



PAT McCRORY  
*Governor*

NICHOLAS J. TENNYSON  
*Secretary*

September 2, 2016

Ms. Crystal Amschler  
U.S. Army Corps of Engineers  
Asheville Regulatory Field Office  
151 Patton Avenue, Room 208  
Asheville, NC 28801-5006

**SUBJECT: Permit Modification Application for Modification of Section 404 Individual Permit and Section 401 Individual Water Quality Certification and Request to Lift the Cease and Desist and Notice of Violation** for the US-74 Monroe Connector/Bypass in Union and Mecklenburg Counties. STIP R-3329 and STIP R-2559, Division 10, Debit WBS Element 34533.1.TA1 in the amount of \$570.

Reference: US Army Corps of Engineers (USACE) 404 Permit issued May 8, 2015; Action ID: SAW-2009-00876  
NC Division of Water Resources (NCDWR) 401 Water Quality Certification Permit issued March 6, 2015; NCDWR Project No. 02-0672 V3  
US Army Corps of Engineers Cease and Desist issued August, 15, 2016  
NC Division of Water Resources Notice of Violation issued August 12, 2016

Dear Ms. Amschler:

The North Carolina Department of Transportation (NCDOT) is in the process of constructing the Monroe Connector/Bypass, as previously authorized by the USACE and NCDWR. NCDOT is requesting a permit modification for the following Permit Sites: 1, 2, 5, 14, 33, and 64 as described below. By way of this application, NCDOT is also requesting the lifting of the Cease and Desist and Notice of Violation issued by your respective agency.

Permit Site 1 (Revised Permit Drawings 6 and 7 of 267):

Site 1 consisted of stream (UT to North Fork Crooked Creek) impacts due to construction of three separate structures. During construction, it became evident that the stream was approximately 9-feet removed from the location provided in the design file on the most upstream structure, an 84" pipe. In order to redesign the crossing and ensure properly aligning the inlet and outlet with the accurate location of the stream, the previously permitted impacts (621 lf of permanent stream impacts, 164 lf of bank stabilization, and 21 lf of temporary stream impacts) will be modified to increase the permanent fill by 16 lf, increase the bank stabilization by 2 lf, and decrease the temporary impacts by 13 lf. By moving the pipe to the correct location and achieving proper alignment with the stream, the crossing will be installed as originally intended during project design review meetings where it was determined to be most ecologically beneficial.



Permit Site 2 (Revised Permit Drawings 6 and 7 of 267):

In addition to the previously permitted 0.14 acre of wetland fill and 0.06 acre of mechanized clearing, the installation of aerial utility lines will result in hand clearing and subsequent maintained easement of 0.06 acre in wetland WX800.

Permit Site 5 (Revised Permit Drawings 27 and 28 of 267):

During construction, it became evident that additional bank stabilization would be required on the upstream portion of UT to North Fork Crooked Creek (SX540). In addition to the previously permitted 0.05 acre of wetland fill, 0.02 acre of mechanized clearing, 114 lf of permanent stream impacts, 12 lf of temporary stream impacts, and 0.01 acre of temporary excavation in wetlands, there will now be an additional 20 lf of bank stabilization.

Permit Site 14 (Revised Permit Drawings 62 and 63 of 267):

In addition to the previously permitted 0.12 acre of permanent wetland impacts, and 0.03 acre of mechanized clearing, 0.02 acre of wetland W22b will be temporarily excavated in order to install a 20" encasement line for future underground utilities.

Permit Site 33 (Revised Permit Drawings 132, 133, 134, and 135 of 267):

In addition to the previously permitted 1.61 acres of permanent wetland impacts and 0.28 acre of mechanized clearing, 0.03 ac of wetland W86 has been hand cleared and subsequently maintained for an aerial utility line. We are requesting this authorization after-the-fact.

Permit Site 64 (Revised Permit Drawings 256 and 257 of 267):

In addition to the previously permitted 0.17 acre of permanent wetland impacts, 0.02 acre of wetland excavation, 0.08 acre of mechanized clearing, and <0.01 ac of hand clearing, 0.05 acre of wetland WX811 has been hand cleared and subsequently maintained for an aerial utility line. We are requesting this authorization after-the-fact.

Impact Summary

The requested modifications are summarized as follows:

- Permit Site 1: Increase of 16 lf of permanent stream impact
  - Increase of 2 lf of permanent stream impact by way of bank stabilization
  - Decrease of 13 lf temporary stream impact to ensure proper adjustment/alignment of the 84" RCP.
- Permit Site 2: Increase of 0.06 acre of hand clearing due to utility relocation
- Permit Site 5: Increase of 20 lf of permanent stream impact by way of bank stabilization
- Permit Site 14: Increase of 0.02 acre of temporary excavation in wetlands due to utility relocation
- Permit Site 33: Increase of 0.03 acre of hand clearing due to utility relocation
- Permit Site 64: Increase of 0.05 acre of hand clearing due to utility relocation

Mitigation

Overall, this permit modification

- increases permanent stream impact by 16 lf
- increases bank stabilization by 22 lf
- decreases temporary stream impact 13 lf
- increases temporary wetland impact by 0.02 ac

Mitigation needs will be compensated by the Division of Mitigation Services (DMS) and will be updated closer to project completion to incorporate any additional mitigatory requirements.

Regulatory Approvals

Application is hereby made for a Department of the Army Section 404 Individual Permit Modification for the above-described activities for the STIP Project R-3329/2559. The revised permit drawings and impact tables are attached.

We are also hereby requesting a Section 401 Individual Water Quality Certification Modification from NCDWR. In compliance with Section 143-215.3D (e) of the NCAC, we will provide \$570.00 to act as payment for processing the Section 401 permit.

By way of this application, and the NCDOT response to the Cease and Desist and Notice of Violation August 26, 2016, NCDOT hereby requests the lifting of the Cease and Desist and Notice of Violation to permit construction activities to continue at the remaining Permit Sites.

Thank you for your time and assistance with this project. Please contact Michael Turchy at either [maturchy@ncdot.gov](mailto:maturchy@ncdot.gov) or (919) 707-6157 if you have any questions or need additional information.

Sincerely,

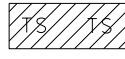



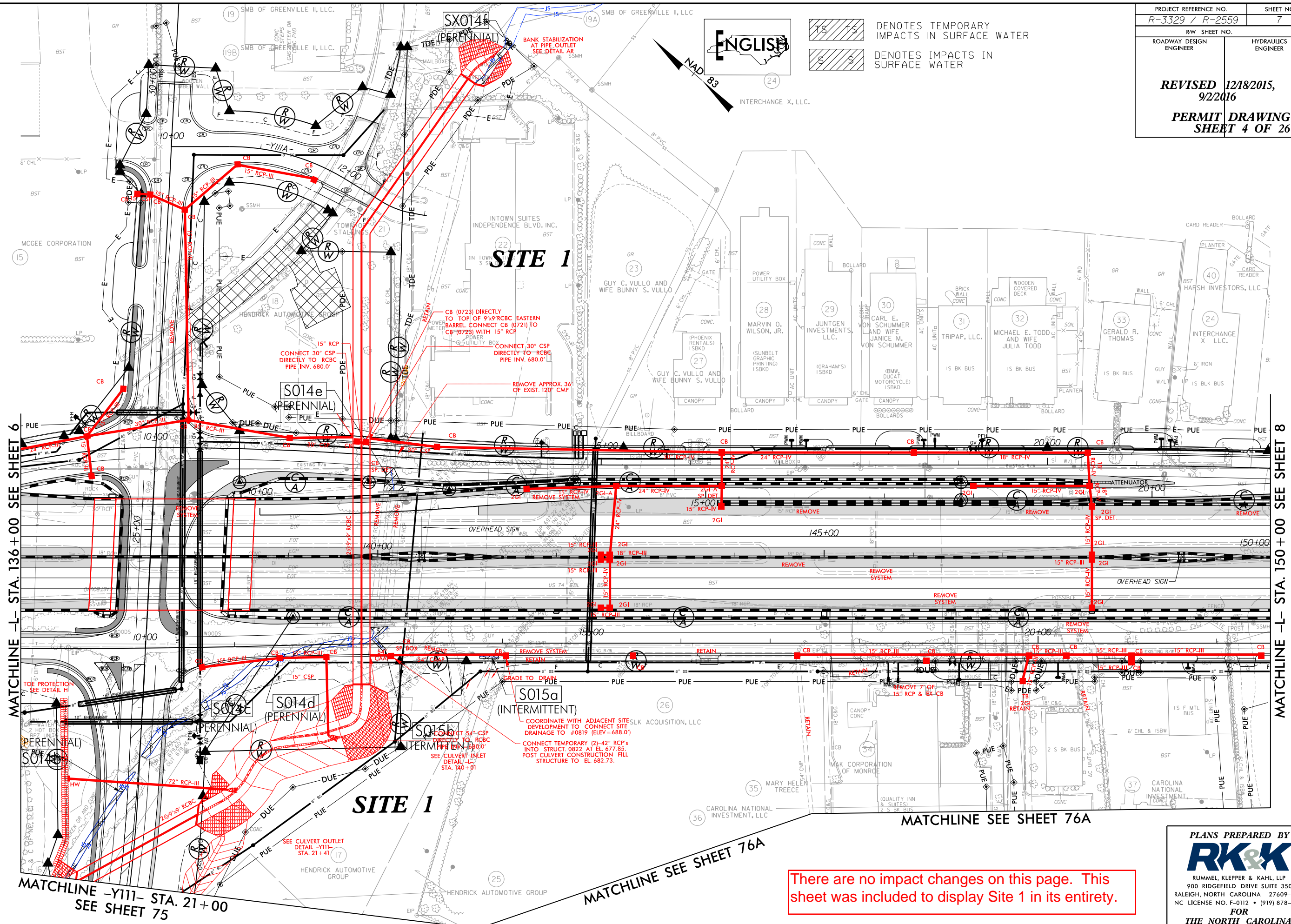
for

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

cc: NCDOT Permit Application Standard Distribution List

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015, 9/2/2016</b> <b>PERMIT DRAWING SHEET 4 OF 267</b>	

 DENOTES TEMPORARY IMPACTS IN SURFACE WATER  
 DENOTES IMPACTS IN SURFACE WATER



**SITE 1**

**SITE 1**

**S015a**  
(INTERMITTENT)

COORDINATE WITH ADJACENT SITE DEVELOPMENT TO CONNECT SITE DRAINAGE TO #0819 (ELEV=688.0')

CONNECT TEMPORARY (2)-42" RCP'S INTO STRUCT. 0822 AT EL. 677.85. POST CULVERT CONSTRUCTION FILL STRUCTURE TO EL. 682.73.

CONNECT 30" CSP DIRECTLY TO RCBC PIPE INV. 680.0'

CONNECT 30" CSP DIRECTLY TO RCBC PIPE INV. 680.0'

CB (0723) DIRECTLY TO TOP OF 9"x9" RCBC EASTERN BARREL CONNECT CB (0721) TO CB (0723) WITH 15" RCP

REMOVE APPROX. 36' OF EXIST. 120" CMP

There are no impact changes on this page. This sheet was included to display Site 1 in its entirety.

PLANS PREPARED BY :

**RK&K**

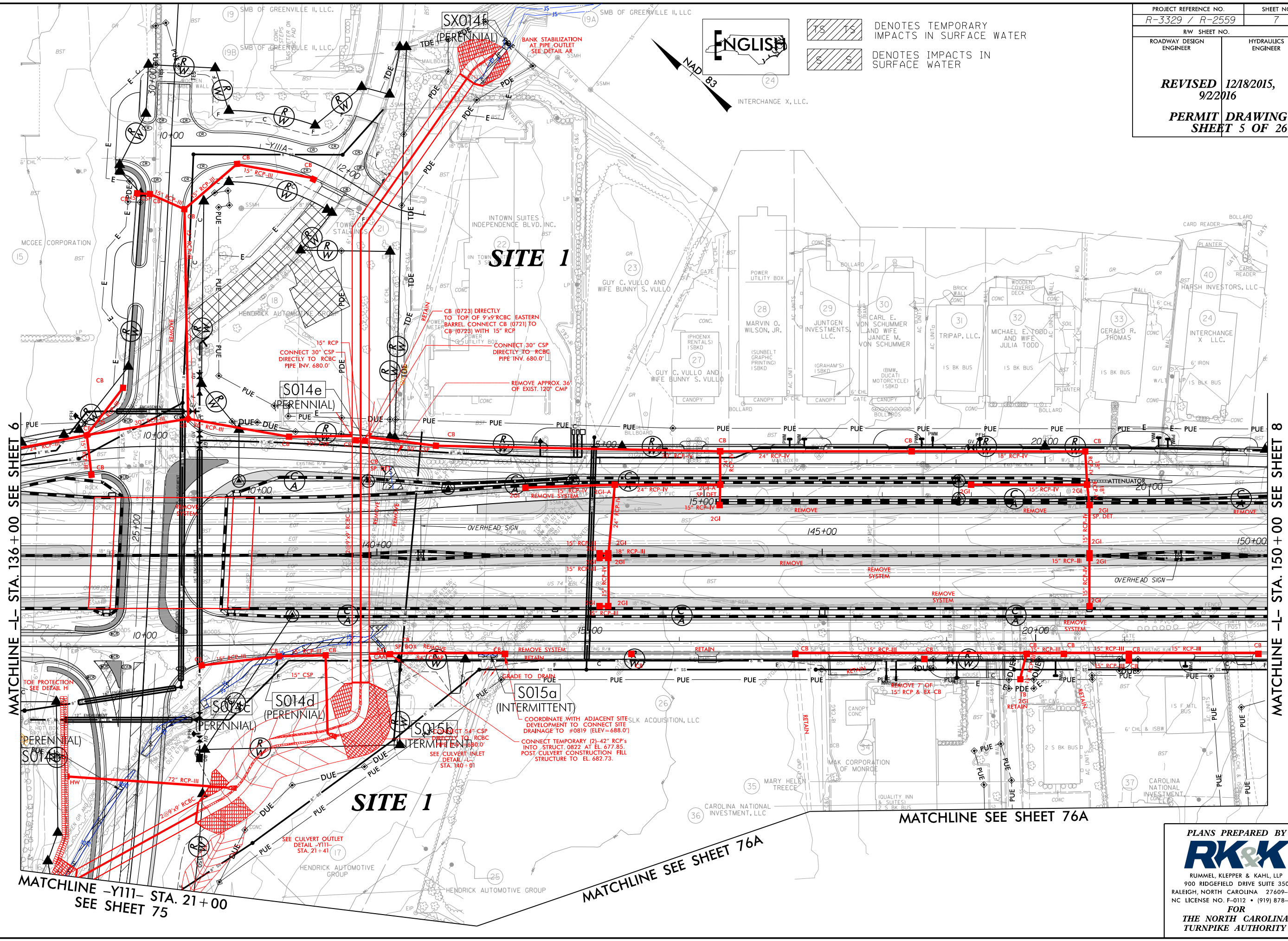
RUMMEL, KLEPPER & KAHL, LLP  
 900 RIDGEFIELD DRIVE SUITE 350  
 RALEIGH, NORTH CAROLINA 27609-3960  
 NC LICENSE NO. F-0112 • (919) 878-9560

FOR  
**THE NORTH CAROLINA  
 TURNPIKE AUTHORITY**

8.17/99

8.17/99

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015, 9/2/2016</b>	
<b>PERMIT DRAWING SHEET 5 OF 267</b>	



MATCHLINE -L- STA. 136+00 SEE SHEET 6

MATCHLINE -L- STA. 150+00 SEE SHEET 8

MATCHLINE -Y111- STA. 21+00 SEE SHEET 75

MATCHLINE SEE SHEET 76A

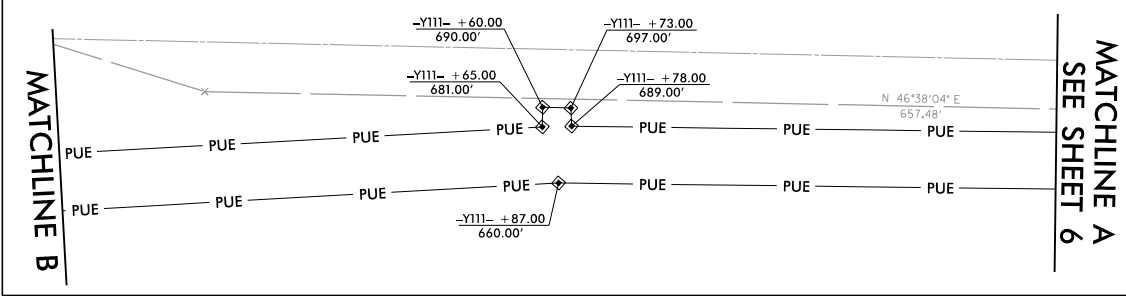
MATCHLINE SEE SHEET 76A

PLANS PREPARED BY :

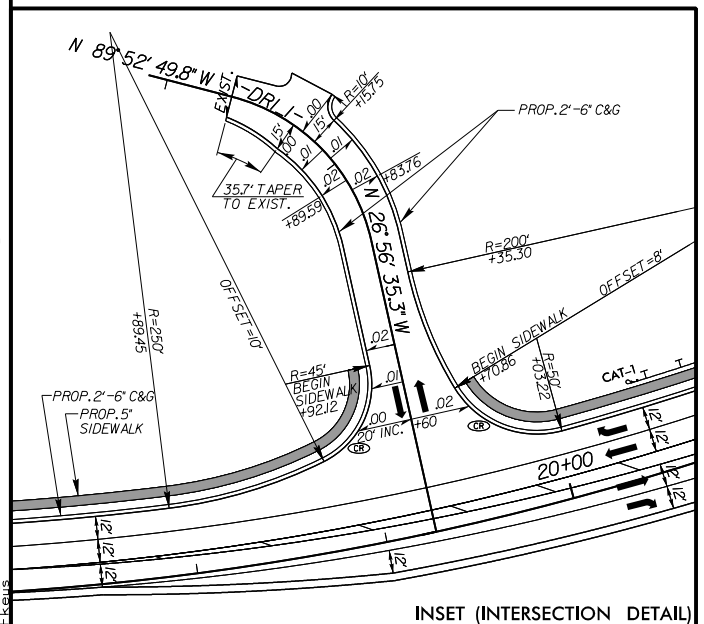
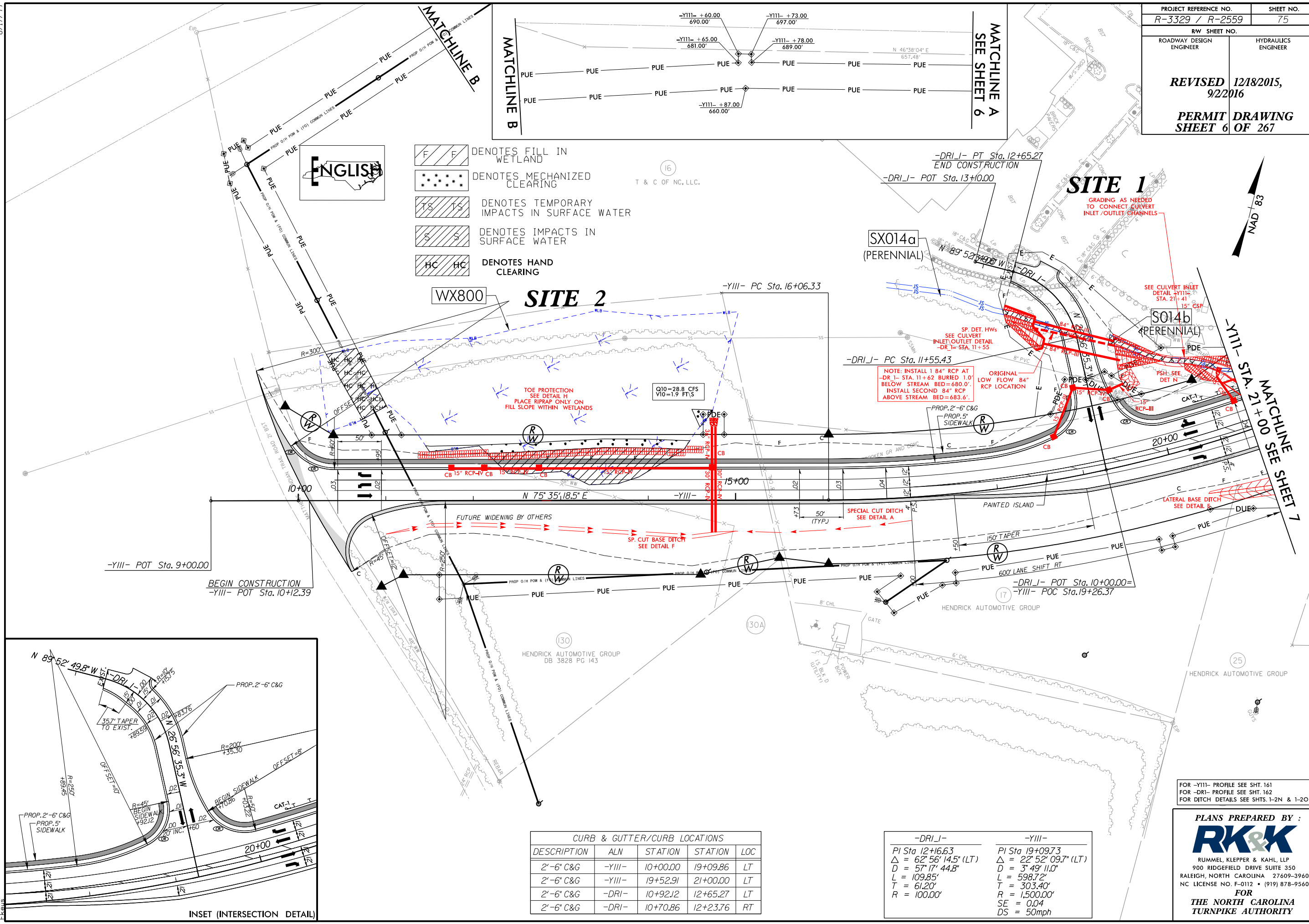
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- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES HAND CLEARING



CURB & GUTTER/CURB LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
2'-6" C&G	-YIII-	10+00.00	19+09.86	LT
2'-6" C&G	-YIII-	19+52.91	21+00.00	LT
2'-6" C&G	-DRI-	10+92.12	12+65.27	LT
2'-6" C&G	-DRI-	10+70.86	12+23.76	RT

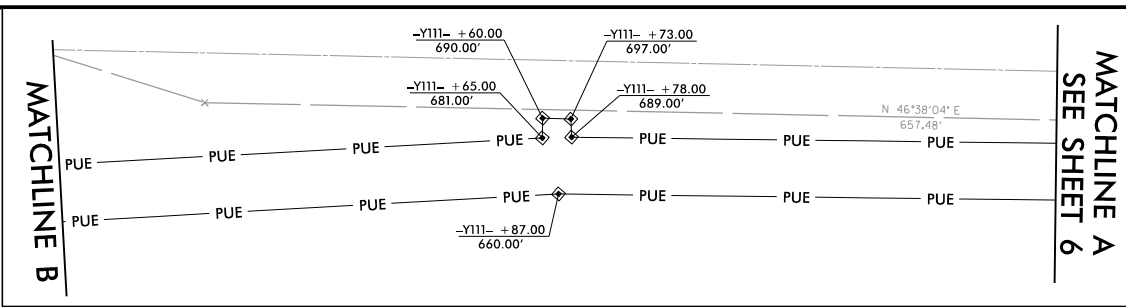
-DRI-	-YIII-
PI Sta 12+16.63	PI Sta 19+09.73
$\Delta = 62^\circ 56' 14.5''$ (LT)	$\Delta = 22^\circ 52' 09.7''$ (LT)
D = 57' 17" 44.8"	D = 3' 49" 11.0"
L = 109.85'	L = 598.72'
T = 61.20'	T = 303.40'
R = 100.00'	R = 1,500.00'
	SE = 0.04
	DS = 50mph

FOR -YIII- PROFILE SEE SHT. 161  
 FOR -DRI- PROFILE SEE SHT. 162  
 FOR DITCH DETAILS SEE SHTS. 1-2N & 1-2O

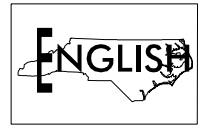
PLANS PREPARED BY :

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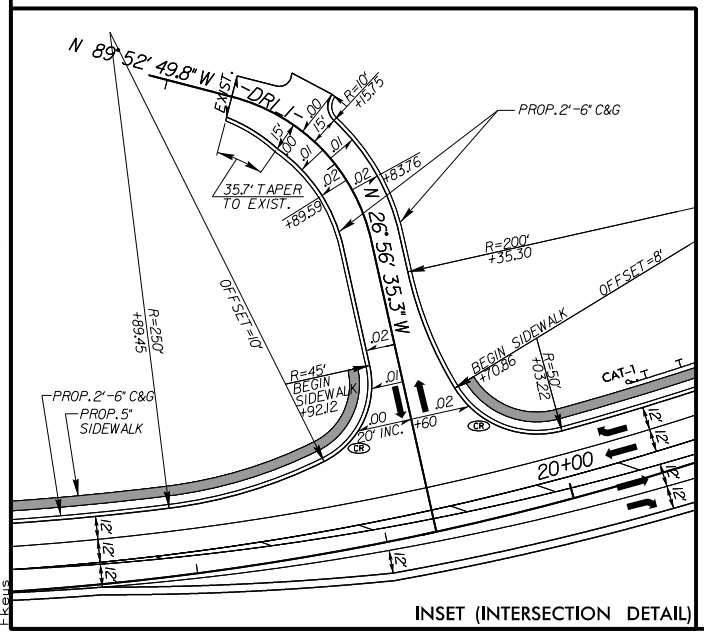
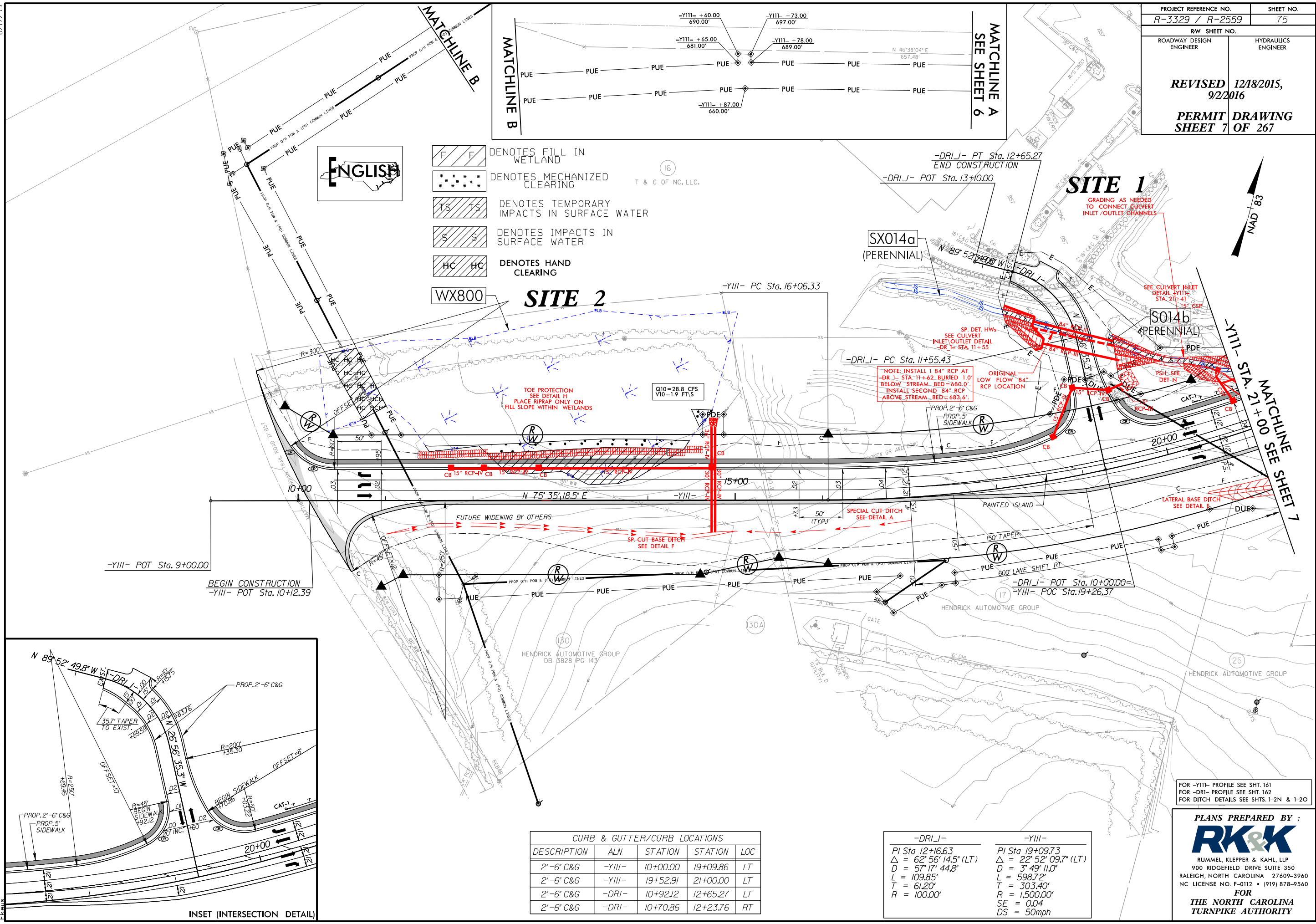
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 8/1/2016



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



16  
T & C OF NC, LLC.



DESCRIPTION	ALN	STATION	STATION	LOC
2'-6" C&G	-YIII-	10+00.00	19+09.86	LT
2'-6" C&G	-YIII-	19+52.91	21+00.00	LT
2'-6" C&G	-DRI-	10+92.12	12+65.27	LT
2'-6" C&G	-DRI-	10+70.86	12+23.76	RT

-DRI-	-YIII-
PI Sta 12+16.63	PI Sta 19+09.73
$\Delta = 62^\circ 56' 14.5''$ (LT)	$\Delta = 22^\circ 52' 09.7''$ (LT)
$D = 57' 17'' 44.8''$	$D = 3' 49' 11.0''$
$L = 109.85'$	$L = 598.72'$
$T = 61.20'$	$T = 303.40'$
$R = 100.00'$	$R = 1,500.00'$
	$SE = 0.04$
	$DS = 50\text{mph}$

FOR -YIII- PROFILE SEE SHT. 161  
FOR -DRI- PROFILE SEE SHT. 162  
FOR DITCH DETAILS SEE SHTS. 1-2N & 1-2O

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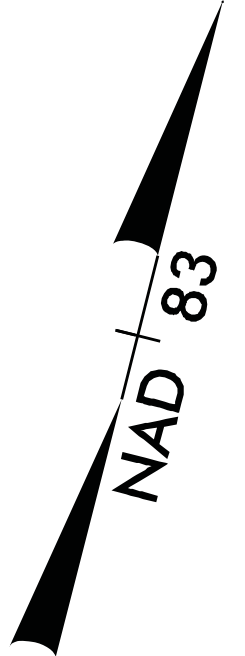
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8/1/2016

-DRI\_I- PI Sta. 12+65.27  
END CONSTRUCTION

-DRI\_I- POT Sta. 13+10.00

# SITE 1

GRADING AS NEEDED  
TO CONNECT CULVERT  
INLET / OUTLET CHANNELS



SX014a  
(PERENNIAL)

SEE CULVERT INLET  
DETAIL -Y111-  
STA. 21+41

S014b  
(PERENNIAL)

SP. DET. HWs  
SEE CULVERT  
INLET / OUTLET DETAIL  
-DR\_1- STA. 11+55

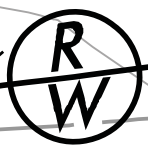
-DRI\_I- PC Sta. 11+55.43

NOTE: INSTALL 1 84" RCP AT  
-DR\_1- STA. 11+62 BURIED 1.0'  
BELOW STREAM BED = 680.0'.  
INSTALL SECOND 84" RCP  
ABOVE STREAM BED = 683.6'.

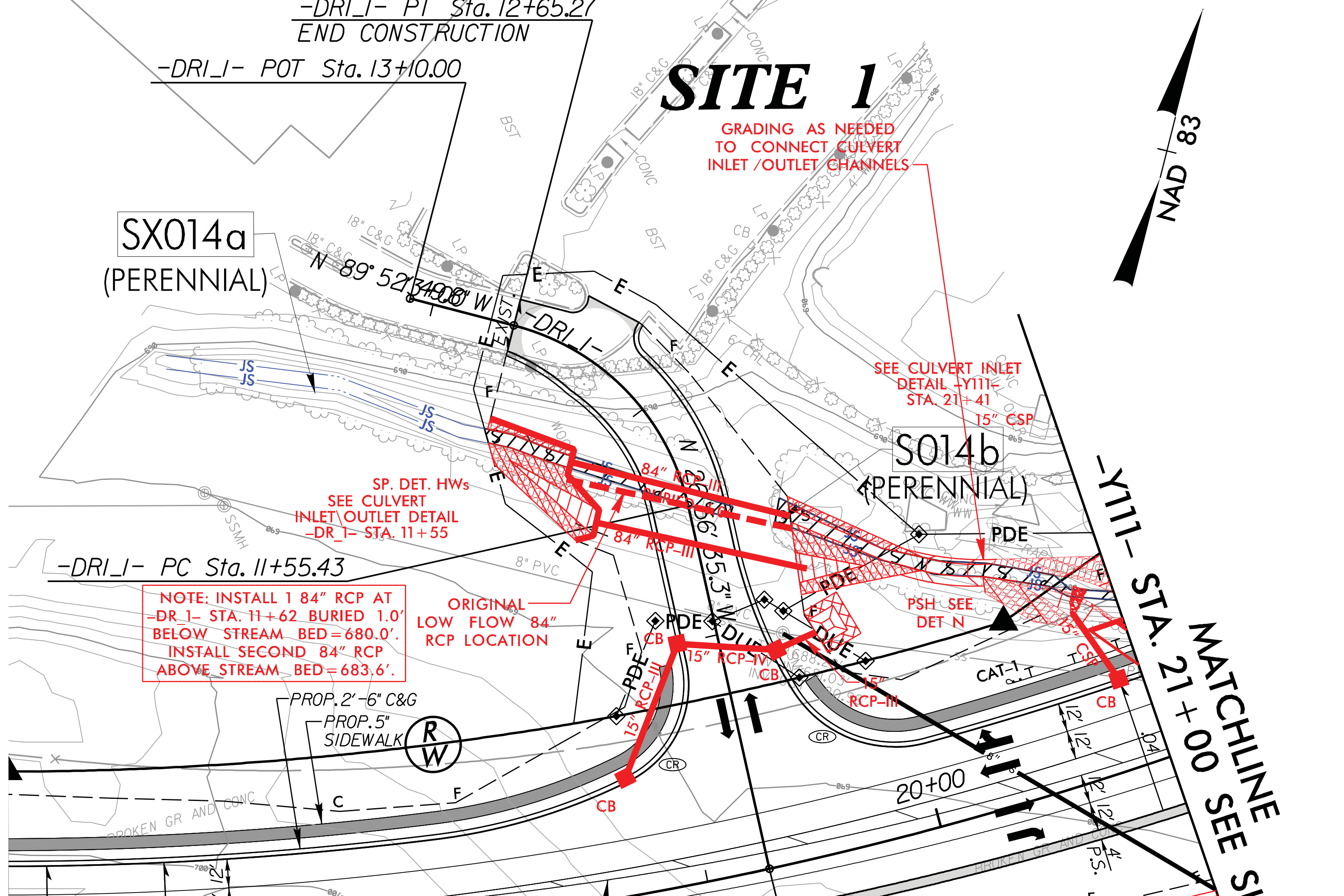
ORIGINAL  
LOW FLOW 84" RCP  
LOCATION

PSH SEE  
DET N

PROP. 2'-6" C&G  
PROP. 5" SIDEWALK



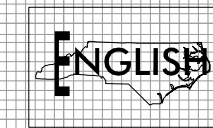
-Y111- STA. 21+00  
MATCHLINE SEE SI





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E. Lewis

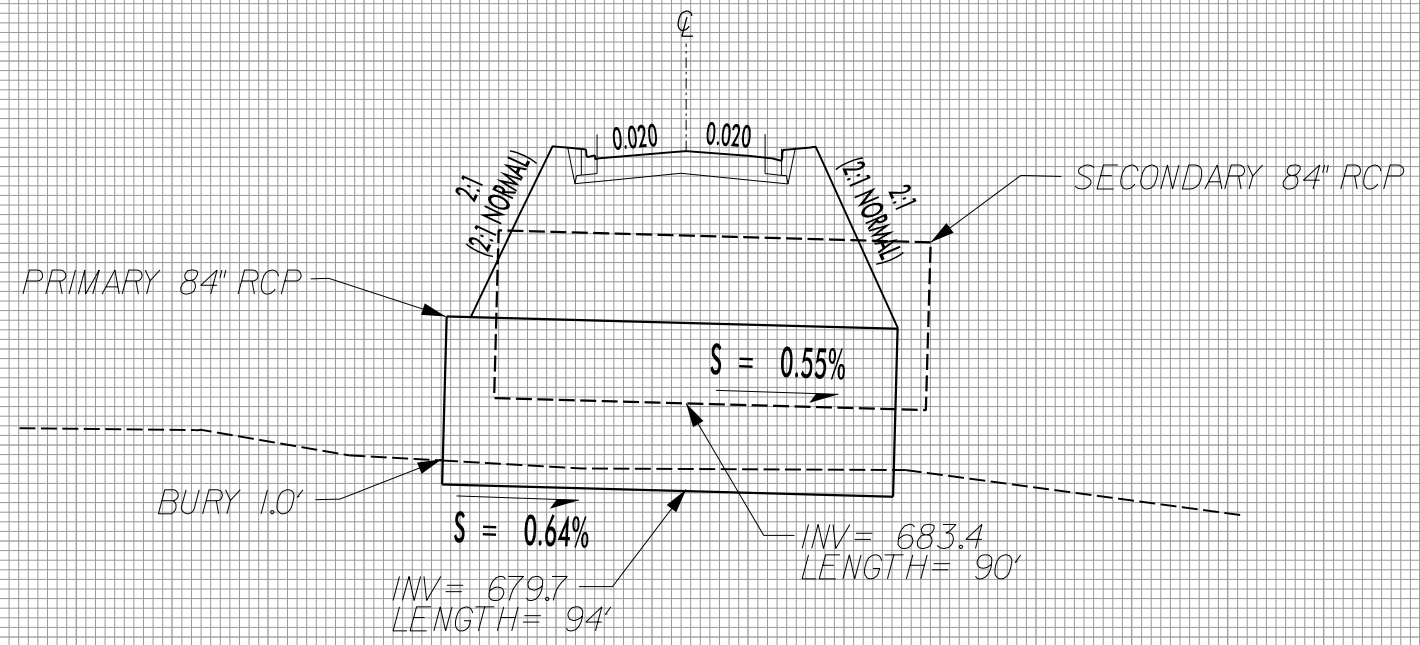
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PROJECT REFERENCE NO. <b>R-3329 /R-2559</b>	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 9/22016</b>	
<b>PERMIT DRAWING SHEET 12 OF 267</b>	

# SITE 1 -DRI- 11+62

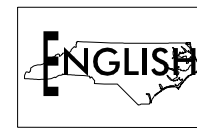
700  
690  
680  
670



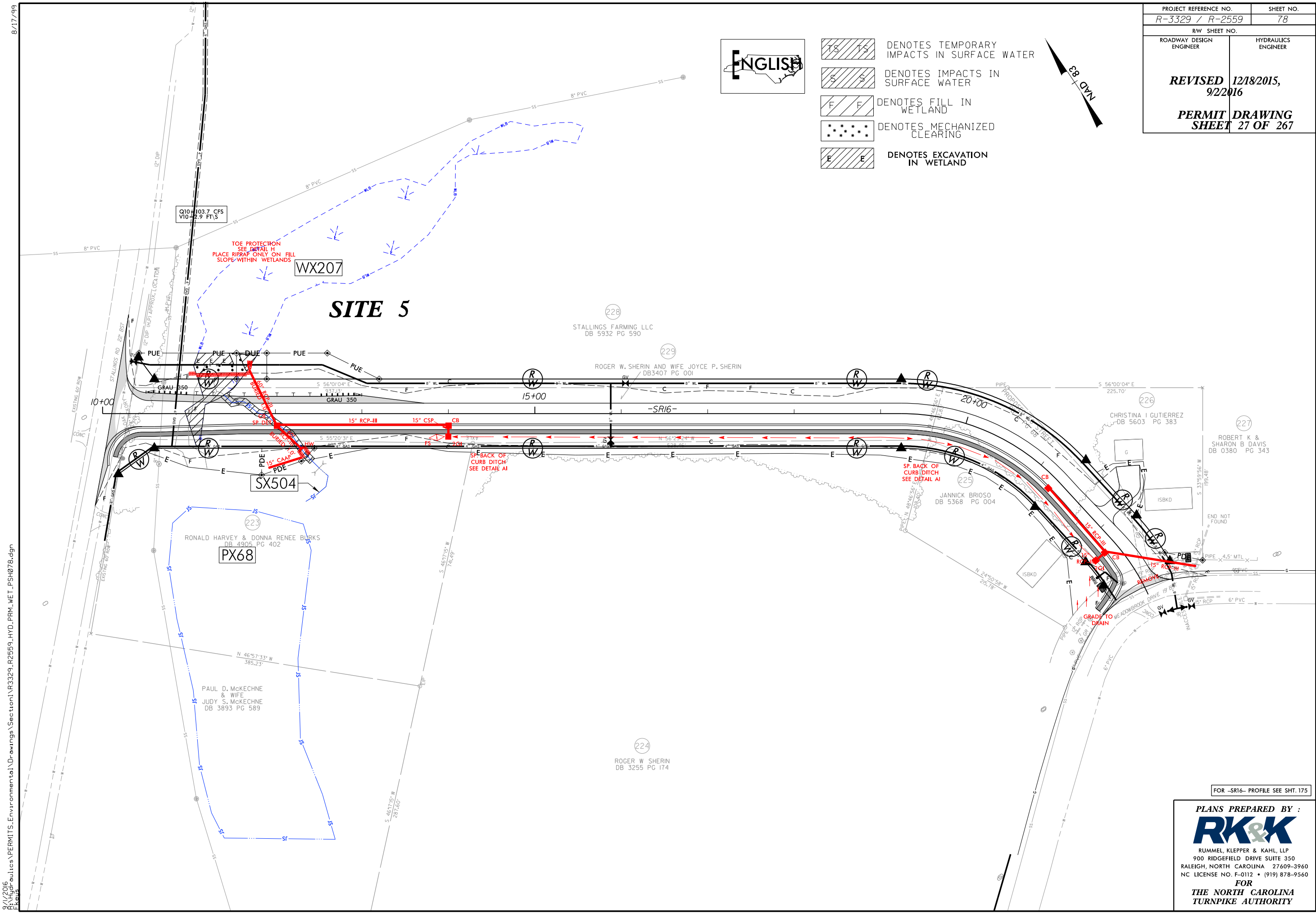
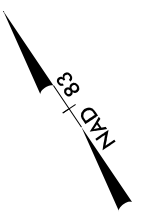
NOTE: BURY PRIMARY 84" RCP 1.0' BELOW STREAM BED=680.0'.  
INSTALL SECONDARY 84" RCP ABOVE STREAM BED CHANNEL=683.6'.

## PROPOSED (2) 84" RCP

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 78
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015, 9/2/2016</b>	
<b>PERMIT DRAWING SHEET 27 OF 267</b>	



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



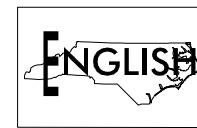
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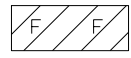


FOR -SR16- PROFILE SEE SHT. 175

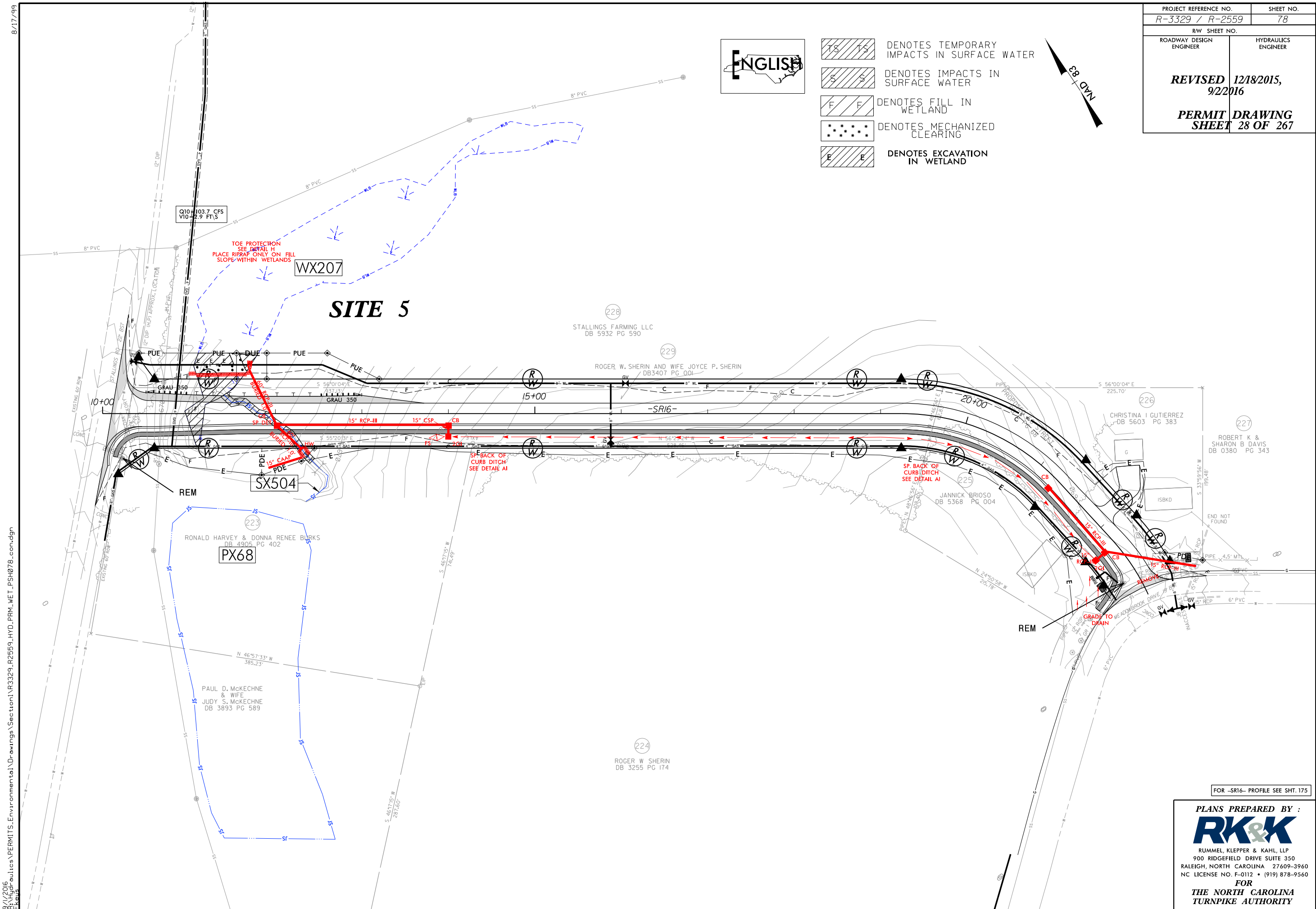
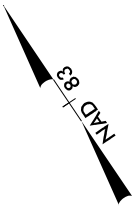
**PLANS PREPARED BY :**

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. 78
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015, 9/2/2016</b>	
<b>PERMIT DRAWING SHEET 28 OF 267</b>	




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



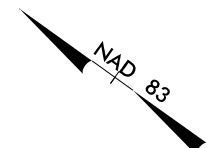
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 8/1/2016

FOR -SR16- PROFILE SEE SHT. 175

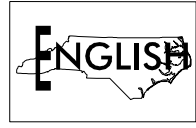
**PLANS PREPARED BY :**  
  
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**FOR**  
**THE NORTH CAROLINA**  
**TURNPIKE AUTHORITY**

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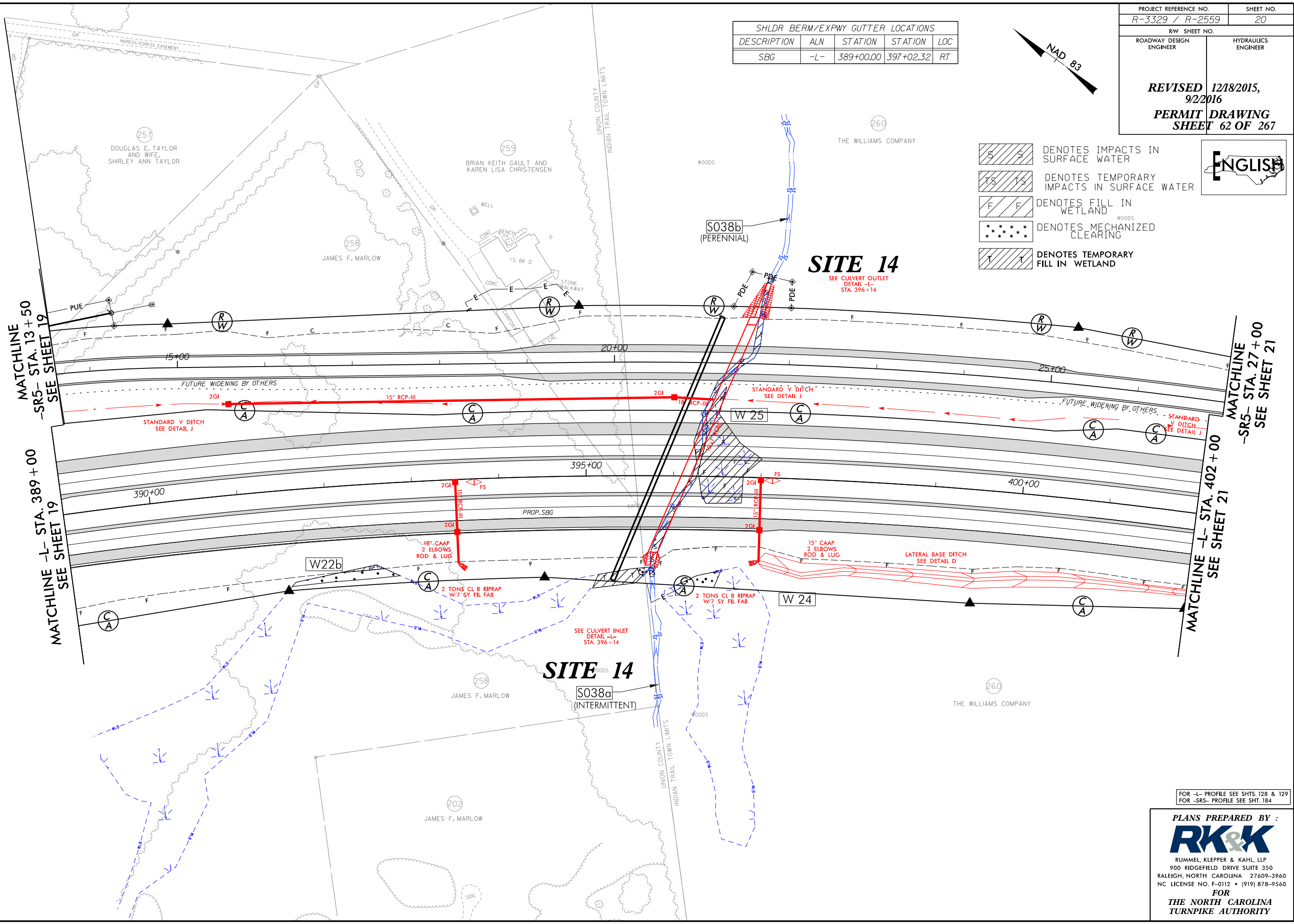
SHLDR BERM/EXPWY GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	389+00.00	397+02.32	RT



PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015,          9/2/2016</b> <b>PERMIT DRAWING          SHEET 62 OF 267</b>	



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



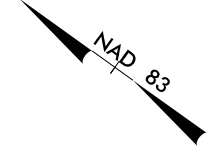
FOR -L- PROFILE SEE SHTS. 128 & 129  
 FOR -SR5- PROFILE SEE SHT. 184

PLANS PREPARED BY :  
**RK&K**  
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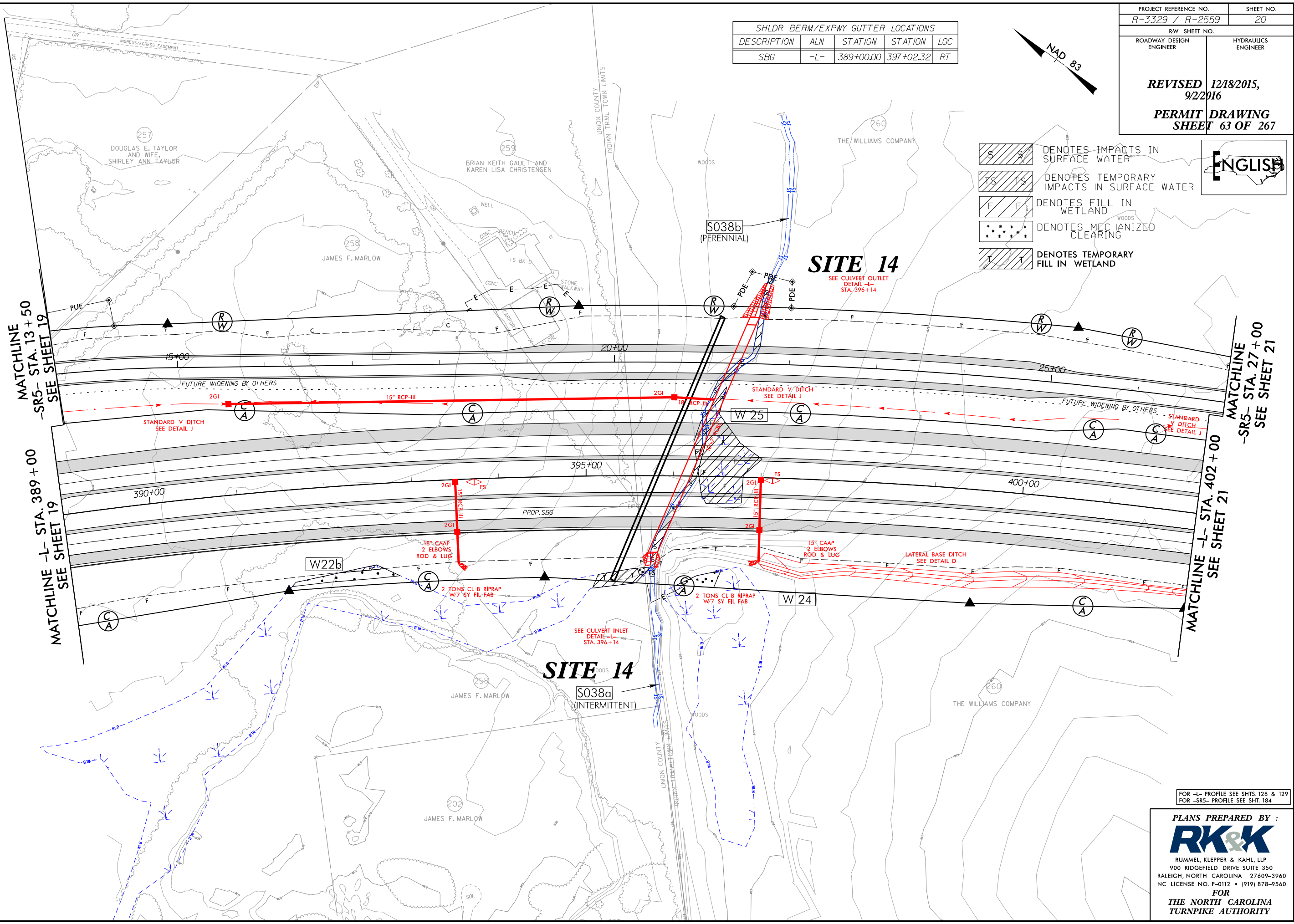
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SHLDR BERM/EXPWY GUTTER LOCATIONS				
DESCRIPTION	ALN	STATION	STATION	LOC
SBG	-L-	389+00.00	397+02.32	RT

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015, 9/2/2016</b> <b>PERMIT DRAWING SHEET 63 OF 267</b>	



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



FOR -L- PROFILE SEE SHTS. 128 & 129  
 FOR -SR5- PROFILE SEE SHT. 184

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 FOR  
**THE NORTH CAROLINA  
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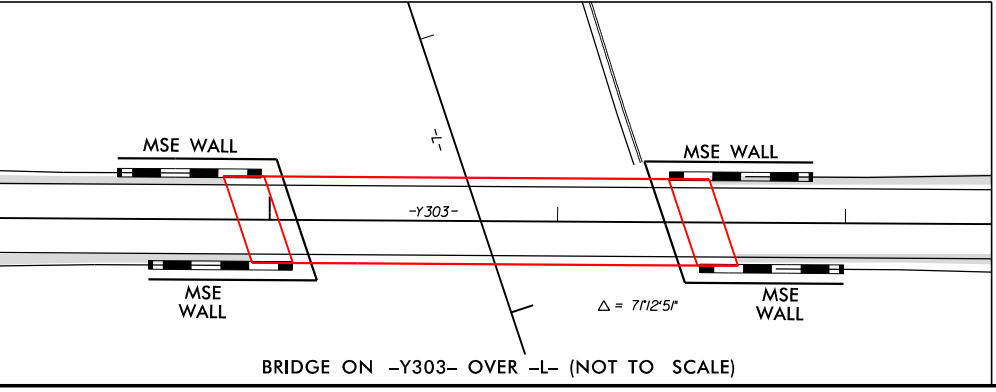
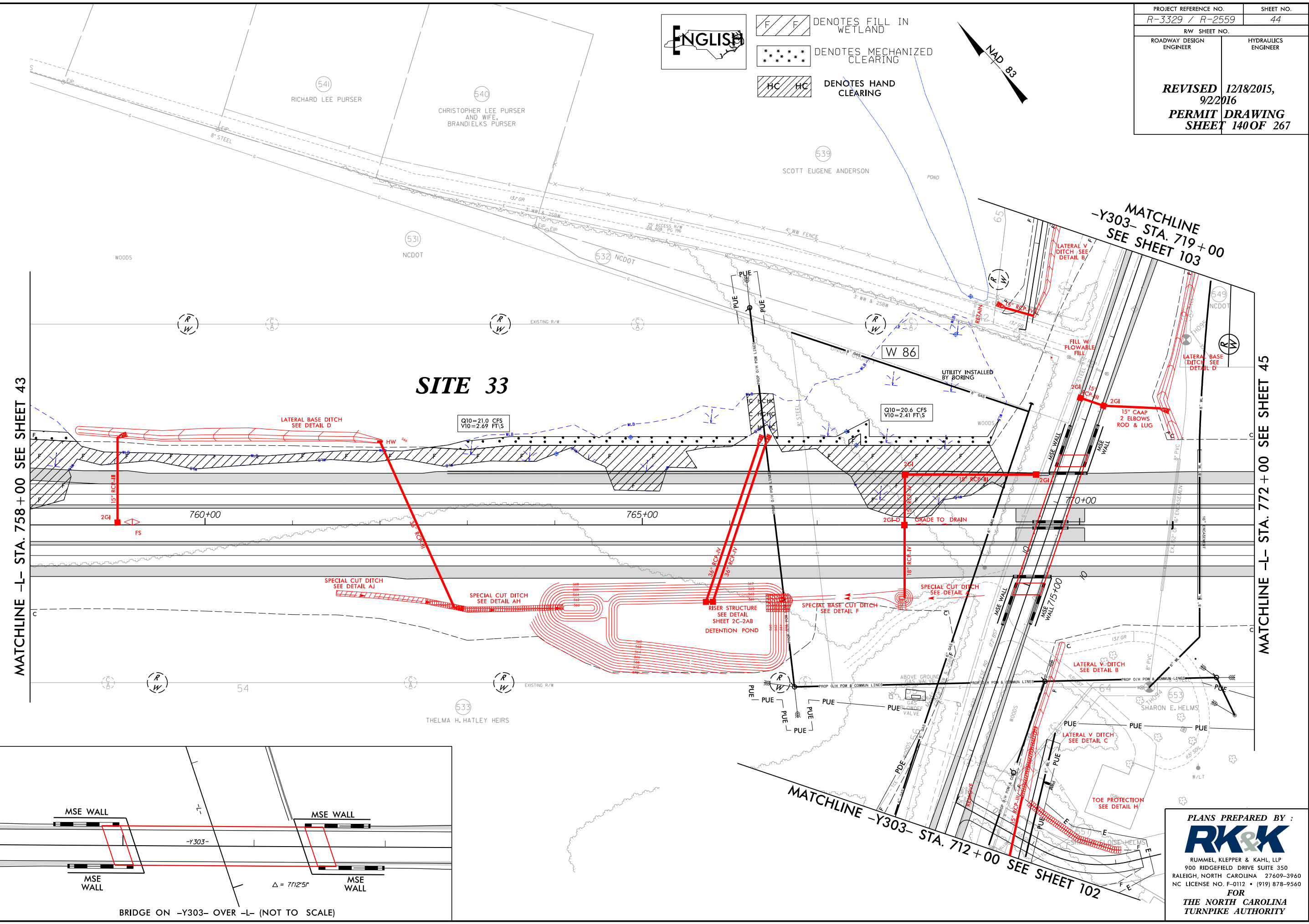
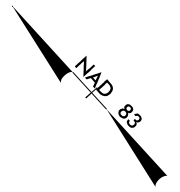
PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 44
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 12/18/2015, 9/22/2016</b>	
<b>PERMIT DRAWING SHEET 140 OF 267</b>	

**ENGLISH**

**F F** DENOTES FILL IN WETLAND

**•••••** DENOTES MECHANIZED CLEARING

**HC HC** DENOTES HAND CLEARING



PLANS PREPARED BY :

**RK&K**

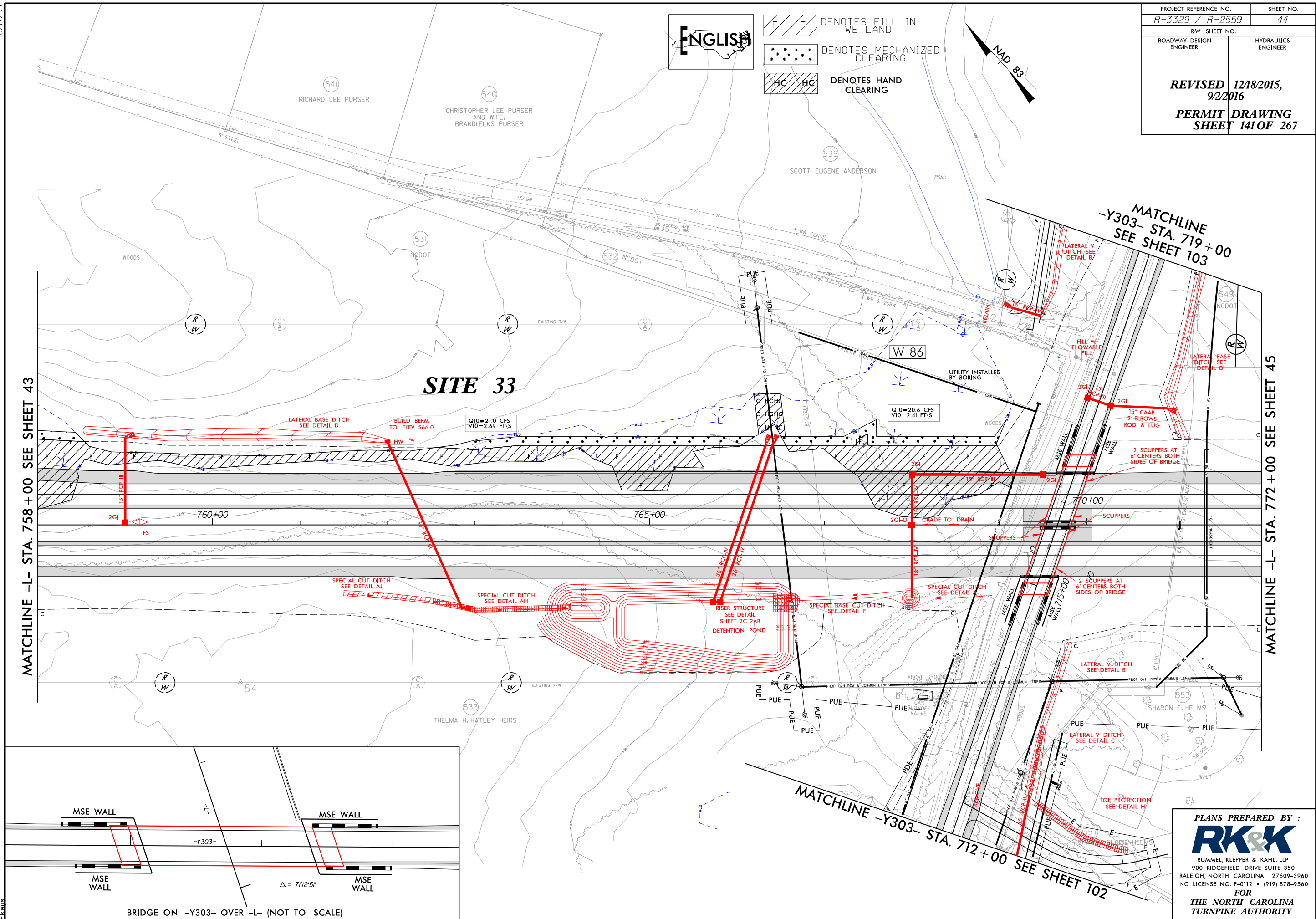
RUMMEL, KLEPPER & KAHL, LLP  
900 RIDGEFIELD DRIVE SUITE 350  
RALEIGH, NORTH CAROLINA 27609-3960  
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FOR  
**THE NORTH CAROLINA  
TURNPIKE AUTHORITY**

PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 44
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVISED 12/18/2015, 9/2/2016	
PERMIT DRAWING SHEET 141 OF 267	



- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES HAND CLEARING

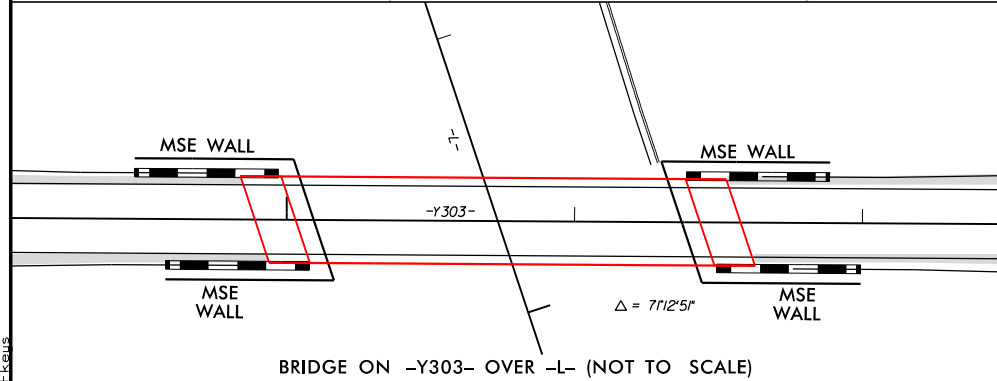


MATCHLINE -L- STA. 758 + 00 SEE SHEET 43

MATCHLINE -L- STA. 772 + 00 SEE SHEET 45

MATCHLINE  
-Y303- STA. 719 + 00  
SEE SHEET 103

MATCHLINE -Y303- STA. 712 + 00  
SEE SHEET 102



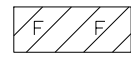
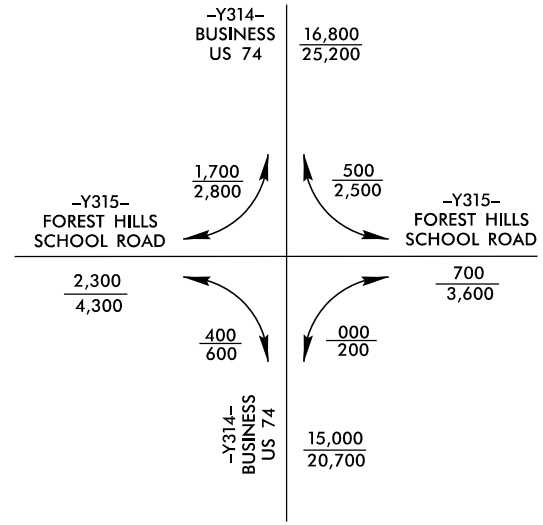
PLANS PREPARED BY :  
  
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ADT 2035

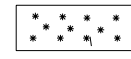
TRAFFIC DIAGRAM



DENOTES FILL IN WETLAND



DENOTES HAND CLEARING



DENOTES MECHANIZED CLEARING



DENOTES TEMPORARY FILL IN WETLAND

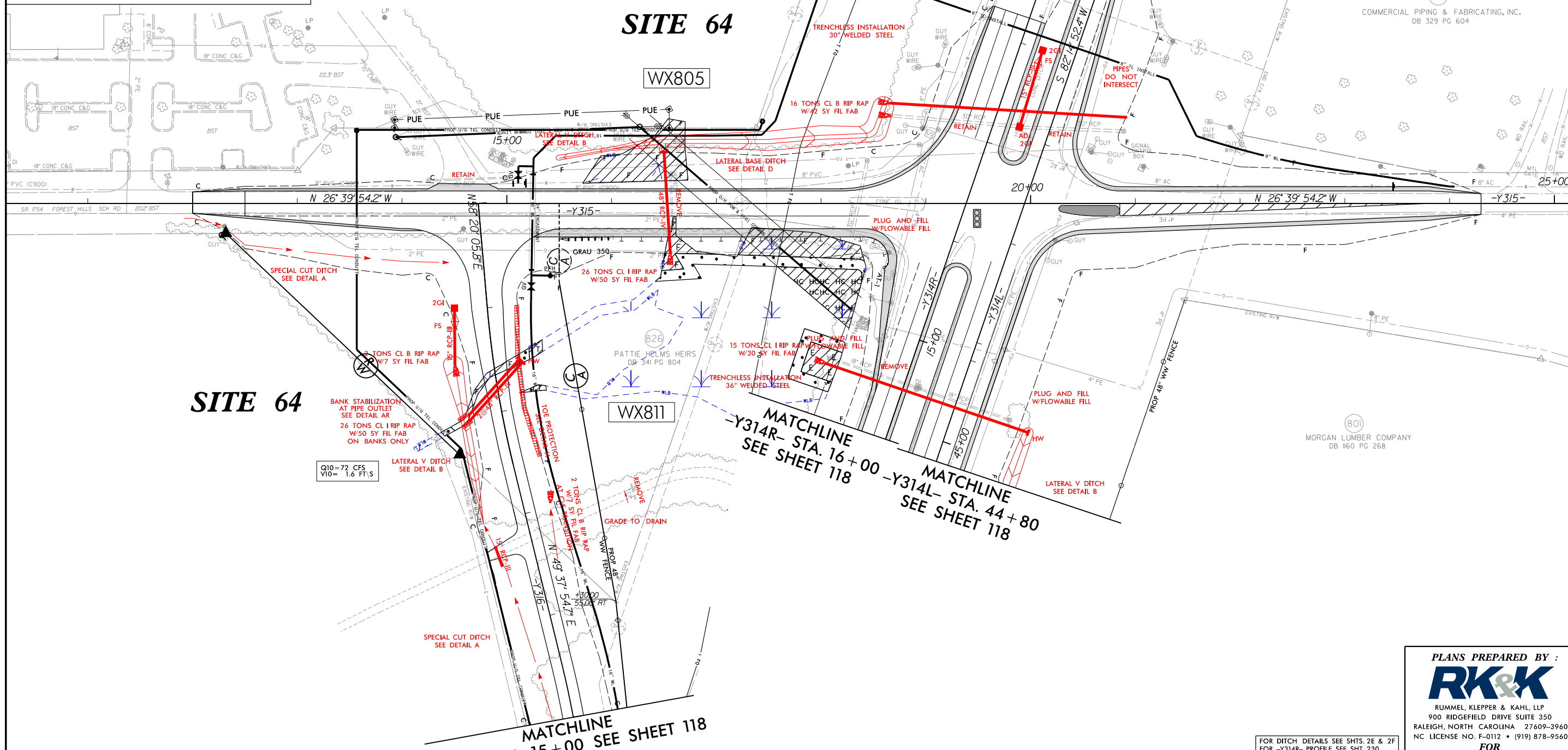
NOTES:

INSTALL ONE 48" RCP AT -Y316- STA. 11+76 BURIED 0.8' BELOW EXIST. WETLAND ELEVATION. INSTALL SECOND 48" RCP 1.0' ABOVE BURIED PIPE.



PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 119
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 9/22/16</b>	
<b>PERMIT DRAWING SHEET 256 OF 267</b>	

**SITE 64**



**SITE 64**

Q10 = 72 CFS  
V10 = 1.6 FT/S

FOR DITCH DETAILS SEE SHTS. 2E & 2F  
 FOR -Y314R- PROFILE SEE SHT. 230  
 FOR -Y314L- PROFILE SEE SHT. 233  
 FOR -Y315- PROFILE SEE SHT. 233  
 FOR -Y316- PROFILE SEE SHT. 234

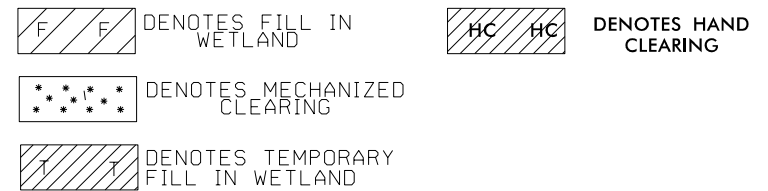
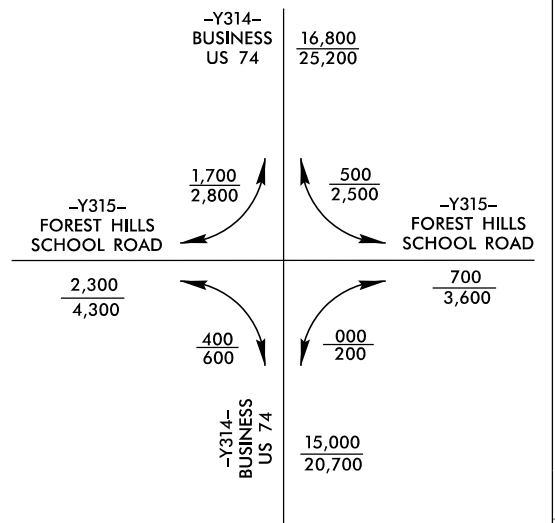
PLANS PREPARED BY :  
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 FOR  
**THE NORTH CAROLINA TURNPIKE AUTHORITY**



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ADT 2013  
ADT 2035

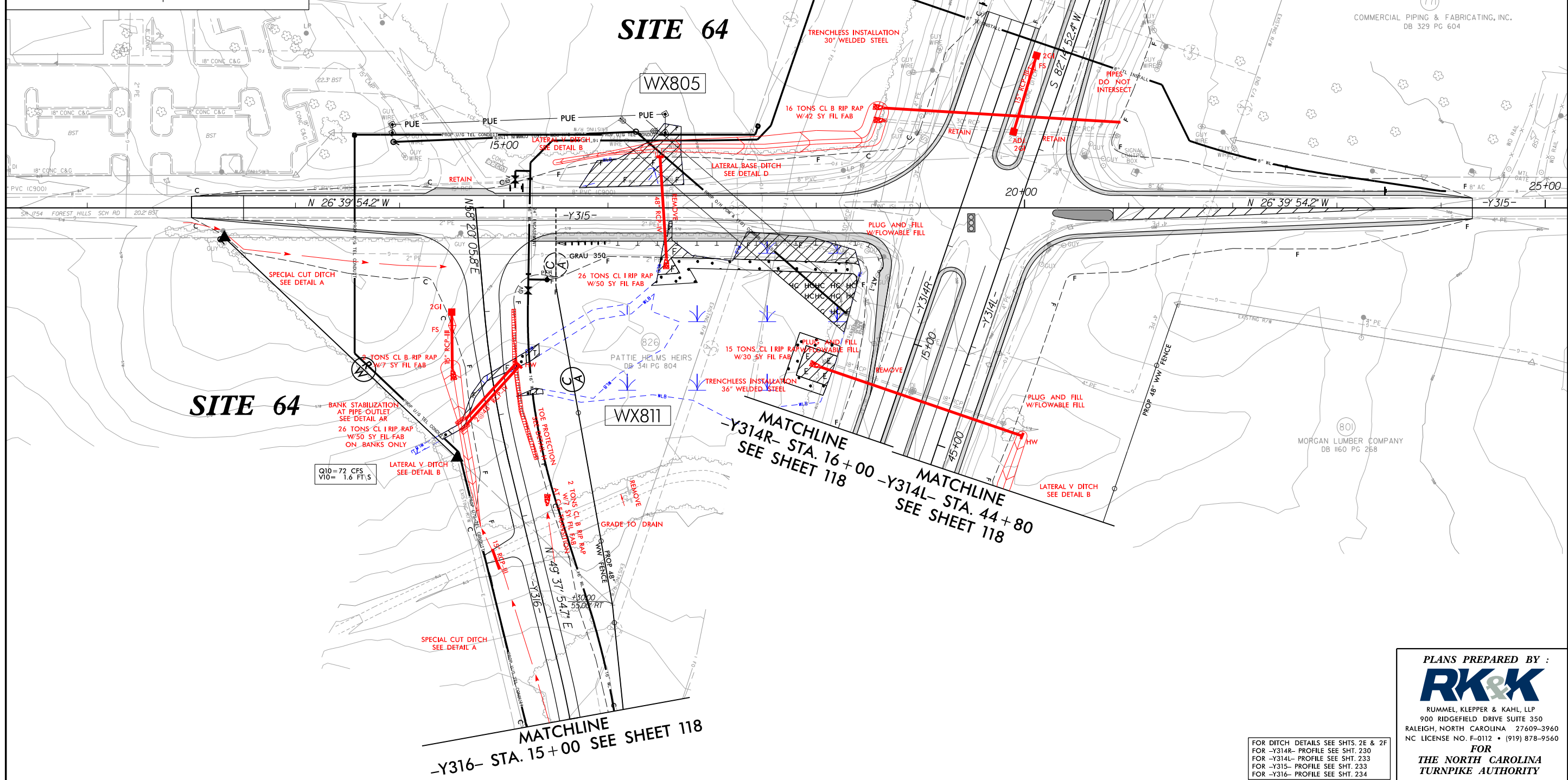
TRAFFIC DIAGRAM



NOTES:  
INSTALL ONE 48" RCP AT -Y316- STA. 11+76 BURIED 0.8' BELOW EXIST. WETLAND ELEVATION. INSTALL SECOND 48" RCP 1.0' ABOVE BURIED PIPE.



PROJECT REFERENCE NO. R-3329 / R-2559	SHEET NO. 119
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>REVISED 9/2/2016</b>	
<b>PERMIT DRAWING SHEET 257 OF 267</b>	



MATCHLINE  
-Y316- STA. 15+00 SEE SHEET 118

MATCHLINE  
-Y314R- STA. 16+00 SEE SHEET 118

MATCHLINE  
-Y314L- STA. 44+80 SEE SHEET 118

FOR DITCH DETAILS SEE SHTS. 2E & 2F  
FOR -Y314R- PROFILE SEE SHT. 230  
FOR -Y314L- PROFILE SEE SHT. 233  
FOR -Y315- PROFILE SEE SHT. 233  
FOR -Y316- PROFILE SEE SHT. 234

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

WETLAND PERMIT IMPACT SUMMARY - DESIGN SECTION 1												
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)
1	-DR1- 11+55 -Y111- 21+50 -L- 140+00	(2) 84" RCP-III 10'X8' RCBC						0.09		637		
		BANK STABILIZATION					0.02	<0.01	166	8		
2	-Y111- 13+00	FILL IN WETLANDS	0.14			0.06						
		UTILITY IMPACTS					0.06					
3	-L- 152+40 -Y113- 22+53	30" RCP-III 42" RCP-III						0.01	<0.01	130	10	
		BANK STABILIZATION						<0.01	<0.01	24	21	
		UTILITY RELOCATION							<0.01		19	
4	-Y114- 32+67 -R674- 16+15 -R574- 35+41 -L- 175+72 -R174- 29+50	10'X7' RCBC						0.06	<0.01	666	2	
		BANK STABILIZATION						0.02	<0.01	194	20	
5	SR16 11+50	60" RCP	0.05			0.02		0.02		114		
		BANK STABILIZATION						<0.01	<0.01	20		
		UTILITY RELOCATION			0.01							
6	Y112 27+50 RT	FILL IN WETLANDS	0.04			0.03						
7	-SR2- 17+00	FILL IN WETLANDS	0.24			0.04						
	-L- 198+00	FILL IN WETLANDS	0.64									
SUBTOTAL DESIGN SECTION 1:			1.12	0.00	0.01	0.15	0.06	0.22	0.01	1951	80	

\*Rounded totals are the sum of actual impacts

Revised 12/18/2015, 9/2/2016

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 UNION COUNTY  
 WBS - 34533.5.TA1 (R-3329/2559)  
 SHEET 261 of 267 9/30/2014

**WETLAND PERMIT IMPACT SUMMARY - DESIGN SECTION 2A**

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)
8	-L- 261+00	42" PIPE	<0.01		0.02	0.01		0.01		382		
9	-L- 265+40	(2) 9'X7' RCBC	0.12			<0.01		0.03		391		
		BANK STABILIZATION					<0.01	0.01	26	60		
		UTILITY IMPACTS		0.03				0.01		69		
10	-L- 293+48	12'X6' RCBC						0.02		167		
		BANK STABILIZATION						0.01	<0.01	105	20	
11	-L- 297+50 LT	(3) 36" RCP										
		BANK STABILIZATION						<0.01		10		
12 <sup>1</sup>	-L- 374+00	7'X8' RCBC FILL IN POND						0.13		532		
		BANK STABILIZATION						0.01	<0.01	65	24	
13 <sup>2</sup>	-L- 376+00	FILL IN POND						0.08				
14	-L- 396+14	10'X6' RCBC	0.12			0.01		0.04		327		
	-L- 396+14	BANK STABILIZATION						0.01	<0.01	42	18	
	-L- 392+00 RT	ROADWAY FILL	<0.01			0.02						
	-L- 395+50 RT	UTILITY IMPACTS		0.02								
15 <sup>3</sup>	-Y107- 50+00	FILL IN POND						0.13				
SUBTOTAL DESIGN SECTION 2A:			0.24	0.05	0.02	0.05	0.00	0.47	0.02	2037	201	

Revised 9/2/2016

\*Rounded totals are the sum of actual impacts  
<sup>1</sup> 0.07ac of fill in surface water due to draining pond  
<sup>2</sup> 0.08ac of fill in surface water due to draining pond  
<sup>3</sup> 0.13ac of fill in surface water due to draining pond

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

UNION COUNTY  
 WBS - 34533.5.TA1 (R-3329/2559)

WETLAND PERMIT IMPACT SUMMARY - DESIGN SECTION 2C												
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)
28	-L- 656+17 TO - 657+71 RT	36" RCP						<0.01		72		
		BANK STABILIZATION						<0.01	<0.01	62	10	
29	-L- 669+50	3@12'X12' RCBC						0.09		241		
		BANK STABILIZATION						0.04	0.01	123	38	
		UTILITY RELOCATION							0.02		55	
30	-L- 700+11 TO - 705+91	7'X7' RCBC						0.04	<0.01	375	33	
		BANK STABILIZATION						0.02	<0.01	206	10	
		UTILITY RELOCATION					0.02	<0.01		11		
31	-L- 718+00	FILL IN WETLANDS	0.09									
32	-L- 738+80 RT	72" RCP & PIPE REMOVAL	0.02					0.01	<0.01	59	20	
		BANK STABILIZATION						<0.01	<0.01	24	10	
33	-L- 752+51 TO - 769+15 LT	FILL IN WETLANDS 30" RCP	1.61			0.28						
	-L- 766+50 LT	UTILITY IMPACTS					0.03					
34	-L- 805+06 LT	15" RCP						<0.01	<0.01	13	10	
35	-L- 805+89	10'X7' RCBC						0.01		185		
		BANK STABILIZATION						0.01	0.01	82	74	
36	-L- 817+63	48" RCP	0.07					0.01		260		
		BANK STABILIZATION						<0.01	<0.01	16	10	
37	-TRA- 22+00 LT	24" & 48" RCP	0.28			0.01	0.03	0.02		380		
38	-L- 841+00 LT & RT	60" RCP & 2 66" RCPs	0.57					0.06		1016		
		BANK STABILIZATION						0.01	<0.01	95	24	
39 <sup>1</sup>	-L- 849+00 RT	FILL IN POND						0.22				
40 <sup>1</sup>	-L- 856+00 RT	FILL IN POND						0.90				
41 <sup>2</sup>	-L- 866+50	42" RCP						0.12		279		
		BANK STABILIZATION						<0.01	<0.01	34	10	
42	-L- 893+14	FILL IN STREAM						0.03	<0.01	276	13	
43	-L- 893+00	84" RCP	0.01			<0.01		0.05		299	11	
		BANK STABILIZATION						0.01	<0.01	28	10	
44	-L- 903+70	54" RCP	0.13			0.02		0.02		179		
		BANK STABILIZATION						<0.01	<0.01	18	10	
45 <sup>1</sup>	-Y302- 152+00 RT	24" RCP						0.05				
SUBTOTAL DESIGN SECTION 2C:			2.78	0.00	0.00	0.31	0.08	1.73	0.06	4322	359	

\*Rounded totals are the sum of actual impacts

<sup>1</sup> Fill in surface water due to draining pond

<sup>2</sup> 0.10ac of fill in surface water due to draining pond

Revised 12/18/2015, 9/2/2016

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

UNION COUNTY  
WBS - 34533.5.TA1 (R-3329/2559)

WETLAND PERMIT IMPACT SUMMARY - DESIGN SECTION 3B												
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)
55	-L- 1074+23	7' x 7' RCBC							0.02		157	
		BANK STABILIZATION							0.01	0.01	80	39
56 <sup>1</sup>	-Y309- 19+71	2@48" RCP	0.03		<0.01	<0.01						
		UTILITY IMPACTS		<0.01								
57	-L- 1096+08	2@42" RCP	0.19	<0.01	0.02	0.06						
58	-L- 1122+50 Lt	FILL IN WETLANDS	0.02			0.01						
59	-Y310- 23+00 Rt	BANK STABILIZATION FOR 36" RCP						<0.01	<0.01	12	10	
60 <sup>2</sup>	-L- 1162+27	72" RCP, 10'x6' RCBC w/42" floodplain pipe	0.64		0.06	0.05		<0.01	<0.01	3	10	
61	-L- 1167+23	48" RCP	0.08			<0.01						
62 <sup>3</sup>	-L- 1201+62	Extend 2@7'x7' RCBC w/ 2@8'x8' RCBC	0.01			0.01		<0.01		37		
		BANK STABILIZATION						0.01	<0.01	102	20	
		UTILITY IMPACTS		0.03								
63	-Y314R- 25+85 Rt	30" RCP	0.04			0.02						
64 <sup>4</sup>	-Y315- 16+53 -Y316- 11+76 -Y314R-15+50 RT	48" RCP 2@48" RCP 36" STEEL	0.14		0.02	0.08						
		UTILITY IMPACTS	0.03	<0.01			0.05					
SUBTOTAL DESIGN SECTION 3B:			1.17	0.04	0.11	0.23	0.05	0.04	0.01	391	79	

\*Rounded totals are the sum of actual impacts

<sup>1</sup> Temporary fill impacts include excavation of utility trench and backfill as well as equipment crossing during construction

<sup>2</sup> Excavation in wetlands includes 1170.4 sf (0.03 ac) of temporary excavation for bypass channel during construction

<sup>3</sup> Temporary fill impacts include excavation of utility trench and backfill as well as equipment crossing during construction

<sup>4</sup> Temporary fill impacts include excavation of utility trench and backfill as well as equipment crossing during construction

Revised 11/9/2015, 9/2/2016

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

UNION COUNTY  
WBS - 34533.5.TA1 (R-3329/2559)

