



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

July 25, 2017

MEMORANDUM TO: Mr. Louis Mitchell, P.E.  
Division 10 Engineer

FROM: *for* Philip S. Harris, III, P.E., Manager  
Natural Environment Section  
Project Development and Environmental Analysis Unit

SUBJECT: Mecklenburg & Iredell Counties; I-77 HOT Lanes Project from I-277 to  
Exit 36; Federal Aid No. NHF-077-1(209)9;  
WBS 45454.1.1; **TIP I-5405, I-4750AA, & I-3311C; South Section**

Attached are the US Army Corps of Engineers Individual Permit Modification and N.C. Division of Water Resources (NCDWR) Water Quality Certification Modification. All environmental permits have been received for the construction of the HOT lanes project.

A copy of this permit package will be posted on the NCDOT website at:  
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>  
**Quick Links>Permit Documents> Issued Permits.**

cc: w/o attachment (see website for attachments)

Mr. Larry Thompson, Division Environmental Officer  
Ms. Virginia Mabry, Priority Projects Office  
Mr. Clarence Coleman, P.E., FHWA  
Mr. Stephen Morgan, P.E., Hydraulics  
Mr. Mark Staley, Roadside Environmental  
Mr. Ron Hancock, P.E., State Roadway Construction Engineer  
Ms. Beth Harmon, Division of Mitigation Services

*Mailing Address:*  
NC DEPARTMENT OF TRANSPORTATION  
NATURAL ENVIRONMENT SECTION  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1598

*Telephone:* (919) 707-6000  
*Fax:* (919) 212-5785  
*Customer Service:* 1-877-368-4968  
*Website:* [www.ncdot.gov](http://www.ncdot.gov)

*Location:*  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

# PROJECT COMMITMENTS

I-77 HOT Lanes Project  
From I-277 to Exit 36  
Mecklenburg & Iredell Counties

## COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

### **PDEA – CATS Coordination**

NCDOT will coordinate with the Charlotte Area Transit System (CATS) during final design and construction to minimize impacts to the operations of its park and ride lots in the project's study area.

*The coordination has occurred.*

### **Division Construction & Build Team – USTs**

If any UST or other potential source of contamination is discovered during construction activities, NCDOT Geotechnical Unit should be notified of its presence immediately upon discovery. An assessment will then be conducted to determine the extent of any contamination and identify the potential impacts and potential measures to address the issue.

### **Hydraulics – Floodplain Mapping**

The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine the status of the project with regard to the applicability of NCDOT'S Memorandum of Agreement with the NC Floodplain Mapping Program (April 22, 2013), or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

*NCDOT Hydraulics and the Build Team coordination is on-going.*

### **Division Construction & Build Team – FEMA Streams**

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, NCDOT Divisions 10 and 12 shall submit sealed as-built construction plans to the NCDOT Hydraulics Unit upon completion of project construction, certifying that the drainage structure(s) and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

### **Human Environment Unit – Noise Wall Aesthetics**

NCDOT will provide a visualization of what proposed walls could look like to assist local communities in making aesthetic decisions regarding noise walls adjacent to listed or eligible for listing properties.

*This process has been completed.*

### **Human Environment Unit – Archaeological Anomaly.**

This project involves construction activities adjacent to a property with a known archaeological anomaly. If the adjacent property cannot be avoided, additional archaeological investigations will be necessary.

*Additional archaeological investigations are not required.*

### **Roadside Environmental, Division Construction, Build Team - DSSW**

Erosion and sediment control BMPs will be implemented in accordance with NCDOT's *Design Standards in Sensitive Watersheds* during the design and construction of this project in and around all watersheds draining to Lake Norman and Byers Creek.

### **Transportation Planning**

NCDOT will participate in the development of a MUMPO led comprehensive, multi-modal strategy to address the complex mobility issues in the Charlotte to Statesville corridor.

*NCDOT will participate when an invitation is received from the CRTPO.*

### **Traffic Noise**

A Design Noise Report (DNR) was prepared for Project I-5405 (Atkins, October 22, 2012). After the I-5405 DNR was finalized, it was discovered that a new development had occurred adjacent to I-77 before the Date of Public Knowledge (10/16/13) that was not originally accounted for in the I-5405 DNR or the FONSI. The Legacy Apartment Homes development is located west of I-77 and north of Westmoreland Road. It includes apartments and townhouses, all with identified outdoor use. Because the development had occurred before the Date of Public Knowledge for the project, in accordance with NCDOT policy, a noise analysis needed to be prepared to determine impacts and evaluate noise mitigation.

*An addendum to the DNR was prepared (Atkins, January 2016). The addendum determined that there would be noise impacts in the new development area, and a noise barrier (Barrier NW15A) along the shoulder of southbound I-77 north of Westmoreland Road was preliminarily reasonable and feasible. The final decision on feasibility and reasonableness and installation of the noise barrier will be made upon completion of the project final design and barrier feasibility review. If the barrier is determined feasible and reasonable, then a public balloting process for benefited receptors will be completed, in accordance with NCDOT policy.*

## **COMMITMENTS FROM PERMITTING**

*No additional commitments have been developed from project permitting.*



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
151 PATTON AVENUE  
ROOM 208  
ASHEVILLE, NORTH CAROLINA 28801-5006



June 23, 2017

Regulatory Division

Action ID No. SAW-2012-00156

North Carolina Department of Transportation,  
Project Development and Environmental Analysis Unit  
Attn: Mr. Philip S. Harris III, P.E.,  
1548 Mail Service Center  
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

Please reference the Department of the Army permit issued on January 28, 2016 and the permit modifications issued May 20, 2016 and November 24, 2016 for the I-77 High Occupancy Toll (HOT) lanes project (TIP #'s I5405, I4750AA and I3311C) which starts north of NC 150 in Iredell County and continues south along I-77, deviating from I77 at the I-277 interchange and following I-277 to terminate at North Brevard Street in Charlotte, Mecklenburg County, North Carolina. The January 28, 2016 permit authorized final impacts for the Central Section of the project and preliminary impacts for the South and North Sections. The May 20, 2016 permit modification authorized the final impacts for the North Section and the November 24, 2016 permit modification authorized the final impacts for the South Section. Total impacts authorized include the permanent impact to 4,162 linear feet of stream channel (of which 225 linear feet is bank stabilization), <0.01 acre of wetland, and <0.01 acre of open water. Temporary impacts include impacts to 491 linear feet of stream channel, 0.1 acre of wetland, and 0.06 acres of open water. Please additionally reference your May 19, 2017, letter requesting authorization for minor modifications to the final permitted plans for the Central and South Sections. The modifications will result in the following changes to previously permitted impacts:

Impact Site	Previously Permitted Stream Impact (If)			Modified Stream Impact (If)			Change in Stream Impact (If)		
	Permanent Fill	Permanent Impact	Temporary Impact	Permanent Fill	Permanent Impact	Temporary Impact	Permanent fill	Permanent Impact	Temporary Impact
6-C (Central)	26	21	42	36	21	42	+10	0	0
7-C (Central)	91	99	40	75	99	40	-16	0	0
3C-S (South)	0	0	45	0	0	85	0	0	+40
Total change in impact							-6	0	+40

\*Changes to impacts highlighted in yellow.

Total modified impacts for each section are shown below:

	<b>Permanent Wetland Impact</b>	<b>Temporary Wetland Impact</b>	<b>Permanent Stream Impact*</b>	<b>Temporary Stream Impact</b>
Central	<0.1	.06	404	491
North	0	0	50	298
South	0	0.17	1400	2368
<b>Total</b>	<b>&lt;0.1</b>	<b>0.23</b>	<b>1854</b>	<b>3157</b>

**\*Permanent Stream Impact includes both permanent fill and permanent impact**

After review of the file and the modification request we have determined that the proposed changes to the permit are minor, and that a supplemental public notice is not necessary. Accordingly your permit is hereby modified and a copy of the modified plans are enclosed.

**The total impacts authorized by the January 28, 2016, permit the May 20, 2016 and the November 24, 2016 permit modifications and this modification include the permanent impacts to 1,854 linear feet of stream channel (of which 258 linear feet is bank stabilization), <0.01 acre of wetland, and <0.01 acre of open water. Temporary impacts include 3,157 linear feet of stream channel, 0.23 acre of wetland, and 0.12 acres of open water.**

The decrease of 6 lf of permanent stream fill impacts within the Central Section resulting from this modification will require reduced compensatory mitigation at a 2:1 ratio (mitigation to impacts). In order to compensate for impacts for this project, mitigation shall be provided by the Division of Mitigation Services (DMS) in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization. **Only mitigation for the Central Section will be effected by this modification and mitigation requirements for the South and North Section will remain the same.**

It is understood that all other conditions of the original permit remain applicable. You should address all questions regarding this authorization to Ms. Crystal Amschler at the Asheville Regulatory Field Office, telephone (828) 271-7980 extension 4231.

Sincerely,



Kevin P. Landers, Sr.  
Colonel, U.S. Army  
District Commander

cc (with enclosures):

Mr. John Sullivan, III, PE  
Division Administrator  
FHWA – NC Division  
310 New Bern Avenue, Suite 410  
Raleigh, North Carolina 27601

NOAA/National Ocean Service  
1315 East-west Hwy., Rm 7316  
Silver Spring, Maryland 20910-3282

Mr. Fritz Rohde  
National Marine Fisheries Service  
101 Pivers Island Road  
Beaufort, North Carolina 28516

Ms. Amy S. Chapman  
Transportation Permitting Unit  
NC Division of Water Quality  
1617 Mail Service Center  
Raleigh, North Carolina 27699-1617

Ms. Marla Chambers  
Western Region Highway Project Coordinator  
NCWRC  
12275 Swift Road  
Oakboro, North Carolina 28129

US Fish and Wildlife Service  
Asheville Ecological Services Field Office  
Attn: Marella Buncick  
160 Zillicoa Street  
Asheville, North Carolina 28801-1082

Mr. Todd Bowers  
Wetlands Protection Section – Region IV  
Water Management Division  
U.S. Environmental Protection Agency  
61 Forsyth Street, SW  
Atlanta, Georgia 30303

Mr. Doug Huggett  
Division of Coastal Management  
N.C. Department of Environment  
and Natural Resources  
400 Commerce Avenue  
Morehead City, North Carolina 28557

Dr. Pace Wilber  
National Marine Fisheries Service  
219 Fort Johnson Road  
Charleston, South Carolina 29412-9110

North Carolina Dept. of Environmental Quality  
Division of Water Resources  
Transportation Permitting Unit  
Ms. Donna Hood  
610 E. Center Ave, Ste 301.  
Mooresville, North Carolina 28115

Western Region Environmental Program Supervisor II  
Natural Environment Section  
Project Development and Environmental Analysis  
NC Department of Transportation  
Attn: Ms. Carla Dagnino  
1598 Mail Service Center  
Raleigh, North Carolina 27699 -1598

cc without enclosures

NC Department Of Transportation  
Mr. Roger Rochell, P.E.,  
Technical Services Administrator,  
1516 Mail Service Center,  
Raleigh, North Carolina 27699-1516

**U.S. ARMY CORPS OF ENGINEERS**  
**Wilmington District**  
**Compensatory Mitigation Responsibility Transfer Form**

**Permittee:** North Carolina Department of Transportation

**Action ID:** SAW-SAW-2012-00156

**Project Name:** The I-77 High Occupancy Toll (HOT)

**County:** Mecklenburg

lanes project (TIP #'s I5405, I4750AA and I3311C) For Central Section

**Instructions to Permittee:** The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Division of Mitigation Services (NCDMS), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

**Instructions to Sponsor:** The Sponsor must verify that the mitigation requirements (credits) shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the bank ledger and provide a copy of the signed form and the updated bank ledger to the Permittee, the USACE Project Manager, and the Wilmington District Mitigation Office (see contact information on page 2). The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

**Permitted Impacts and Compensatory Mitigation Requirements:**

**Permitted Impacts Requiring Mitigation\***

**8-digit HUC and Basin:** 03050101, Catawba River Basin

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
179						

\*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

**Compensatory Mitigation Requirements:**

**8-digit HUC and Basin:** 03050101, Catawba River Basin

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-Riverine	Non-Riparian	Coastal
358						

**Mitigation Site Debited:** \_\_\_\_\_

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCDMS, list NCDMS. If the NCDMS acceptance letter identifies a specific site, also list the specific site to be debited).

***Section to be completed by the Mitigation Sponsor***

**Statement of Mitigation Liability Acceptance:** I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCDMS), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

**Mitigation Sponsor Name:** \_\_\_\_\_

**Name of Sponsor's Authorized Representative:** \_\_\_\_\_

**Signature of Sponsor's Authorized Representative**

**Date of Signature**



Environmental  
Quality

ROY COOPER  
*Governor*

MICHAEL S. REGAN  
*Secretary*

S. JAY ZIMMERMAN  
*Director*

July 14, 2017

Mr. Philip S. Harris, III, P.E., CPM  
Natural Environment Section Head  
Project Development and Environmental Analysis  
North Carolina Department of Transportation  
1598 Mail Service Center  
Raleigh, North Carolina, 27699-1598

Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with ADDITIONAL CONDITIONS for Proposed improvements to I-77 in Mecklenburg and Iredell Counties, Federal Aid Project NHF-077-I(209)9; WBS No. 45454.1.1, TIP I-5405, I-4750AA, and I-3311C.  
NCDWR Project No. 20150931v.4

Dear Mr. Harris:

Attached hereto is a modification of Certification No. WQC004036 issued to The North Carolina Department of Transportation (NCDOT) dated November 13, 2015-version 1, May 16, 2016 version 2, and November 22, 2016 version 3.

This Individual Certification now includes modifications to impacts in the central and south sections, I-5405 and I-3311C sections of the I-77 HOT Lanes project.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

S. Jay Zimmerman, Director  
Division of Water Resources

Attachments

Electronic copy only distribution:

Crystal Amschler, US Army Corps of Engineers, Asheville Field Office  
Larry Thompson, Division 10 Environmental Officer  
Colin Mellor, NC Department of Transportation  
Carla Dagnino, NC Department of Transportation  
Marella Buncick, US Fish and Wildlife Service  
Marla Chambers, NC Wildlife Resources Commission  
File Copy

**Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act  
with ADDITIONAL CONDITIONS**

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 6 linear feet of jurisdictional streams. The project shall be constructed pursuant to the modification dated received May 19, 2017. The authorized impacts are as described below

**Stream Impacts in the Catawba River Basin**

Site	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
<b>6-C</b> (increase 10 feet from 26 to 36 total)			36			
<b>7-C</b> (decrease 16 feet, from 91 to 75 total)			75			
<b>3C-S</b> (additional 40 feet of temporary impact, from 45 to 85 total)				85		
<b>Total Change</b>			-6 feet	40 feet		

**Total Permanent Stream Impact for Modification: - 6 linear feet**

**Total Temporary Stream Impact for Modification: 40 linear feet**

The application provides adequate assurance that the discharge of fill material into the waters of the **Catawba River Basin** in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated received May 19, 2017. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 13, 2015-version 1, May 16, 2016 (February 12, 2016)-version 2, and November 22, 2016-version 3 still apply except where superseded by this certification. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B .0243. For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

**Condition(s) of Certification:**

1. This modification is applicable only to the additional proposed activities. All of the authorized activities and conditions of certification associated with the original Water Quality Certification dated November 13, 2015 and subsequent modifications dated May 16, 2016 version 2, and November 22, 2016 version 3. still apply except where superseded by this certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.

The mailing address for the Office of Administrative Hearings is:

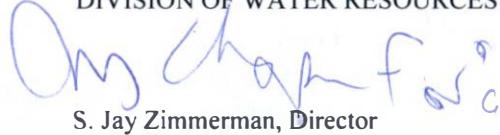
Office of Administrative Hearings  
6714 Mail Service Center  
Raleigh, NC 27699-6714  
Telephone: (919) 431-3000, Facsimile: (919) 431-3100

A copy of the petition must also be served on DEQ as follows:

Mr. Bill F. Lane, General Counsel  
Department of Environmental Quality  
1601 Mail Service Center

This the 14th day of July 2017

DIVISION OF WATER RESOURCES



S. Jay Zimmerman, Director

WQC No. 004036



Environmental  
Quality

ROY COOPER  
*Governor*

MICHAEL S. REGAN  
*Secretary*

S. JAY ZIMMERMAN  
*Director*

NCDWR Project No.: \_\_\_\_\_

County: \_\_\_\_\_

Applicant: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

***Applicant's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Agent's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

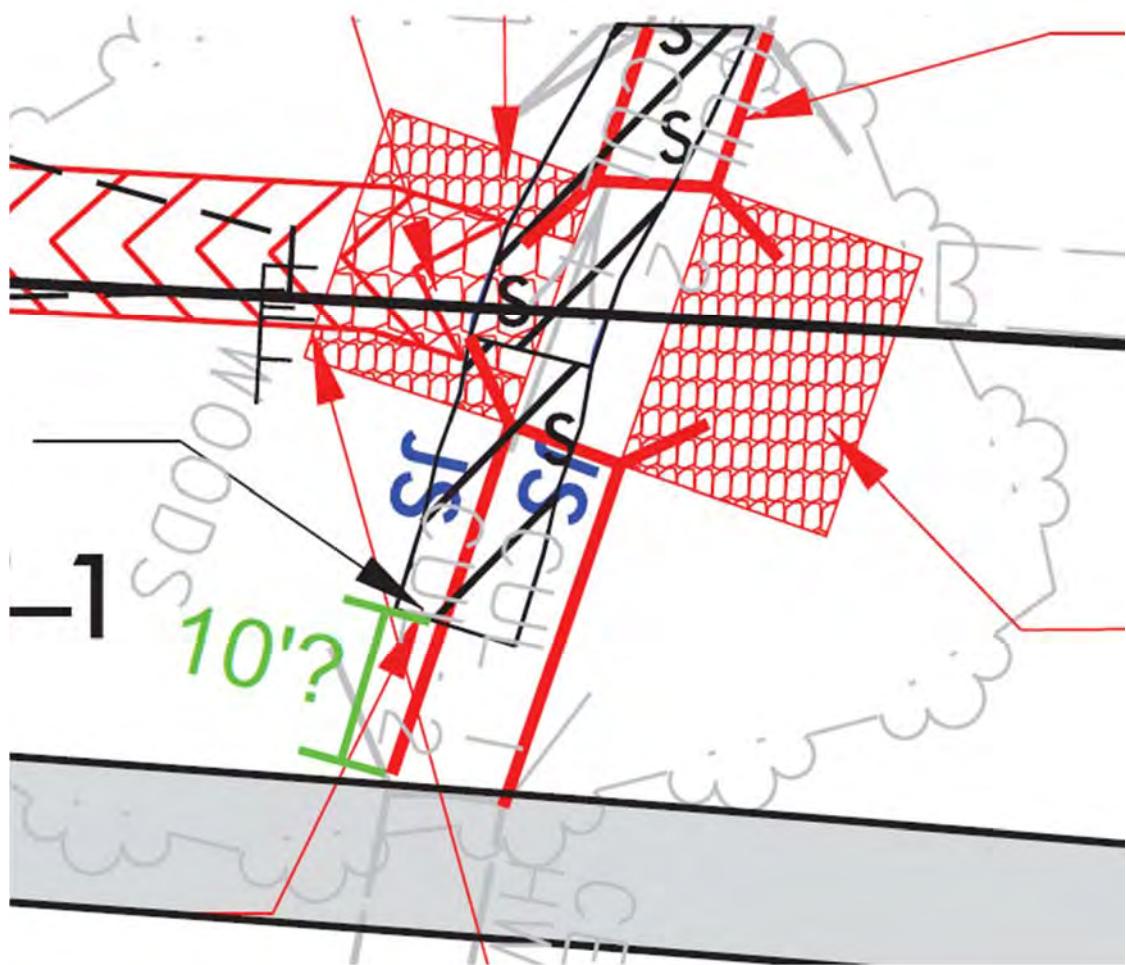
***Engineer's Certification***

\_\_\_\_\_ Partial      \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_ Date \_\_\_\_\_

**Site 6-C:**

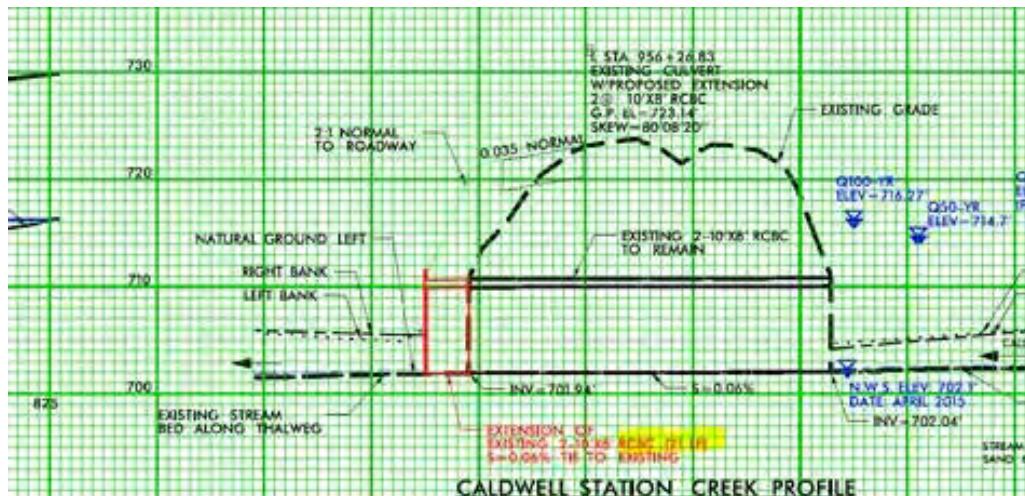
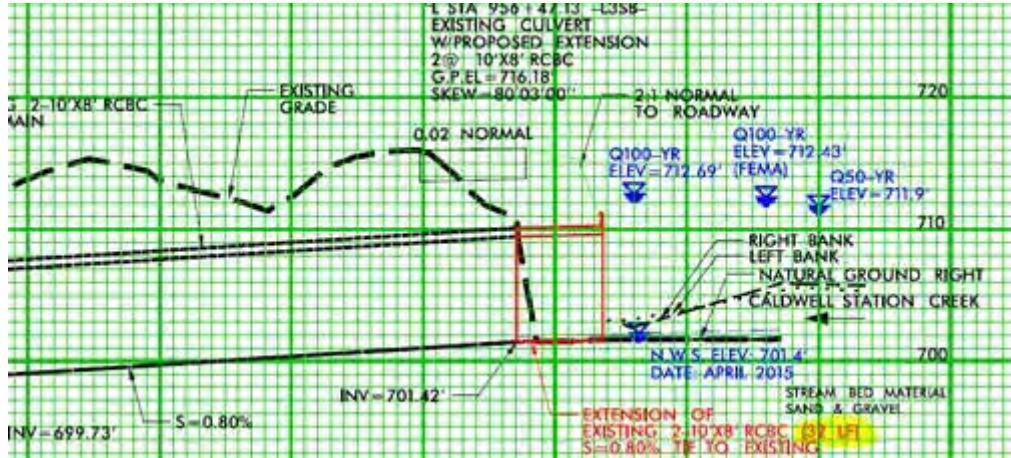


### Site 7-C: (2) 10' x 8' culvert extension to the median

The original/ permitted impact from culvert extensions was 69 linear feet of permanent stream impact, 22 linear feet of channel protection, 99 linear feet of stream bank stabilization, and 40 linear feet of temporary stream impacts for de-watering and construction access.

Plans (below) now indicate that only 53 linear feet of culvert extension is required.

This change results in a surplus of permanent stream impact of 16 feet. The impact summary table has been revised to reflect the decrease from 91 to 75.



## ENLARGEMENT SHEET

PROJECT REFERENCE NO.	SHEET NO.
I-3311C	12B
ROADWAY DESIGN ENGR/INFR	HYDRAULICS ENGINEER

**sugar creek**  
construction, LLC

 Louis Berger

# PERMIT DRAWING SHEET 12 OF 35

Revised 5/19/2017

**MATCH LINE RP02**  
**-L- STA 232 +00**

DATE \$ FILE \$ BENT C \$ TIME \$

## NOTE

IRWIN CREEK AND SITE 3C-S HAVE EXISTING RIPRAP BANK STABILIZATION THAT WILL BE RESTORED AS NECESSARY IF DISTURBED BY THE WORK

## NOTE

**NOTE:**  
~~-CHANNEL RELOCATION SHALL BE COMPLETED AND STABILIZED, AND APPROVED ON SITE BY NCDWR STAFF, PRIOR TO DIVERTING WATER INTO THE NEW CHANNEL~~

RTWRP02-01

**Central Section Revised Impact Summary Table**  
**Highlighted values = revised values**

Site No.	Station (From/To)	Structure Size / Type	WETLAND PERMIT IMPACT SUMMARY						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-C	371+40 - 372+80 RT	TEMP. FILL / ACCESS	< 0.01	0.06								
2-C	388+12 - 388+58 RT	TEMP. FILL / ACCESS							0.01		60	
		BANK STABILIZATION								40		
3-C	407+60 - 411+90 RT	TEMP. FILL							0.03		150	
4-C	709+50 MID	FILL						< 0.01		33		
5-C	721+97 - 722+03 MED	30" RCP						< 0.01	< 0.01	35	17	
		BANK STABILIZATION								65		
6-C	776+15 - 776+25 MED	8' x 7' RCBC						< 0.01		36		
		BANK STABILIZATION								21		
	776+15 - 776+25 LT/RT	8' x 7' RCBC / DEWATERING							< 0.01		42	
7-C	955+50-956+05 MED	2@10'x8' RCBC/CHAN. PROT.						0.04		75		
		BANK STABILIZATION								99		
	955+50-956+05 LT/RT	2@10'x8' RCBC / DEWATERING							0.02		40	
TOTALS*:			< 0.01	0.06				0.07	0.08	404	309	0

\*Rounded totals are sum of actual impacts

NOTES:

# South Section Revised Impact Summary Table

## Highlighted values = revised values

<b>WETLAND PERMIT IMPACT SUMMARY</b>												
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-S	155+10 - 157+30 LT	FILL / CHANNEL RELOCATION						0.05		225		
		TEMP. FILL / ACCESS							0.01		50	
1A-S	171+00 RT	TEMP. FILL / ACCESS							< 0.01		19	
2-S	207+50 - 210+60 LT	TEMP. FILL / ACCESS							0.15		270	
3A-S	219+00 - 221+00 LT	TEMP. FILL / ACCESS							0.15		217	
3B-S	228+50 - 231+00 RT	4-12'x13' RCBC						0.15		234		
	231+00 - 238+20 RT	CHANNEL REALIGN. / STABILIZ						0.35		720		
	238+20 - 250+00 RT	CHANNEL STABILIZATION							0.60		1180	
3C-S	229+10 - 229+50 RT	2-72" RCP						0.01	0.01	45		85
4A-S	271+20 - 276+70 LT	TEMP. FILL / ACCESS	0.17									
4B-S	275+50 - 276+10 RT	TEMP. FILL / ACCESS							0.02		57	
5-S	290+00 - 293+80 RT	TEMP. FILL / ACCESS							0.08		350	
6-S	320+40 - 321+30 RT	7' X 8' RCBC						0.01	< 0.01	166		40
		BANK STABILIZATION								10		
7-S	320+20 - 321+15 LT	TEMP. FILL / ACCESS							< 0.01		100	
<b>TOTALS*</b> :			0.17					0.57	1.02	1400	2368	0

\*Rounded totals are sum of actual impacts

NOTES:

## Cumulative Revised Impact Summary Table

Highlighted values = revised values