



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

April 13, 2005

U. S. Army Corps of Engineers  
Regulatory Field Office  
Post Office Box 1000  
Washington, NC 27889-1000

ATTENTION: Mr. Bill Biddlecome  
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit Application** for the proposed replacement of Bridge No. 76 over the Roanoke River Overflow on US 258, Northampton County, Federal Aid Project No. BRSTP-258(5), State Project No. 8.1101201, TIP B-1303, Division 1, WBS Element 32589.1.1.

Please find enclosed a copy of the project planning report for the above referenced project. Bridge No. 76 will be replaced in the existing location with a 180-foot three span, steel girder bridge with a 40-foot width. The structure will provide two 12-foot travel lanes with eight feet of lateral clearance on each side. The new approach roadway will provide two 12-foot travel lanes with eight feet grass shoulders. While the bridge is under construction, traffic will utilize an on-site detour located to the southeast.

### **Impacts to Waters of the United States**

There is 0.17 acre of proposed permanent jurisdictional wetland impacts (0.10 of mechanized clearing and 0.07 acre of fill) associated with this project. Proposed impacts also include 0.53 acre of temporary fill in wetlands, 0.14 acre of temporary mechanized clearing (amount of clearing to be restored), and 0.03 acre of temporary surface water impacts due to a temporary causeway needed for the on-site detour. Please see attached restoration plan.

### **Bridge Demolition**

Bridge No. 76 is composed of a reinforced concrete deck with an asphalt-wearing surface on steel I-beams. The existing structure is 100 feet long. Due to the structural components of the bridge, there is the possibility of dropping components of the bridge in the water. The estimated amount of temporary fill is 71 cubic yards. All measures will be taken to avoid any temporary fill from entering Waters of the U.S. Best Management Practices for Bridge Demolition and Removal will be implemented.

## Water Resources

One unnamed tributary to Bridgers Creek is located in the project area. This UT is in the Hydrological Cataloguing Unit 03010107 of the Roanoke River Basin. Bridgers Creek is classified as a *Class C* water by DWQ. *Class C* water resources are defined as suitable for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. Wastewater discharge and stormwater management requirements apply to these waters. This bridge also serves as an overflow bridge for the Roanoke River at times of significant flooding.

## Avoidance and Minimization

Bridge No. 76 will be lengthened from 100 feet to 180 feet. As a result, 0.08 acre of wetlands will be restored as a result of existing causeway removal. Fill slopes in wetlands on this project will be 3:1 due to the soils being loose alluvial sandy soils without clay or cohesion in order to avoid major erosion and slope failure.

## Mitigation

Based upon the agreements stipulated in the “Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District” (MOA), it is understood that the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP), will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for NCDOT projects that are listed in Exhibit 1 of the subject MOA during the EEP transition period which ends on June 30, 2005.

Compensatory mitigation to offset unavoidable impacts to waters that are jurisdictional under the federal Clean Water Act will be provided by the Ecosystem Enhancement Program (EEP). The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible. As stated above, NCDOT will restore 0.08 acre of wetlands due to the longer bridge. The remaining, unavoidable impacts to 0.09 acre of jurisdictional wetlands will be offset by compensatory mitigation provided by the EEP. Please see attached EEP acceptance letter.

## Federally Protected Species

As of January 29, 2003, the United States Fish and Wildlife Service (USFWS) lists two federally protected species for Northampton County. The red-cockaded woodpecker (*Picoides borealis*) is listed as endangered. The Bald eagle (*Haliaeetus leucocephalus*) is listed as Threatened. The Biological Conclusions for the two protected species remain: **No Effect**.

## Regulatory Approvals

Section 404 Permit: This project is being processed by the Federal Highway Administration as a “Categorical Exclusion” in accordance with 23 CFR 771.115(b). Therefore, we do not anticipate requesting an individual permit but propose to proceed under a Nationwide 23 as authorized by a Nationwide Permit 23 (67 FR 2020; January 15, 2002). The NCDOT requests that replacement of Bridge No. 76 be authorized by Nationwide Permit 23.

Section 401 Permit: We anticipate 401 General Certification number 3403 will apply to this project. In accordance with 15A NCAC 2H, Section .0500(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review.

The project is currently scheduled to be let in September 2005. You may view a copy of this permit application on the NCDOT website at: <http://www.ncdot.org/planning/pe/naturalunit/Permit.html>.

The NCDOT appreciates your continued assistance with this project. If you have any questions or need additional information, please contact Mr. Chris Underwood at (919) 715-1451.

Sincerely,

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

cc: W/attachment

Mr. John Hennessy, Division of Water Quality (7 copies)  
Mr. Gary Jordan, USFWS  
Mr. Travis Wilson, NCWRC  
Mr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Mark Staley, Roadside Environmental  
Mr. Don Conner, P.E., Division 1 Engineer  
Mr. Clay Willis, DEO, Division 1

W/o attachment

Mr. David Franklin, USACE, Wilmington (Cover Letter Only)  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Omar Sultan, Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Ms. Beth Harmon, EEP  
Ms. Robin Hancock, P.E., PDEA



April 12, 2005

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

**B-1303**, Replace Bridge 76 over the Roanoke River Overflow on  
US 258, Northampton County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide compensatory mitigation for the subject project. Based on the information supplied by you in a letter dated April 4, 2005, the impacts requiring EEP mitigation are located in Cataloging Unit 03010107 of the Roanoke River Basin in the Northern Inner Coastal Plain Eco-Region, and are summarized below.

Wetland Impacts: 0.09 acre

**This letter replaces the mitigation acceptance letter issued on February 7, 2005.** As stated in your letter, the subject project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The compensatory mitigation for the subject project will be provided in accordance with Section IX, EEP Transition Period, of this agreement.

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

Sincerely,

William D. Gilmore, P.E.  
EEP Director

cc: Mr. Bill Biddlecome, USACE - Washington  
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit  
File No. B-1303 Revised

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





April 12, 2005

Mr. Bill Biddlecome  
U. S. Army Corps of Engineers  
Washington Regulatory Field Office  
Post Office Box 1000  
Washington, North Carolina 27889-1000

Dear Mr. Biddlecome:

Subject: EEP Mitigation Acceptance Letter

**B-1303, Replace Bridge 76 over the Roanoke River Overflow on US 258),  
Northampton County; Roanoke River Basin (Cataloging Unit 03010107);  
Northern Inner Coastal Plain (NICP) Eco-Region**

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) proposes to provide high quality preservation to compensate for the unavoidable 0.09 acre of riverine wetland associated with the subject project in the following manner:

**Wetland Preservation (10:1) in Same Eco-Region**

Roanoke River (Halifax County)

0.90 acre

**This letter replaces the mitigation acceptance letter issued on February 7, 2005.** The subject TIP project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The compensatory mitigation for the project will be provided in accordance with Section IX, EEP Transition Period, of the Agreement.

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

Sincerely,

William D. Gilmore, P.E.  
EEP Director

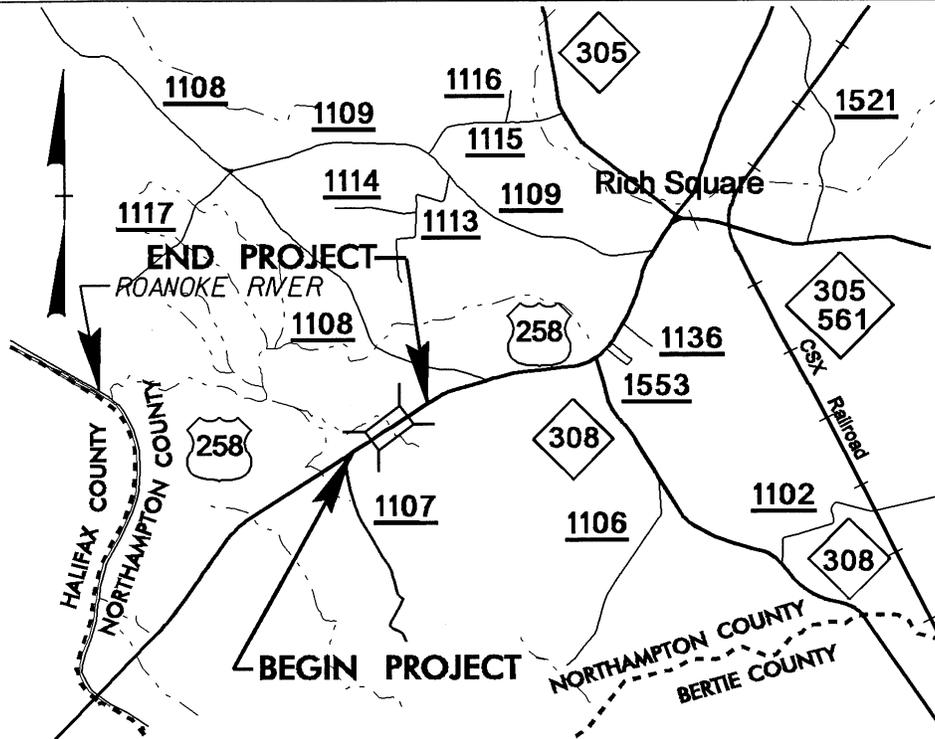
cc: Mr. Phil Harris, Office of Natural Environment, NCDOT  
Mr. John Hennessey, Division of Water Quality, Wetlands/401 Unit  
File: B-1303 Revised

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



North Carolina Ecosystem Enhancement Program, 1652 Mail Service Center, Raleigh, NC 27699-1652 / 919-715-0476 / www.nceep.net

# NORTH CAROLINA



## VICINITY MAPS

**NCDOT**  
DIVISION OF HIGHWAYS  
NORTHAMPTON COUNTY  
PROJECT: 32589.1.1 (B-1303)

BRIDGE NO. 76 OVER ROANOKE  
RIVER OVERFLOW ON US 258  
SOUTHWEST OF RICH SQUARE



SITE MAP

**NCDOT**

**DIVISION OF HIGHWAYS  
NORTHAMPTON COUNTY  
PROJECT: 32589.11 (B-1303)**

**BRIDGE NO. 76 OVER ROANOKE  
RIVER OVERFLOW ON US 258  
SOUTHWEST OF RICH SQUARE**



7/27/99

REVISIONS

PROJECT REFERENCE NO. B-1303	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH UNITS

MICHAEL S. COOKE, et al  
DB 576 PG 896  
DB 390 PG 302

1

STA 13+00.00 -L- BEGIN STATE PROJECT B-1303

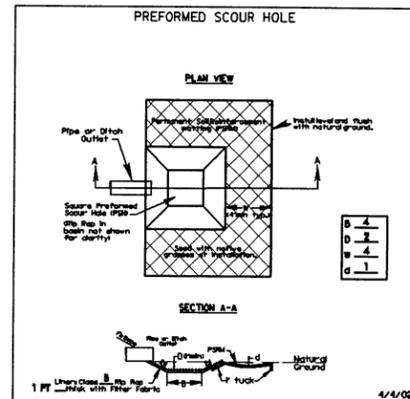
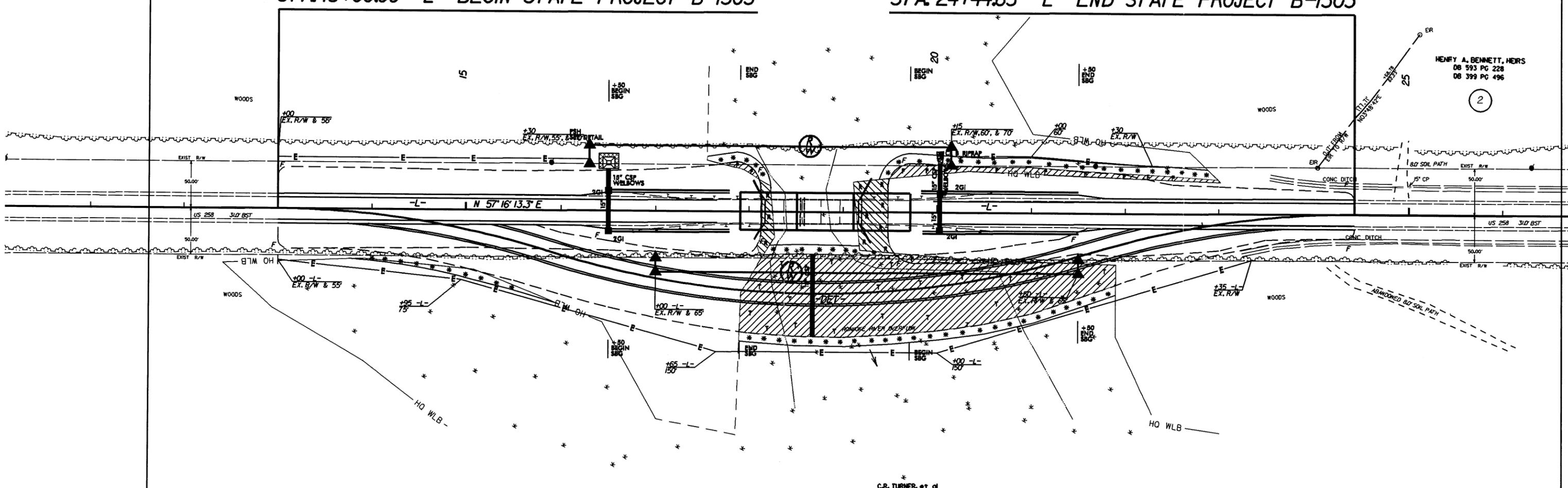
STA 24+44.63 -L- END STATE PROJECT B-1303

HENRY A. BENNETT, HERS  
DB 593 PG 228  
DB 399 PG 496

2

C.R. TURNER, et al  
DB 344 PG 288

3



- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES RESTORATION OF WETLAND

22-SEP-2004 10:25  
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maniborn

7/2/99

REVISIONS

PROJECT REFERENCE NO. B-1303		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

ENGLISH UNITS

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DB 576 PG 836  
DB 390 PG 302

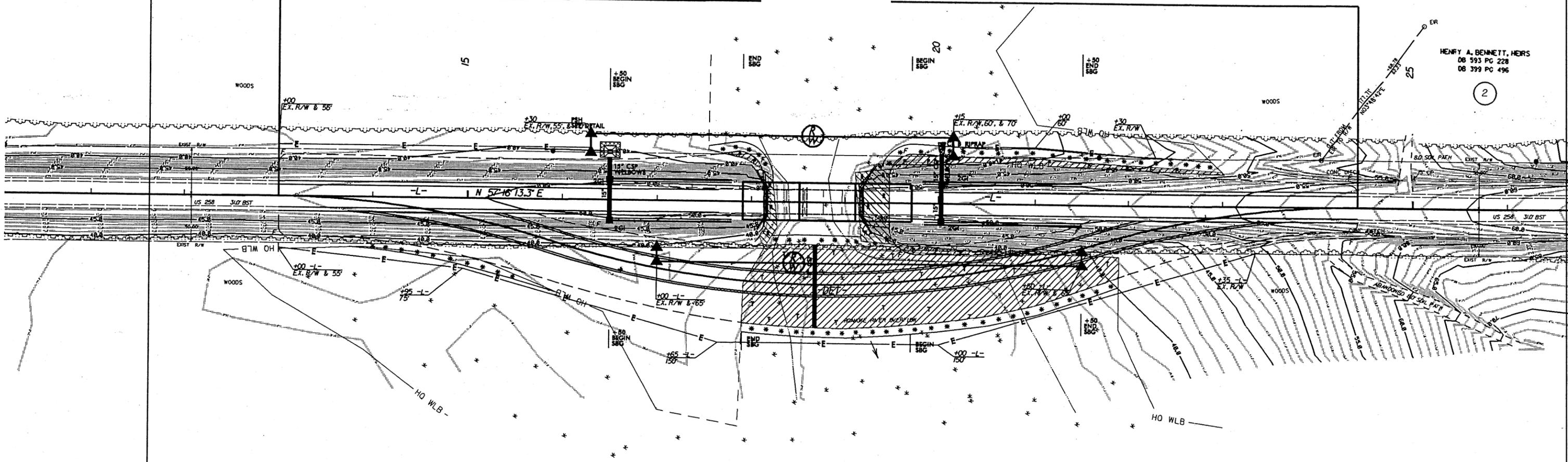
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STA. 24+44.63 -L- END STATE PROJECT B-1303

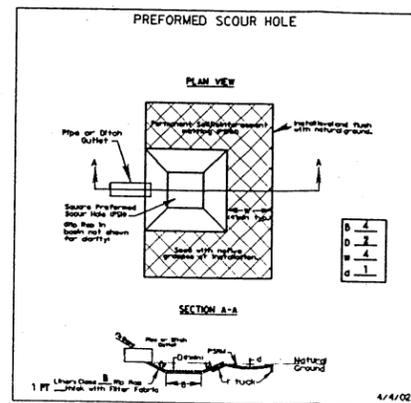
HENRY A. BENNETT, HEIRS  
DB 593 PG 228  
DB 399 PG 496

2



C.R. TURNER, et al  
DB 348 PG 288

3



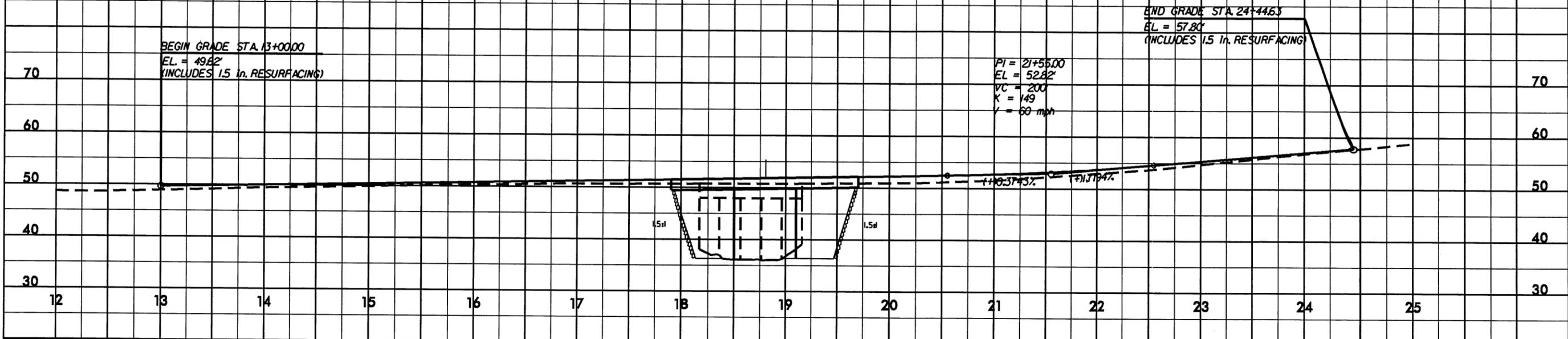
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES RESTORATION OF WETLAND

SEP-2004 10:25  
1303.dwg  
msh

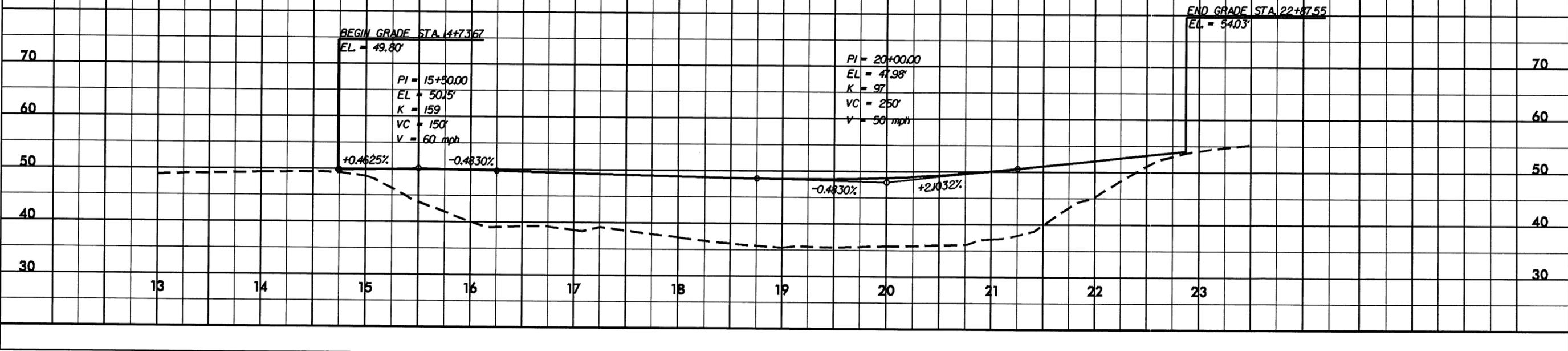
5/28/99

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 35,000 CFS
DESIGN FREQUENCY	= 50 YR
DESIGN HW ELEVATION	= 35.8 FT
BASE DISCHARGE	= 6,000 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 39.8 FT
OVERTOPPING DISCHARGE	= N/A CFS
OVERTOPPING FREQUENCY	= 500 YR
OVERTOPPING HW ELEVATION	= N/A FT

BM RR SPIKE IN BASE OF POWER POLE  
TAGGED MCP "M3456", NORTH SIDE OF US 258  
ELEV = 74.50  
COORDINATES: N 92966.3, E 249243.6



**-DET-**



22-SEP-2004 08:37  
R:\Hydr\aut\cs\1303\_hyd\_pf1.dgn  
msdown

# PROPERTY OWNERS

## NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	MICHAEL S. COOKE, et al	4919 RICHLAND DR. RALEIGH, NC 27612
3	C. R. TURNER, et al	6 LONGSTREET WELDON, NC 27890

### NCDOT

DIVISION OF HIGHWAYS

PROJECT: 32589.1.1 (B-1303)

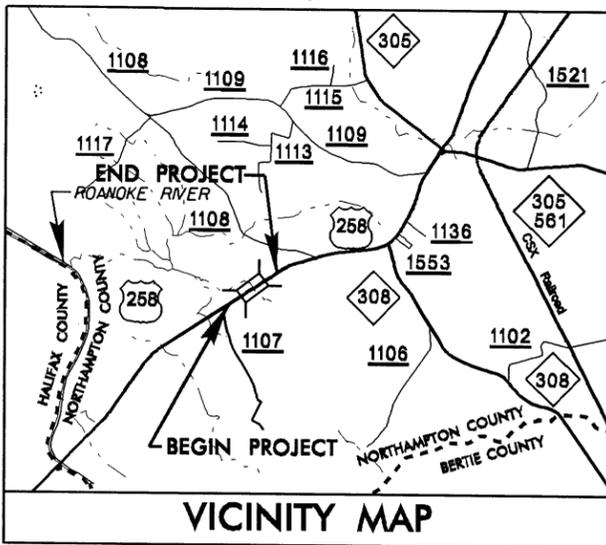
PROJECT: 32589.1.1 (B-1303)

BRIDGE NO.76 OVER ROANOKE  
RIVER OVERFLOW ON US 258  
SOUTHWEST OF RICH SQUARE

9/09/09

CONTRACT: C201289 TIP PROJECT: B-1303

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

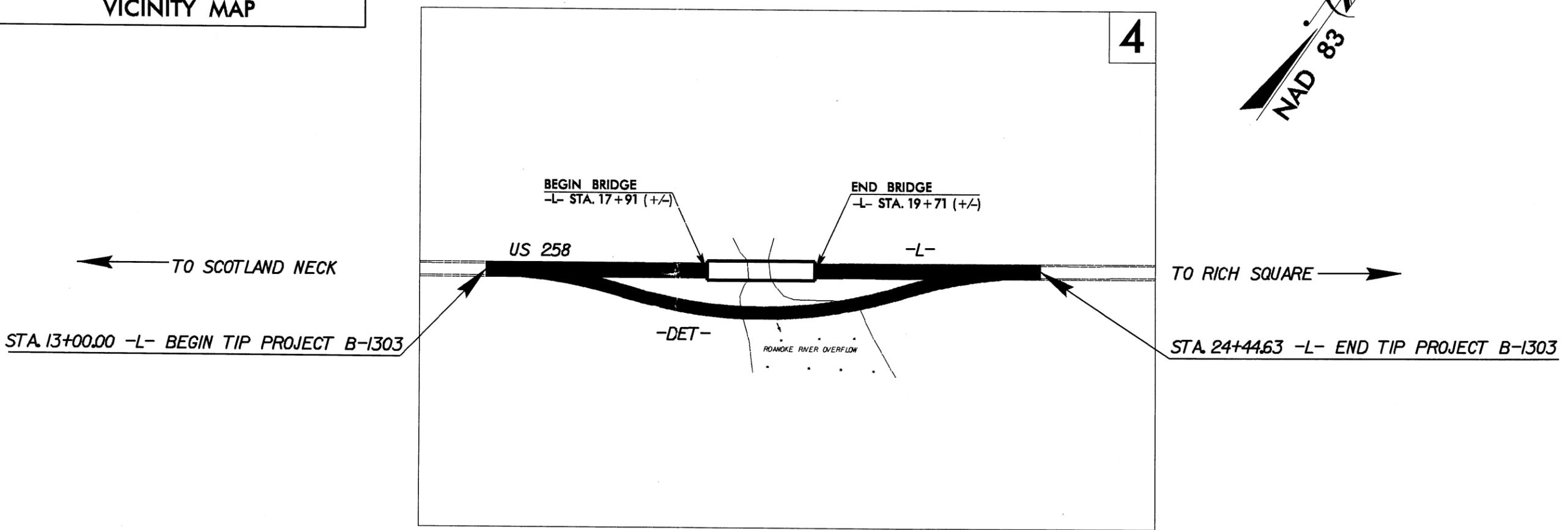
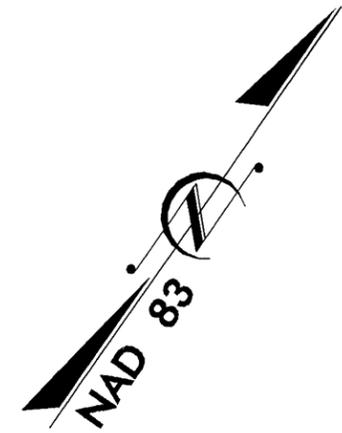


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**NORTHAMPTON COUNTY**

LOCATION: BRIDGE NO. 76 OVER ROANOKE RIVER OVERFLOW  
ON US 258 SOUTHWEST OF RICH SQUARE

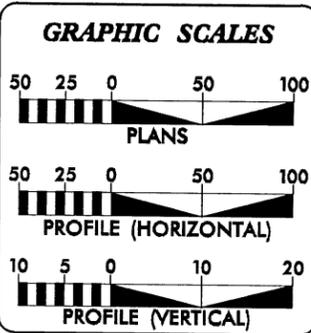
TYPE OF WORK: GRADING, DRAINAGE, GUARDRAIL,  
STRUCTURE, AND SIGNING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-1303	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
32589.1.1	BRSTP-258(5)	P.E.	
32589.2.2	BRSTP-258(5)	R/W, UTIL	



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



**DESIGN DATA**

ADT 2005 =	3260
ADT 2025 =	4490
DHV	11 %
D	55 %
T	20 % *
V	60 MPH
FUNC CLASS	= RURAL MINOR ARTERIAL
*( TTST 15% + DUAL 5%)	

**PROJECT LENGTH**

LENGTH OF ROADWAY TIP PROJECT B-1303	=	0.183 MILES
LENGTH OF STRUCTURES TIP PROJECT B-1303	=	0.034 MILES
TOTAL LENGTH OF TIP PROJECT B-1303	=	0.217 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
SEPTEMBER 17, 2004

LETTING DATE:  
SEPTEMBER 20, 2005

**HYDRAULICS ENGINEER**

\_\_\_\_\_  
SIGNATURE: P.E.

**ROADWAY DESIGN ENGINEER**

\_\_\_\_\_  
SIGNATURE: P.E.

**DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA**

\_\_\_\_\_  
STATE DESIGN ENGINEER P.E.

**DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION**

\_\_\_\_\_  
APPROVED DIVISION ADMINISTRATOR

\_\_\_\_\_  
DATE

28 SEP 2004 08:20  
RS: sep, kb, 30  
TE: [unclear]

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CONVENTIONAL SYMBOLS

\*S.U.E = SUBSURFACE UTILITY ENGINEER

## ROADS & RELATED ITEMS

Edge of Pavement	-----
Curb	-----
Prop. Slope Stakes Cut	----- C
Prop. Slope Stakes Fill	----- F
Prop. Woven Wire Fence	----- ○ ○
Prop. Chain Link Fence	----- □ □
Prop. Barbed Wire Fence	----- ◇ ◇
Prop. Wheelchair Ramp	----- WCR
Curb Cut for Future Wheelchair Ramp	----- DCFR
Exist. Guardrail	----- Y Y
Prop. Guardrail	----- Y Y
Exist. Cable Guiderail	----- A A
Prop. Cable Guiderail	----- A A
Equality Symbol	----- ⊕
Pavement Removal	----- ⊕

## RIGHT OF WAY

Baseline Control Point	----- ◆
Existing Right of Way Marker	----- △
Exist. Right of Way Line wMarker	----- △
Prop. Right of Way Line with Proposed R/W Marker (Iron Pin & Cap)	----- ▲
Prop. Right of Way Line with Proposed (Concrete or Granite) R/W Marker	----- ⊙
Exist. Control of Access Line	----- ⊙
Prop. Control of Access Line	----- ⊙
Exist. Easement Line	----- E
Prop. Temp. Construction Easement Line	----- E
Prop. Temp. Drainage Easement Line	----- TDE
Prop. Perm. Drainage Easement Line	----- POE

## HYDROLOGY

Stream or Body of Water	-----
Flow Arrow	----- →
Disappearing Stream	----- Y
Spring	----- ○
Swamp Marsh	----- ⋈
Shoreline	----- - - - -
Falls, Rapids	----- + + + +
Prop Lateral, Tail, Head Ditches	----- ← FLOW

## STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	----- CONC
Bridge Wing Wall, Head Wall and End Wall	----- CONC WW

## MINOR

Head & End Wall	----- CONC HW
Pipe Culvert	----- P
Footbridge	----- > <
Drainage Boxes	----- CB
Paved Ditch Gutter	----- ---

## UTILITIES

Exist. Pole	----- •
Exist. Power Pole	----- •
Prop. Power Pole	----- ○
Exist. Telephone Pole	----- •
Prop. Telephone Pole	----- ○
Exist. Joint Use Pole	----- •
Prop. Joint Use Pole	----- ○
Telephone Pedestal	----- □
Cable TV Pedestal	----- □
Hydrant	----- ⊕
Satellite Dish	----- ⋈
Exist. Water Valve	----- ⊗
Sewer Clean Out	----- ⊕
Power Manhole	----- ⊕
Telephone Booth	----- ⊕
Water Manhole	----- ⊕
Light Pole	----- ⊕
H-Frame Pole	----- ⊕
Power Line Tower	----- ⊕
Pole with Base	----- ⊕
Gas Valve	----- ⊕
Gas Meter	----- ⊕
Telephone Manhole	----- ⊕
Power Transformer	----- ⊕
Sanitary Sewer Manhole	----- ⊕
Storm Sewer Manhole	----- ⊕
Tank; Water, Gas, Oil	----- ⊕
Water Tank With Legs	----- ⊕
Traffic Signal Junction Box	----- ⊕
Fiber Optic Splice Box	----- ⊕
Television or Radio Tower	----- ⊕
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	----- TS TS

Recorded Water Line	----- W W
Designated Water Line (S.U.E.*)	----- W W
Sanitary Sewer	----- SS SS
Recorded Sanitary Sewer Force Main	----- FSS FSS
Designated Sanitary Sewer Force Main(S.U.E.*)	----- FSS FSS
Recorded Gas Line	----- G G
Designated Gas Line (S.U.E.*)	----- G G
Storm Sewer	----- S S
Recorded Power Line	----- P P
Designated Power Line (S.U.E.*)	----- P P
Recorded Telephone Cable	----- T T
Designated Telephone Cable (S.U.E.*)	----- T T
Recorded U/G Telephone Conduit	----- TC TC
Designated U/G Telephone Conduit (S.U.E.*)	----- TC TC
Unknown Utility (S.U.E.*)	----- ?UTL ?UTL
Recorded Television Cable	----- TV TV
Designated Television Cable (S.U.E.*)	----- TV TV
Recorded Fiber Optics Cable	----- FO FO
Designated Fiber Optics Cable (S.U.E.*)	----- FO FO
Exist. Water Meter	----- ⊕
U/G Test Hole (S.U.E.*)	----- ⊕
Abandoned According to U/G Record	----- ATTUR
End of Information	----- E.O.I.

## BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	----- PL
Exist. Iron Pin	----- ⊕
Property Corner	----- +
Property Monument	----- ECM
Property Number	----- 123
Parcel Number	----- 6
Fence Line	----- X X X X WW & ISBW
Existing Wetland Boundaries	----- WLB
Proposed Wetland Boundaries	----- WLB
Existing Endangered Animal Boundaries	----- EAB
Existing Endangered Plant Boundaries	----- EPB

## BUILDINGS & OTHER CULTURE

Buildings	----- ⊕
Foundations	----- ⊕
Area Outline	----- ⊕
Gate	----- /
Gas Pump Vent or U/G Tank Cap	----- ○
Church	----- ⊕
School	----- ⊕
Park	----- ⊕
Cemetery	----- ⊕
Dam	----- ⊕
Sign	----- ○
Well	----- ○
Small Mine	----- ⊕
Swimming Pool	----- ⊕

## TOPOGRAPHY

Loose Surface	-----
Hard Surface	-----
Change in Road Surface	-----
Curb	-----
Right of Way Symbol	----- R/W
Guard Post	----- ⊕ GP
Paved Walk	-----
Bridge	----- ⊕
Box Culvert or Tunnel	----- ⊕
Ferry	-----
Culvert	-----
Footbridge	-----
Trail, Footpath	-----
Light House	----- ⊕

## VEGETATION

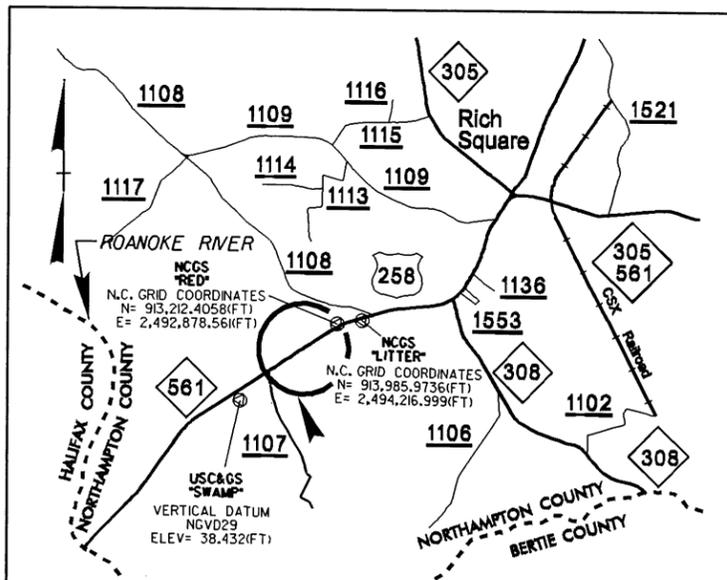
Single Tree	----- ⊕
Single Shrub	----- ⊕
Hedge	----- ⊕
Woods Line	----- ⊕
Orchard	----- ⊕
Vineyard	----- VINEYARD

## RAILROADS

Standard Gauge	----- CSX TRANSPORTATION
RR Signal Milepost	----- MILEPOST 35
Switch	----- SWITCH

5/28/99  
28-SEP-2004 08:24  
T:\Duncan

# SURVEY CONTROL SHEET B-1303



### CONTROL DATA

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		BL1	911797.9230	2490748.5920	47.88	OUTSIDE PROJECT LIMITS	
2		BL2	912591.4550	2491986.6350	55.31	23+85.88	19.62 RT

### BENCHMARK DATA

.....  
 BM5 ELEVATION = 74.50  
 N 912966 E 2492439  
 L STATION 27+31  
 N 45° 04' 07.9" E DIST 242.95  
 R/R SPIKE LOCATED IN THE BASE OF A  
 POWER POLE TAGGED NCP \*M134567. NORTH  
 SIDE OF US 258.  
 .....  
 BM6 ELEVATION = 44.64  
 N 911604 E 2490321  
 L STATION 10+00  
 S 62° 29' 11.2" W DIST 551.45  
 R/R SPIKE LOCATED IN THE BASE OF A  
 POWER POLE TAGGED NCP \*M1345611. NORTH  
 SIDE OF US 258.  
 .....



STA. 13+00.00 -L- BEGIN TIP PROJECT B-1303

LOCALIZED PROJECT COORDINATES  
 N = 912,020.861  
 E = 2,491,062.553

TO SCOTLAND NECK

US 258

-L-

US 258

TO RICH SQUARE

NCDOT BASELINE STATION "BL1"  
 LOCALIZED PROJECT COORDINATES  
 N = 911,797.923  
 E = 2,490,748.592

-DET-

NCDOT BASELINE STATION "BL2"  
 LOCALIZED PROJECT COORDINATES  
 N = 912,591.455  
 E = 2,491,986.635

ROANOKE RIVER OVERFLOW

STA. 24+44.63 -L- END TIP PROJECT B-1303

LOCALIZED PROJECT COORDINATES  
 N = 912,639.724  
 E = 2,492,025.452

### DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "RED" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 913212.4058(Ft) EASTING: 2492878.561(Ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000020508 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "RED" TO -L- STATION 13+00.00 IS S 56°43'46" W 2.172024 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

### NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING [HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project)

FILE: b1303\_la\_control\_040331.txt

SITE CALIBRATION PARAMETERS HAVE NOT BEEN DETERMINED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

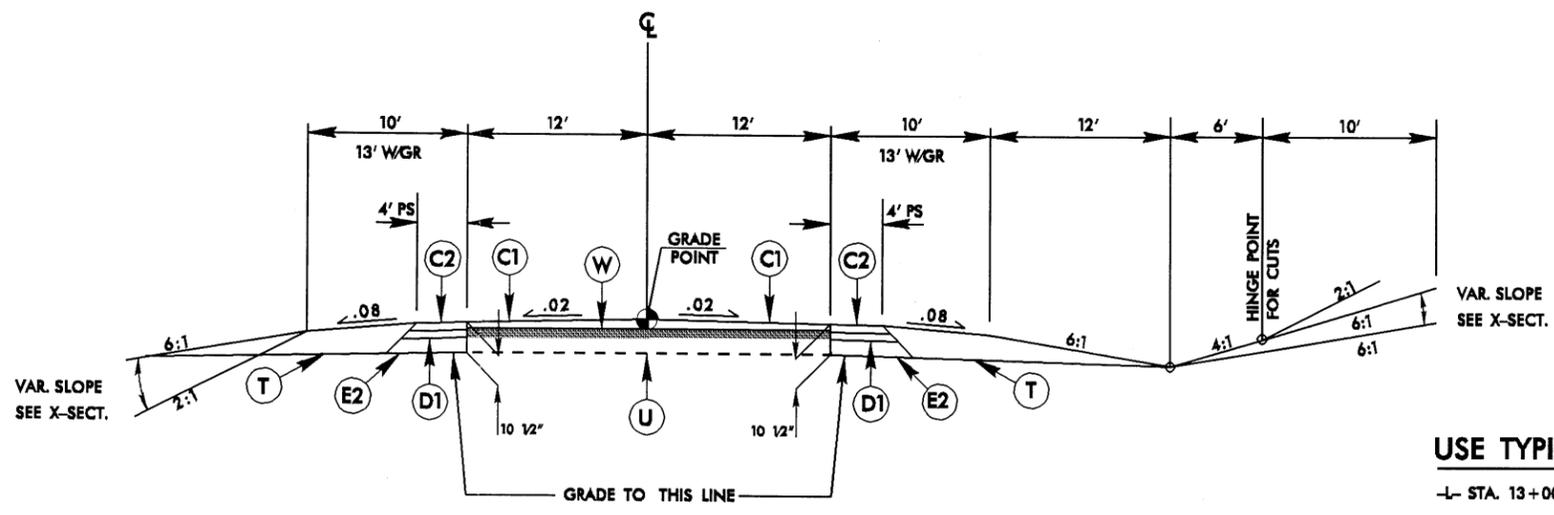
**NOTE: DRAWING NOT TO SCALE**

6/2/78

PROJECT REFERENCE NO. B-1303	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE ( FINAL PAVEMENT DESIGN )	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 188 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE 89.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1 1/2" IN DEPTH OR GREATER THAN 2 1/4" IN DEPTH.
D1	PROP. APPROX. 2 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0B, AT AN AVERAGE RATE OF 285 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 119.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 488 LBS. PER SQ. YD.
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT. (SEE WEDGING DETAIL)

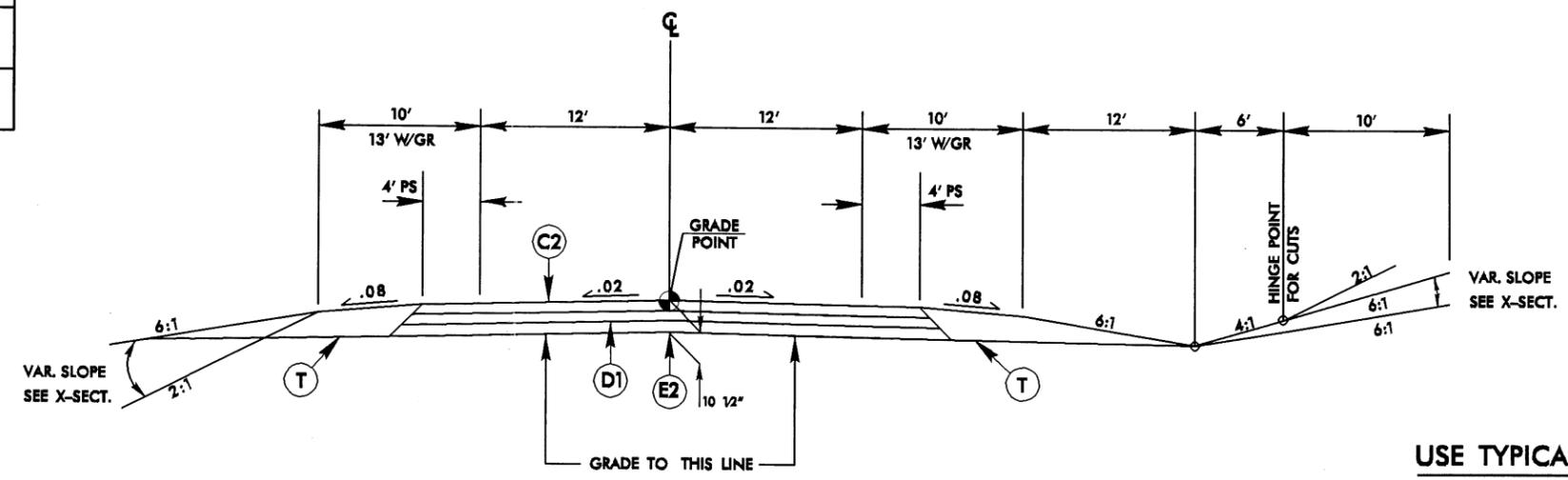
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



**TYPICAL SECTION NO. 1**

**USE TYPICAL SECTION NO. 1**

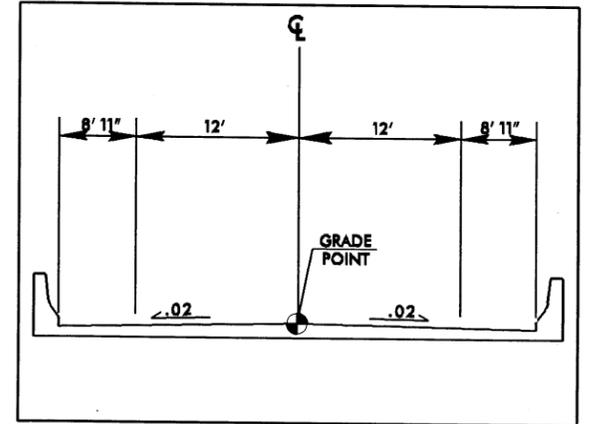
-L- STA. 13+00.00 TO -L- STA. 17+40.00  
-L- STA. 20+20.00 TO -L- STA. 24+44.63



**TYPICAL SECTION NO. 2**

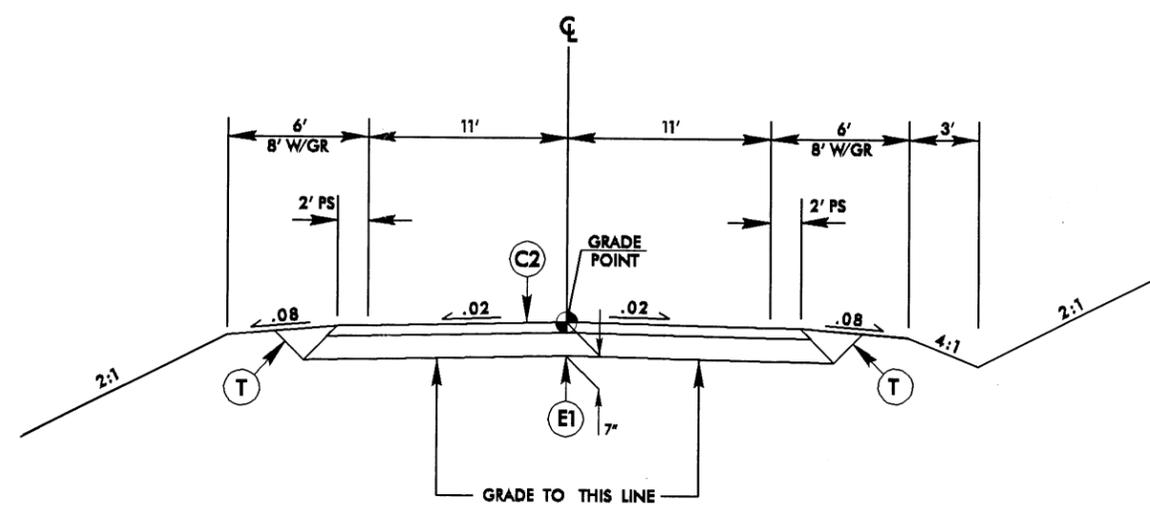
**USE TYPICAL SECTION NO. 2**

-L- STA. 17+40.00 TO -L- STA. 17+91 (+/-) (BEG. BRIDGE)  
-L- STA. 19+71 (+/-) (END BRIDGE) TO -L- STA. 20+20.00



**TYPICAL BRIDGE DETAIL**

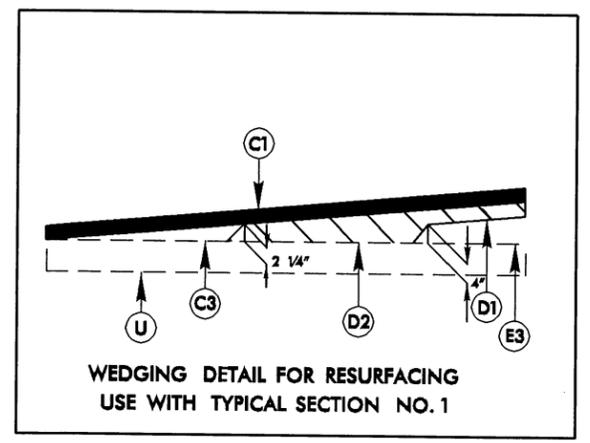
-L- STA. 17+91 (+/-) TO -L- STA. 19+71 (+/-)



**TYPICAL SECTION NO. 3**

**USE TYPICAL SECTION NO. 3**

-DET- STA. 14+73.67 TO -DET- STA. 15+34.09 TRANSITION FROM EXIST  
-DET- STA. 15+34.09 TO -DET- STA. 22+28.13  
-DET- STA. 22+28.13 TO -DET- STA. 22+87.55 TRANSITION TO EXIST



**WEDGING DETAIL FOR RESURFACING  
USE WITH TYPICAL SECTION NO. 1**

28-SEP-2004 08:20  
E:\proj\161303\Fyp  
D:\unc\am

7/2/99

REVISIONS	

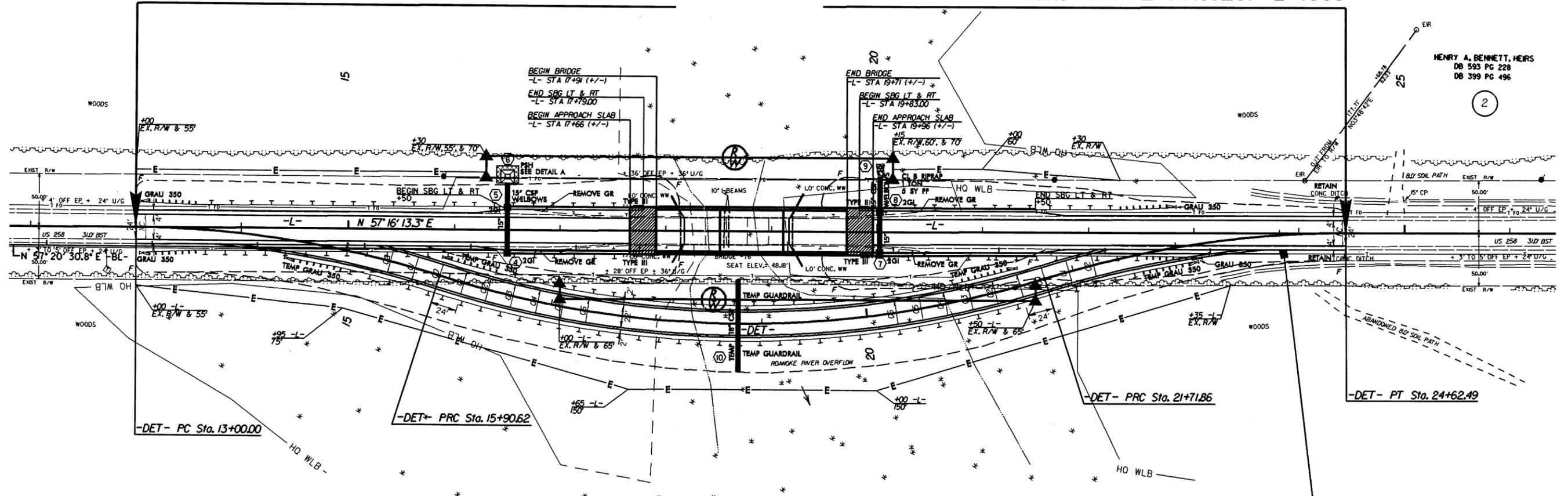
PROJECT REFERENCE NO. B-1303	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

MICHAEL S. COOKE, et al  
DB 576 PG 896  
DB 390 PG 302

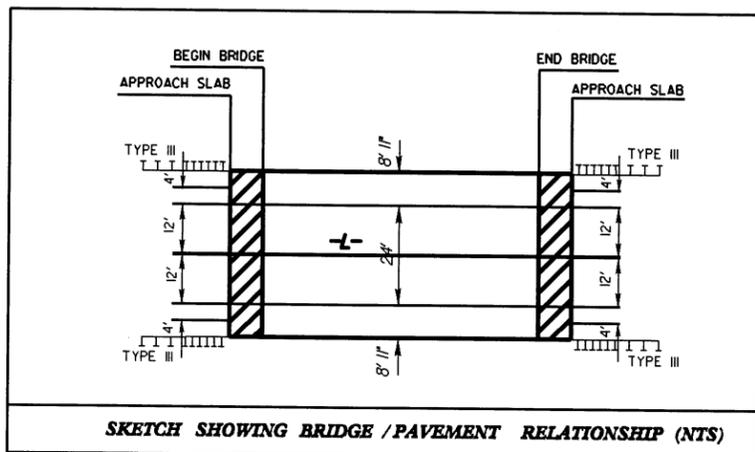


STA. 13+00.00 -L- BEGIN STATE PROJECT B-1303

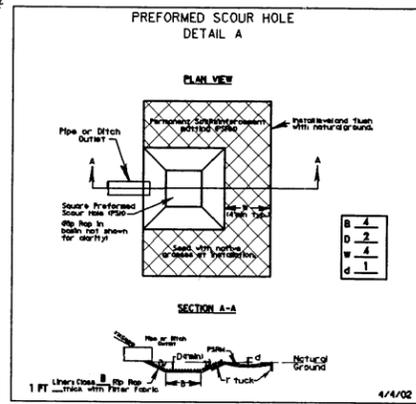
STA. 24+44.63 -L- END STATE PROJECT B-1303



HENRY A. BENNETT, MEIRS  
DB 593 PG 228  
DB 399 PG 496



SKETCH SHOWING BRIDGE / PAVEMENT RELATIONSHIP (NTS)



-L- STA. 16+50.20

C.R. TURNER, et al  
DB 341 PG 288

-DET-		
PI Sta 14+46.44	PI Sta 18+90.56	PI Sta 23+18.31
$\Delta = 17' 26' 09.6\" (RT)$	$\Delta = 34' 52' 19.2\" (LT)$	$\Delta = 17' 26' 09.6\" (RT)$
$D = 5' 59' 58.4\"$	$D = 5' 59' 58.4\"$	$D = 5' 59' 58.4\"$
$L = 290.62'$	$L = 581.24'$	$L = 290.62'$
$T = 146.44'$	$T = 292.94'$	$T = 146.44'$
$R = 955.00'$	$R = 955.00'$	$R = 955.00'$
$SE = .02$	$SE = .06$	$SE = .02$
$RO = 48'$	$RO = 144'$	$RO = 48'$

SBG: SHOULDER BERM GUTTER  
 PSH: PREFORMED SCOUR HOLE  
 FOR -L- PROFILE SEE SHEET 5  
 FOR -DET- PROFILE SEE SHEET 5

28-SEP-2004 08:20  
TF: Duncan

5/28/99

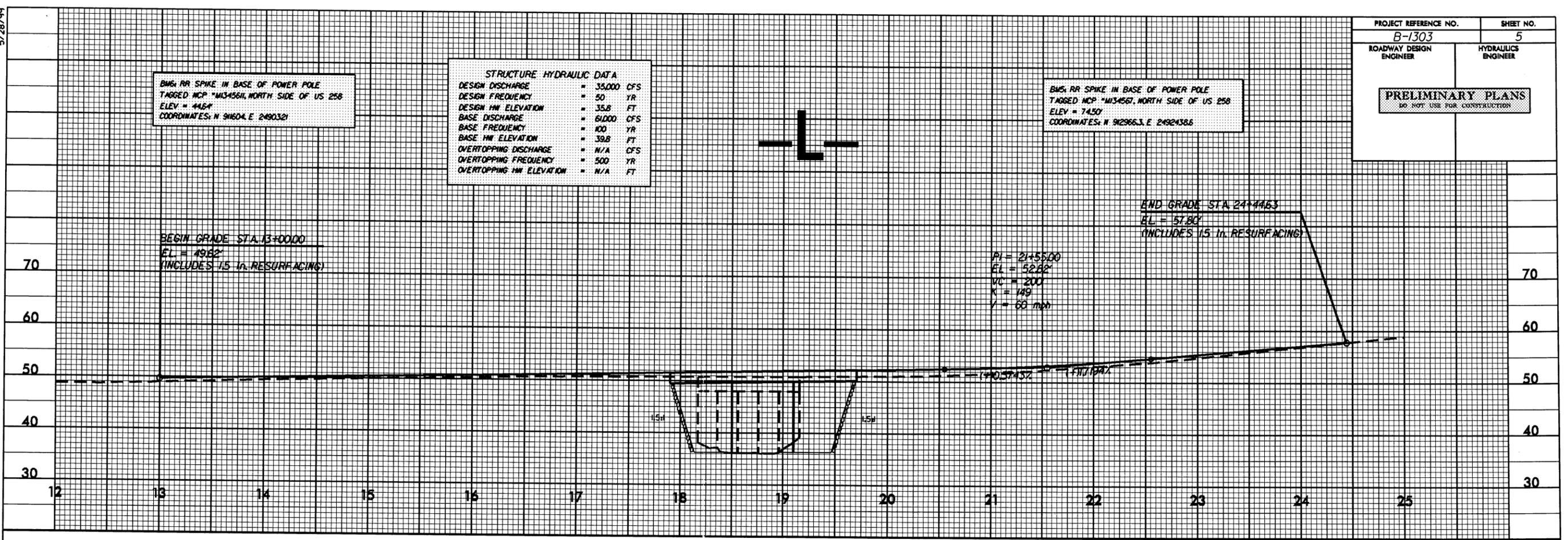
PROJECT REFERENCE NO. B-1303	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

BM: RR SPIKE IN BASE OF POWER POLE  
TAGGED MCP "M34561, NORTH SIDE OF US 258"  
ELEV = 44.8'  
COORDINATES: N 31624, E 2490321

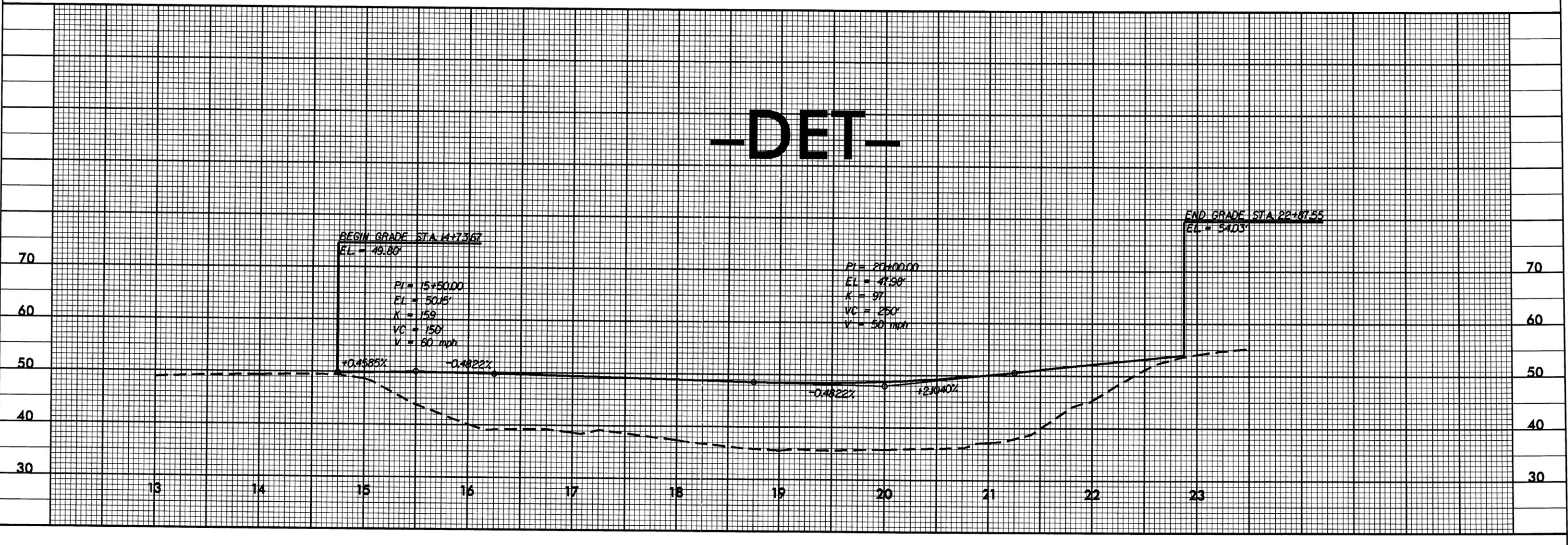
**STRUCTURE HYDRAULIC DATA**

DESIGN DISCHARGE	= 35,000 CFS
DESIGN FREQUENCY	= 50 YR
DESIGN HW ELEVATION	= 35.8 FT
BASE DISCHARGE	= 6100 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 39.8 FT
OVERTOPPING DISCHARGE	= N/A CFS
OVERTOPPING FREQUENCY	= 500 YR
OVERTOPPING HW ELEVATION	= N/A FT

BM: RR SPIKE IN BASE OF POWER POLE  
TAGGED MCP "M34561, NORTH SIDE OF US 258"  
ELEV = 74.50'  
COORDINATES: N 929663, E 24924366



**-DET-**



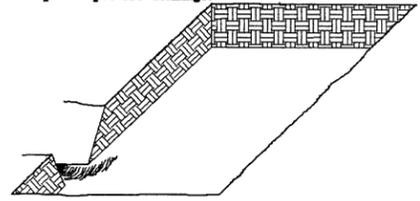
28-SEP-2004 08:48:03  
T:\proj\A\1303\dwg\pl.dgn  
TFDunson

## PLANTING DETAILS

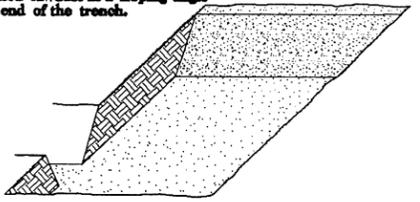
### SEEDLING / LINER BAREROOT PLANTING DETAIL

#### HEALING IN

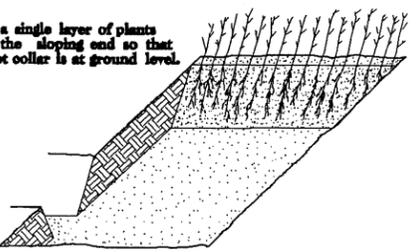
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



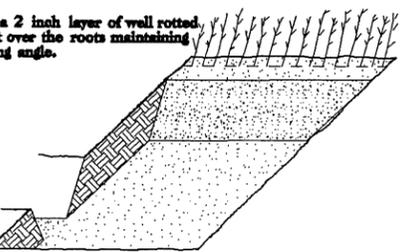
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

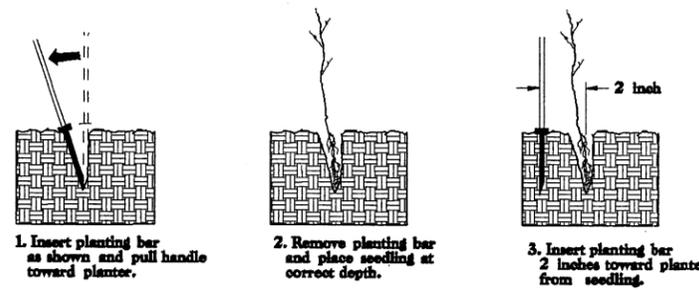


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

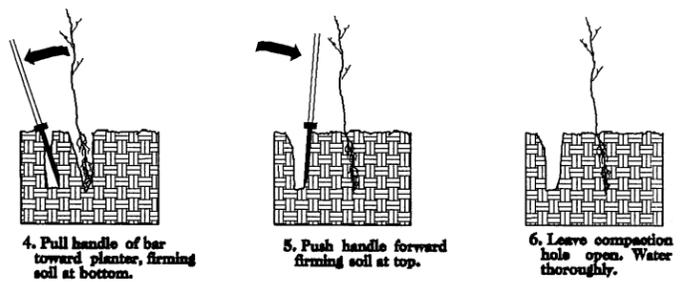


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

#### DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.
2. Remove planting bar and place seedling at correct depth.
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.
5. Push handle forward firming soil at top.
6. Leave compaction hole open. Water thoroughly.

#### PLANTING NOTES:

**PLANTING BAG**  
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



**KBC PLANTING BAR**  
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



**ROOT PRUNING**  
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

## REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

#### REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

25% TAXODIUM DISTICHUM	BALDCYPRESS	12 in - 18 in BR
25% QUERCUS LYRATA	OVERCUP OAK	12 in - 18 in BR
25% PRUNUS SEROTINA	BLACK CHERRY	12 in - 18 in BR
25% SALIX NIGRA	BLACK WILLOW	12 in - 18 in BR

## REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

Northampton County,  
Bridge No. 76 on US 258  
Over Roanoke River Overflow  
Federal Aid Project BRSTP - 258(5)  
State Project 8.1101201  
TIP Project B-1303

**CATEGORICAL EXCLUSION**

U. S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

AND

N. C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED:

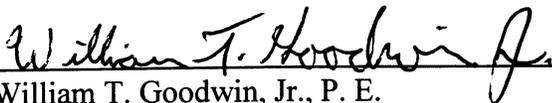
6-29-99  
Date for *W. D. Gilmore*  
W. D. Gilmore, P. E., Manager  
Project Development and Environmental Analysis Branch

6-29-99  
Date for *John C. Wadsworth*  
Nicholas L. Graf, P. E.  
Division Administrator, FHWA

Northampton County,  
Bridge No. 76 on US 258  
Over Roanoke River Overflow  
Federal Aid Project BRSTP - 258(5)  
State Project 8.1101201  
TIP Project B-1303

CATEGORICAL EXCLUSION

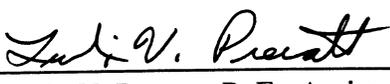
Documentation Prepared in Project Development and Environmental Analysis Branch By:

  
\_\_\_\_\_  
William T. Goodwin, Jr., P. E.  
Project Planning Engineer

6-29-99



  
\_\_\_\_\_  
Wayne Elliott  
Bridge Project Planning Engineer, Unit Head

  
\_\_\_\_\_  
Lubin V. Prevatt, P. E., Assistant Manager  
Planning and Environmental Branch

Northampton County,  
Bridge No. 76 on US 258  
Over Roanoke River Overflow  
Federal Aid Project BRSTP - 258(5)  
State Project 8.1101201  
TIP Project B-1303

**I. SUMMARY OF PROJECT**

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 76 in Northampton County. This bridge carries US 258 over Roanoke River Overflow (see Figure 1). NCDOT includes this bridge in the Draft 2000-2006 Transportation Improvement Program (TIP) as a bridge replacement project. NCDOT and the Federal Highway Administration (FHWA) classify this project as a federal Categorical Exclusion. These agencies expect no notable environmental impacts.

NCDOT will replace Bridge No. 76 in its existing location as shown in Figure 2. NCDOT recommends replacing the bridge with a reinforced concrete box culvert. The culvert will be a single barreled culvert with the barrel measuring 9 feet by 6 feet. The approach roadway will consist of a 24 foot travelway, 4 foot paved shoulders and a total shoulder width of at least 10 feet. The new roadway will be at approximately the same elevation as the existing bridge. The completed project will provide a design speed of approximately 60 mph. Traffic will be maintained on an on-site detour located southeast of the existing bridge during construction.

The estimated cost is \$ 684,700 including \$ 34,700 for right of way acquisition and \$ 650,000 for construction. The estimated cost included in the Draft 2000-2006 TIP is \$ 450,000.

**II. ANTICIPATED DESIGN EXCEPTIONS**

NCDOT is not expected to need any design exceptions for this project.

**III. SUMMARY OF PROJECT COMMITMENTS**

All standard procedures and measures will be implemented to avoid or minimize environmental impacts. All applicable Best Management Practices will be installed and properly maintained during project construction.

In accordance with the provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344), a permit will be required from the Corps of Engineers for the discharge of dredged or fill material into "Waters of the United States." A Corps of Engineers Nationwide Permit # 23 will likely be applicable for this project.

A North Carolina Division of Environmental Management (DEM) Section 401 Water Quality General Certification will be obtained prior to issue of the Corps of Engineers Nationwide Permit # 23.

Once construction of the new bridge is complete, the temporary detour will be removed back to the natural grade and the area will be replanted with native grasses and/or trees as appropriate.

#### **IV. EXISTING CONDITIONS**

NCDOT classifies US 258 as a Rural Minor Arterial in the Statewide Functional Classification System. The surrounding area consists of woods and farm fields. Near Bridge No. 76, US 258 is a two lane paved road. It has 32 feet of pavement, including a 24 foot wide travelway with 4 foot paved shoulders on both sides. Total shoulder width is approximately 10 feet including the paved shoulders. Both vertical and horizontal alignment in the area are good. NCDOT built Bridge No. 76 in 1923. The bridge has an asphalt overlay surface on a reinforced concrete deck, with steel I-beams. The bridge has reinforced concrete caps on concrete piles for the bents and reinforced concrete caps on timber piles for the end bents. The bridge is 100 feet long with a 26 foot roadway width. It is not currently posted for single vehicles or for Truck-tractor Semi-trailer (TTST). According to Bridge Maintenance Unit records, the sufficiency rating of Bridge No. 76 is 6.0 of a possible 100.0.

The current (2000) traffic volume is 3000 vehicles per day (VPD), projected to 4500 VPD by the design year (2020). These traffic figures include 5% Dual tired vehicles(DUALS) and 20% Truck-tractor Semi-trailer (TTST). The speed limit in the project area is posted at 55 mph. Traffic Engineering accident records indicate two accidents were reported in the vicinity of Bridge No. 76 during a recent 3 year period. School bus operations will not be hindered by this project since traffic will be maintained on-site during construction.

#### **V. ALTERNATES**

**Alternate One (Recommended)** - replace the bridge in the existing location with a single barreled reinforced concrete box culvert. The barrel of this culvert will measure 9 feet by 6 feet. Traffic will be maintained along an on-site detour located southeast of the existing roadway, as shown in Figure 2.

There is not a reasonable off-site detour route considering the amount of traffic on US 258. The shortest detour route (37.3 miles) would generate road user costs of over \$ 4,000,000 over the approximate 4 month construction period. This cost is far greater than the cost of an on-site detour, so an alternate for road closure during construction is not reasonable.

An on-site detour to the north would result in higher utility impacts due to the presence of overhead power transmission lines and underground fiber optic telephone lines along the north shoulder of US 258 in the project area.

The “do-nothing” alternate is not practical. The existing bridge would continue deteriorating until it was unusable. This would require closing the road, or continued intensive maintenance.

## **VI. COST ESTIMATE**

Estimated costs of the alternates studied are as follows:

	<b>Alternate One Recommended</b>
Structure	\$ 48,600
Roadway Approaches	221,300
Detour Structure & Approaches	154,400
Structure Removal	1,800
Misc. and Mobilization	133,900
Engineering & Contingencies	90,000
<hr/>	
Total Construction	650,000
Right of Way & Utilities	34,700
<hr/>	
<b>TOTAL PROJECT COST</b>	<b>\$ 684,700</b>

## **VII. RECOMMENDED IMPROVEMENTS**

NCDOT will replace Bridge No. 76 in its existing location as shown in Figure 2. NCDOT recommends replacing the bridge with a reinforced concrete box culvert. The culvert will be a single barreled culvert with the barrel measuring 9 feet by 6 feet. The approach roadway will consist of a 24 foot travelway, 4 foot paved shoulders and a total shoulder width of at least 10 feet. The new roadway will be at approximately the same elevation as the existing bridge. The completed project will provide a design speed of approximately 60 mph. Traffic will be maintained on an on-site detour located southeast of the existing bridge during construction.

The Division Engineer has indicated that replacing Bridge No. 76 in-place with traffic maintained on-site during construction would be acceptable from his perspective.

Construction of Alternate 1 will not have a significant adverse impact on the floodplain or associated flood hazard. The elevation of the 100-year flood will not be increased by more than 12 inches.

NCDOT expects utility conflicts to be low for a project of this type and magnitude.

## **VIII. ENVIRONMENTAL EFFECTS**

### **A. General Environmental Effects**

The project is considered to be a “categorical exclusion” due to its limited scope and insignificant environmental consequences.

The bridge replacement will not have a substantial adverse effect on the quality of the human or natural environment with the use of current NCDOT 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 construction of the project.

No adverse effect on families or communities is anticipated. Right-of-way acquisition will be limited.

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.

There are no publicly owned parks, recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project.

There are no known hazardous waste sites in the project area.

## **B. Architectural and Archaeological Resources**

The State Historic Preservation Office (SHPO) has indicated that there are no known architectural sites in the project area and no unknown sites are likely to be found. Therefore, SHPO has recommended no architectural surveys be conducted in connection with this project. (See letter dated 1/7/98.)

The State Historic Preservation Office (SHPO) has indicated that there is a previously recorded archaeological site in the project area. NCDOT archaeological staff surveyed the project area and no previously unknown sites were found, nor was the previously recorded site found to be impacted by project construction. (See SHPO Letter dated 12/30/98.)

## **C. Natural Systems**

### **PHYSICAL RESOURCES**

Soil properties and site topography significantly influence the potential for soil erosion and compaction, along with other possible construction limitations or management concerns. Water resources within the project area present important management limitations due to the need to regulate water movement and the increased potential for water quality degradation. Excessive soil disturbance resulting from construction activities can potentially alter both the flow and quality of water resources, limiting downstream uses. In addition, soil characteristics and the availability of water directly influence the composition and distribution of flora and fauna in biotic communities, thus affecting the characteristics of these resources.

## Regional Characteristics

Northampton County lies in the Coastal Plain Physiographic Province of northeastern North Carolina. The southeastern part of the county is generally characterized by nearly level topography and a high water table. Poorly drained and somewhat poorly drained clayey soils are dominant. The highest elevation in the county is 360 feet, west of Vulture. The lowest elevation in the county is 5 feet, where the Meherrin River leaves the northeastern part of the county. The county is drained by the Meherrin and Roanoke Rivers, and their tributaries.

## **Soils**

There are three soil types located in the project area. A brief description of each soil type is provided.

Chastain silt loam, frequently flooded (Ch) is nearly level, poorly drained soil found on floodplains in the central and eastern parts of the county. It has slow permeability, moderate available water capacity and moderate shrink-swell potential. The seasonal high water table is at or near the surface most of the year. This soil is frequently flooded. The slope is 0-2 percent. This soil is listed as hydric for Northampton County.

Altavista fine sandy loam 0-3% slopes, rarely flooded (AtA) is nearly level and gently sloping moderately well-drained soil found on stream terraces along the Roanoke and Meherrin Rivers. It has moderate permeability and moderate available water capacity. The seasonal high water table is at a depth of 1.5-2.5 feet during wet periods. The soil is subject to rare flooding. This soil is listed as having hydric inclusions for Northampton County.

State sandy loam 0-3% slopes, rarely flooded (StA) is nearly level and gently sloping well-drained soils on stream terraces. It has moderate permeability and available water capacity. The seasonal high water table is at a depth of 4-6 feet. The soil is subject to rare flooding.

## **Water Resources**

This section contains information concerning surface water resources likely to be impacted by the proposed project. Water resource assessments include the physical characteristics, best usage standards, and water quality aspects of the water resources, along with their relationship to major regional drainage systems. Probable impacts to surface water resources are also discussed, as are means to minimize impacts.

### **Best Usage Classification**

Water resources within the study area are located in the Roanoke River Drainage Basin. There is one water resource in the project study area. US 258 crosses one intermittent stream, an unnamed tributary (UT) to Bridgers Creek. This bridge also serves as an overflow bridge for the Roanoke River at times of significant flooding.

Streams have been assigned a best usage classification by the Division of Water Quality (DWQ), formerly Division of Environmental Management (DEM), which reflects water quality conditions and potential resource usage. Unnamed tributaries receive the same classification as the streams to which they flow. The classification for Bridgers Creek [DEM Index No. 23-34, 7/1/73] is C. Class C refers to waters suitable for aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. No registered point source dischargers are located in or directly upstream from the project study area.

No waters classified as High Quality Waters (HQW), Water Supplies (WS-I or WS-II) or Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area.

#### Physical Characteristics of Surface Waters

The UT to Bridgers Creek at US 258 is approximately 3.0 feet wide and ranges in depth from 0.5-1.0 feet. The substrate in the study area is composed of sandy loam. The riparian community is composed of Emergent Cypress Gum Swamp species such as black willow, wild cotton, tearthumb, panic grass, milkweed, swamp rose and bedstraw.

#### Water Quality

This section describes the quality of the water resources within the project area. Potential sediment loads and toxin concentrations of these waters from both point sources and nonpoint sources are evaluated. Water quality assessments are made based on published resource information and existing general watershed characteristics. These data provide insight into the value of water resources within the project area to meet human needs and to provide habitat for aquatic organisms.

#### Benthic Macroinvertebrate Ambient Network

The Basinwide Monitoring Program, managed by the DWQ, is part of an ongoing ambient water quality-monitoring program that addresses long-term trends in water quality. The program monitors ambient water quality by sampling at fixed sites for selected benthic macroinvertebrates organisms, which are sensitive to water quality conditions. Samples are evaluated on the number of taxa present of intolerant groups [Ephemeroptera, Plecoptera, Trichoptera (EPT)] and a taxa richness value (EPT S) is calculated. A biotic index value is also calculated for the sample that summarizes tolerance data for all species in each collection. The two rankings are given equal weight in final site classification. The biotic index and taxa richness values primarily reflect the effects of chemical pollution and are a poor measure of the effects of such physical pollutants as sediment. There is no benthic monitoring station on Bridgers Creek or its unnamed tributary in or above the project area.

## Summary of Anticipated Impacts

Impacts to water resources in the project area are likely to result from activities associated with project construction. Activities likely to result in impacts are clearing and grubbing on streambanks, riparian canopy removal, instream construction, fertilizers and pesticides used in revegetation, and pavement installation. The following impacts to surface water resources are likely to result from the above mentioned construction activities.

- Increased sedimentation and siltation downstream of the crossing and increased erosion in the project area.
- Changes in light incidence and water clarity due to increased sedimentation and vegetation removal.
- Alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow from construction.
- Changes in and destabilization of water temperature due to vegetation removal.
- Increased nutrient loading during construction via runoff from exposed areas.
- Increased concentrations of toxic compounds in roadway runoff.
- Increased potential for release of toxic compounds such as fuel and oil from construction equipment and other vehicles.
- Alteration of stream discharge due to silt loading and changes in surface and groundwater drainage patterns.

In order to minimize potential impacts to water resources in the project area, NCDOT's Best Management Practices for the Protection of Surface Waters will be strictly enforced during the construction phase of the project. Impacts can be further reduced by limiting instream activities and revegetating stream banks immediately following the completion of grading.

## **BIOTIC RESOURCES**

Biotic resources include terrestrial and aquatic communities. This section describes the biotic communities encountered in the project area, as well as the relationships between fauna and flora within these communities. The composition and distribution of biotic communities throughout the project area are reflective of topography, soils, hydrology, and past and present land uses. Descriptions of the terrestrial systems are presented in the context of plant community classifications. These classifications follow Schafale and Weakley (1990) where possible. Representative animal species that are likely to occur in these habitats (based on published range distributions) are also cited. Fauna observed during the site visit are denoted in the text with an asterisk (\*).

### Biotic Communities

Biotic communities include terrestrial and aquatic elements. Much of the flora and fauna described from biotic communities utilize resources from different communities, making boundaries between contiguous communities difficult to define. There are four communities located in the project area. These communities are discussed below.

### Mixed Pine Hardwood Forest

This community is located on the north and southwest sides of the existing bridge and will be impacted on the southwest side by the on-site detour. It is bordered by roadside and cypress-gum swamp communities. The canopy is dominated by loblolly pine, sweetgum, American elm, sycamore, and oaks such as southern red oak, post oak, cherrybark oak, white oak and willow oak. The understory is composed of red maple, possum haw, winged elm, ironwood and hawthorne. The shrub and ground layers include wild grape, crane fly orchid, poison ivy, rattan vine, blackberry, rattlesnake fern, clubmoss, wild onion, Christmas fern, river oats, sensitive fern, southern lady fern, royal fern and Japanese honeysuckle.

### Cypress-Gum Swamp

This community surrounds the UT to Bridgers Creek and is contiguous to the mixed pine hardwood forest, emergent swamp and roadside community. It will be impacted by both the bridge replacement and the on-site detour. The canopy is composed of bald cypress, overcup oak, water gum, water ash, cottonwood and black cherry. The understory is dominated by winged elm, red chokeberry, red maple, holly and persimmon. The shrub and ground layers include Japanese grass, elderberry, Japanese honeysuckle, poison ivy, Virginia willow, pepper-vine, lizard's tail, privet, false nettle, lycopus, clearweed, pokeweed, ludwiga, buttercup, cross vine and fetter-bush.

### Emergent Cypress-Gum Swamp

This community is located under and immediately to the northwest of the existing bridge. It contains the maintained powerline right of way and the disturbed area under the bridge. It is surrounded by the older cypress-gum swamp community. It will also be impacted by both the bridge replacement and the on-site detour. This community is composed of beech, black willow, wild cotton, tearthumb, panicum, goldenrod, passionflower, milkweed, swamp rose, sunflower, curly dock, and bedstraw.

### Disturbed Roadside

This community is located on both sides of US 258 and will be impacted by both the bridge replacement and the on-site detour. Because of mowing and the use of herbicides this community is kept in a constant state of early succession. The dominant species in this community are fescue, mugwort and wild onion.

### Aquatic Community

This community consists of the Unnamed Tributary to Bridgers Creek. Because this tributary is intermittent, aquatic species diversity is limited. Aquatic insects found in this community include the water strider, riffle beetle, crane fly, stream mayfly and black-winged damselfly.

## Wildlife

Maintained/disturbed communities adjacent to forested tracts provide rich ecotones for foraging, while the forests provide forage and cover. Common mammals and birds associated with ecotones and upland forests are woodchuck, least shrew, southern short-tailed shrew, hispid cottonrat, eastern cottontail rabbits, ruby crowned kinglet\*, Carolina chickadee\*, bluebird\*, downy woodpecker\* and white-breasted nuthatch\*. The ground beetle\* and bessbug\* were also found in this community, feeding under logs.

The cypress-gum swamp provides habitat for an assortment of birds and mammals. Birds often associated with swamp communities include red-winged blackbird, white-throated sparrow and northern cardinal. Yellow-rumped warblers\* and common yellow throat may also be found in this community. Yellow warbler, red-eyed vireo, Carolina wren and mourning dove may also frequent this area.

Mammals that may frequent the swamp and mixed pine hardwood communities include white-footed mouse and raccoon. In addition, white-tailed deer\* and gray squirrel may also forage in or near this community. Amphibians and reptiles are likely to be locally abundant in the riparian edge. Spring peeper\* and northern cricket frog\* breed in semipermanent pools during the spring. Rat snake, worm snake, ring-necked snake and queen snake may be found here as well. The box turtle may also be found in the swamp community.

### **Summary of Anticipated Impacts**

Construction of the proposed project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies potential impacts to the natural communities within the project area in terms of the area impacted and the organisms affected. Temporary and permanent impacts are considered here as well, along with recommendations to minimize or eliminate impacts.

### **Terrestrial Impacts**

Impacts to terrestrial communities will result from project construction due to the clearing and paving of portions of the project area, and thus the loss of community area. Table 1 summarizes potential losses to these communities, resulting from project construction. Calculated impacts to terrestrial communities reflect the relative abundance of each community present in the study area. Estimated impacts are derived based on the entire proposed right-of-way width of 100.0 feet for the bridge replacement and 60.0 feet for the on-site detour. However, project construction often does not require the entire right-of-way; therefore, actual impacts may be considerably less.

Table 1. Estimated area impacts to terrestrial communities.

Community	Impacted Area ha (ac)	
	Bridge Replacement*	On-Site Detour**
Mixed Pine-Hardwood Forest	0.00 ac	0.34 ac
Cypress-Gum Swamp [wet]	0.02 ac	0.90 ac
Emergent Cypress-Gum Swamp [wet]	0.21 ac	0.00 ac
Disturbed Roadside	0.12 ac	0.04 ac
<b>Total Impacts</b>	<b>0.35 ac</b>	<b>1.28 ac</b>

[wet] – wetland community type

\*Permanent Impacts

\*\*Temporary Impacts

### Aquatic Impacts

Impacts to the aquatic community of the UT to Bridgers Creek will result from the replacement of Bridge No. 76. Impacts are likely to result from the physical disturbance of aquatic habitats (i.e. substrate and water quality). Disturbance of aquatic habitats has a detrimental effect on aquatic community composition by reducing species diversity and the overall quality of aquatic habitats. Physical alterations to aquatic habitats can result in the following impacts to aquatic communities.

- Inhibition of plant growth.
- Algal blooms resulting from increased nutrient concentrations.
- Loss of benthic macroinvertebrates through scouring resulting from an increased sediment load.

Impacts to aquatic communities can be minimized by strict adherence to BMP's.

### JURISDICTIONAL TOPICS

This section provides inventories and impact analyses pertinent to two significant regulatory issues: Waters of the United States and rare and protected species. These issues retain particular significance because of federal and state mandates that regulate their protection. This section deals specifically with the impact analyses required to satisfy regulatory authority prior to project construction.

#### Waters of the United States

Surface waters and wetlands fall under the broad category of "Waters of the United States," as defined in Section 33 of the Code of Federal Register (CRF) Part 328.3. Any action that proposes to dredge or place fill material into surface waters or wetlands falls under the jurisdiction of the U.S. Army Corps of Engineers (COE) under Section 404 of the Clean Water Act (33 U.S.C. 1344). Surface waters include all standing or flowing waters which have commercial or recreational value to the public. Wetlands are identified based on the presence of

hydric soils, hydrophytic vegetation, and saturated or flooded conditions during all or part of the growing season.

### Characteristics of Wetlands and Surface Waters

Criteria to delineate jurisdictional wetlands include evidence of hydric soils, hydrophytic vegetation and hydrology. There are wetlands in the project area in the form of the cypress-gum swamp. Soils were determined to be 10 YR 6/1 in the upper six inches gaining 7.5 YR 5/6 mottles seven inches and lower. Vegetation includes bald cypress, water gum, lizard tail, Japanese grass, overcup oak and red maple. Wetland impacts for the replacement of the bridge are approximately 0.23 ac; and for the on-site detour are approximately 0.90 ac [Table 1]. The unnamed intermittent tributary to Bridgers Creek starts to lose its bank and channel as it flows southeast into the project area. It flows into the cypress-gum swamp system on the southwest side of Bridge 76 and completely loses a defined channel.

### Permits

Impacts to jurisdictional surface waters are anticipated from the proposed project. As a result, construction activities will require permits and certifications from various regulatory agencies in charge of protecting the water quality of public water resources

A Nationwide Permit 33 CFR 330.5(a) (23) is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. This permit authorizes activities undertaken, assisted, authorized, regulated, funded or financed in whole, or part, by another Federal agency or department where that agency or department has determined that pursuant to the council on environmental quality regulation for implementing the procedural provisions of the National Environmental Policy Act:

- (1) 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, and;
- (2) that the office of the Chief of Engineers has been furnished notice of the agency' or department's application for the categorical exclusion and concurs with that determination.

This project will also require a 401 Water Quality Certification from the DWQ prior to the issuance of the Nationwide Permit. Section 401 of the Clean Water Act requires that the state issue or deny water certification for any federally permitted or licensed activity that may result in a discharge to Waters of the United States. Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulation. The issuance of a 401 permit from the DWQ is a prerequisite to issuance of a Section 404 permit.

There is the potential for parts of all spans of the bridge deck and three bents to be dropped into the wetlands at the project site during removal of this bridge. The resulting temporary fill into waters of the United States will amount to no more than 65 cubic yards of material. All temporary fill material will be removed from the wetlands as soon as possible as part of the bridge removal process.

#### Avoidance, Minimization, Mitigation

The COE 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 (to wetlands), 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 mitigation examines all appropriate and practicable possibilities of averting impacts to Waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the COE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology and logistics in light of overall project purposes. In projects of this type, the crossing of water bodies, some small amount of impact to Waters of the United States are unavoidable.

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to Waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction to median widths, right-of-way widths, fill slopes and/or road shoulder widths. In order to minimize impacts to Waters of the United States resulting from project construction the detour will be designed to strict standards resulting in the minimum possible impact to wetlands at the project site.

Compensatory mitigation is not normally considered until anticipated impacts to Waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States, specifically wetlands. Such actions should be undertaken in areas adjacent to or contiguous to the discharge site. Once construction of the proposed culvert is complete the on-site detour will be removed and any impacted wetlands will be restored to meet their pre-project topography and plant community type.

Compensatory mitigation is required for those projects authorized under Nationwide Permits that result in the fill or alteration of:

- More than 0.45 ha (1.0 ac) of wetlands will require compensatory mitigation;
- And/or more than 45.7 m (150.0 linear ft) of streams will require compensatory mitigation.

Written approval of the final mitigation plan is required from the DWQ prior to the issuance of a 401 Certification. Final permit/mitigation decisions rest with the COE.

### Rare and Protected Species

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human development. Federal law (under the provisions of the Endangered Species Act of 1973, as amended) requires that any action, likely to adversely affect a species classified as federally-protected, be subject to review by the United States Fish and Wildlife Service (FWS). Other species may receive additional protection under separate state laws.

#### Federally-Protected Species

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under the provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 15, 1999, the FWS lists two federally protected species for Northampton County. A brief description of the characteristics and habitat requirements for these species along with a conclusion regarding potential project impacts follows Table 2.

Table 2. Federally Protected Species for Northampton County.

Common Name	Scientific Name	Status
Red-Cockaded Woodpecker	<i>Picoides borealis</i>	Endangered
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened

Note:

- “Endangered” denotes a species in danger of extinction throughout all or a significant portion of its range.  
 “Threatened” denotes a species likely to become endangered in the foreseeable future throughout all or a significant portion of its range.

#### *Picoides borealis* (red-cockaded woodpecker) Endangered

The adult red-cockaded woodpecker (RCW) has a plumage that is entirely black and white except for small red streaks on the sides of the nape in the male. The back of the RCW is black and white with horizontal stripes. The breast and underside of this woodpecker are white with streaked flanks. The RCW has a large white cheek patch surrounded by the black cap, nape, and throat.

The RCW uses open old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. A forested stand must contain at least 50% pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are >60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 500 acres. This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 12-100 feet above the ground and average 30-50 feet high. They can be identified by a large incrustation of running sap that surrounds the tree. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 38 days later.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The mature, open pine stands that the RCW needs are not present in the project area. The pines around the project site are few and are contained in the mixed pine-hardwood community. In addition, this community is not contiguous to other stands of older pines that would enable it to be foraging habitat. The North Carolina Natural Heritage Program database was checked and there were no records of existing populations of RCW in the project area. No habitat for RCW exists in the project area. Thus, no impacts to RCW will occur from project construction.

***Haliaeetus leucocephalus* (bald eagle) Threatened**

Adult bald eagles can be identified by their large white head and short white tail. The body plumage is dark-brown to chocolate-brown in color. In flight bald eagles can be identified by their flat wing soar.

Eagle nests are found in close proximity to water (within a half mile) with a clear flight path to the water, in the largest living tree in an area, and having an open view of the surrounding land. Human disturbance can cause an eagle to abandon otherwise suitable habitat. The breeding season for the bald eagle begins in December or January. Fish are the major food source for bald eagles. Other sources include coots, herons, and wounded ducks. Food may be live or carrion.

**BIOLOGICAL CONCLUSION: NO EFFECT**

The project area is not within one-half mile of water. The closest body of water large enough to support bald eagles, the Roanoke River, is 3.5 miles from the project area. In addition, the North Carolina Natural Heritage Program database was reviewed and revealed no records of bald eagles in the project area. No habitat for bald eagle exists in the project area. Thus, construction of the proposed project will have no effect on this species.

#### **D. Air Quality and Traffic Noise**

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

If the project disposes of vegetation by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520.

The project will not substantially increase traffic volumes. Therefore, it will have no substantial impact on noise levels. Temporary noise increases may occur during construction.

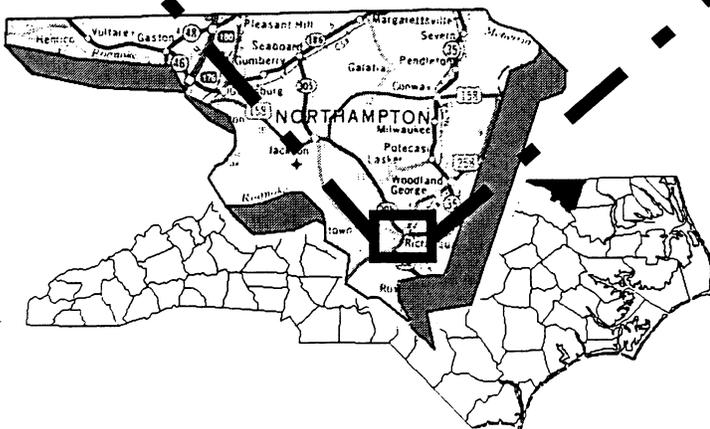
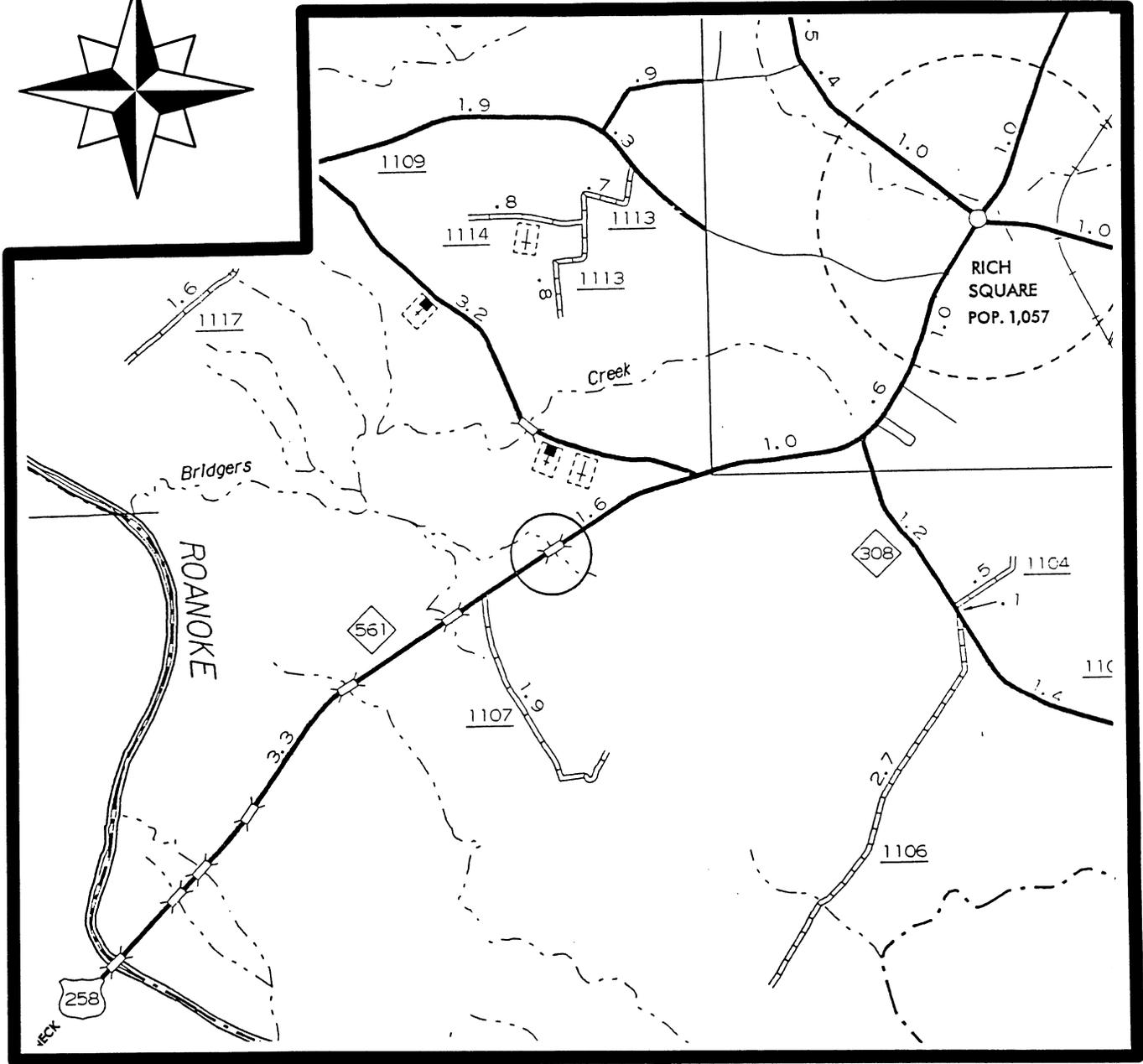
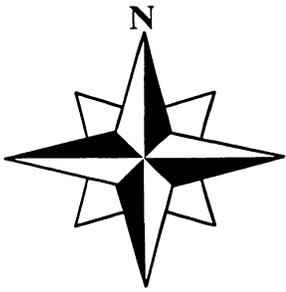
#### **E. Farmland**

The zoning around the bridge is AR. This is an agricultural/residential classification, which allows a variety of those types of uses. This project will not substantially impact any prime or important farmlands.

### **X. CONCLUSIONS**

Based on the above discussion, NCDOT and FHWA conclude that the project will cause no significant environmental impacts. Therefore, the project may be processed as a Categorical Exclusion.

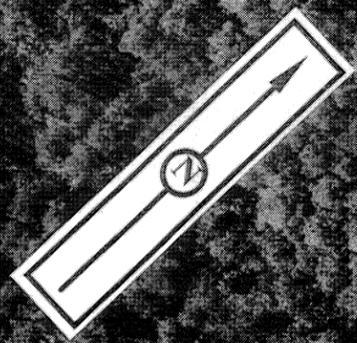
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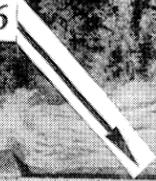
North Carolina Department of  
Transportation  
Division of Highways  
Planning & Environmental Branch

Northampton County  
Replace Bridge No. 76 on US 258  
Over Roanoke River Overflow  
B-1303

Figure One



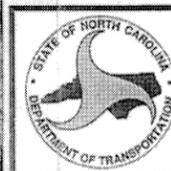
Bridge No. 76



US 258

US 258

Alternate 1 (On-site Detour)



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Scale 1:1200

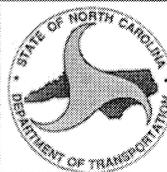
Figure Two



Looking northeast  
across Bridge No. 76



Looking southwest  
across Bridge No. 76



North Carolina Department of  
Transportation  
Division of Highways  
Planning & Environmental Branch

Northampton County  
Replace Bridge No. 76 on US 258  
Over Roanoke River Overflow  
B-1303

Figure Three

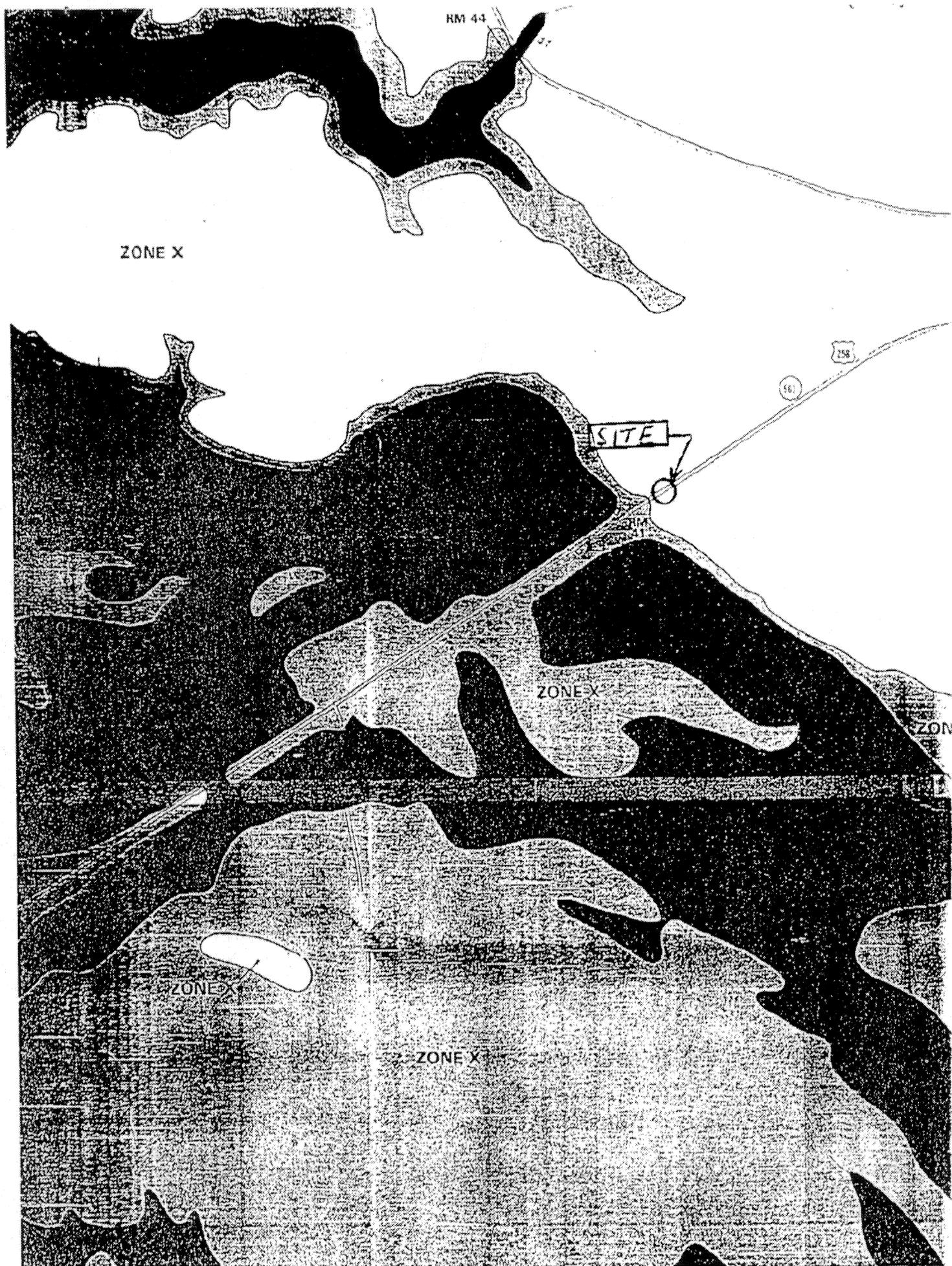


Fig. 4

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# North Carolina Department of Cultural Resources

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

Division of Archives and History  
Jeffrey J. Crow, Director

December 30, 1998

Nicholas L. Graf  
Division Administrator  
Federal Highway Administration  
Department of Transportation  
310 New Bern Avenue  
Raleigh, N.C. 27601-1442



Re: Replacement of Bridge 76 on US 258 over  
Roanoke River overflow, Northampton County,  
Federal Aid Project BRSTP-258(5), State Project  
8.1101201, B-1303, ER 99-7886

Dear Mr. Graf:

Thank you for your letter of December 3, 1998, transmitting the archaeological survey report by the North Carolina Department of Transportation concerning the above project.

During the course of the survey no sites were located within the project area. The authors have recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since this project will not involve significant archaeological resources. The report meets our office's guidelines and those of the Secretary of the Interior.

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

DB:slw

cc: W. D. Gilmore  
T. Padgett





## North Carolina Department of Cultural Resources

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

Division of Archives and History  
Jeffrey J. Crow, Director

January 7, 1998

Nicholas L. Graf  
Division Administrator  
Federal Highway Administration  
Department of Transportation  
310 New Bern Avenue  
Raleigh, N.C. 27601-1442

Re: Bridge 76 on US 258 over Roanoke River  
Overflow, Northampton County, B-1303, Federal  
Aid Project BRSTP-258(5), State Project  
8.1101201, ER 98-7938

Dear Mr. Graf:

On December 17, 1997, Debbie Bevin of our staff met with North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. We reported our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project area photographs and aerial photographs at the meeting.

Based upon our review of the photographs and the information discussed at the meeting, we offer our preliminary comments regarding this project.

In terms of historic architectural resources, we are aware of no historic structures located within the area of potential effect. We recommend that no historic architectural survey be conducted for this project.

A review of our files indicates that there is a recorded site, 31NP188, just northwest of the existing bridge. We recommend that this site be tested to determine its eligibility for inclusion in the National Register of Historic Places, the limits of the site, and sufficient information gathered to develop a mitigation plan should such become necessary. Impact considerations should include the actual bridge site and lateral ditches or other erosion control structures, temporary haul roads, bridges, and detours.

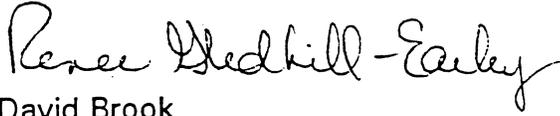
Having provided this information, we look forward to receipt of either a Categorical Exclusion or Environmental Assessment which indicates how NCDOT addressed our comments.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 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,



*for* David Brook  
Deputy State Historic Preservation Officer

DB:slw

cc: ✓ H. F. Vick  
B. Church  
T. Padgett

Northampton County  
Bridge No. 76 on US 258  
Over Roanoke River Overflow  
Federal Project BRSTP-258 (5)  
State Project 8.1101201  
WBS 32589.1.1  
TIP No. B-1303

ADDENDUM TO  
CATEGORICAL EXCLUSION  
U. S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
AND  
N. C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED:

1/20/04   
Date for Gregory J. Thorpe, PhD  
Environmental Management Director, PDEA

1/21/04   
Date for John F. Sullivan, III  
Division Administrator, FHWA

**Northampton County  
Bridge No. 76 on US 258  
Over Roanoke River Overflow  
Federal Project BRSTP-258 (5)  
State Project 8.1101201  
WBS 32589.1.1  
TIP No. B-1303**

**ADDENDUM TO  
CATEGORICAL EXCLUSION**

**Documentation Prepared in  
Project Development and Environmental Analysis Branch By:**

**January 2004**

*Robin Y. Hancock*

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**Robin Y. Hancock  
Project Planning Engineer, PDEA**

*William T. Goodwin, Jr.*

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**William T. Goodwin, Jr., PE  
Unit Head, PDEA**

**Northampton County  
Bridge No. 76 on US 258  
Over Roanoke River Overflow  
Federal Project BRSTP-258 (5)  
State Project 8.1101201  
WBS 32589.1.1  
TIP No. B-1303**

**I. BACKGROUND**

A Categorical Exclusion (CE) for the subject project was approved June 29, 1999. The document recommended replacement of the existing bridge with a reinforced concrete box culvert at approximately the same location and roadway elevation. The proposed structure would be a single barrel culvert with the barrel measuring 9 feet by 6 feet. Traffic would be detoured onsite, using a temporary causeway located southeast of the existing bridge during construction.

Since the completion of the CE document, wetland mitigation requirements have changed. The CE states wetland mitigation will not be required if impacts are less than 1.0 acres. The change in regulations resulted in mitigation required for all impacts over 0.1 acres. The CE shows approximately 0.23 acres of permanent and 0.90 acres of temporary impacts. This project is located in the Roanoke River Basin, which does not have any mitigation sites readily available and the Wetland Restoration Program (WRP) will not allow NCDOT to buy credits from them for this basin. In addition to the revised regulations, resource agencies do not recommend culverts and strongly encourage replacing existing structures with bridges.

There is not a reasonable offsite detour route considering the amount of traffic on US 258. Therefore, from a design and cost standpoint, the following Alternates were evaluated:

- Alternate 1: (Recommended in original Categorical Exclusion) Replace Bridge No. 76 with a single barrel reinforced concrete culvert at approximately the same location and roadway elevation. The proposed structure would be a single barrel culvert with the barrel measuring 9 feet by 6 feet. Traffic would be maintained onsite, using a temporary causeway located southeast of the existing bridge during construction.
- Alternate 2: Replace Bridge No. 76 with a new bridge at approximately the same location and roadway elevation. The proposed bridge would be approximately 200 feet in length and 40 feet in width. Traffic would be maintained onsite, using a temporary causeway located southeast of the existing bridge during construction.

**II. DISCUSSION**

The first issue is to choose the replacement structure (culvert vs. bridge). The construction cost of a culvert would be approximately \$250,000 less than the cost of a bridge. From an environmental standpoint, using a bridge will result in slightly fewer wetland impacts (0.12

acres), and is strongly recommended by the resource agencies. The cost of the structure could end up being much lower than mitigation costs. The final decision resulted in the new structure being a bridge.

The next issue was the temporary onsite detour. A temporary causeway (fill) with a pipe was the recommended structure in the original Categorical Exclusion. Some resource agencies felt the detour should be bridged. However, the length, cost, and time to use a temporary bridge were extremely high. On a site visit, NCDOT Representatives met with a representative of the US Army Corps of Engineers (USACE). During that site visit, it was determined that a geotechnical analysis was needed to determine the amount of settlement that would occur from the causeway. The USACE representative stated if the expected settlement would be less than 12 inches, the temporary causeway could be used as the detour. NCDOT's Geotechnical Unit performed the analysis and determined the detour would result in approximately 0.8 feet of settlement over a time period of one year. Therefore, the temporary causeway with a pipe will be used as the detour route.

It was determined that the new bridge would be a cored slab bridge 200 feet in length and 40 feet in width. A cored slab bridge can be built fairly quickly which results in less time for the temporary causeway to be in place. The less time the fill stays in place, the greater the chance of re-vegetation and restored wetland function (verses permanent impacts).

NCDOT's Hydraulic Unit looked at minimizing impacts of the ditch located on the north side (east approach) by possibly taking the ditch outside the wetland boundary. However, if the ditch were moved out of the wetlands, mother nature would take over and create her own 'ditch' over time. Plus, the amount of wetland impacts from the ditch would not significantly decrease impacts. Therefore, the ditch will remain where it is in the design.

As for mitigation; on the previously mentioned site visit, NCDOT has identified a section of abandoned roadway fill and is pursuing restoring it for use as on-site mitigation. The NCDOT's Geotechnical Unit has evaluated the fill material contained in the old roadbed and has determined that it can be used as a borrow source to provide material for the proposed temporary on-site detour at B-1303. As such, it may be possible to derive a dual benefit from restoring the abandoned roadway. In addition, once the new bridge is built, and traffic is shifted off the detour, the causeway will be removed to natural ground.

According to the February 25, 2003 updated list for Northampton County, all Threatened and Endangered Species listed in the Categorical Exclusion are the same. The two listed species are the bald eagle and the red-cockaded woodpecker. Biological Conclusions of No Effect remain valid for both because habitat is not present.

### **III. COST ESTIMATES**

The estimated cost of the project is \$1,790,000 including \$1,750,000 in construction costs and \$40,000 in right of way costs. The estimated cost of the project in the original Categorical Exclusion was \$685,000 including \$650,000 for construction and \$35,000 for Right of Way.

### **IV. RECOMMENDATIONS**

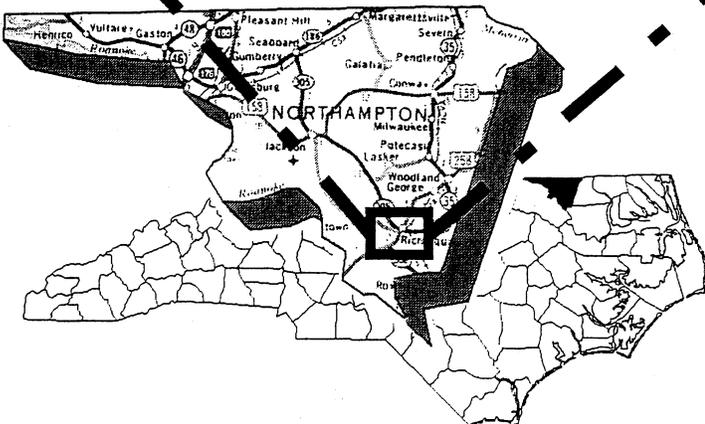
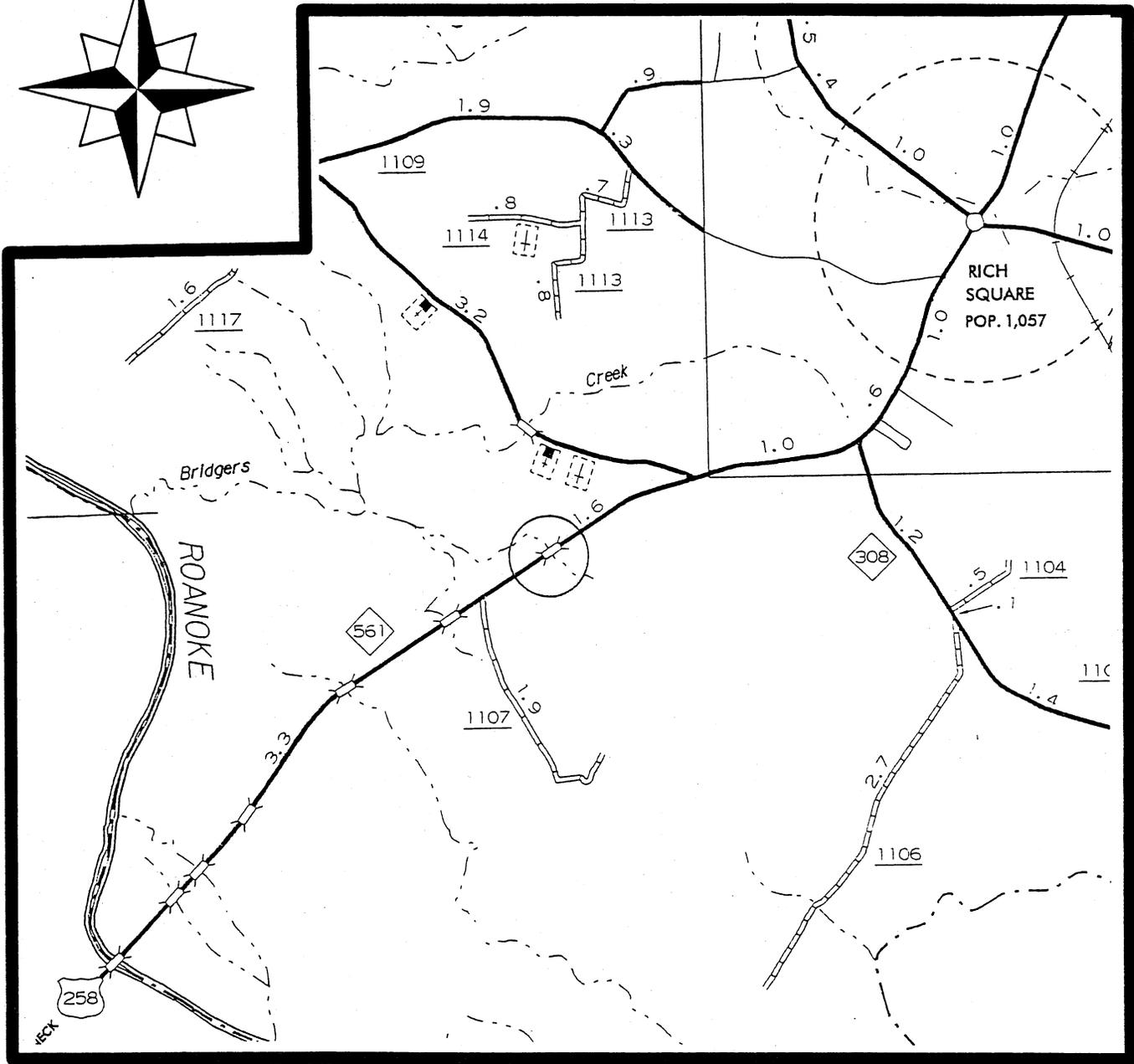
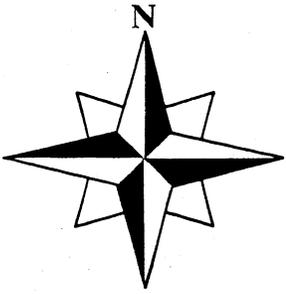
Bridge No. 76 will be replaced with a new bridge at approximately the same location and elevation as the existing bridge. The new bridge will be approximately 200 feet in length and 40 feet in width. A travelway of 24 feet will be accommodated, with an offset of 8 feet on each side. Traffic will be maintained onsite along a temporary causway during construction. The temporary causeway will consist of two 11-foot travel lanes with 2-foot paved shoulders. Total project length will be approximately 1100 feet. Based on preliminary design, the design speed should be approximately 60 mph.

The approach roadway will consist of two 12-foot travel lanes with 4-foot paved shoulders and a total shoulder width of at least 10 feet. The shoulder widths will be 3 feet wider where guardrail is warranted. There will be approximately 450 feet of approach work on each side of the bridge.

The construction of the recommended alternate does not have the potential to cause substantial impacts to the local environment. The NCDOT Division 1 Construction Engineer concurs with the selection of this Alternate.

### **V. CONCLUSIONS**

This alternate is the most cost-effective option with the least amount of impacts to natural resources in the vicinity of the project. Also, this Alternate combines both the department and resource agencies needs to satisfy the public in a safe manner.



North Carolina Department of  
Transportation  
Division of Highways  
Planning & Environmental Branch

Northampton County  
Replace Bridge No. 76 on US 258  
Over Roanoke River Overflow  
B-1303

Figure One

# PROJECT COMMITMENTS

**Replacement of Bridge No. 76  
on US 258 over Roanoke River Overflow  
Northampton County  
Federal-Aid No. BRSTP-258(5)  
State Project No. 8.1101201  
WBS 32589.1.1  
TIP. No. B-1303**

## Commitments Developed Through Project Development and Design

### ***Roadside Environmental Unit, Division 1 Construction, Structure Design Unit***

**Bridge Demolition:** Best Management Practices for Bridge Demolition & Removal will be implemented during the replacement of Bridge No. 76. The superstructure is composed of a reinforced concrete deck that can be removed without dropping any components into the Waters of the United States. The substructure is composed of both timber and reinforced piles and caps. There is potential for components of the piers to be dropped into the Waters of the United States. The resulting temporary fill associated with this bridge is 71 cubic yards.

### ***Roadway Design Unit, Roadside Environmental Unit, Division 1 Construction***

Once construction of the new bridge and approaches are complete, the temporary detour will be removed to natural grade and the area will be re-vegetated with appropriate plant species.

### ***Roadway Design Unit, Roadside Environmental Unit, Division 1 Construction***

Placement of soil stabilization fabric is required along the majority of the detour approaches to assist in stabilizing the weak surficial deposits and reduce disturbance of the wetland in order to reestablish the natural ground elevation when the detour embankment is removed.

**Wetland Restoration Plan for Roanoke River Overflow  
Northampton County  
TIP B-1303  
April 4, 2005**

The North Carolina Department of Transportation (NCDOT) will perform on-site restoration for riverine swamp impacts at the US 258 overpass of Roanoke River Overflow in Northampton County. This mitigation site occurs within Transportation Improvement Program (TIP) B-1303. NCDOT will restore 0.53 acre of proposed temporary fill and 0.14 acre of mechanized clearing needed for an onsite detour and 0.08 acre of riverine swamp wetland by removing causeway fill underneath the existing bridge.

**EXISTING CONDITIONS:**

The existing bridge, located approximately 1.5 miles northeast of the Roanoke River, is 100 feet in length. The surrounding area consists of woodlands and agriculture fields. The Categorical Exclusion (CE) for TIP B-1303, dated June 1999 and the Addendum to the CE, dated January 2004, provide further details concerning existing and proposed roadway conditions and existing biotic communities.

The proposed project will result in 0.53 acre of temporary fill and 0.14 acre of mechanized clearing to a riverine swamp wetland to construct the temporary onsite detour. In addition, there is an 0.08 acre area proposed for wetland restoration that lies underneath the existing bridge and consists of fill associated with the bridge. The riverine swamp under the bridge and northwest of the bridge consists of beech, black willow, wild cotton, tearthumb, panicum, goldenrod, passionflower, milkweed, swamp rose, sunflower, curly dock, and bedstraw.

**PROPOSED CONDITIONS:**

The proposed wetland mitigation will consist of two areas. After the proposed new bridge is constructed, the temporary causeway for the onsite detour will be removed. The 0.67 acre (0.53 acre and 0.14 acre) area will then be graded to its original elevation and replanted with vegetation at approximately 680 stems per acre (see Planting Details). Approximately 0.08 acres of riverine swamp will be restored by lengthening the new bridge by 80 feet and removing the associated fill to match the elevation of the adjacent riverine swamp. The restored area will be planted with various grasses.

No monitoring is proposed. Elevations will be verified during construction.

