STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

April 16, 2021

U.S. Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, NC 27587

ATTN: Mr. Eric Alsmeyer

Subject: Request for Modification of the Phased Section 404 Individual Permit and Section 401 Individual Water Quality Certification for the construction of the Triangle Expressway Southeast Extension from NC-55 Bypass in Apex to I-40, Wake and Johnston Counties. TIP Nos. R-2721, R-2828, and R-2829. Debit $570 from WBS 376731.TA1.

Reference: USACE Section 404 Authorization SAW-2009-02240, issued October 24, 2019, modified February 4, 2020, and corrected February 7, 2020, and modified April 30, 2020, January 7, 2021, and March 19, 2021.

NCDWR Water Quality Certification Number 4179 and Neuse River Riparian Buffer Authorization, issued February 15, 2019, modified January 30, 2020, April 20, 2020, June 1, 2020, December 29, 2020, and March 9, 2021.

Dear Sir:

As you are aware, the North Carolina Department of Transportation (NCDOT) applied for a phased Section 404 Individual Permit, Section 401 Individual Water Quality Certification (WQC), Neuse River Riparian Buffer Authorization, Non-404 Jurisdictional Wetlands and Waters Permit for the subject project in September 2018. The project, also known as Complete 540, encompasses three NCDOT Transportation Improvement Plan (TIP) projects: R-2721 (NC-55 Bypass to US-401), R-2828 (east of US-401 to I-40 Interchange) and R-2829 (east of I-40 to US 64/264). Revised permit applications were submitted in February 2019 and the NCDWR 401 and USACE 404 Permits were issued in February and October of 2019. Additionally, NCDOT received a modified 401 WQC for the Complete 540 Project on January 30, 2020, April 23, 2020, June 1, 2020, December 29, 2020, and March 9, 2021 from the NC Division of Water Resources (NCDWR) and a revised Department of the Army authorization #SAW-2009-02240 on February 7, 2020, April 29, 2020, January 7, 2021, and March 19, 2021.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
TURNPIKE AUTHORITY
1578 MAIL SERVICE CENTER
RALEIGH NC 27699-1578

TELEPHONE: 919-707-2700
FAX: 919-715-551
Customer Service: 1-877-3684968

WEBSITE: NCDOT.GOV

Location:
1 SOUTH WILMINGTON STREET
RALEIGH NC, 27601

This letter is a request for a modification to Site 44 on the R-2828 section of the Complete 540 project. Included in this package are updated permit drawings for Site 44 (Permit Sheets 1, 97, and 98 of 171), updated permit summary sheets 166 through 171 of 171, and updated roadway plan sheet 2F-9.

Permit Site 44:

Construction of Bridge 9 is scheduled to begin shortly. During the field preparation to commence construction, it was noted that an area that is currently permitted as hand clearing is higher than the surrounding area and will actually need to be slightly excavated and graded to allow the required clearance under the bridge. The proposed changes to Site 44 are described below:

- Permit Site 44 (Permit Drawing 97 and 98 of 171, Plan Sheet 26)
  - Limited area of hand clearing changed to excavation:
    - Increase of 0.02 acre of wetland excavation impact.
    - Decrease of 0.01 acre of wetland hand clearing impact.

The reason for the difference in excavation to hand clearing impacts is due to rounding. Hand clearing at Site 44 was originally 0.55 acre (rounded from 0.551). The excavation is 0.0154 acre (which rounds to 0.02) and the new hand clearing is 0.5356 acre (which rounds to 0.54); thus the two values don't match.

Revised Impacts Summary R-2828

Due to the changes described above for R-2828, the total project impacts will now be as listed below.

Revised Table 4. R-2828 Jurisdictional Resources Impacts

Impact Type	Riparian Wetlands Temp./ Perm. (ac)	Non-Riparian Wetlands Perm. (ac)	Isolated Wetlands (ac)	Ponds (ac)	Isolated Ponds (ac)	Streams (lf)			Riparian Buffer (sq ft) Zone 1/2
						Perm.	Temp.	Structure* Stab.	
Neuse River Basin (HUC 03020201)	4.79 / 19.56	0.07	0.25	8.32	n/a	16,842	1,702	2,065	1,182,975/ 719,806

***Structure stabilization is pipe, culvert, and bank stabilization.**

Compensatory Mitigation

Currently, NCDOT has requested mitigation for R-2828 from NCDMS to cover 19.49 acres of wetland impacts. The new proposed wetland impacts are 19.56 acres, which is an increase of

0.02 acre from the currently requested mitigation needs. Per an email received on April 8, 2021, the USACE is not requiring additional mitigation for the increase due to the expectation that the wetlands will likely be present after bridge is built.

REGULATORY APPROVALS

Section 404: We are requesting a modification to the USACE Permit Number SAW-2009-02240 Section 404 Individual Permit for the above-described activities.

Section 401: We are requesting a modification to the WQC Permit Number 4179 Section 401 Individual Water Quality Certification. We are providing this application to NCDEQ, for their approval. Authorization to debit the $570.00 Permit Modification Fee from TIP No. R-2828/WBS 37673.1.TA1 is hereby given.

The individual permit modification package for the Complete 540 project (STIP Projects R-2721, R-2828, and R-2829) is available at https://xfer.services.ncdot.gov/pdea/PermApps/

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Deanna Riffey at driffey@ncdot.gov or 919-707-6151.

Sincerely,

DocuSigned by:
Rodger Rochelle
2CF80ADB9B414F0...

Rodger Rochelle, P.E.
North Carolina Turnpike Authority
Chief Engineer

cc: NCDOT Permit Application Standard Distribution List

09/08/99

TIP PROJECT: R-2828

CONTRACT: C204197

2/5/2021
G:\projectwise\pb\projectwiseint\wsp--victoria.kohlwey\d0348956\R2828_hyd_prm_wet_psh_01.dgn
USVK677148

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAKE & JOHNSTON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2828	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35516.3.GV1	NHP-0540(043)	DESIGN-BUILD
35516.2.3	NHP-0540(043)	R/W
35516.2.TA1	NHP-0540(043)	R/W

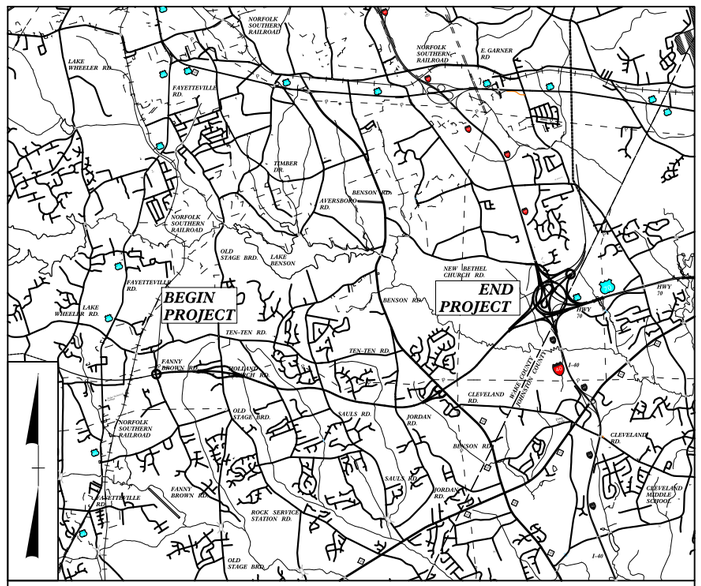
Permit Drawing Package
Last Revised on 04/15/21

LOCATION: TRIANGLE EXPRESSWAY SOUTHEAST EXTENSION FROM EAST OF US 401 TO EAST OF I-40

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS

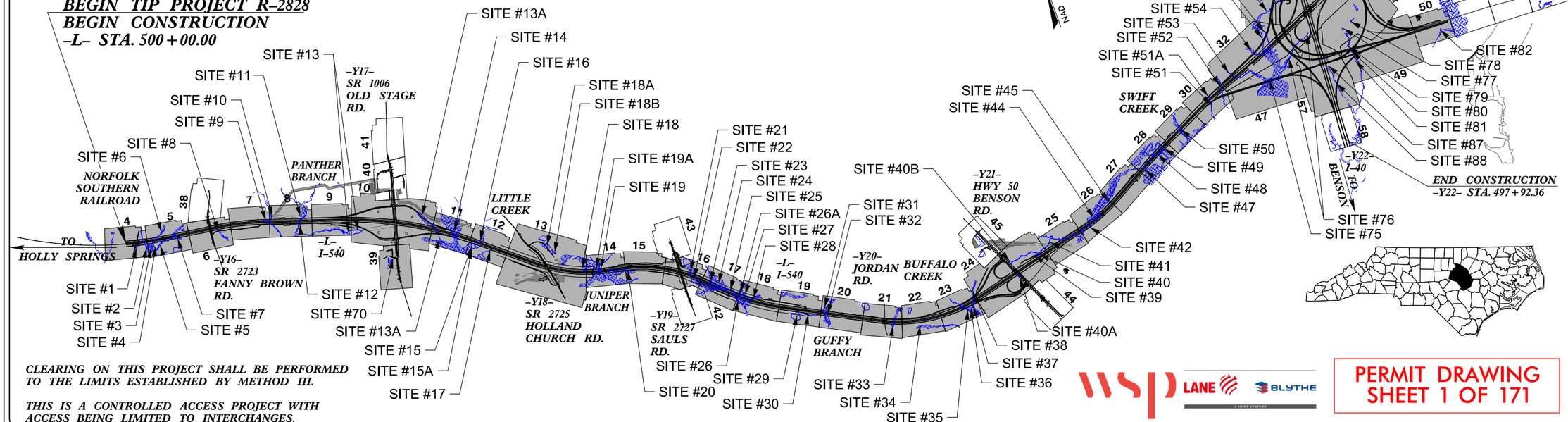
WETLAND AND SURFACE WATER IMPACTS PERMIT

PACKAGE R-2828
DATE: APRIL 15 , 2021



VICINITY MAP (NOT TO SCALE)

END TIP PROJECT R-2721B
BEGIN TIP PROJECT R-2828
BEGIN CONSTRUCTION
-L- STA. 500+00.00



END TIP PROJECT R-2828
END CONSTRUCTION
-L-STA. 968+50.00

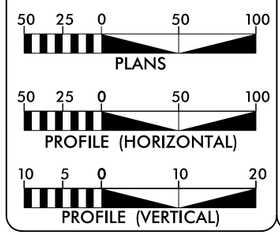
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

WSP LANE BLYTHE A JOINT VENTURE

PERMIT DRAWING
SHEET 1 OF 171

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = NA
ADT 2040 = 53,400
DHV = 12 %
D = 65 %
T = 11 % *
V = 75 MPH
*(TTST 4 + DUAL 7)

FUNCTIONAL CLASS: FREEWAY

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-2828 = 8.055 Miles

LENGTH OF STRUCTURE PROJECT R-2828 = 0.562 Miles

TOTAL LENGTH OF TIP PROJECT R-2828 = 8.617 Miles

NCDOT CONTACT: _____
DESIGN BUILD PROJECT ENGINEER – TRANSPORTATION PROGRAM MANAGEMENT UNIT

Prepared In the Office of
WSP USA
434 FAYETTEVILLE STREET
SUITE 2500
RALEIGH, NC 27601
TEL: 1.919.856.6040
FAX: 1.919.856.6099
LICENSE NO. F-0165
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPT. 09, 2019

LETTING DATE: DEC. 11, 2019

DANIEL BRIDGES, PE
PROJECT ENGINEER

RONYELL THIGPEN, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LANE BLYTHE

WSP 434 Fayetteville Street, Suite 1100, Raleigh, NC, 27601 NC ENG. NO. P-0161

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Permit Drawing Package
Last Revised on 04/15/21

NAD 83 2011

8/17/99 REVISIONS

MATCH LINE SEE SHEET 25 -L- STA. 829+00.00

MATCH LINE SEE SHEET 27 -L- STA. 843+00.00

SITE #44

SITE #41

SITE #42

SDF

WDV

SCY

WDU

PROPOSED NOISE WALL

WETLAND FILL IMPACT, TYP

6' BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 2-26

RIPRAP AT EMANKMENT CLASS II RIPRAP SEE DETAIL 2-30

BANK STABILIZATION CLASS I RIPRAP SEE DETAIL 2-51

TOE PROTECTION SEE DETAIL 2-34

TEMPORARY WORK TRESTLE

GRADE TO DRAIN

20' PUBLIC DRAINAGE EASEMENT SCALED FROM BM 2007 PG 2883

48" WD

RW MON

EIP

TYPE B-77

CAT-1

JB w/MH

98' PROP CGAU

GREU TYPE TL-3

PROPOSED GUIDERAIL

18" RCP III

24" RCP III

15" CSP W/ ELBOWS

CL B RIP RAP EST. 2 TON EST. 7 SY GF

CLASS II RIPRAP

BERM 'V' DITCH SEE DETAIL 2-41

LATERAL 'V' DITCH SEE DETAIL 2-20

NON-JURISDICTIONAL POND

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

HC HC DENOTES HAND CLEARING

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PONDS SHALL BE DRAINED IN ACCORDANCE WITH THE "POND DRAINAGE PLAN REQUIREMENT" AS APPROVED BY THE ENGINEER.

PERMIT DRAWING SHEET 97 OF 171

100 0 100
GRAPHIC SCALE

3/26/2021
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USVM04388

PROJECT REFERENCE NO.	SHEET NO.
R-2828	26
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LANE BLYTHE

WSP 434 Fayetteville Street, Suite 1100, Raleigh, NC 27601 NC ENG. NB P-0161

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Permit Drawing Package
Last Revised on 04/15/21

NAD 83(2011)

REVISIONS 8/17/99

MATCH LINE SEE SHEET 25 -L- STA. 829+00.00

MATCH LINE SEE SHEET 27 -L- STA. 843+00.00

SITE #44

SITE #41

SITE #42

SDF

WDV

SCY

WDU

PROPOSED NOISE WALL

WETLAND FILL IMPACT, TYP

6" BASE CHANNEL CHANGE W/CLASS II RIPRAP SEE DETAIL 2-26

RIPRAP AT EMANKMENT CLASS II RIPRAP SEE DETAIL 2-30

BANK STABILIZATION CLASS I RIPRAP SEE DETAIL 2-51

TOE PROTECTION SEE DETAIL 2-36

TEMPORARY WORK TRESTLE

TYPE B-77

CAT-1

CLASS II RIPRAP

2GI

18" RCP III

GREU TYPE TL-3

PROPOSED GUIDERAIL

JB w/MH

CL B RIP RAP EST. 2 TON EST. 7 SY GF

15" CSP W/ ELBOWS

BERM "V" DITCH SEE DETAIL 2-41

LATERAL "V" DITCH SEE DETAIL 2-20

NON-JURISDICTIONAL POND

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES HAND CLEARING

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

PONDS SHALL BE DRAINED IN ACCORDANCE WITH THE "POND DRAINAGE PLAN REQUIREMENT" AS APPROVED BY THE ENGINEER.

PERMIT DRAWING SHEET 98 OF 171

100 0 100
GRAPHIC SCALE

3/26/2021
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Permit Drawing Package
Last Revised on 02/24/20

WETLAND AND SURACE WATER IMPACTS 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)
1*	503+27 (RT)	RDWY Fill (WCD)	0.16									
2	505+24, 505+63 (LT)	9'x8' RCBC (SBP)						0.03	< 0.01	519	20	
2	505+24, 505+63 (LT)	9'x8' RCBC Pipe Stabil. (SBP)						< 0.01		95		
3	506+50 (RT)	42" RCP(WCE(1),WCE(2),SBR)	0.55			< 0.01		< 0.01	< 0.01	90	10	
3	506+50 (RT)	42" RCP Pipe Stabilization (SBR)						< 0.01		35		
4	508+50 (LT)- 511+70 (RT)	Drain Pond (PM)						1.57				
5**	508+60-515+40 (RT)	RDWY Fill WCF / Stream SBR	0.03					0.03		462		
6	512+15 (LT)	RDWY Fill WCH / Stream SBU	0.02		< 0.01	0.04		0.02	< 0.01	173	33	
7	515+32 (LT) - 520+00 (LT)	RDWY Fill WCI / Stream SBS	0.67		0.07	0.05		< 0.01		27		
8	529+75 - 531+00 (RT)	Roadway Fill (WCJ)	0.12			0.01						
9	545+63 - 548+40	Roadway Fill (WCL)	0.22									
10**	548+68 (LT)-549+40 (RT)	6'x8' RCBC (SBY, WCM)				< 0.01		0.05	< 0.01	485	18	
10	548+68 (LT)-549+40 (RT)	Culvert Stabilization (SBY)						< 0.01		77		
10	548+68 (LT)-549+40 (RT)	Bank Stabilization (SBY)						< 0.01		14		
11	557+67 (RT)-559+60 (LT)	9'x8' RCBC (WCQ, SBX)	0.08			0.04		0.08	< 0.01	484	22	
11	557+67 (RT)-559+60 (LT)	9'x8' RCBC Culvert Stabil. (SBX)						0.01		70		
11	557+67 (RT)-559+60 (LT)	Bank Stabilization (SBX)						< 0.01		7		
12	558+00 (RT)	Roadway Fill (WCR)	0.06									
13	Ramp Quad C (-Y17-)	Drain Pond (PN)						1.04				
13	Ramp Quad C (-Y17-)	Roadway Fill (WCV)	0.02			< 0.01						
13**	Ramp Quad C (-Y17-)	Roadway Fill (WCW)	0.04									
13A	Ramp Quad A (-Y17-)	Drain Pond (PP)						1.01				
13A	Ramp Quad A (-Y17-)	Roadway Fill WCZ(2)	0.40	< 0.01								
SHEET 1 SUBTOTALS***:			2.36	< 0.01	0.08	0.16		3.88	0.01	2538	103	0

NOTES:
*Represents an isolated wetland impact (also non-riparian)
**Represents any non-riparian wetland impact
***Rounded totals are sum of actual impacts

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
03/04/2020
WAKE & JOHNSTON
TIP NO. R-2828
WBS NO. 37673.1.TA2

Permit Drawing Package
Last Revised on 02/24/20

WETLAND AND SURACE WATER IMPACTS 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)
14	609+07 (LT)-610+38 (RT)	Roadway Fill (WCZ(1))	1.28			0.27						
14	609+07 (LT)-610+38 (RT)	10'x8' RCBC (SCC)						0.02	< 0.01	322	10	
14	609+07 (LT)-610+38 (RT)	Culvert Stabilization (SCC)						< 0.01		78		
14	609+07 (LT)-610+38 (RT)	10'x8' RCBC (SCK)						0.02	< 0.01	257	10	
14	609+07 (LT)-610+38 (RT)	Culvert Stabilization (SCK)						< 0.01		26		
15	616+50 (RT)	Drain Pond PQ, WCZ(2)						0.35				
15A	616+50 (RT)	Energy Dissipator (WCZ(2)	< 0.01			< 0.01						
16	618+00 (RT)	Drain Pond (PR)						1.01				
17	622+30 - 622+54 (RT)	Roadway Fill (WCZ(1))	0.01			< 0.01						
18	653+75 - 655 + 50 (LT)	Roadway Fill (WDB)	0.36			0.04						
18A	-Y18A- 15+00 - 17+50	Roadway Fill (WDD)	0.20			0.10						
18B	-Y18A- 19+50	18" RCP (SCF)						< 0.01	< 0.01	47	10	
18B	-Y18A- 19+50	18" RCP Pipe Stabil. (SCF)						< 0.01		17		
19	BRIDGE	Bank Stabilization (SCG)						< 0.01	< 0.01	10	17	
19A	BRIDGE	Roadway Fill (WDB)	0.03			0.02	0.85					
20	662+00 - 671+00	Roadway Fill (WDB)	2.00			0.12						
21	689+00 - 691+00 (LT)	Roadway Fill (WDF)	0.19		0.02	0.05						
22	690+00 - 691+75 (RT)	Drain Pond (PU)						0.87				
23	692+20 - 703+00	Roadway Fill (WDG(1))	2.75		0.38	0.26						
24	699+00 - 700+00 (LT)	Drain Pond (PW)						0.12				
25	703+00 - 705+40	Drain Pond (PV)						0.93				
26	697+00 -709+00	Roadway Fill (SCL)						0.06	< 0.01	1047	10	
26	697+00 -709+00	Culvert Stabilization (SCL)						< 0.01		30		
SHEET 2 SUBTOTALS***:			6.82		0.39	0.86	0.85	3.40	< 0.01	1834	57	0

NOTES:
*Represents an isolated wetland impact (also non-riparian)
** Represents an isolated wetland impact
***Rounded totals are sum of actual impacts

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
03/04/2020
WAKE & JOHNSTON
TIP NO.R-2828
WBS NO. 37673.1.TA2

Permit Drawing Package
Last Revised on 02/16/21

WETLAND AND SURACE WATER IMPACTS 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)
26A	707+50	Roadway Fill (SCM)						0.01	< 0.01	266	35	
26A	707+50	Culvert Stabilization (SCM)						< 0.01		65		
27	705+75 - 714+00	Roadway Fill (WDH)	2.44		0.03	0.24						
28	711+00 - 714+00 (LT)	Roadway Fill (SCN)						0.01	< 0.01	156	10	
29	726+50 - 728+00 (RT)	Drain Pond (PY)						1.40				
30	728+00 - 734+50 (RT)	Channel Change (SCQ)						0.06		673		
31	736+00	Roadway Fill (WDJ, SCQ)	0.38			0.09		0.03	< 0.01	130	58	
32	736+70 (LT) - 738+00 (RT)	2 @ 8'x9' RCBC (SCP)						0.07	0.02	379	92	
32	736+70 (LT) - 738+00 (RT)	Culvert Stabilization (SCP)						< 0.01		44		
32	736+70 (LT) - 738+00 (RT)	Bank Stabilization (SCP)						< 0.01		29		
33	759+00 (RT) - 759+82 (LT)	Roadway Fill (WDM)	0.39			0.03						
34	767+65 (RT)	Roadway Fill (WDN)				< 0.01						
35	782+00 (LT)	9'x8' RCBC (SCT)						0.05	< 0.01	441	37	
35	782+00 (LT)	Culvert Stabilization (SCT)						< 0.01		47		
35	782+00 (LT)	Bank Stabilization (SCT)						< 0.01		18		
36	782+00 - 787+20	Roadway Fill (WDO)	0.71		< 0.01	0.06						
37	785+90 (RT) - 787+70 (LT)	48" RCP (SCV)						0.03	< 0.01	394	20	
37	785+90 (RT) - 787+70 (LT)	Pipe Stabilization (SCV)						< 0.01		37		
38	788+00 (LT)	Roadway Fill (WDP)				< 0.01						
39	812+00 - 813+00 (LT)	Roadway Fill (WDS)	0.08									
40	812+90 - 813+37 (LT)	Channel Change (SDB)						< 0.01		54		
40	813+50 (LT)	Channel Change (SDC)						< 0.01		93		
40A*	-Y21- 40+00 (LT)	Roadway Fill (WDR)	0.09									
40B	-Y21- 44+40 (RT)	Roadway Fill (SCZ)						< 0.01	< 0.01	52	13	
SHEET 3 SUBTOTALS***:			4.09		0.03	0.43		1.70	0.03	2878	265	0

NOTES:
*Represents an isolated wetland impact (also non-riparian)
**Represents any non-riparian wetland impact
***Rounded totals are sum of actual impacts

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
03/04/2020
WAKE & JOHNSTON
TIP NO.R-2828
WBS NO. 37673.1.TA2

Permit Drawing Package
Last Revised on 04/15/21

WETLAND AND SURACE WATER IMPACTS 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)
41	813+50 (LT) - 829+50 (RT)	Channel Change (SCY)						0.21	0.05	1453	187	
41	-Y21- 44+50 (RT)	18" CSP (SCY)						< 0.01		58		
41	-Y21- 44+50 (RT)	Pipe Stabilization (SCY)						< 0.01		21		
41	829+50 (LT) - 834+00 (RT)	Bank Stabilization (SCY)						0.08		283		
42	BRIDGE 832+50 (RT)	Work Trestle (WDU)					0.02					
44	BRIDGE	Bridge****	0.02		0.02		0.54		0.05		238	
44	BRIDGE	Bank Stabilization						0.01		44		
45	841+78 - 843+00 (LT)	Roadway Fill (WDV)	0.05			0.03						
47	856+50 - 861+50	Roadway Fill (WDV)	0.37			0.05						
48	861+40 - 866+30	Work Trestle (WDV)	0.02			< 0.01	0.65					
49	867+50 - 868+50	Work Trestle (WDY)	< 0.01				0.17					
50	876+00	14'X8' RCBC (SDJ)						0.03	< 0.01	318	46	
50	876+00	Culvert Stabilization (SDJ)						< 0.01		42		
50	876+00	Bank Stabilization (SDJ)						< 0.01		48		
50A	875+50 - 877+00	Roadway Fill (WDZ)	0.56			0.09						
51	890+00	42" RCP (SDK)						< 0.01	< 0.01	32	10	
51	890+00	Pipe Stabilization (SDK)						< 0.01		21		
51A	890+00	Roadway Fill (WEA)	0.29									
52	895+00	60" RCP (SDL)						0.05	< 0.01	588	20	
52	895+00	Pipe Stabilization (SDL)						< 0.01		39		
53	900+50 (LT) - 906+50 (RT)	42" RCP (SDM)						0.05	< 0.01	948	20	
53	900+50 (LT) - 906+50 (RT)	Pipe Stabilization (SDM)						< 0.01		47		
54	911+00 (LT) - 913+75 (RT)	Roadway Fill (WEC)	1.88			0.10						
SHEET 4 SUBTOTALS***:			3.19		0.02	0.27	1.38	0.45	0.10	3942	521	0

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****Impacts are rounded to the nearest hundreds

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
03/04/2020
WAKE & JOHNSTON
TIP NO.R-2828
WBS NO. 37673.1.TA2

Permit Drawing Package
Last Revised on 02/24/20

WETLAND AND SURACE WATER IMPACTS 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)
55	914+00 (RT)-918+50 (LT)	2@ 9'x9' RCBC (SDW)						0.12	< 0.01	834	10	
55	914+00 (RT)-918+50 (LT)	Culvert Stabilization (SDW)						< 0.01		18		
55	914+00 (RT)-918+50 (LT)	Bank Stabilization (SDW)						< 0.01		4		
56	Y22SLIPRPB 38+50 (LT)	Channel Change (SDV)						0.02	< 0.01	518	10	
57	-Y22RPB- 25+42 (LT)	54" RCP (SDT)						0.01	< 0.01	113	10	
57	-Y22RPB- 25+42 (LT)	Pipe Stabilization (SDT)						< 0.01		22		
57A	-Y22RPB- 26+50 (LT)	Channel Change (SDS)						< 0.01	< 0.01	72	10	
58	Y22FLYBD 46+50-47+75	42" RCP (SDT)						0.01	< 0.01	196	20	
58	Y22FLYBD 46+50-47+75	Pipe Stabilization (SDT)						< 0.01		47		
58A	Y22FLYCC 123+00-127+00	54" RCP (SDT)						0.05	< 0.01	485	20	
58A	Y22FLYCC 123+00-127+00	Pipe Stabilization (SDT)						< 0.01		57		
59	Y22FLYCC 119+00 (RT)	15" CSP (SDX)						< 0.01		17	15	
59	Y22FLYCC 119+00 (RT)	Pipe Stabilization (SDX)						< 0.01	< 0.01	75		
59A	Y22FLYCC 119+00 (RT)	Roadway Fill (WEJ)				< 0.01						
70	-Y17- 28+50	24" Pipe Stabilization SCB(1)						< 0.01	< 0.01	20	10	
72	REMOVED	Non-Jurisdictional Pond (PAB)										
73	Y22FLYBD 34+70 (RT)	30" RCP Extension (SDR)						< 0.01	< 0.01	10	10	
73	Y22FLYBD 34+70 (RT)	Pipe Stabilization (SDR)						< 0.01		57		
75	Y22FLYCC 34+00-41+00	Bridge (WEC, SDV)	0.03			0.02	1.56		0.01		254	
76	Y22FLYCC 143+00 (RT)	42" RCP (WEC, SDO)	< 0.01			< 0.01		0.08	< 0.01	1101	10	
77	Y22FLYCC 71+00 (615' LT)	Roadway Fill (WEY)	0.06									
78	REMOVED	60" RCP Pipe Removal (SET)										
79	Y22FLYBD 83+00 (LT)	54" RCP (SET)						0.04	< 0.01	563	20	
79	Y22FLYBD 83+00 (LT)	Pipe Stabilization (SET)						< 0.01		44		
SHEET 5 SUBTOTALS***:			0.09			0.02	1.56	0.36	0.02	4253	399	0

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WAKE & JOHNSTON
TIP NO.R-2828
WBS NO. 37673.1.TA2

Permit Drawing Package
Last Revised on 04/15/21

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
80	-Y22FLYBD- 83+50 (RT)	Roadway Fill (WEV)	0.03									
81	-Y22RPDE- 29+50 (RT)	Roadway Fill (WEU)	0.04									
82	-Y22FLYBD- 113+30 (RT)	HSB Outlet SEH, (WFN(2))				0.05			< 0.01		10	
82	-Y22FLYBD- 113+30 (RT)	12" Pipe Stabil. (SEH)						< 0.01		15		
82A	-Y22SEC2- 382+00 - 386+00 (LT)	Channel Change (SEM)						0.04	< 0.01	422	20	
83	-Y22SEC2- 396+50 (LT)	Channel Change (SEK, WFF)				< 0.01		< 0.01	< 0.01	28	13	
84	-Y22SEC2- 405+00 (LT)	60" CMP & 72" WSP (SEL)							< 0.01		10	
84	-Y22SEC2- 405+00 (LT)	Pipe Stabilizatoin (SEL)						< 0.01		37		
85	-Y22SEC2- 416+00 (LT)	30" RCP Pipe Extension (SEV)						< 0.01	< 0.01	59	10	
85	-Y22SEC2- 416+00 (LT)	Pipe Stabilizatoin (SEV)						< 0.01		19		
87	-Y22SEC2- 474+20 (LT)	42" Pipe (SES)							< 0.01		10	
87	-Y22SEC2- 474+20 (LT)	Pipe Stabilization (SES)						< 0.01		10		
88	-Y22SEC2 (LT) - 80+00 (LT)	48" RCP (SES)						0.02	< 0.01	244	20	
88	-Y22SEC2 (LT) - 80+00 (LT)	Pipe Stabilizatoin (SES)						< 0.01		30		
91	Y22FLYCC 121+30/121+90 (RT)	Haul Road (SDQ)							0.01		66	
	SHEET 1 SUBTOTALS		2.36	< 0.01	0.08	0.16		3.88	0.01	2538	103	
	SHEET 2 SUBTOTALS		6.82		0.39	0.86	0.85	3.40	< 0.01	1834	57	
	SHEET 3 SUBTOTALS		4.09		0.03	0.43		1.70	0.03	2878	265	
	SHEET 4 SUBTOTALS		3.19		0.02	0.27	1.38	0.45	0.10	3942	521	
	SHEET 5 SUBTOTALS		0.09			0.03	1.56	0.36	0.02	4253	399	
TOTALS***:			16.62	< 0.01	0.52	1.79	3.79	9.88	0.20	16309	1504	0

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WAKE & JOHNSTON
TIP NO.R-2828
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SHEET 171 OF 171

GRADING PLAN – BRIDGE 9

Revised 4/16/21

wsp
414 Fayetteville Street, Suite 1500, Raleigh, NC 27601
NC FIRM NO. P-0165

PROJECT REFERENCE NO.	SHEET NO.
R-2828	2F-9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

8/17/99

STEVEN & AMANDA KUBERA
DB 13792 PG 1471
BM 2007 PG 2884

NCDOT
DB 010353 PG 02477 02479

T. H. TURNER FARMS, INC.
DB 2626 PG 799

RANDY PENNY & BILLIE MATTHEWS
DB 6312 PG 324

DONALD & PARTICIA MAYNARD
DB 11320 PG 130
BM 2005 PG 735

-L- TS Sta. 829+35.96

-L- SC Sta. 832+85.96

PROPERTY LINE IS CENTERLINE OF CAUSEWAY BRANCH AS IT MEANDERS

EXISTING R/W PER I8203I_PSD_1

2512 HW
2510 2GI
2511 2GI
2503 2GI
2508 2GI
2516 2GI
2509 BDO
2004
2110
2604 2GI
2608 JB_wMH
2602 2GI
2601

18" RCP-III
15" RCP-III
12" RCP-III
24"
15"
18"
FS
BDO
5" CSP ELBOWS

Change from hand clearing to excavation for Site #44.

LEGEND:
GRADING LIMITS

3/19/2021
C:\projectwise\pb\projectwise\khorwa\d0289309\R2828_rdy_psh_2F-9.dgn
khorwa