STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

NICHOLAS J. TENNYSON
SECRETARY

October 15, 2015

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

ATTN: Mr. Eric Alsmeyer
NCDOT Division 5 Coordinator

SUBJECT: **Request for Modification of the Section 404 Individual Permit and Section 401 Water Quality Certification** for the proposed East End Connector from NC 147 (Durham Freeway/Buck Dean Expressway) to north of NC 98 (Holloway Street) in Durham, Durham County, North Carolina, Division 5. Federal Aid Project No. NHF–76–1(2), TIP No. U-0071.

Debit $570.00 from WBS Element No. 34745.1.1

REFERENCE: 1) USACE Individual Permit, Action ID No. SAW-2011-00796, dated March 24, 2014

2) USACE Individual Permit Modification, Action ID No. SAW-2011-00796, dated May 7, 2015.

3) NCDWR Section 401 Water Quality Certification, Neuse River Buffer Authorization, and Isolated Wetlands Permit, NCDWR Project No. 20131282, Certification No. 3980, dated January 28, 2014.

4) Modification to the NCDWR Section 401 Water Quality Certification, Neuse River Buffer Authorization, and Isolated Wetlands Permit, NCDWR Project No. 20131282 ver. 2, Certification No. 3980, dated April 15, 2015.

Dear Sir:

The purpose of this letter is to request a second modification to the United States Army Corps of Engineers (USACE) Section 404 Individual Permit and North Carolina Division of Water Resources (NCDWR) Section 401 Water Quality Certification for the above-referenced project.

In addition to this cover letter, please find enclosed new Wetland Permit Drawing Sheet No. 1A of 91 and revised Wetland Permit Drawing Sheet Nos. 36, 74, 90, and 91 of 91.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
NATURAL ENVIRONMENT SECTION
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-707-6100

FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

PHYSICAL ADDRESS:
Century Center - Building B
1020 Birch Ridge Dr
Raleigh, NC 27610-4328

IMPACTS TO WATERS OF THE UNITED STATES

Surface Waters

All revisions occur within the Neuse River Basin (HUC 03020101). No revisions to wetland or buffer impacts were made in this modification. Stream impact revisions occur at Sites 6 and 23. Descriptions for the changes at each site are below. Please also see Table 1, which has been revised to reflect these modifications. Revised Sites, sub-totals, and totals are in italics.

- **Permit Site 6 (Permit Drawing 36 of 91) at 21+78 -Y7RPA- Lt:** The contractor has installed the 66-inch pipe structure and rip rap bank stabilization following the most recently approved permit drawing at this site. The Department proposes to install additional Class II rip rap on the stream bank that would allow for the permanent stability to extend to the utility line crossing (and associated rip rap bank stabilization) downstream of this pipe structure that is depicted on Utility Stream Permit Drawing 2 of 5. This design change will result in a reduction in temporary stream impacts of 15 linear ft. (all will be eliminated) and an increase in bank stabilization impacts of 25 linear ft.

- **Permit Site 23 (Permit Drawing 74 of 91) at 45+00 -US70FLY- Lt:** The contractor is currently installing the single barrel culvert at this site. The Department has evaluated existing streambank stability downstream of the culvert and proposes to add additional Class II rip rap bank stabilization along both streambanks at the outlet to provide for enhanced permanent stability. This design change will result in a reduction in temporary stream impacts of 11 linear ft., a decrease in permanent stream impacts of 10 linear ft., and an increase in bank stabilization impacts of 13 linear ft.

In addition to the modifications at Sites 6 and 23, design revisions are also proposed at Sites 7, 8, 12, 17, and 23. These revisions will not alter the currently permitted impact totals at these sites. Descriptions for the changes at these sites are below.

- **Culverts at 95+48 -L- Lt/Rt (Permit Site 7, Permit Drawing 36 of 91), 133+41 -L- Lt/Rt (Permit Site 17, Permit Drawing 60 of 91 [not included]), 34+45 -Y3- Lt/Rt (Permit Site 23, Permit Drawing 74 of 91), and 19+07 -Y4- Lt/Rt (Permit Site 7, Permit Drawing 36 of 91):** The contractor has completed installation of the single-barrel box culvert at 95+48 -L- Lt/Rt (Permit Site 7). The streambed has a headcut above the culvert inlet. The Department proposes to install a one foot sill at the inlet and outlet of the culvert at this location, as well as the other three culverts on the project (at Sites 7, 17, and 23). Please see added Wetland Permit Drawing Sheet No. 1A of 91 for the culvert sill detail.

- **Permit Site 7 (Permit Drawing 36 of 91) at 20+50 -Y7RPA- Rt:** The Department proposes to install additional Class II rip rap bank stabilization on the north streambank at the culvert outlet. Note that this rip rap is fully within the limits of Class II rip rap bank stabilization previously permitted along the south streambank at the culvert outlet following the most recently approved permit drawing.

- **<u>Permit Site 8 (Permit Drawing 36 of 91) at 20+00 -Y4- Lt</u>:** The original plan indicated placement of Class II rip rap in an existing stream channel. Note that the stream impact has been previously permitted as a total take. The Department has evaluated this design based on existing field conditions and now proposes to relocate the channel into a rip rap lined-lateral base false cut located at the toe of the fill slope. Please see Detail ZZ on the permit drawing.

- **<u>Permit Site 12 (Permit Drawings 48 [not included] and 74 of 91) at 41+60 -US70FLY- Rt</u>:** The original plan indicated construction of a tail ditch (with no flow line liner) to convey stream flow through the project. The Department has evaluated this design based on existing field conditions and now proposes to relocate the stream channel into a tail ditch with Class I rip rap in the flow line and on the banks. Please see Detail BG3 on Permit Drawing No. 74.

Table 1. Revised Surface Water Impacts within the Neuse River Basin (HUC 03020201)

Permit Site No.	Stream Name	Stream ID[1]	Intermittent /Perennial	Impact Type	Impacts (lin. ft.)	Impacts Requiring USACE mitigation (lin. ft.)	USACE Mitigation Ratio	Impacts Requiring 1:1 DWR mitigation (lin. ft.)
1	UT of Goose Creek	S-B	Intermittent	Perm. Fill	412	0[2]		0[3]
2	UT of Goose Creek	S-A	Intermittent	Temp. Fill	14	0		0
				Perm. Fill	673	0[2]		0[3]
				Bank Stabil.	20	0[5]		0[3]
3	UT of Goose Creek	S-35	Intermittent	Perm. Fill	410	0[2]		0[3]
4	UT of Little Lick Creek	S-26	Intermittent (**Isolated**)	Temp. Fill	15	0		0
				Perm. Fill	349	0[4]		0[3]
				Bank Stabil.	70	0[4]		0[3]
6	*UT of Little Lick Creek*	*S-25*	*Intermittent*	*Bank Stabil.*	*25*	*0*[2]		*0*[3]

Table 1. Revised Surface Water Impacts within the Neuse River Basin (HUC 03020201) (Continued)

Permit Site No.	Stream Name	Stream ID[1]	Intermittent /Perennial	Impact Type	Impacts (lin. ft.)	Impacts Requiring USACE mitigation (lin. ft.)	USACE Mitigation Ratio	Impacts Requiring 1:1 DWR mitigation (lin. ft.)
7	UT of Little Lick Creek	S-18	Perennial	Temp. Fill	104	0		0
				Perm. Fill	665	665	2:1	665
				Bank Stabil.	305	0[5]		305
8	UT of Little Lick Creek	S-19	Intermittent	Perm. Fill	443	0[2]		0[3]
9	UT of Little Lick Creek	S-24	Intermittent	Perm. Fill	29	0[2]		0[3]
				Bank Stabil.	43	0[5]		0[3]
12	UT of Little Lick Creek	S-16	Intermittent	Temp. Fill	132	0		0
				Perm. Fill	705	0[2]		0[3]
				Bank Stabil.	42	0[5]		0[3]
17	UT of Little Lick Creek	S-6	Perennial	Temp. Fill	28	0		0
				Perm. Fill	479	479	2:1	479
				Bank Stabil.	85	0[5]		85
17A	UT of Little Lick Creek	S-12	Intermittent	Temp. Fill	56	0		0
17B	UT of Little Lick Creek	S-14	Intermittent	Temp. Fill	7	0		0
23	*UT of Little Lick Creek*	*S-6*	*Perennial*	*Temp. Fill*	*65*	*0*		*0*
				Perm. Fill	*270*	*270*	*2:1*	*270*
				Bank Stabil.	*140*	*0[5]*		*140*
24	UT of Little Lick Creek	S-7	Intermittent	Temp. Fill	23	0		0
				Perm. Fill	104	0[2]		0[3]

Table 1. Revised Surface Water Impacts within the Neuse River Basin (HUC 03020201) (Continued)

Permit Site No.	Stream Name	Stream ID[1]	Intermittent /Perennial	Impact Type	Impacts (lin. ft.)	Impacts Requiring USACE mitigation (lin. ft.)	USACE Mitigation Ratio	Impacts Requiring 1:1 DWR mitigation (lin. ft.)
25	UT of Little Lick Creek	S-2	Intermittent	Temp. Fill	10	0		0
				Perm. Fill	168	0[2]		0[3]
				Bank Stabil.	35	0[5]		0[3]
26	UT of Little Lick Creek	S-2	Intermittent	Temp. Fill	23	0		0
				Perm. Fill	50	0[2]		0[3]
				Bank Stabil.	50	0[5]		0[3]
27	UT of Little Lick Creek	S-6	Perennial	Bank Stabil.	10	0[5]		10[6]
U-1	UT of Little Lick Creek	S-25	Intermittent	Utility/ Bank Stabil.	20	0[5]		0[3]
Temporary Fill Impacts (Non-isolated)					*462*	0		0
Temporary Fill Impacts (Isolated)					15	0		0
Permanent Fill Impacts (Non-isolated)					*4,408*	*1,414*		*1,414*
Permanent Fill Impacts (Isolated)					349	0[4]		0
Bank Stabilization Impacts (Non-isolated)					*775*	0		*540*
Bank Stabilization Impacts (Isolated)					70	0[4]		0
TOTAL TEMPORARY IMPACTS					***477***	**0**		**0**
TOTAL PERMANENT IMPACTS					***5,602***	***1,414***		***1,954***

[1]Stream IDs are from the JD re-verification packet, dated April 7, 2011.

[2]Per USACE, no compensatory mitigation is required for permanent impacts (including bank stabilization) to USACE-regulated intermittent streams associated with this project.

[3] Per the NCDWQ Public Memorandum dated August 14, 2009, any NCDOT project within the Merger 01 process that has reached CP 4A prior to the effective date of October 16, 2009 is not subject to the NCDWR Intermittent Stream Mitigation Policy. This project reached CP 4A on December 13, 2007 and is not subject to this policy. Therefore, no compensatory mitigation for permanent impacts along intermittent streams is required by NCDWR for this project.

[4]Isolated streams are not regulated by USACE.

[5]Per USACE, bank stabilization impacts do not require compensatory mitigation.

[6]Although this Site does not individually exceed the 150 linear foot threshold set by NCDWR for requiring compensatory mitigation, when combined with other Sites along the same stream, the cumulative impact to the stream exceeds that threshold.

Compensatory Mitigation

Compensatory mitigation requirements for permanent stream impacts associated with U-0071 within the Neuse River Basin (HUC 03020101) are summarized below in Table 2. Wetland mitigation requirements have not changed since the original application and subsequent permits. Buffer mitigation requirements have not changed since the 1st permit modification application and subsequent revised certification. Revised sub-totals and totals are in italics.

Stream Impacts

A total of 5,602 linear feet of permanent warm water stream impacts will occur within the Neuse Basin. This is an increase of 28 linear feet compared to the 5,574 linear feet that was reported in the 1st permit modification application. The 28 linear-foot increase is due to the addition of 38 linear feet of bank stabilization, minus 10 linear feet of permanent stream impacts due to the reduction at Site 23.

A total of 1,414 linear feet of permanent warm water stream impacts will require compensatory mitigation per the USACE at a 2:1 ratio. This is a reduction of 10 linear feet compared to the original permit application/1st permit modification application and is due to the reduction in permanent stream impacts at Site 23. The 38 linear-foot increase in bank stabilization impacts does not require compensatory mitigation per USACE. Since there was a reduction in mitigable impacts rather than an increase, a revised Mitigation Acceptance Letter from the N.C. Department of Environmental Quality (DEQ), Division of Mitigation Services (DMS) is not being pursued at this time.

The amount of compensatory mitigation required by NCDWR increased since the 1st permit modification application from 1,951 linear feet to 1,954 linear feet of permanent warm water stream impacts. This revised amount will be mitigated for at a 1:1 ratio.

After revisions, the total USACE mitigation requirement still exceeds the NCDWR mitigation requirement.

Table 2. Revised Neuse River Basin Compensatory Mitigation Summary

	Stream Impacts (lin. ft.)
Impacts Requiring Mitigation	*1,414*
Mitigation Ratio	2:1
Total DMS Mitigation Required	*2,828*

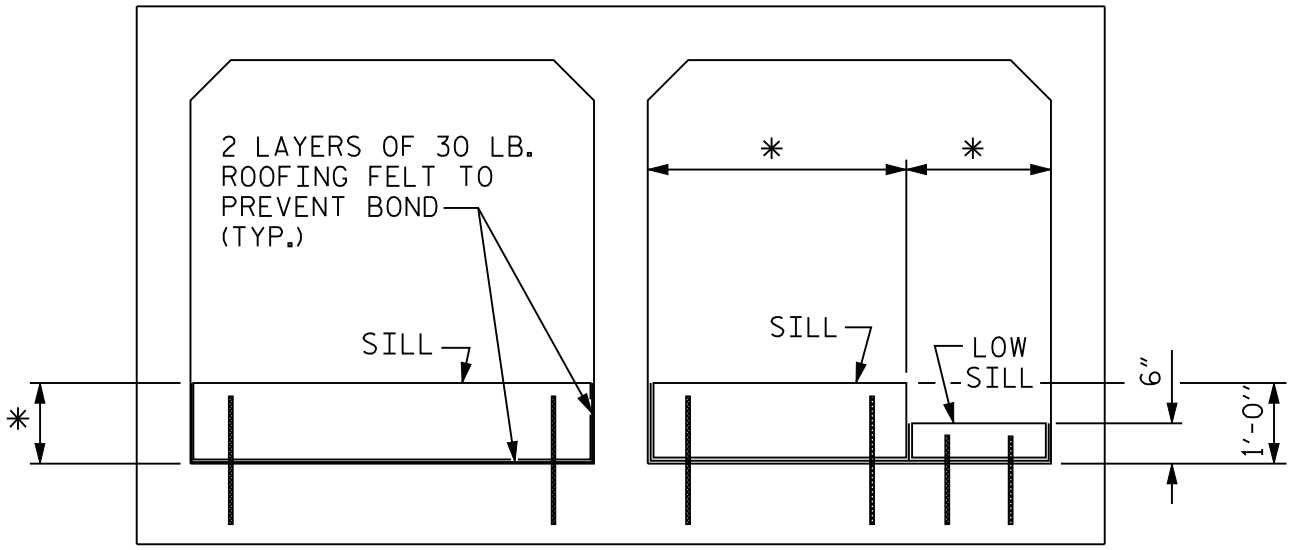
A copy of this permit modification application and its distribution list will be posted on the NCDOT website at https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx, under *Quick Links > Permit Applications*. Thank you for your time and assistance with this project. Please contact James Mason at either jsmason@ncdot.gov or (919) 707-6136 if you have any questions or need additional information.

Sincerely,

for Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis Unit

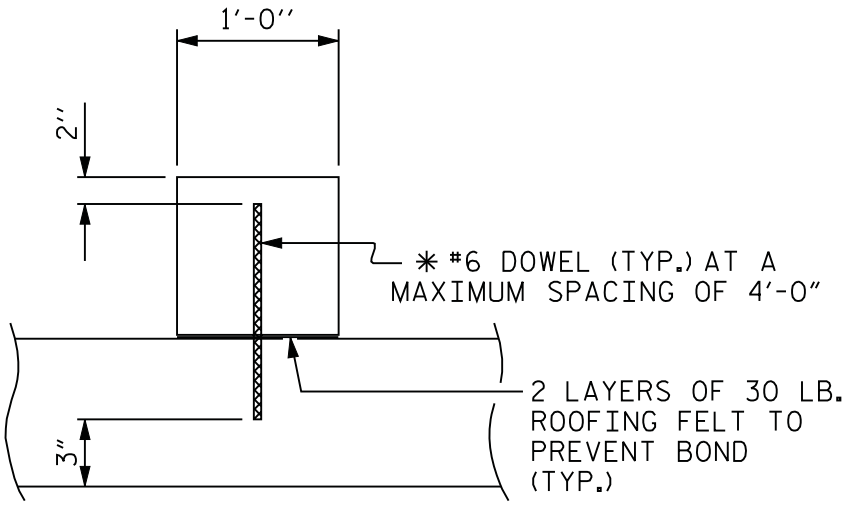
cc: NCDOT Permit Application Standard Distribution List

Permit Drawing
Sheet 1A of 91
Added October 2015



ELEVATION

* DIMENSION TO BE DETERMINED BY HYDRAULICS UNIT.



SECTION THROUGH SILL

* DOWELS MAY BE PUSHED INTO GREEN CONCRETE
AFTER SLAB HAS BEEN FLOAT FINISHED.

CULVERT SILL DETAILS

FIGURE 9 - 18

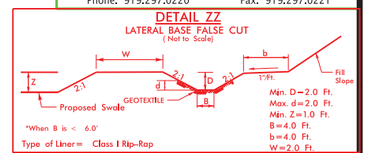
PROJECT REFERENCE NO.	SHEET NO.
U-0071	9-C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DETAIL ZZ
LATERAL BASE FALSE CUT
(Not to Scale)



-Y4- STA. 19+50 TO STA. 20+30 LT

Permit Drawing
Sheet 36 of 91
Revised October 2015

REVISIONS

8/17/99

SITE 4
SITE 5
SITE 6
SITE 7
SITE 8

Complete site shown on Sheet 9-B

Sta. 18+00.97

-Y7LPA- SC Sta. 12+00.00

-Y2- CS Sta. 10+65.63 = -WBL- POC Sta. 95+08.63 (61.00' LT)

-WBL- SC Sta. 94+57.58

-L- SC Sta. 93+87.96

-Y4- CS Sta. 17+99.33

-Y4- SRS Sta. 19+99.33

-Y4- SC Sta. 21+99.33

-Y7RPD- SC Sta. 7+97.62

-Y7RPD- TS Sta. 6+37.62

-Y7RPD- CS Sta. 9+14.66

-Y7RPD- SRS Sta. 11+54.66

-Y7RPD- SC Sta. 13+54.66 = -Y4- POC Sta. 23+97.52 (12' RT)

-Y7RPA- SC Sta. 12+65.83

-Y2- CS Sta. 12+65.83

TEMP. SURFACE WATER IMPACTS

SURFACE WATER IMPACTS

FILL IN WETLANDS

DENOTES FILL IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

CHUNG FAT INVESTORS

FORMERLY BILLY HAMPTON CAPPS

FORMERLY FLORINE L. COSTNER

N.C.D.O.T.

(FORMERLY ALVIS M. BAUCOM)

DAVID WAYNE HANSON

SEAL & ABANDON WELL -L- STA.90+00 (140' RT)

PROPOSED 8' X 9' RCBC

PROPOSED 8' X 9' RCBC

SPECIAL TRAPEZOIDAL GRASSED SWALE WITH ROCK CHECKS SEE DETAIL RB1

SPECIAL CUT DITCH SEE DETAIL S1

TAIL BASE DITCH SEE DETAIL T2 EST. EX. 400 C.Y.

SPECIAL TAIL BASE DITCH SEE DETAIL TSS EST 142 CY DDE

SPECIAL BASE DITCH SEE DETAIL S5

LATERAL V DITCH SEE DETAIL SVD EST 393 CY DDE

LATERAL BASE FALSE CUT SEE DETAIL ZZ

LATERAL BASE GRASS SWALE w/ROCK CHECKS @ 25' INTERVALS SEE DETAIL RB AND RDY STD. 1633.02 10YR STORM VEL = 1.95 FPS EST 1008 CY DDE

LATERAL BASE GRASSED SWALE SEE DETAIL G4 EST 2835 CY DDE

SPECIAL LATERAL BASE DITCH SEE DETAIL SL2R EST 209 TONS CL I EST 433 SY GFD

LATERAL BASE DITCH SEE DETAIL L2R EST 463 CY DDE EST 129 TONS CL I EST 267 SY GFD

LATERAL BASE DITCH SEE DETAIL L2R EST 844 CY DDE EST 189 SY FORM

LATERAL BASE DITCH SEE DETAIL L2R EST 120 CY DDE EST 34 TONS CL I EST 70 SY GFD

CL. I RIP RAP EST 302 TONS EST 490 SY GFD SEE DETAIL RB1

CLASS 'I' RIP RAP EST. 2 TONS 6 SY GFD

CLASS 'I' RIP RAP EST. 4 TONS 12 SY GFD

CLASS 'II' RIP RAP EST 100 TONS 200 SY GFD

CLASS 'II' RIP RAP EST 95 TONS 190 SY GFD

CLASS 'II' RIP RAP EST 145 TONS 300 SY GFD

CLASS 'II' RIP RAP EST. 80 TONS 165 SY GFD

CLASS 'II' RIP RAP EST 40 TONS 80 SY GFD

CLASS 'I' RIP RAP EST. 3 TONS 7 SY GFD

CLASS 'I' RIP RAP EST. 7 TONS 15 SY GFD

CLASS 'I' RIP RAP EST. 60 TONS 119 SY GFD

CLASS 'I' RIP RAP EST. 40 TONS 75 SY GFD

FILL EXISTING DITCH TO NATURAL GROUND APPROX EL = 227.0

PSH SEE DETAIL P1 GRADE TO EL. 337

PSH SEE DETAIL P1 GRADE TO EL. 335

PROP. 4' CONC. S/W

MED. GR ANCHOR

WOODS

GRAU 350

CAT-1

BEGIN SBG -Y7RPA- STA. 23+75

END SBG -Y7RPA- STA. 19+35

BEGIN SBG -L- STA. 91+50

BEGIN SBG -Y7RPD- STA. 6+00

END SBG

N 12° 15' 10.2" W -Y7RPA-

S 37° 52' 52.9" E

S 5° 58' 14.4" E -Y6-

S 40° 00' 00.0" E -Y7RPD-

2° 20' 33.3" W

-Y2-

-Y4-

-WBL-

-L-

-Y7RPD-

-Y6-

-Y7LPA-

-Y7RPA-

PROJECT REFERENCE NO.	SHEET NO.
U-0071	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

M A Engineering Consultants, Inc.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

Permit Drawing
Sheet 74 of 91
Revised October 2015

DETAIL BG3
TAIL BASE DITCH
(Not to Scale)

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.

Type of Liner= Class 'I' Rip-Rap
FROM –Y2– STA 28+88 (69' LT) TO STA 29+30 (225' LT)

TEMPORARY SHORING – SEE WORK ZONE TRAFFIC CONTROL PLANS

NAD 83/95

MATCH LINE SEE SHEET NO.10

Site continued on Sheet 10A and 10B

TEMP. IMPACTS IN SURFACE WATERS

SITE 12

SITE 23

SITE 24

IMPACTS IN SURFACE WATERS

TEMP. IMPACTS IN SURFACE WATERS

WILLIAM B. BARKER

LYNN-OXFORD ASSOCIATES

N.C. STATE HIGHWAY COMMISSION
FORMERLY ALLEN D. ALDRIDGE

LIVING WATERS CHRISTIAN COMMUNITY

PHILLIP C. RANSDELL II
PAGE GUNTER RANSDELL
PAUL ANDREW RANSDELL

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS
R/W REVISION / /202 RMP ALL ADJACENT PARCELS OWNED BY WILLIAM B.BARKER COMBINED INTO PARCEL NO.309. PARCEL NO.185 REVISED TO 928.

8/17/99

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	L 32+58 to 36+64	FILL						0.04		412		
2	L 37+75 - SR1 34+84 Y17 11+14	66" RCP-IV, 48"RCP-III, 24"RCP-III	0.08					0.07	<0.01	673	14	
		BANK STABILIZATION								20		
3	L 44+53	30" RCP-III	0.06					0.06		410		
* 4	SR2 36+89 Y7 17+24	48" RCP-III, 60" RCP-III	0.05					0.03	<0.01	349	15	
		BANK STABILIZATION								70		
* 5(T)	Y7LPA 13+98	60" RCP-III	0.06									
6	Y7RPA 21+78	BANK STABILIZATION						<0.01		25		
7	Y7RPA 20+75 to Y6 15+90	8'x9' RCBC						0.17	0.01	665	104	
		BANK STABILIZATION								305		
8	Y4 19+63 to 22+30 and Y4 23+04 to 25+59	30" RCP-III, FILL	0.04					0.07		443		
9	Y5 23+20 RT.	30" RCP-III						0.03	<0.01	29	0	
		BANK STABILIZATION								43		
10	Y5 26+62 RT.	FILL	0.01	0.01								
11	Y6 11+15 off 104 RT.	18" RCP-III				<0.01						
12	Y2 26+53 to 27+90 LT.	48" RCP-III & RECHANNELIZATION						0.11	0.03	705	132	
		BANK STABILIZATION								42		
13(T)	Y4 35+48	36" RCP-IV						0.78				
* 14(T)	L 122+93	30" RCP-V	0.08									
* 15(T)	L 132+13	FILL	0.03									
* 16(T)	L 132+33 RT.	FILL	0.05									
17	L 133+41	6'x7' RCBC						0.06	<0.01	479	28	
		BANK STABILIZATION								85		
17A	L 133+26 264' LT	FILL							<0.01		56	
TOTALS:			0.46	0.01		<0.01		1.42	0.04	4755	349	

*Rounded totals are sum of actual impacts

NOTES:
* indicates isolated wetland

(T) Indicates Total Take

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DURHAM COUNTY
WBS - 34745.1.1 (U-0071)

10/5/2015

Revised October 2015

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
17B	L 133+69 263' RT	FILL							<0.01		7	
18(T)	L 134+53 LT.	FILL						0.19				
19	not jurisdictional	0										
20	DFLW 27+34 to 38+06	42" RCP-III						0.02	<0.01	218	17	
21	DFLW 39+19	FILL						0.01		28		
22	DFLW 41+62	FILL						0.01		23		
23	Y3 34+45	8'x10' CULVERT						0.09	0.01	270	65	
		BANK STABILIZATION								140		
24	Y3 40+16.69 RT	30" RCP-III						0.04	0.01	104	23	
25	Y9 28+10 LT to 26+85 RT	66" RCP-III						0.01	<0.01	168	10	
		BANK STABILIZATION								35		
26	Y3 57+75 LT to RT	60" RCP-III						0.01	<0.01	50	23	
		BANK STABILIZATION								50		
27	L 129+77 414LT.	BANK STABILIZATION								10		
28	DFLW 52+08 LT & RT	36" RCP						0.02	0.01	121	20	
29	DFLW 72+35 LT	FILL						< 0.01		40		
30	DFLW 73+72 LT	FILL						< 0.01		10		
31	DFLW 78+76 LT& 81+14 RT	BANK STABILIZATION								61		
		Construction Activity							<0.01		22	
32	DFLW 78+79 LT	Construction Activity							<0.01		9	
TOTALS (page 2 of 2):			0.00	0.00		0.00		0.4	0.03	1328	196	
TOTALS (page 1 of 2):			0.46	0.01		<0.01		1.42	0.04	4755	349	
TOTALS:			0.46	0.01		<.0.01		1.82	0.07	6083	545	

*Rounded totals are sum of actual impacts

NOTES:
* indicates isolated wetland

(T) Indicates Total Take

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DURHAM COUNTY
WBS - 34745.1.1 (U-0071)

10/5/2015

Revised October 2015