



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

October 25, 2004

NC Department of Environment and Natural Resources  
Division of Water Quality  
1650 Mail Service Center  
Raleigh, NC 27699-1650

Attn: Ms. Nicole Thompson  
NCDOT Coordinator, Division 5

Dear Madam:

**Subject: Application for Modification to Section 401 Water Quality Certification and Neuse Riparian Buffer Certification:** Widening of Interstate 85 from west of US 15-501 to west of Broad Street, Durham County, Division 5; TIP No. I-0306C; State Project No. 8.1414801; Federal Aid Project No. I-85-4(49)174. USACE Action ID No. 20220949; NCDENR-DWQ Water Quality Certification No. 3411; \$475.00 Debit WBS Element 34143.1.1.

The North Carolina Department of Transportation (NCDOT) is currently widening Interstate 85 in Durham County from west of US 15-501 to west of Broad Street (I-306C). The United States Army Corps of Engineers (USACE) originally issued an Individual Permit for this project on April 7, 2003. The North Carolina Division of Environment and Natural Resources, Division of Water Quality issued the 401 Water Quality Certification and Neuse River Buffer Certificate No. 3411 (NCDENR-DWQ Project No. 021677) for this project on February 5, 2003. The DWQ issued a modification to the 401 Water Quality Certification and Neuse River Buffer Certificate on August 12, 2003.

The purpose of this submittal is to request a modification to the Section 401 Water Quality Certification and Neuse Buffer Certificate. This modification is for changes to buffer impacts through utility design changes and stormwater design changes including changes in pipe sizes at several locations due to construction feasibility. The stormwater design changes are described in this permit modification application to adhere to Condition No. 13 in the Section 401 Water Quality Certification No. 3411, dated February 5, 2003. This condition states "*No changes to the horizontal or vertical placement of the stormwater outfall locations, the horizontal or vertical placement of the culverts, the horizontal or vertical placement of bridges, the horizontal or vertical placement of grassed swales, or the horizontal or vertical placement of*

**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

*open ditches is permitted without written approval from the NC Division of Water Quality (NCDWQ) 401 Wetlands Unit. In addition, no changes to the flow spreader locations or designs, preformed scour hole locations or designs are permitted without written approval for the NCDWQ 401 Wetlands Unit; Any request for changes to the referenced items above will require submittal of a modification request, with seven copies, and corresponding fees will need to be submitted to the NCDWQ.*" This modification application contains the following revised permit drawing sheets:

- Permit Drawings 6 and 7 of 21
- Utility Permit Drawings 3, 11 and 13 of 14
- Plan Sheet 5

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:

- Non-Erosive Velocities in Buffers
- Protected Species
- Aquatic Life passage
- FEMA compliance
- Cultural Resources

## **Buffer Impacts**

Changes to Neuse River Riparian Buffer impacts have occurred at a few sites. These changes are described below.

### Permit Drawing 12 of 14/Site 7A

During construction it was determined that the grade of the sewer line at this Site was too high at the proposed location. Therefore, the sewer line has changed to tie into another existing line at a lower elevation. Zone 1 impacts were reduced by 236 sq ft and impacts in Zone 1 are now 303 sq ft. Buffer impacts increased in Zone 2 by 1247 sq ft and buffer impacts in Zone 2 are now 1988 sq ft.

This Site originally had a perpendicular crossing through the buffers. According to the Neuse Riparian Buffer rules, these original impacts are allowable and NCDOT did not originally mitigate for these buffer impacts. The design change has now caused the crossing in the buffers to be other than perpendicular and so now mitigation is required for the Zone 1 impacts. Zone 2 impacts are allowable.

### Permit Drawing 11 of 14/Site 7

The sewer line at this Site is to be connected to an existing line on the north side of the stream. During construction it was determined that the existing sewer line to tie into was actually a bit further south than originally shown. The design has been shifted to tie into the existing sewer line. There is an increase of 107 sq ft Zone 1 and buffer impacts are now 2415 sq ft. There

is a reduction of 39 sq ft in Zone 2 and buffer impacts are now 1268 sq ft. There is no increase in stream impacts.

This Site is allowable with mitigation according to the Neuse Riparian Buffer rules. NCDOT originally mitigated for these buffer impacts and will mitigate for the additional Zone 1 impacts.

Permit Drawing 7 of 21/Plan Sheet 5/Site 1

The original Permit Drawing did not account for buffer impacts to the base ditch. The Permit Drawing and summary impact sheet have been revised to show the impacts. Stormwater runoff at this site will still be directed to sheetflow through buffers at nonerosive velocities. Additional buffer impacts to Zone 1 are 688 sq ft. Additional buffer impacts to Zone 2 are 441 sq ft.

Buffer impacts at this Site are due to a road crossing. According to the Neuse Riparian Buffer rules, these impacts are allowable with impacts greater than 40 linear feet but equal to or less than 150 linear feet or one-third of an acre of riparian buffer. The increase in buffer impacts has not put the revised total impact above this threshold, therefore these impacts are allowable and no mitigation will be required.

Table 1. Change in Buffer Impacts

Buffer Site	1 (road crossing)	7 (Utility)	7A ( Utility)
Approved Linear feet impacts	44	103	43
Additional Linear feet Impacts	23	0	36
<b>Revised Total Liner feet Impacts</b>	<b>67</b>	<b>103</b>	<b>79</b>
Zone 1 Impacts Approved (sq ft)	2265	2309	566
Additional Zone 1 Impacts (sq ft) (Reduction)	688	107	(-263)
<b>Revised Total Zone 1 Impacts</b>	<b>2953</b>	<b>2416</b>	<b>303</b>
Zone 2 Impact Approved (sq ft)	1742	1307	741
Additional Zone 2 Impacts (sq ft) (Reduction)	441	(-39)	1247
<b>Revised Total Zone 2 Impacts (sq ft)</b>	<b>2183</b>	<b>1268</b>	<b>1988</b>
Mitigation requirements (exempt, allowable or allowable with mitigation)	allowable	allowable with mitigation	Allowable for Zone 2 impacts, allowable with mitigation for Zone 1 impacts

Mitigation for these changes in impacts are needed at Site 7, Zone 1 (107 sq ft) and Site 7A Zone 1 (303 sq ft). Total mitigation needed for these additional impacts to Zone 1 are 410 sq ft. Mitigation for the additional buffer impacts will be provided by the Ecosystem Enhancement Program (EEP). A copy of the letter accepting this mitigation is enclosed with this application.

## Stormwater Buffer Impacts and Pipe Size Changes

### Permit Drawing 6 of 21/Plan Sheet 5/Site 1

The original Permit Drawing had a 900 mm stormwater pipe going over the proposed culvert. This size pipe could not clear the culvert. The Permit Drawing and plan sheet were revised to two 750 mm pipes over the culvert. No additional buffer impacts will occur at this site.

### Pipe size changes/Plan Sheet 5

Construction revisions have been made to the above subject project due to clearance problems over an existing box culvert and issues with project phasing. These revisions consist of the following:

DESCRIPTION	STRUCTURE NUMBER		PIPE SIZES	
	FROM	TO	OLD	NEW
<u>Changed pipe size</u>	51	49	450	375
<u>Changed pipe size</u>	49	32	900	375
<u>Changed pipe size</u>	32	31	900	375
<u>Changed pipe size</u>	31	33	900	1050
<u>Changed pipe size</u>	29	31	900	1050
<u>Changed pipe size</u>	30	29	900	1050
<u>Changed pipe size</u>	40	30	450	900
<u>Changed pipe size</u>	41	40	375	900
<u>Changed pipe size</u>	42	41	375	750
<u>Changed pipe size</u>	43	41	375	750
<u>Changed pipe size</u>	53	52	375	750
<u>Eliminate pipe</u>	44	43	375	---
<u>Add pipe</u>	44	42	---	750
<u>Add pipe</u>	53	44	---	750
<u>Add pipe</u>	52	43	---	750
<u>Plug ex.900mm pipe ends</u>	53	50	---	900
<u>Eliminate Conc. Collar</u>	50	--	900	---
<u>Eliminate pipe</u>	50	49	900	---

## Regulatory Approvals

Application is hereby made for the modification of the Section 401 Water Quality Certification and Neuse Buffer Certification from the NCDENR-DWQ. The modification of the permit site on this project (I-306C) 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 NCA we have provided a method of debiting \$475, as noted in the subject line of this application, as payment for processing the Section 401 Water Quality Certification modification application. We are providing seven copies of this application to NCDENR-DWQ, for their use.

If you have any questions or need additional information, please call Ms. Rachelle Beauregard at (919) 715-1383 or (919) 715-1500.

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

w/attachments

Mr. Eric Alsmeyer, USACE  
Mr. John Hennessy, NCDWQ (7 copies)  
Mr. Travis Wilson, NCWRC  
Ms. Becky Fox, USEPA – Whittier, NC  
Mr. Ronald Mikulak, USEPA – Atlanta, GA  
Mr. Gary Jordan, USFWS  
Mr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Jon Nance, P.E., Division 5 Engineer  
Mr. Tracy Parrott, Division 5 Construction Engineer  
Mr. Chris Murray, Division 5 Environmental Officer

w/o attachment

Mr. Jay Bennett, P.E., Roadway Design  
Mr. Omar Sultan, Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Mr. Mark Staley, Roadside Environmental  
Mr. David Franklin, USACE, Wilmington



October 21, 2004  
 DOT TIP#: I-306C  
 DWQ#: N/A  
 COE#: N/A

Rachelle Beauregard  
 Department of Transportation  
 1548 Mail Service Center  
 Raleigh, NC 27699-1548

Subject: Project: I-85 Widening from west of US 15-501 to west of Broad Street  
 County: Durham

The purpose of this letter is to notify you that the North Carolina Ecosystem Enhancement Program (NCEEP) is willing to accept payment for buffer impacts associated with the subject project. Please note that the decision by the NCEEP to accept the mitigation requirements of this project does not assure that this payment will be approved by the U.S. Army Corps of Engineers and the N.C. Division of Water Quality Wetlands/401 Unit. It is the responsibility of the applicant to contact these agencies to determine if payment to the NCEEP for impacts associated with this project is appropriate.

Based on the information supplied by you in a letter dated October 8, 2004 the buffer restoration that is necessary to satisfy the compensatory mitigation requirements for this project is summarized in the following table. The maximum amount of mitigation that the NCEEP will accept for this project is also indicated in this table.

	Stream (linear feet)	Wetlands Riparian (acres)	Riparian Buffer (ft <sup>2</sup> )
Impacts			673
Mitigation Maximum			1,346

The riparian buffer mitigation will be provided as specified in the 401 Water Quality Certification and/or Section 404 Permit for impacts associated with the subject project in Cataloging Unit 03040105 of the Neuse River Basin. The mitigation will be performed in accordance with the Memorandum of Understanding between the N.C. Department of Environment and Natural Resources and the U.S. Army Corps of Engineers dated November 4, 1998.

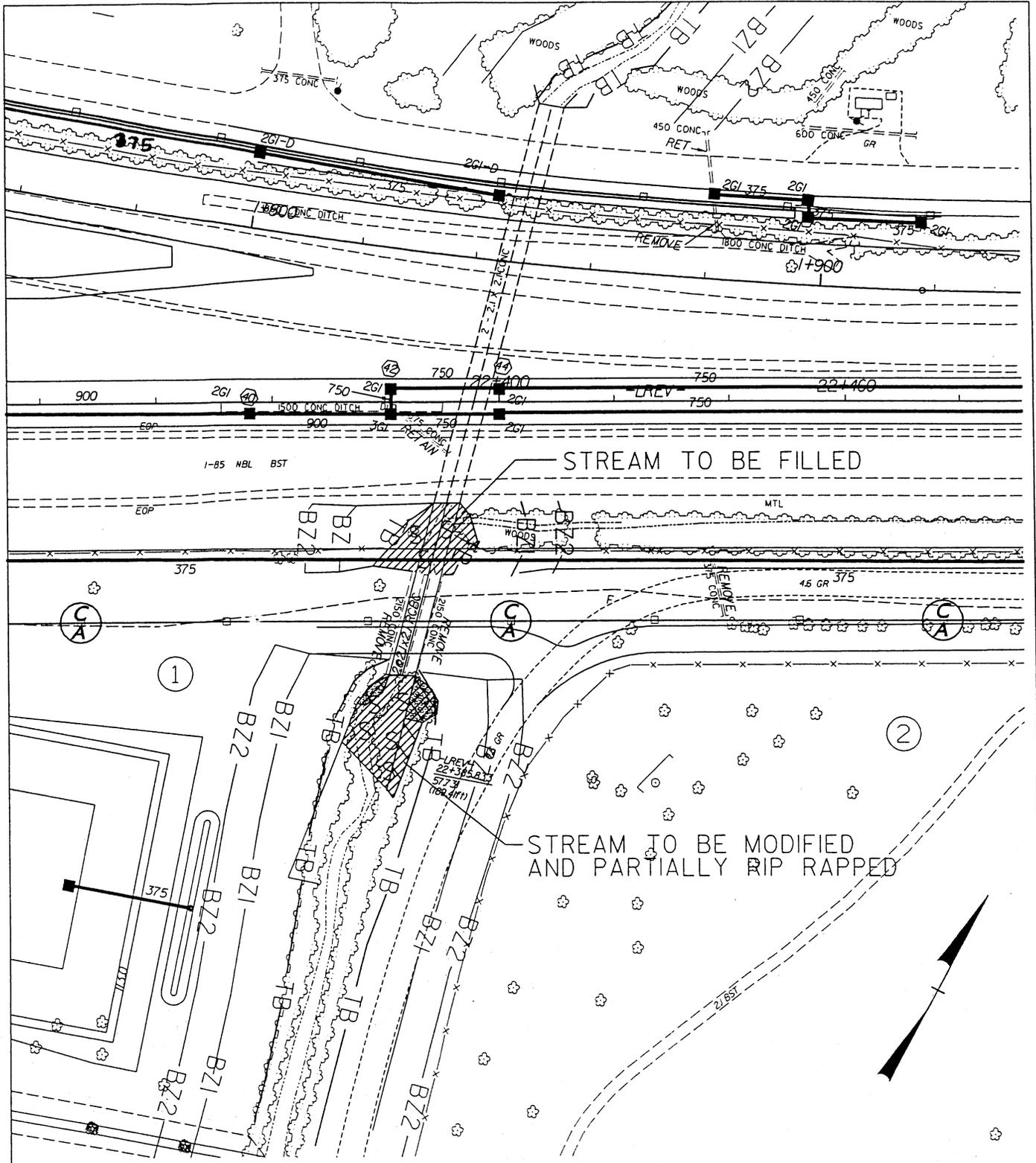
If you have any questions or need additional information, please contact Carol Shaw at (919) 733-5208.

Sincerely,  
  
 Deborah D. Anderson  
 In-Lieu Fee Administrator

cc: Cyndi Karoly, Wetlands/401 Unit  
 John Hennessy, NC DWQ  
 Eric Alsmeyer, USACOE-Raleigh  
 Steve Mitchell, DWQ Regional Office-Raleigh  
 File

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





PLAN VIEW  
 SITE 1  
 STREAM IMPACTS

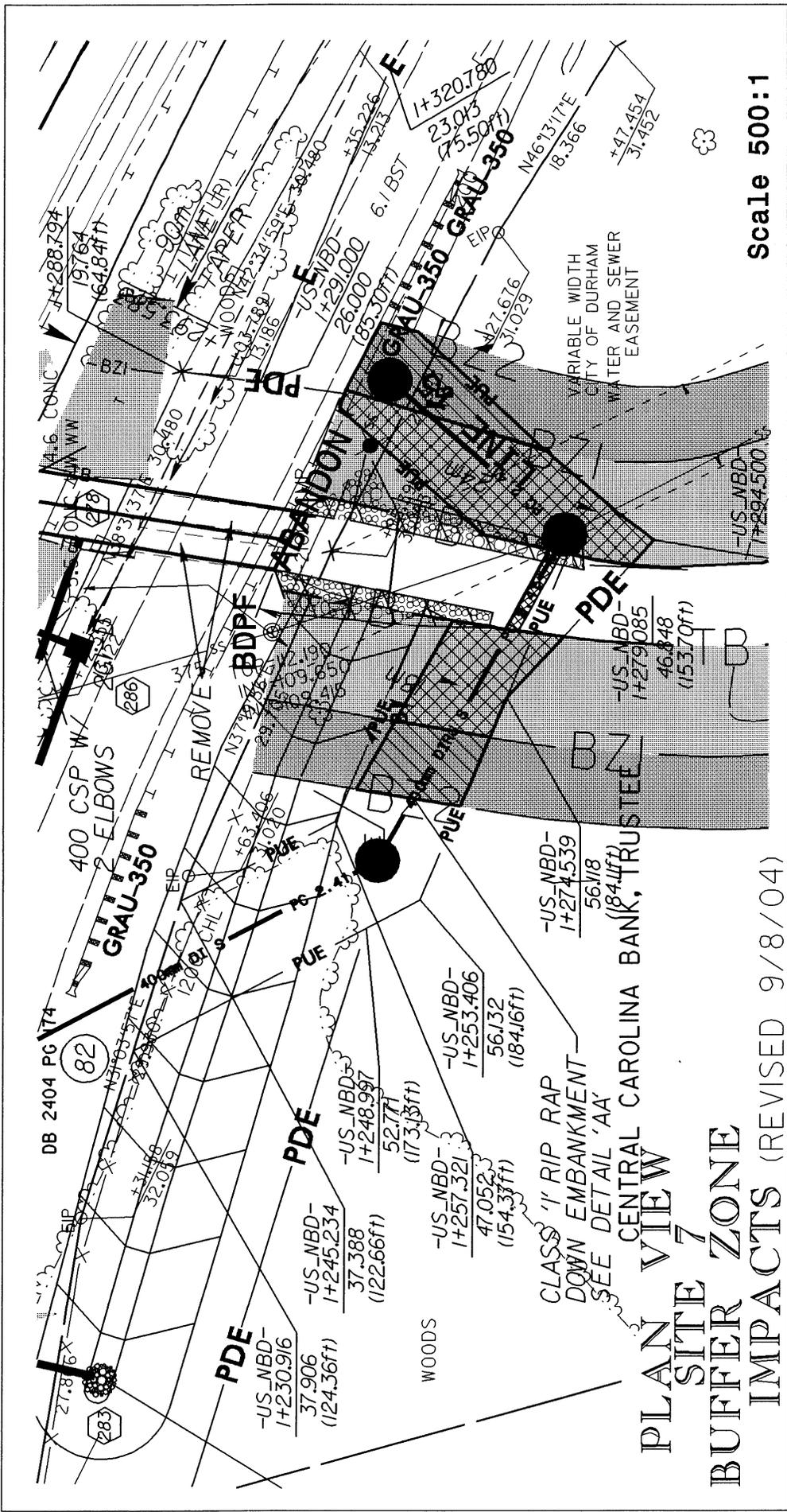
SCALE = 1:1000

NCDOT  
 DIVISION OF HIGHWAYS  
 DURHAM COUNTY  
 PROJECT: 8.1414801 (I-306C)  
 I-85 FROM WEST OF US 15-501  
 TO WEST OF BROAD STREET

Rev  
 SHEET 6 OF 21  
 9/2/04







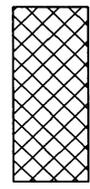
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LOCATION, RIGHT OF STA. 1+260 LINE -US\_NBD-

Stream Impact  
 Length=24.90 ft  
 Area=82.67 ft<sup>2</sup>



Permanent Impacts Zone 1  
 Length=89.81 ft  
 Area=2415.31 ft<sup>2</sup>

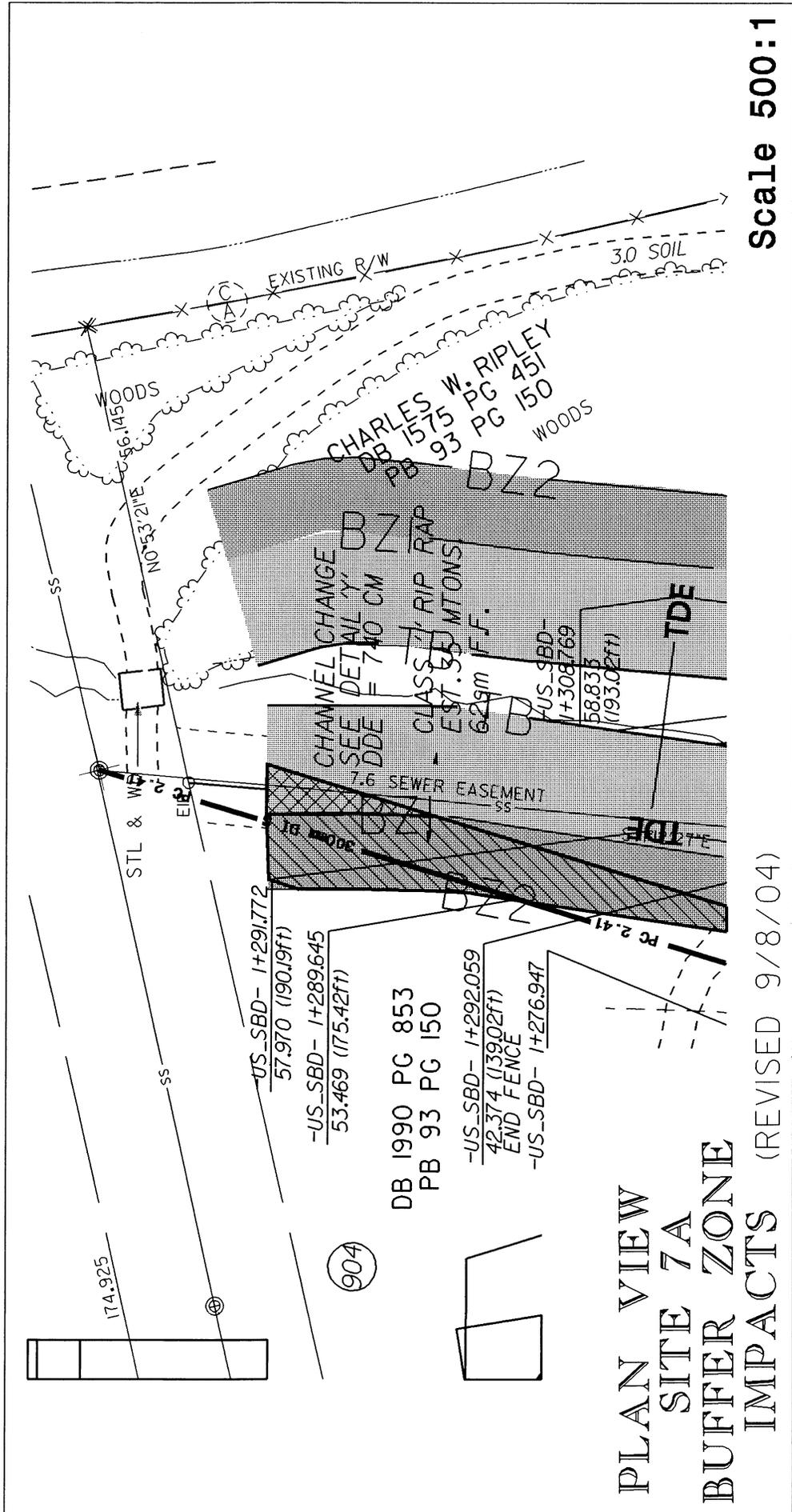


Permanent Impacts Zone 2  
 Length=36.18 ft  
 Area=1267.67 ft<sup>2</sup>



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

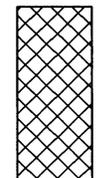
PROJECT: 8.1414801, (I-0306C)  
 I-85 FROM EAST OF US 15/501  
 TO WEST OF BROAD STREET  
 SHEET 1 OF 14



Scale 500:1

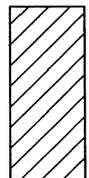
PLAN VIEW  
SITE 7A  
BUFFER ZONE  
IMPACTS (REVISED 9/8/04)

LOCATION, LEFT OF STA. 1+260 LINE -US\_NBD-



PERMANENT IMPACTS  
ZONE 1

Length=0 ft  
Area=303.43 ft<sup>2</sup>



PERMANENT IMPACTS  
ZONE 2

Length=78.74 ft  
Area=1988.31 ft<sup>2</sup>

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

PROJECT: 8.1414801, (I-0306C)  
I-85 FROM EAST OF US 15/501  
TO WEST OF BROAD STREET

SHEET 00 OF 14  
12

**TOTAL PERMANENT IMPACTS IN  
BUFFER ZONE 1**

**Area=6,726.26 ft<sup>2</sup>**

**TOTAL PERMANENT IMPACTS IN  
BUFFER ZONE 2**

**Area=18,371.30 ft<sup>2</sup>**

(REVISED 9/8/04)

**TOTAL STREAM IMPACT**

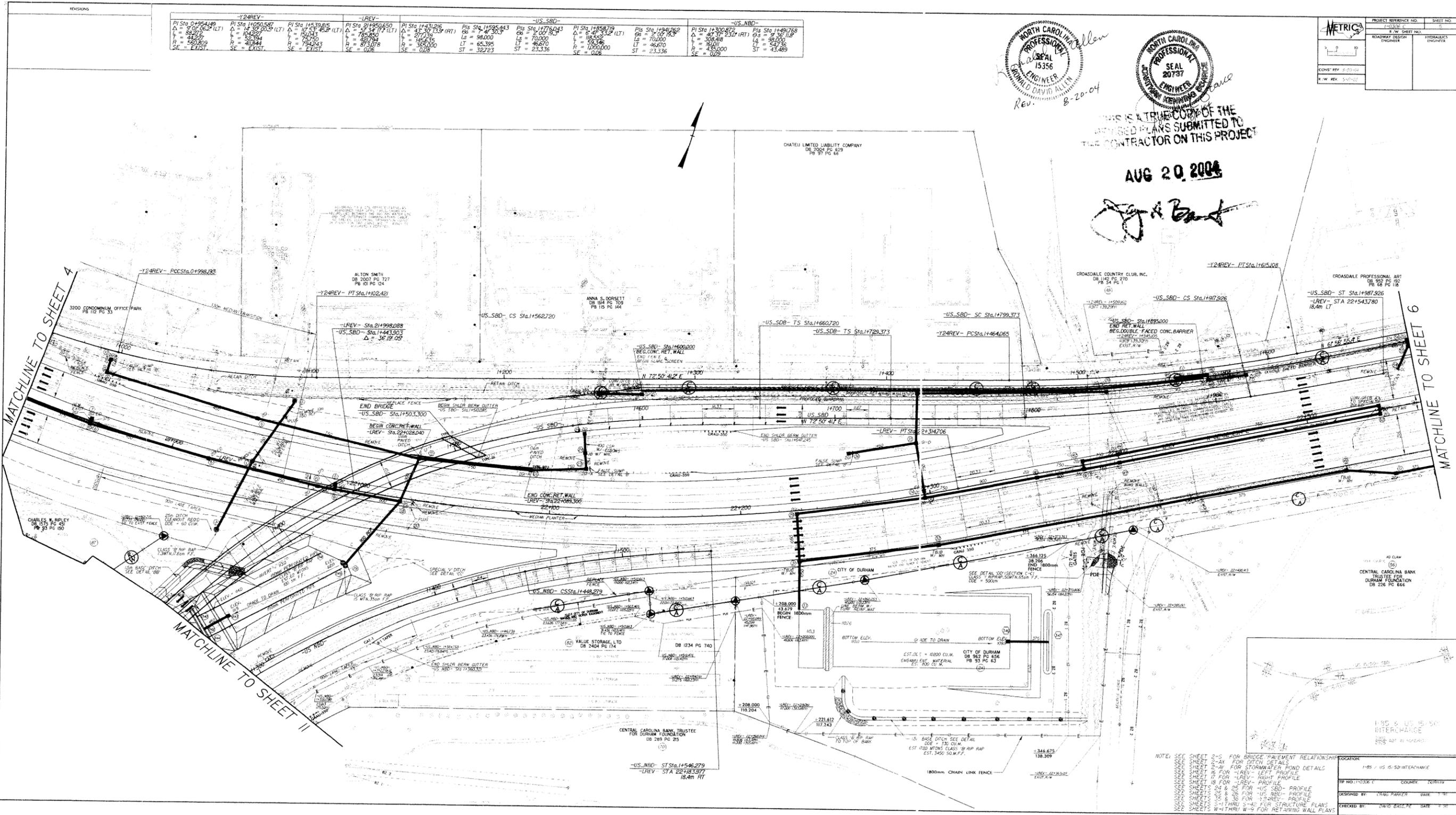
**Area=82.67 ft<sup>2</sup>**

**N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
DURHAM COUNTY**

**PROJECT: 8.1414801, (I-0306C)  
I-85 FROM EAST OF US 15/501  
TO WEST OF BROAD STREET**

**SHEET 13 OF 14**

CONST. REV. - VARIOUS DRAINAGE REVISIONS FROM STRUCTURE NUMBERS 29 TO 53. (8-20-04)BCK



-Y24REV-		-LREV-		-US_SBD-		-US_NBD-	
PI Sta. 0+954.149	PI Sta. 1+050.587	PI Sta. 1+539.815	PI Sta. 2+195.650	PI Sta. 1+431.216	PI Sta. 1+595.443	PI Sta. 1+941.860	PI Sta. 1+300.672
Δ = 100°46'24"(LT)	Δ = 143°00'03"(LT)	Δ = 107°54'45"(LT)	Δ = 111°17'17"(LT)	Δ = 117°30'13.9"(RT)	Δ = 6°47'33.2"(LT)	Δ = 47°37'23.7"(RT)	Δ = 37°56'11.8"
L = 862.77	L = 104.267	L = 107.643	L = 107.643	L = 78.250	L = 98.000	L = 70.000	L = 306.416
R = 520.809	R = 418.44	R = 724.243	R = 407.794	R = 145.336	R = 365.000	R = 46.670	R = 184.01
SF = EXIST.	SF = EXIST.	SF = EXIST.	SF = 0.06	SF = 0.06	SF = 0.06	SF = 2.336	SF = 0.06

Rev. B-20-04

THIS IS A TRUE COPY OF THE  
 REVISIONS SUBMITTED TO  
 THE CONTRACTOR ON THIS PROJECT  
  
**AUG 20, 2004**

PROJECT REFERENCE NO.	SHEET NO.
100561	1
100561	2
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NOTE: SEE SHEET 2-5 FOR BRIDGE PAVEMENT RELATIONSHIP  
 SEE SHEET 2-4 FOR DITCH DETAILS  
 SEE SHEET 2-4 FOR STORMWATER POND DETAILS  
 SEE SHEET 16 FOR -LREV- LEFT PROFILE  
 SEE SHEET 17 FOR -LREV- FRONT PROFILE  
 SEE SHEET 18 FOR -LREV- PROFILE  
 SEE SHEET 19 FOR -LREV- PROFILE  
 SEE SHEET 20 & 21 FOR -US\_SBD- PROFILE  
 SEE SHEET 22 & 23 FOR -US\_NBD- PROFILE  
 SEE SHEET 24 & 25 FOR -US\_SBD- PROFILE  
 SEE SHEET 26 & 27 FOR -US\_NBD- PROFILE  
 SEE SHEET 28 & 29 FOR -US\_SBD- PROFILE  
 SEE SHEET 30 & 31 FOR -US\_NBD- PROFILE  
 SEE SHEETS 32-42 FOR STRUCTURE PLANS  
 SEE SHEETS W-1 THRU W-5 FOR RETAINING WALL PLANS

LOCATION	DATE
1-85 / US 15-50 INTERCHANGE	
TP 1011-0306	COUNTY: DURHAM
DESIGNED BY: LARRY PARRIS	DATE: 1-90
CHECKED BY: DAVID BASSETTE	DATE: 1-90