18+00 TO STA. 19+50 RT



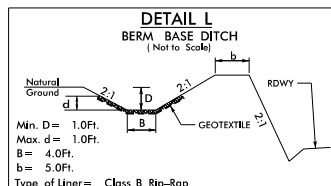
—L— STA. 327+50 TO STA. 329+05 LT
—L— STA. 352+00 TO STA. 353+82 LT
—L— STA. 354+90 TO STA. 357+50 RT
—L— STA. 360+00 TO STA. 364+50 LT
—L— STA. 360+00 TO STA. 363+25 RT
—L— STA. 364+50 TO STA. 365+50 RT
—L— STA. 405+25 TO STA. 414+30 LT
—L— STA. 406+85 TO STA. 412+00 RT
—L— STA. 431+50 TO STA. 433+00 LT
—L— STA. 455+00 TO STA. 458+10 LT
—L— STA. 462+50 TO STA. 465+00 RT
—SERRD3— STA. 41+35 TO STA. 42+39 LT
—SERRD3— STA. 20+70 TO STA. 23+75 LT
—SERRD3 DR1— STA. 11+58 TO STA. 12+68 LT
—SERRD5— STA. 12+50 TO STA. 13+80 RT
—SERRD5— STA. 15+00 TO STA. 17+00 LT
—Y4RPC— STA. 16+40 TO STA. 21+00 RT
—Y4RPC— STA. 19+78 TO STA. 21+50 LT
—Y5— STA. 21+00 TO STA. 23+00 LT
—Y5— STA. 45+50 TO STA. 46+50 LT
—Y9— STA. 15+75 TO STA. 16+50 RT
—Y9— STA. 23+50 TO STA. 25+00 RT
—Y9— STA. 27+00 TO STA. 29+40 LT
—Y9— STA. 31+25 TO STA. 32+50 LT
—Y9— STA. 36+35 TO STA. 37+50 LT
—Y9— STA. 45+45 TO STA. 46+00 RT
—Y9— STA. 61+00 TO STA. 61+50 RT
—Y9— STA. 62+60 TO STA. 63+05 RT
—Y9— STA. 67+45 TO STA. 67+90 RT
—Y9RAB— STA. 10+55 TO STA. 12+00 LT
—Y9C— STA. 13+50 TO STA. 14+00 LT
—Y9FLY— STA. 10+75 TO STA. 11+80 LT
—Y9FLY— STA. 17+00 TO STA. 19+50 RT
—Y9FLY— STA. 24+30 TO STA. 27+25 RT



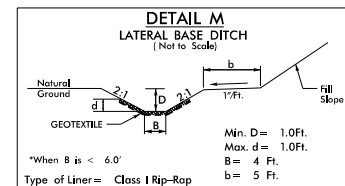
—Y4RPB— STA. 27+27 TO STA. 30+42 RT; 4:1
—Y9— STA. 36+50 TO STA. 37+00 RT
—Y9— STA. 53+00 TO STA. 54+00 RT



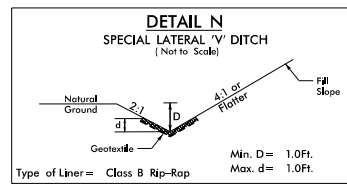
—Y5— STA. 37+75 TO STA. 41+08 LT



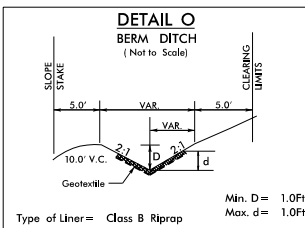
—L— STA. 212+00 TO STA. 216+50 LT
—L— STA. 222+00 TO STA. 228+00 RT
—L— STA. 230+00 TO STA. 234+50 RT
—L— STA. 317+20 TO STA. 318+20 LT
—Y5— STA. 16+69 TO STA. 18+50 LT
—Y4LPB— STA. 10+00 TO STA. 11+45 RT
—Y9— STA. 31+50 TO STA. 42+00 RT



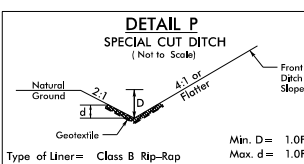
—L— STA. 280+00 TO STA. 280+50 LT
—L— STA. 368+00 TO STA. 371+50 RT
—SERRD5— STA. 14+50 TO STA. 17+17 RT
—SR Q— STA. 46+00 TO STA. 47+60 RT
—Y4— STA. 71+00 TO STA. 72+50 RT
—Y4LPB— STA. 10+00 TO STA. 11+45 RT
—Y4RPD— STA. 23+23 TO STA. 24+20 RT
—Y9— STA. 10+00 TO STA. 14+50 RT
—Y9A— STA. 29+00 TO STA. 32+83 LT



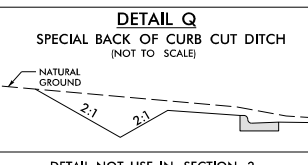
DETAIL NOT USE IN SECTION 2



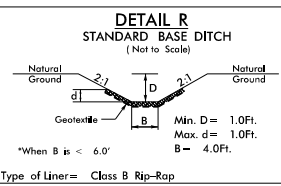
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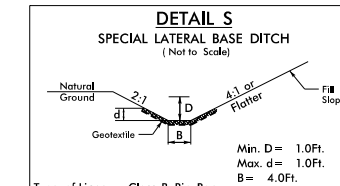
—SR 1— STA. 24+00 TO STA. 26+38 LT
—Y5A— STA. 14+50 TO STA. 15+00 LT
—Y10END— STA. 21+50 TO STA. 22+34 RT



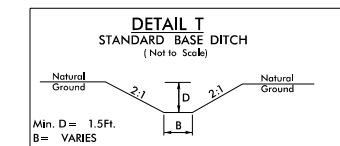
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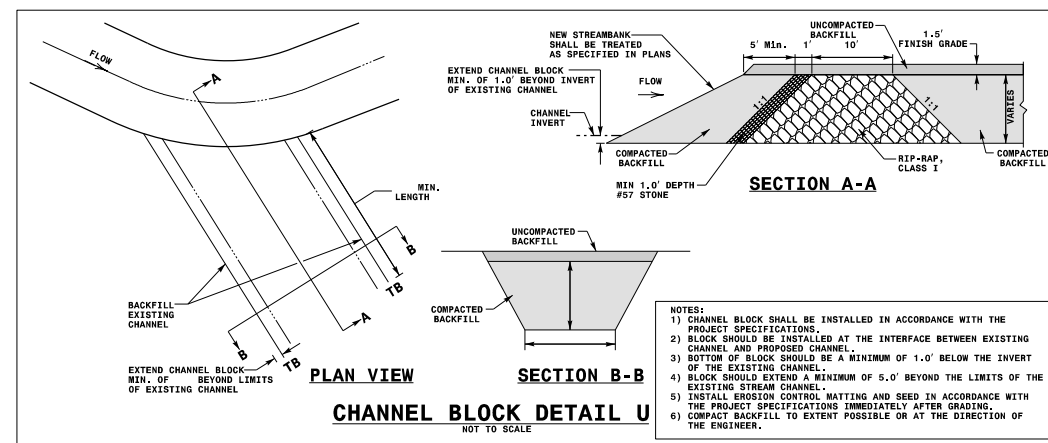
—Y4LPB— 19+90 LT, L=82', S=7.3%
BEG. ELEV=829.0, END ELEV=832.9
—Y4LPD— 22+75 RT, L=89', S=8.0%
BEG. ELEV=825.0, END ELEV=817.7
—Y5— 46+00 RT, L=50', S=8.0%
BEG. ELEV=806.0, END ELEV=802.0
—Y9— STA. 53+33 LT, B=2', S=0.53%, D=2.75'
L=68', BEG. ELEV=626.4, END ELEV=626.0
—Y9— STA. 79+00 LT, L=56', S=3.8%
BEG. ELEV=611.5, END ELEV=609.4
—Y9FLY— STA. 26+50 LT, L=134', S=8.34%
BEG. ELEV=700.0, END ELEV=688.8



—SERRD1— STA. 11+25 TO STA. 14+00 LT

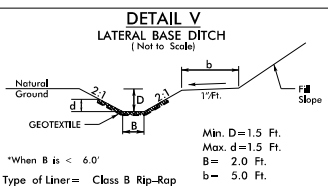


—L— STA. 314+35 LT, B=2', S=1.00%
L=50', BEG. ELEV=854.0, END ELEV=853.5
—L— STA. 445+54 RT, B=4', L=92', S=6.5%
BEG. ELEV=690.0, END ELEV=684.0
—NC159 SPUR— STA. 12+00 LT, B=4', S=4.1%
BEG. ELEV=610.0, END ELEV=600.9
—SR 12— STA. 13+25 RT, B=3', L=76', S=0.45%
BEG. ELEV=772.3, END ELEV=772.0
—SR 1 DR1— STA. 13+25 RT, B=4', S=0.34%
L=129', BEG. ELEV=764.0, END ELEV=763.6
—SR Q— STA. 40+00 LT, L=30', S=0.50%
BEG. ELEV=617.2, END ELEV=617.1
—Y3— STA. 15+80 RT, L=44', S=0.68%
BEG. ELEV=817.5, END ELEV=817.2
—Y4LPB— STA. 20+50 TO STA. 21+68 RT, B=4'
S=1.73%, L=18', BEG. ELEV=821.2, END ELEV=819.7
—Y6 DET— STA. 11+31.48 RT, B=4', S=0.96%
L=78', BEG. ELEV=846.8, END ELEV=846.0
—Y9B— STA. 15+00 LT, L=76', S=8.8%
BEG. ELEV=723.9, END ELEV=717.2

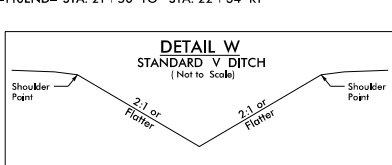


—L— STA. 433+50 RT
—Y9— STA. 74+60 LT
—Y9— STA. 75+72 LT
—Y9— STA. 76+20 LT
—Y9FLY— STA. 11+54 LT
—Y9RPB— STA. 21+90 LT
—Y9RPB— STA. 24+30 LT
—Y9RPB— STA. 25+25 LT

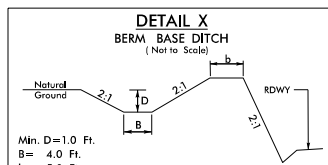
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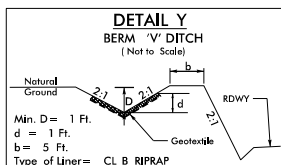
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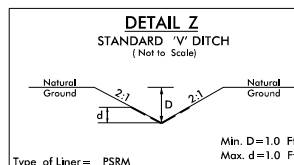
—L— STA. 221+50 TO STA. 222+00 RT, L=61'
S=0.31%, BEG. ELEV=833.1, END ELEV=832.9
—SERRD3— STA. 39+80 TO STA. 41+35 RT
—Y4RPA— STA. 26+00 RT, L=73', S=0.41%
BEG. ELEV=822.8, END ELEV=822.5
—Y4RPC— STA. 22+50 TO STA. 25+50 LT, L=300'
S=0.30%, BEG. ELEV=836.1, END ELEV=837.0
—Y9A— STA. 42+50 RT, L=20', S=0.35%
BEG. ELEV=630.1, END ELEV=630.0
—Y9LPB— STA. 16+00 LT, L=50', S=7.6%
BEG. ELEV=643.8, END ELEV=640.0



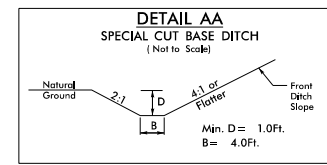
—SR Q— STA. 13+99 TO STA. 16+98 RT
—Y9RPD— STA. 25+00 TO STA. 27+50 LT



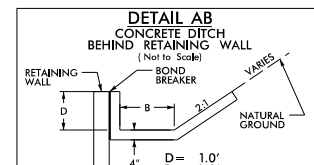
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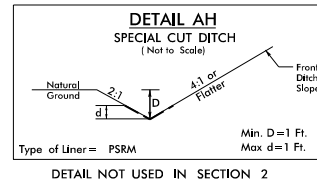
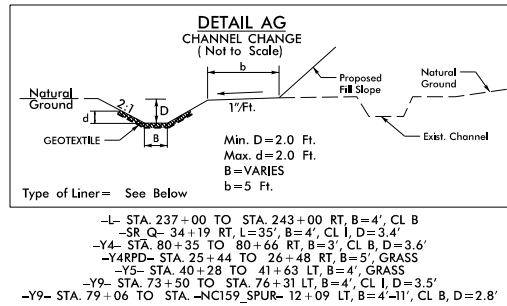
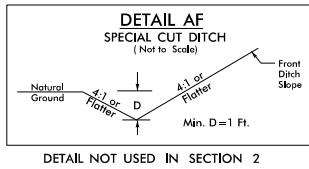
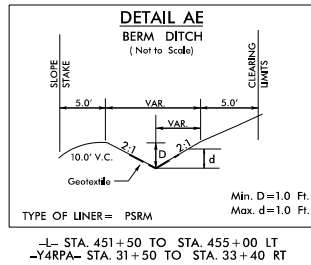
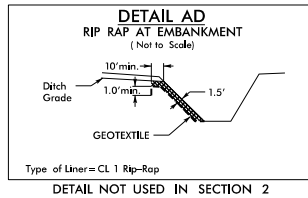
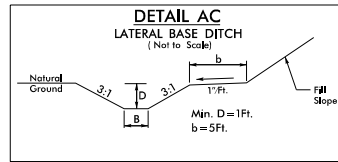


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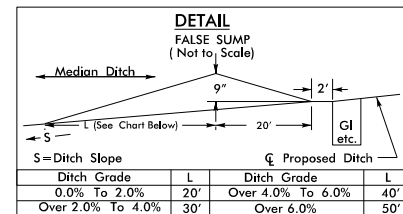
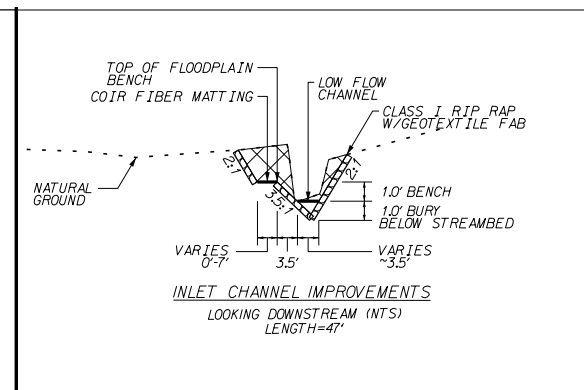
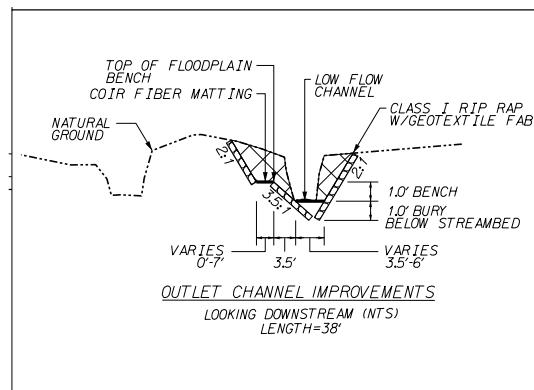
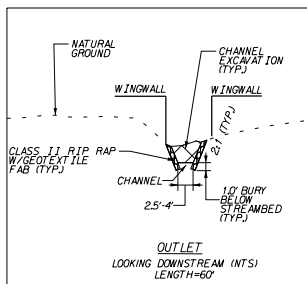
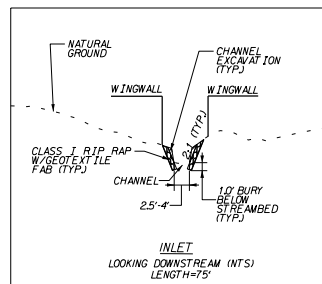
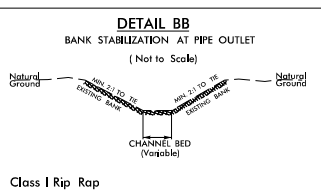
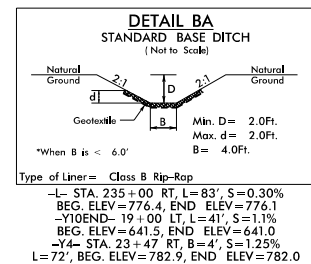
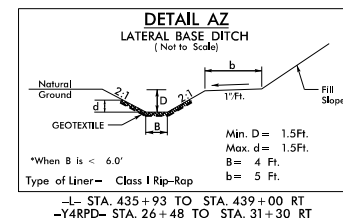
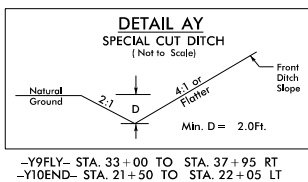
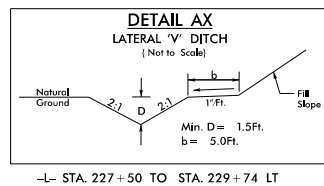
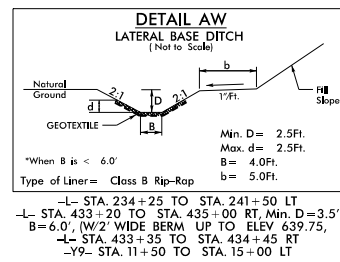
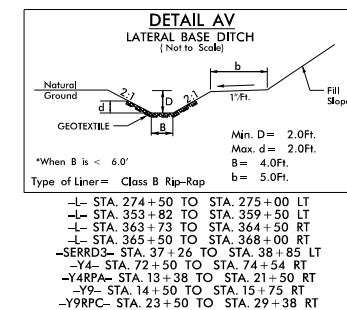
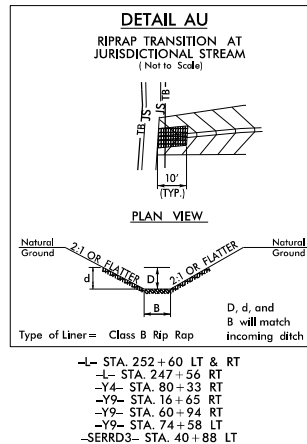
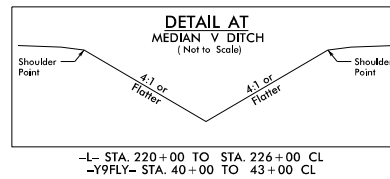
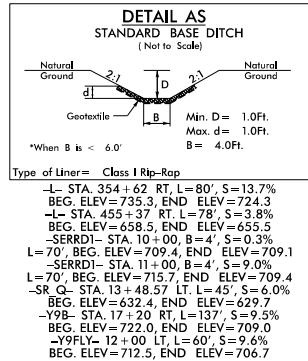
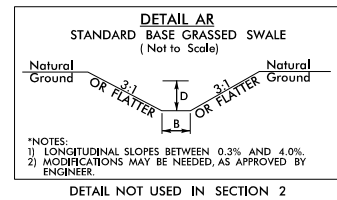
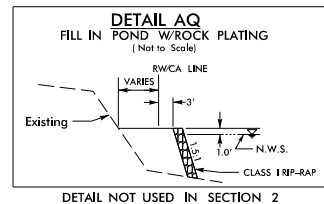
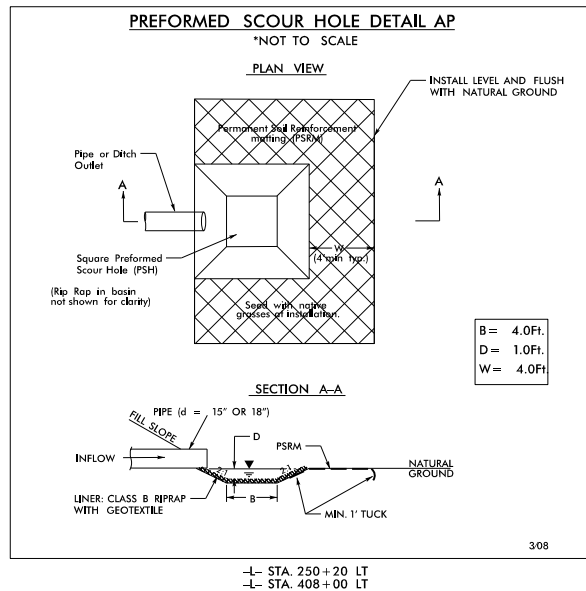
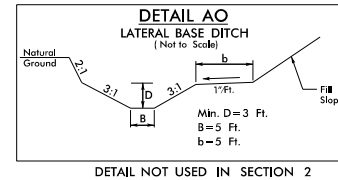
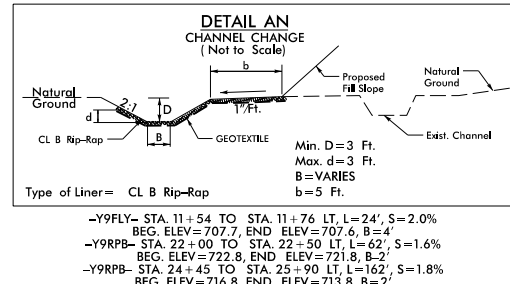
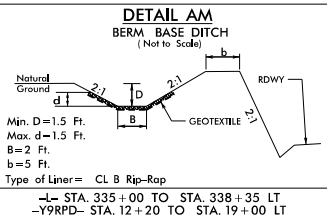
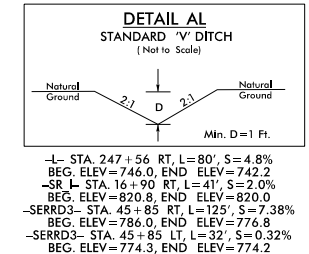
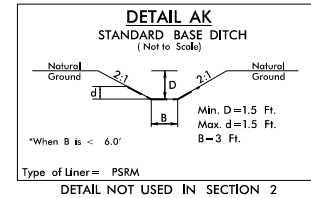
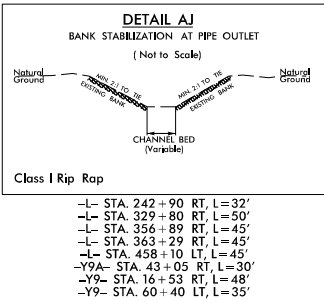
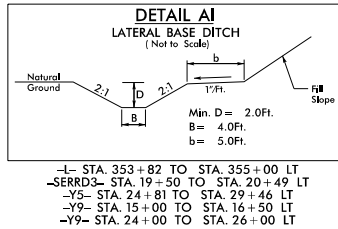


—Y9— STA. 26+00 TO STA. 27+00 LT, Min. D=1.5'





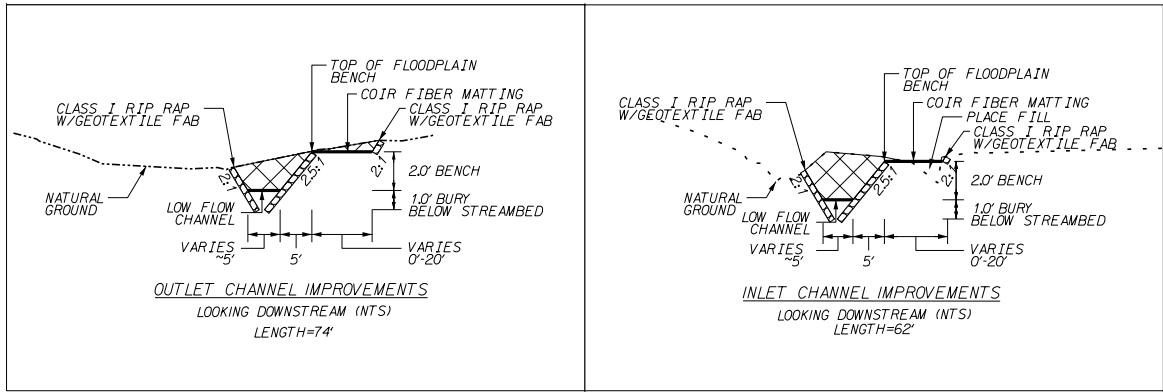
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SHEET 62 OF 257



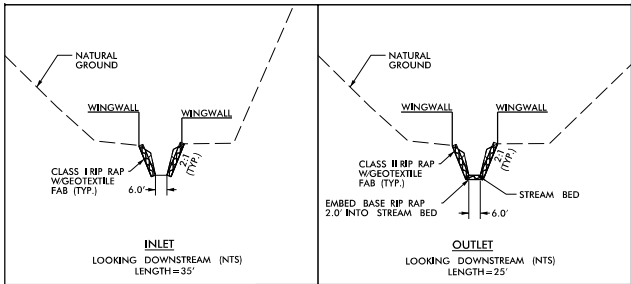
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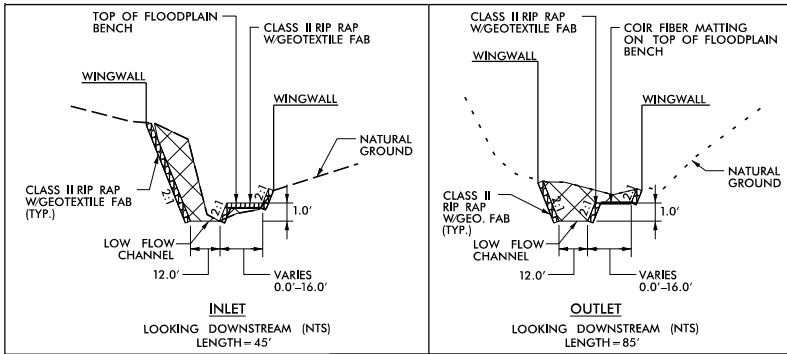
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-Y5- STA 41+00



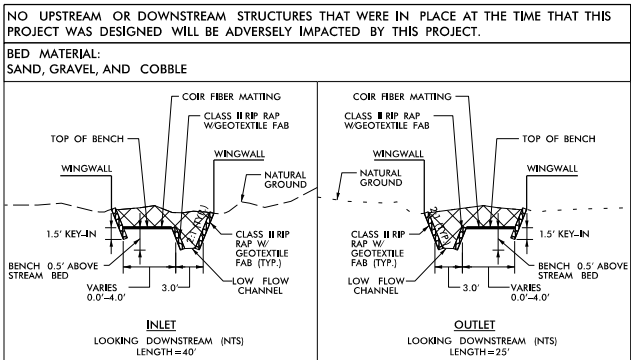
CULVERT INLET/OUTLET DETAILS
-L- STA 364+22

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SHEET 63 OF 257

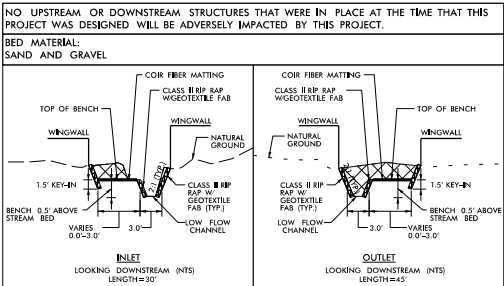
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R-2536	2D-3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 5/16/2017	REVISED 6/14/2016
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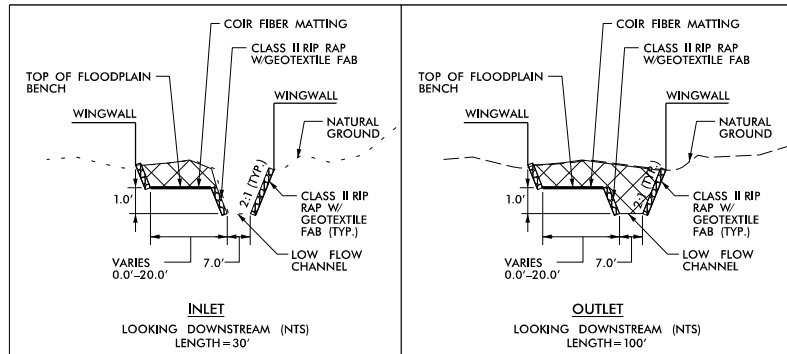
CULVERT INLET/OUTLET DETAILS
-Y9- STA 29+09



CULVERT INLET/OUTLET DETAILS
-Y9- STA 73+26



CULVERT INLET/OUTLET DETAILS
-L- STA 408+00



CULVERT INLET/OUTLET DETAILS
-L- STA 433+26

5/17/2017
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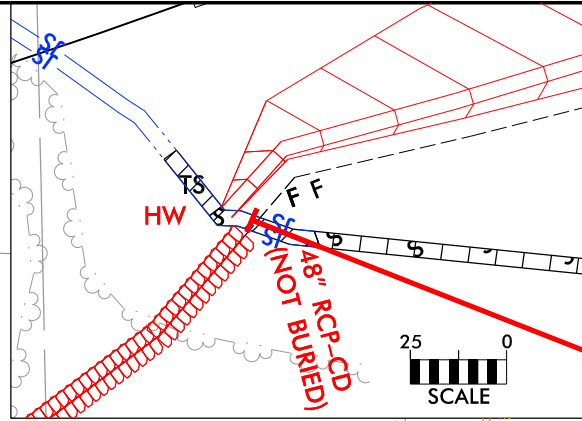
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PERMIT DRAWING
SHEET 87 OF 257

15' FS
5' FS
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

5' FS
5' FS
DENOTES IMPACTS IN
SURFACE WATER



INSET A

MATCHLINE EXISTING
FOOTHILLS DRIVE
SEE SHEET 78

NAD 8395

PROJECT REFERENCE NO. R-2536		SHEET NO. 27
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
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MATCHLINE -L- STA. 341+00 SEE SHEET 26

MATCHLINE SEE SHEET 77

SITE 33

SDD-B

SEE INSET A

MATCHLINE
-L- STA. 354+00 SEE SHEET 28

LATERAL BASE DITCH
SEE DETAIL C

LATERAL BASE DITCH
SEE DETAIL B

PERMANENTLY
BRAIN POND

350+00

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

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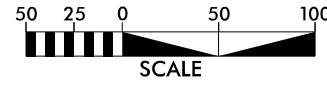
EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W

EXISTING R/W



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PERMIT DRAWING
SHEET 88 OF 257

15' 75' DENOTES TEMPORARY IMPACTS IN SURFACE WATER
5' 5' DENOTES IMPACTS IN SURFACE WATER



PROJECT REFERENCE NO. R-2536		SHEET NO. 27
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
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REVISED 6/14/2016		
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NAD 83 95

MATCHLINE EXISTING
SEE SHEET 78

INSET A

SITE 33

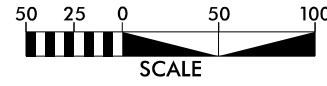
SDD-B

SEE INSET A

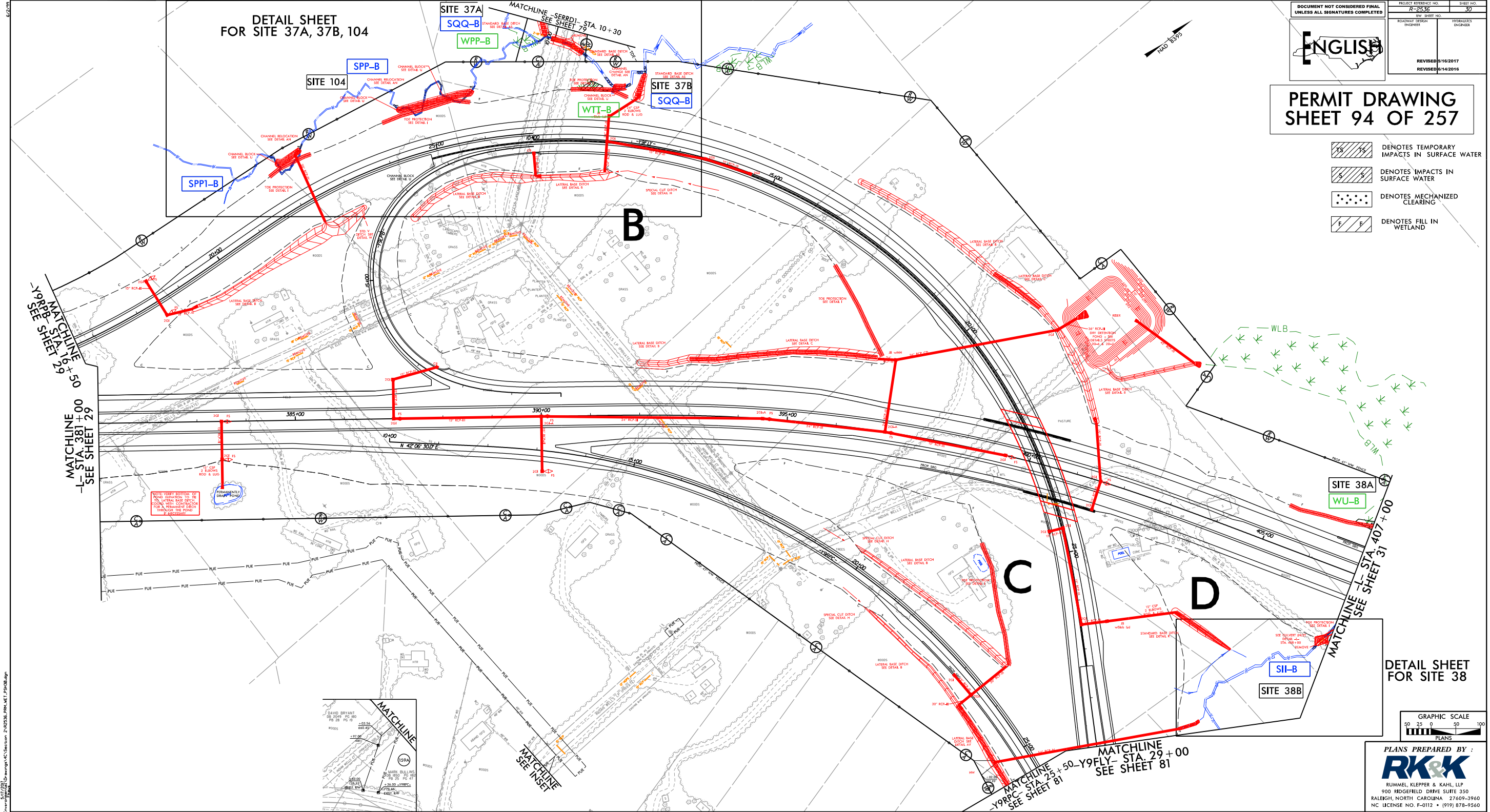
MATCHLINE
1- STA. 354+00 SEE SHEET 28

MATCHLINE -L- STA. 341+00 SEE SHEET 26

MATCHLINE SEE SHEET 77



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DETAIL SHEET
FOR SITE 37A, 37B, 104

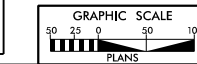
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SHEET NO. **30**
REV. SHEET NO. **7-2536**
ROADWAY DESIGN
INCHES
REVISIONS
REVISED 9/16/2017
REVISED 6/14/2016

PERMIT DRAWING
SHEET 94 OF 257

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

DETAIL SHEET
FOR SITE 38



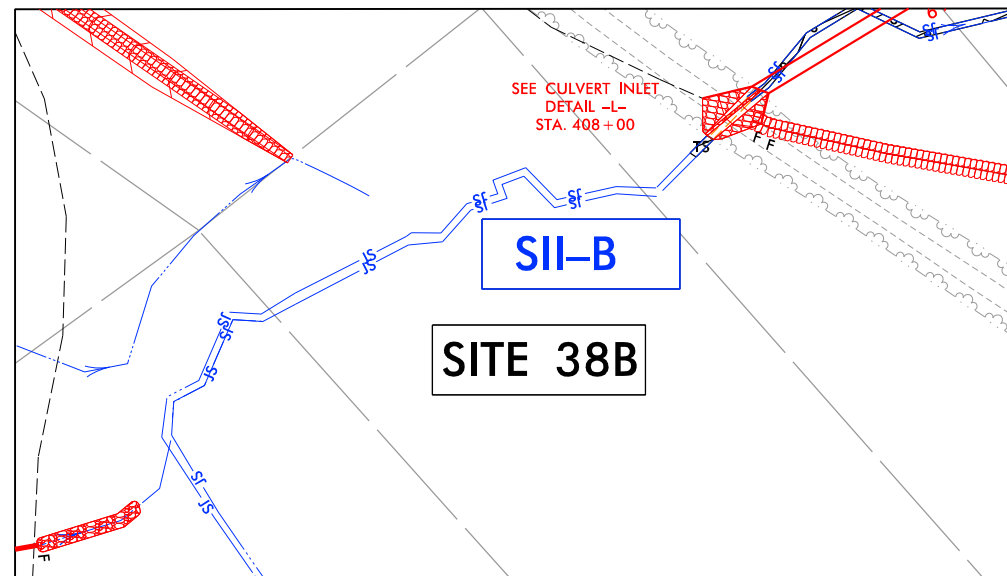
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DETAIL SHEET FOR SITE 38



NAD 83/95



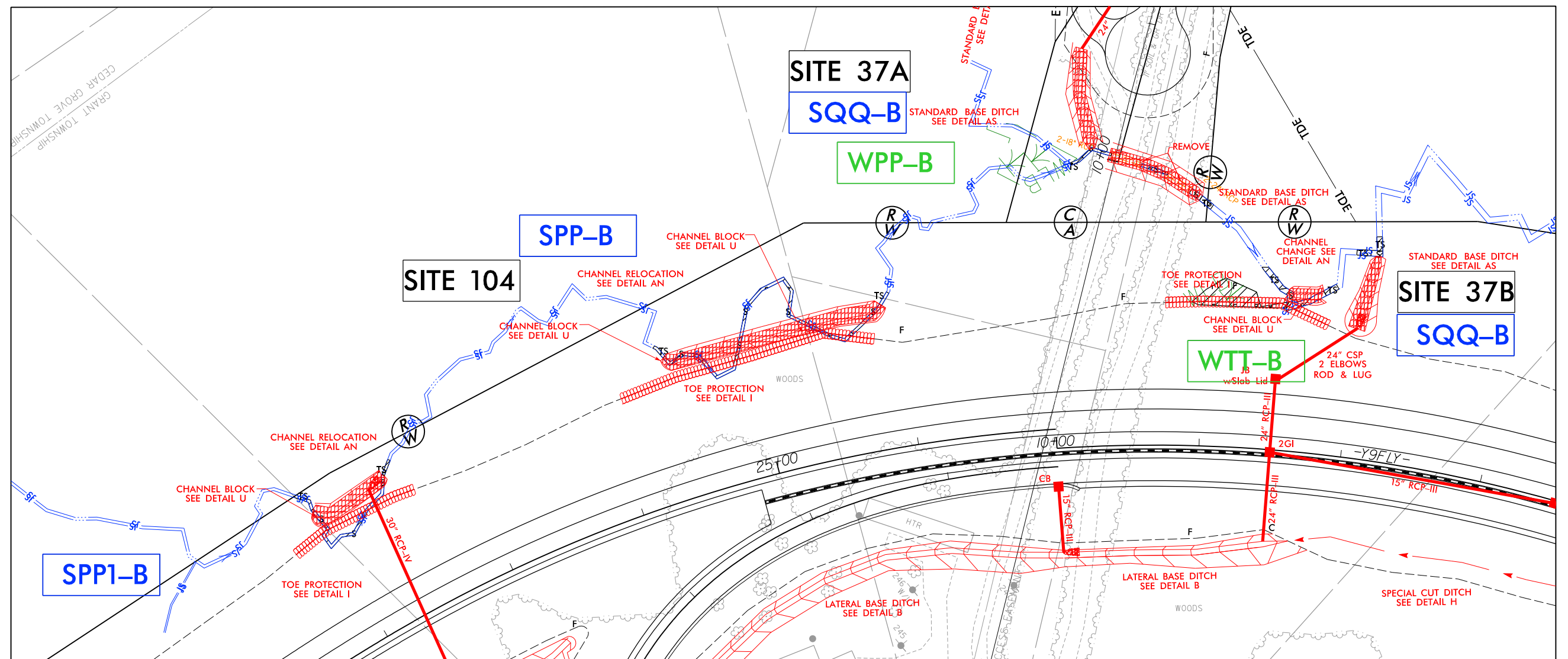
PERMIT DRAWING
SHEET 96 OF 257

PROJECT REFERENCE NO.	SHEET NO.
R-2536	30A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND

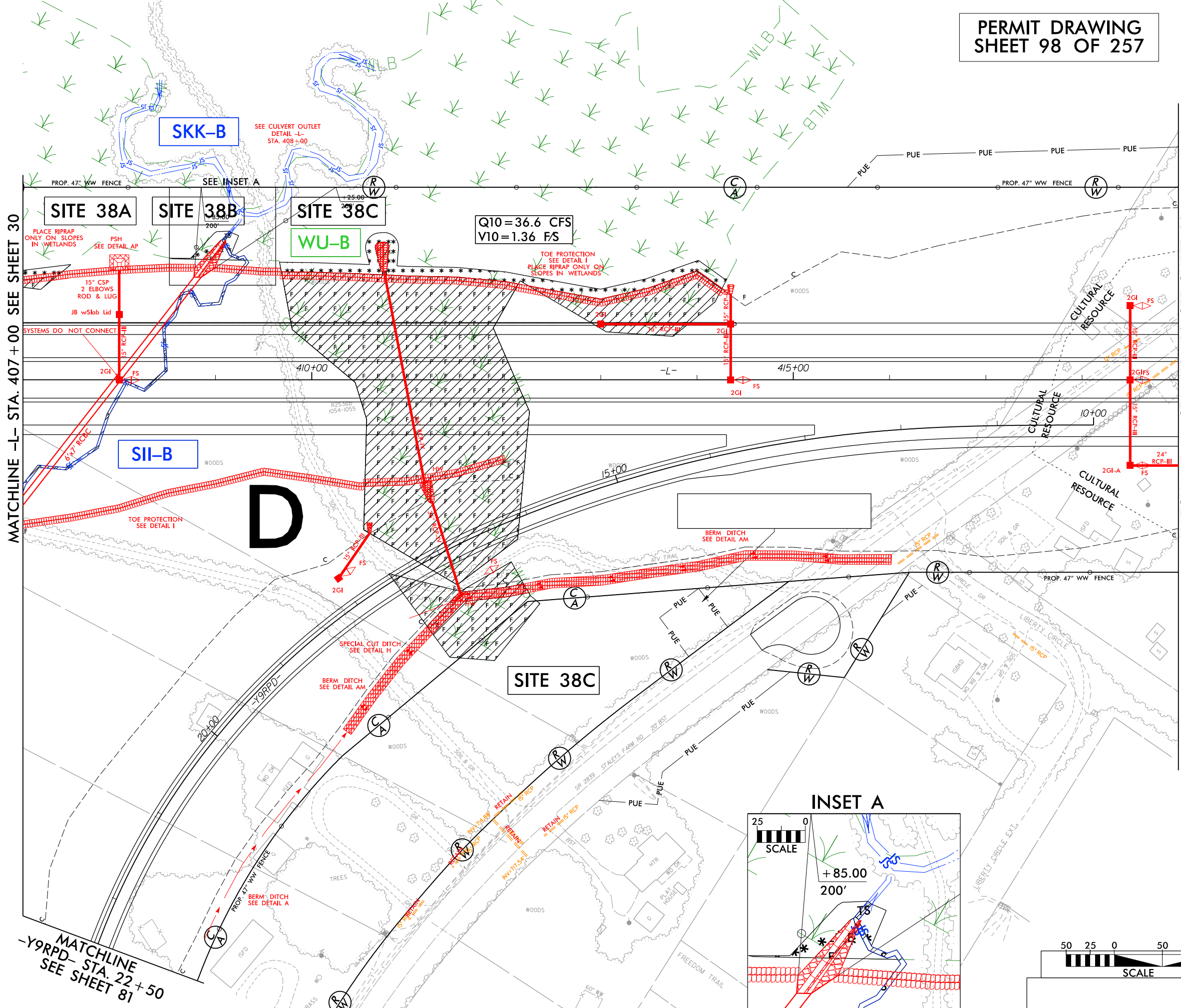


DETAIL SHEET FOR SITE 37A, 37B, 104

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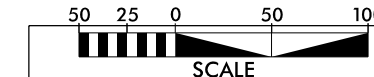
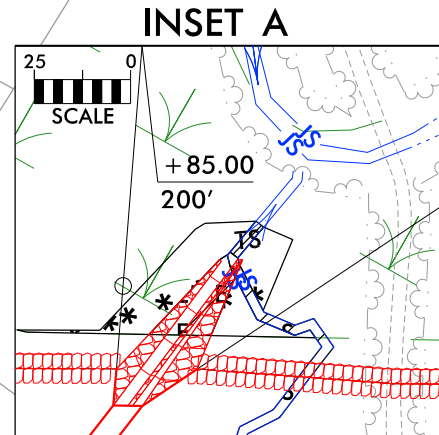
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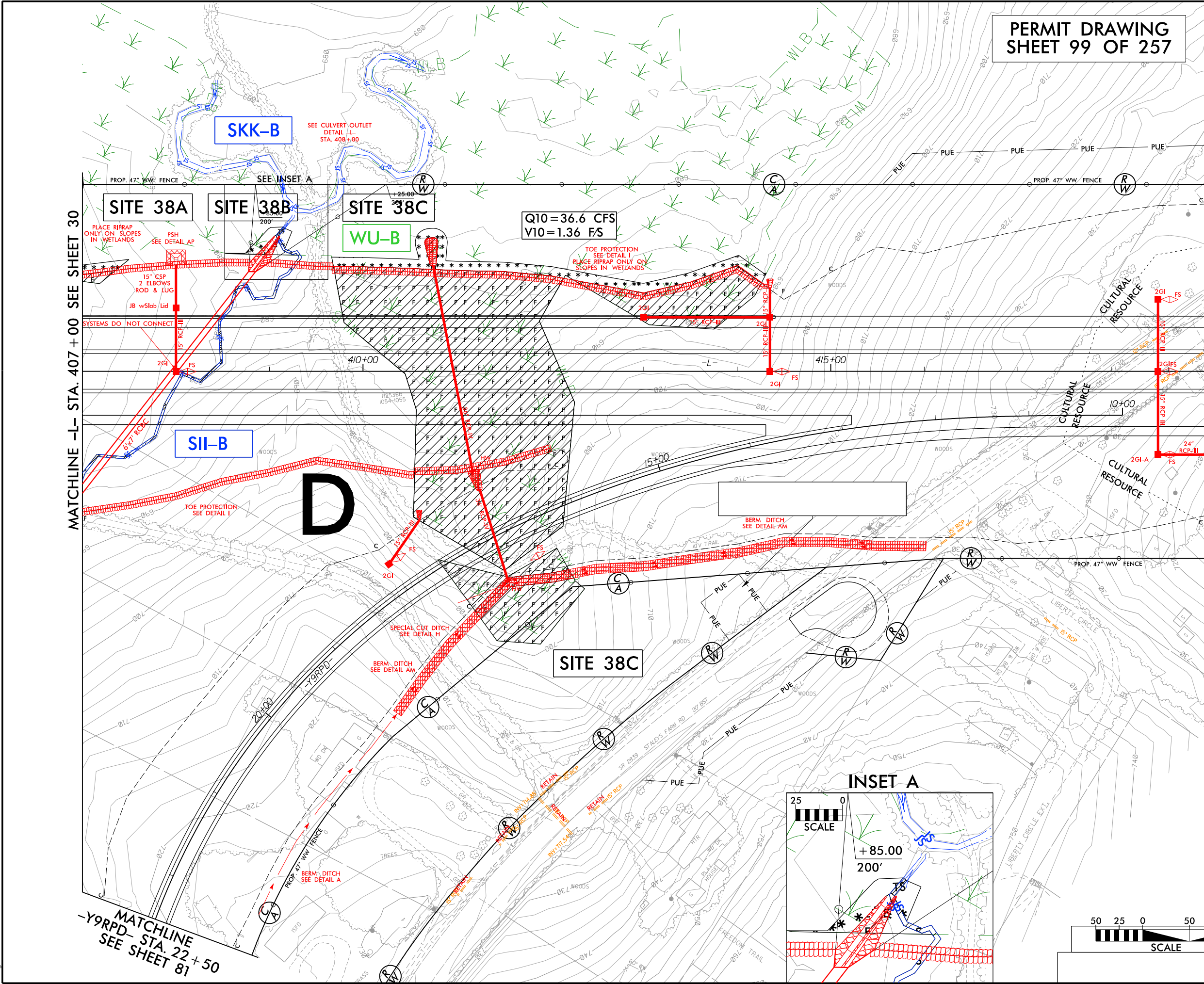
PERMIT DRAWING
SHEET 98 OF 257

PROJECT REFERENCE NO.	SHEET NO.
R-2536	31
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND



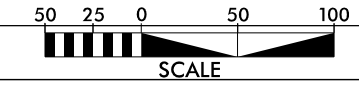
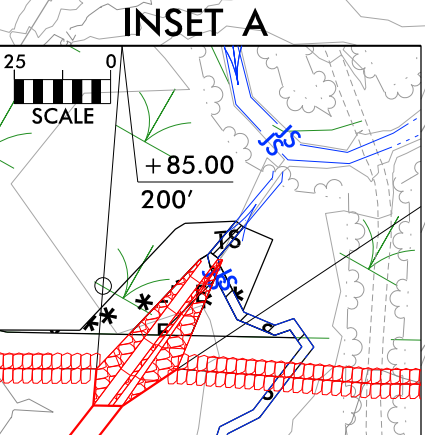
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SHEET 99 OF 257

PROJECT REFERENCE NO. <i>R-2536</i>		SHEET NO. <i>31</i>	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
REVISED		5/16/2017	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

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



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

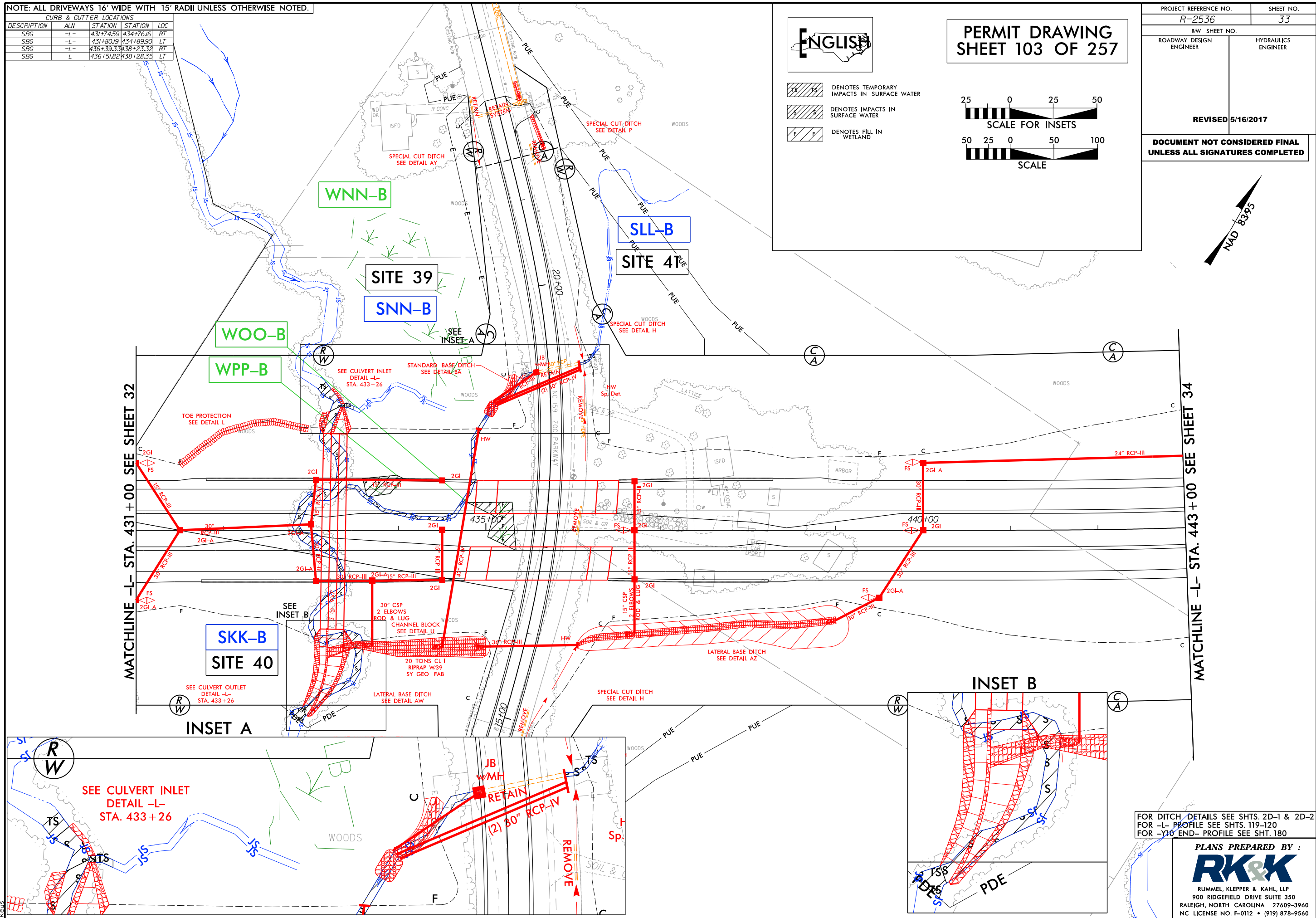
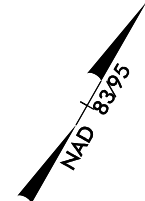
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	431+74.59	434+76.6	RT
SBG	-L-	431+80.9	434+89.90	LT
SBG	-L-	436+39.33	438+23.32	RT
SBG	-L-	436+51.82	438+28.35	LT

OR DITCH DETAILS SEE SHTS. 2D-1 & 2D-2
OR -L- PROFILE SEE SHTS. 119-120
OR -Y/O END- PROFILE SEE SHT. 180

PLANS PREPARED BY :

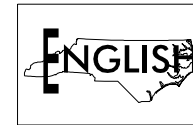
RK&K

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



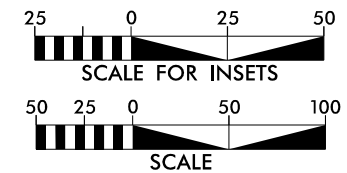
NOTE: ALL DRIVEWAYS 16' WIDE WITH 15' RADII UNLESS OTHERWISE NOTED.

CURB & GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	431+74.59	434+76.16	RT
SBG	-L-	431+80.19	434+89.90	LT
SBG	-L-	436+39.33	438+23.32	RT
SBG	-L-	436+51.82	438+28.35	LT

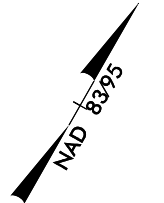


PERMIT DRAWING SHEET 104 OF 257

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



PROJECT REFERENCE NO. <i>R-2536</i>		SHEET NO. <i>33</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
REVISED 5/16/2017			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



MATCHLINE -L- STA. 431+00 SEE SHEET 32

MATCHLINE -L- STA. 443+00 SEE SHEET 34

INSET A

INSET B

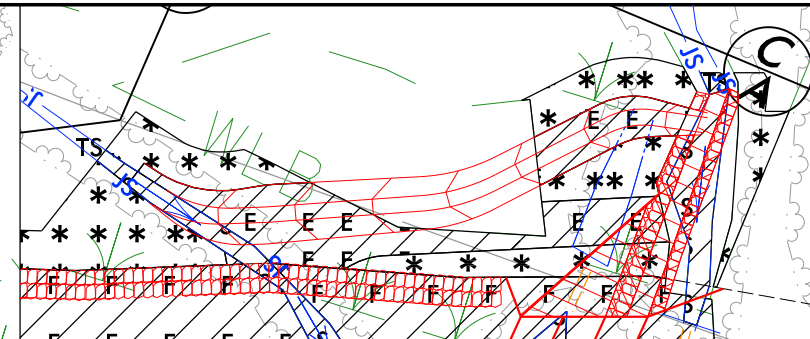
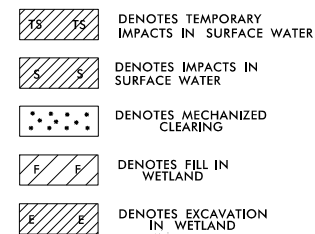
5/17/2017
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keu

FOR DITCH DETAILS SEE SHTS. 2D-1 & 2D-2
FOR -L- PROFILE SEE SHTS. 119-120
FOR -Y10 END- PROFILE SEE SHT. 180

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

WITTER LOCATIONS			
	STATION	STATION	
	40+83.53	44+25.00	

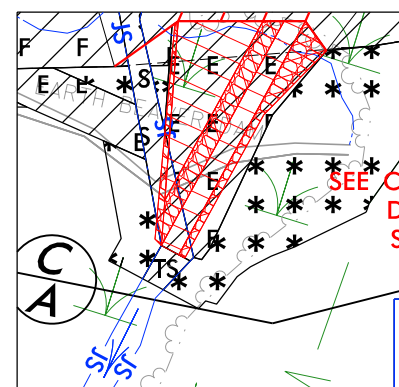
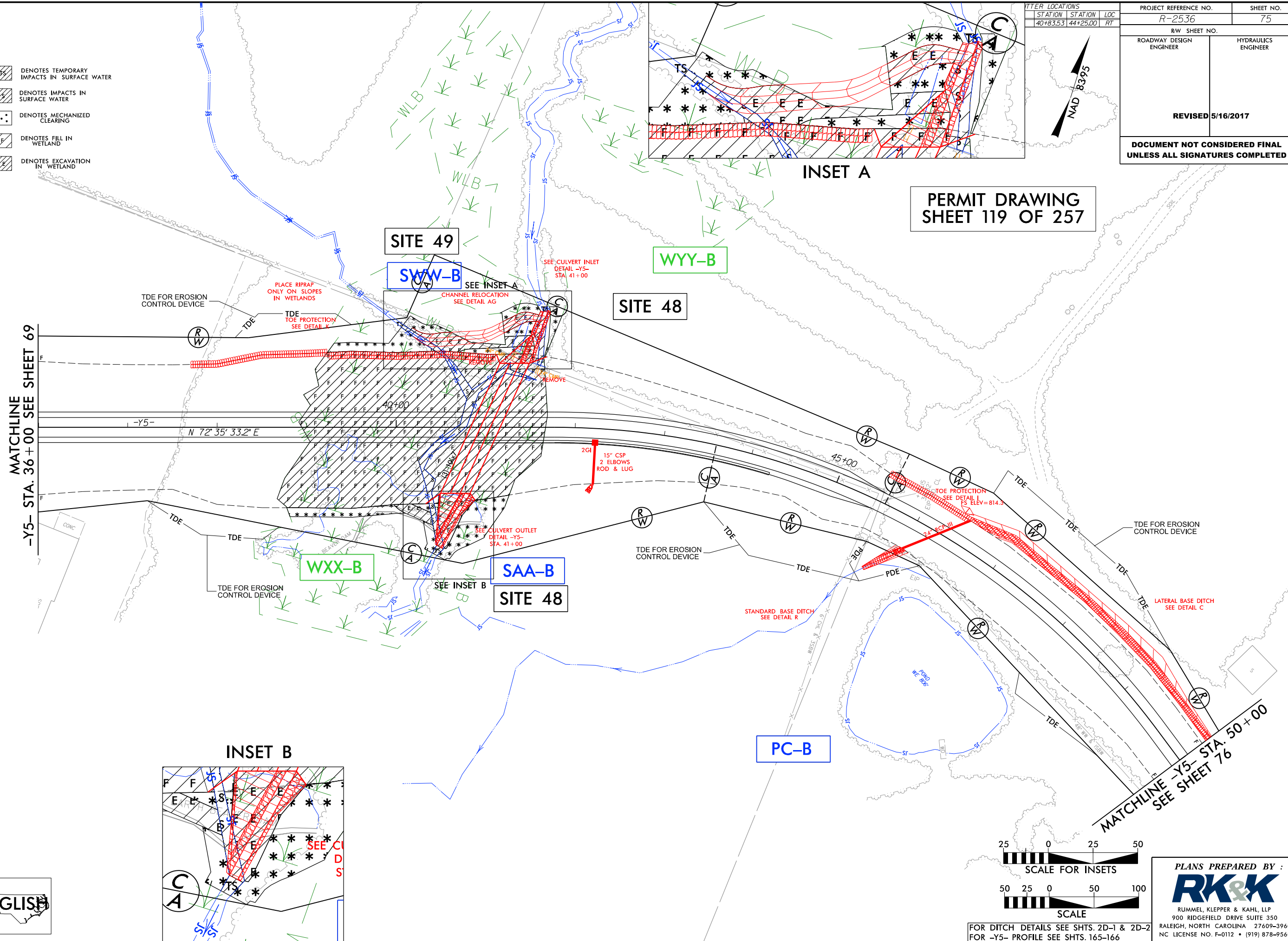
PROJECT REFERENCE NO.		SHEET NO.	
R-2536		75	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
REVISED 5/16/2017			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



INSET A

PERMIT DRAWING
SHEET 119 OF 257

MATCHLINE
-Y5- STA. 36+00 SEE SHEET 69



PC-B

FOR DITCH DETAILS SEE SHTS. 2D-1
FOR -Y5- PROFILE SEE SHTS. 165-166

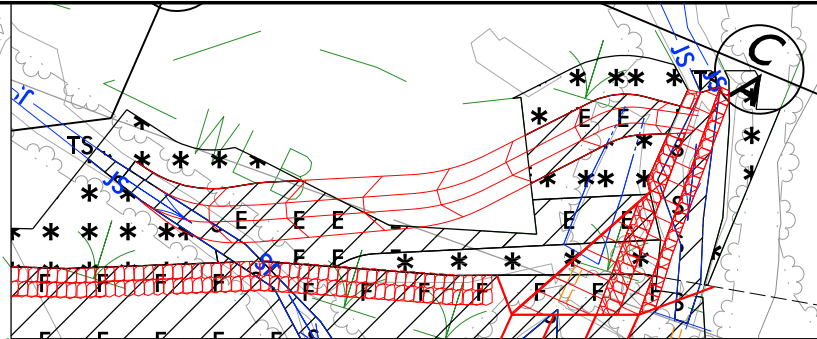
PLANS PREPARED BY :
RK&K
RUMMEL, KLEPPER & KAHL, LLP
900 RIDGEFIELD DRIVE SUITE 350
RALEIGH, NORTH CAROLINA 27609-396
NC LICENSE NO. F-0112 • (919) 878-956

8/17/99

POTTER LOCATIONS		
STATION	STATION	LOC
40+83.53	44+25.00	RT

PROJECT REFERENCE NO. R-2536		SHEET NO. 75
RW SHEET NO.		HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER		
REVISED 5/16/2017		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

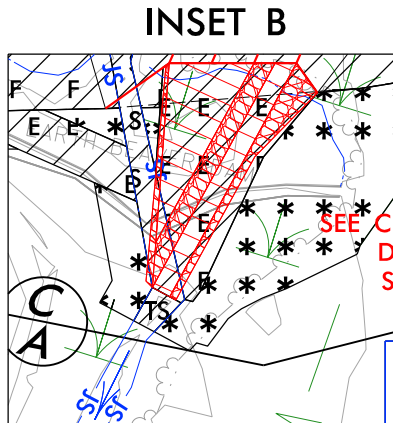
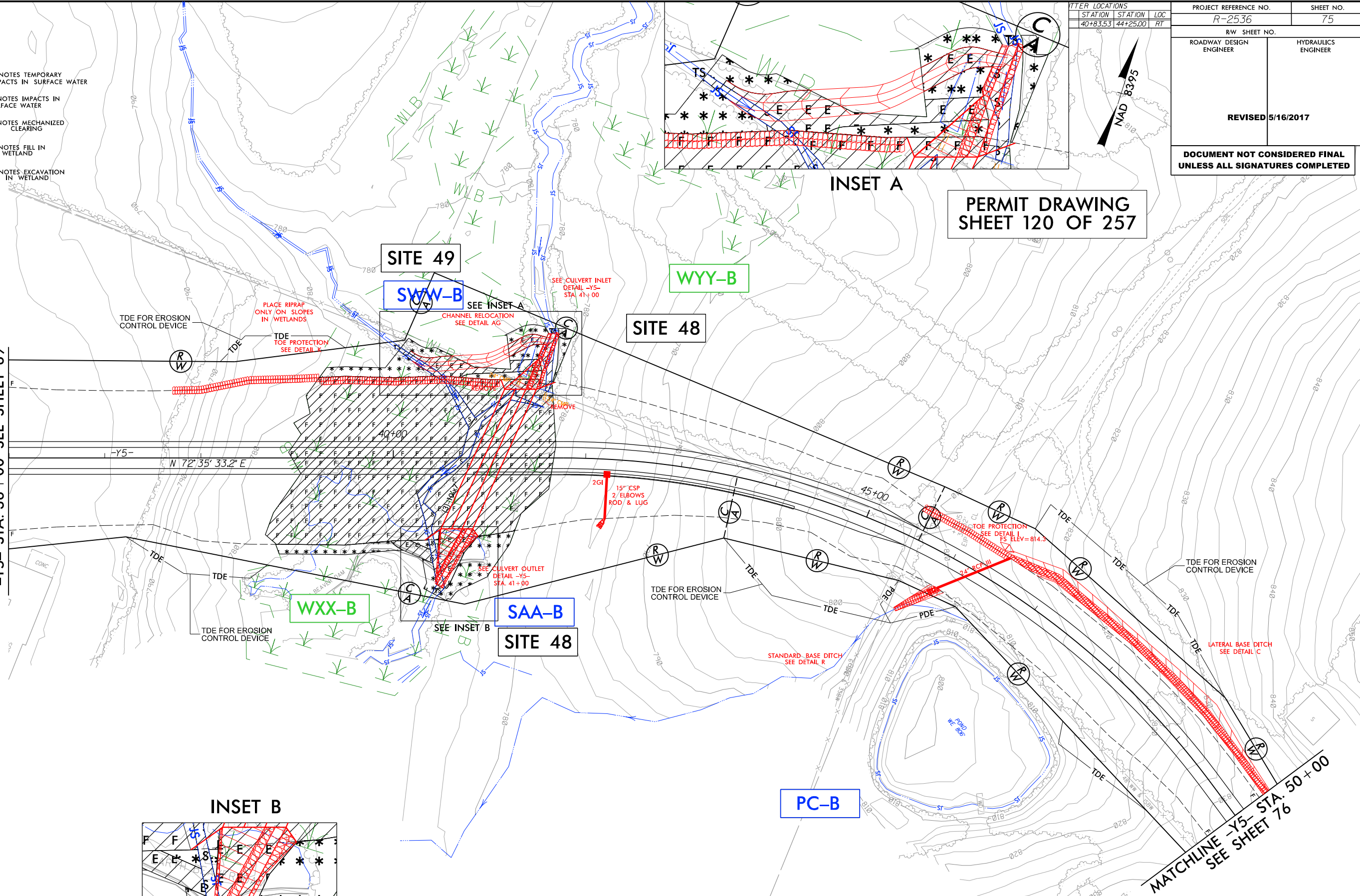
- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- S S DENOTES IMPACTS IN SURFACE WATER
- ... DENOTES MECHANIZED CLEARING
- F F DENOTES FILL IN WETLAND
- E E DENOTES EXCAVATION IN WETLAND



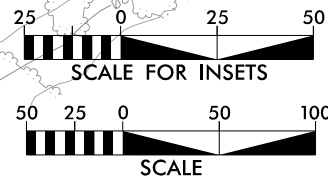
INSET A

PERMIT DRAWING
SHEET 120 OF 257

MATCHLINE
-Y5- STA. 36+00 SEE SHEET 69



INSET B



FOR DITCH DETAILS SEE SHTS. 2D-1 & 2D-2
FOR -Y5- PROFILE SEE SHTS. 165-166

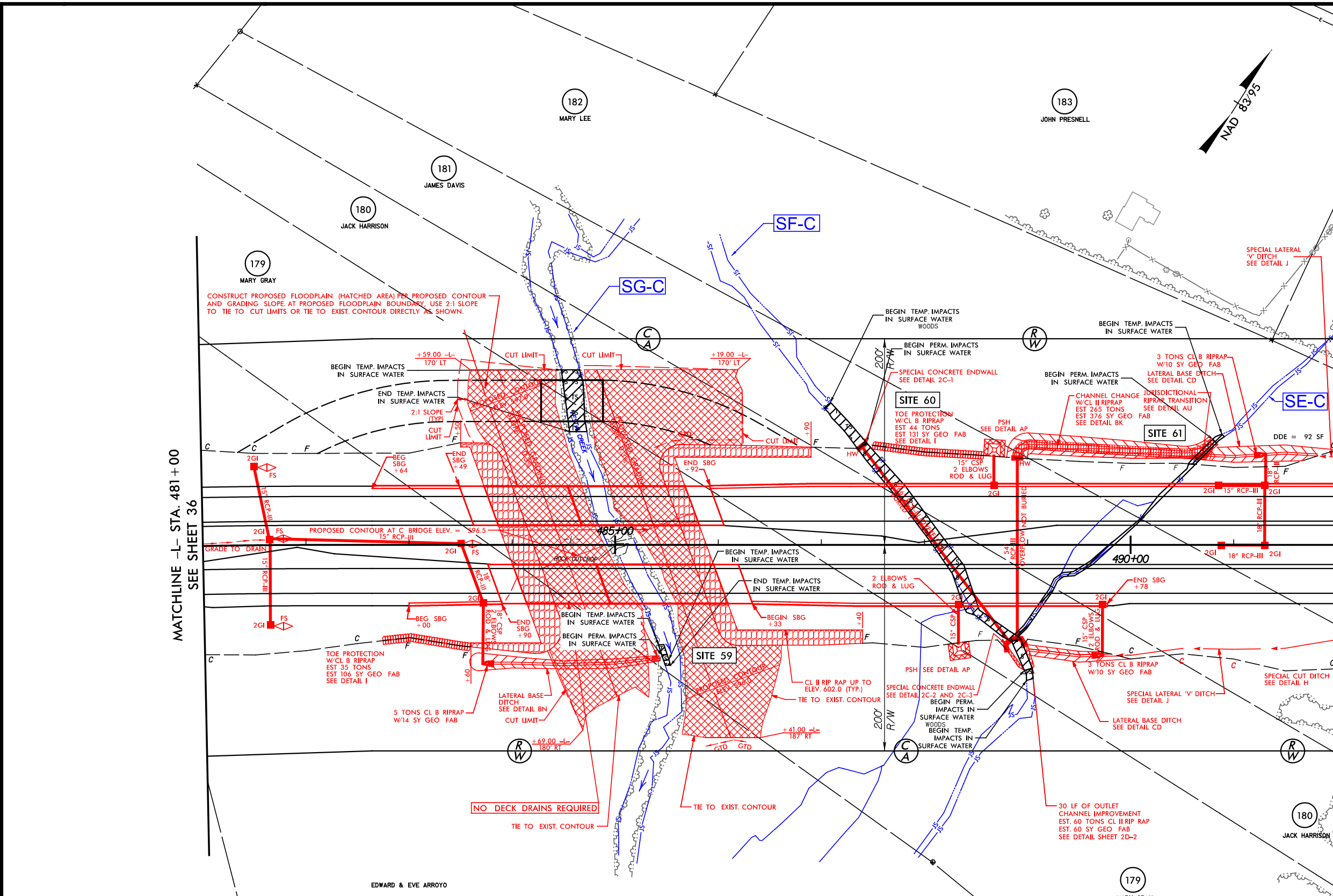
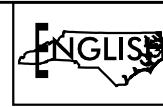


PLANS PREPARED BY :

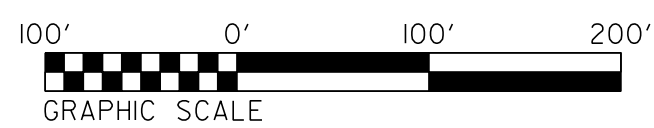
RK&K

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

5/17/2017
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R. K. Kahl



SITE 59, 60 AND 61
PLAN VIEW



CURB & GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	482+64	483+49	LT
SBG	-L-	483+00	483+90	RT
SBG	-L-	485+92	492+50	LT
SBG	-L-	486+33	489+78	RT

LEGEND

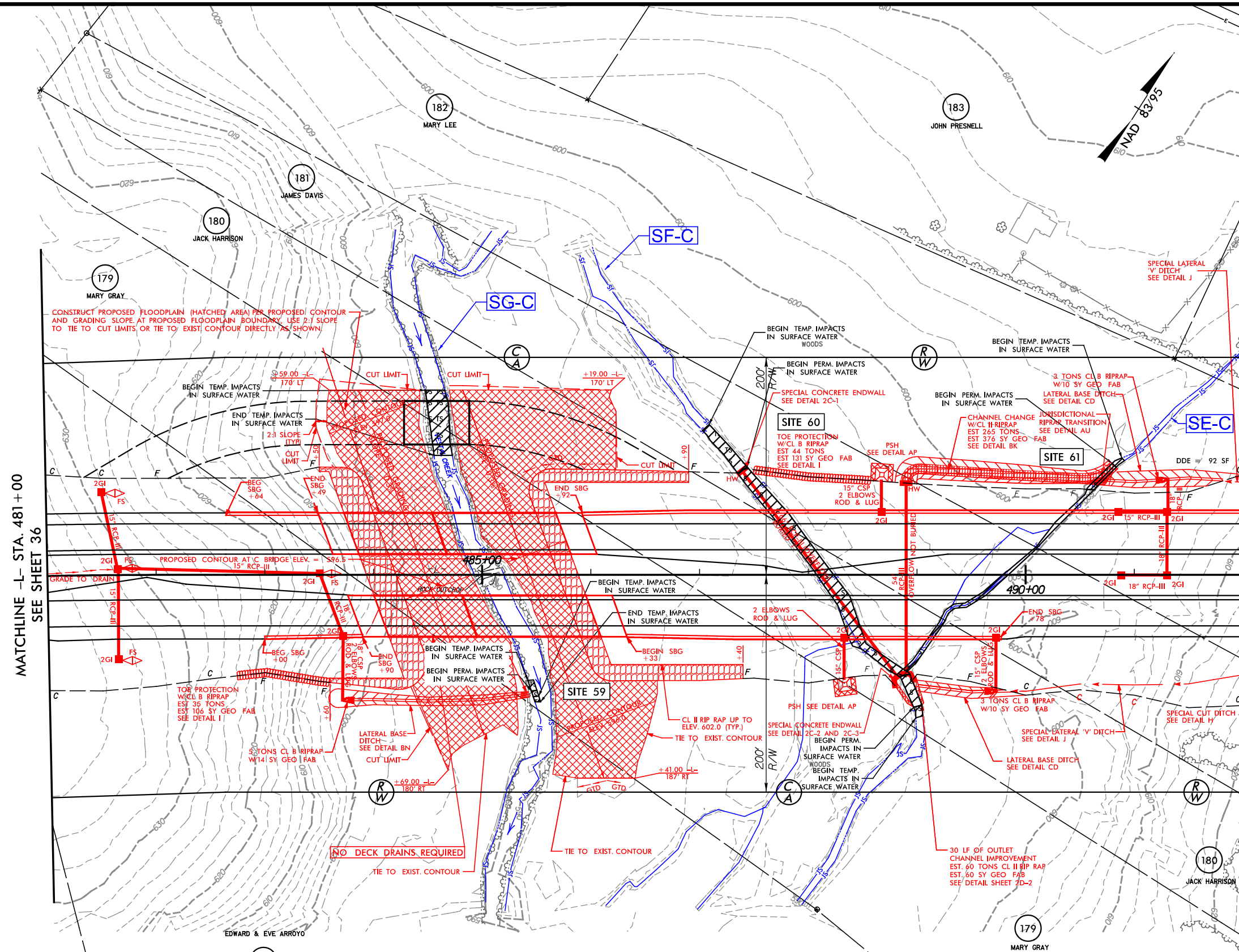
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES PERMANENT IMPACTS IN SURFACE WATER

ICA Engineering

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Suite 100
Raleigh, NC 27607
NC License No: F-0258

5/16/2017
ICA ENGINEERING, INC.
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SITE 59, 60 AND 61
PLAN VIEW

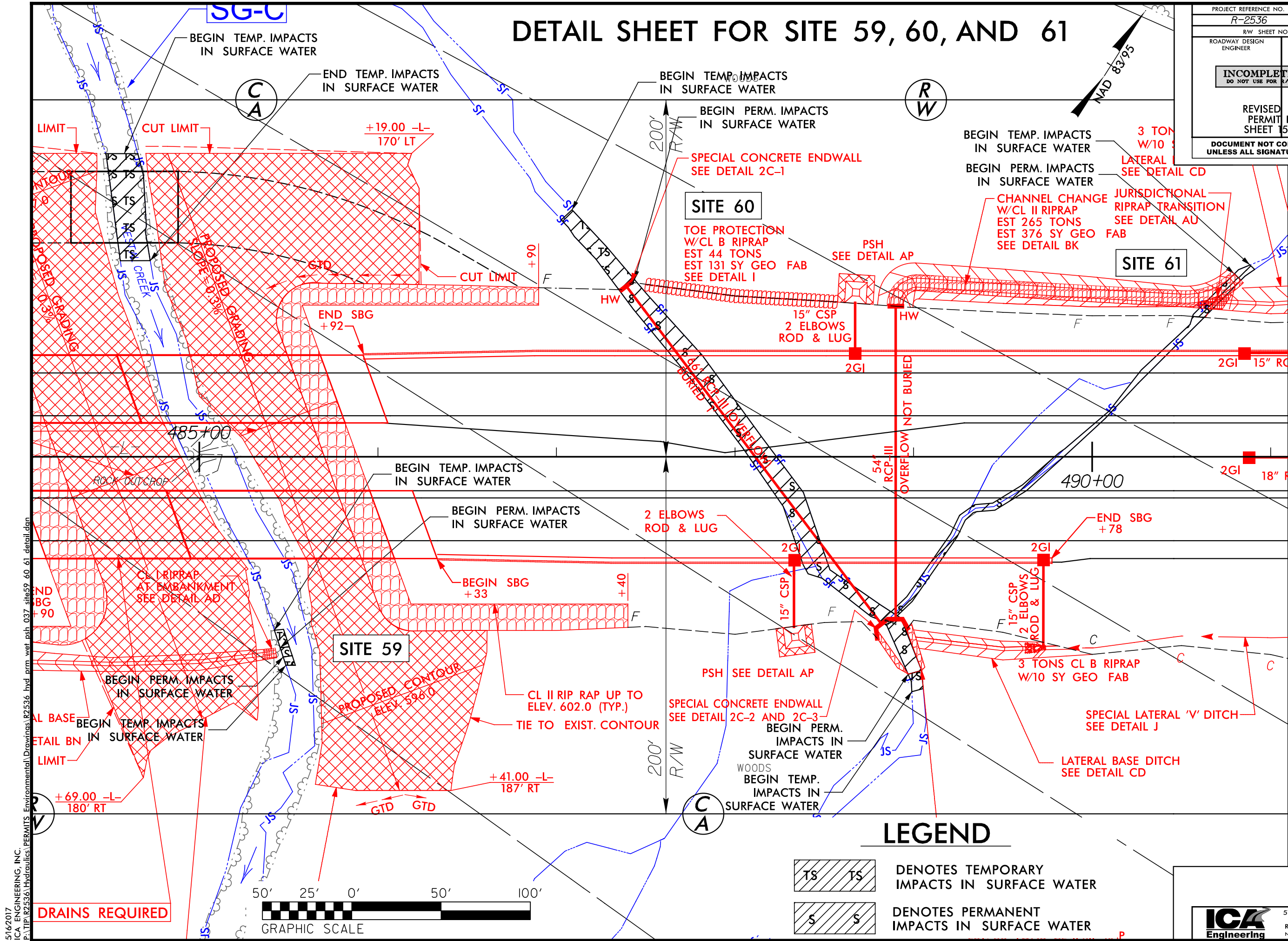


CURB & GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	482+64	483+49	LT
SBG	-L-	483+00	483+90	RT
SBG	-L-	485+92	492+50	LT
SBG	-L-	486+33	489+78	RT

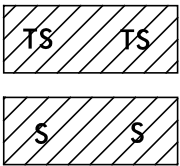
- LEGEND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - DENOTES PERMANENT IMPACTS IN SURFACE WATER

DETAIL SHEET FOR SITE 59, 60, AND 61

PROJECT REFERENCE NO.	SHEET NO.
R-2536	37A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/CQUISITION	
REVISED PERMIT DRAWING SHEET 152 OF 257	5/16/2017
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



LEGEND



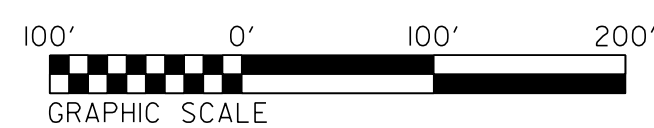
DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES PERMANENT
IMPACTS IN SURFACE WATER



5121 Kingdom Way,
Suite 100
Raleigh, NC 27607
NC License No: F-0258

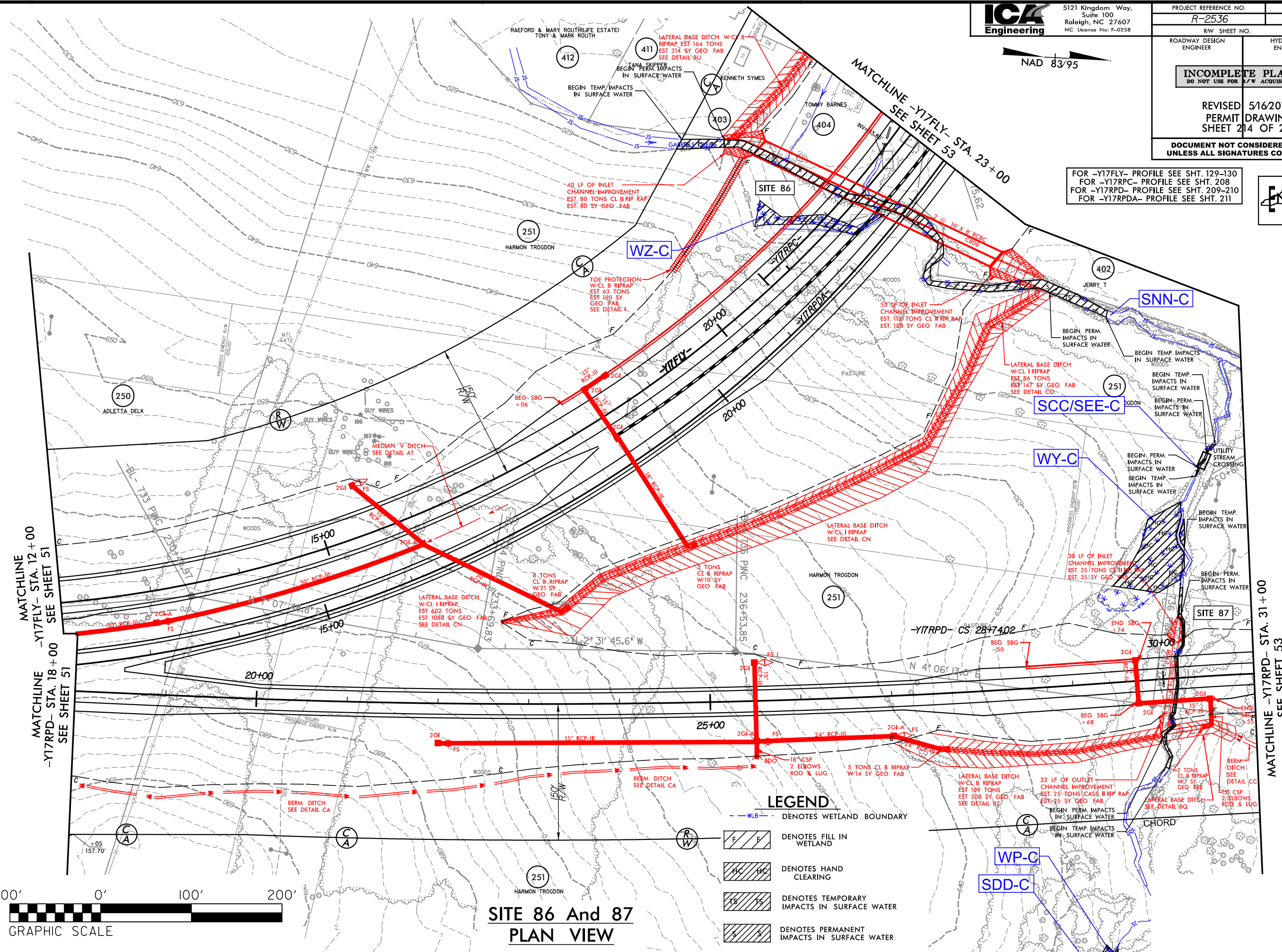
5/16/2017
ICA ENGINEERING, INC.
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SITE 86 And 87
PLAN VIEW

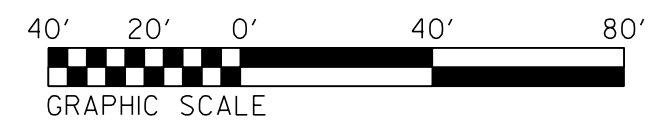
5/16/2017
CA ENGINEERING, INC.
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NAD 83/95



**SITE 86 And 87
PLAN VIEW**

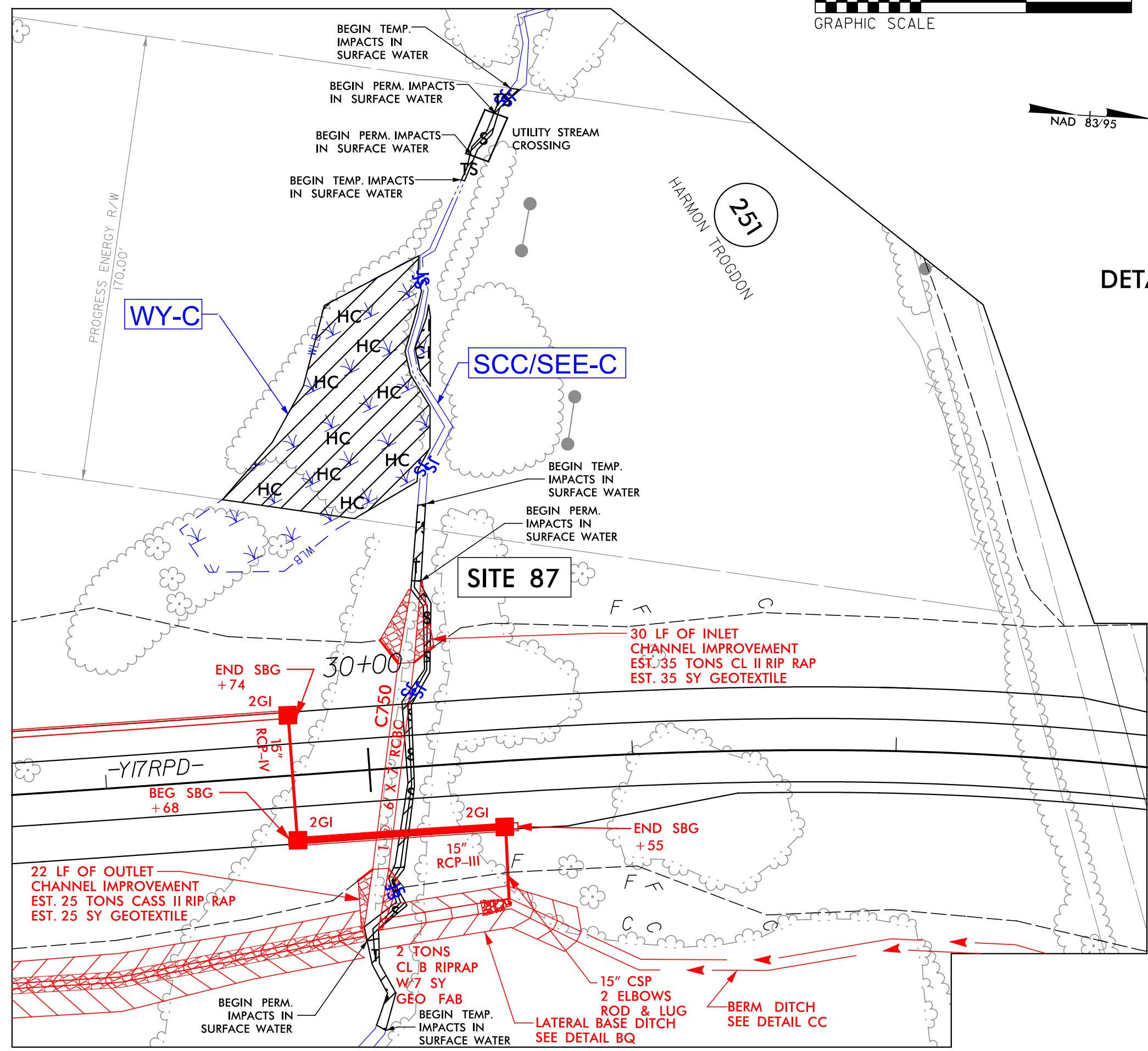
PROJECT REFERENCE NO.	SHEET NO.
R-2536	52B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
REVISED	5/16/2017
PERMIT DRAWING	
SHEET 216	OF 257
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



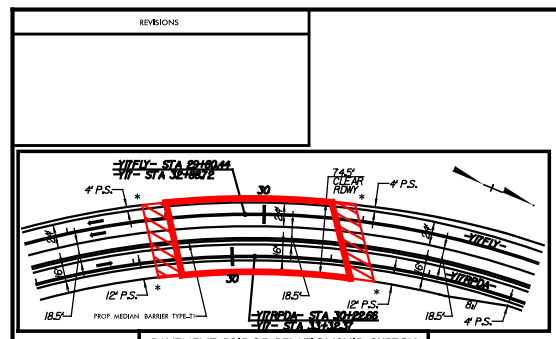
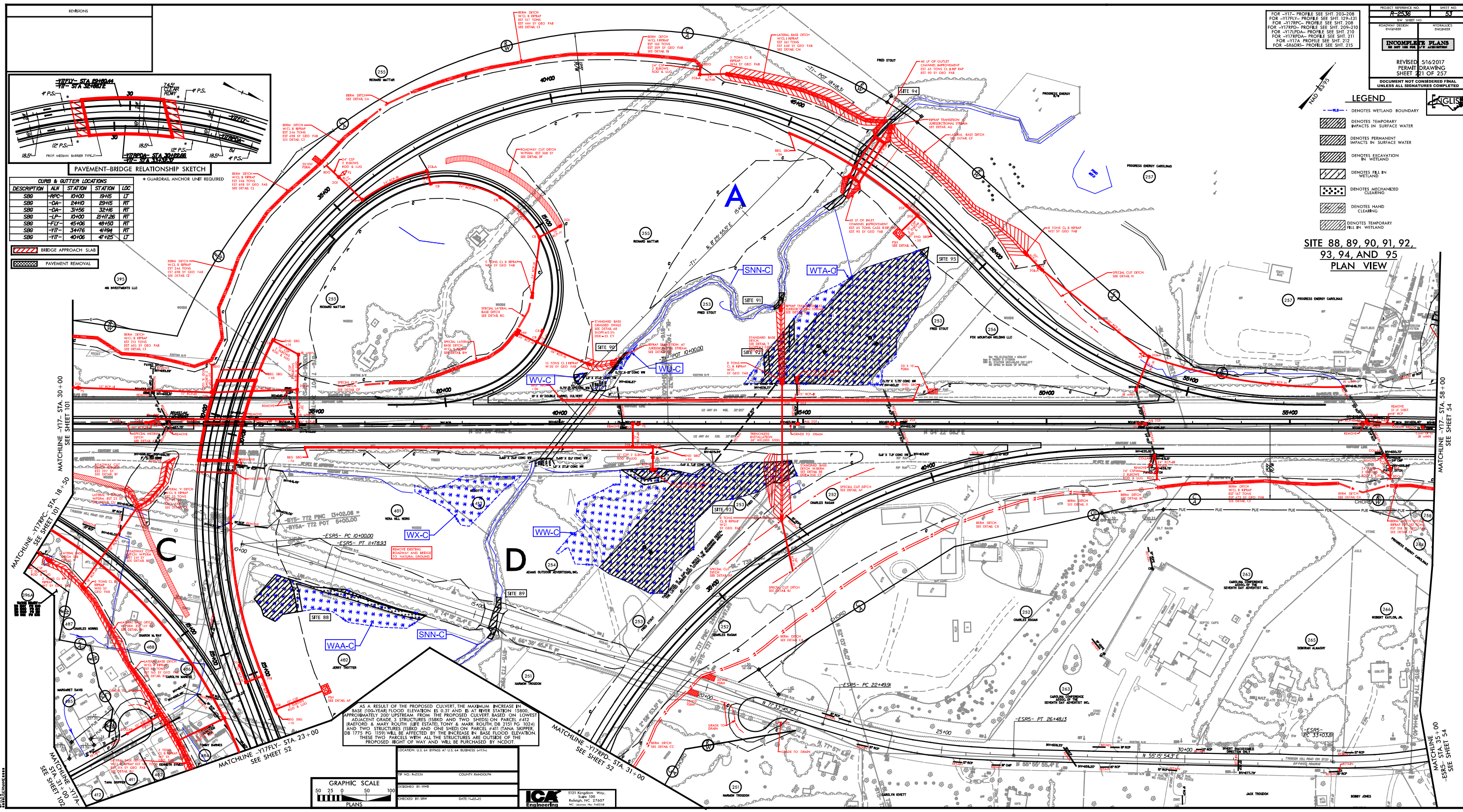
DETAIL SHEET FOR SITE 87

LEGEND

- WLB --- DENOTES WETLAND BOUNDARY
- TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- S S DENOTES PERMANENT IMPACTS IN SURFACE WATER
- HC HC DENOTES HAND CLEARING



5/16/2017 ICA ENGINEERING, INC. P:\TIP\2536\Hydraulics\PERMITS\Drawings\Drawings part b\2536 hvd prm psh 052 site 87 detail.dgn



CURB & GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LDC
SBR	DA	2440	2945	RT
SBR	DA	3456	3246	RT
SBR	FLY	4040	2447.26	RT
SBR	FLY	45106	45150	RT
SBR	FLY	34476	41494	RT
SBR	FLY	40406	41425	LT

BRIDGE APPROACH SLAB

PAVEMENT REMOVAL

PROJECT REFERENCE NO. 17-2536

SHEET NO. 53

FOR -Y17- PROFILE SEE SHT. 203-208
FOR -Y17FLY- PROFILE SEE SHT. 178-181
FOR -Y17PC- PROFILE SEE SHT. 208
FOR -Y17PD- PROFILE SEE SHT. 209-210
FOR -Y17PDA- PROFILE SEE SHT. 210
FOR -Y17A- PROFILE SEE SHT. 212
FOR -Y17A- PROFILE SEE SHT. 212
FOR -Y17A- PROFILE SEE SHT. 215

REVISOR 5/16/2017
SHEET 21 OF 257

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

REVISOR 5/16/2017
SHEET 21 OF 257

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

REVISOR 5/16/2017
SHEET 21 OF 257

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

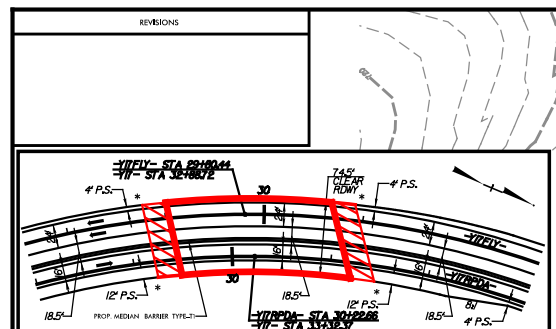
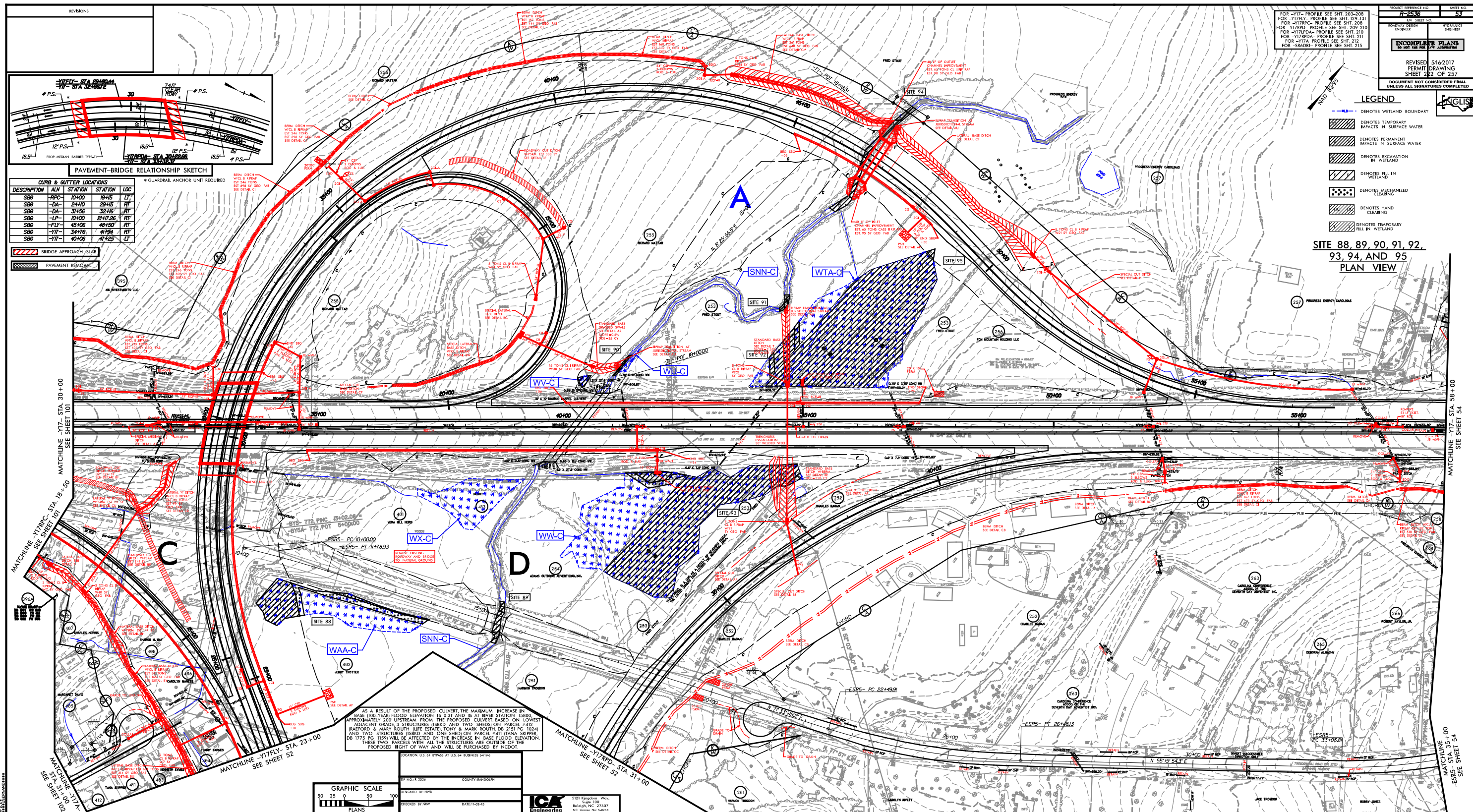
- LEGEND**
- DENOTES WETLAND BOUNDARY
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - DENOTES PERMANENT IMPACTS IN SURFACE WATER
 - DENOTES EXCAVATION IN WETLAND
 - DENOTES FILL IN WETLAND
 - DENOTES MECHANIZED CLEARING
 - DENOTES HAND CLEARING
 - DENOTES TEMPORARY FILL IN WETLAND

**SITE 88, 89, 90, 91, 92, 93, 94, AND 95
PLAN VIEW**

GRAPHIC SCALE
0 25 50 100
PLANS

TP NO. E-2536 COUNTY RANDOLPH
DESIGNED BY PWS
CHECKED BY SPW
DATE 11/20/2015

ICA Engineering
5121 Kingdom Way
Suite 100
Raleigh, NC 27607
NC License No. P-00238



CURB & GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBR	RPC	10+00	19+15	LT
SBR	DA	24+00	29+15	RT
SBR	DA	34+56	32+16	RT
SBR	LA	40+00	24+26	RT
SBR	FLY	45+00	45+50	RT
SBR	Y17	34+76	41+94	RT
SBR	Y17	40+00	41+25	LT

BRIDGE APPROACH SLAB
PAVEMENT REMOVAL

PROJECT REFERENCE NO. **A-2536** SHEET NO. **53**

FOR -Y17- PROFILE SEE SHT. 203-208
FOR -Y17PC- PROFILE SEE SHT. 173-174
FOR -Y17PD- PROFILE SEE SHT. 209-210
FOR -Y17PDA- PROFILE SEE SHT. 210
FOR -Y17A- PROFILE SEE SHT. 212
FOR -SBRDRI- PROFILE SEE SHT. 215

REVISOR: 5/16/2017
SHEET 22 OF 257

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

INCOMPLETE PLANS
BY TOP LINE FOR 1/2" ALTERNATIVE

HYDRAULICS
ENGINEER

REVISED: 5/16/2017
SHEET 22 OF 257

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

- LEGEND**
- DENOTES WETLAND BOUNDARY
 - ▨ DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - ▨ DENOTES PERMANENT IMPACTS IN SURFACE WATER
 - ▨ DENOTES EXCAVATION IN WETLAND
 - ▨ DENOTES FILL IN WETLAND
 - ▨ DENOTES MECHANIZED CLEARING
 - ▨ DENOTES HAND CLEARING
 - ▨ DENOTES TEMPORARY FILL IN WETLAND

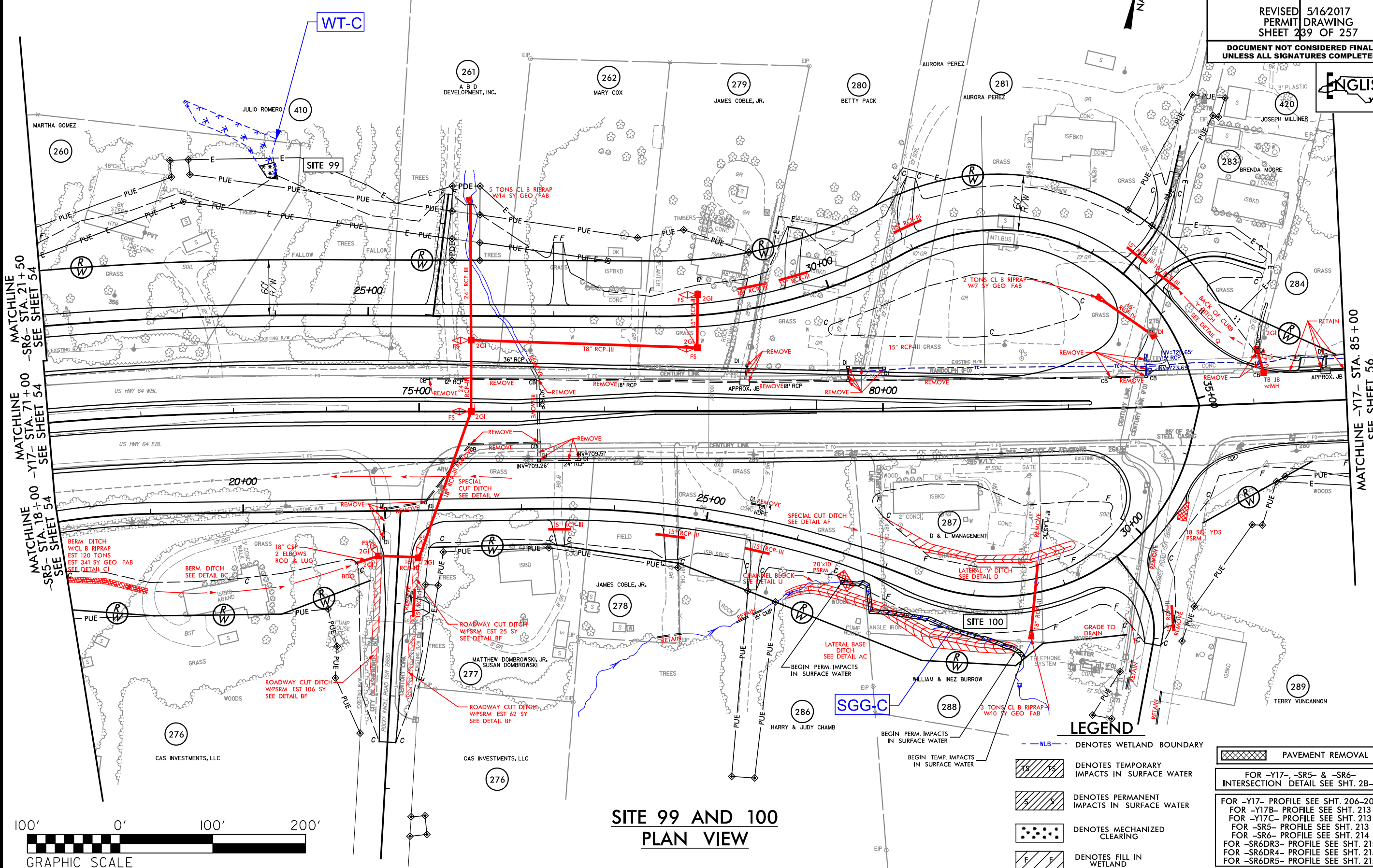
**SITE 88, 89, 90, 91, 92, 93, 94, AND 95
PLAN VIEW**

AS A RESULT OF THE PROPOSED CULVERT, THE MAXIMUM INCREASE IN BASE (100-YEAR FLOOD ELEVATION) IS 0.31' AND 0.47' AT RIVER STATION 15+00 AND 20+00 UPSTREAM FROM THE PROPOSED CULVERT BASED ON LOWEST ADJACENT GRADE 3 STRUCTURES (ISRD) AND TWO SHEDS ON PARCEL #415 (RATFORD & MARY ROUTH (LIFE ESTATE) TONY & MARK ROUTH DB 2151 PG 1024) AND TWO STRUCTURES (ISRD) AND ONE SHED ON PARCEL #411 (TANA SHIPPER DB 1775 PG 1159) WILL BE AFFECTED BY THE INCREASE IN BASE FLOOD ELEVATION. THESE TWO PARCELS WITH ALL THE STRUCTURES ARE OUTSIDE OF THE PROPOSED RIGHT OF WAY AND WILL BE PURCHASED BY NCDOT.

GRAPHIC SCALE
0 25 50 100
PLANS

TP NO. E-2536 COUNTY RANDOLPH
DESIGNED BY: PWS
CHECKED BY: SPW DATE 11/25/2015

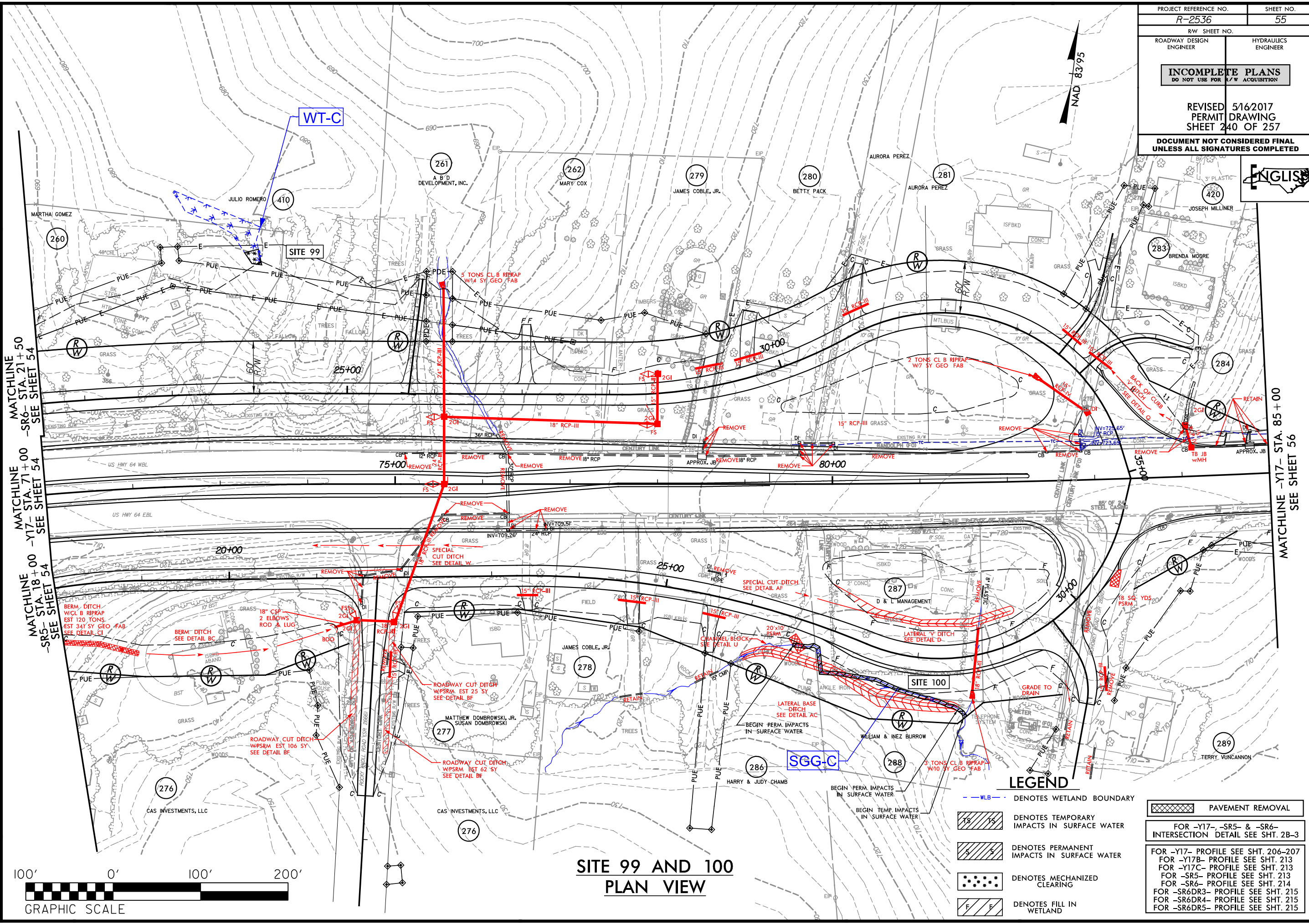
ICA Engineering
5121 Kingdom Way
Suite 100
Raleigh, NC 27607
NC License No. P-60238



**SITE 99 AND 100
PLAN VIEW**

LEGEND

- WLB — DENOTES WETLAND BOUNDARY
- [Hatched Box] DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- [Hatched Box] DENOTES PERMANENT IMPACTS IN SURFACE WATER
- [Dotted Box] DENOTES MECHANIZED CLEARING
- [Hatched Box] DENOTES FILL IN WETLAND
- [Hatched Box] PAVEMENT REMOVAL
- FOR -Y17-, -SR5- & -SR6- INTERSECTION DETAIL SEE SHT. 2B-3
- FOR -Y17- PROFILE SEE SHT. 206-207
- FOR -Y17B- PROFILE SEE SHT. 213
- FOR -Y17C- PROFILE SEE SHT. 213
- FOR -SR5- PROFILE SEE SHT. 213
- FOR -SR6- PROFILE SEE SHT. 214
- FOR -SR6DR3- PROFILE SEE SHT. 215
- FOR -SR6DR4- PROFILE SEE SHT. 215
- FOR -SR6DR5- PROFILE SEE SHT. 215

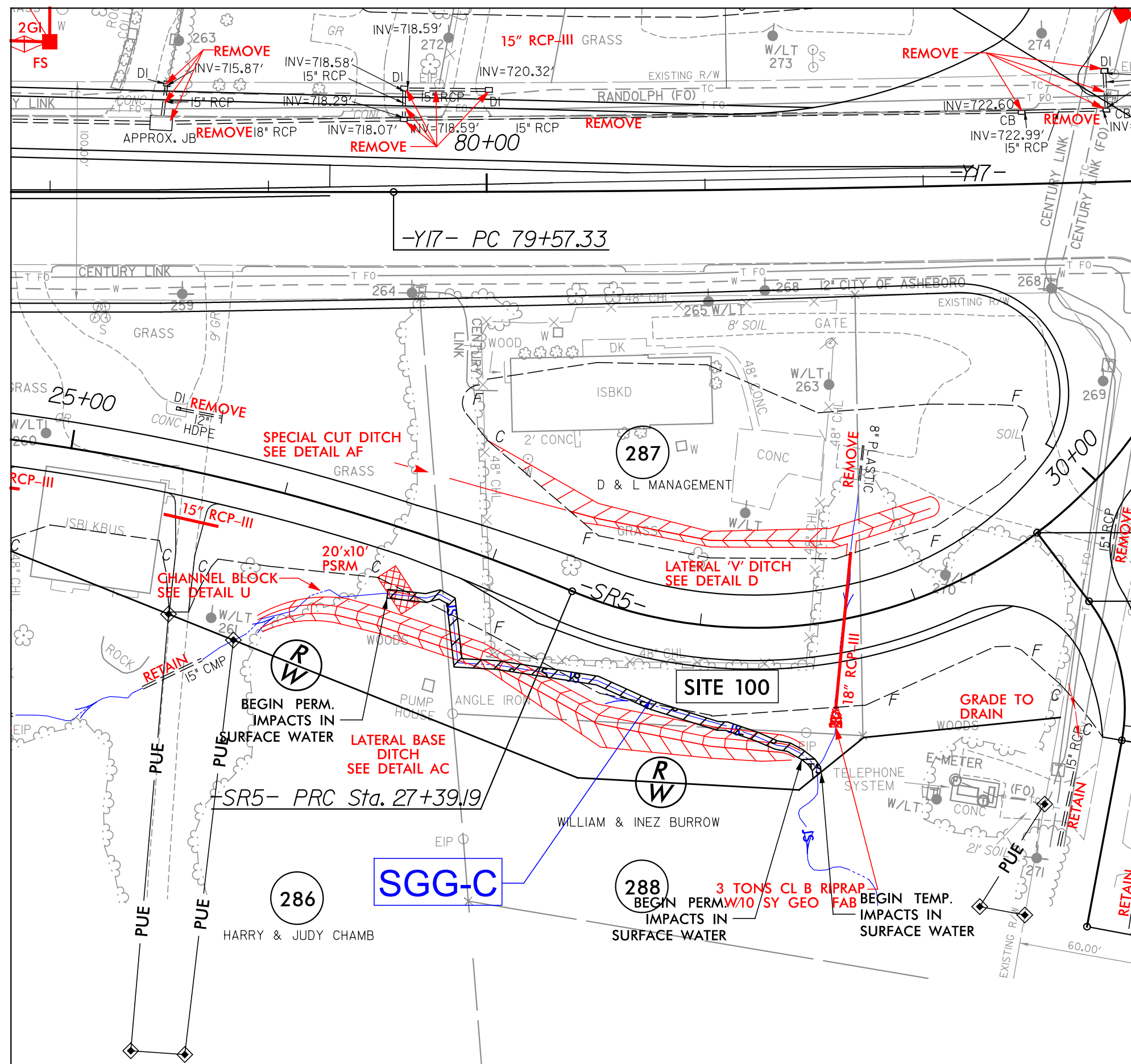


SITE 99 AND 100 PLAN VIEW

LEGEND

- WLB — DENOTES WETLAND BOUNDARY
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES PERMANENT IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND

- DENOTES PAVEMENT REMOVAL
- FOR -Y17-, -SR5- & -SR6- INTERSECTION DETAIL SEE SHT. 2B-3
- FOR -Y17- PROFILE SEE SHT. 206-207
- FOR -Y17C- PROFILE SEE SHT. 213
- FOR -SR5- PROFILE SEE SHT. 213
- FOR -SR6- PROFILE SEE SHT. 214
- FOR -SR6DR3- PROFILE SEE SHT. 215
- FOR -SR6DR4- PROFILE SEE SHT. 215
- FOR -SR6DR5- PROFILE SEE SHT. 215

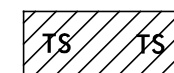
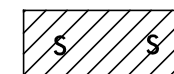


PROJECT REFERENCE NO.	SHEET NO.
<i>R-2536</i>	<i>55</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
REVISED PERMIT SHEET	5/16/2017 DRAWING 242 OF 257
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



DETAIL SHEET FOR SITE 100

LEGEND

DENOTES TEMPORARY
IMPACTS IN SURFACE WATER

DENOTES PERMANENT
IMPACTS IN SURFACE WATER



5121 Kingdom Way,
Suite 100
Raleigh, NC 27607
NC License No: F-0258

WETLAND PERMIT IMPACT 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)
1A	-DR- 13+32 - 14+56	4' X 4' RCBC, L=70', SB-AA						0.03	< 0.01	211	10	
1B	-L- 7+80	SCOUR STABILIZATION, SB-AA						< 0.01	< 0.01	26	12	
2	-FLY- 13+02 - -SR1- 16+47	48" RCP, L=251', SD-AA; TOTAL: PA-AA, WYZ-AA, WXX-AA	0.12					1.15	< 0.01	472	11	
		BANK STABILIZATION, SD-AA						< 0.01		51		
3	-SR1- 18+44 - 19+30	36" CSP, L=153', SAA-AA, WB-AA				< 0.01	0.03	0.02	< 0.01	205	14	
4A	-Y- 15+96 - 16+08	36" CSP, L=32', SE-AA						< 0.01	< 0.01	69	10	
4B	-LPD- 11+21 - 13+06	42" RCP, L=169', SE-AA						0.04		394		
		BANK STABILIZATION, SE-AA						< 0.01	< 0.01	42	20	
4C	-FLY- 32+99 - 37+12	54" RCP, L=496', SE-AA						0.07	< 0.01	759	20	
		BANK STABILIZATION, SE-AA						< 0.01		36		
4D	-L- 62+82 - 63+15	BANK STABILIZATION, SE-AA						< 0.01	< 0.01	11	21	
4E	-L- 64+72 - 70+83	FILL, SE-AA						0.07	< 0.01	753	10	
5	-Y- 13+18 - 16+08	FILL, SM-AA						0.01	< 0.01	258	25	
6A	-LPD- 28+45 - -FLY- 42+22	36" RCP L=328', SZZ-AA, WUU-AA	0.33			0.02		0.02	< 0.01	424	10	
		BANK STABILIZATION, SZZ-AA						< 0.01		34		
6B	-L- 62+21 - 63+23	FILL, SZZ-AA						0.01	< 0.01	111	20	
6C	-L- 63+77 - 64+68	FILL, SZZ-AA						< 0.01	< 0.01	82	10	
7	-RPA- 24+13 -L- 71+29	2 @ 8' X 8' RCBC L=601', SG-AA						0.26	< 0.01	1330	20	
		BANK STABILIZATION, SG-AA						< 0.01		24		
18A	-Y- 29+31 - 29+45	FILL, SH-AA						< 0.01	< 0.01	42	10	
18B	-FLY- 45+56 - 45+81	36" RCP L=253, SH-AA						0.02	< 0.01	270	12	
		BANK STABILIZATION, SH-AA						< 0.01		36		
18C	-RPA- 22+46 - 22+81	FILL, SH-AA						< 0.01	< 0.01	71	10	
19	-YRT- 13+79 - 16+14	FILL, SK-AA; TOTAL: WD-AA	< 0.01					0.06	< 0.01	312	20	
20	-Y- 57+91 - 59+37	FILL, TOTAL: WE-AA	0.07									
TOTALS*:			0.51			0.02	0.03	1.81	0.03	6021	264	0

*Rounded totals are sum of actual impacts

NOTES:

Revised 05/16/2017

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
JANUARY 2016
RANDOLPH
R-2536
34450.3.S1

WETLAND PERMIT IMPACT 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)
48	-Y5- 38+67 - 41+84	3 @ 10' X 7' RCBC L=160', WXX-B, SAA-B	0.96		0.09	0.17		0.05	< 0.01	340	15	
49	-Y5- 40+06 - 40+85	FILL, SWW-B						0.01	< 0.01	100	10	
50	-Y9A- 43+05	BANK STABILIZATION, SKK-D						< 0.01	< 0.01	36	20	
51	-Y9- 10+00 - 12+61	DRAIN POND; TOTAL: PA-D						1.18				
52	-Y9- 14+39 - 17+02	48" RCP L=313', SH-D						0.03		404		
		BANK STABILIZATION, SH-D, WZZ-D				< 0.01		< 0.01	< 0.01	38	15	
53	-Y9- 28+19 - 29+83	2 @ 10' X 14' RCBC L=138', SG-D						0.09	< 0.01	291	21	
		BANK STABILIZATION, SG-D						0.01		36		
54A	-Y9- 53+24 - 53+40	FILL; TOTAL: WD-D	0.02									
54B	-Y9- 53+24 - 53+40	ROW; TOTAL: WE-D	0.02									
55	-Y9- 60+09 - 61+01	36" RCP L=104', 42" RCP L=140', SF-D						0.02		319		
		BANK STABILIZATION, SF-D						< 0.01	< 0.01	82	21	
56A	-Y9- 72+52 - 76+35	6' X 7' RCBC L=170', SC/SD-D						0.06	< 0.01	810	21	
56B	-Y9- 78+92 - 79+23	DITCH, SC/SD-D						< 0.01	< 0.01	20	10	
56C	-Y9RAB- 80+53 - 81+03	PIPE REMOVAL, SC/SD-D						< 0.01		49		
56D	-NC159- 11+77 - 12+24	DITCH, SC/SD-D						< 0.01	< 0.01	42	10	
104	-Y9RPB- 22+00 - 26+00	FILL, SPP-B						0.02	< 0.01	345	49	
TOTALS*:			1.00		0.09	0.17		1.51	0.02	2912	193	0

*Rounded totals are sum of actual impacts

NOTES:

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
JANUARY 2016
RANDOLPH
R-2536
34450.3.S2

SHEET252OF257

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)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
84	-L- 669+26 RT	FILL, DIVERSION DITCH; TOTAL: WK-C	< 0.01		< 0.01							
85	-L- 670+00	60" RCP L=207', FILL, SX-C, WL-C	0.05			0.02		0.02	< 0.01	278	44	
		BANK STABILIZATION, SX-C						< 0.01	< 0.01	40	57	
86	-Y17FLY- 22+13	2 @ 10' X 8' RCBC L=289', SNN-C; TOTAL: WZ-C	0.03					0.06	0.03	341	120	
		BANK STABILIZATION, SNN-C						0.02		120		
87	-Y17RPD- 30+09	1 @ 6' X 7' RCBC L=79', SCC-C						< 0.01	< 0.01	81	66	
		BANK STABILIZATION, SCC-C						< 0.01		65		
		UTILITY INSTALLATION, WY-C					0.10	< 0.01	< 0.01	19	22	
88	-Y17RPDA- 25+91 - 26+95 RT	FILL & CUT, WAA-C	0.12		0.02	0.07						
89	-ESR5- 15+50	BRIDGE REMOVAL, SNN-C							< 0.01		31	
		BANK STABILIZATION, SNN-C						0.02		57		
90	-Y17- 41+00 LT	TAIL DITCH BANK STABILIZATION, SNN-C; TOTAL: WV-C	< 0.01						0.02	20	32	
91	-Y17- 44+57 LT	TAIL DITCH BANK STABILIZATION, SNN-C						< 0.01	< 0.01	13	23	
92	-Y17- 44+57 LT	TAIL DITCH & BORE HOLE, WTA-C		0.03	0.03		0.02					
	-Y17- 44+90 LT	RIP-RAP PAD, WTA-C	< 0.01									
	-Y17- 44+08 - 47+64 LT	UTILITY INSTALLATION, WTA-C		1.13								
93	-Y17- 42+00 RT	RIP-RAP PAD, WW-C	< 0.01									
	-Y17- 40+81 - 44+82 RT	UTILITY INSTALLATION, WW-C		0.85		0.03						
	-Y17- 44+57 RT	TAIL DITCH AND BERM, WW-C	0.02		0.02		< 0.01					
94	-Y17FLY- 46+76	2 @ 12' X 8' RCBC L=96', SNN-C						0.02	0.03	98	105	
		BANK STABILIZATION, SNN-C						0.02		80		
95	-Y17FLY- 49+00 RT	FILL, WTA-C	< 0.01									
96	-SR6- 15+40 LT	24" RCP L=83', TAIL DITCH, SMM-C						< 0.01	< 0.01	124	18	
TOTALS*:			0.27	2.01	0.08	0.12	0.13	0.22	0.15	1336	518	0

*Rounded totals are sum of actual impacts

NOTES:
SITE 95 ONLY INCLUDES PERMANENT FILL AT STA. 49+00 -Y17FLY- RT

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NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
MAY 26, 2016
RANDOLPH COUNTY
R-2536
34450.3.S1

