



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

December 13, 2004

US Army Corps of Engineers  
Raleigh Field Office  
6508 Falls of Neuse Road, Suite 120  
Raleigh, NC 27615-6814

ATTENTION: Eric Alsmeyer  
NCDOT Coordinator, Division 5

Dear Sir:

Subject: **Application for Modification to Section 404 and Section 401 permits and Neuse Buffer Certificate for the Knightdale Bypass**--US 64 from I-440 (Raleigh Beltline) to existing US 64 near SR 1003, I-440 from 0.83 mile south of US 64 to Poole Road and a portion of the East Wake Expressway from existing US 64 to the proposed US 64 Bypass in Wake County. State Project No. 8.142202, Federal Aid Project No. NHF-DPI-0199 (004), TIP No. R-2547 BA and CC, \$475.00 Debit Work Order 8.142202, WBS Element 34455.1.7. NCDENR-DWQ Water Quality Certification Project No. 011689 and USACE Action ID 200220819.

The North Carolina Department of Transportation (NCDOT) proposes to construct a new controlled-access six-lane, divided highway to be known as the Knightdale Bypass. The new location of the project consists of the Bypass (R-2547), which would extend from I-440 (Raleigh Beltline) to existing US 64 near SR 1003, and a portion of the Eastern Wake Expressway (R-2641) from existing US 64 to the proposed Bypass. The project also includes the widening of I-440 from 0.83 miles south of US 64 to Poole Road.

The North Carolina Department of Environment and Natural Resources, Division of Water Quality (NCDENR-DWQ) issued a Section 401 Water Quality Certificate and a certification under the Neuse River Buffer Rules (No. 3377) on April 10, 2002 and subsequent modifications dated December 4, 2002, March 21, 2003, April 19, 2004, July 8, 2004 (Section BA), September 27, 2004 (Section BB). The United States Army Corps of Engineers (USACE) issued a Section 404 permit on April 25, 2002 and modification on May 4, 2004. The project has been let and construction has begun.

**MAILING ADDRESS:**

NC DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1500  
FAX: 919-715-1501

WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

**LOCATION:**

2728 CAPITAL BLVD.  
PARKER LINCOLN BUILDING, SUITE 168  
RALEIGH NC 27604

The purpose of this submittal is to request a modification to the Section 404 Individual Permit, Section 401 Water Quality Certificate and the Neuse Buffer Certification, specifically for Sections BA and CC. The modification for the permit is for changes to the horizontal alignment of a ramp at Site 4 and additional buffer impacts at Site 3 and 19.

The revised design does not compromise NCDOT's compliance with the existing permit conditions. The revision has been evaluated for compliance with the avoidance/minimization criteria and are in compliance with all previous issues, including the following:

- Protected Species
- Aquatic Life passage
- FEMA compliance
- Cultural Resources

## Summary of Changes

### Section BA

#### Permit Drawing 7 of 25/Site 4

**Issue:** The current design of the ramp at Site 4 will not provide a smooth approach to the newly constructed bridges.

**Status:** The original plan for the ramp has begun construction

**Resolution:** The New Hope Road (-Y1-) horizontal alignment was revised from -Y1REV- Sta. 15+45.467 to 17+32.782 in order to provide a smoother approach to the bridges that have already been constructed. The bridges and the bridge sketch were revised to reflect what has been constructed.

**Impact Analysis:** No changes in impacts will occur to jurisdictional areas or buffers

#### Permit Drawing 21 of 25/Site 19

**Issue:** The property owner at this site wanted to put in a driveway for access to the property.

**Status:** Not yet constructed

**Resolution:** A partial driveway turnout located across from the ramp/loop termini in quadrant D of the New Hope Road interchange was added. This occurs at approximate station No. -Y1rec- Sta. 17+32.782. The pipe will be extended for the driveway and an additional right-turn and left-turn lane will be provided on New Hope Road to provide access to the driveway. The remainder of the driveway will be constructed by others at a later time. The control of access fence will not be removed at this time.

**Impact Analysis:** Impacts by the above revisions will be to an additional 10ft of jurisdictional stream and additional buffer impacts of 481 sq ft in Zone 1 and 414 sq ft in Zone 2.

## Section CC

Site 3 Section CC (Current Permit Drawings 6 and 7 of 24 dated 12/11/03, Proposed Revised Permit Drawings 6 and 7 of 24 dated 8/30/04 and Revised Permit Drawing 23 of 24 dated 8/30/04) and Construction Plan Sheet 6

**Issue:** Current permit drawings 6 and 7 of 24 depict a preformed scour hole at the outlet of a 600 mm pipe. The proposed revised permit drawings 6 and 7 of 24 depict a grass-lined swale at the outlet of the 600mm pipe right of station 150+30 –L-.

**Status:** The grass-lined swale has not been constructed.

**Resolution:** A 600mm pipe enters the narrow side of Structure #14 in the roadway median, therefore a Type 'A' box is required and a minimum depth box cannot be used. The median ditch elevation (Structure #14 Rim) is 72.50 with the invert of Structure #14 at 71.05. The natural ground at the 600mm pipe outlet (located outside of the 50 foot buffer) is approximately elevation 72.50. The 600mm pipe invert at this location is 70.80. Due to the elevation difference, the preformed scour hole would require excavating approximately 1.5 meters (5 feet) at the pipe outlet and would not function correctly. The preformed scour hole would back water up into the storm drainage system and median ditch, which is a safety hazard and not standard practice. Directing the pipe outlet to the other side of the roadway would still require a ditch through the buffer, since the natural ground elevation outside the buffer zone is approximately 72.1.

The grass-lined swale at the outlet of the pipe is needed to provide positive drainage and to prevent storm water from backing up into the drainage system. Treatment of storm water is provided by grass-lined swales. A summary of the treatment calculations for each drainage inlet has been included to show that treatment has been provided. The same drainage area and quantity of impervious area is directed to the outlet as in the previous design and the revised design allows the site to remain in compliance with the riparian buffer rules.

**Impact Analysis:** Construction of the grass-lined swale will impact 204 square feet of riparian buffer in Zone 1 and 280 square feet of riparian buffer in Zone 2.

## Summary of Mitigation

Compensatory mitigation will be required for the additional impacts to jurisdictional streams and buffers. Total additional jurisdictional stream impacts are 10 linear feet. Additional Neuse Buffer impacts are 685 sq ft in Zone 1 and 694 sq ft in Zone 2. The Ecosystem Enhancement Program (EEP) will provide the necessary mitigation. A copy of their acceptance letter is enclosed with this application.

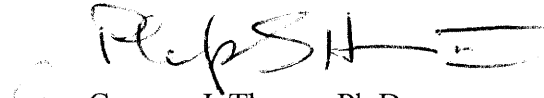
## Regulatory Approvals

Application is hereby made for a Modification to Department of the Army Section 404 Individual Permit for the above-described activities. We are also hereby requesting modifications to the 401 Water Quality Certification and Neuse Buffer Certification from the Division of Water Quality. The modification of the permit site on this project (R-2547 BA and CC) has been designed to comply with the Riparian Buffer Mitigation Program (15A NCAC 2B .0242) and the Neuse River Basin Riparian Buffer Rules (15A NCAC 2B .0233). Therefore, as part of the Modification request, we respectfully request that the NCDENR-DWQ issue an Authorization Certificate pursuant to 15A NCAC 2B .0233 for the proposed use. In compliance with Section 143-215.3D(e) of the NCAC we will provide \$475.00 to act as payment for

processing the Section 401 permit application previously noted in this application (see Subject line). We are providing seven copies of this application to the NCDWQ for their review.

If you have any questions or need additional information, please call Ms. Rachelle Beauregard at (919) 715-1383.

Sincerely,



Gregory J. Thorpe, Ph.D.  
Environmental Management Director, PDEA

cc: w/attachment

- Mr. John Hennessy, NCDWQ (7 copies)
- Mr. David Franklin, USACE, Wilmington Field Office
- Mr. Travis Wilson, NCWRC
- Mr. Garland Pardue, USFWS, Raleigh
- Mr. John Sullivan III, P.E., FHWA
- Mr. John G. Nance, P.E., Division 5 Engineer
- Mr. Chris Murray, DEO Division 5
- Mr. Steve Leonard, Division 5 Resident Engineer
- Mr. Tracy Parrott, Division 5 Construction Engineer

w/out attachment

- Mr. Calvin Leggett, P.E. Program Development Branch
- Mr. Art McMillan, P.E., Highway Design Branch
- Mr. David Chang, P.E., Hydraulics Unit
- Mr. Greg Perfetti, P.E., Structure Design Unit
- Mr. Jay Bennett, P.E., Roadway Design Unit\
- Beth Harmon, EEP



December 8, 2004

Mr. Gregory J. Thorpe, Ph.D.  
Environmental Management Director  
Project Development and Environmental Analysis Branch  
North Carolina Department of Transportation  
1548 Mail Service Center  
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

**R-2547BA/CC, I-540 – Northern Wake Expressway, Wake  
Counties**

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide stream mitigation for the subject project. Based on the information supplied by you in a letter dated November 24, 2004, the impacts are located in CU 03020201 of the Neuse River Basin in the Central Piedmont (CP) Eco-Region, and are as follows:

Stream Impacts: 10 feet

Also, as indicated in your letter, this project will impact buffers located in CU 03020201 of the Neuse River Basin. The total buffer impacts are 685 square feet in Zone 1 and 694 square feet in Zone 2. Please note, since buffer impacts were not projected in the NCDOT's 7-year Impact Projection Database, EEP was not able to include these cost in the Biennial budget approved at the July 2004 Board of Transportation meeting. The buffer mitigation request and approval will be managed through the EEP's In-Lieu Fee (ILF) Program.

The NCDOT will be responsible to ensure that the appropriate compensation for the buffer mitigation will be provided in the agreed upon method of fund transfer. Upon receipt of the NCDWQ's Buffer Authorization, the NCDOT will provide the EEP a copy of the Authorization along with a letter verifying the buffer impact/mitigation amounts and requesting a fund transfer to provide the required compensation. The EEP will transfer funds from the MOA Account (Fund 2984) into the ILF Buffer Mitigation Fund

*Restoration, Evaluation, Protection and Stewardship*

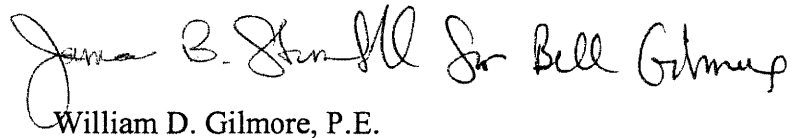


(Fund 2982). Since this expense is outside of the approved Biennial budget, the EEP will request reimbursement for the buffer mitigation on the next quarterly invoice after the transfer has occurred.

As stated in your letter, the subject project is not listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. However, the EEP will provide the required mitigation for the subject project in accordance with this agreement.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

A handwritten signature in cursive script that reads "William D. Gilmore, P.E." The signature is written in black ink and is positioned above the printed name.

William D. Gilmore, P.E.  
EEP Director

cc: Mr. Eric Alsmeyer, USACE-Raleigh  
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit  
File: R-2547



December 8, 2004

Mr. Eric Alsmeyer  
US Army Corps of Engineers  
Raleigh Regulatory Field Office  
6508 Falls of the Neuse Road, Suite 120  
Raleigh, North Carolina 27615

Dear Mr. Alsmeyer:

Subject: EEP Mitigation Acceptance Letter:

**R-2547BA/CC, I-540 – Northern Wake Expressway, Wake  
County, Neuse River Basin (Cataloging Unit 03020201); Central  
Piedmont Eco-Region**

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide mitigation for the 10 feet of unavoidable stream impact associated with the above referenced project.

The subject project is not listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003; therefore, the EEP intends to provide compensatory stream mitigation up to a 2:1 ratio in Cataloging Unit 03020201 of the Neuse River Basin.

If you have any questions or need additional information, please contact Ms. Beth Harmon at (919) 715-1929.

Sincerely,

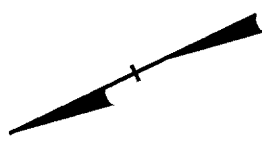
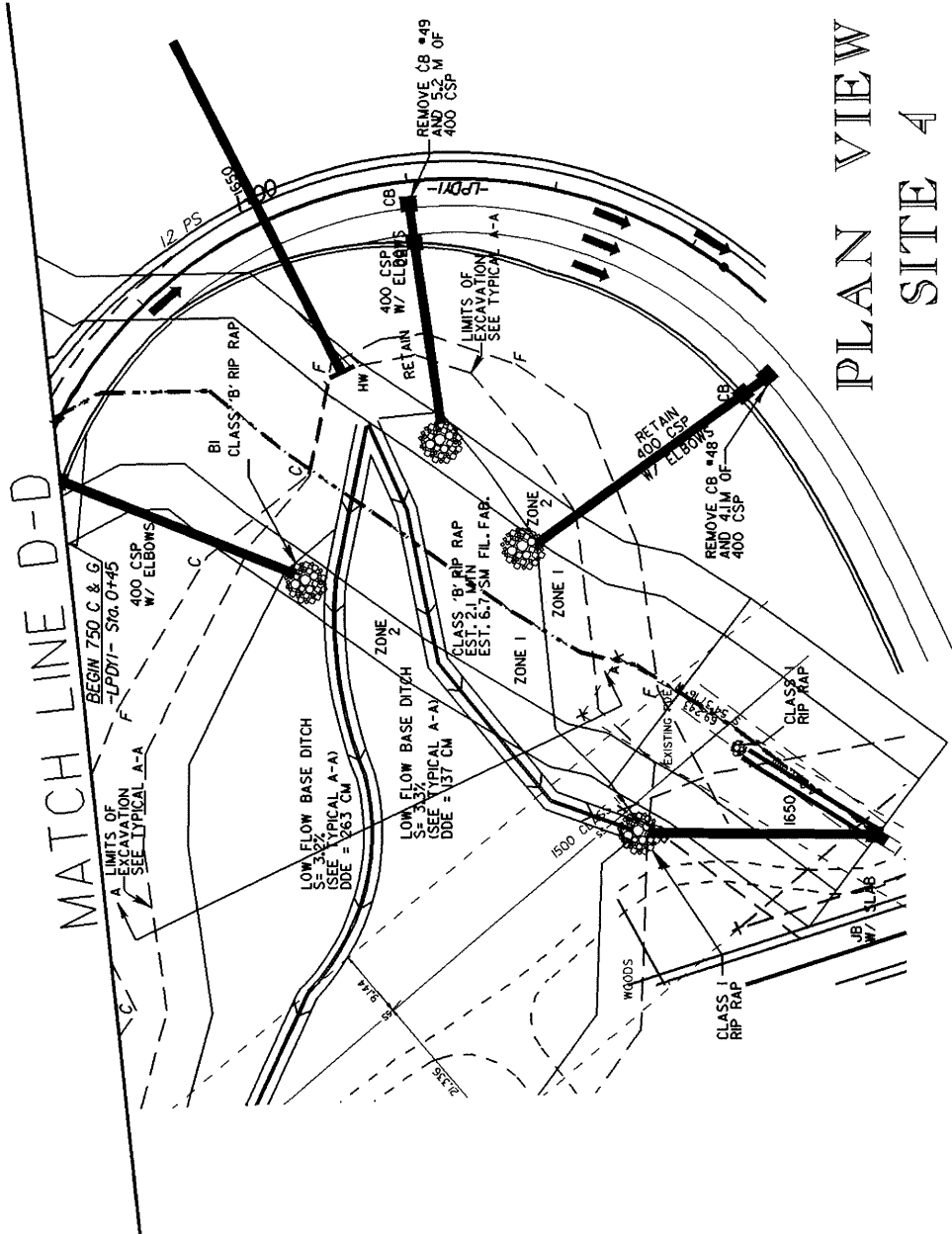
A handwritten signature in black ink that reads "James B. Stensell Jr Bill Gilmore".

William D. Gilmore, P.E.  
Director

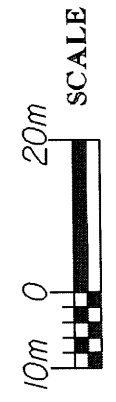
cc: Mr. Phil Harris, Office of Natural Environment, NCDOT  
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit  
File: R-2547BA/CC

*Restoring... Enhancing... Protecting Our State*





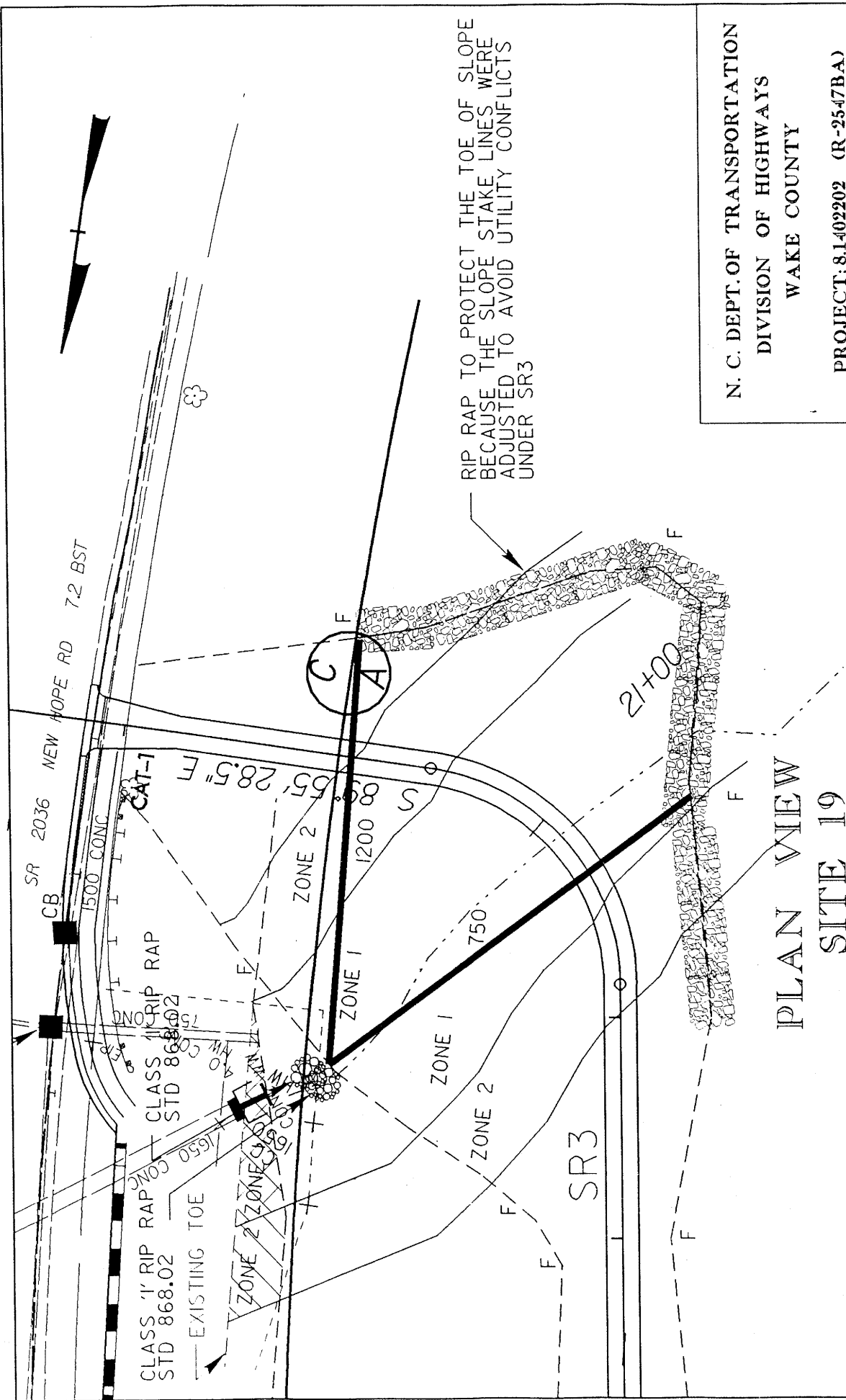
# PLAN VIEW SITE 4



HATCHED BOX DENOTES FILL IN SURFACE WATERS

N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD  
 SHEET 7 OF 25 9/15/2004  
 Rev.





PLAN VIEW  
SITE 19

N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
WAKE COUNTY

PROJECT: 8.1-402202 (R-2547BA)  
US 64 BYPASS FROM I-440  
TO NEW HOPE ROAD

SHEET 11 OF 15 Rev 9/15/2004



149+00

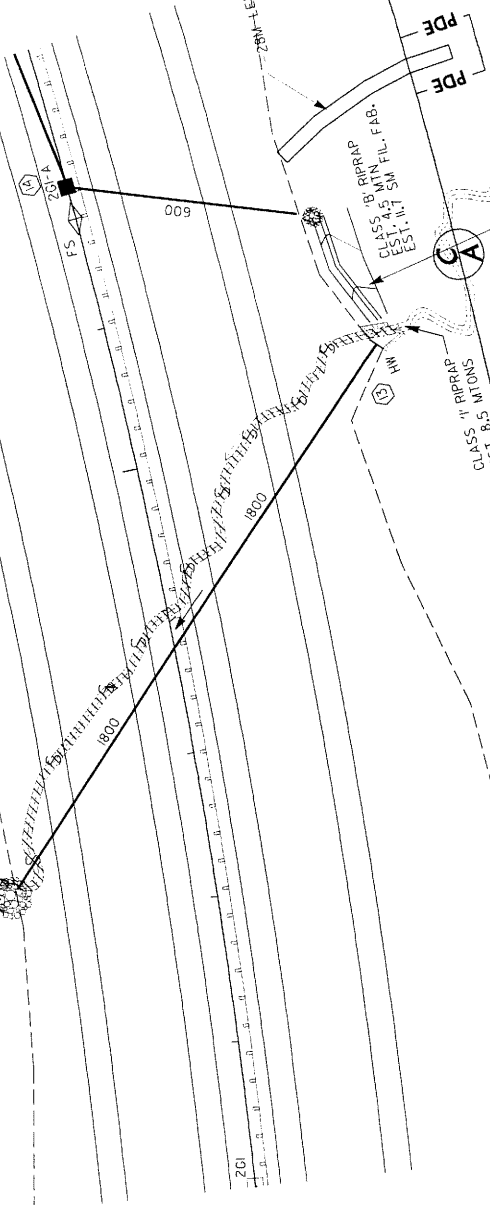
ANTIONETTE H. POOLE

PDE

PDE

30M LEVEL SPREADER  
150+00  
C/A  
46  
150+20  
30M LEVEL SPREADER  
160+00  
TEE DRAIN  
C/A

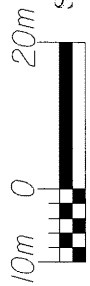
CLASS '1' RIPRAP  
EST. 34.5 MTN  
EST. 65.2 SM FIL. FAB.



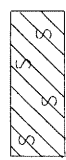
ANTIONETTE H. POOLE

ANTIONETTE H. POOLE

# SITE 3 PLAN VIEW

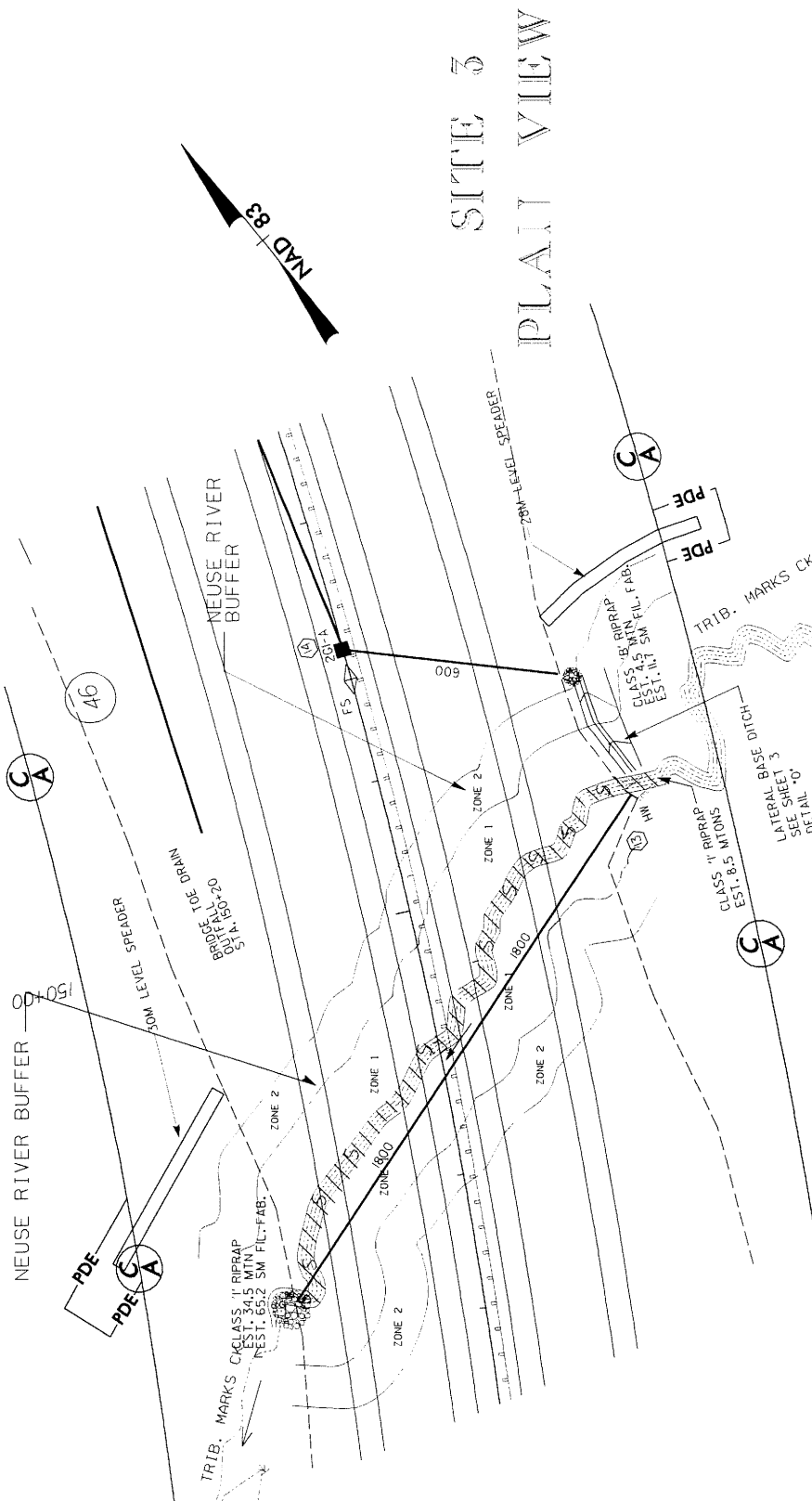


SCALE



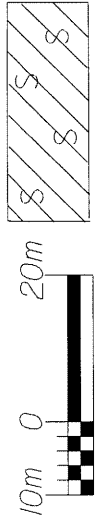
DENOTES FILL IN SURFACE WATERS

U. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
WAKE COUNTY  
PROJECT: 8.1-02202 (R-254700)  
US64 FROM SR2502 TO EXISTING  
US64 JUMP SR1005  
SHEET 6 OF 24 REV 8/30/04



SITE 3  
 PLAN VIEW

IMPACTED NEUSE RIVER  
 BUFFER ZONES  
 AND STREAM IMPACTS



SCALE

N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 81-02202 (R-2547CC)  
 US64 FROM SR2502 TO EXISTING  
 US64 HEAR SR1005  
 SHEET 7 OF 24 REV 8/30/04



**IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS					SURFACE WATER IMPACTS					BUFFER IMPACTS				
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (ha)	Existing Channel Impacted (m)	Relocated Channel (m)	Enclosed Channel (m)	Zone 1 (sq ft)	Zone 2 (sq ft)			
1	SEE SITE 10 OF SECTION R-2547C FOR IMPACTS																
2	SEE SITE 10 OF SECTION R-2547C FOR IMPACTS																
3	149+79 -L-	1800mm RCP															
		Approved impacts															
		Additional impacts															
		Total revised impacts															
4	154+78.5 -L-	1 @ 2.4m X 2.1m RCBC															
5	154+60 -L-		0.092					0.13									
6	158+71.6 -L-	1 @ 2.4m X 2.4m RCBC															
7 & 8	13+92 -RPCY1-	900 RCP						0.002									
9	8+15-RPBDY1-	1200 RCP						0.03									
10	15+10-RPCY1-	1350 RCP						0.021									
11	184+60 -L-		0.024					0.024									
12	185+40 -L-		0.002					0.006									
13	12+00 -Y3-	1350 RCP						0.016									
14	180+60 -L-	2 @ 750 PIPES						0.014									
<b>TOTALS:</b>			0.118	0.00	0.00	0.07	1.13	0.459	0.00	0.00	0.00	0.00	1126	289	680	1.828	1.256
			0.29	0.00	0.00	0.07	1.13	0.459	0.00	0.00	0.00	0.00	3694	948	2231	4.52	3.10

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

WAKE COUNTY

PROJECT: 8.1402202 (R-2547CC)

SHEET 23 OF 24

REV. 8/30/2004

Site 3 impacts  
 approved impacts (sq ft) 17,115 Zone 1  
 additional impacts (sq ft) 204 Zone 2  
 total revised impacts (sq ft) 17,139 11,948  
 280  
 12,228