



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

July 8, 2008

Mr. Brad Shaver
U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1890
Wilmington, NC 28402-1890

Dear Sir:

Subject: Application for Section 404 Nationwide Permit 23 and Water Quality Certification for the replacement of Bridge No. 44 over South River on NC 41; Bladen/Sampson Counties; TIP Project B-3613; Federal Aid Project No. BRSTP-41 (5). Debit \$240.00 from WBS Element 33164.1.1.

Please find enclosed permit drawings and roadway plans for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). A Categorical Exclusion (CE) was completed for this project on October 26, 2006, and distributed shortly thereafter. Additional copies are available upon request. The NCDOT proposes to replace existing Bridge No. 44 over South River on NC 41 in Bladen/Sampson Counties. The project involves replacement of the existing functionally obsolete and structurally deficient 320-foot bridge and approaches with a new 335-foot bridge and approaches. The new bridge will feature two 12-foot lanes with a 5-foot 11-inch offset and a 2-foot 11-inch offset. The west approach will be approximately 358 feet long and the east approach will be approximately 318 feet long. Proposed permanent impacts include 0.02 acre of riparian wetland impacts. Traffic will be detoured on-site during construction.

Impacts to Water of the United States

General Description: The project is located in the Cape Fear River Basin (Hydrologic Unit 03030006). A best usage classification of "C Sw ORW" has been assigned to South River [DWQ Index # 18-68-12-(8.5)]. No Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds) occur within 1.0 mile of the project area. South River is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. Additionally, South River is not listed on the Final 2006 303(d) list of impaired waters due to sedimentation, nor does it drain into any Section 303(d) waters within 1.0 mile of the project study area.

Permanent Impacts: As stated above, proposed permanent impacts consist of 0.01 acre of fill and 0.01 acre of mechanized clearing in riparian wetlands. The total amount of proposed impacts to jurisdictional wetlands is 0.02 acre.

Hand Clearing: There will be 0.02 acre of hand clearing in riparian wetlands.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Utility Impacts: There will be no impacts due to utilities.

Bridge Demolition: The superstructure for Bridge No. 44 is composed of a reinforced concrete deck on steel I-beams and the substructure consists of timber piles with reinforced concrete caps. All components can be removed without any debris falling into the water. Best Management Practices for Bridge Demolition and Removal will be implemented.

Avoidance and Minimization

Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States". Due to the presence of surface waters and wetlands within the project area, avoidance of all impacts is not possible. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Minimization measures were incorporated as part of the project design. These included:

- The bridge will be lengthened by 15 feet.
- Top-down construction will be utilized.
- NCDOT is also minimizing impacts to surface waters by utilizing longer spans with fewer bents than the existing bridge.
- 3:1 slopes were used in jurisdictional areas.
- Use of a hazardous spill basin for the Outstanding Resource Water.

Moratorium

NCDOT will adhere to an in-water work moratorium from February 15 – June 15. Although, the CE states a moratorium of February 1 – July 1, an email from the North Carolina Wildlife Resources Commission (NCWRC) amends the previous moratorium to the standard dates. The email is enclosed.

Mitigation

The proposed project will have permanent impacts to riparian wetlands totaling 0.02 acre. Due to the minimal amount of permanent impacts to jurisdictional resources, NCDOT is not proposing compensatory mitigation.

Federally Protected Species

As of January 31, 2008, the US Fish and Wildlife Service (USFWS) lists six federally protected species for Bladen/Sampson Counties. The biological conclusions are "No Effect".

Federally Protected Species for Bladen/Sampson Counties

Common Name	Scientific Name	Status	Habitat	Conclusion
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No	No Effect
American alligator	<i>Alligator mississippiensis</i>	T(S/A)	Yes	N/A
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	No	No Effect
Pondberry	<i>Lindera melissifolia</i>	E	No	No Effect
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	E	No	No Effect
American chaffseed	<i>Schwalbea americana</i>	E	No	No Effect

Bald Eagle

The bald eagle was delisted as of August 8, 2007 and is no longer protected by the Endangered Species Act. It is, however, protected under the Bald and Golden Eagle Protection Act. No nests or individuals were observed within 660 feet of the project area.

Project Schedule

The project has a scheduled let of February 17, 2009 with a review date of December 30, 2008.

Regulatory Approvals

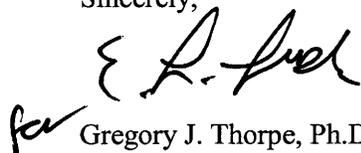
Section 404 Permit: Most aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by Nationwide Permits 23.

Section 401 Permit: We anticipate 401 General Certification number 3701 will apply to this project. The NCDOT will adhere to all standard conditions of the aforementioned certifications. Due to the proximity of wetlands to an ORW on this project, we are requesting written concurrence. In accordance with 15A NCAC 2H, Section .0500(a), we are providing five copies of this application to the NCDWQ for their review. Authorization to debit the \$240 Permit Application Fee from WBS Element 33164.1.1 is hereby given.

A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>.

If you have any questions or need additional information, please contact Chris Underwood at (919) 715-1451 or csunderwood@ncdot.gov.

Sincerely,



for Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis

W/attachment:

Mr. Brian Wrenn, NCDWQ (5 copies)

W/o attachment:

Dr. David Chang, P.E., Hydraulics
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming & TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS

Ms. Anne Deaton, NCDMF
Mr. Joseph Miller, PDEA
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. H. Allen Pope, P.E., Division 3
Mr. Mason Herndon, Division 3

Subject: RE: B-3613 on the South River; Bladen Co.

Date: Thu, 10 Jan 2008 09:22:12 -0500

From: "Travis Wilson" <travis.wilson@ncwildlife.org>

To: "Christopher Stanley Underwood" <csunderwood@dot.state.nc.us>

For consistency with our current anadromous fish guidelines we will amend our recommendation to include an in-water work moratorium from February 15 to June 15.

-----Original Message-----

From: Christopher Stanley Underwood [<mailto:csunderwood@dot.state.nc.us>]

Sent: Wednesday, December 12, 2007 8:04 AM

To: Wilson, Travis W.

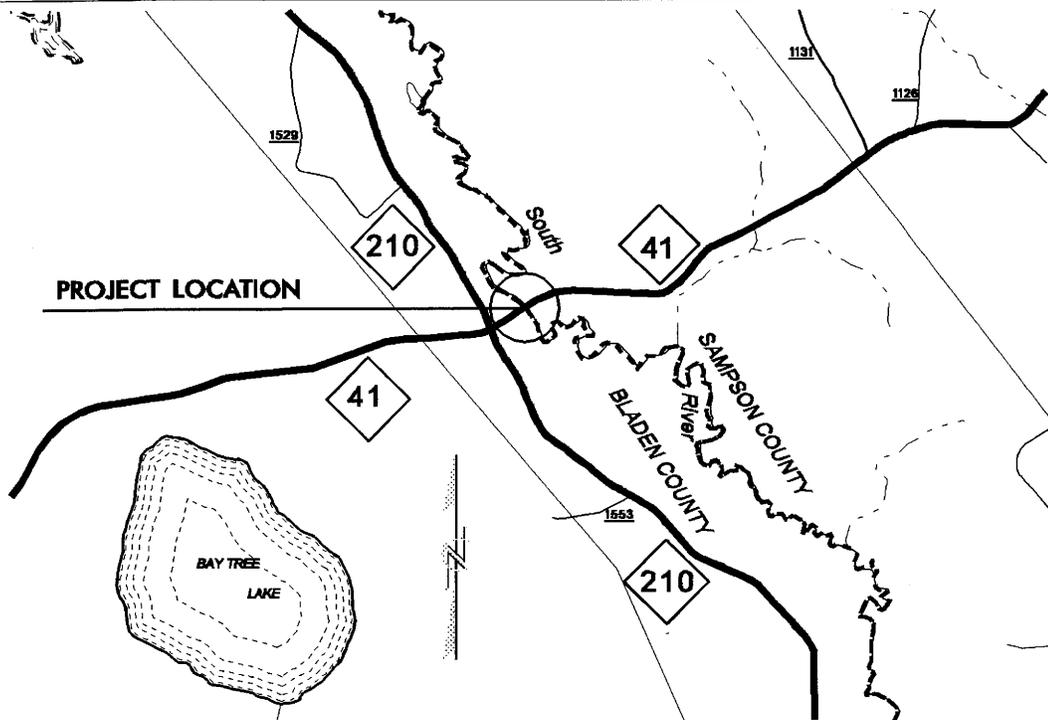
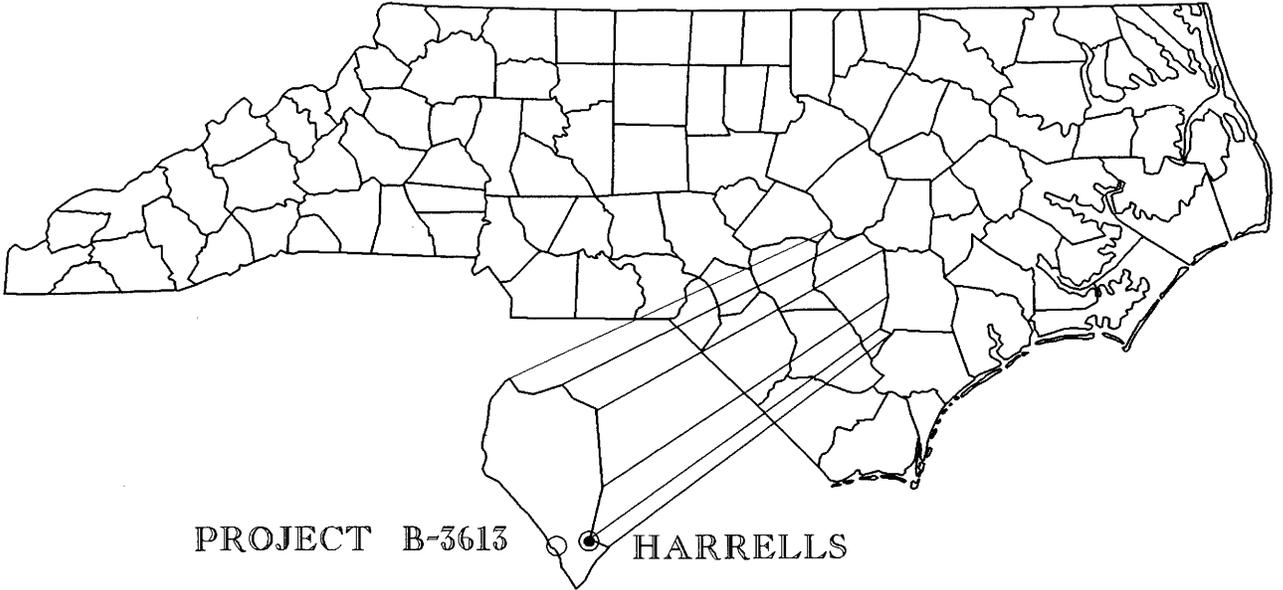
Subject: B-3613 on the South River; Bladen Co.

Hey Travis,

Owen Anderson set a moratorium of Feb. 1 - July 1 in 2000. Can you let me know how much is for anadromous fish? It was stated for anadromous and other spawning fish. Thanks for your help.

Chris

NORTH CAROLINA

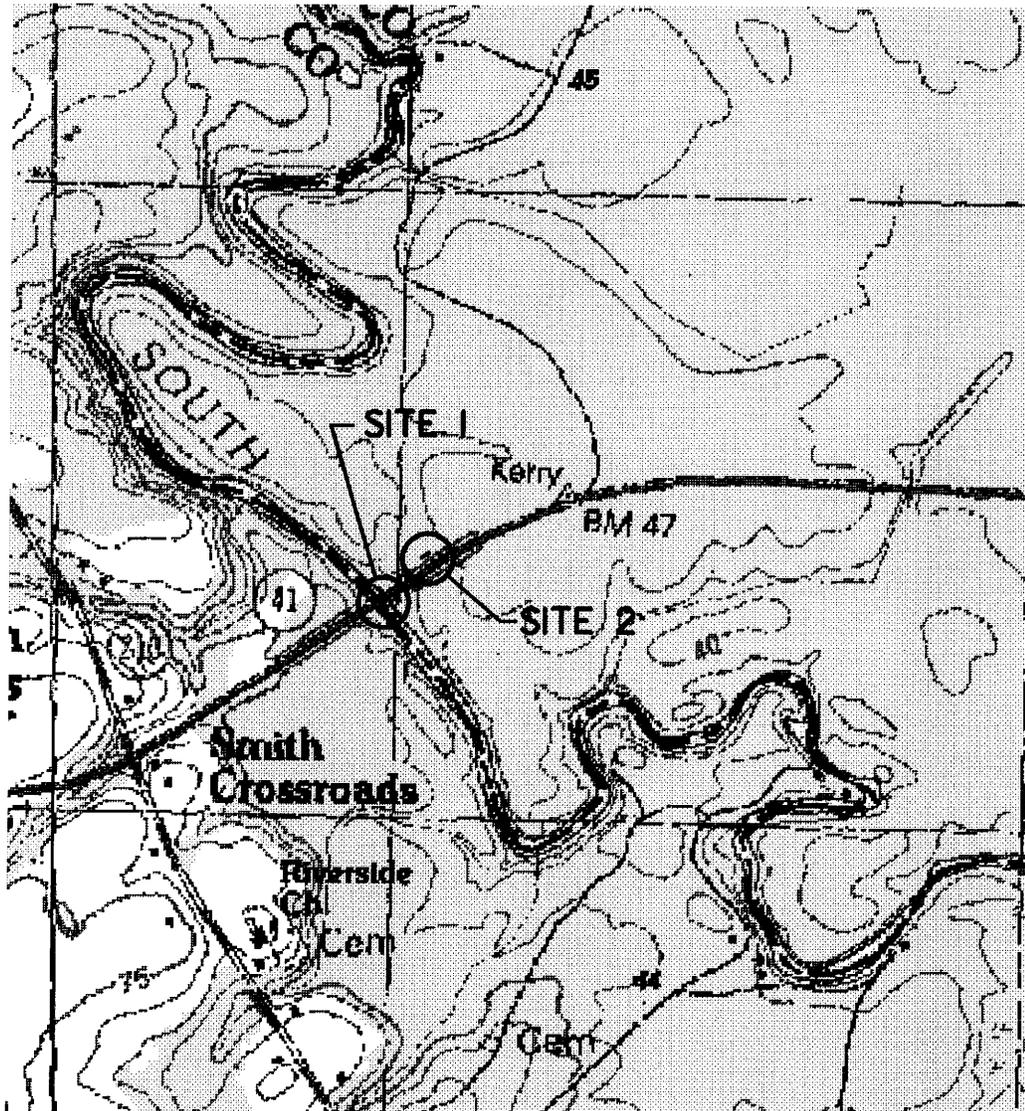


VICINITY
MAPS

NCDOT
DIVISION OF HIGHWAYS
SAMPSON COUNTY
PROJECT: 33164.1.1 (B-3613)
BRIDGE NO. 44 ON NC 41
AND APPROACHES OVER
THE SOUTH RIVER

SHEET OF 3/18/08

Permit Drawing
Sheet 1 of 13



TOMAHAWK, NC QUAD MAP

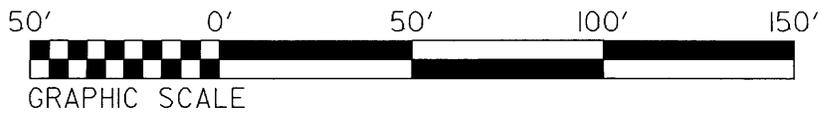
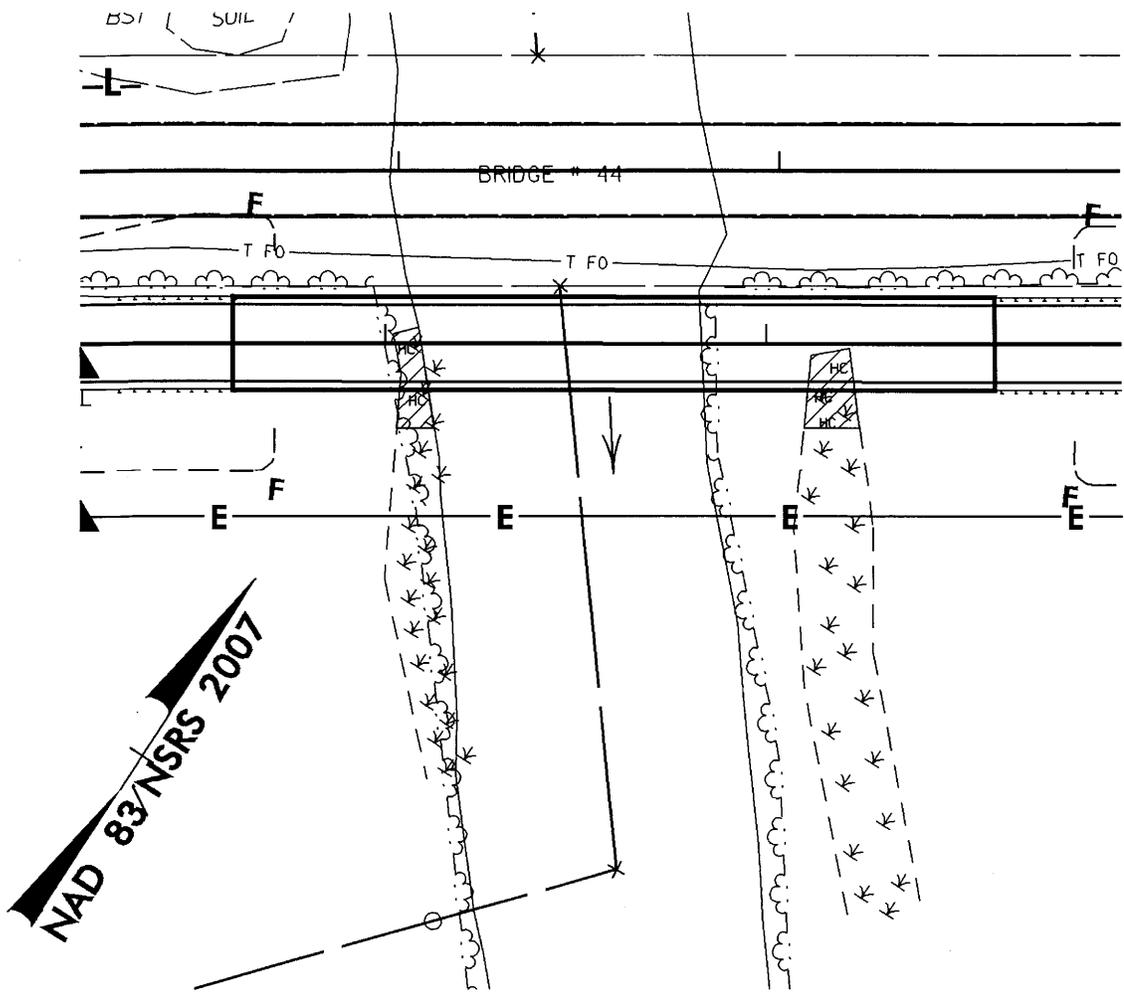
NAD 83/NSRS 2007

VICINITY
MAP



NCDOT
 DIVISION OF HIGHWAYS
 BLADEN AND SAMPSON COUNTIES
 PROJECT: 33154.1.1 (B-3613)
 BRIDGE NO. 44 ON NC 41 AND
 APPROACHES OVER
 THE SOUTH RIVER

SHEET OF



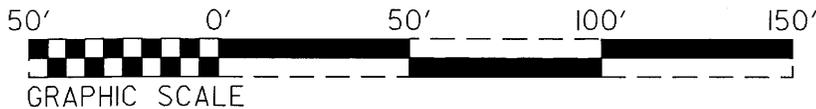
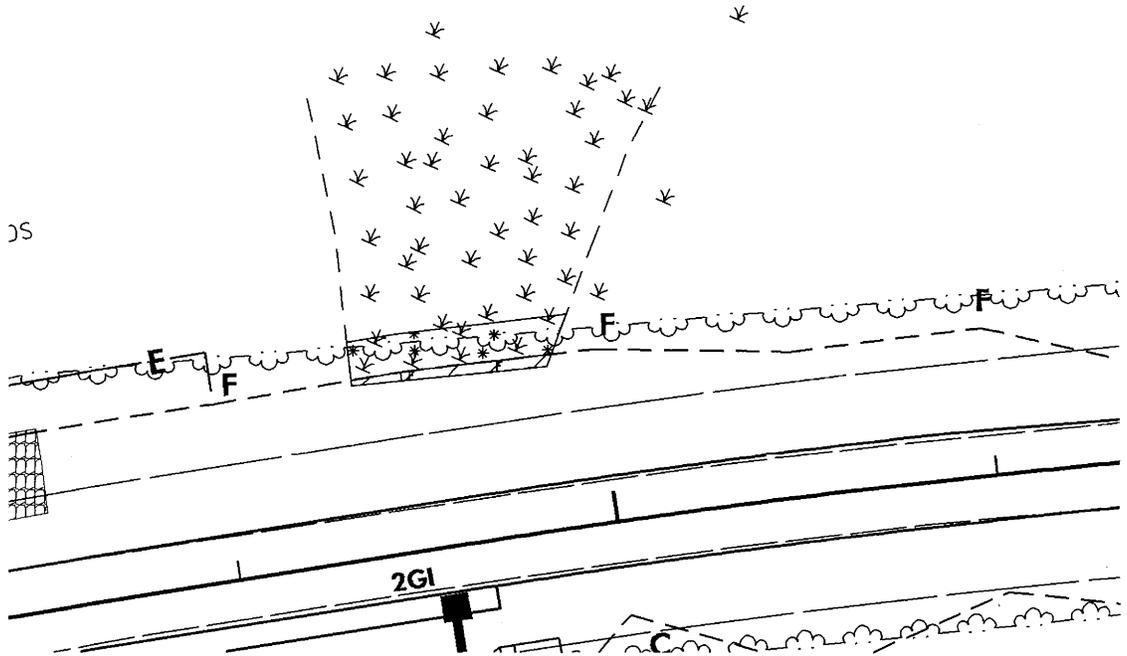
SITE 1 ENLARGEMENT

 DENOTES HAND CLEARING

NCDOT
 DIVISION OF HIGHWAYS
 BLADEN AND SAMPSON COUNTY
 PROJECT: 33154.1.1 (B-3613)
 BRIDGE NO.44 ON NC 41
 AND APPROACHES OVER
 THE SOUTH RIVER

SHEET OF

NAD 83/NSRS 2007



SITE 2 ENLARGEMENT

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NCDOT
DIVISION OF HIGHWAYS
BLADEN AND SAMPSON COUNTY
PROJECT: 33154.1.1 (B-3613)
BRIDGE NO. 44 ON NC 41 AND
APPROACHES OVER
THE SOUTH RIVER
SHEET OF

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	MILTON MARSHBURN	4905 HWY 210E HARRELS NC 28444
2	PROGRESS ENERGY	PEB(3A); S.WILMINGTON ST. RALEIGH, NC 27601

NCDOT

DIVISION OF HIGHWAYS

SAMPSON COUNTY

PROJECT: 33164.1.1 (B-3613)

**BRIDGE NO. 44 ON NC 41
AND APPROACHES OVER
THE SOUTH RIVER**

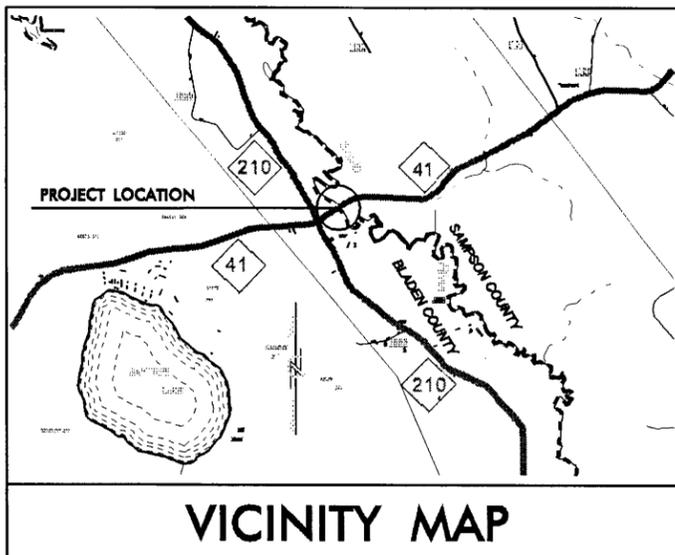
SHEET OF 3/18/08

**Permit Drawing
Sheet 5 of 13**

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN / SAMPSON COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3613	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33164.1.1	BRSTP-41 (5)	PE R/W & UTIL	

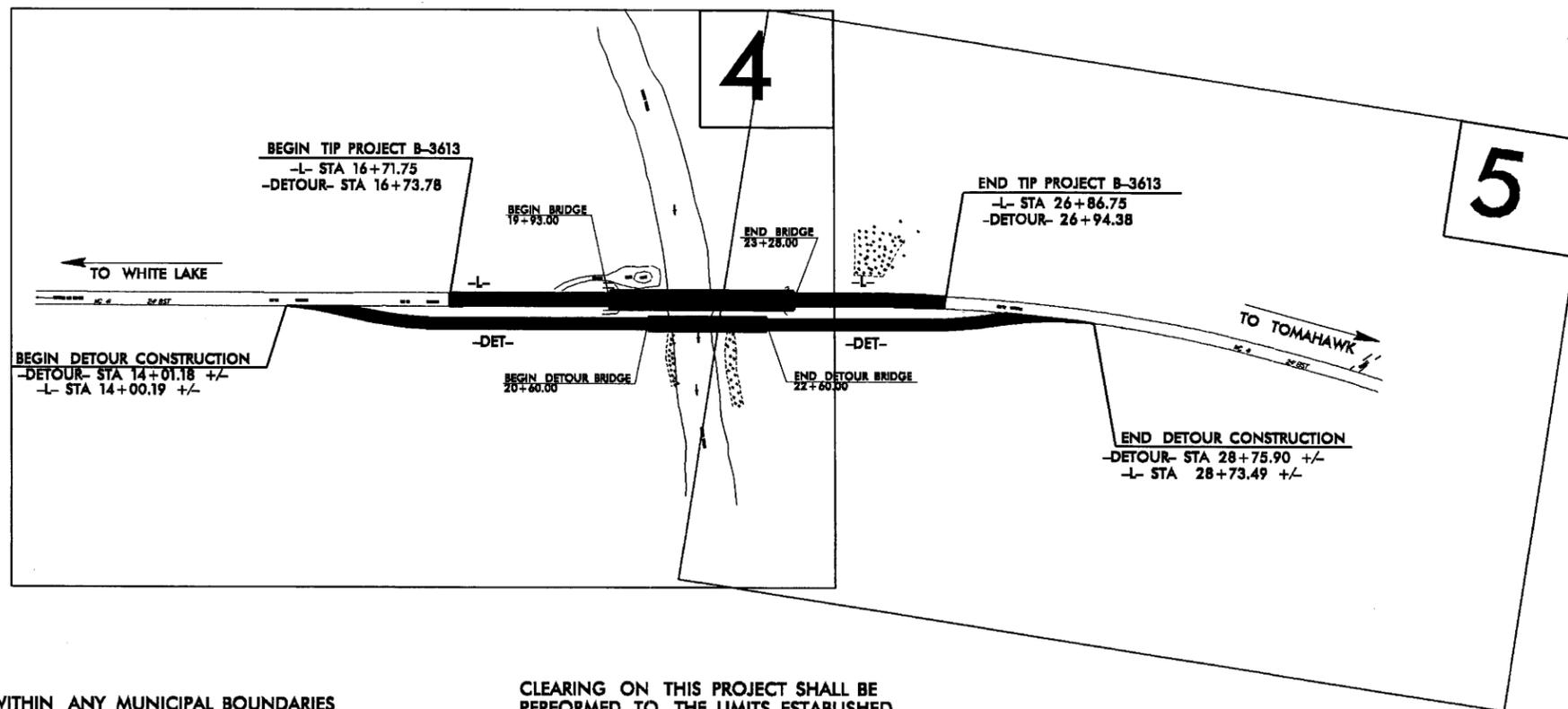
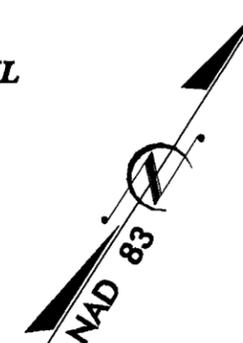


LOCATION: BRIDGE NO. 44 ON NC 41 AND APPROACHES
OVER THE SOUTH RIVER

TYPE OF WORK: RESURFACING, GRADING, PAVING, DRAINAGE,
DETOUR CONSTRUCTION, STRUCTURE, GUARDRAIL,
TEMPORARY STRUCTURE AND TEMPORARY GUARDRAIL

Permit Drawing
Sheet 7 of 13

WETLAND AND STREAM PERMIT



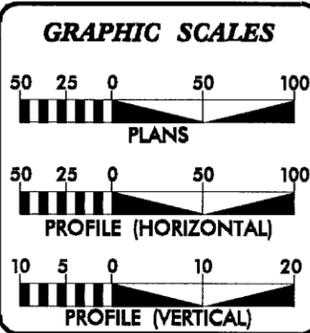
NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
NOTE: THIS IS NOT A CONTROLLED-ACCESS PROJECT

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-3613

CONTRACT: C201252



DESIGN DATA

ADT 2007 =	3028 VPD
ADT 2025 =	3200 VPD
DHV =	10 %
D =	60 %
T =	22 % *
V =	60 MPH
* TTST 4	DUAL 18
FUNC CLASS =	COLLECT.

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3613	= ?
LENGTH OF STRUCTURE TIP PROJECT B-3613	= ?
TOTAL LENGTH TIP PROJECT B-3613	= 0.192

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 15, 2008	JIMMY GOODNIGHT PE PROJECT ENGINEER
LETTING DATE: FEBRUARY 17, 2009	TIM GOINS PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

\$\$\$\$\$SYTIME\$\$\$\$\$
\$\$\$\$\$DCN\$\$\$\$\$
\$\$\$\$\$USERNAME\$\$\$\$\$

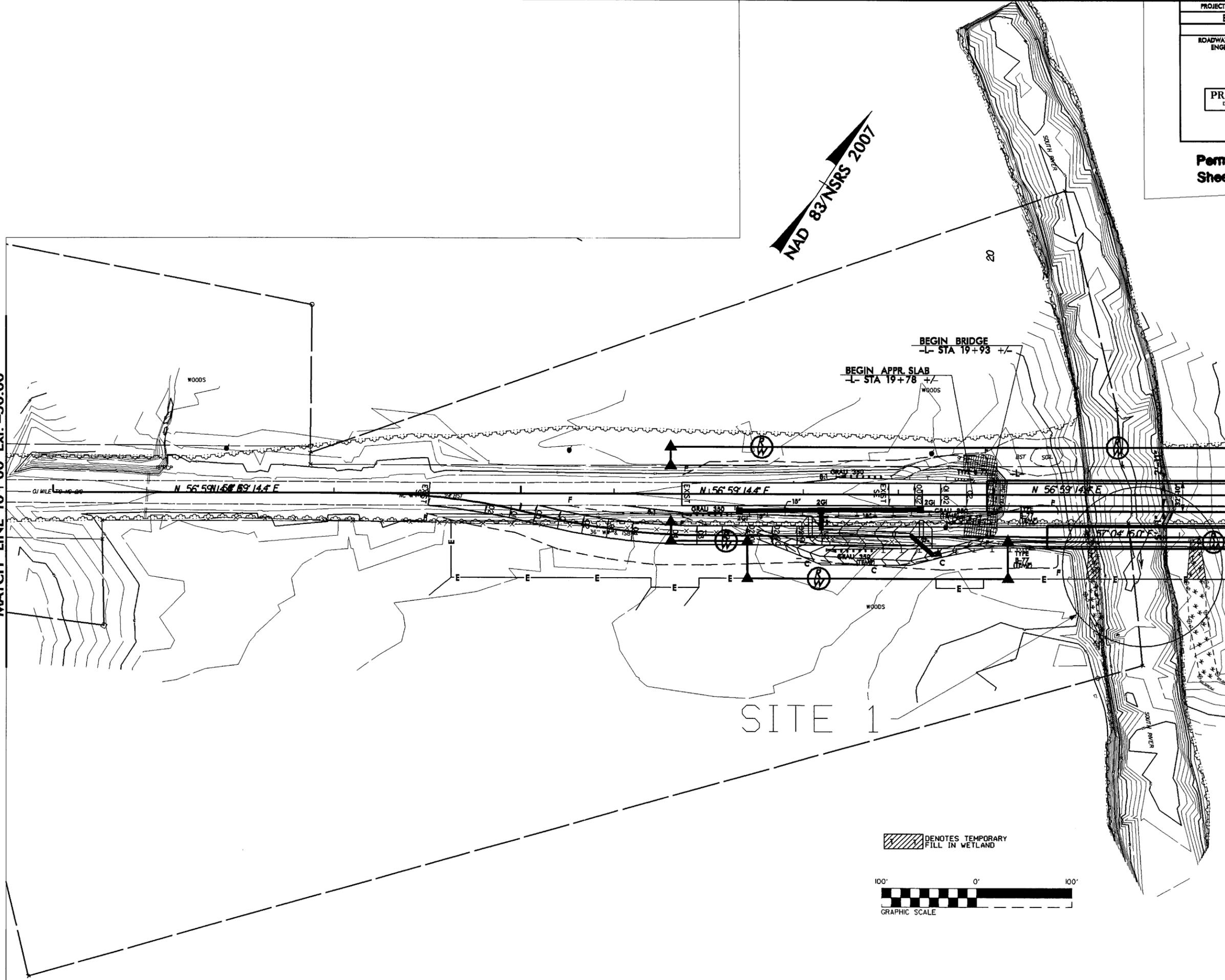
PROJECT REFERENCE NO. B-3613	SHEET NO. 4
MW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 9 of 13

NAD 83/NSRS 2007

MATCH LINE 10 + 00 Ext. -50.00

MATCH LINE 22 + 50 SEE SHEET 5



 DENOTES TEMPORARY FILL IN WETLAND



REVISIONS

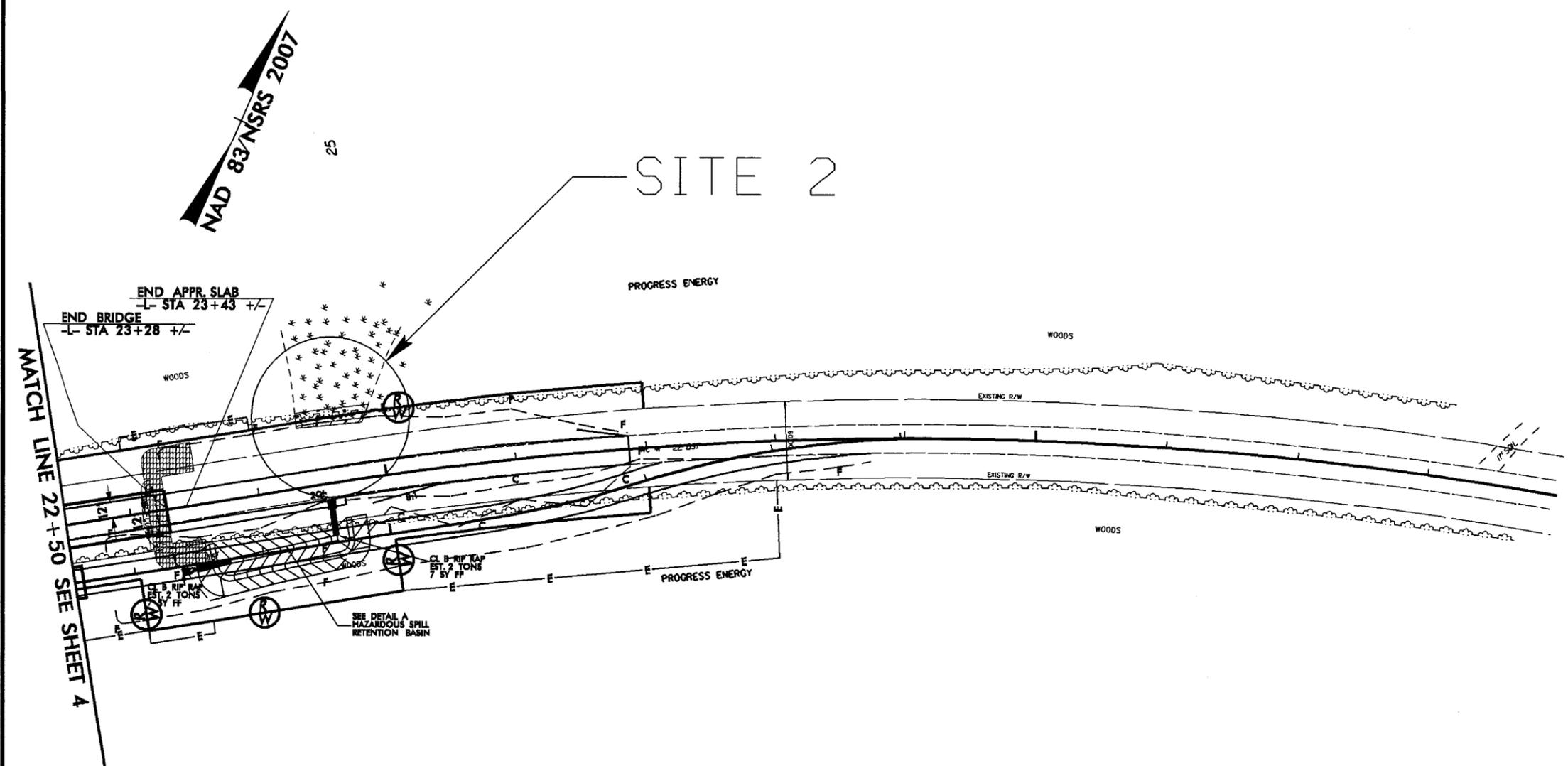
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PROJECT REFERENCE NO. B-3613	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 10 of 13

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REVISIONS



 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING

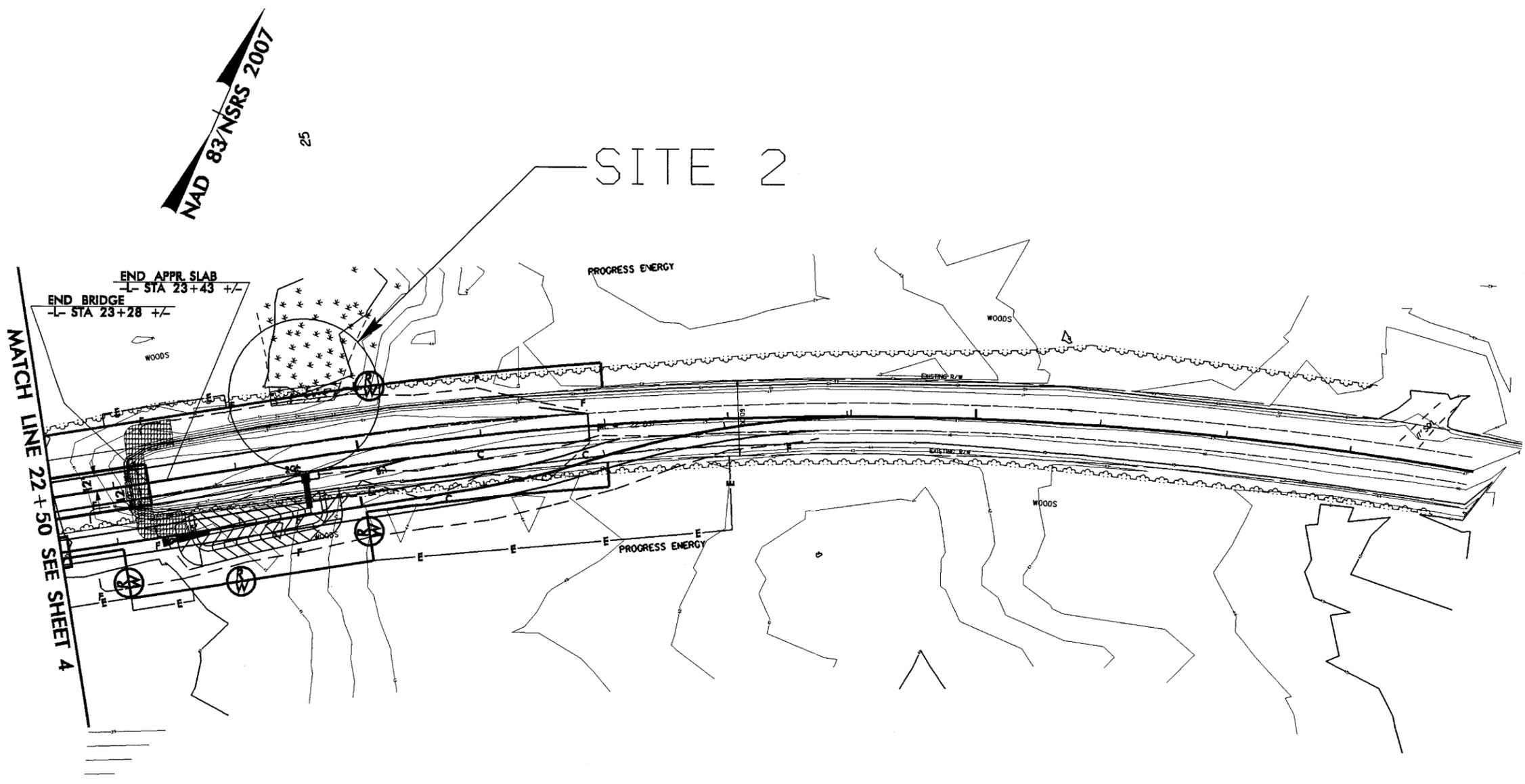


PROJECT REFERENCE NO. B-3613	SHEET NO. 5
MW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 11 of 13

8/17/99

REVISIONS



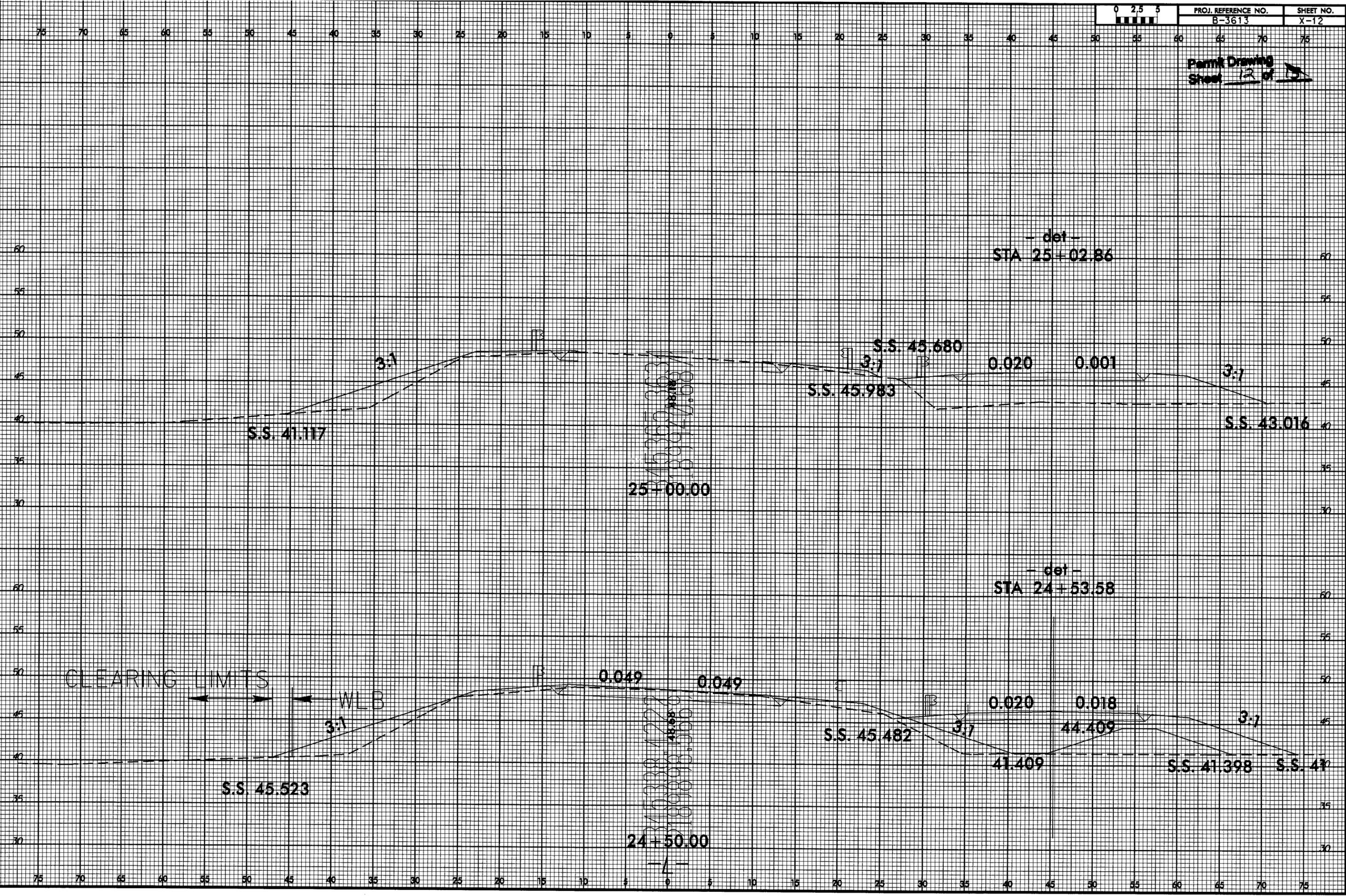
 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING



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 11/2/08

8/23/91

Permit Drawing
Sheet 12 of 13



3-MAR-2008 08:26
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Lawhopper

5/14/99

PROJECT REFERENCE NO. B-3613	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

Permit Drawing
Sheet 13 of 13

BM #80 ELEV. 43.95' RR SPIKE IN BASE OF 20"
GUM TREE 51.47' LT OF LINE -L- STA 8+46.79
-L- STA 13+25.51 68.64' LEFT

BEGIN RESURFACING
-L- STA. 16+71.75
ELEV. 47.29
INCLUDES 1.25"

BEGIN BRIDGE
-L- STA. 19+93 +/-

PI = 21+75.00
EL = 51.03'
VC = 275'
K = 159

END RESURFACING
-L- STA. 26+86.75
ELEV. 47.37
INCLUDES 1.25"

BEGIN GRADE
-L- STA. 18+90.00
ELEV. 48.51

END BRIDGE
-L- STA. 23+28 +/-

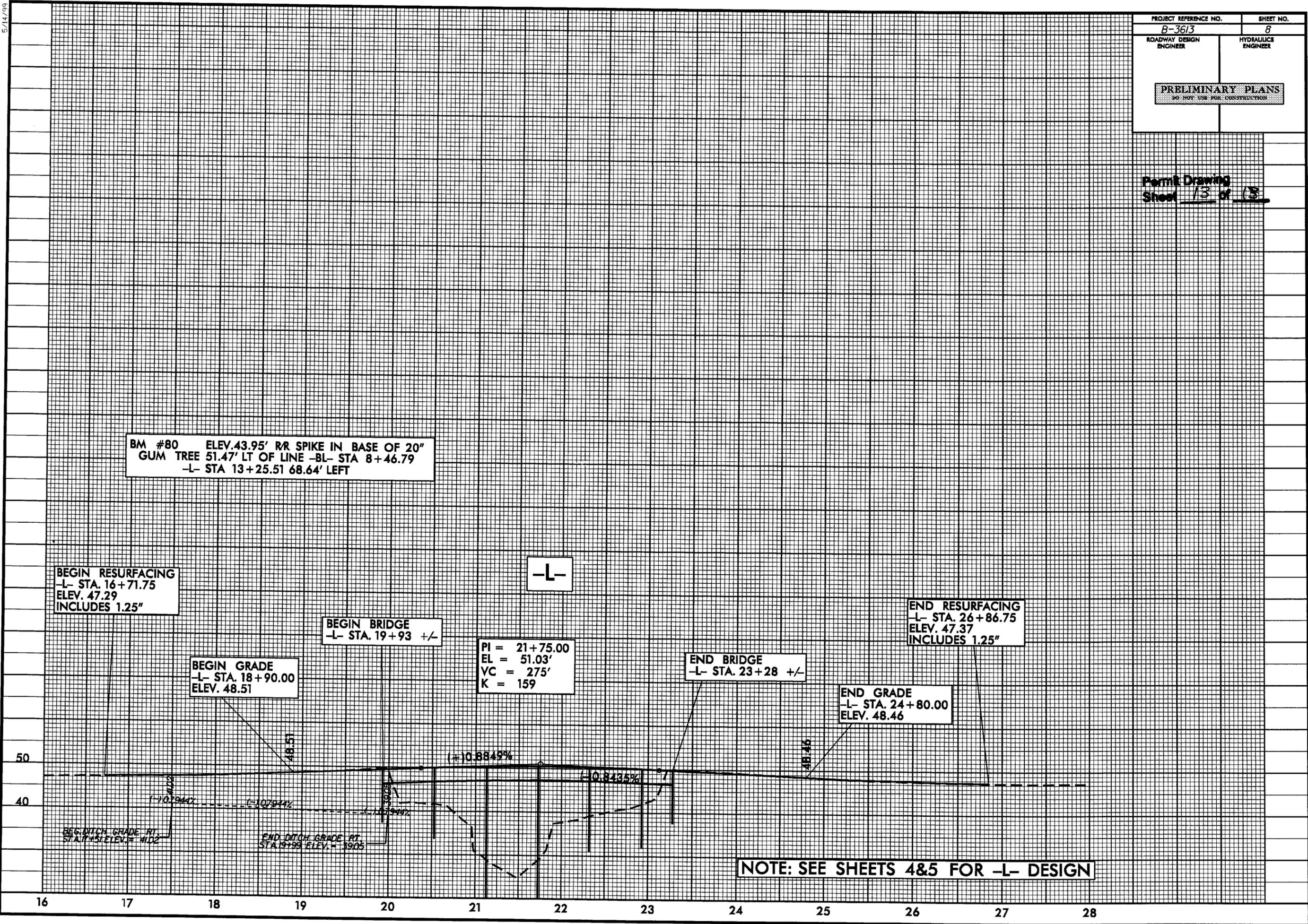
END GRADE
-L- STA. 24+80.00
ELEV. 48.46

BEG. DITCH GRADE RT.
STA. 17+51 ELEV. = 41.02

END DITCH GRADE RT.
STA. 19+93 ELEV. = 39.05

NOTE: SEE SHEETS 4&5 FOR -L- DESIGN

30-APR-2008 11:02
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See Sheet 1-A For Index of Sheets

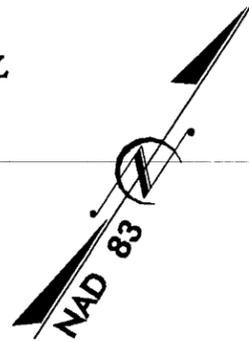
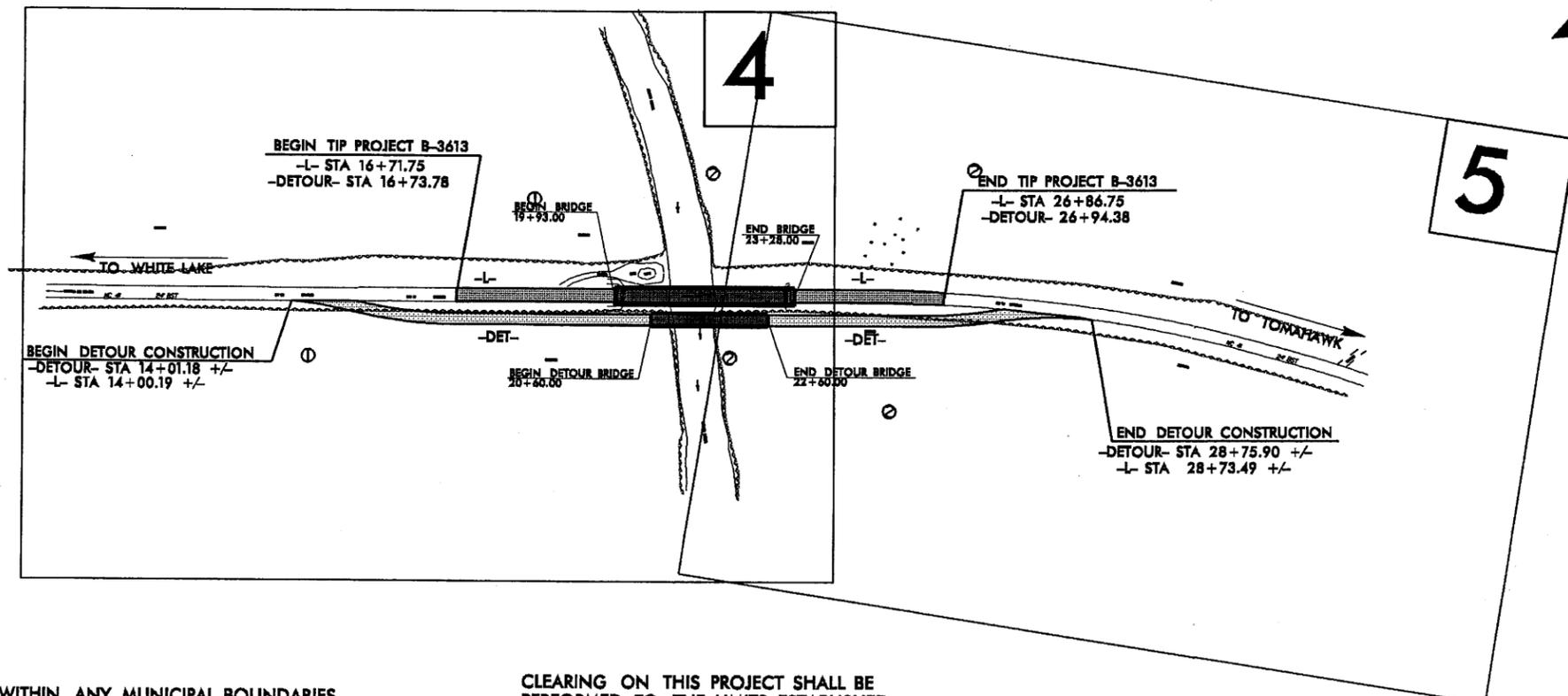
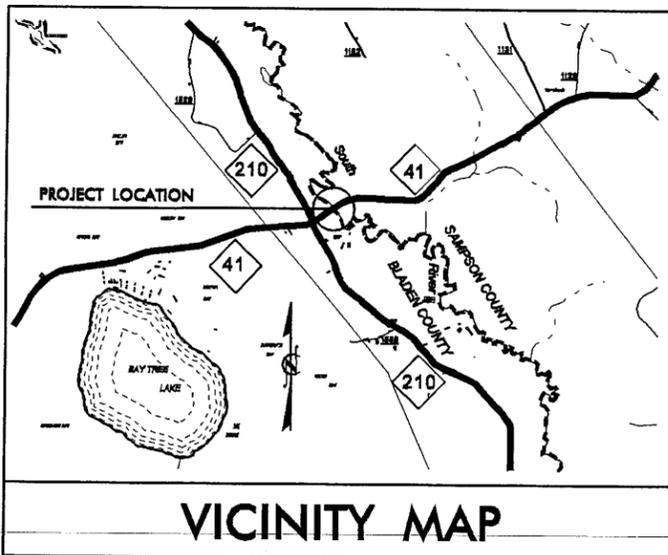
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BLADEN / SAMPSON COUNTIES

LOCATION: BRIDGE NO. 44 ON NC 41 AND APPROACHES
OVER THE SOUTH RIVER

TYPE OF WORK: RESURFACING, GRADING, PAVING, DRAINAGE,
DETOUR CONSTRUCTION, STRUCTURE, GUARDRAIL,
TEMPORARY STRUCTURE AND TEMPORARY GUARDRAIL

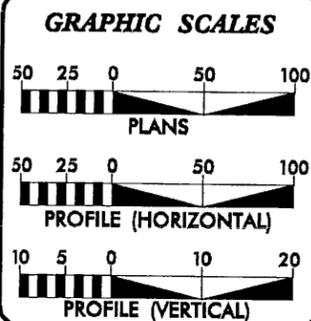
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3613	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33164.1.1	BRSTP-41 (5)	PE RW & UTIL	



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NOTE: THIS IS NOT A CONTROLLED-ACCESS PROJECT

CLEARING ON THIS PROJECT SHALL BE
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BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2007 =	3028 VPD
ADT 2025 =	3200 VPD
DHV =	10 %
D =	60 %
T =	22 % *
V =	60 MPH
* TTST 4	DUAL 18
FUNC CLASS =	COLLECT.

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3613	= ?
LENGTH OF STRUCTURE TIP PROJECT B-3613	= ?
TOTAL LENGTH TIP PROJECT B-3613	= 0.192

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: **FEBRUARY 15, 2008**

LETTING DATE: **FEBRUARY 17, 2009**

JIMMY GOODNIGHT PE
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

30-APR-2008 10:59
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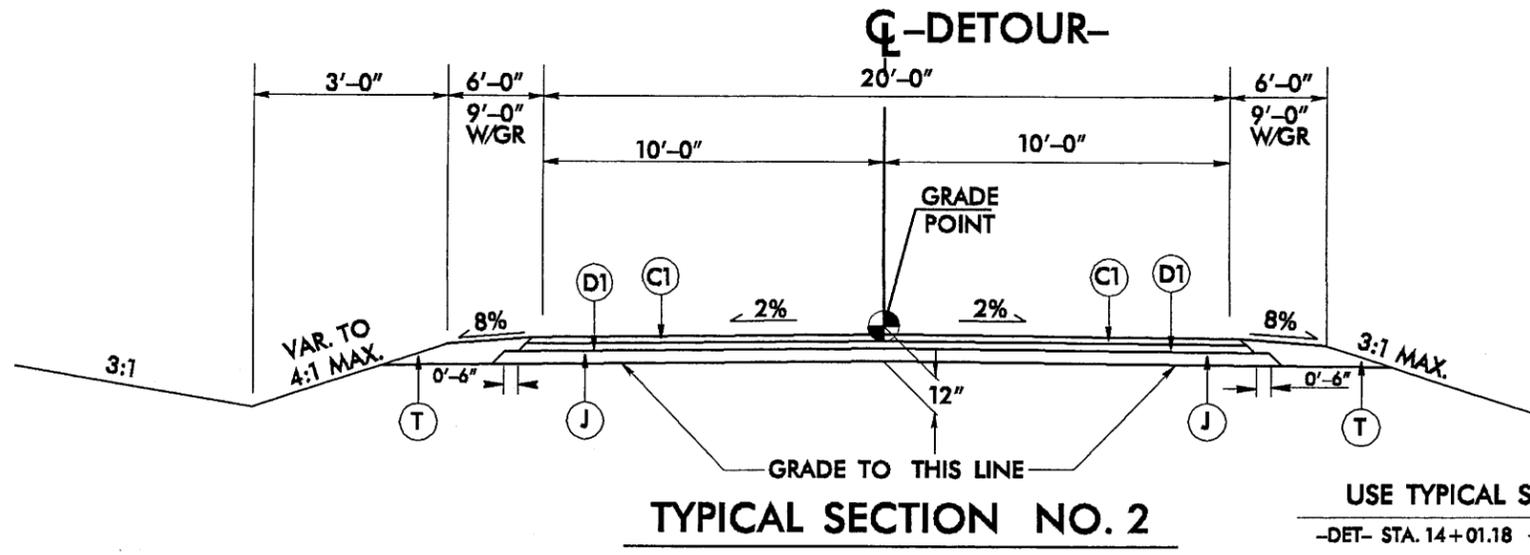
TIP PROJECT: B-3613
CONTRACT: C201252

PRELIMINARY PLANS
NO. 507 508 FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	1 1/2" S9.5B
C2	3" S9.5B
C3	VAR. DEPTH S9.5B
D1	2 1/2" I19.0B
D2	VAR. DEPTH I19.0B
E1	4" B25.0B
E2	VAR. DEPTH B25.0B
J	8" ABC
T	EARTH MATERIAL
U	EXISTING PAVEMENT

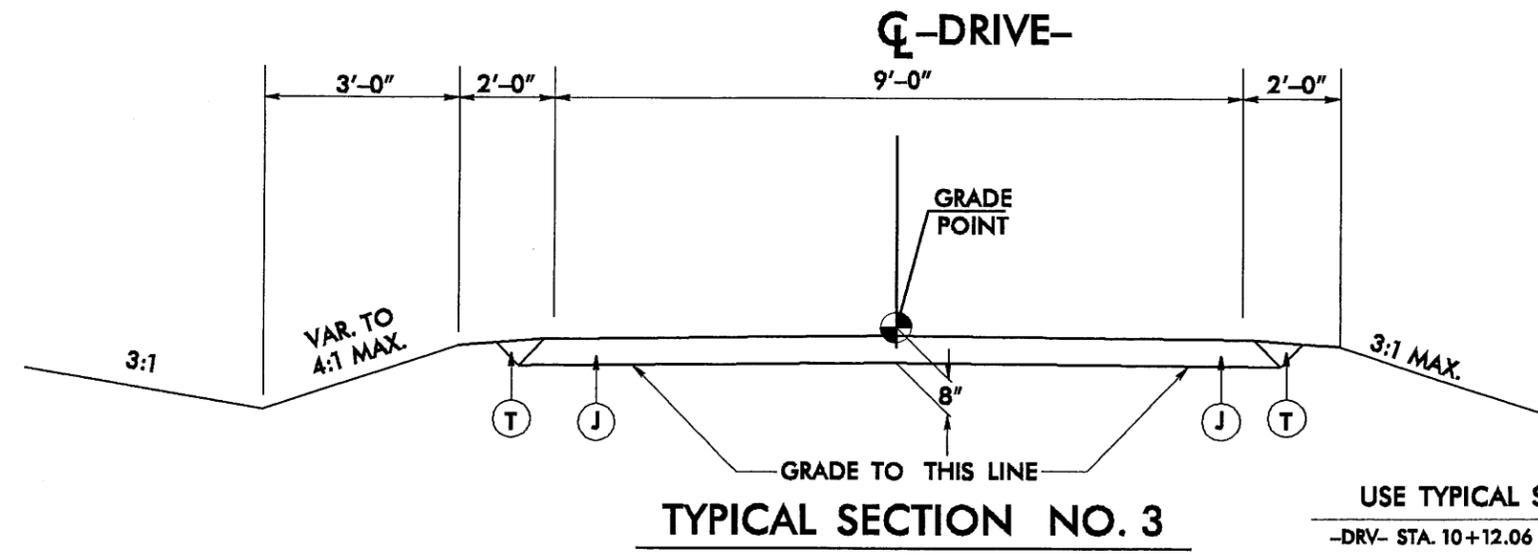
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 3

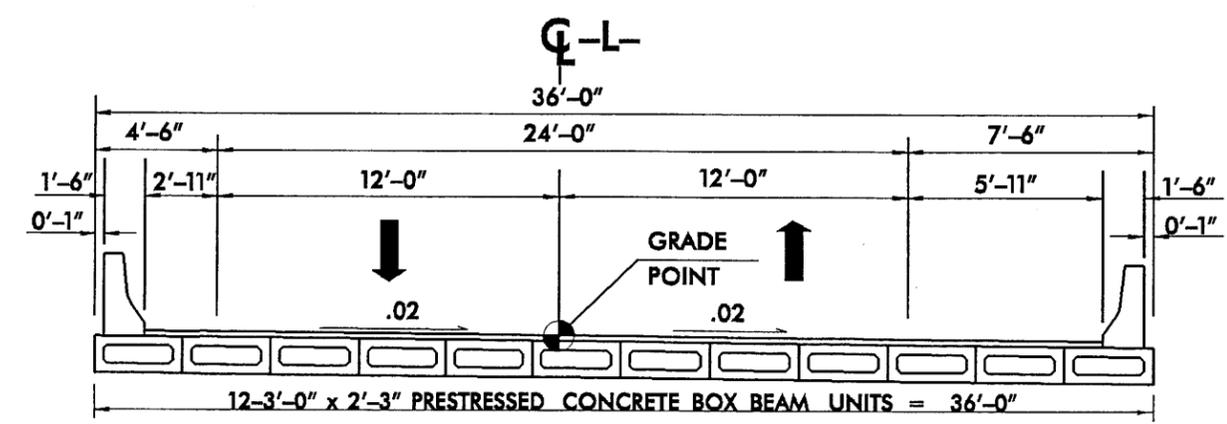
-DET- STA. 14+01.18 +/- TO 28+75.90 +/-



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 4

-DRV- STA. 10+12.06 TO 11+96.46



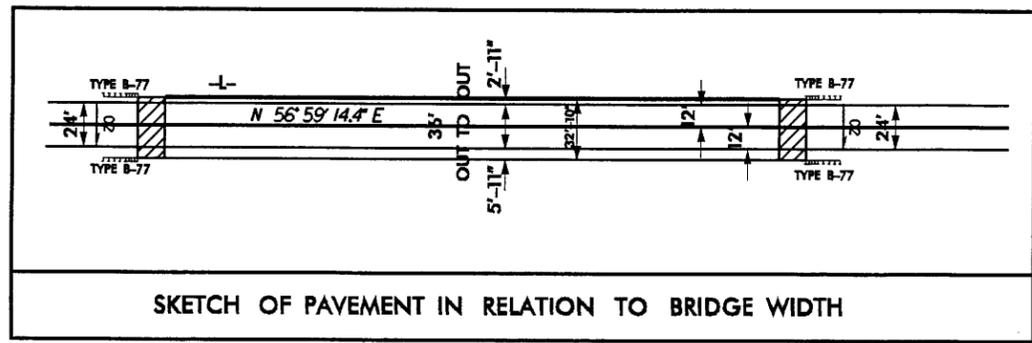
TYPICAL SECTION ON BRIDGE

-L- STA. 19+93 +/- (BEG. BRIDGE) TO STA -L- STA. 23+28 +/- (END BRIDGE)

6/2/99

30-APP-2008 1059
P:\roadway\p\3613_rdy_tup.dgn
\$\$\$\$USERNAME\$\$\$\$

PROJECT REFERENCE NO. B-3613	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

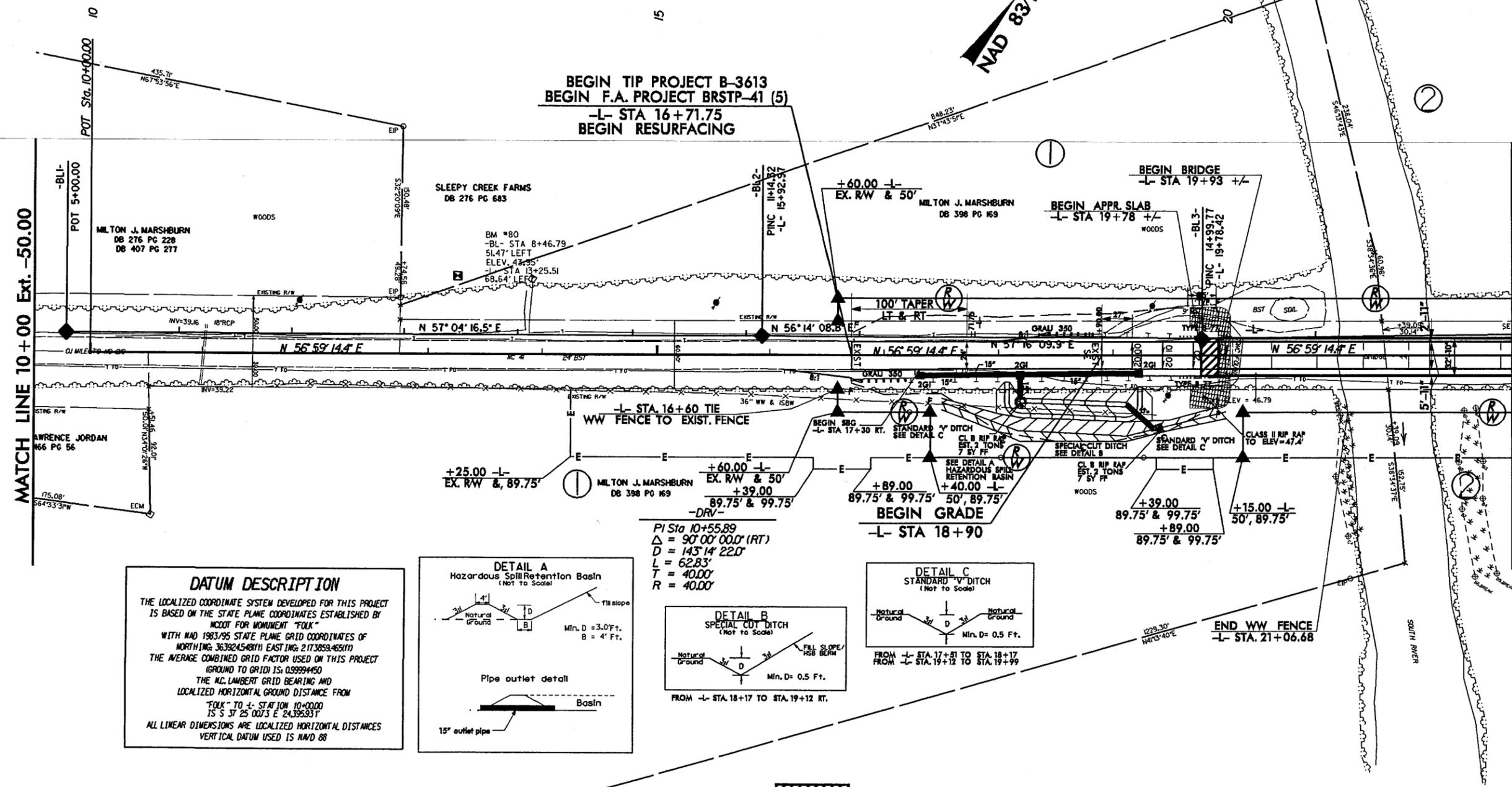


BEGIN TIP PROJECT B-3613
BEGIN F.A. PROJECT BRSTP-41 (5)
 -L- STA 16+71.75
BEGIN RESURFACING

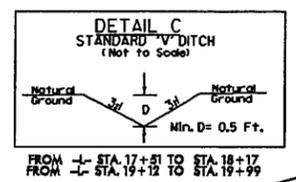
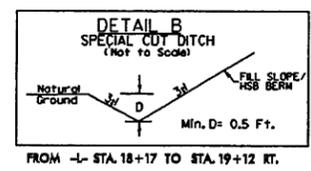
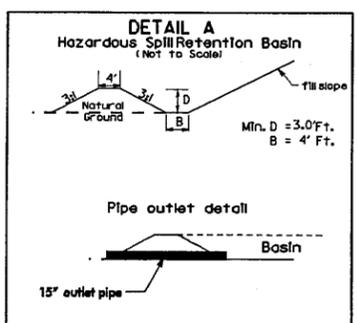
NAD 83/NSRS 2007

MATCH LINE 10+00 Ext. -50.00

MATCH LINE 22+50 SEE SHEET 5



DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MDOT FOR MONUMENT "FOUK"
 WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 3639245.8(11) EASTING: 2173859.465(11)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99994450
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "FOUK" TO -L- STATION 10+00.00 IS 5 37 25 007.3 E 24,395.931'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAD 88



PI Sta 10+55.89
 $\Delta = 90^{\circ} 00' 00.0''$ (RT)
 $D = 143' 14'' 22.0''$
 $L = 62.83'$
 $T = 40.00'$
 $R = 40.00'$



8/17/99
 REVISIONS
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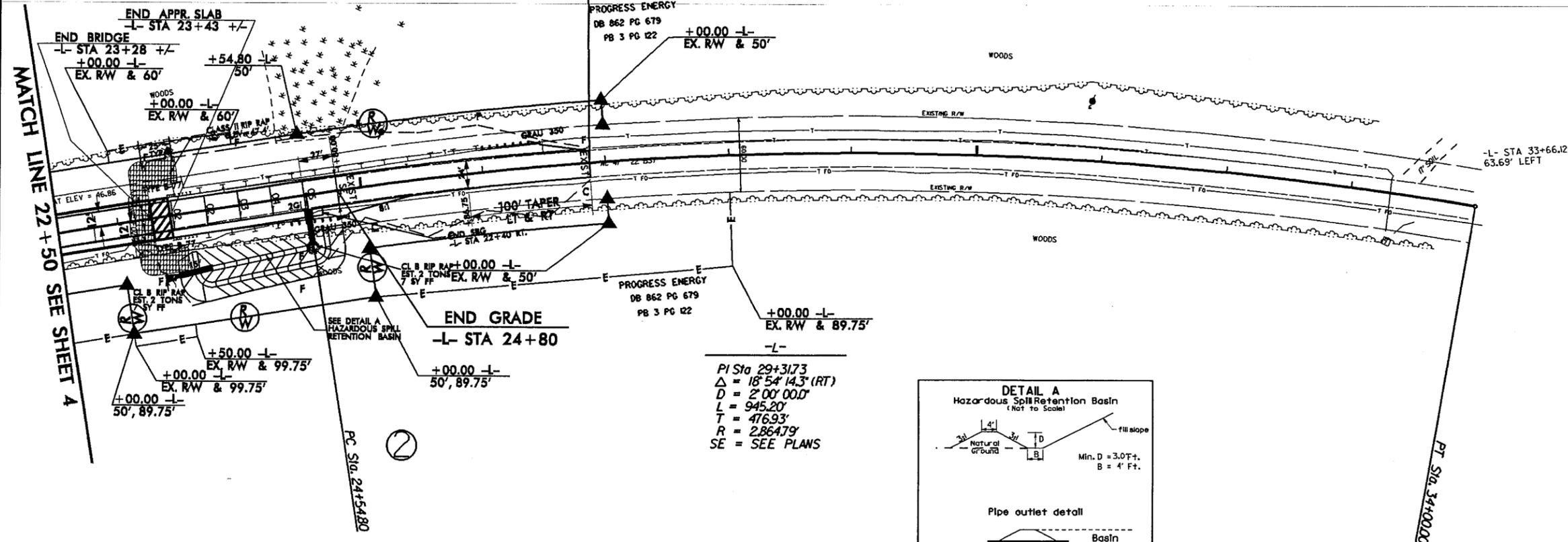
PROJECT REFERENCE NO. B-3613	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

8/17/99

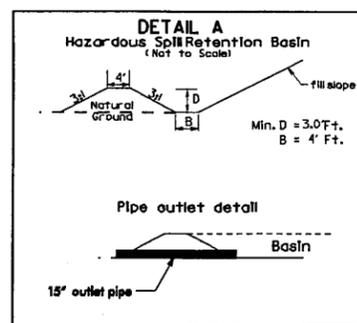
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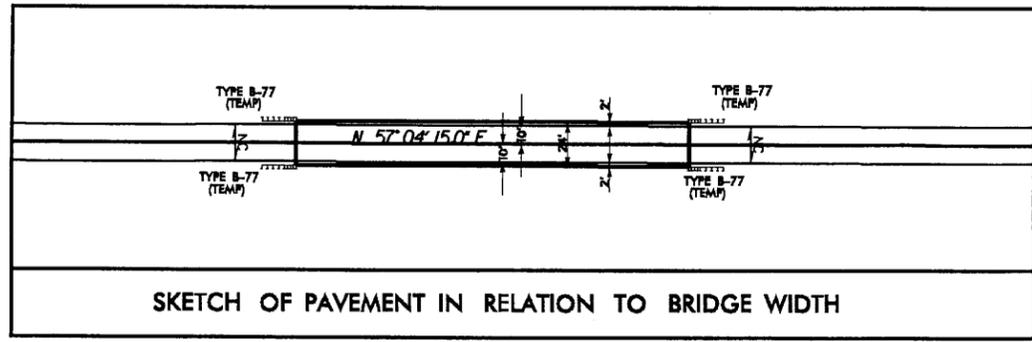
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END F.A. PROJECT BRSTP-41 (5)
-L- STA 26+86.75
END RESURFACING**



PI Sta 29+31.73
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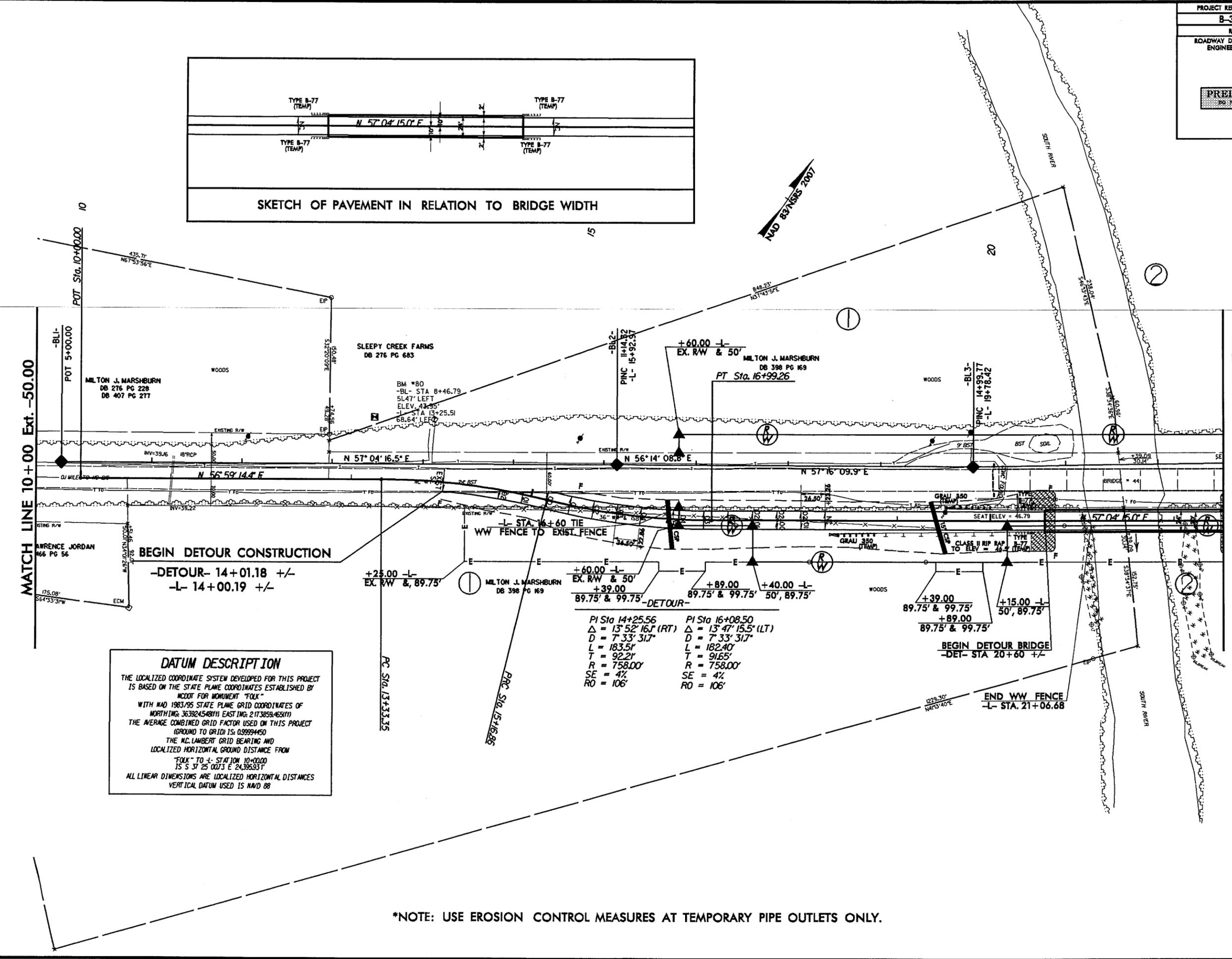


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MATCH LINE 10+00 Ext. -50.00

MATCH LINE 22+50 SEE SHEET 7



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCOOT FOR MONUMENT "FOUK" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 3639245480(11) EASTING: 2173859465(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99994450 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "FOUK" TO -L- STATION 10+00.00 IS S 37°25'00.73" E 24,396.933'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 88

PI Sta 14+25.56 Δ = 13°52'16.1" (RT) D = 7'33'31.7" L = 183.51' T = 92.21' R = 758.00' SE = 4% RO = 106'	PI Sta 16+08.50 Δ = 13°47'15.5" (LT) D = 7'33'31.7" L = 182.40' T = 91.65' R = 758.00' SE = 4% RO = 106'
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*NOTE: USE EROSION CONTROL MEASURES AT TEMPORARY PIPE OUTLETS ONLY.

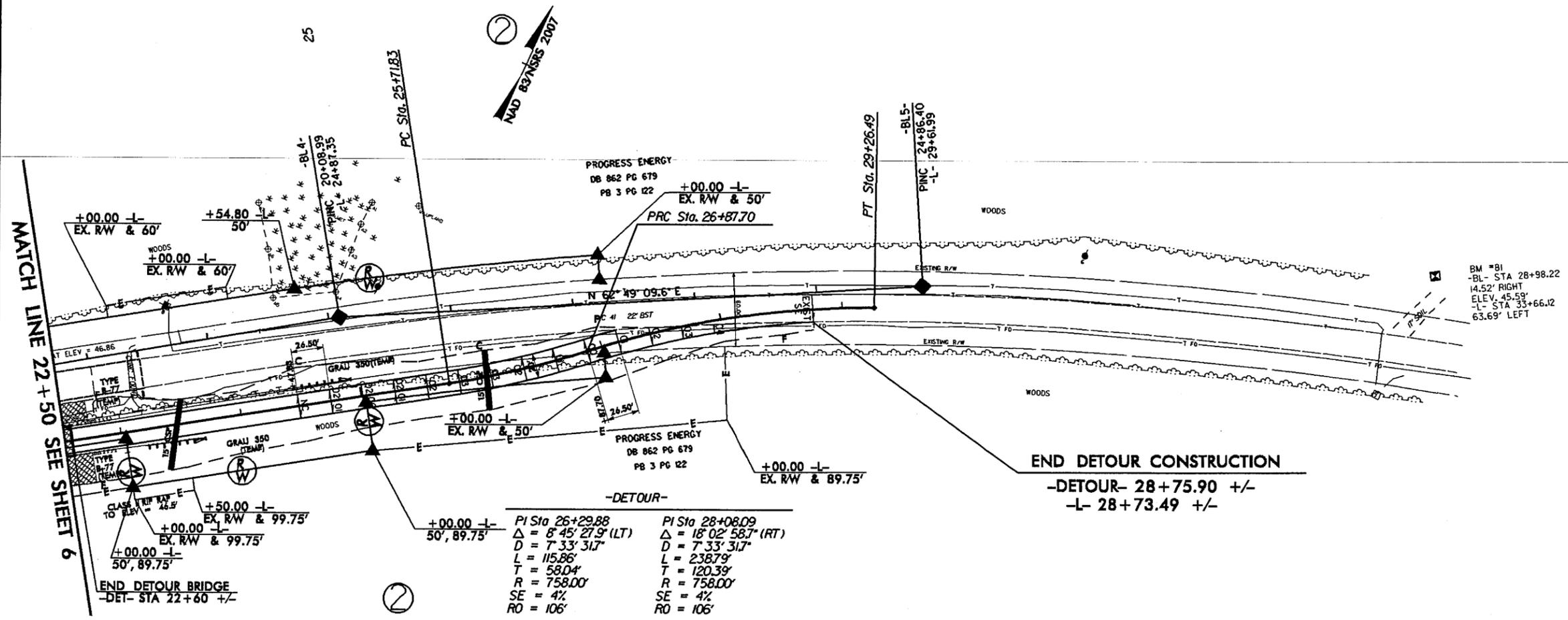
REVISIONS

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REVISIONS



*NOTE: USE EROSION CONTROL MEASURES AT TEMPORARY PIPE OUTLETS ONLY.

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 \$\$\$LISEFRAME\$\$\$

5/14/99

BM #80 ELEV.43.95' RR SPIKE IN BASE OF 20"
GUM TREE 51.47' LT OF LINE -L- STA 8+46.79
-L- STA 13+25.51 68.64' LEFT

BEGIN RESURFACING
-L- STA. 16+71.75
ELEV. 47.29
INCLUDES 1.25"

-L-

BEGIN BRIDGE
-L- STA. 19+93 +/-

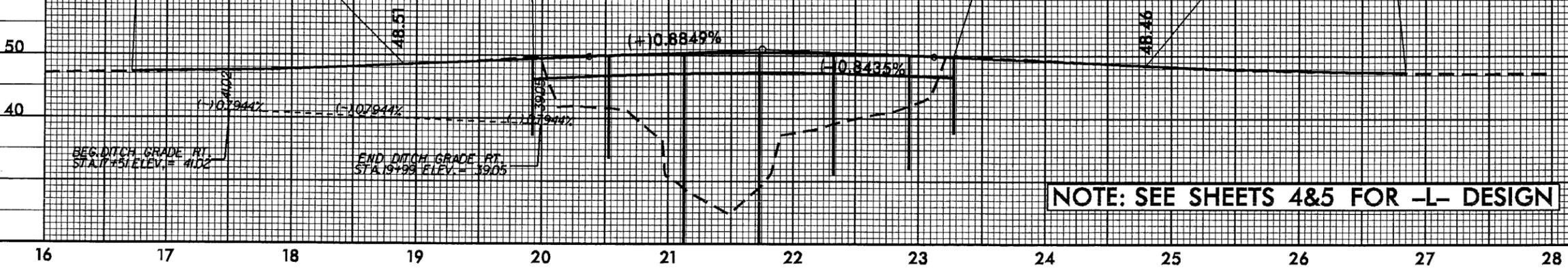
BEGIN GRADE
-L- STA. 18+90.00
ELEV. 48.51

PI = 21+75.00
EL = 51.03'
VC = 275'
K = 159

END BRIDGE
-L- STA. 23+28 +/-

END RESURFACING
-L- STA. 26+86.75
ELEV. 47.37
INCLUDES 1.25"

END GRADE
-L- STA. 24+80.00
ELEV. 48.46



BEG. DITCH GRADE BY
STA. 17+51 ELEV. = 41.02

END DITCH GRADE RT.
STA. 19+93 ELEV. = 39.05

NOTE: SEE SHEETS 4&5 FOR -L- DESIGN

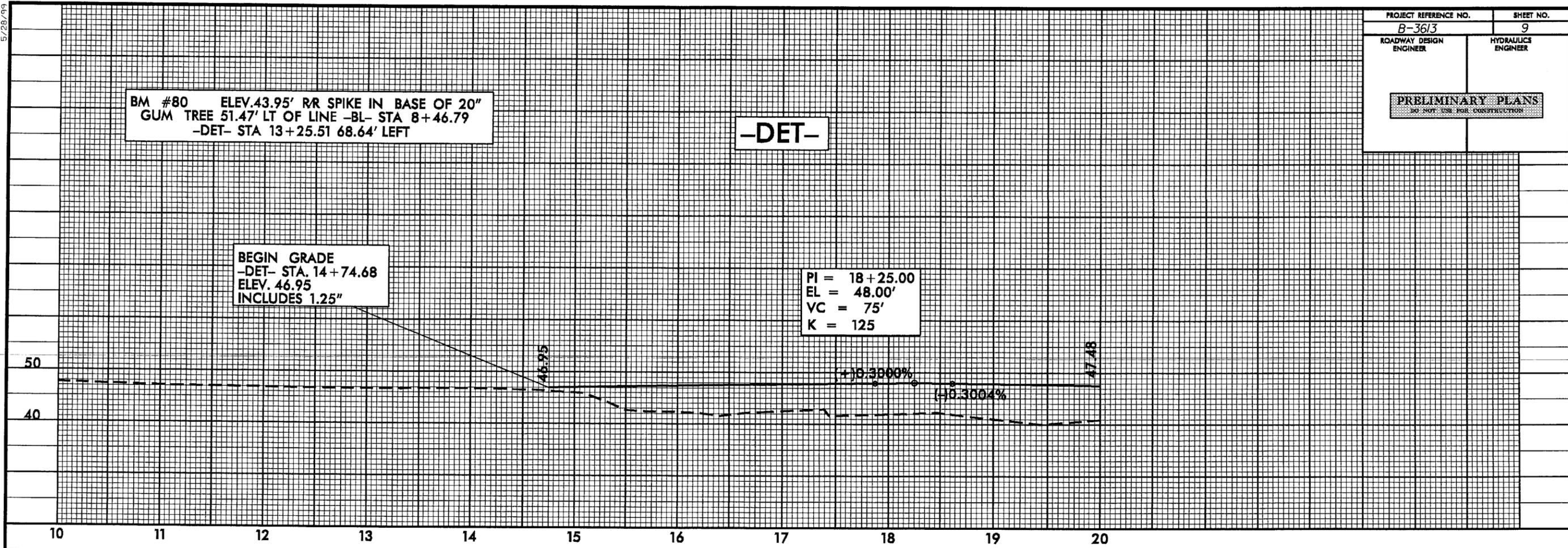
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BM #80 ELEV. 43.95' RR SPIKE IN BASE OF 20"
GUM TREE 51.47' LT OF LINE -BL- STA 8+46.79
-DET- STA 13+25.51 68.64' LEFT

-DET-

BEGIN GRADE
-DET- STA. 14+74.68
ELEV. 46.95
INCLUDES 1.25"

PI = 18+25.00
EL = 48.00'
VC = 75'
K = 125



-DRV-

BEGIN TEMP. BRIDGE
-DET- STA. 20+60

END TEMP. BRIDGE
-DET- STA. 22+60

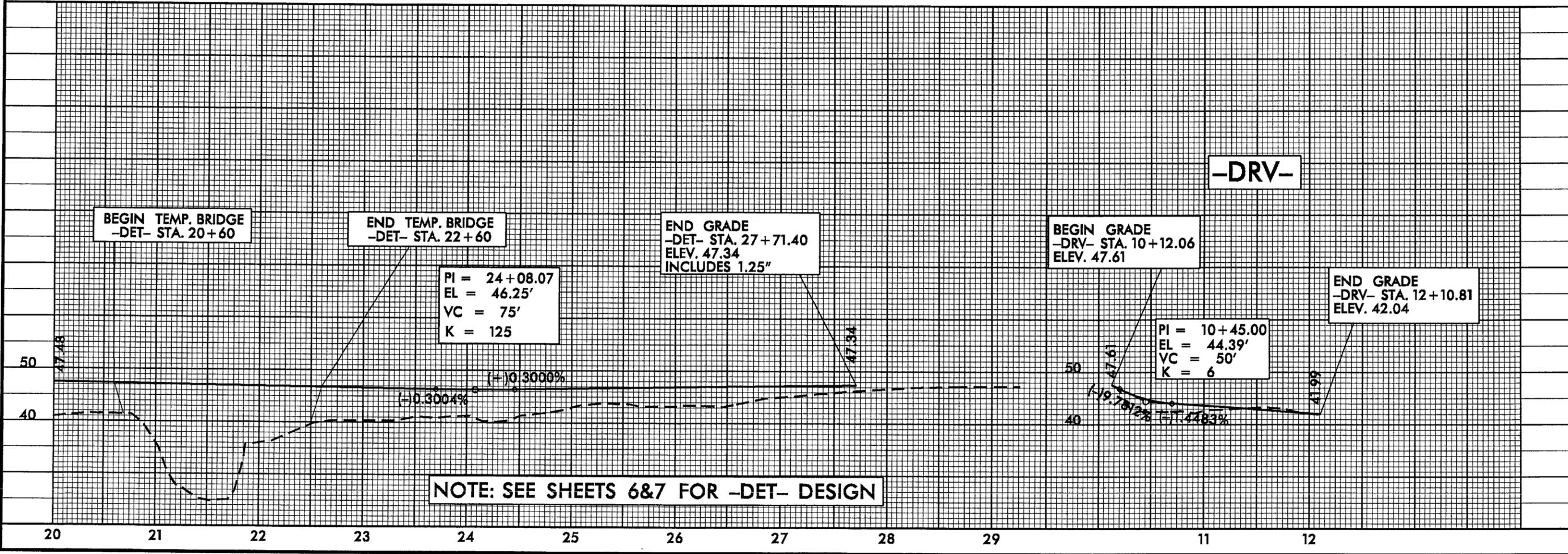
END GRADE
-DET- STA. 27+71.40
ELEV. 47.34
INCLUDES 1.25"

BEGIN GRADE
-DRV- STA. 10+12.06
ELEV. 47.61

END GRADE
-DRV- STA. 12+10.81
ELEV. 42.04

PI = 24+08.07
EL = 46.25'
VC = 75'
K = 125

PI = 10+45.00
EL = 44.39'
VC = 50'
K = 6



NOTE: SEE SHEETS 6&7 FOR -DET- DESIGN

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Bladen / Sampson Counties
Bridge No. 44 on NC 41
over the South River
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
TIP No. B-3613

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

08/06/03
DATE

for Stacy Baldwin
Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis Branch, NCDOT

08/11/03
DATE

for Boyd Glass
John F. Sullivan, III
Division Administrator, FHWA

Bladen / Sampson Counties
Bridge No. 44 on NC 41
over the South River
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
TIP No. B-3613

CATEGORICAL EXCLUSION

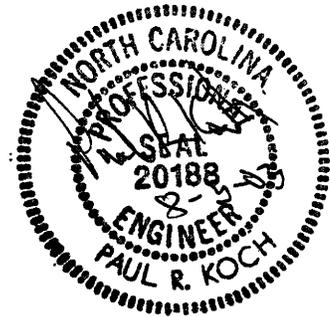
August 2003

Documentation Prepared by:
Stantec Consulting

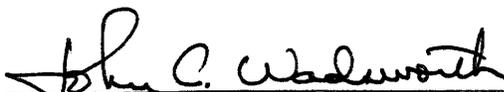


Paul R. Koch, PE
Project Manager

8-5-03
Date



For the North Carolina Department of Transportation



John C. Wadsworth, PE
Project Manager
Consultant Engineering Unit

Bladen / Sampson Counties
Bridge No. 44 on NC 41
over the South River
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
TIP No. B-3613

PROJECT COMMITMENTS

In addition to the Nationwide Permit No. 3, No. 14 and No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, Best Management Practices for the Protection of Surface Waters, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Highway Design

Because the section of South River within the project area is designated as an Outstanding Resource Water (ORW), hazardous spill basins will be required.

No deck drains will be allowed to discharge directly into the river.

NCDOT Division Office

Removal of the old structure and construction of the new one will be scheduled to avoid in-stream activities between February 1 and July 1 to minimize impacts to anadromous fish passage and sunfish spawning.

Because the section of South River within the project area is designated as an Outstanding Resource Water (ORW), hazardous spill basins will be required.

Bladen / Sampson Counties
Bridge No. 44 on NC 41
over the South River
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
TIP No. B-3613

INTRODUCTION: The replacement of Bridge No. 44 is included in the 2002-2008 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and in the Federal-Aid Bridge Replacement Program. The location is shown in Exhibit 1. No substantial environmental impacts are anticipated. The project is classified as a Federal “Categorical Exclusion”.

I. PURPOSE AND NEED STATEMENT

NCDOT Bridge Maintenance Unit records indicate that Bridge No. 44 has a sufficiency rating of 40.3 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of this inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

NC 41 is classified as a rural major collector. Land immediately adjacent to the existing bridge is a combination of forested and cleared vacant land. There are a few residences and a small business located just beyond the project area at the intersection of NC 41 and NC 210.

Bridge No. 44 was built in 1950. The structure includes 8 spans totaling 320.5 feet (97.7 meters) in length and the bridge deck width is 25.3 feet (7.7 meters). The depth from crown to stream bed is approximately 25 feet (7.6 meters). The superstructure consists of steel stringers and a concrete deck. The end bents and interior bents are reinforced concrete caps on timber piles. The posted weight limit is 36 tons (32 metric tons).

The drainage area at the bridge location is approximately 435 square miles (1126 square kilometers).

The westbound approach is a slight curve and the eastbound approach is on tangent. The existing structure is tangent. The existing roadway cross section is two 12-foot (3.6-meter) lanes with 6-foot (1.8-meter) unpaved shoulders. The posted speed limit is 55 mph (90 km/h).

The 2003 estimated average daily traffic volume (ADT) is 1,900 vehicles per day (vpd). The projected traffic volume is expected to increase to 3,200 vpd by the design year 2025.

This section of NC 41 is not part of a designated bicycle route nor is it listed in the TIP as needing bicycle accommodations.

There are no utilities carried by the existing structure. There are aerial telephone and power lines

located north of the bridge and fiber optic cable on the south side.

No accidents were reported at the bridge during the period from January 1, 2000, to December 31, 2002.

Three Bladen County school buses cross Bridge No. 44 twice each day. Sampson County school buses do not cross this bridge.

III. ALTERNATIVES

A. Project Description

The approach roadway will consist of two 12-foot (3.6-meter) travel lanes with 8-foot (2.4-meter) shoulders (Exhibit 4).

Based on a preliminary hydraulic analysis, the new structure will have a length of approximately 330 feet (100 meters). The proposed structure will provide a 30-foot (9.0-meter) clear roadway width to allow for two 12-foot (3.6-meter) travel lanes and 3-foot (1.0-meter) shoulders on each side. The elevation of the new structure will be approximately the same as the existing structure. The length and opening size of the bridge may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis, to be performed during the final design phase of the project.

B. Build Alternatives

Two (2) Build Alternatives for replacing the existing bridge are described below:

Alternative A replaces the bridge at its existing location on tangent alignment. During construction, traffic will be maintained with an on-site detour on the north (upstream) side of the existing bridge. The proposed detour structure should be a 160-foot (49-meter) temporary bridge. The roadway approach work will extend from approximately 390 feet (119 meters) west to 280 feet (85 meters) east of the existing bridge. Construction of the detour will extend from approximately 600 feet (183 meters) west to 550 feet (167 meters) east of the existing bridge.

Alternative B (Preferred) replaces the bridge on new alignment to the south (downstream) of the existing bridge. The approaches will both be on 4-degree (436 meter radius) curves. During construction, traffic will be maintained on the existing structure. The roadway approach work will extend from approximately 700 feet (213 meters) west to 800 feet (244 meters) east of the existing bridge.

C. Alternatives Eliminated from Further Study

Replacing the bridge at its existing location and utilizing an off-site detour (NC 210, SR 1007, SR 1121, and SR 1120) was eliminated due to the excessive length of the off-site detour [approximately 17.4 miles (28.0 kilometers)].

Replacing the bridge at its existing location and maintaining traffic with an on-site detour on the south (downstream) side of the existing bridge was eliminated because it resulted in comparable impacts to Alternative B but with an additional \$600,000 in construction costs.

The “Do-Nothing” alternative will eventually necessitate closure of the bridge. This is not desirable due to the service provided by Bridge Number 44.

Rehabilitation of the existing bridge is not feasible due to its age and deteriorated condition.

D. Preferred Alternative

Alternative B, replacing the bridge on new alignment to the south (downstream) of the existing bridge, was selected as the Preferred Alternative because there is no reasonable off-site detour available, it has the lowest construction cost, and has fewer impacts to Waters of the United States.

During construction, traffic will be maintained on the existing structure.

IV. ESTIMATED COSTS

The estimated costs based on current prices are listed in Table 1.

**TABLE 1
ESTIMATED COSTS**

	Alternative A	Alternative B (Preferred)
Structure Removal (existing)	\$ 61,400	\$ 61,400
Structure (Proposed)	742,500	742,500
Detour Structure and Approaches	650,000	0
Roadway Approaches	166,300	242,600
Miscellaneous and mobilization	439,800	478,500
Engineering Contingencies	240,000	225,000
ROW/Const. Easements/Utilities	47,000	37,500
TOTAL	\$ 2,347,000	\$ 1,787,500

The estimated cost of the project listed in the 2002-2008 Transportation Improvement Program (TIP), is \$1,995,000 including \$95,000 for right-of-way and \$1,750,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Information sources used to prepare this report include: U.S. Geological Survey (USGS) Tomahawk quadrangle map (1986); Soil Conservation Service (SCS) Soil Survey of Bladen County (1997) and Soil Survey of Sampson County (1985); United States Fish and Wildlife Service (USFWS) National Wetlands Inventory Map (Tomahawk 1994); USFWS list of protected and candidate species (March 22, 2001); North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats (July 1, 2000); NCDOT aerial photography of the project area; and North Carolina Division of Water Quality (DWQ) water resource data. Research using these resources was conducted prior to the field investigation.

A general field survey was conducted along the proposed project corridor on July 6, 2000. Plant communities and their associated wildlife were identified using a variety of observation techniques including active searching, visual observations with binoculars, and identifying characteristic signs of wildlife (sounds, tracks, scat, and burrows).

Investigation into wetland occurrence in the project impact area was conducted using methods of the 1987 Corps of Engineers Wetlands Delineation Manual.

Impact calculations were based on the worst-case scenario using 100-foot (30-meter) right-of-way limits (minus the existing right of way), the width and length of the replacement structure, the width of the stream for aquatic impacts, and the length of the project approaches. The actual construction impacts should be less as the worst case was assumed for the impact calculations.

B. Physiography and Soils

The project site lies within the Coastal Plain Physiographic Province. This province typically consists of unconsolidated sands, silts, clays, and peat. The topography of the project vicinity is characterized as nearly level with steep slopes along the major waterways. Elevations in the project vicinity range from approximately 40 to 75 feet (12 to 23 meters) above mean sea level (msl). Elevations in the project area vary from approximately 40 to 45 feet (12 to 14 meters) above msl.

According to the soil map for Bladen County (1990), the project area is found within the Johns-Paxville-Johnson soil association. Soils in this association are generally found on stream terraces and flood plains. The soils are described as nearly level, moderately well drained and poorly drained soils that have a loamy surface layer and a loamy subsoil or sandy and loamy underlying material. According to the soil map for Sampson County (1985), the project area is found within the Johnston-Bibb soil association. The soils are described as nearly level, poorly drained and very poorly drained soils that have a loamy or sandy surface layer and loamy or sandy underlying material. Field conditions generally conform to the soil survey maps; any discrepancies are stated below. Soil series found within the project area are described below.

Johns fine sandy loam is found throughout the project area. Johns fine sandy loam is a moderately well drained soil found on stream terraces along the South River. Permeability is moderate in the subsoil and rapid in the underlying material. The seasonal high water table is at a depth of 1.5 to 3.0 feet (46 to 91 centimeters). According to the Sampson County hydric soils list, Johns fine sandy loam has hydric inclusions of Lumbee in depressions. Johns fine sandy loam is not listed on the Bladen County hydric soils list.

Blanton sand, 2 to 7 percent slopes is mapped in the extreme western end of the project area. Blanton sand is a moderately well drained soil found in broad areas on uplands. Permeability is rapid. The seasonal high water table is at a depth of 5 to 6 feet (150 to 180 centimeters). Blanton sand is not listed on the hydric soils list.

Lakeland sand, 1 to 7 percent slopes is mapped in a small area along the river in the southwestern portion of the project area. This excessively drained soil is found on narrow ridges along stream terraces. Permeability is very rapid, and the available water capacity is low. Lakeland sand is listed as having hydric inclusions of Leon in lower positions.

A small area of Bibb and Johnston soils, frequently flooded, is mapped on the soil survey in the northeastern portion of the project area. The soils in this locale did not conform to the soil survey; the area appeared to consist of Johns fine sandy loam which dominates the project area.

C. Water Resources

1. Waters Impacted

The proposed project falls within the Cape Fear River Basin, with a subbasin designation of 03-06-18. Waters within the project study area include the South River.

2. Water Resource Characteristics

South River is a tributary of the Black River. South River flows southeast through the proposed project area with a width of approximately 60.0 feet (18.3 meters) at the bridge. The drainage area at the bridge location is approximately 435 square miles (1126 square kilometers). The water was dark (colored by tannins) and the flow was slow on the day of the field investigation. The substrate consisted of sand. The river was approximately 5.0 feet (1.5 meters) deep on the day of the site visit.

Within the project area, South River is classified as "C Sw ORW" by the North Carolina Department of Environment and Natural Resources (NCDENR). Class "C" waters are suitable for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, and agriculture. The supplemental classification of "Sw" (swamp waters) recognizes those waters that generally have naturally occurring very low velocities, low pH, and low dissolved oxygen. The supplemental classification "ORW" (Outstanding Resource Waters) is intended to protect unique and special waters having excellent water quality and being of exceptional state or national ecological or recreational significance. The classification date and index number for this portion of the river is 6/1/94, 18-68-12-(8.5).

Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program. A search within 1.0 mile (1.6 km) of the project revealed no NPDES permitted dischargers.

Non-point source refers to runoff that enters surface waters through stormwater flow or no defined point of discharge. Storm water runoff from NC 41 may cause water quality degradation through the addition of oil or gas residuals, particulate matter, or other sources of contamination.

Benthic macroinvertebrates, or benthos, are organisms that live in and on the bottom substrates of rivers and streams. The North Carolina Division of Water Quality (DWQ) uses benthos data as a tool to monitor water quality as benthic macroinvertebrates are sensitive to subtle changes in water quality. Formerly, the DWQ used the Benthic Macroinvertebrate Ambient Network (BMAN) as a primary tool for water quality assessment but phased this method out several years ago and has converted to a basinwide assessment sampling protocol. Each river basin in the state is sampled once every five years and the number of sampling stations has been increased within each basin. Each basin is sampled for biological, chemical, and physical data.

The DWQ includes the North Carolina Index of Biotic Integrity (NCIBI) as another method to determine general water quality in basinwide sampling. The NCIBI is a modification of the Index of Biotic Integrity (IBI) initially proposed by Karr (1981) and Karr, et al. (1986). The method was developed for assessing a stream's biological integrity by examining the structure and health of its fish community. The Index incorporates information about species richness and composition, trophic composition, fish abundance, and fish condition. The NCIBI summarizes the effects of all classes of factors influencing aquatic faunal communities (water quality, energy source, habitat quality, flow regime, and biotic interactions).

According to the information obtained from the Cape Fear Basinwide Water Quality Plan (August 2000), the DWQ has a sampling station located approximately nine (9) miles (14.5 km) upstream of the project area at SR 1502 and South River. The station was last sampled in August 1998 and received a rating of Good. This station has been sampled since 1983 and has received a rating of Good or Excellent each time.

3. Anticipated Impacts to Water Resources

a) General Impacts - Neither High Quality Waters (HQW) nor Water Supplies (WS-I: undeveloped watershed, or WS-II: predominately undeveloped watersheds) occur within 1.0 mile (1.6 km) of the project study area. However, the waters within the project area are designated Outstanding Resource Waters. Hazardous spill basins will therefore be required.

Impacts to the water resources will result due to the placement of support structures in the river channel. In the short term, construction of the bridge and approach work will increase sediment loads. Sediment loading can reduce flow and result in a decrease in oxygen levels. The removal of trees that provide shade along the river banks could result in an increase in water temperature and a decrease in oxygen levels as well.

The NCDOT, in cooperation with DWQ has developed a sedimentation control program for

highway projects which adopts formal best management practices (BMPs) for the protection of surface waters. The following are methods to reduce sedimentation and water quality impacts:

- strict adherence to BMPs for the protection of surface waters during the life of the project;
- reduction and elimination of direct and non-point discharge into the water bodies and minimization of activities conducted in the creek;
- placement of temporary ground cover or re-seeding of disturbed sites to reduce runoff and decrease sediment loadings;
- reduction of clearing and grubbing along the creek;
- no deck drains will be allowed to discharge directly into the creek.

b) Impacts related to Bridge Demolition and Removal - In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all potential contractors will follow appropriate guidelines for bridge demolition and removal. These guidelines are presented in three NCDOT documents entitled “Pre-Construction Guidelines for Bridge Demolition and Removal”, “Policy: Bridge Demolition and Removal in Waters of the United States”, and “Best Management Practices for Bridge Demolition and Removal”. Guidelines followed for bridge demolition and removal are in addition to those implemented for Best Management Practices for the Protection of Surface Waters.

Dropping any portion of the structures into waters of the United States will be avoided unless there is no other practical method of removal. In the event that no other practical method is feasible, a worst case scenario is assumed for calculations of fill entering waters of the United States.

Replacement of this bridge falls under Case 2 of the Best Management Practices for Bridge Demolition and Removal which means that no in-water work can take place during moratorium periods associated with fish migration, spawning, and larval recruitment into nursery areas. For this project, there is a moratorium from February 1 to July 1 to minimize impacts to anadromous fish passage and sunfish spawning.

The superstructure for Bridge No. 44 is composed of a reinforced concrete deck on steel I-beams. The substructure is composed of timber piles with reinforced concrete caps. In order to avoid impacts from temporary fill, the bridge deck should be removed by sawing through the concrete and lifting out sections between the beams. In the event that this removal technique is unsuccessful, the maximum potential temporary fill resulting from the removal of the concrete deck will be approximately 50 cubic yards (38 cubic meters). Conditions in the river will not raise sediment concerns since the substrate consists of sand; therefore, a turbidity curtain is not recommended.

D. Biotic Resources

Living systems described in the following sections include communities of associated plants and animals. These descriptions refer to the dominant flora and fauna in each community and the relationship of these biotic components. Classification of plant communities is based on a system used by the North Carolina Natural Heritage Program (NCNHP) (Schafale and Weakley, 1990). If a community is modified or otherwise disturbed such that it does not fit into an NCNHP classification, it is given a name that best describes current characteristics. Scientific nomenclature and common names (when applicable) are used for the plant and animal species described. Subsequent references to the same species include the common name only. Vascular plant names follow nomenclature found in Radford et al. (1968) unless more current information is available. Terrestrial and aquatic wildlife were determined through field observations, evaluation of habitat, and review of field guides and other documentation (Conant, 1958; Farrand, 1993; Robbins et al., 1966; and Whitaker, 1980).

1. Plant Communities

The predominant terrestrial communities found in the project study area are the maintained/disturbed and dry-mesic oak-hickory forest communities. Dominant faunal components associated with these terrestrial areas are discussed in each community description. Many species are adapted to the entire range of habitats found along the project alignment but may not be mentioned separately in each community description.

a) *Maintained/Disturbed Community* - The maintained/disturbed community includes the power line easements and the road shoulders. Many plant species are adapted to these disturbed and regularly maintained areas. The cutover area in the northern quadrant is dominated by red maple (*Acer rubrum*) and sweetgum (*Liquidambar styraciflua*) saplings as well as greenbrier (*Smilax rotundifolia*). The dominant species within the other maintained/disturbed areas include fescue (*Festuca spp.*), ryegrass (*Lolium spp.*), clover (*Trifolium spp.*), thistle (*Cirsium spp.*), goldenrod (*Solidago spp.*), dog fennel (*Eupatorium leptophyllum*), greenbrier (*Smilax bonanox*), asters (*Aster spp.*), wild onion (*Allium cernuum*), dandelion (*Taraxacum officinale*), and plantain (*Plantago spp.*).

b) *Dry-Mesic Oak-Hickory Forest Community* - This community occurs along the river and NC 41 bordering the maintained/disturbed habitat. The canopy layer includes white oak (*Quercus alba*), post oak (*Quercus stellata*), scarlet oak (*Quercus coccinea*), red maple, sweetgum, and pignut hickory (*Carya glabra*). Loblolly pine (*Pinus taeda*) is scattered in some areas. The understory consists of dogwood (*Cornus florida*), water oak (*Quercus nigra*), blueberry (*Vaccinium stamineum*), titi (*Cyrilla racemiflora*), and holly (*Ilex opaca*). The herbaceous layer includes common greenbrier (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), honeysuckle (*Lonicera spp.*), muscadine grape (*Vitis rotundifolia*), and Virginia creeper (*Parthenocissus quinquefolia*).

2. Wildlife

The animal species present in the maintained/disturbed communities are opportunistic and capable of surviving on a variety of resources, ranging from vegetation (flowers, leaves, fruits, and seeds) to both living and dead faunal components. A Northern mockingbird (*Mimus polyglottos*) and a garter snake (*Thamnophis sirtalis*) were observed during the site visit in these areas. Other species such as Virginia opossum (*Didelphis virginiana*), white-footed mouse (*Peromyscus leucopus*), raccoon (*Procyon lotor*), house sparrow (*Passer domesticus*), American robin (*Turdus migratorius*), and black racer (*Coluber constrictor constrictor*) are often attracted to these disturbed habitats.

On the day of the site visit, gray treefrogs (*Hyla versicolor*) were observed in the dry-mesic oak-hickory forest community. Other species which may reside or forage in these areas include wild turkey (*Meleagris gallopavo*), downy woodpeckers (*Picoides pubescens*), blue jays (*Cyanocitta cristata*), common flicker (*Colaptes auratus*), white-breasted nuthatch (*Sitta carolinensis*), Eastern phoebe (*Sayornis phoebe*), Eastern box turtle (*Terrapene carolina carolina*), white-tailed deer (*Odocoileus virginianus*), and red fox (*Vulpes vulpes*).

Species such as the snapping turtle (*Chelydra serpentina*), Eastern cottonmouth (*Agkistrodon piscivorus*), bullfrog (*Rana catesbeiana*), and Pickerel frog (*Rana palustris*) may reside or forage within the aquatic community or along the waters edge.

According to the North Carolina Wildlife Resources Commission (NCWRC), the South River is very good for fishing. Species which may be found in the river include warmouth (*Lepomis gulosus*), suckers (*Catostomus spp.*), pickerel (*Esox spp.*), perch (Percidae), and bass (*Micropterus spp.*).

3. Aquatic Communities

The aquatic community in the project area includes South River. South River flows southeast through the proposed project area with a width of approximately 60.0 feet (18.3 meters) at the bridge. The water was dark (colored by tannins) and the flow was slow on the day of the field investigation. The substrate consisted of sand. The river was approximately 5.0 feet (1.5 meters) deep on the day of the site visit.

Vegetation along the creek banks included bald cypress (*Taxodium distichum*), willow oak (*Quercus phellos*), and river birch (*Betula nigra*). The banks were steep and well-defined ranging from 5.0 to 15.0 feet (1.5 to 4.6 meters) in height above the top of the river. Some erosion was evident along the banks.

4. Anticipated Impacts to Biotic Communities

a) *Terrestrial Communities* - The dry-mesic oak-hickory forest and the maintained/disturbed communities serve as nesting, foraging, and shelter habitat for fauna. Removal of plants and other construction related activities will result in the displacement and mortality of faunal species

in residence. Individual mortalities are likely to occur to terrestrial animals from construction machinery used during clearing activities.

Calculated impacts to terrestrial resources reflect the relative abundance of each community present in the study area. Project construction will result in clearing and degradation of portions of these communities. Often, project construction does not require the entire right of way; therefore, actual impacts may be considerably less. Alternative B will result in the greatest amount of impacts to the terrestrial communities.

b) Wetland Communities – No jurisdictional wetlands were found within the study area.

c) Aquatic Communities - The replacement of Bridge No. 44 over South River will result in up to 0.04 acres (.02 hectares) of aquatic impacts. This figure is obtained by measuring the width of the bridge over water times the length of the bridge over water. Up to 0.04 acres (.02 hectares) of additional temporary impacts may occur from on-site detours.

Activities such as the removal of trees, as well as the construction of the bridge and approach work will likely result in an increase in sediment loads and water temperatures and a decrease in dissolved oxygen in the short term. Construction activities can also increase the possibility of toxins, such as engine fluids and particulate matter, entering the waterways. The combination of these factors can potentially cause the displacement and mortality of fish and local populations of invertebrates which inhabit these areas.

Aquatic life that is not very mobile could be harmed when components of the bridge enter the water. Species which filter feed, as well as those species that feed upon them, could be negatively impacted by increased sedimentation. In addition, compaction to the stream bed would occur from dropping bridge components into the water.

BMPs for the protection of sensitive watersheds should be strictly enforced to minimize potential adverse impacts due to this project. Since South River is potentially anadromous fish spawning habitat, the NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will be adhered to for this project. The purpose of these guidelines is to provide guidance to NCDOT to ensure that replacement of existing and new highway stream crossing structures will not impede the movement of anadromous fish.

According to NCWRC, a moratorium on in-stream activities is recommended between February 1 and July 1 to minimize impacts to anadromous fish passage and sunfish spawning.

E. Special Topics

1. “Waters of the United States”: Jurisdictional Issues

Wetlands and surface waters fall under the broad category of "Waters of the United States" as defined in 33 CFR 328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344). Waters of the United States are regulated by the United States Army Corps of Engineers (USACOE).

**TABLE 2
ANTICIPATED IMPACTS TO
TERRESTRIAL AND AQUATIC COMMUNITIES**

Bridge No. 44 Replacement Alternatives	Maintained/ Disturbed Community		Dry-Mesic Oak- Hickory Forest Community		Aquatic Community		Stream Impacts		Combined Total	
	acres	Ha	acres	Ha	acres	Ha	feet	meters	acres	Ha
Alternative A	1.13	0.46	0.40	0.16	0.08	0.03	60	18.3	1.61	0.65
Alternative B	0.10	0.04	2.10	0.85	0.04	0.02	30	9.0	2.24	0.91

NOTES:

- Impacts are based on a 100 foot (30 meter) right of way (minus the existing right of way of NC 41) for each alternative.
- Actual construction impacts may be less than those indicated above; calculations were based on the worst-case scenario.

Investigation into wetland occurrence in the project impact area was conducted using methods of the 1987 Corps of Engineers Wetlands Delineation Manual. No jurisdictional wetlands were found within the project area.

Project construction cannot be accomplished without infringing on jurisdictional surface waters. The river boundaries were flagged and surveyed an up to 30 linear feet (9.0 meters) of jurisdictional surface waters may be impacted by this project.

2. Permits

a) Section 404 of the Clean Water Act - In accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344), a permit is required from the USACOE for projects of this type for the discharge of dredged or fill material into "Waters of the United States". The USACOE issues two types of permits for these activities. A general permit may be issued on a nationwide or regional basis for a category or categories of activities when: those activities are substantially similar in nature and cause only a minimal individual or cumulative environmental impacts, or when the general permit would result in avoiding unnecessary duplication or regulatory control exercised by another Federal, state, or local agency provided that the environmental consequences of the action are individually and cumulatively minimal. If a general permit is not appropriate for a particular activity, then an individual permit must be utilized. Individual permits are authorized on a case-by-case evaluation of a specific project involving the proposed discharges.

It is anticipated that this project will fall under Nationwide Permit 23, which is a type of general permit. Nationwide Permit 23 is relevant to approved Categorical Exclusions. This permit authorizes

any activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in

part, by another Federal Agency or department where that agency or department has determined,...that the activity, work, or discharge is "categorically excluded" from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment,...

Activities authorized under nationwide permits must satisfy all terms and conditions of the particular permit.

b) Section 401 Water Quality Certification - A 401 Water Quality Certification, administered through the DWQ, will also be required. This certification is issued for any activity which may result in a discharge into waters for which a federal permit is required.

3. Mitigation

The USACOE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy which embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of waters of the United States, specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoiding impacts, minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization, and compensatory mitigation) must be considered sequentially.

Avoidance - The project purpose necessitates traversing South River; therefore, totally avoiding surface water impacts is impossible.

Minimization - Specific minimization methods recommended for this project include: no in-stream activities between February 1 and July 1 to minimize impacts to anadromous fish passage and sunfish spawning; removal of all temporary fills from waters and wetlands; and planting all restored areas with endemic vegetation including trees, if appropriate.

Compensatory Mitigation - Only jurisdictional surface waters will be impacted by the proposed project. Since the potential impacts are minor, compensatory mitigation is not expected to be required for this project. A final determination regarding mitigation requirements rests with the USACOE.

F. Rare and Protected Species

Some populations of plants and animals have been or are in the process of decline due to factors such as natural forces, competition from introduced species, or human related impacts such as destruction of habitat. Rare and protected species listed for Bladen and Sampson Counties and any likely impacts to these species as a result of the proposed project construction are discussed in the following sections.

1. Federally Protected Species

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended.

The United States Fish and Wildlife Service (USFWS) lists six federally protected species for Bladen County and three for Sampson County as of the February 5, 2003 listing (Table 3).

**TABLE 3
FEDERALLY-PROTECTED SPECIES
FOR BLADEN AND SAMPSON COUNTIES**

Scientific Name Common Name	Status	
	Bladen	Sampson
<i>Acipenser brevirostrum</i> (Shortnose sturgeon)	E	-
<i>Alligator mississippiensis</i> (American alligator)	T(S/A)	T(S/A)
<i>Picoides borealis</i> (Red-cockaded woodpecker)	E	E
<i>Lindera melissifolia</i> (Pondberry)	E	E
<i>Lysimachia asperulaefolia</i> (Rough-leaved loosestrife)	E	-
<i>Schwalbea americana</i> (American chaffseed)	E	-

NOTES:

- E Denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range).
- T(S/A) Denotes Threatened due to similarity of appearance (a species that is threatened due to similarity of appearance with other rare species and is listed for its protection).
- The species is not listed for that county.

Acipenser brevirostrum (Shortnose sturgeon) E
 Family: Acipenseridae
 Date Listed: March 11, 1967

The **shortnose sturgeon** is a large [24 to 40 inches (61 to 102 centimeters) long] anadromous fish with a short snout and wide mouth. This fish is dark brown to black above and light brown to yellow below with bony plates or scutes along the side of its body. It has a shark-like tail and small dorsal fins.

The shortnose sturgeon exists in many habitats but it appears to prefer the shifting sands in relatively fast flowing, medium sized rivers and medium to large creeks. It is also found over gravel and coarse sand substrates. Populations have been reported in the Brunswick River, the Cape Fear River, and possibly in western Albemarle Sound. These fish spend most of the year in brackish or salt water, then migrate to river spawning grounds in January and February.

BIOLOGICAL CONCLUSION: NO EFFECT

The NC Division of Marine Fisheries recommended a biological conclusion of "No Effect" since shortnose sturgeon are not known to occur in the South River. In addition, the NC natural heritage program database (May 2003) has no records of shortnose sturgeon occurring in the South River.

<i>Alligator mississippiensis</i>	(American alligator)	T(S/A)
Family:	Crocodylidae	
Date Listed:	June 4, 1987	

The **American alligator** is a large reptile [6-12 feet (1.8-3.7 meter) long] with a rough hide and rounded broad snout. It is found in coastal marshes, swamps, river systems, canals and lakes from Dare County, NC, to Corpus Christie, Texas. Its varied diet includes mammals, herptiles, fish, and birds. Although marked increases in numbers have followed the alligator's protection from hunting and protection of its wetland habitat, its similarity in appearance to the American crocodile keeps it listed as T(S/A).

The American alligator is not biologically endangered or threatened and is not subject to Section 7 consultation.

<i>Picoides borealis</i>	(Red-cockaded woodpecker)	E
Family:	Picidae	
Date Listed:	October 13, 1970	

The **red-cockaded woodpecker** is a small [7-8 inch (18-20 cm) long] bird with black and white horizontal stripes on its back, a black cap and a large white cheek patch. The male has a small red spot or "cockade" behind the eye.

The preferred nesting habitat of the red-cockaded woodpecker is open stands of pines with a minimum age of 60 to 120 years. Longleaf pines (*Pinus palustris*) are preferred for nesting; however, other mature pines such as loblolly (*Pinus taeda*) may be utilized. Typical nesting areas, or territories, are pine stands of approximately 200 acres (80 hectares), however, nesting has been reported in stands as small as 60 acres (25 hectares). Preferred foraging habitat is pine and pine-hardwood stands of 80 to 125 acres (32 to 50 hectares) with a minimum age of 30 years and a minimum diameter of 10 inches (25 cm). The red-cockaded woodpecker utilizes these areas to forage for insects such as ants, beetles, wood-boring insects, caterpillars, as well as seasonal wild fruit. Although some colonies may be found in pine stands where midstory

hardwood encroachment has occurred, this situation is relatively rare. Periodic burning regimes typically are needed to maintain suitable habitat.

BIOLOGICAL CONCLUSION: NO EFFECT

This habitat type does not exist in the project area; there are no stands of old growth pines within or adjacent to the study area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact the red-cockaded woodpecker.

<i>Lindera melissifolia</i>	(Pondberry)	E
Family:	Lauraceae	
Date Listed:	July 31, 1986	

Pondberry is a deciduous shrub which grows to approximately 6 feet (2 meters) tall, and spread vegetatively by stolons. Pale yellow flowers appear in the spring before the leaves. The bright red, 0.5 inch (1.3 cm) long, oval-shaped fruits mature in the fall. It is distinguished by its drooping, thin, membranaceous, and ovately- to elliptically-shaped leaves that have a strong, sassafras-like odor when crushed.

Pondberry is associated with wetland habitats such as bottomland hardwoods in the interior areas, and the margins of sinks, ponds, and other depressions in the more coastal sites. The plants generally grow in shaded areas but may also be found in full sun.

BIOLOGICAL CONCLUSION: NO EFFECT

Habitat does not exist in the area; no wetland habitat is located within the project area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded the construction of the proposed project will not affect the pondberry.

<i>Lysimachia asperulaefolia</i>	Rough-leaved loosestrife	E
Family:	Primulaceae	
Date Listed:	June 12, 1987	

The **rough-leaved loosestrife** is a rhizomatous perennial herb with whorls of 3 to 4 leaves encircling a slender stem. This plant reaches 1 to 2 feet (30-60 cm) in height. Showy yellow flowers are produced from mid May through June, and fruits are present from July through October.

The rough-leaved loosestrife is endemic to the coastal plain and sandhills of North Carolina and South Carolina. It occurs in open ecotones (edges) between longleaf pine uplands and pond pine pocosins; on moist to seasonally saturated sands and on shallow organic soils overlaying sand. It has also been found on deep peat in the low shrub community of large Carolina bays.

BIOLOGICAL CONCLUSION: NO EFFECT

This habitat type does not exist in the project area; there are no areas of long-leaf pines or adjacent pond-pine pocosins. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact the rough-leaved loosestrife.

<i>Schwalbea americana</i>	American chaffseed	E
Family:	Scrophulariaceae	
Date Listed:	September 29, 1992	

American chaffseed is a densely hairy, erect perennial herb with unbranched stems. Leaves are alternate, entire, elliptic to lance-shaped, and stalkless. Large, purplish-yellow, tubular flowers are produced from April to June in the south and from June to mid July in the north. Chaffseed fruits are long, narrow capsules enclosed in a sac-like structure. *Schwalbea* is a hemiparasite (partially dependent upon another plant as host); however, it is not host-specific, so its rarity is not due to its preference for a specialized host.

The American chaffseed occurs in sandy, acidic seasonally moist to dry soils. It is found in open, moist pine flatwoods, fire-maintained savannas, ecotonal areas between pocosins and xeric sandy soils, and other open grass-sedge systems. Most of the surviving populations are in areas that are subject to frequent fires.

BIOLOGICAL CONCLUSION: NO EFFECT

Although there are no pine flatwoods, savannas, pocosins or xeric sandy areas, the power line easements in the project area may provide the open habitat that this plant requires. A survey for this plant was conducted on July 6, 2000; no specimens were observed in the project area. A search of the NCNHP database showed no recorded occurrences of this species within the project vicinity. It can be concluded that the construction of the proposed project will not impact the American chaffseed.

2. Federal Species of Concern

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Species designated as FSC are defined as taxa which may or may not be listed in the future. These species were formerly Candidate 2 (C2) species or species under consideration for listing for which there is insufficient information to support listing.

Some of these species are listed as Endangered, Threatened, or Special Concern by the NCNHP list of Rare Plant and Animal Species and are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979.

Table 4 includes listed FSC species for Bladen and Sampson County and their state classifications (February 5, 2003).

The NCNHP database shows no recorded occurrences of FSCs within the project area; however, populations of broadtail madtom (*Noturus* sp. 1) and Santee chub (*Cyprinella zanema*), both listed by the state as Special Concern, have been recorded in the project area.

**TABLE 4
FEDERAL SPECIES OF CONCERN
BLADEN AND SAMPSON COUNTIES**

Scientific Name (Common Name)	North Carolina Status		Habitat Present	
	Bladen	Sampson	Bladen	Sampson
<i>Aimophila aestivalis</i> (Bachman's sparrow)	SC	SC	Yes	Yes
<i>Corynorhinus rafinesquii</i> (Rafinesque's big-eared bat)	SC	SC	Yes	Yes
<i>Dolania americana</i> (American sand burrowing mayfly)	-	SR	-	Yes
<i>Fusconaia masoni</i> (Atlantic pigtoe)	T	-	Yes	-
<i>Hemipachnobia subporphyrea</i> <i>subporphyrea</i> (Venus flytrap cutworm moth)	SR	-	No	-
<i>Heterodon simus</i> * (Southern hognose snake)	SR	SR	No	No
<i>Lampsilis cariosa</i> (Yellow lampmussel)	T	-	Yes	-
<i>Ophisaurus mimicus</i> (Mimic glass lizard)	SC	SC	No	No
<i>Noturus</i> sp. 1 (Broadtail madtom)	SC	SC	Yes	Yes
<i>Progomphus bellei</i> (Belle's sand dragon)	SR	-	Yes	-
<i>Rana capito capito</i> (Carolina gopher frog)	SC	SC	No	No
<i>Amorpha georgiana</i> var. <i>confusa</i> (Savanna indigo-bush)	T	-	No	-
<i>Asplenium heteroresiliens</i> (Carolina spleenwort)	E	-	No	-
<i>Astragalus michauxii</i> (Sandhills milkvetch)	T	-	No	-
<i>Carex chapmanii</i> ♦ (Chapman's sedge)	NL	-	No	-

Scientific Name (Common Name)	North Carolina Status		Habitat Present	
	Bladen	Sampson	Bladen	Sampson
<i>Cylindrocolea andersonii</i> ♦ (A liverwort)	-	NL	-	Yes
<i>Dionaea muscipula</i> (Venus flytrap)	C-SC	C-SC	No	No
<i>Juglans cinerea</i> ♦ (Butternut)	-	NL	-	No
<i>Litsea aestivalis</i> (Pondspice)	C	C	No	No
<i>Lobelia boykinii</i> (Boykin's lobelia)	C	-	No	-
<i>Macbridea caroliniana</i> (Carolina bogmint)	T	T	Yes	Yes
<i>Parnassia caroliniana</i> (Carolina grass-of-parnassus)	E	-	No	-
<i>Plantago sparsiflora</i> (Pineland plantain)	E	-	No	-
<i>Pteroglossaspis ecristata</i> ** (Spiked medusa)	E	-	No	-
<i>Rhexia aristosa</i> ♦ ♦ (Awned meadow-beauty)	T	-	No	-
<i>Solidago verna</i> (Spring-flowering goldenrod)	T	T	No	No
<i>Tofieldia glabra</i> * (Carolina asphodel)	C	-	No	-

NOTES:

- C Candidate (species for which population monitoring and conservation action is recommended).
- SC Special Concern (species which are afforded protection by state laws).
- E Endangered (species which are afforded protection by state laws).
- T Threatened (species which are afforded protection by state laws).
- SR Significantly Rare (species for which population monitoring and conservation action is recommended).
- W Watch list (any other species believed to be rare and of conservation concern in the state but not warranting active monitoring at this time)
- This species is not listed for this county.
- * Historic record - the species was last observed in the county more than 50 years ago (USFWS).
- ** Obscure record - the date and/or location of observation is uncertain (USFWS).
- ♦ Listed by the USFWS but not by the NCNHP.
- ♦♦ Listed by the NCNHP but not by the USFWS.

3. Summary of Anticipated Impacts

Biological conclusions of "No Effect" were reached for each of the federally listed species in Bladen and Sampson Counties. Habitat is present for several FSC species. According to the

NCNHP, there have been no recorded occurrences of any federally protected species within the project vicinity.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and to afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on December 6, 1999. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). In a concurrence form dated April 19, 2000, the HPO concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated June 28, 2000 stated that they "are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project." A copy of the memorandum is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is considered to be a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of the current North Carolina Department of Transportation standards and specifications.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of the project.

No adverse impact on families or communities is anticipated. Right-of-way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

According to NRCS, because funds are already committed for the bridge replacement, no determination regarding Prime Farmlands is required.

This project is an air quality “neutral” project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required.

This project is located in Bladen and Sampson Counties, which have been determined to be in compliance with the National Ambient Air Quality standards. 40 CFR Part 51 is not applicable because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the assessment requirements for highway traffic noise of Title 23, Code of Federal Regulations (CFR), Part 772 and for air quality (1990 Clean Air Act Amendments and the National Environmental Policy Act) and no additional reports are required.

Based on research conducted by the NCDOT Geotechnical Unit, no underground storage tanks or hazardous waste sites are known to be present in the study area.

Bladen and Sampson Counties are current participants in the National Flood Insurance Program. The approximate 100-year floodplain in the project area is shown on Exhibit 1. The amount of floodplain area to be affected is not substantial.

There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in a crossing of approximately equal magnitude. All reasonable measures will be taken to minimize any possible harm.

The project will not increase the upstream limits of the 100-year floodplain.

This crossing of South River is in a designated flood hazard zone, but is not included in a detailed flood study. There are no buildings in the project vicinity with floor elevations below the 100-year flood level. The existing floodplain is rural and comprised primarily of woods and agricultural areas. The proposed bridge replacement will not have any significant adverse impact on the existing floodplain nor on the associated flood hazard.

Based on the above statements, it is concluded that no significant adverse environmental impacts will result from implementation of the project.

VIII. PUBLIC INVOLVEMENT

A newsletter was mailed to residents within the study area during November of 2001. The newsletter solicited comments. However, no comments were received from the public.

On June 26, 2003, a small group meeting was held at the request of local residents. The meeting was held at a Church in close proximity to the project study area. Forty-six citizens attended. Most of the comments heard regarded safety at the nearby intersection of NC 41 and NC 210. Concerns regarding sight distance at the approaches, the grade, and the volume of heavy trucks were raised. NCDOT Division personnel were also in attendance and responded to the intersection concerns.

Citizens also expressed opposition to replacing the bridge south of its existing location. Several citizens expressed a preference for replacing the bridge in-place and using an off-site detour during construction. They stated that shifting the bridge to the south would worsen the sight distance problem at the NC 41/NC 210 intersection. *{NCDOT will attempt to implement safety improvements at the NC 41/NC 210 intersection to improve sight distance. The offsite detour was considered infeasible due to its length of approximately 17.4 miles (28.0 kilometers). Sight distance from the intersection to the relocated bridge is anticipated to be adequate as long as vegetation is cleared along the sight lines}.*

IX. AGENCY COMMENTS

Agency comments are summarized below. Letters from the commenting agencies are included in the appendix.

United States Army Corps of Engineers (USACOE)—USACOE recommends that the Project Commitments should include the removal of all temporary fills from waters and wetlands and “time-of-year” restrictions on in-stream work if recommended by the NC Wildlife Resources Commission. The USACOE also recommends that any undercut material resulting from the construction of temporary detours should be stockpiled and used to restore the site. They also recommend that all restored areas should be planted with endemic vegetation including trees, if appropriate.

Response: The USACOE recommendations listed above have been incorporated in the Project Commitments.

United States Fish and Wildlife Service (USFWS)—Based on the information provided and the limited amount of wetland involved, [USFWS] does not anticipate significant impacts to waters or wetlands of the United States from implementation of this project provided the construction work is restricted to the footprint of the existing crossing, no stream channelization is performed beyond the necessary work zone above or below the existing crossing and no in-water work is performed between February 1 and July 1.

Response: The moratorium on in-stream work from February 1 to July 1 has been incorporated in the Project Commitments. Because there is no reasonable off-site detour available, the evaluation of alternatives included consideration of; 1) replacement on new alignment, and 2) the use of an on-site detour. Therefore, construction can not be limited to the existing footprint.

North Carolina Wildlife Resources Commission (NCWRC) – NCWRC states that there is a record of the broad-tailed madtom near the bridge. Additionally, there appear to be significant wetlands associated with this area. This reach is also considered anadromous fish spawning area. An in-water work moratorium is requested between February 1 – July 1 to minimize impacts to anadromous fish and other spawning fish. NCWRC prefers that debris not be discharged to the river during demolition activities to prevent obstructions to navigation and impacts to potential habitat for the broad-tailed madtom.

Response: The moratorium on in-stream work from February 1 to July 1 has been incorporated in the Project Commitments.

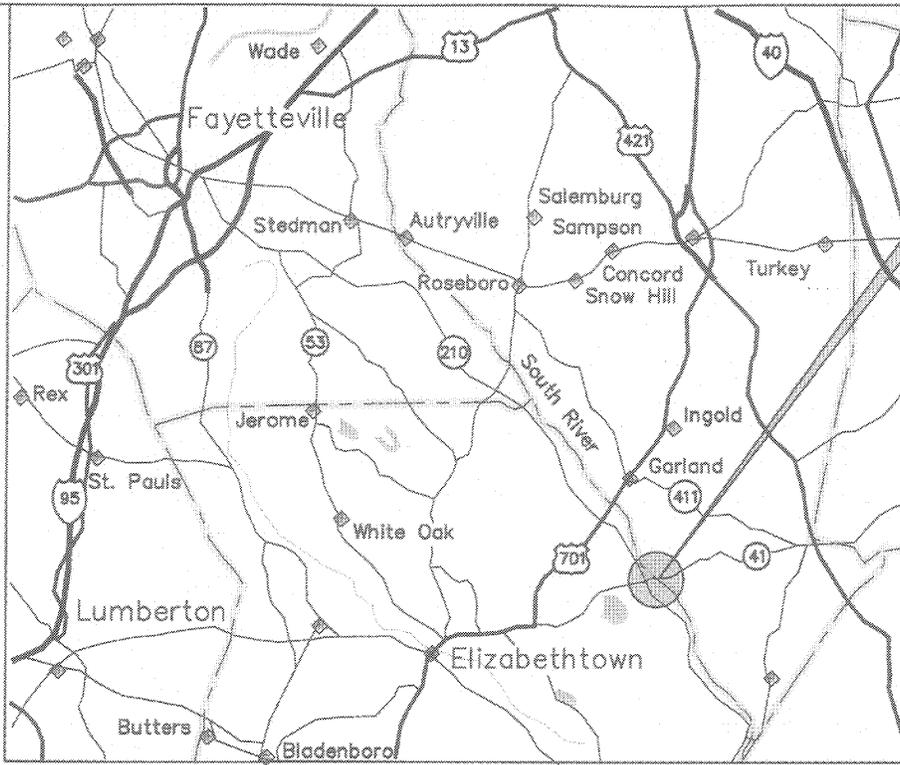
In order to minimize potential discharge of material into the river during bridge demolition and removal, work will be conducted in accordance with the three NCDOT documents entitled “Pre-Construction Guidelines for Bridge Demolition and Removal”, “Policy: Bridge Demolition and Removal in Waters of the United States”, and “Best Management Practices for Bridge Demolition and Removal”. Dropping any portion of the structures into waters of the United States will be avoided unless there is no other practical method of removal.

As addressed Section 3b of this document, it is anticipated that removal techniques can be employed to avoid temporary fill in the river. In addition, the river substrate consists of sand and will not raise sediment concerns. Therefore, a turbidity curtain is not recommended.

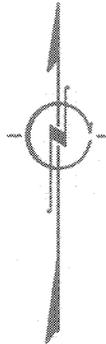
North Carolina Department of Environment and Natural Resources Natural Heritage Program (NHP)–NHP commented that populations of the broadtail madtom (*Noturus n. sp. 1*) and Santee chub (*Cyprinella zanema*), coastal populations of which are listed as Special Concern, have been recorded at the NC 41 Bridge location.

To avoid impacts to these populations, NHP recommends the use of Best Management Practices (BMPs) for erosion and sedimentation and that all concrete used in this project be fully cured prior to contact with the water.

Response: The use of BMPs is included in the Project Commitments.



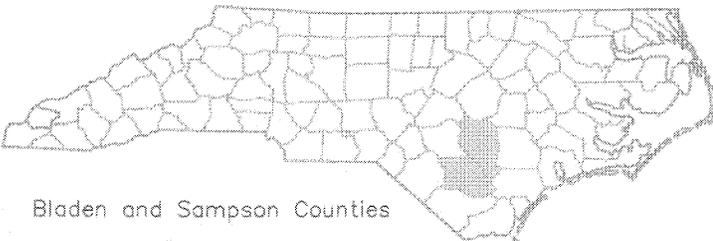
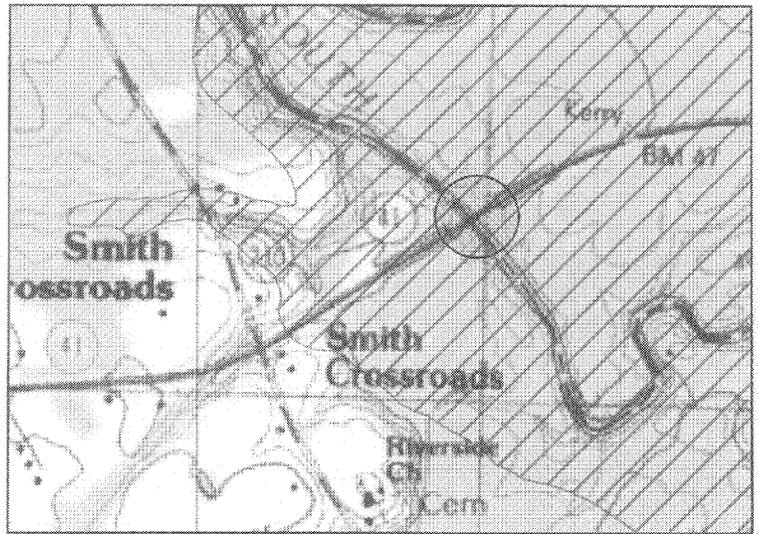
Project Vicinity



Legend

 Limits of 100 Year Floodplains

Note:
Limits of 100 Year Floodplains
from the National Flood Insurance
Program, Flood Insurance Rate Maps
(FIRM) Community-Panel Numbers
370293 0006 A dated January 20, 1978
and 370220 0300 B dated July 16, 1991



Bladen and Sampson Counties



**North Carolina
Department of Transportation**

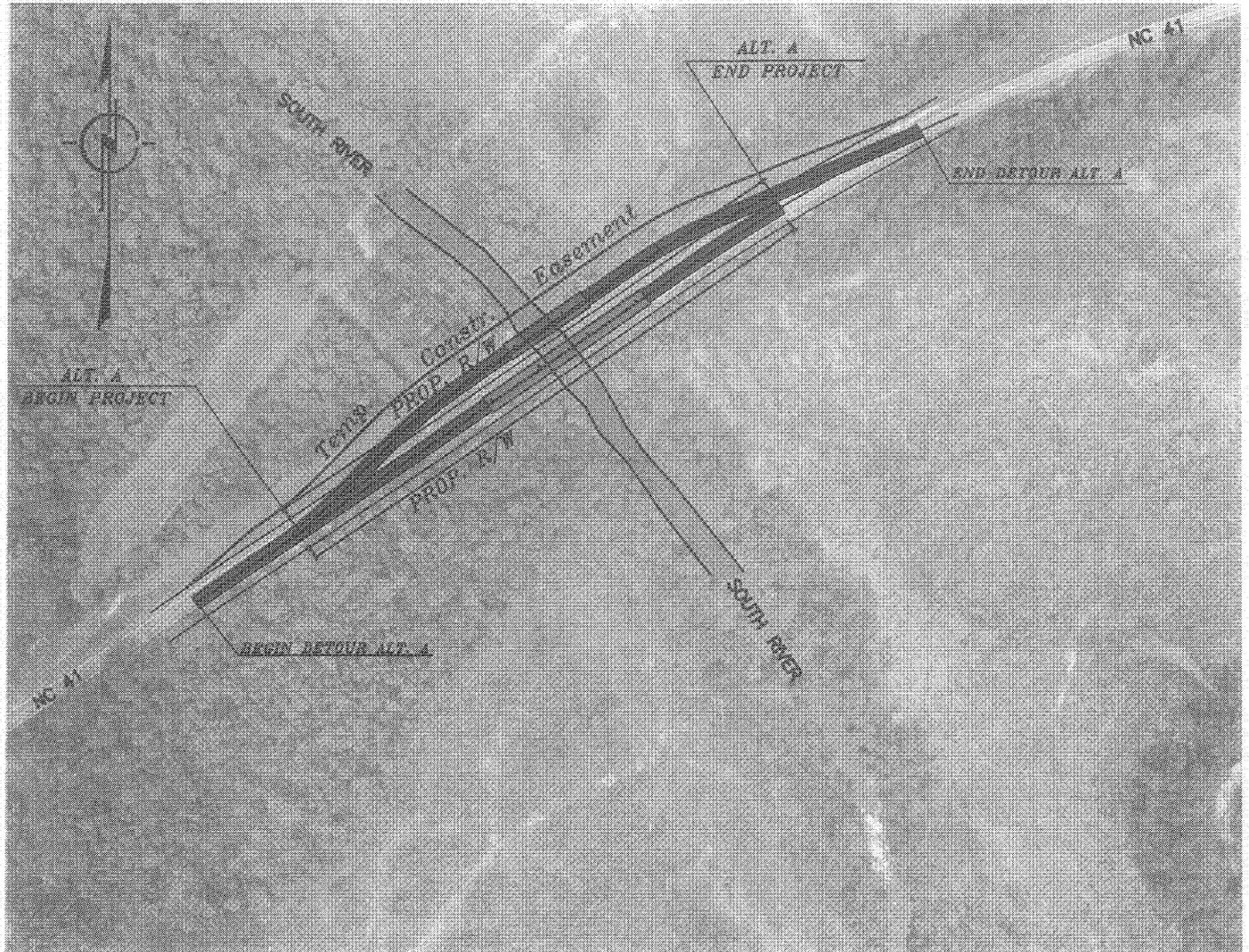
**NC 41
Replace Bridge No. 44 over South River
Bladen and Sampson Counties
North Carolina**

B-3613

Project Vicinity

Not to Scale

Exhibit 1



BRIDGE No. 44 LENGTH=320 FT (97.5 M)
 PROP. BRIDGE LENGTH=330 FT (100.6 M), WIDTH=30 FT (9.0 M)
 PROP. DETOUR BRIDGE LENGTH=160 FT (48.8 M), WIDTH=30 FT (9.0 M)

Legend

-  Proposed Roadway Improvements
-  Proposed Bridge
-  South River

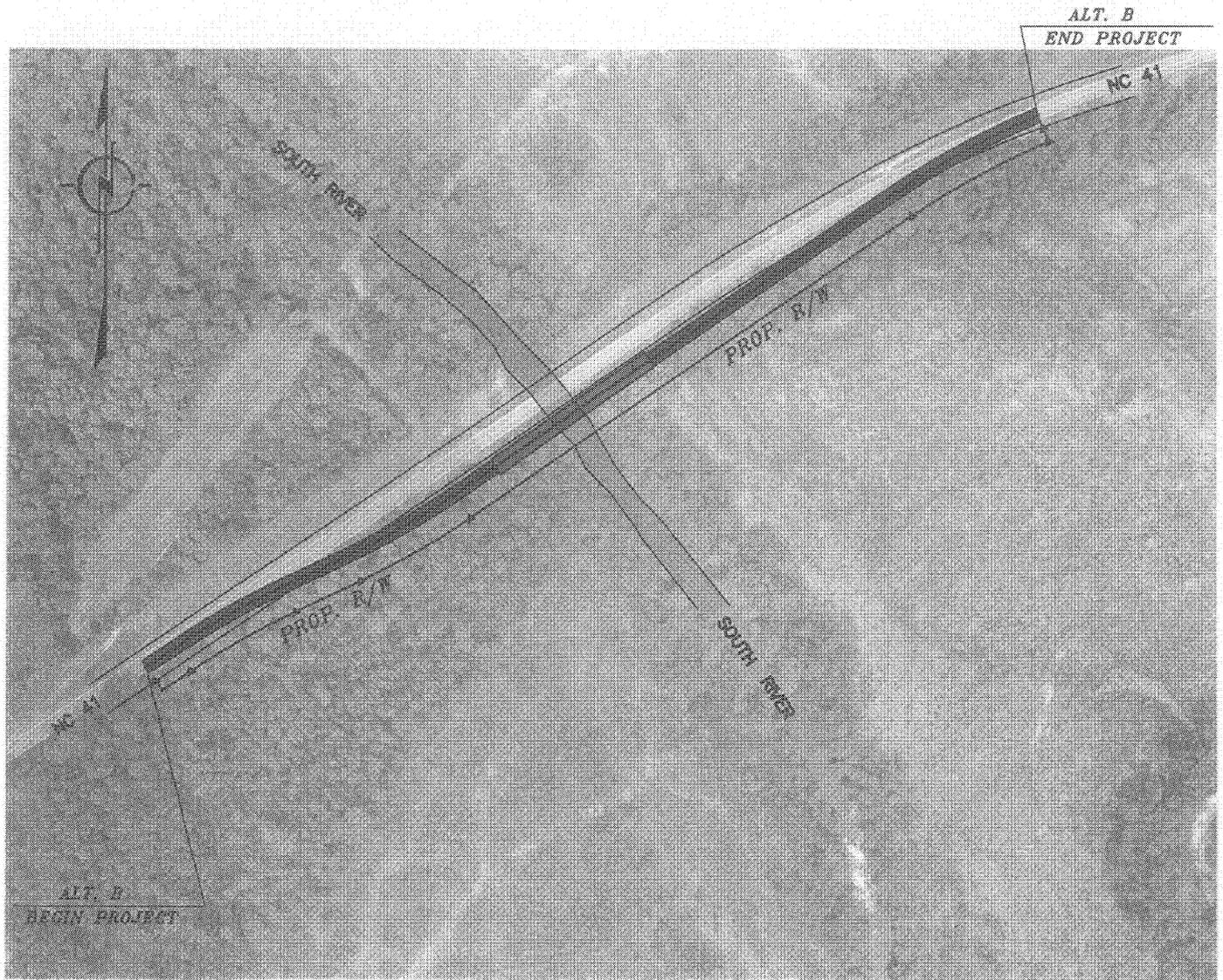


**North Carolina
 Department of Transportation**

**NC 41
 Replace Bridge No. 44 over South River
 Bladen and Sampson Counties
 North Carolina**

B-3613

Alternative A



BRIDGE No. 44 LENGTH=320 FT (97.5 M)
 PROP. BRIDGE LENGTH=330 FT (100.6 M), WIDTH=30 FT (9.0 M)

Legend

-  Proposed Roadway Improvements
-  Proposed Bridge
-  South River



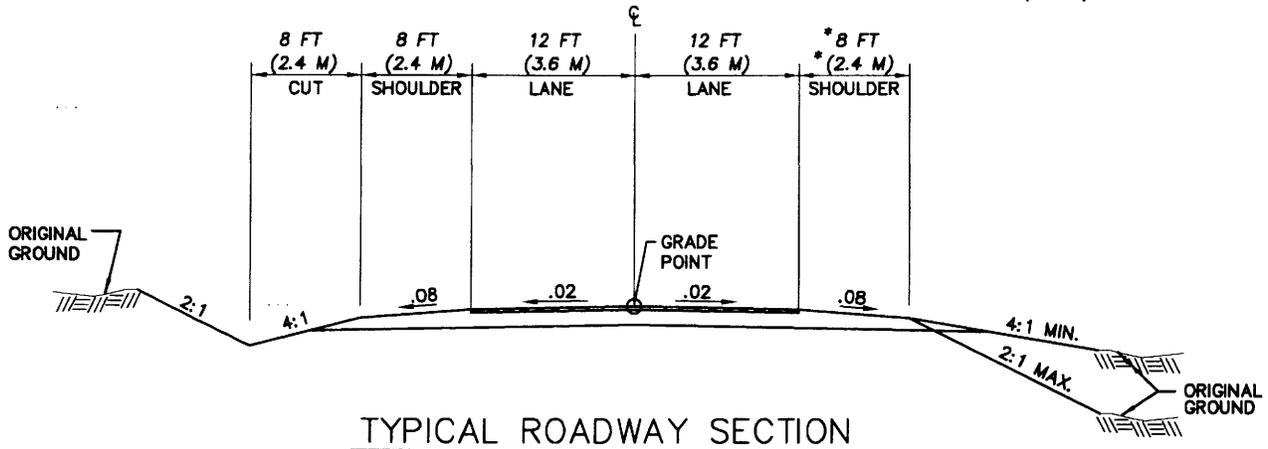
**North Carolina
 Department of Transportation**

NC 41
Replace Bridge No. 44 over South River
Bladen and Sampson Counties
North Carolina
B-3613
Alternative B
(Preferred)

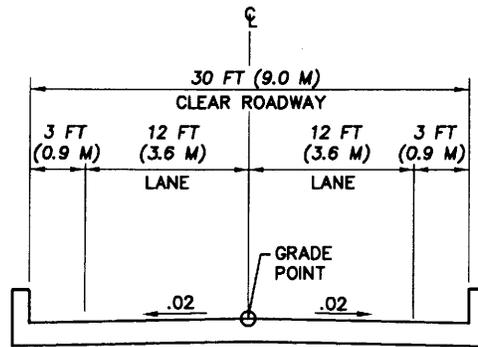
Not to Scale

Exhibit 3

* 8 FT (2.4 M) WITHOUT GR
11 FT (3.3 M) WITH GR



TYPICAL ROADWAY SECTION



TYPICAL BRIDGE SECTION

Design Data

ADT 2001	<u>1850</u>	LOS	<u>B</u>
ADT 2003	<u>1900</u>	LOS	<u>B</u>
ADT 2025	<u>3200</u>	LOS	<u>C</u>
DUAL			<u>4%</u>
TTST			<u>18%</u>
DESIGN SPEED			<u>60 mph (100 Km/h)</u>
POSTED SPEED			<u>55 mph (90 Km/h)</u>
FUNCTIONAL CLASSIFICATION			<u>Rural Maj. Collector</u>
MIN RADIUS (Se = <u>.08</u>)			<u>1205 (395)</u>
MAX GRADE			<u>5%</u>
MIN DES. K FACTORS		SAG	<u>136 (45)</u>
		CREST	<u>151 (52)</u>

English (Metric)



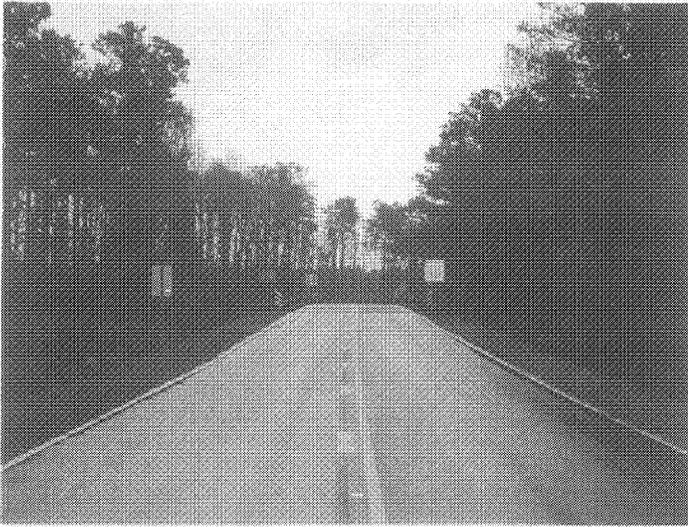
**North Carolina
Department of Transportation**

**NC 41
Replace Bridge No. 44 over South River
Bladen and Sampson Counties
North Carolina**

**B-3613
Typical Sections**

Not to Scale

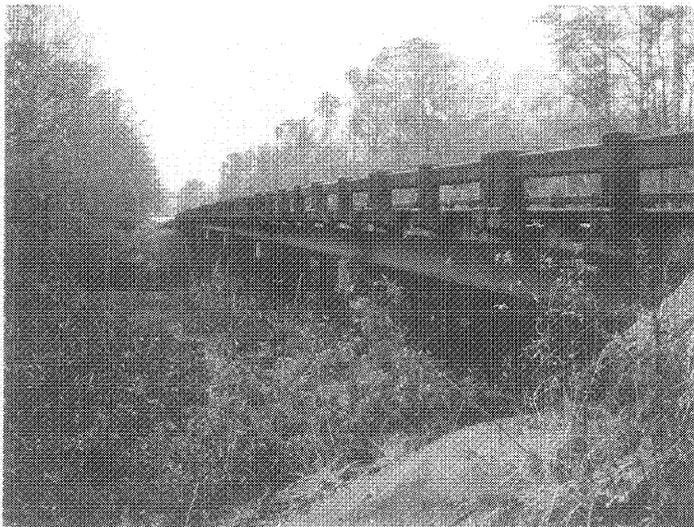
Exhibit 4



Eastbound Approach



Westbound Approach



Looking North



**North Carolina
Department of Transportation**

**NC 41
Replace Bridge No. 44 over South River
Bladen and Sampson Counties
North Carolina**

**B-3613
Photos**

APPENDIX



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890



IN REPLY REFER TO

August 2, 2000

Regulatory Division

Action ID No. 200001525, 200001526, 200001527, 200001528, 200001529, 200001530,
200001531.

Mr. William D. Gilmore, P.E., Manager
Project Development & Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, N.C. 27699-1548

Dear Mr. Gilmore:

Reference your letters dated June 7, 2000, June 28, 2000, and July 3, 2000 regarding the following proposed bridge replacement projects, including those of Group XXVII:

1. TIP Project B-3449, Duplin County, Bridge No. 204 on SR 1827 over Northeast Cape Fear River, Action ID 200001525.
2. TIP Project B-3626, Carteret County, Bridge No. 26 on SR 1154 over a branch of the Newport River, Action ID 200001526.
3. TIP Project B-3884, Onslow County, Bridge No. 40 on SR 1308 over Squires Run, Action ID 200001527.
4. TIP Project B-3887, Pender County, Bridge No. 116 on SR 1520 over Shaken Creek, Action ID 200001528.
5. TIP Project B-3516, Scotland County, Bridge No. 59 on SR 1614 over Gum Swamp Creek, Action ID 200001529.
6. TIP Project ~~B-3515~~, Scotland County, Bridge No. 46 on SR 1612 over Big Shoe Heel Creek, Action ID 200001530.
7. TIP Project B-3613, Bladen/Sampson County, Bridge No. 44 on NC 41 over South River, Action ID 200001531.

Based on the information provided in the referenced letters, it appears that each proposed bridge replacement project may impact jurisdictional wetlands. Department of the Army (DA) permit authorization, pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent wetlands in conjunction with these projects, including

disposal of construction debris. Specific permit requirements will depend on design of the projects, extent of fill work within the waters of the United States, including wetlands, construction methods, and other factors.

Although these projects may qualify as a Categorical Exclusion, to qualify for nationwide permit authorization under Nationwide Permit #23, the project planning report should contain sufficient information to document that the proposed activity does not have more than a minimal individual or cumulative impact on the aquatic environment. Our experience has shown that replacing bridges with culverts often results in sufficient adverse impacts to consider the work as having more than minimal impacts on the aquatic environment. Accordingly, the following items need to be addressed in the project planning report:

- a. The report should contain the amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected.
- b. Off-site detours are always preferable to on-site (temporary) detours in wetlands. If an on-site detour is the recommended action, justification should be provided. On-site detours can cause permanent wetland impacts due to sediment consolidation resulting from the on-site detour itself and associated heavy equipment. Substantial sediment consolidation in wetland systems may in turn cause fragmentation of the wetland and impair the ecological and hydrologic functions of the wetland. Thus, on-site detours constructed in wetlands can result in more than minimal wetland impacts. These types of wetland impacts will be considered as permanent wetland impacts.

For proposed projects and associated on-site detours that cause minimal losses of wetlands, an approved wetland restoration plan will be required prior to issuance of a DA nationwide or general permit. For proposed projects and associated on-site detours that cause significant wetland losses, an individual DA permit and a mitigation proposal for the unavoidable wetland impacts may be required.

In view of our concerns related to onsite detours constructed in wetlands, recent field inspections were conducted at each of the proposed project sites and a cursory determination was made on the potential for sediment consolidation due to an onsite detour. Based on these inspections, potential for sediment consolidation in wetlands exists at several of the proposed projects. Therefore, it is recommended that geotechnical evaluations be conducted at each project site to estimate the magnitude of sediment consolidation that can occur due to an on-site detour and the results be provided in the project planning report.

Based on our field inspections, we strongly recommend that geotechnical evaluations be conducted at the following proposed project sites:

- 1) TIP Project B-3626, Carteret County, Bridge No. 226 on SR 1154 over a branch of the Newport River, Action ID 200001526.
- 2) TIP Project B-3884, Onslow County, Bridge No. 40 on SR 1308 over Squires Run, Action ID 200001527.
- 3) TIP Project B-3887, Pender County, Bridge No. 116 on SR 1520 over Shaken Creek, Action ID 200001528.
- 4) TIP Project B-3516, Scotland County, Bridge No. 59 on SR 1614 over Gum Swamp Creek, Action ID 200001529.
- 5) TIP Project B-3515, Scotland County, Bridge No. 46 on SR 1612 over Big Shoe Heel Creek, Action ID 200001530.

c. Project commitments should include the removal of all temporary fills from waters and wetlands and "time-of-year" restrictions on in-stream work if recommended by the NC Wildlife Resources Commission. In addition, if undercutting is necessary for temporary detours, the undercut material should be stockpiled to be used to restore the site.

d. All restored areas should be planted with endemic vegetation including trees, if appropriate.

e. The report should provide an estimate of the linear feet of new impacts to streams resulting from construction of the project.

f. If a bridge is proposed to be replaced with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts on the aquatic environment, specifically addressing the passage of aquatic life including anadromous fish. In addition, the report should address the impacts that the culvert would have on recreational navigation.

g. The report should discuss and recommend bridge demolition methods and shall include the impacts of bridge demolition and debris removal in addition to the impacts of constructing the bridge. The report should also incorporate the bridge demolition policy recommendations pursuant to the NCDOT policy entitled "Bridge Demolition and Removal in Waters of the United States" dated September 20, 1999.

Should you have any questions, please call Mr. David L. Timpy at the Wilmington Field office at 910-251-4634.

Sincerely,

A handwritten signature in cursive script that reads "E. David Franklin".

E. David Franklin
NCDOT Team Leader



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

July 5, 2000

Mr. William D. Gilmore, P.E., Manager
NCDOT
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Gilmore:

Thank you for your June 7, 2000 letter requesting comments from the U.S. Fish and Wildlife Service (Service) on the proposed replacement of Bridge No. 44 on NC 41 over the South River, Bladen and Sampson Counties, North Carolina (TIP No. B-3613). This report provides scoping information and is provided in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531-1543). This report also serves as scoping comments to federal and state agencies for use in their permitting and/or certification process for this project.

The NCDOT proposes to replace the bridge at the existing location. The current bridge dates to 1950 and includes 8 spans totaling 320 feet 6 inches in length. The end bents and interior bents are reinforced concrete caps on timber piles. Construction of the new bridge will contribute approximately 50 cubic yards of fill in waters and wetlands of the United States. Removal of the old structure and construction of the new one will be scheduled to avoid in-stream activities between February 1 - July 1 to minimize impacts to anadromous fish passage and sunfish spawning.

Enclosed is a list of federally-listed threatened and endangered species, and Federal Species of Concern (FSC) that are known to occur in Bladen and Sampson Counties. The project site should be surveyed for the presence or absence of any of the listed species. Surveys should be conducted by trained personnel and the results forwarded to this office for review.

Federal Species of Concern are those plant and animal species for which the Service remains concerned, but further biological research and field study are needed to resolve the conservation status of these taxa. Although FSC's receive no statutory protection under the ESA, we would encourage the NCDOT to be alert to their potential presence, and to make every reasonable effort to conserve them if found. The North Carolina Natural Heritage Program should be contacted for information on species under state protection.

Based on the information provided and the limited amount of wetland involved, the Service does not anticipate significant impacts to waters or wetlands of the United States from implementation of this project provided the construction work is restricted to the footprint of the existing crossing, no stream channelization is performed beyond the necessary work zone above or below the existing crossing, and no in-water work is performed between February 1 and July 1.

Thank you for the opportunity to comment on this project. Please advise us of any changes in project plans. If you have any questions regarding these comments, please contact Tom McCartney at 919-856-4520, ext. 32.

Sincerely,



Dr. Garland B. Pardue
Ecological Services Supervisor

cc:

COE, Wilmington, NC (David Timpy)
WRC, Northside, NC (David Cox)
DWQ, Raleigh, NC (John Hennessy)

FWS/R4:TMcCartney:TM:07/05/00:919/856-4520 extension 32:\brdg#44b.lad

COMMON NAME

SCIENTIFIC NAME

STATUS

BLADEN COUNTY

Vertebrates

Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered
Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC
American alligator	<i>Alligator mississippiensis</i>	T(S/A)
Rafinesque's big-eared bat	<i>Corynorhinus (=Plecotus) rafinesquii</i>	FSC
Southern hognose snake	<i>Heterodon simus</i>	FSC*
Mimic glass lizard	<i>Ophisaurus mimicus</i>	FSC
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Carolina gopher frog	<i>Rana capito capito</i>	FSC

Invertebrates

Atlantic pigtoe	<i>Fusconaia masoni</i>	FSC
Venus flytrap cutworm moth	<i>Hemipachnobia subporphyrea subporphyrea</i>	FSC
Yellow lampmussel	<i>Lampsilis cariosa</i>	FSC
Belle's sanddragon (=variegated clubtail dragonfly)	<i>Progomphus bellei</i>	FSC

Vascular Plants

Savanna indigo-bush (=Carolina lead-plant)	<i>Amorpha georgiana var. confusa</i>	FSC
Carolina spleenwort	<i>Asplenium heteroresiliens</i>	FSC
Sandhills milkvetch	<i>Astragalus michauxii</i>	FSC
Chapman's sedge	<i>Carex chapmanii</i>	FSC
Venus flytrap	<i>Dionaea muscipula</i>	FSC
Resinous boneset (=Pine Barrens boneset)	<i>Eupatorium resinosum</i>	FSC
White wicky	<i>Kalmia cuneata</i>	FSC
Southern spicebush	<i>Lindera melissifolia</i>	Endangered
Pondspice	<i>Litsea aestivalis</i>	FSC
Boykin's lobelia	<i>Lobelia boykinii</i>	FSC
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Endangered
Carolina bogmint	<i>Macbridea caroliniana</i>	FSC
Carolina grass-of-parnassus	<i>Parnassia caroliniana</i>	FSC
Wavyleaf wild quinine	<i>Parthenium radfordii</i>	FSC
Pineland plantain	<i>Plantago sparsiflora</i>	FSC
Spiked medusa (=Eulophia)	<i>Pteroglossaspis ecristata</i>	FSC**
Awned meadowbeauty	<i>Rhexia aristosa</i>	FSC
American chaffseed	<i>Schwalbea americana</i>	Endangered
Spring-flowering goldenrod	<i>Solidago verna</i>	FSC
Carolina asphodel	<i>Tofieldia glabra</i>	FSC*

BRUNSWICK COUNTY

Vertebrates

Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered
Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC

COMMON NAME	SCIENTIFIC NAME	STATUS
Mountain catchfly	<i>Silene ovata</i>	FSC**
White irisette	<i>Sisyrinchium dichotomum</i>	Endangered

Nonvascular Plants

Rock gnome lichen	<i>Gymnoderma lineare</i>	Endangered
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SAMPSON COUNTY

Vertebrates

Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC
American alligator	<i>Alligator mississippiensis</i>	T(S/A)
Rafinesque's big-eared bat	<i>Corynorhinus (=Plecotus) rafinesquii</i>	FSC**
Southern hognose snake	<i>Heterodon simus</i>	FSC*
Mimic glass lizard	<i>Ophisaurus mimicus</i>	FSC*
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Carolina gopher frog	<i>Rana capito capito</i>	FSC

Invertebrates

American sand burrowing mayfly	<i>Dolania americana</i>	FSC
--------------------------------	--------------------------	-----

Vascular Plants

Venus flytrap	<i>Dionea muscipula</i>	FSC
Butternut	<i>Juglans cinerea</i>	FSC
White wicky	<i>Kalmia cuneata</i>	FSC
Pondberry	<i>Lindera melissifolia</i>	Endangered
Pondspice	<i>Litsea aestivalis</i>	FSC
Carolina bogmint	<i>Macbridea caroliniana</i>	FSC
Spring-flowering goldenrod	<i>Solidago verna</i>	FSC

Nonvascular Plants

A liverwort	<i>Cylindrocolea andersonii</i>	FSC*
-------------	---------------------------------	------

SCOTLAND COUNTY

Vertebrates

Bachman's sparrow	<i>Aimophila aestivalis</i>	FSC
American alligator	<i>Alligator mississippiensis</i>	T(S/A)
Southern hognose snake	<i>Heterodon simus</i>	FSC
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Northern pine snake	<i>Pituophis melanoleucus melanoleucus</i>	FSC**
Carolina gopher frog	<i>Rana capito capito</i>	FSC

Vascular Plants

Sandhills milkvetch	<i>Astragalus michauxii</i>	FSC
Resinous boneset	<i>Eupatorium resinosum</i>	FSC
White wicky	<i>Kalmia cuneata</i>	FSC
Sandhills bog lily	<i>Lilium iridollae</i>	FSC*
Bog spicebush	<i>Lindera subcoriacea</i>	FSC



NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF PARKS AND RECREATION

July 5, 2000

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

DR. PHILIP K. MCKNELLY
DIRECTOR

MEMORANDUM

TO: Stacy Harris
DOT

FROM: Stephen Hall SH

SUBJECT: CATEX – 13 Bridge Replacement Projects

REFERENCE: B-3620, B-3613

The Natural Heritage Program database contains records for rare aquatic species from the vicinity of two of the proposed projects:

B-3620

A population of Santee chub (*Cyprinella zanema*), considered significantly rare in North Carolina, has been recorded right at the bridge crossing on SR 1001.

B-3613

Populations of broadtail madtom (*Noturus n. sp. 1*), state listed as Special Concern, and Santee chub (*Cyprinella zanema*), coastal populations of which are state listed as Special Concern, have been recorded at the NC 41 bridge crossing.

In order to avoid impacts to these species, we recommend that all best management practices for the control of erosion and sedimentation be strictly followed. All concrete used in these projects should be fully cured before allowed to come into contact with the water.

/sph



1615 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1615
PHONE 919-733-4181 FAX 919-715-3085

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED/10% POST-CONSUMER PAPER



North Carolina Department of Cultural Resources
State Historic Preservation Office

David L. S. Brook, Administrator

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

June 28, 2000

William D. Gilmore, PE, Manager
NCDOT
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Re: Replacement of Bridge No. 44 over South River on NC 41,
B-3613, Bladen and Sampson Counties, ER 00-10116

Dear Mr. Gilmore:

Thank you for your letter of June 7, 2000, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook
Deputy State Historic Preservation Officer

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
ARCHAEOLOGY	421 N. Blount St., Raleigh NC	4619 Mail Service Center, Raleigh NC 27699-4619	(919) 733-7342 • 715-2671
RESTORATION	515 N. Blount St., Raleigh NC	4613 Mail Service Center, Raleigh NC 27699-4613	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4618 Mail Service Center, Raleigh NC 27699-4618	(919) 733-6545 • 715-4801

complete

Federal Aid #BRSTP-41(5)

TIP #B-3013

County: Bladen and Sampson

CONCURRENCE FORM FOR PROPERTIES NOT ELIGIBLE FOR THE NATIONAL REGISTER OF HISTORIC PLACES

Project Description: Replace Bridge No. 44 on NC 41 over South River

On March 27, 2000, representatives of the

- North Carolina Department of Transportation (NCDOT)
- Federal Highway Administration (FHWA)
- North Carolina State Historic Preservation Office (SHPO)

Reviewed the subject project at

- a scoping meeting
- photograph review session/consultation
- other

All parties present agreed

- there are no properties over fifty years old within the project's area of potential effect.
- there are no properties less than fifty years old which are considered to meet Criterion Consideration G within the project's area of potential effect.
- there are properties over fifty years old (list attached) within the project's area of potential effect, but based on the historical information available and the photographs of each property, properties identified as Bridge #44 & Prop #1 are considered not eligible for the National Register and no further evaluation of them is necessary.
- there are no National Register-listed properties located within the project's area of potential effect.

Signed:

Mary Pope 3-27-00
 Representative, NCDOT Date

Michael C. Dawson 4/13/00
 FHWA, for the Division Administrator, or other Federal Agency Date

Carol Alpin 3/27/00
 Representative, SHPO Date

David A. ... 4/19/00
 State Historic Preservation Officer Date



☒ North Carolina Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch, NCDOT

FROM: Owen F. Anderson, Mountain Region Coordinator
Habitat Conservation Program *Copy - Owen Anderson 9/25/2001*

DATE: August 21, 2000

SUBJECT: Scoping for Group XXXII Bridge Replacement Projects in Buncombe, Haywood, Jackson, Madison and Bladen/Sampson Counties

This memorandum responds to your request for our concerns regarding impacts on fish and wildlife resources resulting from the subject projects. We apologize for the delay in our response but a staff shortage has put us behind in our reviews. The North Carolina Wildlife Resources Commission (NCWRC) has reviewed the proposed projects, and our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The proposed work involves nine bridge replacement projects in western North Carolina and one project in Bladen/Sampson Counties. Construction impacts on wildlife and fisheries resources will depend on the extent of disturbance in the streambed and surrounding floodplain areas. We prefer bridge designs that do not alter the natural stream morphology or impede fish passage. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. We are also concerned about impacts to designated Public Mountain Trout Waters (PMTW) and environmental documentation for these projects should include description of any streams or wetlands on the project site and surveys for any threatened or endangered species that may be affected by construction.

B-3615 - Bladen/Sampson County Bridge No. 44 on NC 41 over the South River

There is a record of the broad-tailed madtom near the bridge. Additionally, there appear to be significant wetlands associated with this area. This reach is also considered anadromous fish spawning area. An in-water work moratorium is requested between February 1-July 1 to minimize impacts to anadromous fish and other spawning fish. We prefer that debris not be discharged to the river during demolition activities to prevent obstructions to navigation and impacts to potential habitat for the broad-tailed madtom.

B-3614 - Buncombe County, Bridge No. 300 on SR 1141 over Hominy Creek

Hominy Creek is considered a spawning stream for trout. We request an instream construction moratorium between November 1-April 15 to minimize impacts to spawning trout.

B-3616 – Buncombe County, Bridge No 740 on SR 1319 over Mill Creek

This creek is not considered to be trout waters. We have no concerns other than minimization of impacts to water quality and habitat.

B-3619 – Buncombe County, Bridge No. 10056 on SR 3449 over Bill Moore Creek

This stream reach is used by trout for spawning. Baldwin Field Branch, which drains off of nearby National Forest Land, is a designated trout stream. The confluence of this stream is in close proximity of the bridge structure. We would prefer the existing bridge be replaced with a spanning structure due to the importance of this area for trout movement. We request an instream construction moratorium between November 1 and April 15 to minimize impacts to trout reproduction.

B-3470 - Haywood County, Bridge No 163 on US 276 over Pigeon River Overflow

This reach of the Pigeon River supports trout. We request a moratorium on in-water construction between November 1 and April 15. Additionally, there are records for the Appalachian Elktoe upstream of this site. If suitable habitat exists, the animal may be found downstream of this project. Therefore, we request that you consult with the US Fish and Wildlife on this project concerning impacts to this species.

B-3656 - Haywood County Bridge No. 419 on US 19-23 over the Pigeon River

The reach of the Pigeon does not support trout. We do not anticipate a moratorium would be required.

B-3659 – Haywood County, Bridge No. 112 on SR 1147 over Allens Creek

Allens Creek is considered trout waters. We prefer that the old bridge be replaced with a spanning structure. We request a moratorium between November 1 and April 15 to minimize impacts to trout reproduction.

B-3661 - Haywood County, Bridge No. 36 on SR 1503 over Crabtree Creek

This section of Crabtree Creek is not considered trout waters. We do not anticipate a moratorium would be required.

B-3667 – Jackson County, Bridge No. 47 on SR 1131 over Trout Creek

Trout creek is considered trout waters. We request a moratorium on in-water construction between November 1 and April 15.

B-3869 - Madison County, Bridge No. 146 on SR 1151 over Big Pine Creek

Big Pine in this reach is not known to support trout. We do not anticipate a moratorium would be required.

Because the Corps of Engineers (COE) recognizes all of the above counties as “trout water counties”, the NCWRC will review any nationwide or general 404 permits for the proposed projects. The following conditions are likely to be placed on the subject 404 permits:

1. Adequate sedimentation and erosion control measures must be implemented and maintained on the project site to avoid impacts to downstream aquatic resources. Structures should be inspected and maintained regularly, especially following rainfall events.
2. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.
3. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
4. If concrete is used during construction, a dry work area must be maintained to prevent direct contact between curing concrete and stream water. Uncured concrete affects water quality and is highly toxic to fish and other aquatic organisms.
5. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for gamefish and wildlife.
6. **In trout waters, instream construction is prohibited during the trout-spawning period of November 1 to April 15 to avoid impacts on trout reproduction.**
7. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.
8. If multi-celled reinforced concrete box culverts are utilized, they should be designed so that all water flows through a single cell (or two if necessary) during low flow conditions. This could be accomplished by constructing a low sill on the upstream end of the other cells that will divert low flows to another cell. This will facilitate fish passage at low flows.
9. Notched baffles should be placed in reinforced concrete box culverts at 15-foot intervals to allow for the collection of sediments in the culvert, reduce flow velocities, and to provide resting places for fish moving through the structure.
10. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural river bottom when construction is completed.
11. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

Thank you for the opportunity to review and comment during the early stages of these projects. If you have any questions regarding these comments, please contact me at (828) 452-2546.

cc: Mr. Steven Lund, NCDOT Coordinator, COE, Asheville
Ms. Stacy Harris, P.E., PD & EA Branch, NCDOT, Raleigh
Mr. Mark Cantrell, Biologist, USFWS Asheville
Mr. David Timpy, NCDOT Coordinator, COE Wilmington



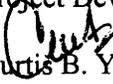
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT JR.
GOVERNOR

DAVID MCCOY
SECRETARY

August 2, 2000

MEMORANDUM TO: William D. Gilmore, PE, Manager
Project Development and Environmental Analysis Branch

FROM: 
Curtis B. Yates, Director

SUBJECT: Replacement of Bridge No. 44 on NC 41
Over South River,
Bladen and Sampson Counties, TIP Project No. B-3613

This memo is to respond to your request for comments on the subject bridge replacement project.

This section of NC 41 is not part of a designated bicycle route nor is it listed in the TIP as needing incidental bicycle accommodations. Our office has no indication that there are an unusual number of bicyclists using this roadway.

We appreciate the opportunity to comment on the subject project. If there is a need for additional information, please contact Tom Norman, Facilities Program Manager, at 715-2342.

CBY/tpn

MAILING ADDRESS:
DIVISION OF BICYCLE & PEDESTRIAN TRANSPORTATION
1552 MAIL SERVICE CENTER
RALEIGH NC 27699-1552

TELEPHONE: 919-715-2340
FAX: 919-715-4422

WEBSITE: WWW.DOT.STATE.NC.US/TRANSIT/BICYCLE/
EMAIL: CBYATES@DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
ROOM 304
RALEIGH NC

Bridge No. 44 on NC 41
over the South River
Bladen / Sampson Counties
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
WBS 33164.1.1
TIP No. B-3613

ADDENDUM TO CATEGORICAL EXCLUSION
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

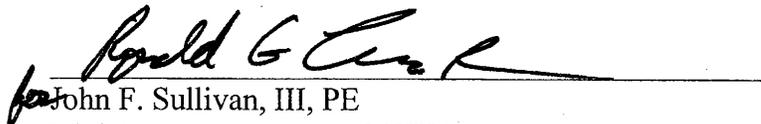
APPROVED:

10/26/06
DATE



Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis Branch, NCDOT

10/26/06
DATE



John F. Sullivan, III, PE
Division Administrator, FHWA

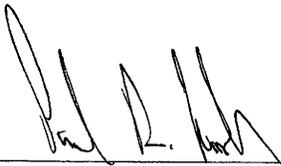
Bridge No. 44 on NC 41
over the South River
Bladen / Sampson Counties
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
WBS 33164.1.1

TIP No. B-3613

ADDENDUM TO CATEGORICAL EXCLUSION

October 2006

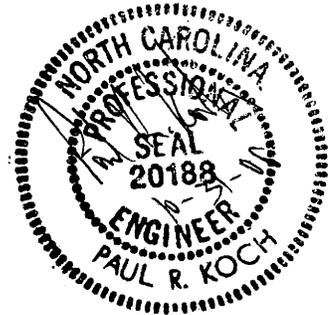
Documentation Prepared by:
Stantec Consulting



Paul R. Koch, PE
Project Manager

10-31-06

Date



For the North Carolina Department of Transportation



Joseph Miller, PE
Project Manager
Consultant Engineering Unit

Bridge No. 44 on NC 41
over the South River
Bladen / Sampson Counties
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
TIP No. B-3613

PROJECT COMMITMENTS

In addition to the Nationwide Permit No. 3, No. 14 and No. 23 Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, Best Management Practices for the Protection of Surface Waters, NCDOT's Guidelines for Best Management Practices for Bridge Demolition and Removal, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Highway Design

Because the section of South River within the project area is designated as an Outstanding Resource Water (ORW), hazardous spill basins will be required.

Maintaining boater access to the river should be considered during design. Existing access is in the northwest quadrant of the bridge. Consideration of access should be integrated with the right-of-way necessary for the hazardous spill basins.

No deck drains will be allowed to discharge directly into the river.

NCDOT Division Office

Removal of the old structure and construction of the new one will be scheduled to avoid in-stream activities between February 1 and July 1 to minimize impacts to anadromous fish passage and sunfish spawning.

Because the section of South River within the project area is designated as an Outstanding Resource Water (ORW), hazardous spill basins will be required.

Addendum to Categorical Exclusion
Bridge No. 44 on NC 41
over the South River
Bladen / Sampson Counties
Federal Aid Project No. BRSTP-41(5)
State Project No. 8.1421201
WBS 33164.1.1
TIP No. B-3613

INTRODUCTION: A Categorical Exclusion for the replacement of Bridge No. 44 (see Exhibit 1 for project vicinity) was signed on August 11, 2003. An Addendum was prepared in September 2004 to document a recommended change in the selection of the Preferred Alternative, subsequent to the signing of the environmental document. Following the publication of the September 2004 Addendum, the selection of the Preferred Alternative changed a second time. Therefore, this Addendum describes the new Preferred Alternative, associated public input, and supporting information.

A. PREFERRED ALTERNATIVE

The August 2003 Categorical Exclusion identified Alternative B, replacing the bridge on new alignment to the south (downstream) and maintaining traffic during construction on the existing bridge, as the Preferred Alternative. Replacing the bridge at its existing location had been eliminated as a preliminary alternative due to the length of the offsite detour (17.8 miles).

Based on input received from the public at a June 2003 small group meeting, and an evaluation by NCDOT Division 3, the length of the detour was subsequently deemed acceptable. Therefore, the September 2004 Addendum presented replacement of the bridge at its existing location (designated as Alternative C) as the Preferred Alternative. Following completion of the first addendum, additional public input was received in response to the newsletter which described the change in the Preferred Alternative. This additional public input opposed utilizing an off-site detour to maintain traffic during construction. Based on this latest public input and coordination with the NCDOT Division Office, the new Preferred Alternative is replacement of Bridge No. 44 at its existing location with a temporary on-site detour on the south (downstream) side. This alternative (Alternative D) is described below:

Alternative D (Preferred) (see Exhibit 2) replaces the bridge at its existing location. The new structure will be 335 feet in length and 33 feet in width. The roadway approach work will extend from approximately 390 feet west to 280 feet east of the existing bridge. It is anticipated that the project will be constructed within existing right of way.

During construction, traffic will be maintained with an on-site detour on the south (downstream) side of the existing bridge. The proposed detour structure should be a 160-foot temporary bridge. Construction of the detour will extend from approximately 600 feet west to 550 feet east of the existing bridge.

B. ESTIMATED COSTS

The estimated cost of the Preferred Alternative is listed in Table 1. The estimated cost of the project listed in the 2006-2012 Transportation Improvement Program (TIP), is \$1,590,000 including \$40,000 for right-of-way, \$1,400,000 for construction, and \$150,000 for prior years costs.

TABLE 1: ESTIMATED COSTS

	Alternative D (Preferred)
Structure Removal (existing)	\$ 80,000
Structure (Proposed)	820,000
Detour Structure & Approaches	360,000
Roadway Approaches	222,000
Miscellaneous and mobilization	343,000
Engineering Contingencies	275,000
ROW/Const. Easements/Utilities	16,000
TOTAL	\$ 2,116,000

C. SUMMARY OF ANTICIPATED IMPACTS

This section provides a summary of anticipated impacts for the Preferred Alternative. Detailed descriptions of the existing conditions and field survey methods are included in the August 2003 Categorical Exclusion.

Terrestrial and Aquatic Communities - Table 2 lists the anticipated impacts to terrestrial and aquatic communities. Impacts are based on a 100 foot right of way (minus the existing right of way of NC 41). Actual construction impacts may be less than those indicated because calculations are based on the worst-case scenario.

TABLE 2: ANTICIPATED IMPACTS TO TERRESTRIAL AND AQUATIC COMMUNITIES

Bridge No. 44 Replacement	Maintained/ Disturbed Community	Dry-Mesic Oak-Hickory Forest Community	Aquatic Community	Stream Impacts	Wetland Impacts
	acres	acres	acres	feet	acres
Alternative D	0.10	1.43	0.08	60	0.0

Wetland Communities – No jurisdictional wetlands were found within the study area.

Threatened and Endangered Species – When the CE was signed in August 2003, biological conclusions of “No Effect” were reached for each of the federally listed species in Bladen and Sampson Counties. No substantial changes to the potential habitat have changed since the CE date. Habitat is present for several FSC species. However, according to the NCNHP, there have been no recorded occurrences of any federally protected species within the project vicinity.

Historic Architecture - A field survey of the Area of Potential Effects (APE) was conducted on December 6, 1999. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). In a concurrence form dated April 19, 2000, the HPO concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix of the August 2003 Categorical Exclusion.

Archaeology - The SHPO, in a memorandum dated June 28, 2000 stated that they “are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project.” A copy of the memorandum is included in the Appendix of the August 2003 Categorical Exclusion.

Relocations - No adverse impact on families or communities is anticipated. It is anticipated that the project will be constructed within existing right of way. No relocatees are expected with implementation of the proposed alternative.

Public Facilities / Social Impacts - No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

Section 4(f) Impacts - The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

Prime Farmlands - Because the bridge will be replaced at its existing location, no impacts to Prime Farmlands are anticipated.

D. PUBLIC INVOLVEMENT

A newsletter was mailed to residents within the study area during November of 2001. The newsletter solicited comments. However, no comments were received from the public.

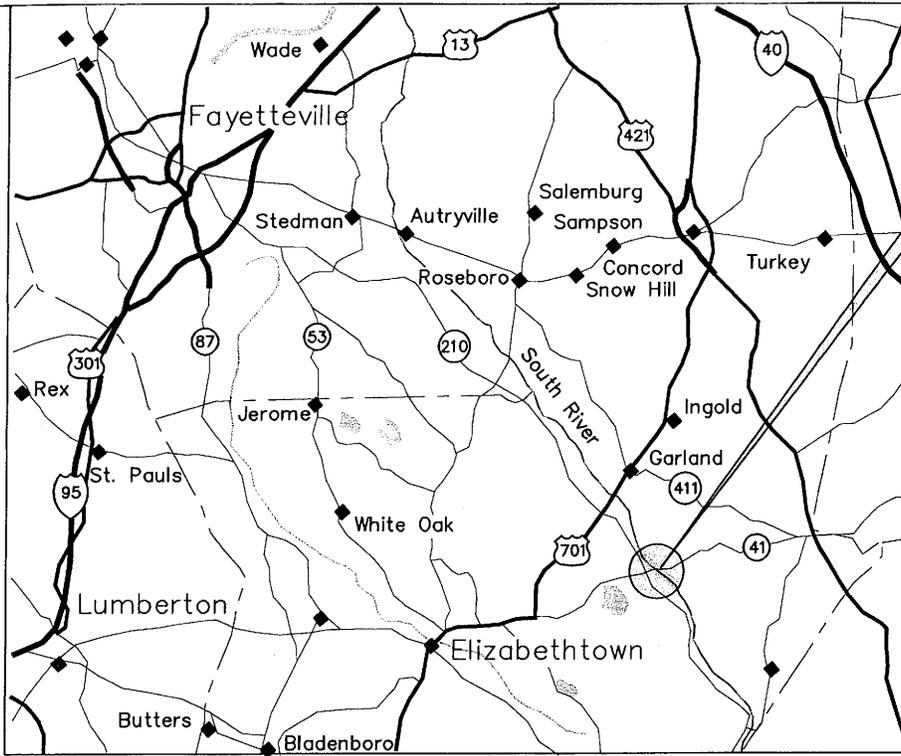
On June 26, 2003, a small group meeting was held at the request of local residents. The meeting was held at Riverside Baptist Church in Harrells, NC. Forty-six citizens attended. Most of the comments heard regarded safety at the nearby intersection of NC 41 and NC 210. Concerns regarding sight distance at the approaches, the grade, and the volume of heavy trucks were raised. NCDOT Division personnel were in attendance and responded to the intersection concerns.

Citizens expressed opposition to replacing the bridge south of its existing location. Several

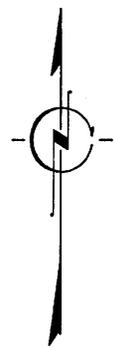
citizens stated a preference for replacing the bridge in-place and using an off-site detour during construction. They stated that shifting the bridge to the south would worsen the sight distance problem at the NC 41/NC 210 intersection. In response to these concerns, NCDOT revised the Recommended Alternative to involve replacing the bridge at its existing location and maintaining traffic with an off-site detour (Alternative C).

A second newsletter was sent in July 2004 to describe Alternative C. Several comments from the public were subsequently received that opposed the offsite detour due to its length. Through coordination between the NCDOT Division staff and several citizens in response to these comments, the Recommended Alternative was revised to include an on-site temporary detour as described in this addendum (Alternative D).

Alternative D was presented to the public at a Citizen's Informational Workshop that was held from 5:00 PM to 7:00 PM on Monday, July 17, 2006 at the Riverside Baptist Church. Displays showing the Recommended Alternative (Alternative D) were available for public viewing and the project staff answered questions. Approximately 26 citizens attended the workshop. Six comment sheets were received prior to the workshop. They were all from the Friends of Sampson Waterways members and all asked that access to the river for paddlers and fishermen be maintained. Four comments were received at the workshop including a resolution from the Sampson County Board of Commissioners that the access to the river be preserved. None of the written comments directly addressed the Recommended Alternative.



Project Vicinity

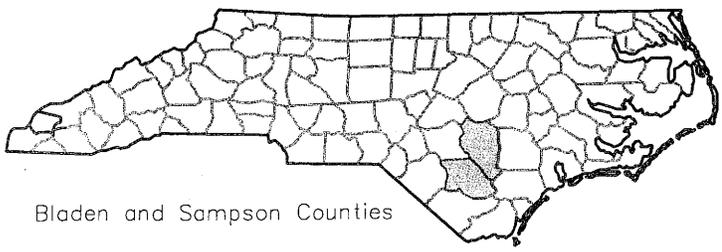
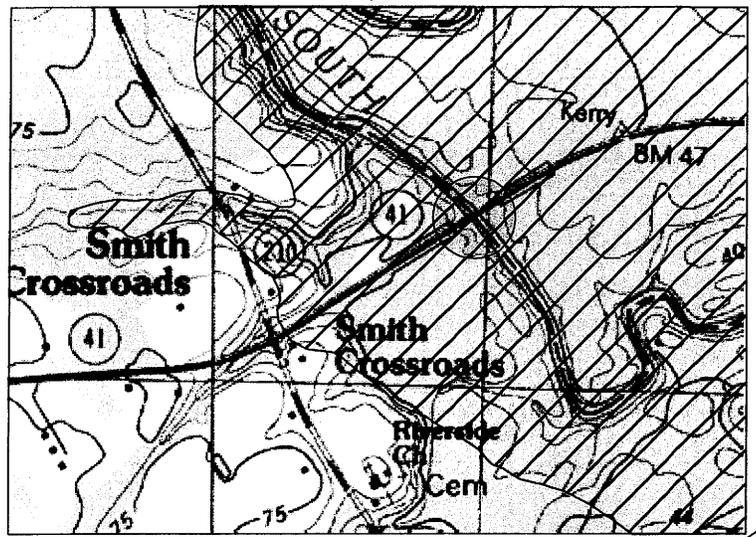


Legend



Limits of 100 Year Floodplains

Note:
Limits of 100 Year Floodplains
from the National Flood Insurance
Program, Flood Insurance Rate Maps
(FIRM) Community-Panel Numbers
370293 0006 A dated January 20, 1978
and 370220 0300 B dated July 16, 1991



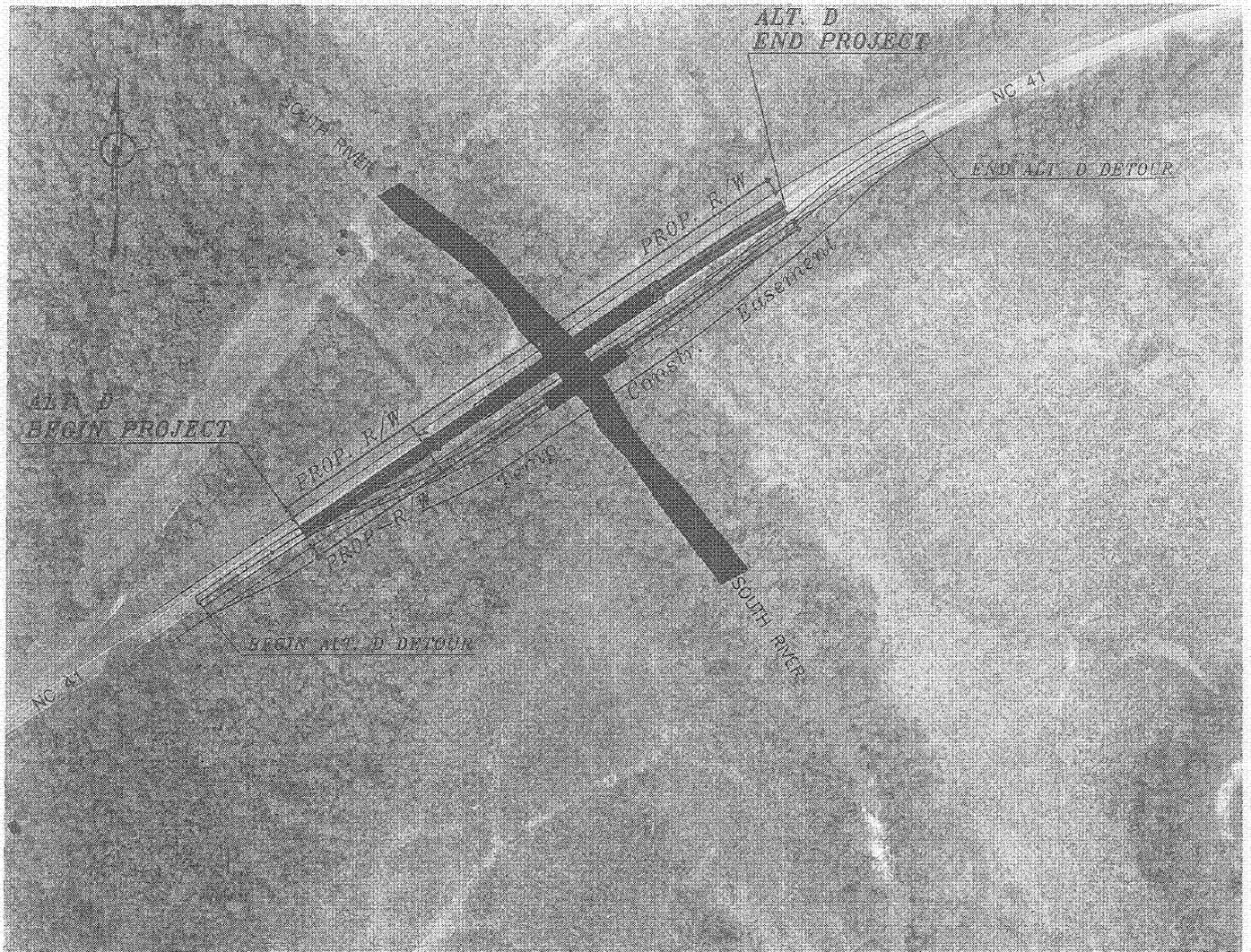
Bladen and Sampson Counties



North Carolina
Department of Transportation

NC 41
Replace Bridge No. 44 over South River
Bladen and Sampson Counties
North Carolina

B-3613
Project Vicinity



BRIDGE No. 44 L=335 FT
 PROP. BRIDGE LENGTH = 335 FT, WIDTH = 33 FT
 PROP. DETOUR BRIDGE LENGTH = 160 FT, WIDTH = 30 FT

Legend

-  Proposed Roadway Improvements
-  Proposed Bridge
-  Temporary Detour
-  Temporary Bridge
-  South River



North Carolina
 Department of Transportation

NC 41
 Replace Bridge No. 44 over South River
 Bladen and Sampson Counties
 North Carolina
B-3613
Alternative D
(Recommended)

Not to Scale

Exhibit 2