



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 19, 2007

U.S. Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of Neuse Road, Suite 120
Raleigh, NC 27615-6814

ATTENTION: Mr. Andrew Williams
NCDOT Coordinator, Division 7

Dear Sir:

SUBJECT: **Application for Section 404 Nationwide Permit 23** for the proposed replacement of Bridge No. 39 over Hogans Creek on SR 1503 (Walter's Mill Rd.), Caswell County, Division 7. Federal Aid Project No: BRZ-1503 (9), State Project No: 8.2481701, WBS No: 33421.3.1, TIP No: B-4057.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 39 over Hogans Creek on SR 1503 (Walter's Mill Rd.) in Caswell County. The project proposes to demolish the existing bridge and construct a three span, pre-stressed concrete girder bridge on the existing horizontal alignment. This new structure will span Hogans Creek. The new bridge will be 210 feet long, with span lengths, from west to east, of 50 feet, 90 feet, and 70 feet. The bridge will have a clear roadway width of 28 feet, with two 11-foot lanes and 3-foot shoulders. The new bridge approaches will have two 11-foot lanes with 5-foot grass shoulders. The shoulders along the approaches will be widened to 8 feet where guardrail is present. During construction, traffic will be maintained by an on-site detour located approximately 40 feet south of the existing bridge. The temporary bridge associated with the detour will be 195 feet long.

Please see the enclosed copies of the permit drawings, design plans, and Rapanos form for Hogans Creek. A Categorical Exclusion (CE) for this project was completed in January 2005 and distributed shortly thereafter. A Re-Evaluation of the CE was completed and distributed in May 2007. This re-evaluation changed the preferred alternative to the one described above so that the project would avoid impacts to a U.S. Department of Agriculture (USDA) Conservation Easement north of the existing bridge. Additional copies are available upon request.

IMPACTS TO WATERS OF THE UNITED STATES

General Description

The project is located in the Roanoke River Basin (sub-basin 03-02-03) in Caswell County. This area is part of Hydrologic Cataloging Unit 03010104. Hogans Creek comprises the single water resource within the project area. There are no wetlands within the project study area.

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

TELEPHONE: 919-715-1334
FAX: 919-715-1501
WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD., SUITE 240
RALEIGH NC 27604

Hogans Creek is a perennial stream that flows roughly south to north through the project study area. The portion of Hogans Creek that flows through the study area is assigned Stream Index Number 22-50 (09/01/57) by the N.C. Division of Water Quality (NCDWQ) and has a best usage classification of C. It is approximately 45 feet wide and has vegetated stream banks that exhibit signs of erosion both upstream and downstream of the bridge. The stream channel is slightly incised, with a well-formed floodplain located approximately 9 feet above the streambed. During field investigations associated with the Natural Resources Technical Report (NRTR; April 2002), water depth ranged between 1 and 4 feet and the substrate was primarily composed of silt and coarse sand, with occasional gravel.

Neither High Quality Waters (HQW), Water Supplies (WS I: undeveloped watersheds or WS II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile of the project study area. Additionally, no portion of Hogans Creek, its tributaries, or other surface waters within 1.0 mile of the project are listed on the NCDWQ 2006 Final 303(d) List of Impaired Waters.

Permanent Impacts

There will be no wetland impacts associated with this project.

The new structure will span Hogans Creek. Therefore, no permanent stream impacts are anticipated.

Temporary Impacts

A temporary causeway will be placed into Hogans Creek to allow for removal of an existing in-water bent (Interior Bent No. 2). The causeway will be composed of Class II riprap. The Class II riprap will be placed on the stream bed and will result in 0.02 acres (39 linear feet) of temporary impacts to the stream.

Additionally, a total of 50 square feet (less than 0.01 acres) of temporary fill will occur in Hogans Creek due to piles associated with the detour bridge.

Bridge Demolition

The superstructure of Bridge No. 39 is composed of an asphalt-wearing surface on a timber deck, supported by steel I-beams. This superstructure is supported by a timber substructure with steel crutch bents and timber bulkheads.

NCDOT shall adhere to NCDOT's Best Management Practices (BMPs) for Bridge Demolition and Removal. The entire bridge will be removed without dropping any components into Hogans Creek. Additionally, the piles associated with Interior Bent No. 2 will be cut off level with the surface of the streambed.

Utility Impacts

No impacts to jurisdictional waters will occur as a result of utility work associated with this project. However, as an avoidance and minimization effort, a directional bore will be installed by MebTel Communications under Hogans Creek. This bore will be used for the installation of new underground telephone cables. The existing aerial telephone lines will be abandoned or removed.

RESTORATION PLAN

No permanent fill will result from the subject activity. Piles associated with the temporary detour bridge will be removed from the creek. The stone materials used as temporary fill in the construction of the causeway will also be removed from the streambed. The temporary fill areas will be restored back to their pre-project elevations. NCDOT will also restore the streambed to its pre-project contours.

REMOVAL AND DISPOSAL PLAN

The piles associated with the temporary detour bridge will be removed from the creek once the new structure is built. The causeway will be removed from the stream after the existing in-water bent is removed. All stone material placed in the stream for construction of the temporary causeway will be removed by the contractor using excavation equipment. The contractor will be required to submit a reclamation plan for the removal and disposal of all material off-site at an upland location. The contractor will have the option of reusing any of the materials that the engineer deems suitable in the construction of project.

AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and National Environmental Policy Act (NEPA) compliance stages; minimization measures were incorporated as part of the project design.

According to the Clean Water Act (CWA) §404(b)(1) guidelines, NCDOT must avoid, minimize, and mitigate, in sequential order, impacts to waters of the US. The following is a list of the project's avoidance/minimization activities proposed or completed by NCDOT:

Avoidance/Minimization

- The preferred alternative for this project was changed to avoid impacts to a USDA Conservation Easement north of the bridge that contains wetlands.
- No bents associated with the new structure are to be placed in Hogans Creek.
- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of NCDOT's BMPs for Protection of Surface Waters.
- NCDOT's BMP's for Bridge Demolition and Removal will be implemented during this project.

Compensatory Mitigation

No permanent impacts will result from the construction of the new structure. Therefore, no mitigation is proposed for this project.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of its most recent update on May 10, 2007, the U.S. Fish and Wildlife Service (USFWS) website lists one federally protected species for Caswell County, the James spiny mussel (*Pleurobema collina*).

Table 1. Federally protected species in Caswell County

Scientific Name	Common Name	Federal Status	Biological Conclusion	Habitat Present
<i>Pleurobema collina</i>	James spiny mussel	E	May Affect, Not Likely to Adversely Affect	Yes

Visual surveys for the James spiny mussel were performed in Hogans Creek by the Catena Group, Inc. on September 26, 2003. The surveys were performed from approximately 1300 feet downstream of the project crossing to a point approximately 300 feet upstream. Although Hogans Creek could potentially provide habitat for this species, individuals were not found during the surveys. Additionally, no other mussel species were observed and only the introduced Asian clam (*Corbicula fluminea*) was common in the creek. A search of the North Carolina Natural Heritage Program (NCNHP) database (GIS shapefiles most recently updated on September 28, 2007) revealed no known populations of this species within 1.0 mile of the project. Due to the presence of potential habitat, a Biological Conclusion of **May Affect, Not Likely to Adversely Affect** was assigned to this species. Concurrence from the USFWS for this conclusion was initially received on March 17, 2004. However, due to the above-mentioned change in the preferred alternative, concurrence from the USFWS had to be re-requested. A letter from the USFWS dated April 30, 2007 states that the Service's initial concurrence is still valid for this project even though the alternative has changed. The concurrence letters can be found as attachments to the Re-Evaluation of the CE. No additional surveys are required for this species.

SCHEDULE

The project calls for a review date of April 29, 2008, a letting of June 17, 2008, and a date of availability of July 29, 2008. It is expected that the contractor will choose to start construction in July or August 2008.


REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a "Categorical Exclusion" (CE) in accordance with 23 CFR 771.115(b). The NCDOT requests that activities described in the CE document be authorized by a Nationwide Permit 23 (72 FR 11092 – 11198; March 12, 2007).

Section 401 Permit: We anticipate that Section 401 General Water Quality Certification (WQC) 3632 will apply to this project. The NCDOT will adhere to all general conditions of this WQC. Therefore, written concurrence from the NCDWQ is not required. In accordance with 15A NCAC 2H, Section .0500 (a) and 15A NCAC 2B, Section .0200, we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources (NCDENR), NCDWQ, as notification.

A copy of this permit application will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information please call Mr. Jim Mason at (919) 715-5531.

Sincerely,



Gregory J. Thorpe, Ph.D.

Environmental Management Director, PDEA

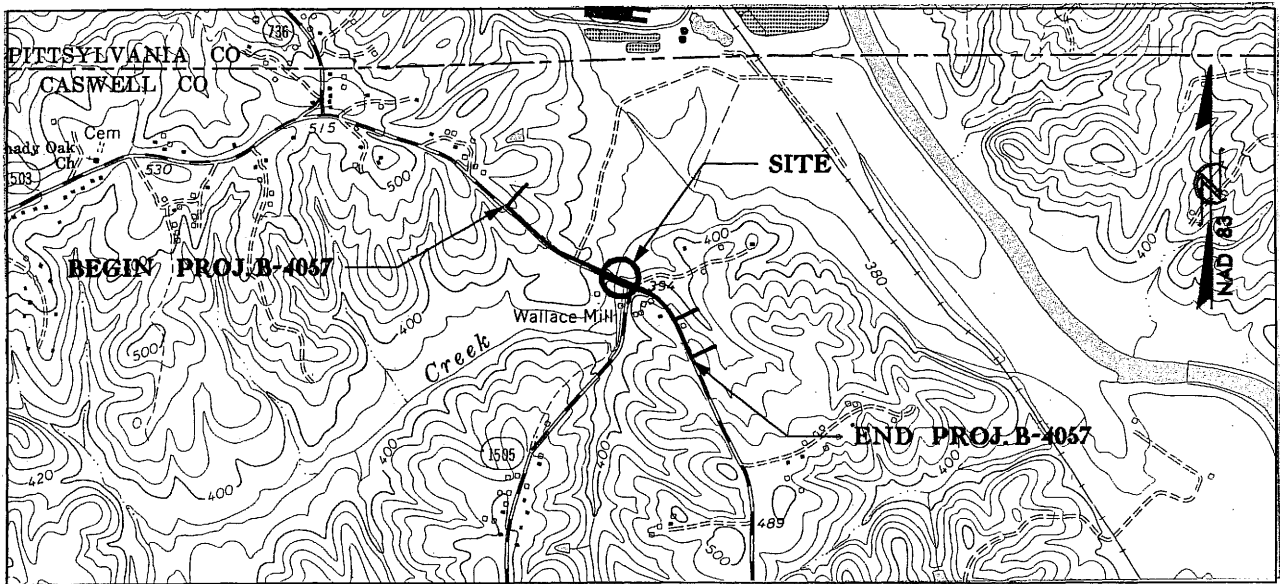
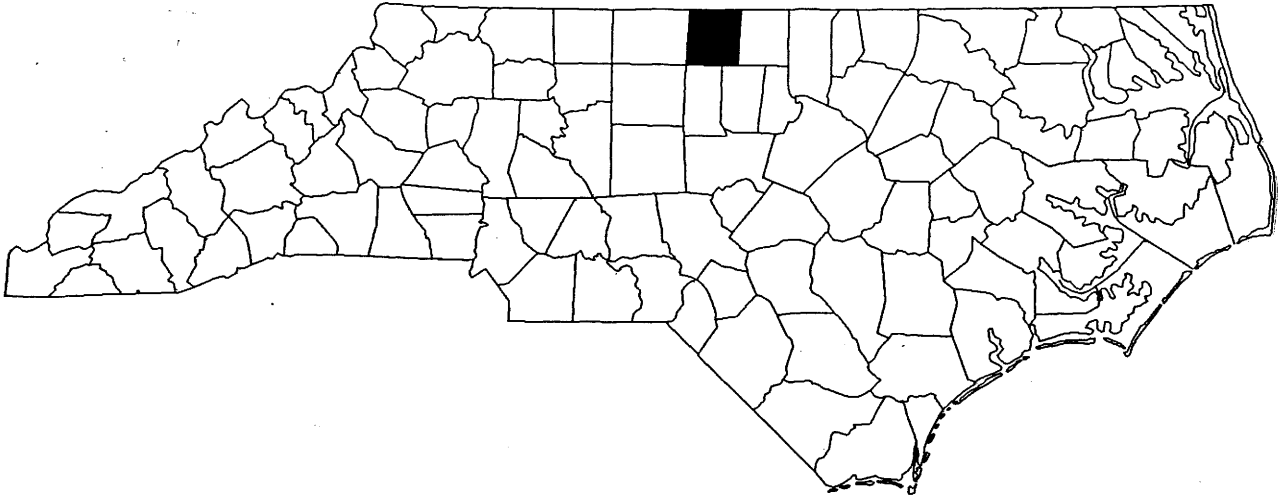
w/attachment

Mr. John Hennessy, NCDWQ (2 Copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. J. M. Mills, P.E., Division 7 Engineer
Mr. Jerry Parker, Division 7 Environmental Officer

w/o attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Terry Harris, PDEA Project Planning Engineer
Mr. Scott McLendon, USACE, Wilmington

NORTH CAROLINA



USGS RINGGOLD, NC QUAD MAP

LOCATION MAP

NCDOT
DIVISION OF HIGHWAYS
CASWELL COUNTY
WBS NO.: 33421.1.1 (B-4057)
BRIDGE NO. 39
OVER HOGANS CREEK

Parcel No.	Property Owner Name	Property Owner Address
1	Scott R. Smith, et al	
2	John B. Taylor	1880 Maryland Ave., Charlotte, NC 28209
3	John E. & Lenor W. Filler	2961 Walters Mill Road, Providence, NC 28305
4	Glenn F. Womble, Jr.	364 Westlake Trail, Mebane, NC
5	Glenn F. Womble, Jr.	364 Westlake Trail, Mebane, NC

List of Property Owners

NC Dept. of Transportation
 Division of Highways
 Caswell County

WBS No.: 33421.1.1 (B-4057)

Bridge No. 39 Over Hogans Creek

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS							
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)			
1	-L- STA 23+50	ROCK CAUSEWAY									0.02			39	
TOTALS:											0.02			39	

50 ft² of temporary fill in surface water due to detour bridge piles.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CASWELL COUNTY
WBS - 33421.1.1 (B-4057)
BRIDGE no. 39 Over Hogans Creek

SHEET **3 of 8**
8/16/2007

09/08/09

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

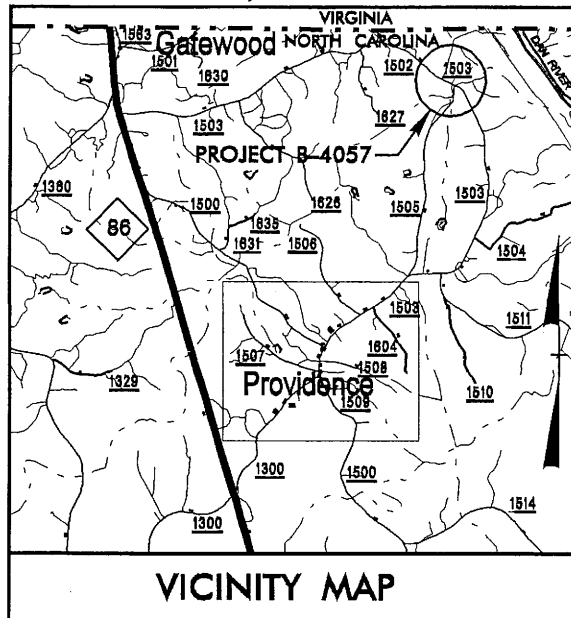
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CASWELL COUNTY

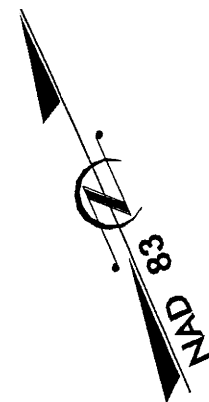
LOCATION: BRIDGE NO. 39 OVER HOGAN'S CREEK
ON SR 1503 (WALTER'S MILL ROAD)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4057	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33421.1.1	BRZ-1503(5)	PE	
33421.2.1	BRZ-1503(5)	R/W & UTILITIES	
33421.3.1	BRZ-1503(5)	CONST.	

Permit Drawing
Sheet 4 of 8



WETLAND/SURFACE WATER PERMIT DRAWINGS

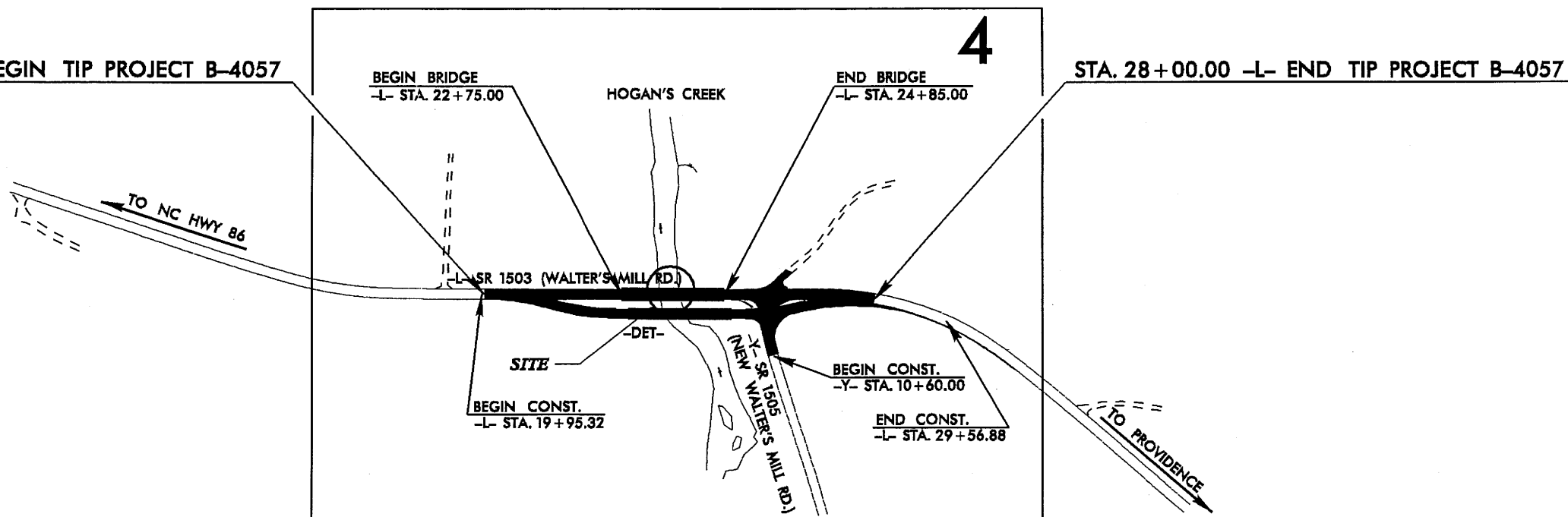


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BEGIN BRIDGE
-L- STA. 22+75.00

END BRIDGE
-L- STA. 24+85.00

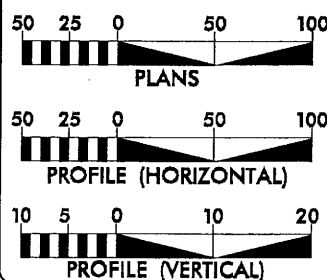
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PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

** DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVES, SHOULDER WIDTH, AND STOPPING SIGHT DISTANCES.

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 920
 ADT 2025 = 1200
 DHV = 10 %
 D = 60 %
 T = 3 % *
 V = 50 MPH
 V_{DETOUR} = 40 MPH
 * TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4057 = 0.112 Mi.
 LENGTH STRUCTURE TIP PROJECT B-4057 = 0.040 Mi.
 TOTAL LENGTH OF TIP PROJECT B-4057 = 0.152 Mi.

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

2006 STANDARD SPECIFICATIONS
 RIGHT OF WAY DATE:
 SEPTEMBER 29, 2005
 LETTING DATE:
 JUNE 17, 2008

JAMES A. SPEER, PE
 PROJECT ENGINEER

DANNY GARDNER
 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER
**DEPARTMENT OF TRANSPORTATION
 FEDERAL HIGHWAY ADMINISTRATION**

APPROVED
 DIVISION ADMINISTRATOR DATE

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kfringledge AT 11/22/08

CONTRACT: C201566 TIP PROJECT: B-4057

-L-	-Y-	-Y-
PI Sta 16+89.48	PI Sta 29+30.50	PI Sta 11+02.82
$\Delta = 18' 30" 50.4' (LT)$	$\Delta = 40' 51' 28.7' (RT)$	$\Delta = 7' 25' 31.8' (RT)$
$D = 5' 43' 46.5"$	$D = 8' 40' 52.2"$	$D = 9' 57' 52.1"$
$L = 323.13'$	$L = 470.65'$	$L = 74.52'$
$T = 162.99'$	$T = 245.83'$	$T = 37.3'$
$R = 1,000.00'$	$R = 660.00'$	$R = 575.00'$
	SE = SEE PLANS	SE = SEE PLANS

-DET-			
PI Sta 10+70.37	PI Sta 12+10.14	PI Sta 15+98.92	PI Sta 18+15.33
$\Delta = 16' 30' 41.3' (RT)$	$\Delta = 16' 30' 41.3' (LT)$	$\Delta = 13' 07' 16.5' (LT)$	$\Delta = 36' 45' 10.0' (RT)$
$D = 11' 48' 48.8"$	$D = 11' 48' 48.8"$	$D = 11' 48' 48.8"$	$D = 11' 48' 48.8"$
$L = 139.77'$	$L = 139.77'$	$L = 111.07'$	$L = 311.11'$
$T = 70.37'$	$T = 70.37'$	$T = 55.78'$	$T = 161.12'$
$R = 485.00'$	$R = 485.00'$	$R = 485.00'$	$R = 485.00'$
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

-YDET-
PI Sta 11+02.82
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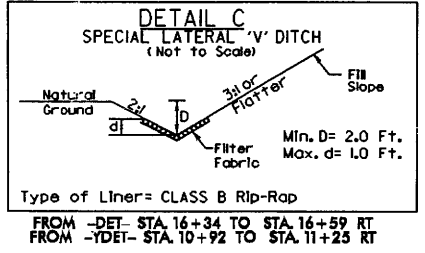
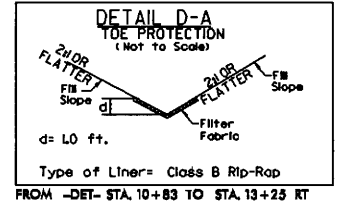
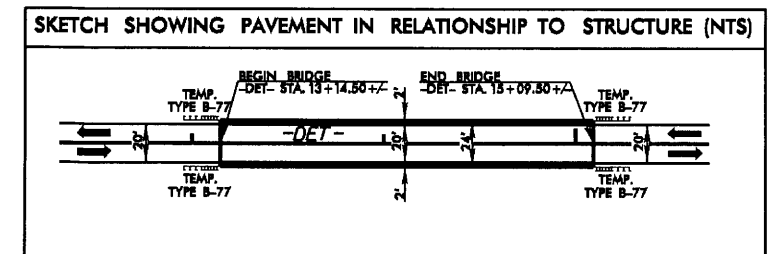
MARIE D. GILLIAM
DB 286 PG 401

1
SCOTT R. SMITH et al
DB 471 PG 909

3
JOHN E. & LENOR W. FILLER
DB 394 PG 476

2
JOHN B. TAYLOR
WB 87-E PG 145

4
GLENN F. WOMBLE, JR.
DB 178 PG 609
DB 176 PG 84



NOTE: SEE SHEET 6 FOR -DET- PROFILE
SEE SHEET 6 FOR -YDET- PROFILE

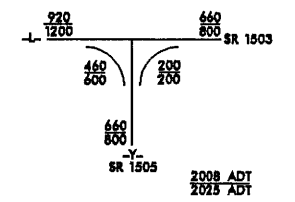
REVISIONS

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Permit Drawing
Sheet 6 of 8

-L-	-Y-	-Y-
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$\Delta = 18^{\circ} 30' 50.4"$ (LT)	$\Delta = 40^{\circ} 51' 28.7"$ (RT)	$\Delta = 7^{\circ} 25' 31.8"$ (RT)
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R = 1,000.00'	R = 660.00'	R = 575.00'
	SE = SEE PLANS	SE = SEE PLANS



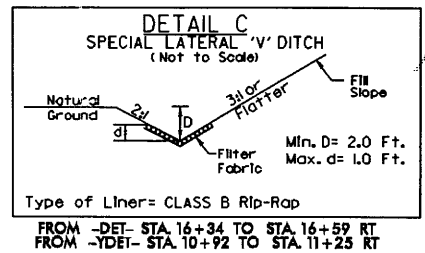
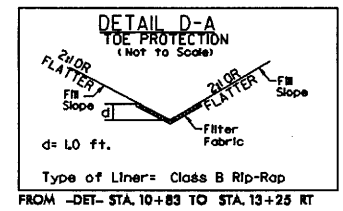
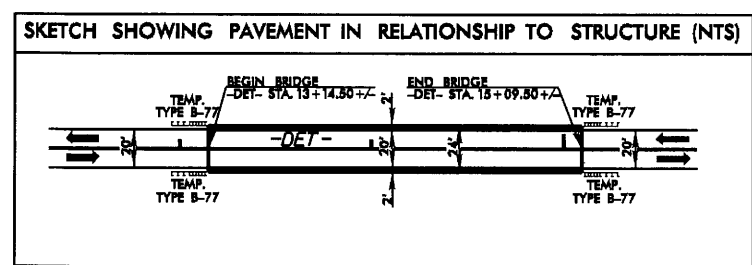
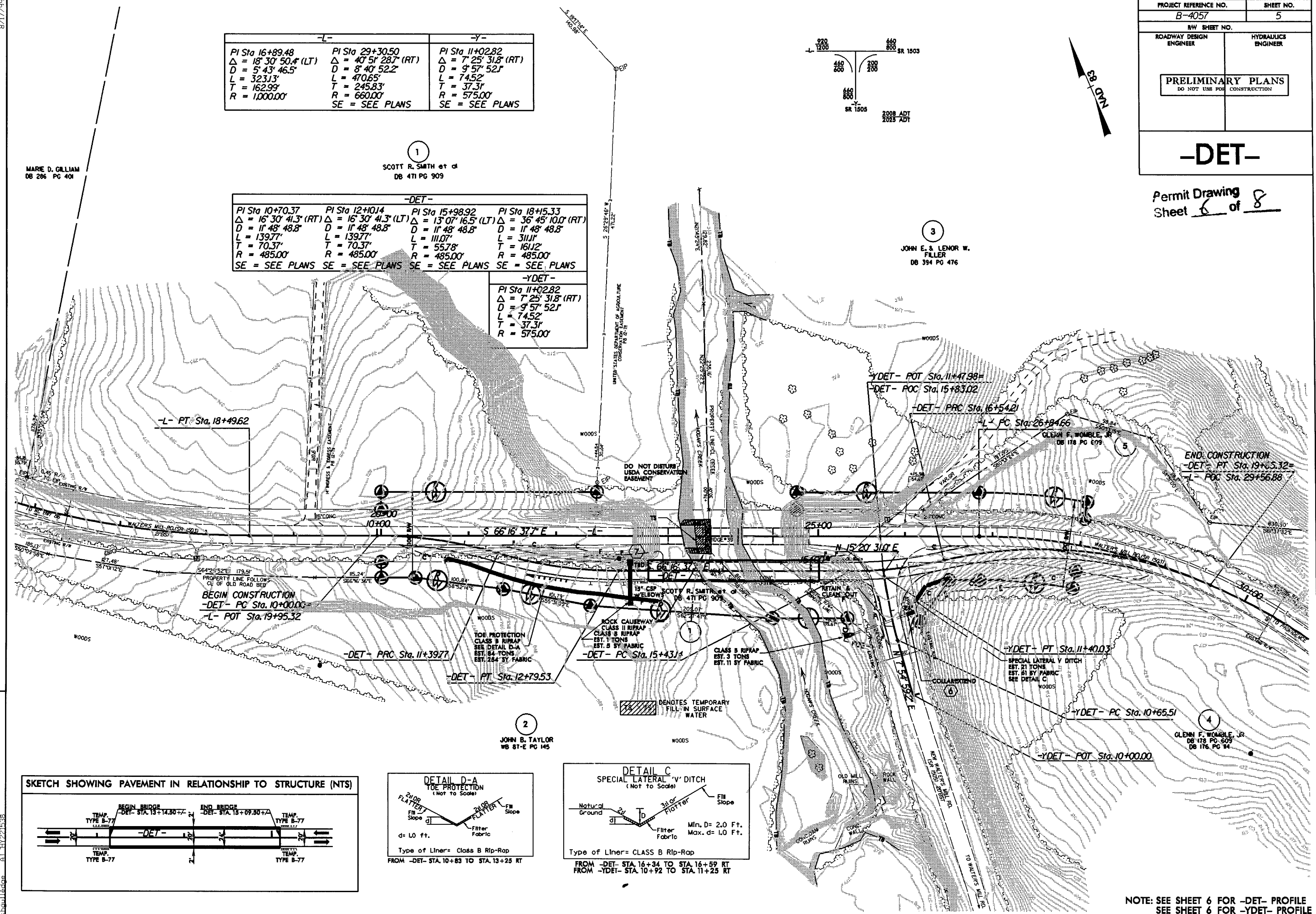
MARIE D. GILLIAM
DB 286 PG 401

SCOTT R. SMITH et al
DB 471 PG 909

JOHN E. & LENOR W. FILLER
DB 394 PG 476

-DET-			
PI Sta 10+70.37	PI Sta 12+10.14	PI Sta 15+98.92	PI Sta 18+15.33
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L = 139.77'	L = 139.77'	L = 111.07'	L = 311.11'
T = 70.37'	T = 70.37'	T = 55.78'	T = 161.12'
R = 485.00'	R = 485.00'	R = 485.00'	R = 485.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS

-YDET-
PI Sta 11+02.82
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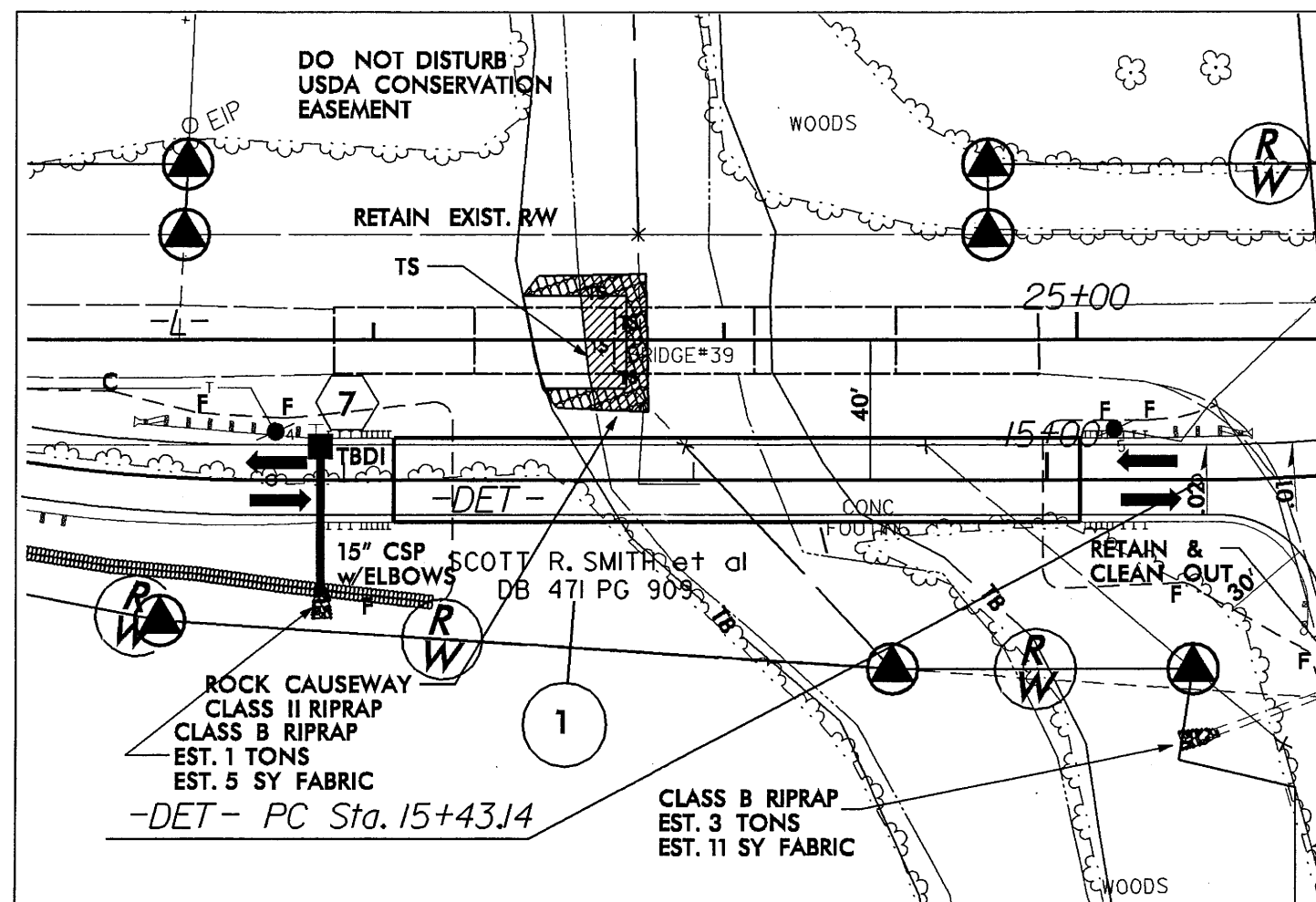


NOTE: SEE SHEET 6 FOR -DET- PROFILE
SEE SHEET 6 FOR -YDET- PROFILE

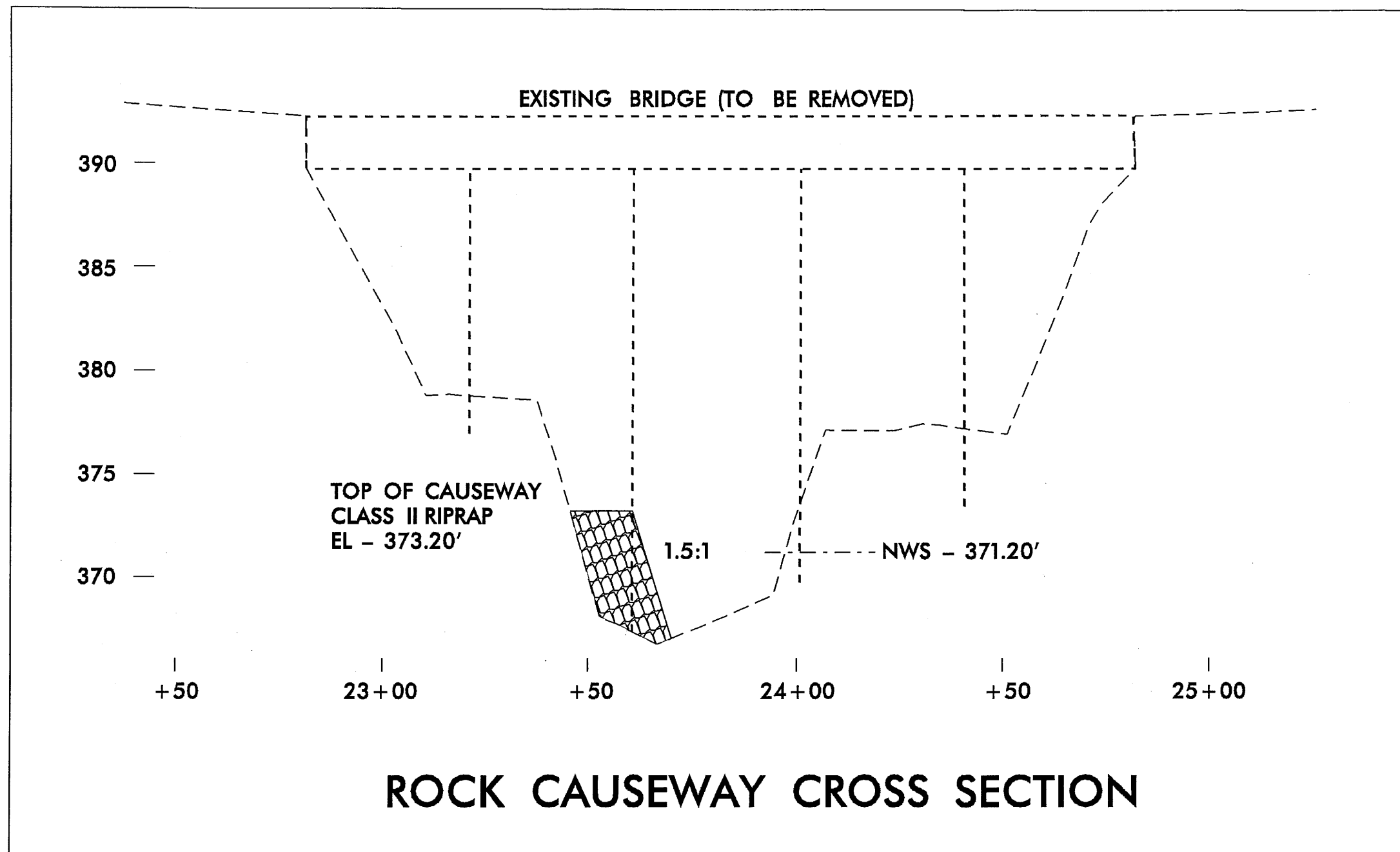
REVISIONS

15-AUG-2007 11:00
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15-AUG-2007 11:00
15-AUG-2007 11:00
15-AUG-2007 11:00

ROCK CAUSEWAY DETAIL

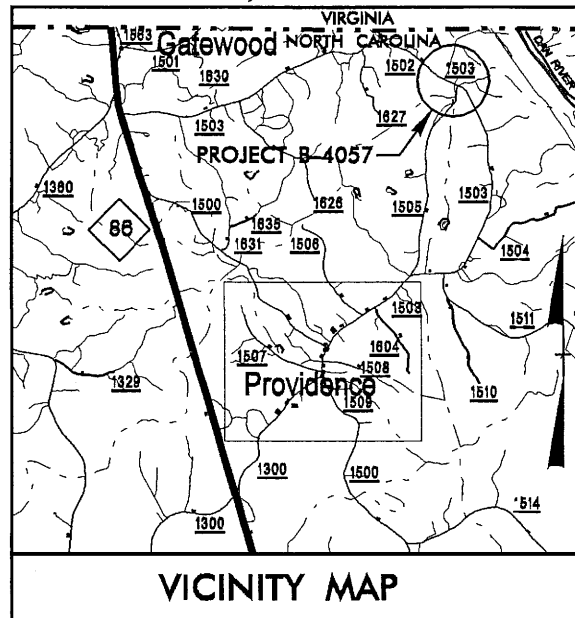


 DENOTES TEMPORARY
FILL IN SURFACE
WATER



09/08/09

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional symbols
See Sheet 1-C For Survey Control Sheet



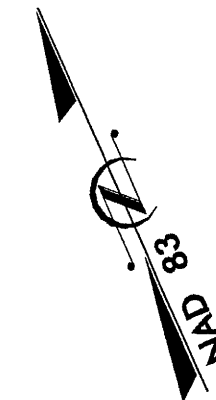
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CASWELL COUNTY

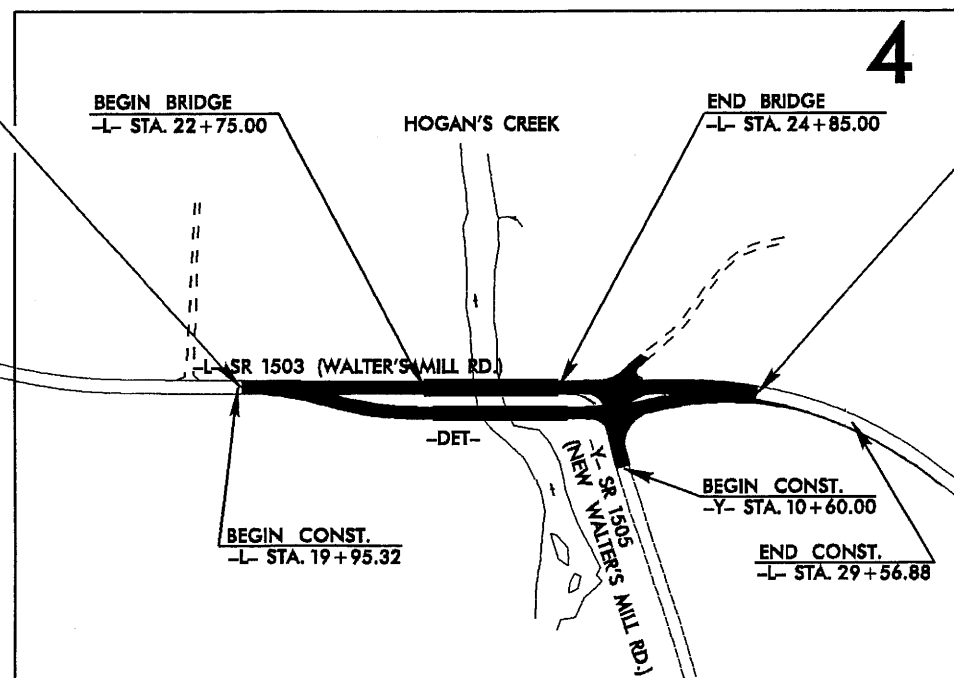
LOCATION: BRIDGE NO. 39 OVER HOGAN'S CREEK
ON SR 1503 (WALTER'S MILL ROAD)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4057	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33421.1.1	BRZ-1503(5)	PE	
33421.2.1	BRZ-1503(5)	R/W & UTILITIES	
33421.3.1	BRZ-1503(5)	CONST.	



STA. 20+00.00 -L- BEGIN TIP PROJECT B-4057

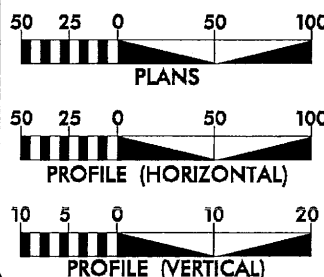


STA. 28+00.00 -L- END TIP PROJECT B-4057

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

** DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVES, SHOULDER WIDTH, AND STOPPING SIGHT DISTANCES.

GRAPHIC SCALES



DESIGN DATA

ADT 2008 = 920
ADT 2025 = 1200
DHV = 10 %
D = 60 %
T = 3 % *
V = 50 MPH
V_{DETOUR} = 40 MPH
* TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4057 = 0.112 Mi.
LENGTH STRUCTURE TIP PROJECT B-4057 = 0.040 Mi.
TOTAL LENGTH OF TIP PROJECT B-4057 = 0.152 Mi.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
SEPTEMBER 29, 2005

LETTING DATE:
JUNE 17, 2008

JAMES A. SPEER, PE
PROJECT ENGINEER

DANNY GARDNER
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____
ROADWAY DESIGN ENGINEER

SIGNATURE: _____
DATE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

09-AUG-2007 12:58
C:\CONV\B4057\CD\knowledge AT R1221538n

CONTRACT: C201566 TIP PROJECT: B-4057

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	----- CCFR
Exist. Guardrail	-----
Prop. Guardrail	-----
Equality Symbol	-----
Pavement Removal	-----

RIGHT OF WAY

Baseline Control Point	-----
Existing Right of Way Marker	-----
Exist. Right of Way Line w/Marker	-----
Prop. Right of Way Line with Proposed RW Marker (Iron Pin & Cap)	-----
Prop. Right of Way Line with Proposed (Concrete or Granite) RW 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	----- PDE

HYDROLOGY

Stream or Body of Water	-----
River Basin Buffer	----- RZ
Flow Arrow	-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----

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	-----
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	-----
UG Telephone Cable Hand Hold	-----
Cable TV Pedestal	-----
UG TV Cable Hand Hold	-----
UG Power Cable Hand Hold	-----
Hydrant	-----
Satellite Dish	-----
Exist. Water Valve	-----
Sewer Clean Out	-----
Power Manhole	-----
Telephone Booth	-----
Cellular Telephone Tower	-----
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

Recorded Water Line	----- W
Designated Water Line (S.U.E.*)	----- W
Sanitary Sewer	----- SS
Recorded Sanitary Sewer Force Main	----- FSS
Designated Sanitary Sewer Force Main(S.U.E.*)	----- FSS
Recorded Gas Line	----- G
Designated Gas Line (S.U.E.*)	----- G
Storm Sewer	----- S
Recorded Power Line	----- P
Designated Power Line (S.U.E.*)	----- P
Recorded Telephone Cable	----- T
Designated Telephone Cable (S.U.E.*)	----- T
Recorded U/G Telephone Conduit	----- TC
Designated U/G Telephone Conduit (S.U.E.*)	----- TC
Unknown Utility (S.U.E.*)	----- TUTL
Recorded Television Cable	----- TV
Designated Television Cable (S.U.E.*)	----- TV
Recorded Fiber Optics Cable	----- FO
Designated Fiber Optics Cable (S.U.E.*)	----- FO
Exist. Water Meter	-----
UG 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	----- EIP
Property Corner	-----
Property Monument	----- ECM
Property Number	----- 123
Parcel Number	----- 6
Fence Line	----- WW & ISBW
Existing Wetland Boundaries	----- WLB
High Quality Wetland Boundary	----- HQ WLB
Medium Quality Wetland Boundaries	----- MQ WLB
Low Quality Wetland Boundaries	----- LO 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

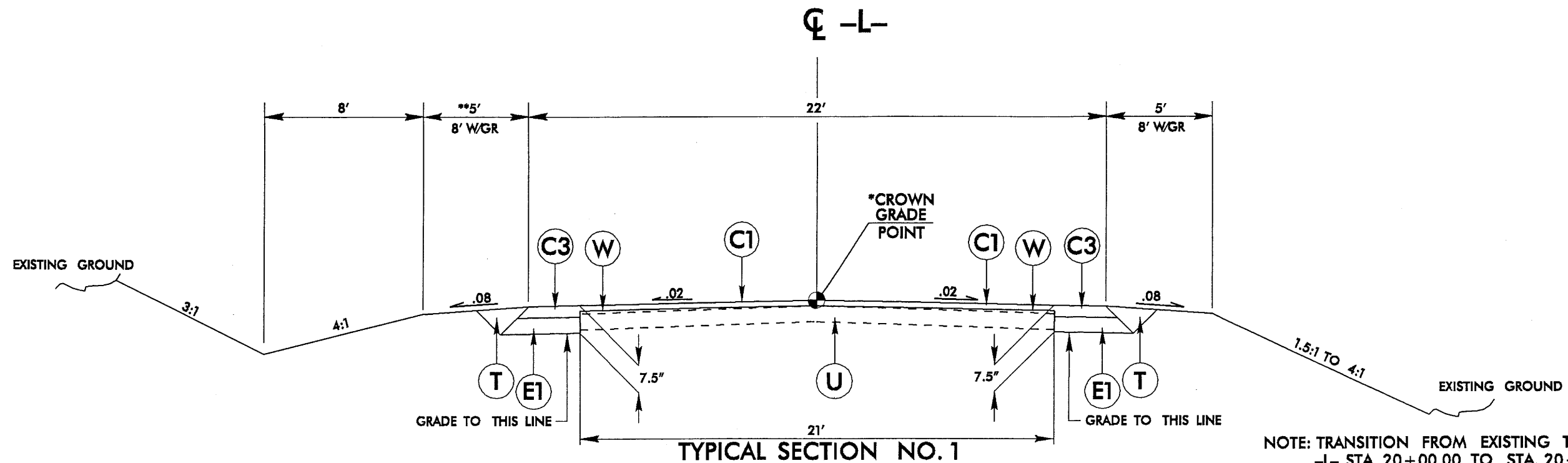
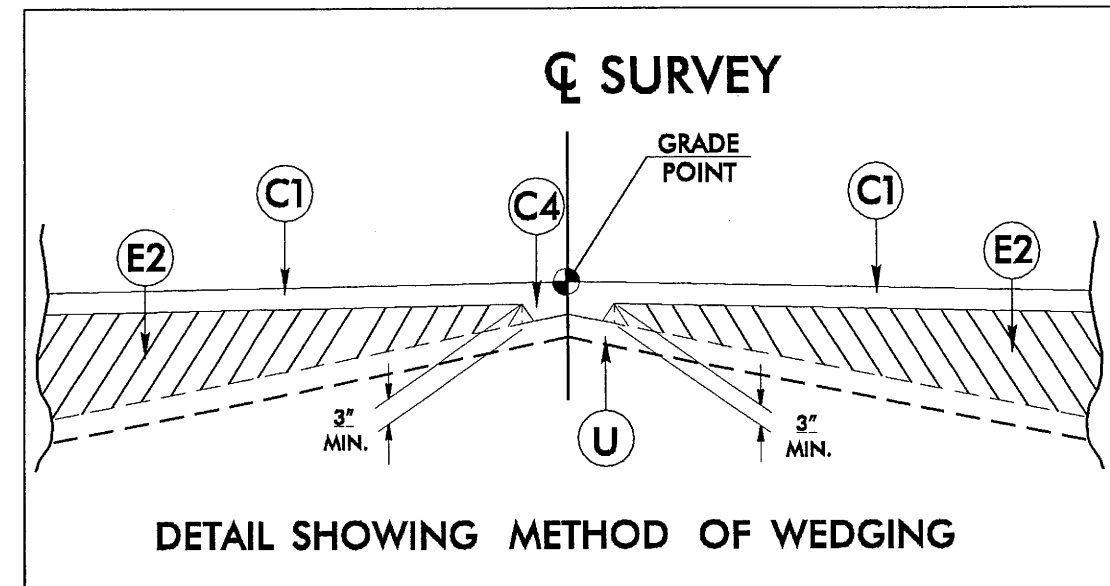
Standard Gauge	-----
RR Signal Milepost	----- MILEPOST 35
Switch	----- SWITCH

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PROJECT REFERENCE NO. B-4057	SHEET NO. 2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
E2	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.
J_	PROP. 6" AGGREGATE BASE COURSE.
P_	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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



**NOTE: USE 5' SHOULDER WIDTH WITH GUARDRAIL PLACED AT 3' FROM EDGE OF TRAVELWAY FROM -L- STA. 22+25.00 LT. TO BEGIN BRIDGE STATION

NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1
 -L- STA. 20+00.00 TO STA. 20+50.00
USE TYPICAL SECTION NO. 1
 *-L- STA. 20+50.00 TO STA. 21+00.00
 -L- STA. 21+00.00 TO STA. 22+75.00 (BEGIN BRIDGE)
 -L- STA. 26+75.00 TO STA. 27+50.00
 NOTE: TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING
 -L- STA. 27+50.00 TO STA. 28+00.00

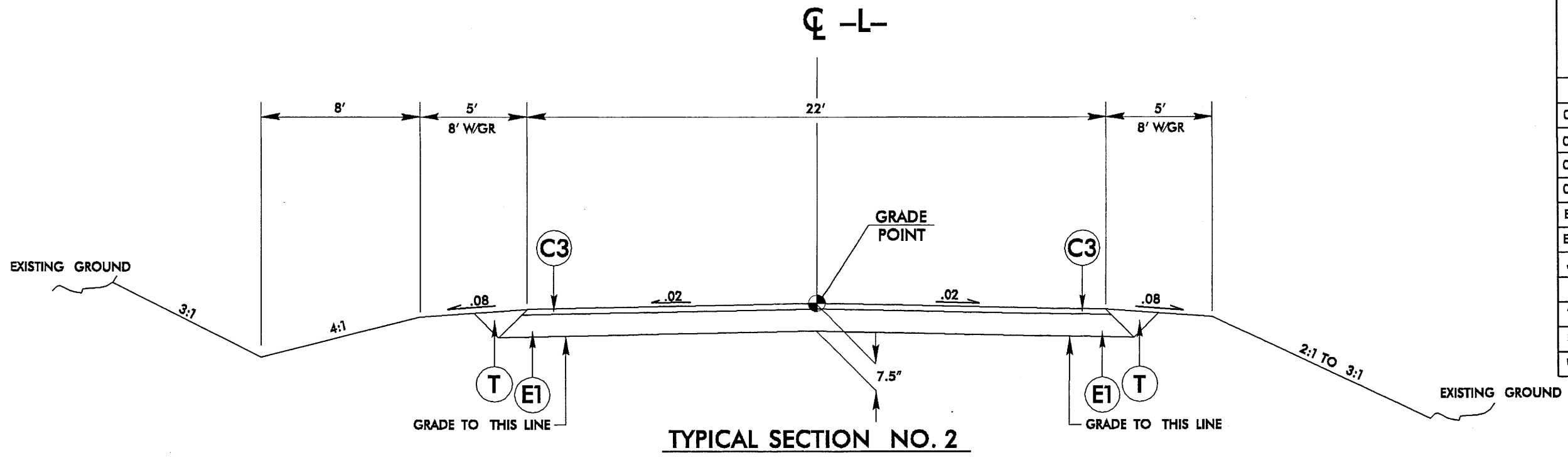
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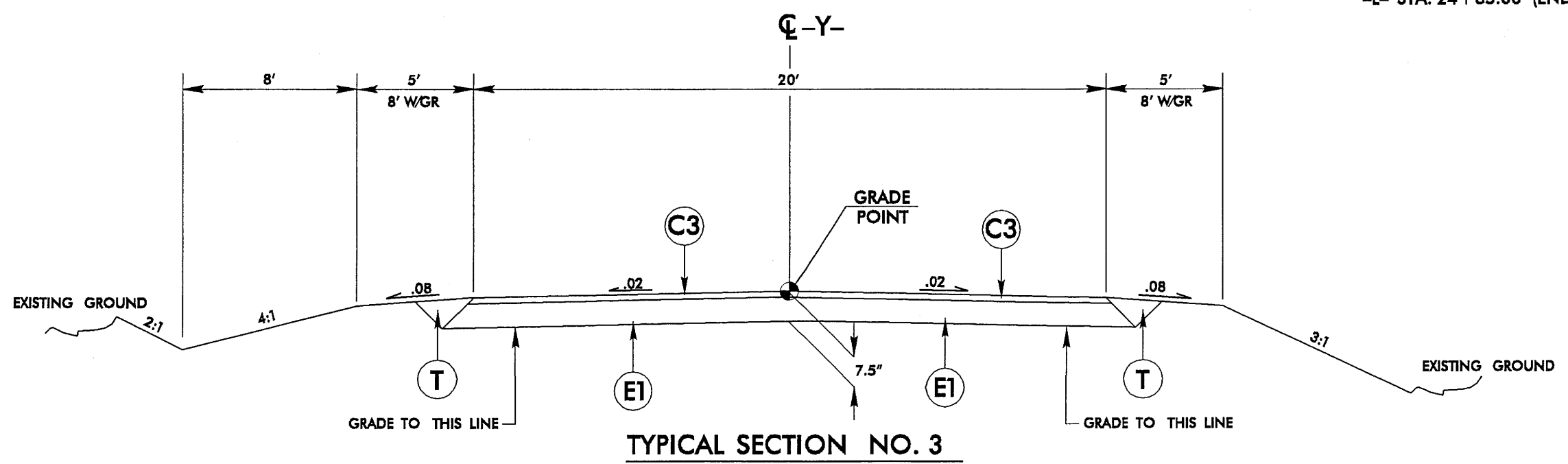
PROJECT REFERENCE NO. B-4057	SHEET NO. 2-A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE	
C1	1 1/4" TYPE SF9.5A
C2	2" TYPE SF9.5A
C3	2 1/2" TYPE SF9.5A
C4	VAR. DEPTH TYPE SF9.5A
E1	5" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
J	PROP. 6" AGGREGATE BASE COURSE.
P	PRIME COAT
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING



TYPICAL SECTION NO. 2

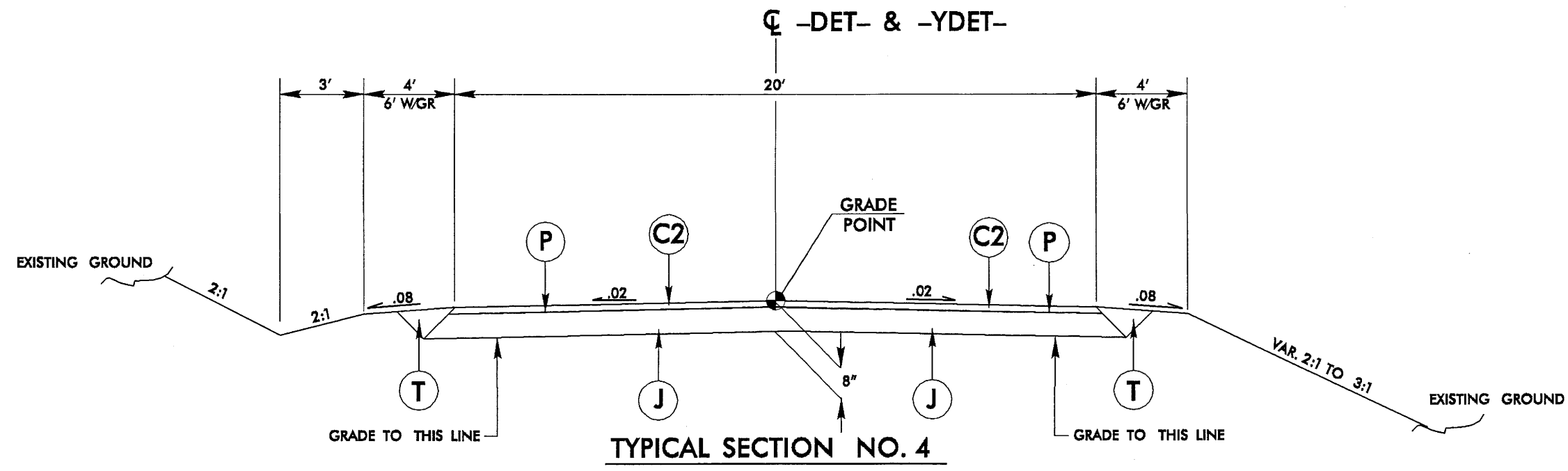
USE TYPICAL SECTION NO. 2
-L- STA. 24+85.00 (END BRIDGE) TO STA. 26+75.00



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-Y- STA. 10+60.00 TO STA. 11+13.38

PROJECT REFERENCE NO. B-4057	SHEET NO. 2-B
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	PAYMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	
PAYMENT SCHEDULE	
C1	1 1/4" TYPE SF9.5A
C2	2" TYPE SF9.5A
C3	2 1/2" TYPE SF9.5A
C4	VAR. DEPTH TYPE SF9.5A
E1	5" TYPE B25.0B
E2	VAR. DEPTH TYPE B25.0B
J	PROP. 8" AGGREGATE BASE COURSE.
P	PRIME COAT
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING

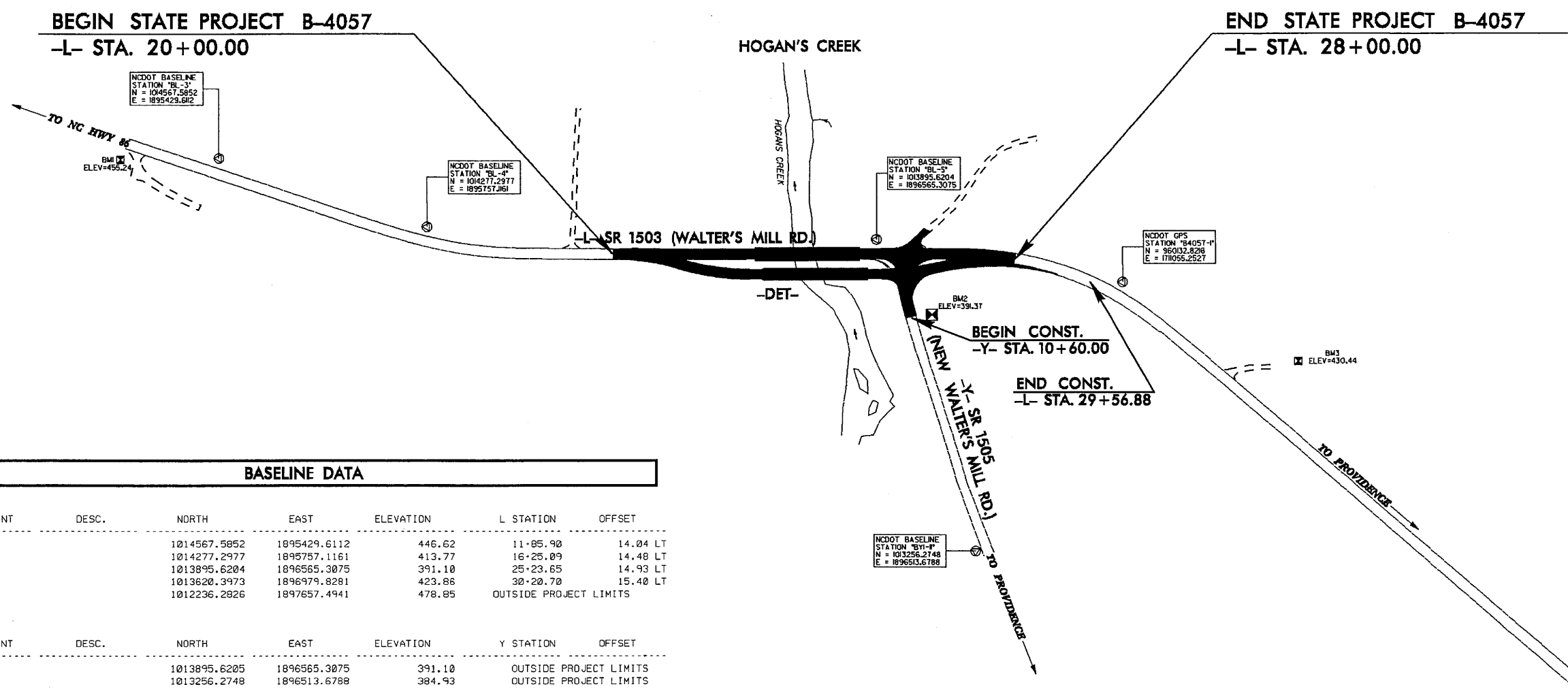
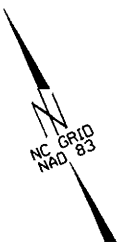


NOTE: TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 4
 -DET- STA 10+00.00 TO STA. 11+41.38
USE TYPICAL SECTION NO. 4
 -DET- STA. 11+41.38 TO STA. 13+14.50 (BEGIN BRIDGE)
 -DET- STA. 15+09.50 (END BRIDGE) TO STA. 16+89.58
 -YDET- STA. 10+60.00 TO STA. 10+81.73

NOTE: TRANSITION FROM TYPICAL SECTION NO. 4 TO EXISTING
 -DET- STA. 16+89.58 TO STA. 19+65.32

B-4057 SURVEY CONTROL SHEET

12/01/2000



BASELINE DATA

BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3		1014567.5852	1895429.6112	446.62	11+85.90	14.04 LT
4		1014277.2977	1895757.1161	413.77	16+25.09	14.48 LT
5		1013895.6204	1896565.3075	391.10	25+23.65	14.93 LT
1		1013620.3973	1896979.8281	423.86	30+20.70	15.40 LT
2		1012236.2826	1897657.4941	478.85		OUTSIDE PROJECT LIMITS

BY1 POINT	DESC.	NORTH	EAST	ELEVATION	Y STATION	OFFSET
12		1013895.6205	1896565.3075	391.10		OUTSIDE PROJECT LIMITS
11		1013256.2748	1896513.6788	384.93		OUTSIDE PROJECT LIMITS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B-4057-1" WITH MAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 1013620.3973(ft) EASTING: 1896979.828(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000108090 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4057-1" TO -L- STATION 20+00.00 IS N 62° 18' 45" 1.016.30 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 PROJECT CONTROL DATA AT: [HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCTION/HIGHWAY/LOCATION/PROJECT](http://www.doh.dot.state.nc.us/preconstruction/highway/location/project) THE FILES TO BE FOUND ARE AS FOLLOWS: b4181_je_control_060821.txt
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED 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. PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM. NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING SERVICE (OPUS)

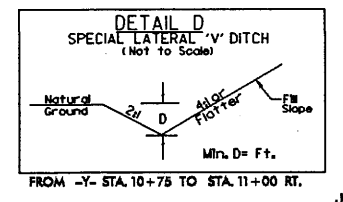
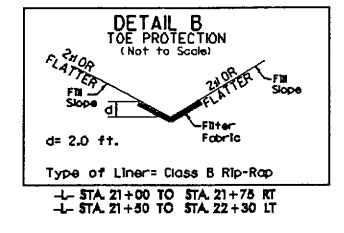
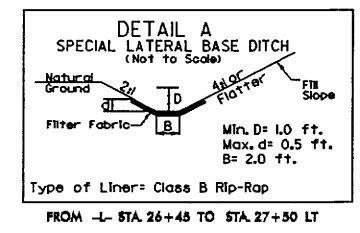
BENCHMARK DATA

BM1	ELEVATION = 455.25
N 1014659	E 1895257
L STATION 10+00	
S 47° 50' 57.0" W DIST 35.12	
R/R SPIKE IN BASE OF 10' WHITE OAK	
BM2	ELEVATION = 391.06
N 1013727	E 1896611
L STATION 26+34 121 RIGHT	
R/R SPIKE IN BASE OF 24' WHITE OAK	
BM3	ELEVATION = 430.46
N 1013349	E 1897242
L STATION 33+77 122 LEFT	
R/R SPIKE IN BASE OF 12' HICKORY	

NOTE: DRAWING NOT TO SCALE

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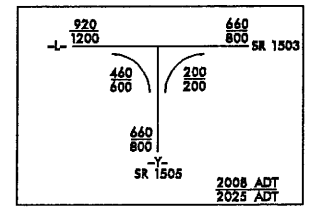
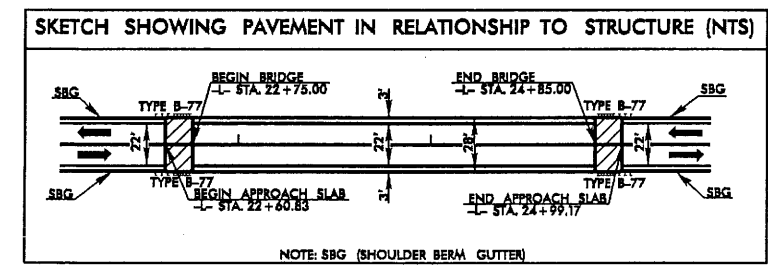
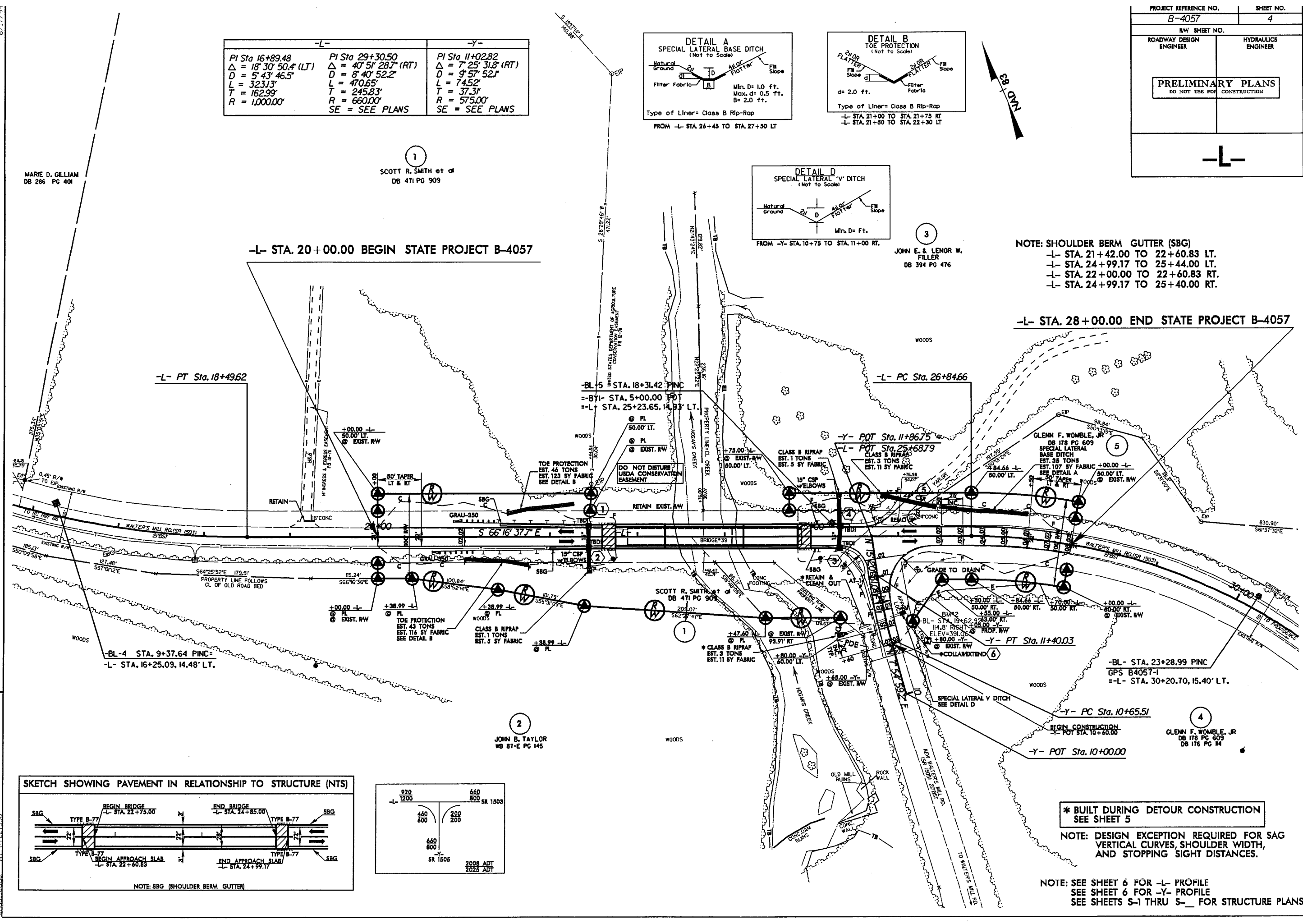
-L-	-Y-	-Y-
PI Sta 16+89.48	PI Sta 29+30.50	PI Sta 11+02.82
$\Delta = 18' 30" 50.4'$ (LT)	$\Delta = 40' 51" 28.7'$ (RT)	$\Delta = 7' 25" 31.8'$ (RT)
$D = 5' 43' 46.5"$	$D = 8' 40' 52.2"$	$D = 9' 57' 52.1"$
$L = 323.13'$	$L = 470.65'$	$L = 74.52'$
$T = 162.99'$	$T = 245.83'$	$T = 37.31'$
$R = 1,000.00'$	$R = 660.00'$	$R = 575.00'$
	SE = SEE PLANS	SE = SEE PLANS



NOTE: SHOULDER BERM GUTTER (SBG)
 -L- STA. 21+42.00 TO 22+60.83 LT.
 -L- STA. 24+99.17 TO 25+44.00 LT.
 -L- STA. 22+00.00 TO 22+60.83 RT.
 -L- STA. 24+99.17 TO 25+40.00 RT.

-L- STA. 28+00.00 END STATE PROJECT B-4057

REVISIONS
 RW REVISION 09/01/06 (DWG) - ELIMINATED THE CLAIM ON MARIE D. GILLIAM AND RENUMBERED THE PARCEL NUMBERS. THE TCE WAS DELETED AND THE RW WAS REVISED ON PARCEL 1 (SCOTT R. SMITH, ET AL). THE RW AND PDE WAS REVISED ON PARCEL 2 (JOHN B. TAYLOR). THE RW WAS REVISED ON PARCEL 3 (JOHN E. & LENOR W. FILLER) AND PARCEL 5 (GLENN F. WOMBLE, JR.). THE RW AND TCE WAS REVISED ON PARCEL 4 (GLENN F. WOMBLE, JR.).



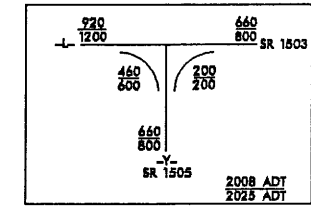
* BUILT DURING DETOUR CONSTRUCTION
SEE SHEET 5

NOTE: DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVES, SHOULDER WIDTH, AND STOPPING SIGHT DISTANCES.

NOTE: SEE SHEET 6 FOR -L- PROFILE
 SEE SHEET 6 FOR -Y- PROFILE
 SEE SHEETS S-1 THRU S-__ FOR STRUCTURE PLANS

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 hqllodge AT 11/22/15 38

-L-	-Y-	-Y-
PI Sta 16+89.48 Δ = 18° 30' 50.4" (LT) D = 5' 43' 46.5" L = 323.13' T = 162.99' R = 1,000.00'	PI Sta 29+30.50 Δ = 40° 51' 28.7" (RT) D = 8' 40' 52.2" L = 470.65' T = 245.83' R = 660.00' SE = SEE PLANS	PI Sta 11+02.82 Δ = 7° 25' 31.8" (RT) D = 9' 57' 52.1" L = 74.52' T = 37.31' R = 575.00' SE = SEE PLANS



MARIE D. GILLIAM
DB 286 PG 404

1
SCOTT R. SMITH et al
DB 471 PG 909

V DESIGN = 40 MPH

-DET-			
PI Sta 10+70.37 Δ = 16° 30' 41.3" (RT) D = 11' 48' 48.8" L = 139.77' T = 70.37' R = 485.00' SE = SEE PLANS	PI Sta 12+10.14 Δ = 16° 30' 41.3" (LT) D = 11' 48' 48.8" L = 139.77' T = 70.37' R = 485.00' SE = SEE PLANS	PI Sta 15+98.92 Δ = 13° 07' 16.5" (LT) D = 11' 48' 48.8" L = 111.07' T = 55.78' R = 485.00' SE = SEE PLANS	PI Sta 18+15.33 Δ = 36° 45' 10.0" (RT) D = 11' 48' 48.8" L = 311.11' T = 161.12' R = 485.00' SE = SEE PLANS

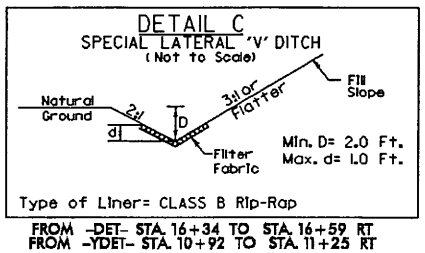
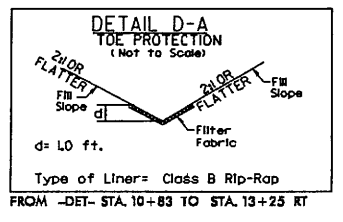
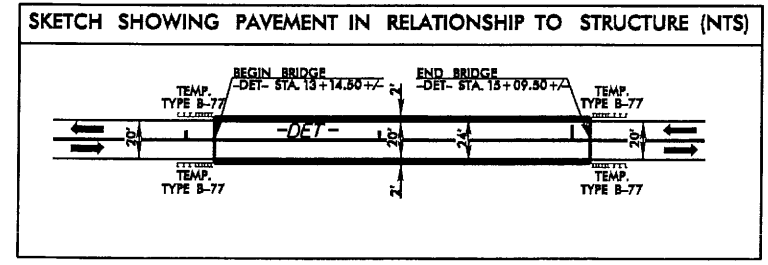
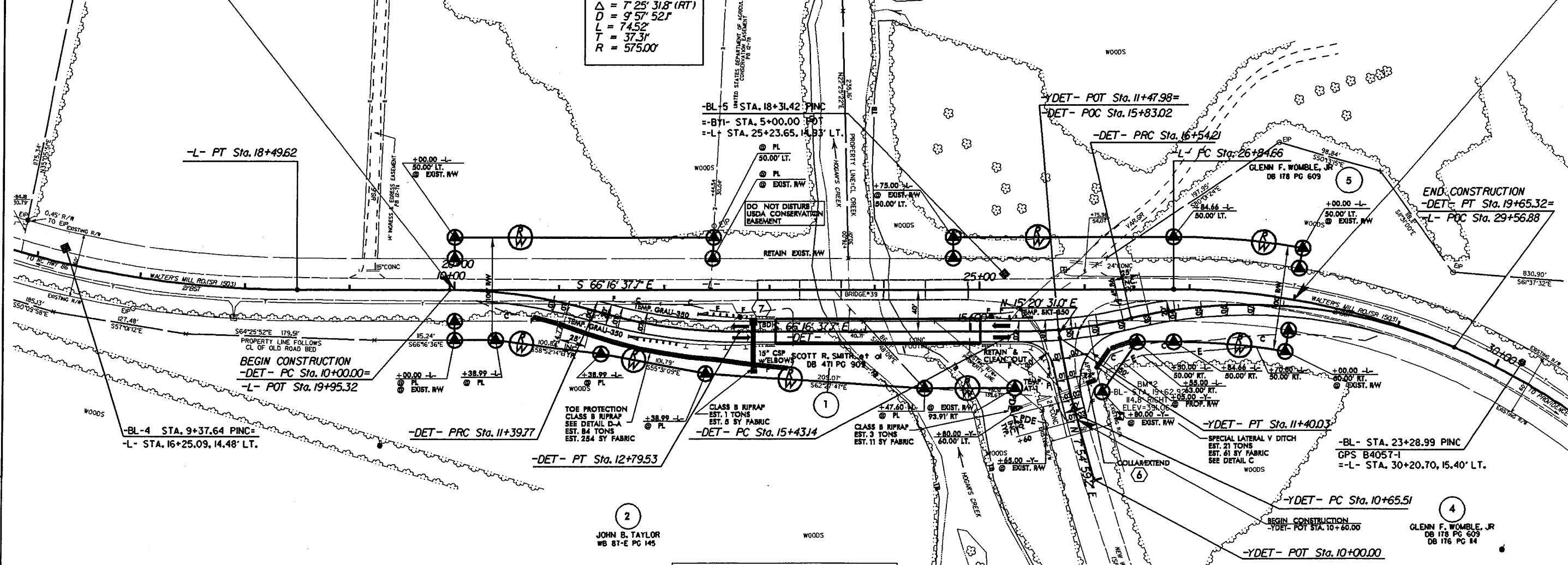
3
JOHN E. & LENOR W. FILLER
DB 394 PG 476

-L- STA. 20+00.00 BEGIN STATE PROJECT B-4057

-YDET-
PI Sta 11+02.82 Δ = 7° 25' 31.8" (RT) D = 9' 57' 52.1" L = 74.52' T = 37.31' R = 575.00'

-L- STA. 28+00.00 END STATE PROJECT B-4057

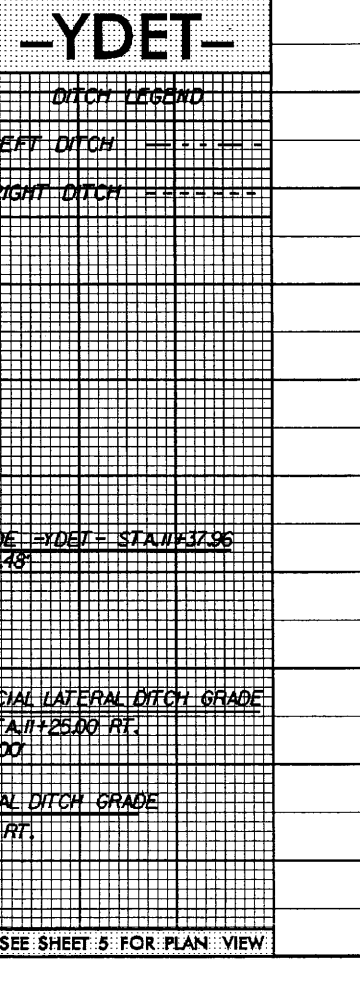
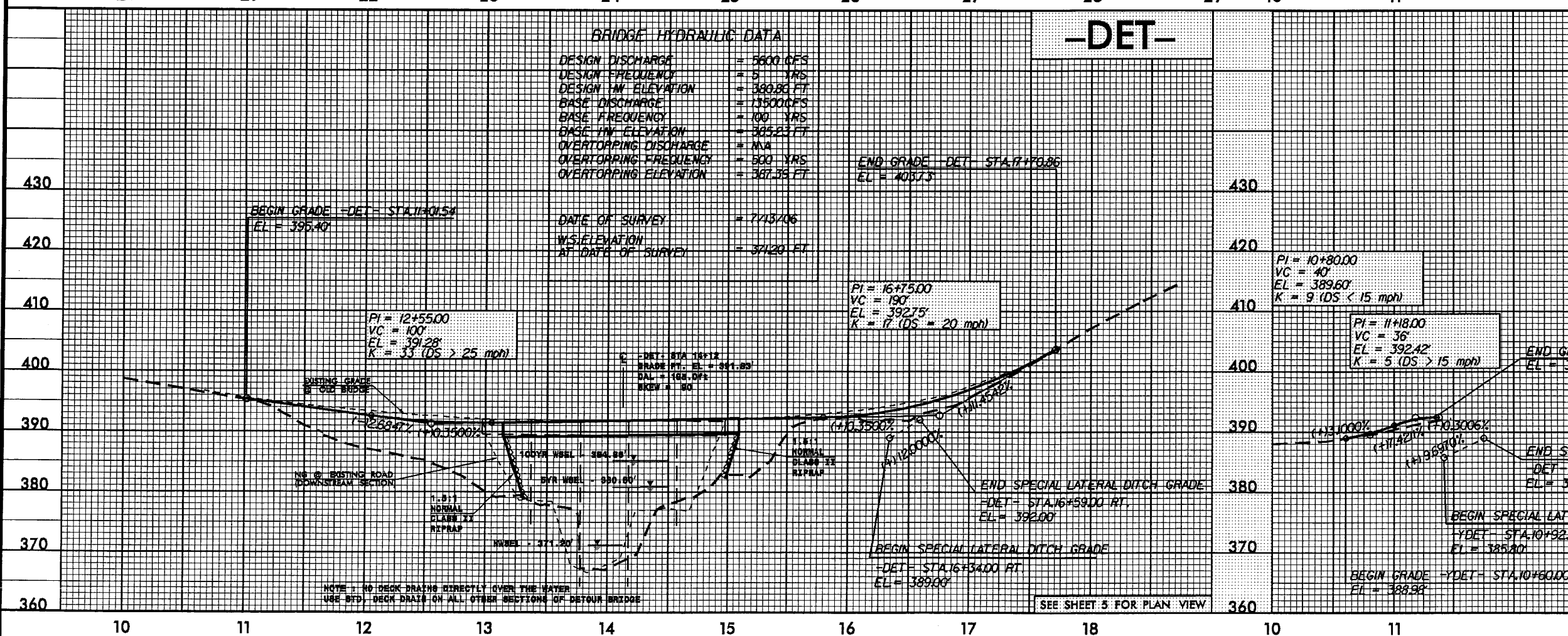
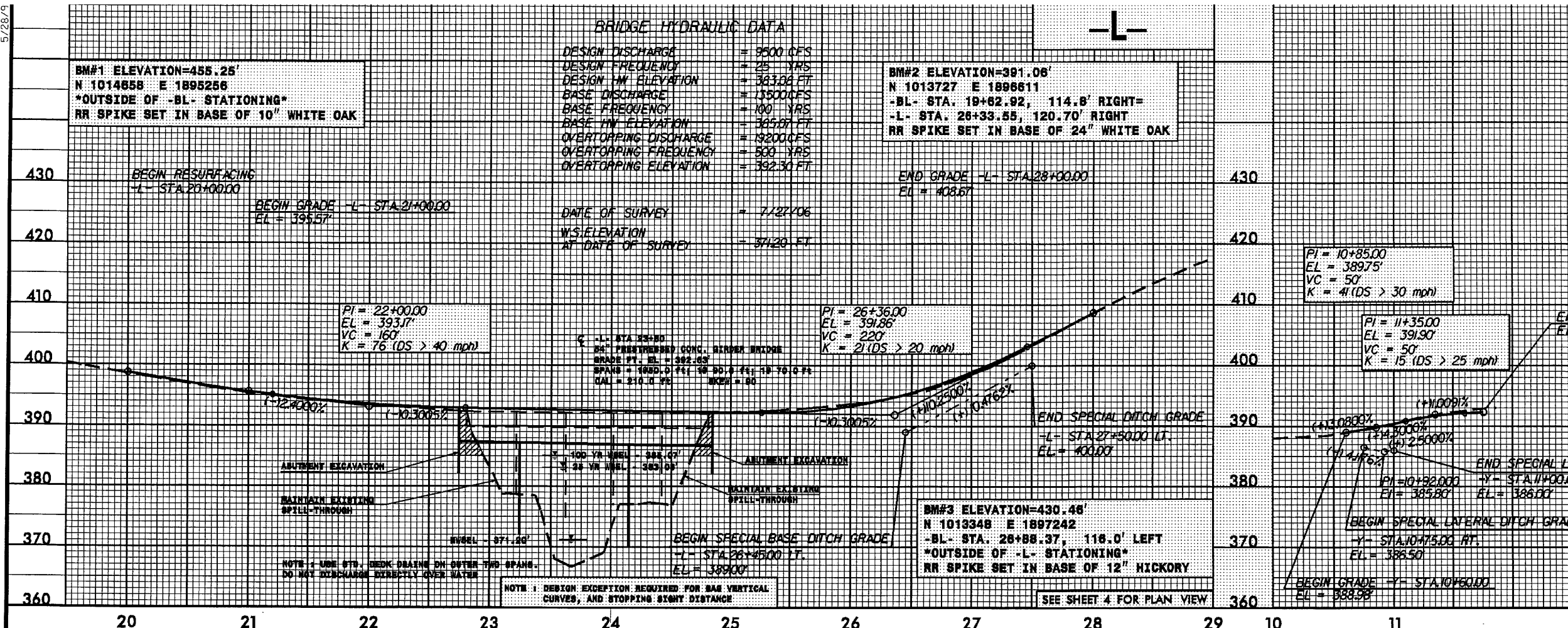
REVISIONS



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MARIE D. GILLIAM

NOTE: SEE SHEET 6 FOR -DET- PROFILE
SEE SHEET 6 FOR -YDET- PROFILE

5/28/09



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APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: B-4057; Replacement of Bridge No. 39 over Hogans Creek on SR 1503

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Hogans Creek.

State: NC County/parish/borough: Caswell City: near Providence
Center coordinates of site (lat/long in degree decimal format): Lat. ° Pick List, Long. ° Pick List
Universal Transverse Mercator: 17 647502E 4044576N

Name of nearest waterbody: Hogans Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Hogans Creek, which flows into Dan River

Name of watershed or Hydrologic Unit Code (HUC): 03010104

- Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
 Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination. Date:
 Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There ~~Are no~~ "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- Waters subject to the ebb and flow of the tide.
 Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There ~~Are~~ "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
 Wetlands adjacent to TNWs
 Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
 Non-RPWs that flow directly or indirectly into TNWs
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
 Impoundments of jurisdictional waters
 Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: 160 width (ft) and/or : 45 ft wide acres.
Wetlands: 0 acres.

c. Limits (boundaries) of jurisdiction based on: Established by OHWM.

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: .

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: **Hogans Creek**.

Summarize rationale supporting determination: Creek is approximately 45 feet wide and 1 to 4 feet deep at the project site, it flows through 2 counties, and is approximately 26 river miles long. It is a large creek that could easily be used for fishing, canoeing, and general recreation. Its confluence with the Dan River is approximately 1 1/4 river miles east of the project site, which makes it likely that recreational users of the river would use Hogans Creek as well.

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

- Tributary flows directly into TNW.
 Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Identify flow route to TNW⁵:
Tributary stream order, if known:

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

TNWs: 160 linear feet, 45 ft wide width (ft), Or, acres.

Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain: .
 Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
- Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: .
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: No wetlands are located within the project study area.

**Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057**

REEVALUATION OF THE
CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

Approved:

5/3/07

DATE

for Gregory J. Thorpe, PhD,
Environmental Management Director, PDEA

5/4/07

DATE

for John F. Sullivan, III, P.E. Division Administrator
Federal Highway Administration

**Caswell County
Bridge No. 39 on SR 1503
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REEVALUATION OF THE
CATEGORICAL EXCLUSION

Documentation Prepared in
Project Development and Environmental Analysis Branch By:

5/3/07

DATE

Terry A. Harris

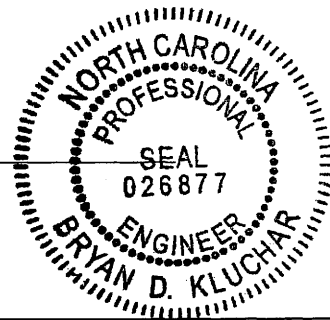
Terry A. Harris
Project Planning Engineer
Bridge Project Development Unit

5/3/07

DATE

Bryan D. Kluchar

Bryan D. Kluchar, PE
Project Engineer
Bridge Project Development Unit



PROJECT COMMITMENTS:

**Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057**

1. Roadway Design Unit, Structure Design Unit, Project Development & Environmental Analysis Branch (Permits), Roadside Environmental Unit, Resident Engineer:

Bridge Demolition:

Bridge No. 39 is composed of a timber deck with asphalt wearing surface on steel I-beams superstructure, and timber substructure with steel crutch bents and timber bulkheads. Bridge demolition will occur by removing the asphalt surface prior to removal of the bridge structure. The remainder of the timber and steel components will be removed without dropping them into Hogans Creek. Consequently, there will be no temporary fill resulting from bridge demolition. Because of the stream's silt and sand substrate, the use of turbidity curtains will be considered during bridge demolition. During construction, Best Management Practices for Bridge Demolition and Removal will be followed.

2. Roadway Design Unit

The U.S. Department of Agriculture conservation easement will not be impacted by temporary easements or acquisition of additional Right of Way.

Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057

INTRODUCTION: Bridge No. 39 is included in the 2007-2013 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement and Rehabilitation Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Reevaluation of the Federal “Categorical Exclusion.”

A Federal Categorical Exclusion was prepared for the project on February 3, 2005. Within the Categorical Exclusion, Alternate 3 was identified as the Preferred Alternative. However, Alternate 3 was selected without knowledge of an impact to a US Department of Agriculture Conservation Easement. The easement states that no “draining, dredging, channeling, filling, leveling, pumping, diking, impounding, or related activities, as well as altering or tampering with water control structures or devices” will occur within the easement area. The conservation easement is located to the north of the existing bridge.

A new design (Alternate 4) avoids the US Department of Agriculture Conservation Easement. Alternate 4 replaces the existing bridge in place and maintains traffic with an onsite detour located to the south of the existing structure.

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicate Bridge No. 39 has a sufficiency rating of 20.4 out of a possible 100 for a new structure. The bridge is considered structurally deficient and functionally obsolete due to a structural appraisal of 2 out of 9 according to Federal Highway Administration (FHWA) standards and eligible for FHWA’s Highway Bridge Replacement Program. The bridge is also structurally deficient based on a superstructure condition of 4 out of 9 and a substructure condition of 3 out of 9. The bridge is also functionally obsolete due to a deck geometry appraisal of 2 out of 9.

Bridge No. 39 includes a 5-span superstructure composed of a timber deck on steel I-beams. The bridge contains a fifty-three year old timber substructure with a typical life expectancy between 40 to 50 years due to the natural deterioration rate of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 39 is approaching the end of its useful life.

II. EXISTING CONDITIONS

The project is located in the north central section of Caswell County (see Figure 1). The area contains a mix of agricultural and rural residential land.

SR 1503 is classified as a rural minor collector in the Statewide Functional Classification System and is not a National Highway System Route. This route is not a designated bicycle route.

In the vicinity of the bridge, SR 1503 has a 21-foot pavement width with 6-foot grass shoulders. The roadway grade is relatively flat to gently rolling through the project area. The roadway is situated approximately 27 feet above the streambed.

The existing bridge (see Figure 3) was constructed in 1954. The overall length of the structure is 201 feet. The clear roadway width is 19 feet. The bridge is posted with weight restrictions of 12 tons for single vehicles and 15 tons for truck-tractor semi-trailers.

There is existing underground telephone service along the south side of SR 1503 (aerial across Hogans Creek). Utility impacts are anticipated to be low.

The current traffic volume of 890 vehicles per day (VPD) is expected to increase to 1280 VPD by the year 2030. The projected volume includes 1-percent truck-tractor semi-trailer (TTST) and 2-percent dual-tired vehicles (DT). There is a 45 mph speed limit in the project area.

There was one accident reported in the vicinity of Bridge No. 39 during a recent three-year period. This crash resulted in a citation for excessive speed for wet conditions. The accident resulted in property damage and one injury.

III. ALTERNATIVES

A. Project Description

The replacement structure will consist of a bridge approximately 210-foot long. The bridge length is based on preliminary design information and is set by hydraulic requirements. The bridge will be of sufficient width to provide for two 11-foot lanes with 3-foot offsets on each side. The roadway grade of the new structure will be approximately 1-foot higher than the existing grade.

The existing roadway will be widened to a 22-foot pavement width to provide two 11-foot lanes. Five-foot (8-foot where guardrail is required) grass shoulders will be provided on each side. This roadway will be designed as a rural minor collector.

B. Reasonable and Feasible Alternatives

Two alternates were studied (See Figure 2). Alternate 3 impacts the US Department of Agriculture Conservation Easement, while Alternate 4 avoids the Conservation Easement.

Alternate 3

The replacement structure consists of a 210-foot long bridge on an alignment shifted approximately 40 feet north of the existing alignment. Traffic will be maintained on the existing bridge during construction. The roadway grade of the new structure will be approximately the same as the existing facility at this location. The bridge will be of sufficient width to provide for two 11-foot lanes and 3-foot offsets. Approach roadwork for the shifted alignment will begin approximately 975 feet to the east of the existing bridge and approximately 515 feet west of the existing bridge.

The existing roadway approaches will be widened to a 22-foot pavement width to provide two 11-foot lanes. Five-foot (8-foot where guardrail is required) grass shoulders will be provided on each side. This roadway will be designed as a rural minor collector with a 60 mile per hour design speed. Design exceptions may be required for vertical and horizontal curves, and vertical and horizontal stopping sight distance.

Alternate 3 impacts a Conservation Easement owned by the US Department of Agriculture. This easement impact was not identified in the Categorical Exclusion prepared for the project on February 3, 2005. The easement states that no “draining, dredging, channeling, filling, leveling, pumping, diking, impounding, or related activities, as well as altering or tampering with water control structures or devices” will occur within the easement area.

Alternate 4 (Preferred)

Alternate 4 replaces the existing bridge at the existing location with a new structure approximately 210 feet long. Traffic will be maintained by an on-site detour located approximately 40 feet to the south of the existing bridge. Alternate 4 does not impact the US Department of Agriculture Conservation Easement. The existing roadway approaches will be widened to a 22-foot pavement width to provide two 11-foot lanes. Five-foot (8-foot where guardrail is required) grass shoulders will be provided on each side.

The roadway grade of the new structure will be approximately one-foot higher than the existing bridge. The bridge will be of sufficient width to provide for two 11-foot lanes and 3-foot offsets on each side. Approach roadwork for Alternate 4 will begin approximately 471 feet to the east of the existing bridge and approximately 280 feet west of the existing bridge. This roadway will be designed as a rural minor collector with a 50 mile per hour design speed.

Design exceptions will be required for sag vertical curves and sag vertical stopping sight distance. A short 50-foot portion of the shoulder width is reduced on the northwest side of the bridge approach slab to avoid impacts to the US Department of Agriculture Conservation Easement.

The onsite detour located south of the existing structure consists of 10-foot lanes and 4-foot shoulders (6-foot with temporary guardrail). The detour structure will be approximately 195 feet long and will be constructed at approximately the same elevation as the existing structure. The detour bridge will provide a clear roadway width of 24 feet with two 10-foot lanes and 2-foot offsets on each side. The onsite detour design speed is 40 miles per hour.

C. Alternatives Eliminated From Further Consideration

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 1503. In addition, timber bridge components typically do not last beyond 30 to 40 years of age due to the natural deterioration rates of wood. Past a certain degree of deterioration, structures with timber piles become impractical to maintain and are programmed for replacement, as is the case for this bridge.

Alternate 1: Replace bridge approximately on existing alignment, and detour traffic offsite onto other local roads.

Alternate 2: Replace bridge approximately on existing alignment, and maintain traffic by an onsite temporary detour structure placed to the north.

D. Preferred Alternative

Alternate 4 is the preferred alternate. Bridge No. 39 will be replaced in-place with an onsite detour to the south of the existing bridge as shown in Figure 2. The onsite detour will maintain traffic during construction.

There were two primary factors considered in reaching a decision on the preferred alternate:

- (a) There is no acceptable offsite detour. The Caswell County Emergency Management Director stated that unacceptable delays in emergency and fire services would result if an offsite detour is used. In addition, the Division 7 Engineer does not concur with an offsite detour for this project. Therefore, Alternate 1 could not be considered further.
- (b) Alternates 2 and 3 impact the US Department of Agriculture Conservation Easement. The easement specifically states that no “draining, dredging, channeling, filling, leveling, pumping, diking, impounding, or related activities, as well as altering or tampering with water control structures or devices” will occur within the easement area.

NCDOT Division 7 concurs with the proposed recommendation.

IV. ESTIMATED COSTS

The estimated costs based on 2006 prices are as follows:

Item	Alternate 3	Alternate 4 (Preferred)
Structure	\$ 689,000	\$ 689,000
Detour Structure	N/A	348,000
Roadway Approaches	581,000	470,000
Structure Removal	46,000	46,000
Eng. & Contingencies	272,000	279,000
Mobilization & Miscellaneous	212,000	219,000
Total Construction Cost	\$ 1,800,000	\$2,051,000
Right-of-way Costs	71,000	20,000
Total Project Cost	\$ 1,871,000	\$ 2,071,000

V. NATURAL RESOURCES

Physical Resources

Water Resources

Hogans Creek is a perennial stream that comprises the single water resource within the project area. The stream is located within the Roanoke River Drainage Basin and is designated as Subbasin 03-02-03 according to the NCDWQ system for cataloging drainage basins, and USGS Hydrologic Unit 03010104 according to the federal system for cataloging drainage basins.

Hogans Creek is designated as DWQ Stream Index # 22-50 and is assigned a primary water resource classification of "C". Class "C" refers to waters that are protected for uses such as secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture and other uses suitable for Class "C". Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed development or types of discharges in Class "C" waters.

There are no surface waters classified as High Quality Water (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) located within 1.0 mi. of the project area. Based on DWQ's 2004 Final 303(d) list, no surface waters within 1.0 mile of the project are listed as 303(d).

Biotic Resources

Terrestrial impacts can result in changes in both species numbers and composition. Plant communities found along the proposed project area often serve as nesting and sheltering habitat for wildlife. The proposed project construction may reduce the existing habitat for these species, thereby diminishing fauna numbers. Biotic communities located within the project area include

Dry Mesic Oak-Hickory Forest, Mesic Mixed Hardwood Forest, Piedmont/Low Mountain Alluvial Forest, Maintained/Disturbed Community, Pasture Community, and Old Field Community.

Aquatic Resources

The aquatic community consists of Hogans Creek below the mean high water line. The vegetation associated with the aquatic community includes those species located along the stream banks of Hogans Creek. Canopy species observed along the banks of Hogans Creek include river birch (*Betula nigra*), hackberry (*Celtis spp.*), box elder (*Acer negundo*), and persimmon (*Diospyros virginiana*). The observed shrub/sapling species include Chinese privet (*Ligustrum sinense*) and elderberry (*Sambucus canadensis*). Herbaceous and woody vine species include river oats (*Chasmanthium latifolium*) and Japanese honeysuckle (*Lonicera japonica*).

There are no NCWRC moratoriums that apply to Hogans Creek. Additionally, there are no NCWRC “proposed critical habitats for aquatic species” located within the project area.

Jurisdictional Topics

Surface Waters and Wetlands

Hogans Creek is considered a jurisdictional Surface Water under Section 404 of the Clean Water Act. No wetlands are located within the proposed project area. Stream impacts associated with the alternates are shown in Table 1.

Table 1. Estimated Stream Impacts

Stream Name	Alternate 3		Alternate 4	
	feet	acres	feet	Acres
Hogans Creek	110	0.11	70	0.02

Conservation Easement

A U.S. Department of Agriculture conservation easement including a floodplain wetland is located at the northwest quadrant of the existing bridge on SR 1503. The U.S. Department of Agriculture conservation easement will not be impacted by temporary easements or acquisition of additional Right of Way associated with Alternate 4.

Permits

In accordance with the provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344), a Section 404 Nationwide Permit 23 from the USACE is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. A NWP No. 33 may be required if temporary construction including cofferdams, access and dewatering are required for this project. A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality General

Certification is required prior to the issuance of the Section 404 Nationwide 23 and/or NWP 33. The USACE will determine final permit requirements.

Bridge Demolition

Bridge No. 39 is a 201 ft long by 20 ft wide structure composed of a timber deck with asphalt wearing surface on steel I-beams superstructure, and timber substructure with steel crutch bents and timber bulkheads. Bridge demolition will occur by removing the asphalt surface prior to removal of the bridge structure. The remainder of the timber and steel components will be removed without dropping them into Hogans Creek. Consequently, there will be no temporary fill resulting from bridge demolition. Because of the stream's silt and sand substrate, turbidity curtains will be considered during bridge demolition.

Federally Threatened and/or Endangered 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 29, 2007, the USFWS listing lists one federally protected species for Caswell County: the James spiny mussel.

Name: James spiny mussel (*Pleurobema collina*)

Family: Unionidae

Federal Status: Endangered

Date Listed: 22 July 1988

Biological Conclusion:

Not Likely to Adversely Affect.

A survey was conducted for NCDOT by the Catena Group consulting firm on September 26, 2003. The finding from this survey was "Not Likely To Adversely Affect." On March 1, 2004, NCDOT requested review and concurrence with this finding from the U.S. Fish and Wildlife Service (USFWS). In a letter dated March 17, 2004, the USFWS concurred with the conclusion. After this concurrence, Alternate 4 was selected as the preferred alternative. In a letter dated April 30, 2007, the USFWS concurred with this conclusion also. Re-surveys for this species are not required for this project (per NCDOT Biologists).

VI. HUMAN ENVIRONMENT

Section 106 Compliance Guidelines

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

Historic Architecture

The North Carolina Department of Cultural Resources has reviewed this project and determined that no structures of historic significance will be affected by the project (see attached letter dated January 3, 2000). The bridge being replaced is not considered eligible for the National Register of Historic Places.

Archaeology

The North Carolina Department of Cultural Resources requested an archaeological investigation. The NCDOT submitted an archeological report on February 25, 2002. This report concluded that Site "31CS70**" is outside the area of potential effect (APE). The report also concluded that Site "31CS71" is not eligible for the National Register of Historic Places. The Department of Cultural Resources agreed with the NCDOT report (see attached Cultural Resources letters dated January 3, 2000, and April 1, 2002).

Another NCDOT archaeological investigation associated with Alternate 4 was completed in 2007. The Department of Cultural Resources concurred that no significant cultural resources were discovered and that no further cultural resource investigations are necessary (see attached letter dated March 8, 2007). Thus it is concluded that no archaeological resources of historic significance will be affected by the project.

Community Impacts

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. All construction will take place along existing alignment. There are no soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

Noise & Air Quality

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required. This project will not result in any meaningful changes in traffic

volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. Any burning of vegetation shall be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 NCAC 2D.0520.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

VII. GENERAL ENVIRONMENTAL EFFECTS

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

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

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

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

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites in the project area.

Caswell County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

VIII. COORDINATION AND AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, NC Department of Natural Resources, U.S. Fish & Wildlife Service, N.C. Wildlife Resource Commission, N.C. Division of Parks & Recreation, North Carolina State Historic Preservation Office, Caswell County Planning Department.

The agencies listed had no special concerns for this project.

IX. PUBLIC INVOLVEMENT

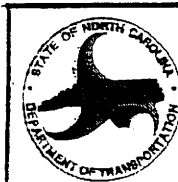
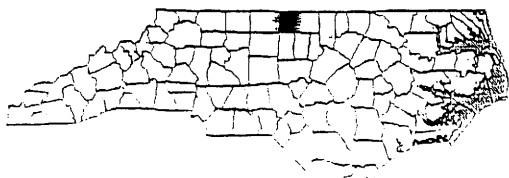
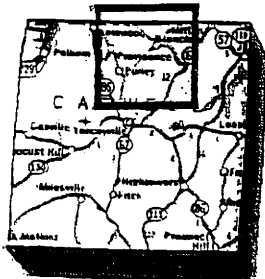
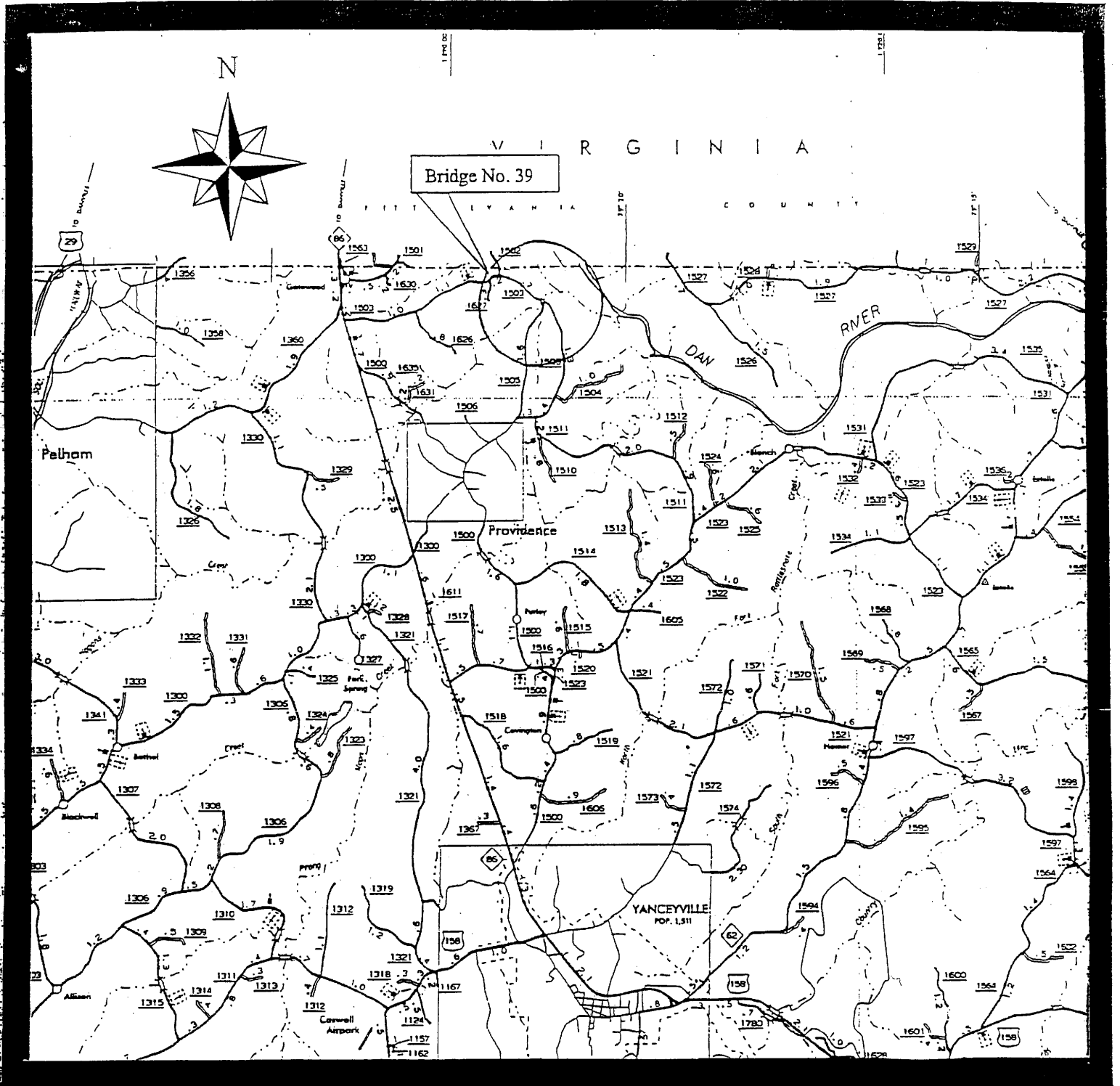
A letter was sent by the Location & Surveys Unit to all property owners affected directly by this project. Property owners were invited to comment. No comments have been received to date.

There is not substantial controversy on social, economic, or environmental grounds concerning the project.

X. CONCLUSION

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project.

FIGURES




NORTH CAROLINA DEPARTMENT OF
TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

CASWELL COUNTY
REPLACE BRIDGE 39 ON SR 1503
OVER HOGAN'S CREEK
B-4057

Figure One



	<p>NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH</p>
<p>CASWELL COUNTY REPLACE BRIDGE NO. 39 ON SR 1508 OVER HOGAN'S CREEK B-4057</p>	
<p>FIGURE 2A (ALTERNATE 3)</p>	



NORTH CAROLINA DEPARTMENT
OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

CASWELL COUNTY
REPLACE BRIDGE NO. 39 ON SR 1503
OVER HOGAN'S CREEK
B-4057

FIGURE 2B (ALTERNATE 4)



Looking east
across Bridge
No. 39



Looking west
across Bridge
No. 39



North Carolina Department of Transportation
Division of Highways
Project Development & Environmental Analysis
Branch

Caswell County
Replace Bridge No. 39 on SR 1503
Over Hogan's Creek
B-4057

Figure Three

APPENDIX A



North Carolina Department of Cultural Resources

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

Division of Archives and History
William S. Price, Jr., Director

January 3, 2000

MEMORANDUM

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

From: David Brook *David Brook*
Deputy State Historic Preservation Officer

Re: Replacement of Bridge No. 39 on SR 1503 over Hogan's Creek,
TIP No. B-4057, Caswell County, ER 01-7941

On November 28, 2000, April Montgomery of our staff met with North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. She 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.

There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, there is a high probability of the presence of remains of a historic mill within the project area. We, therefore, recommend that an archaeological survey be conducted in connection with this project.

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 any questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919 733-4763.

cc: T. Padgett



North Carolina Department of Cultural Resources
State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

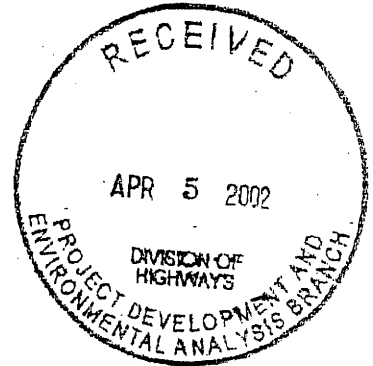
April 1, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*

SUBJECT: Archaeological Survey Report for Replacement, Bridge #39 on SR 1503 over Hogan's Creek, B-4057, Caswell County, ER 01-7941



Thank you for your letter February 25, 2002, of transmitting the archaeological survey report by Mohler and Overton for the above project.

We have reviewed the report and agree with the stated conclusions. 31CS71 is not considered eligible for inclusion in the National Register of Historic Places, given the amount of disturbance to the site. 31CS70** is outside the current area of potential effect and has not been evaluated. Should plans change and 31CS70** be affected, evaluation will be necessary.

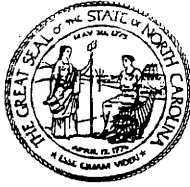
The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

DB:kgc

cc: Matt Wilkerson, NCDOT

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St. Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 • 733-8653
Restoration	515 N. Blount St. Raleigh, NC	4613 Mail Service Center, Raleigh 27699-4613	(919) 733-6547 • 715-4801
Survey & Planning	515 N. Blount St. Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 • 715-4801



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

March 8, 2007

TO: Matt Wilkerson
Archaeology Supervisor
NCDOT - Office of Human Environment

FROM: Peter Sandbeck *Ref for Peter Sandbeck*

SUBJECT: Replacement of Bridge No.39 on SR 1403 over Hogan's Creek, Caswell County, ER 01-7941

Thank you for your letter of February 23, 2007, transmitting the archaeological survey report for the above project.

The report author noted that no significant cultural resources were discovered within the Area of Potential Effect (APE) during the archaeological reconnaissance and that no further cultural resources investigations are necessary and/or warranted. We concur with this recommendation.

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 considerations. If you have any questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-733-4763 ext. 246. In all future communication concerning this project, please cite the above referenced tracking number.

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-4763/733-8653
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801

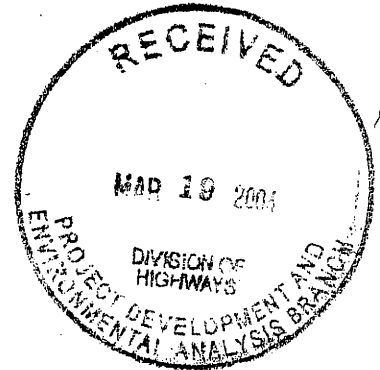


United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

March 17, 2004



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

Dear Dr. Thorpe:

This letter is in response to your letter of March 1, 2004 which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 39 on SR 1503 over Hogan's Creek in Caswell County (TIP No. B-4057) may affect, but is not likely to adversely affect the federally endangered James spinymussel (*Pleurobema collina*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a mussel survey was conducted at the project site on September 26, 2003. The survey extended 100 meters upstream and 400 meters downstream of SR 1503. No mussels of any species were observed. Based on the information provided and other information available, the Service concurs with your conclusion that the proposed bridge replacement may affect, but is not likely to adversely affect the James spinymussel. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: L. Williams

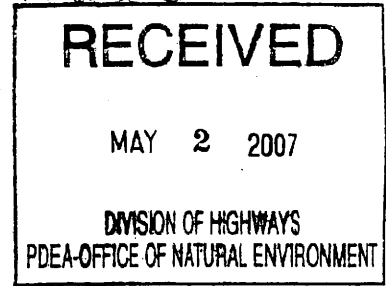
Mason



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

April 30, 2007



Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

This letter is in response to communications with your staff regarding a change in the design of the proposed replacement of Bridge No. 39 on SR 1503 over Hogan's Creek in Caswell County (TIP No. B-4057). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

On March 17, 2004, the U.S. Fish and Wildlife Service (Service) concurred with the North Carolina Department of Transportation (NCDOT) determination that the project may affect, but is not likely to adversely affect the federally endangered James spinymussel (*Pleurobema collina*). The concurrence was based, in part, on a September 26, 2003 mussel survey. In that survey, no mussels of any species were observed. Subsequently, NCDOT slightly changed the location of the new bridge. Previously, the bridge was to be replaced approximately 40 feet north of the existing bridge and traffic maintained on the existing bridge. The new preferred alternative would replace the bridge on the existing location, with traffic maintained by a temporary on-site detour approximately 40 feet south of the existing bridge.

The Service considers our previous concurrence to still be valid with the new preferred alternative. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Gary Jordan
for Pete Benjamin
Field Supervisor

**Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057**

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

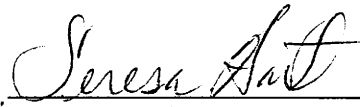
AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION


DIVISION OF HIGHWAYS

Approved:

1/28/05
DATE

for 
Gregory J. Thorpe, PhD, Environmental Manager
Project Development & Environmental Analysis Branch

2/3/05
DATE

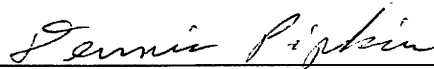
for 
John F. Sullivan, III, P.E. Division Administrator
Federal Highway Administration

**Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057**

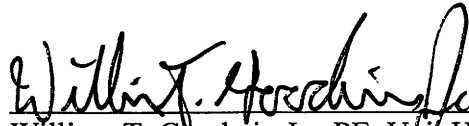
CATEGORICAL EXCLUSION

Documentation Prepared in
Project Development and Environmental Analysis Branch By:

January 2005



Dennis Pipkin, PE
Project Planning Engineer



William T. Goodwin Jr., PE, Unit Head
Bridge Replacement Planning Unit

ENVIRONMENTAL COMMITMENTS:

**Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057**

1. Roadway Design Unit, Roadside Environmental Unit, Resident Engineer:

Revegetation: The existing bridge and approaches will be removed after the new bridge is completed, and the area will be revegetated with appropriate plant species.

2. Roadway Design Unit, Structure Design Unit, Project Development & Environmental Analysis Branch (Permits), Resident Engineer:

Bridge Demolition:

Bridge No. 39 is composed of an asphalt surface, timber and steel I-beam deck, and timber substructure and bulkheads. Bridge demolition will occur by removing the asphalt surface prior to removal of the bridge structure. The remainder of the timber and steel components will be removed without dropping them into Hogans Creek. Consequently, there will be no temporary fill resulting from bridge demolition. Because of the stream's silt and sand substrate, the use of turbidity curtains will be considered during bridge demolition. During construction, Best Management Practices for Bridge Demolition and Removal will be followed.

Caswell County
Bridge No. 39 on SR 1503
Over Hogans Creek
Federal Aid Project No. BRZ-1503(5)
State Project No. 8.2481701
W.B.S. No. 33421.1.1
T.I.P. No. B-4057

INTRODUCTION: Bridge No. 39 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement and Rehabilitation Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED STATEMENT

Bridge No. 39 includes a 5-span superstructure composed of a timber floor and timber deck placed on steel I-beams. The substructure is entirely of timber components.

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 18.3 out of a possible 100 for a new structure. The bridge is considered structurally deficient and functionally obsolete according to Federal Highway Administration (FHWA) guidelines. Inspection records show a structural evaluation of 2 out of 9 (structurally deficient). The bridge is also functionally obsolete due to a deck geometry appraisal of 2 out of 9, in addition to the structural evaluation of 2 out of 9. The bridge is therefore eligible for FHWA's Highway Bridge Replacement and Rehabilitation Program.

Other considerations such as wear and tear resulting from increasing traffic, aging (50 year old) bridge components, and increasing maintenance costs all justify the replacement of this bridge.

II. EXISTING CONDITIONS

The project is located in the north central section of Caswell County (see Figure 1). The area contains a mix of agricultural and rural residential land.

SR 1503 is classified as a rural minor collector in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route.

In the vicinity of the bridge, SR 1503 has a 21-foot pavement width with 6-foot grass shoulders. The roadway grade is relatively flat to gently rolling through the project area. The roadway is situated approximately 27 feet above the streambed.

The existing bridge (see Figure 3) was constructed in 1954. The overall length of the structure is 201 feet. The clear roadway width is 19 feet. The bridge is posted with weight restrictions of 12 tons for single vehicles and 15 tons for truck-tractor semi-trailers.

Utility impacts are anticipated to be low.

There is one existing underground telephone service along the south side of SR 1503 (aerial across Hogans Creek).

The current traffic volume of 800 vehicles per day (VPD) is expected to increase to 1200 VPD by the year 2025. The projected volume includes 1-percent truck-tractor semi-trailer (TTST) and 2-percent dual-tired vehicles (DT). There is a 55 mph speed limit in the project area.

There was one accident reported in the vicinity of Bridge No. 39 during a check of a recent three-year period. This crash resulted in a citation for excessive speed for wet conditions. The accident resulted in property damage and one injury.

III. ALTERNATIVES

A. Project Description

The replacement structure will consist of a 210-foot long bridge on an alignment shifted approximately 40 feet north of the existing alignment. Traffic will be maintained on the existing bridge during construction.

The roadway grade of the new structure will be approximately the same as the existing facility at this location. The bridge will be of sufficient width to provide for two 11-foot lanes and 3-foot offsets. Approach roadwork for the shifted alignment will begin approximately 975 feet to the east of the existing bridge and approximately 515 feet west of the existing bridge.

The existing roadway approaches will be widened to a 22-foot pavement width to provide two 11-foot lanes. Five-foot (8-foot where guardrail is required) grass shoulders will be provided on each side. This roadway will be designed as a rural minor collector with a 60 mile per hour design speed.

Design exceptions may be required for vertical and horizontal curves, and vertical and horizontal stopping sight distance.

B. Reasonable and Feasible Alternatives

Three alternates were studied (See Figure 2):

Alternate 1: Replace bridge approximately on existing alignment, and detour traffic offsite onto other local roads.

Alternate 2: Replace bridge approximately on existing alignment, and maintain traffic by an on-site temporary detour structure placed to the north.

Alternate 3: Replace bridge on new alignment to the north, and maintain traffic on the existing bridge during construction.

C. Alternatives Eliminated From Further Consideration

The “do-nothing” alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 1503. In addition, timber bridge components typically do not last beyond 30 to 40 years of age due to the natural deterioration rates of wood. Past a certain degree of deterioration, structures with timber piles become impractical to maintain and are programmed for replacement, as is the case for this bridge.

D. Preferred Alternative

Alternate 3 is the preferred alternate. Bridge No. 39 will be replaced on a shifted alignment as shown in Figure 2. Traffic will be maintained on the existing bridge during construction.

There were two primary factors considered in reaching a decision on the preferred alternate:

- (a) There is no acceptable offsite detour. The Caswell County Emergency Management Director stated that unacceptable delays in emergency and fire services would result if an offsite detour is used. In addition, the Division 7 Engineer does not concur with an offsite detour for this project. Thus, Alternate 1 could not be considered further.
- (b) Of the two remaining reasonable and feasible alternates, Alternate 3 is the most economical, and still provides maintenance of traffic onsite, as well as providing a new facility that meets the purpose and need for the project.

NCDOT Division 7 concurs with this proposed recommendation.

IV. ESTIMATED COSTS

The estimated costs for the build alternative is as follows:

Item	Alternate 1	Alternate 2	Alternate 3
Structure	\$ 470,000	\$ 616,000	\$ 470,000
Roadway Approaches	91,000	586,000	448,000
Structure Removal	38,000	38,000	38,000
Eng. & Contingencies	108,000	248,000	215,000
Mobilization & Miscellaneous	118,000	362,000	278,000
Total Construction Cost	\$ 825,000	\$ 1,850,000	\$ 1,449,000
Right-of-way Costs	35,000	64,000	71,000
Total Project Cost	\$ 860,000	\$ 1,914,000	\$ 1,520,000

V. NATURAL RESOURCES

Physical Resources

Soils

There are two major soil phases located within the project area:

Dan River loam: Dan River loam is a well-drained, moderately permeable soil on flood plains. The seasonal high water table occurs at depths of 2.5 to 3.5 ft and runoff is slow. The flooding frequency for Dan River loam is occasional.

Danripple sandy loam: Dan River sandy loam is a well-drained, moderately permeable soil on stream terraces. The seasonal high water table occurs at depths of 3.3 to 5.0 ft and runoff is negligible to medium. The flooding frequency for Danripple sandy loam ranges from rare to very rare.

3.4.1 Terrestrial Impacts

Terrestrial impacts can result in changes in both species numbers and composition. Plant communities found along the proposed project area often serve as nesting and sheltering habitat for wildlife. The proposed project construction may reduce the existing habitat for these species, thereby diminishing fauna numbers.

The calculated impacts to biotic resources reflect the relative abundance of each community present within the project area. Project construction will result in clearing and degradation of portions of these communities. The following table summarizes potential quantitative losses to the Biotic Community.

Community	Impacts (acres)			
	Alternative 1	Alternative 2		Alternative 3
	Permanent Impacts	Permanent Impacts	Temporary Impacts	Permanent Impacts
Dry Mesic Oak-Hickory Forest	0.02	0.02	0.04	0.04
Mesic Mixed Hardwood Forest	0.01	0.01	0.02	0.02
Piedmont/Low Mountain Alluvial Forest	0.05	0.05	0.24	0.24
Maintained/Disturbed Community	1.0	1.0	0.1	0.1
Pasture Community	0.06	0.06	0.24	0.24
Old Field Community	0	0	0	0
Total Impacts	1.1	1.1	0.65	0.65

Water Resources

Hogans Creek is a perennial stream that comprises the single water resource within the project area. The stream is located within the Roanoke River Drainage Basin and is designated as Subbasin 03-02-03 according to the NCDWQ system for cataloging drainage basins, and USGS Hydrologic Unit 03010104 according to the federal system for cataloging drainage basins.

Best Usage Classification

Hogans Creek is designated as DWQ Stream Index # 22-50 and is assigned a primary water resource classification of "C". Class "C" refers to waters that are protected for uses such as secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture and other uses suitable for Class "C". Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed development or types of discharges in Class "C" waters.

There are no surface waters classified as High Quality Water (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) located within 1.0 mi. of the project area.

Aquatic Resources

The aquatic community consists of Hogans Creek below the mean high water line. The vegetation associated with the aquatic community includes those species located along the stream banks of Hogans Creek. Canopy species observed along the banks of Hogans Creek include river birch, hackberry, box elder, and persimmon (*Diospyros virginiana*). The observed shrub/sapling species include Chinese privet and elderberry (*Sambucus canadensis*). Herbaceous and woody vine species include river oats (*Chasmanthium latifolium*) and Japanese honeysuckle.

There are no NCWRC moratoriums that apply to Hogans Creek. Additionally, there are no NCWRC “proposed critical habitats for aquatic species” located within the project area.

Aquatic Impacts

Wetlands: No wetlands are located within the proposed project area.

Conservation Easement: A floodplain wetland is located outside the northwest quadrant of the project area approximately 180 ft (55 m) north of SR 1503 (Walters Mill Road). . The wetland is located outside the project area. The wetland and its adjoining floodplain have both been placed under a United States Department of Agriculture Wetland Reserve Program (USDA WRP) conservation easement. A legal description of the property is attached to this document.

Stream Impacts:

Table 1. Estimated Stream Impacts

Stream Name	Alternative 1 Impacts		Alternative 2 Impacts		Alternative 3 Impacts	
	ft	ac	ft	ac	ft	ac
Hogans Creek	60	0.06	110	0.11	110	0.11

Bridge Demolition

Bridge No. 39 is a 201 ft long by 19 ft wide structure composed of an asphalt surface, timber and steel I-beam deck, and timber substructure and bulkheads. Bridge demolition will occur by removing the asphalt surface prior to removal of the bridge structure. The remainder of the timber and steel components will be removed without dropping them into Hogans Creek. Consequently, there will be no temporary fill resulting from bridge demolition. Because of the stream’s silt and sand substrate, it is recommended that turbidity curtains be used during bridge demolition.

Federally Threatened and/or Endangered 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 ~~November 16, 2004~~, the USFWS listing (updated ~~May 31, 2002~~) lists one federally protected species for Caswell County: the James spiny mussel.

Name: James spiny mussel (*Pleurobema collina*)

Family: Unionidae

Federal Status: Endangered

Date Listed: 22 July 1988

Biological Conclusion:

Not Likely to Adversely Affect.

This species was initially “Unresolved”; however, on September 26, 2003, a survey was conducted for NCDOT by the Catena Group consulting firm. The finding from this survey was “Not Likely To Adversely Affect.” On March 1, 2004, NCDOT requested review and concurrence with this finding from the U.S. Fish and Wildlife Service (USFWS). In a letter dated March 17, 2004, the USFWS concurred with the conclusion.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

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

B. Historic Architecture

The North Carolina Department of Cultural Resources has reviewed this project and determined that no structures of historic significance will be affected by the project (see attached letter dated January 3, 2000). The bridge being replaced is not considered eligible for the National Register of Historic Places.

C. Archaeology

The North Carolina Department of Cultural Resources requested an archaeological investigation. The NCDOT submitted an archeological report on February 25, 2002. This report concluded that Site “31CS70**” is outside the area of potential effect (APE). The report also concluded that Site

“31CS71” is not eligible for the National Register of Historic Places. The Department of Cultural Resources agreed with the NCDOT report (see attached Cultural Resources letters dated January 3, 2000, and April 1, 2002). Thus it is concluded that no archaeological resources of historic significance will be affected by the project.

VII. GENERAL ENVIRONMENTAL EFFECTS

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

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

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

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

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. Although farmlands will be affected by the project, there will be no effect on soils classified as prime, unique, or having state or local importance.

This project is an air quality “neutral” project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520.

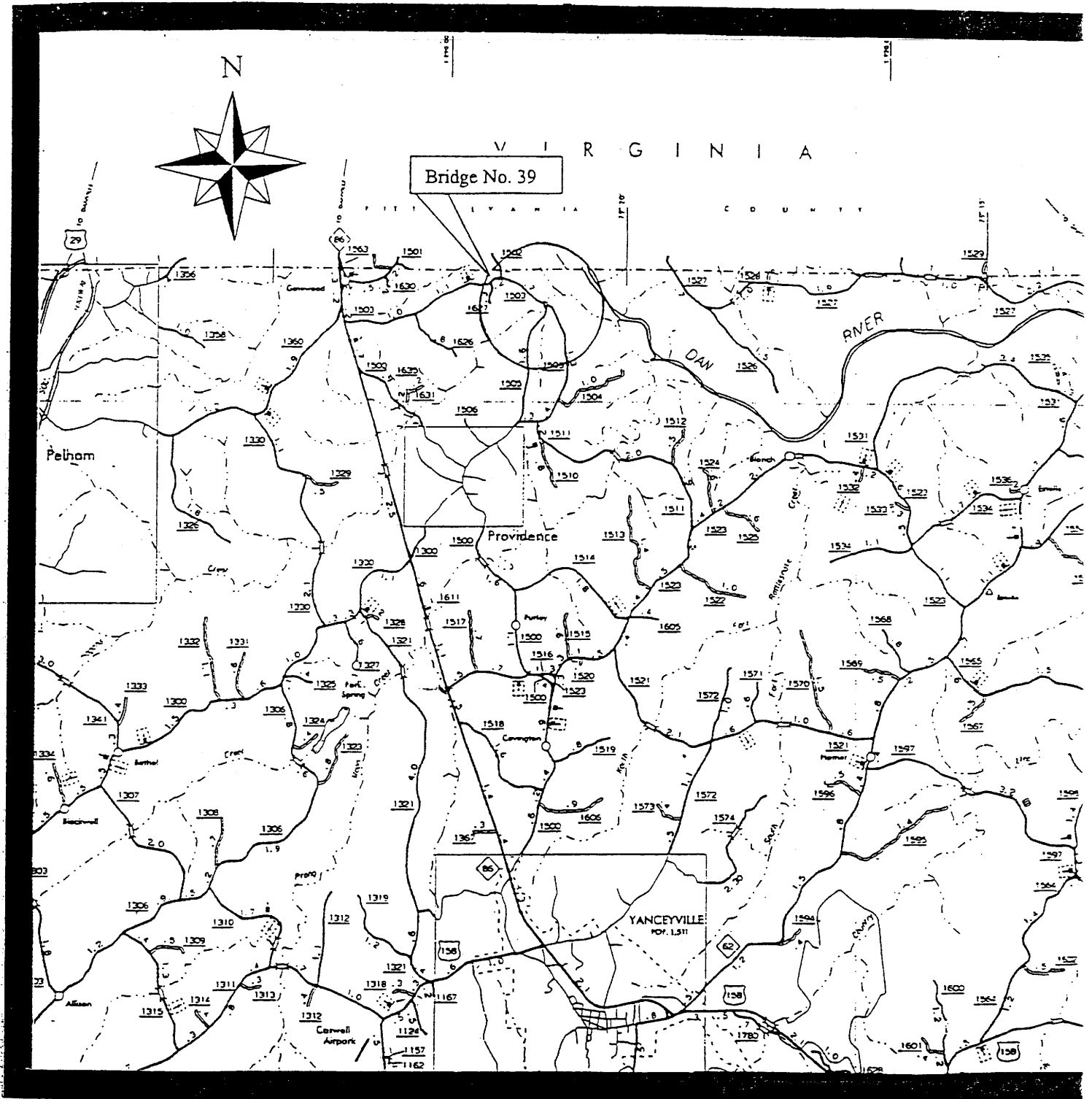
Noise levels could increase during construction but will be temporary. This evaluation completes the assessment requirements for highway traffic noise of Title 23, Code of Federal Regulation (CFR), Part 772 and for air quality (1990 Clean Air Act Amendments and the National Environmental Policy Act) and no additional reports are required.


An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North

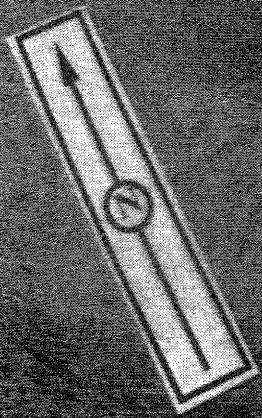
Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites in the project area.

Caswell County is a participant in the National Flood Insurance Program. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project.



	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
	CASWELL COUNTY REPLACE BRIDGE 39 ON SR 1503 OVER HOGAN'S CREEK B-4057
Figure One	



Hogan's Creek

Alternate 3

Alternate 2

Alternate 1

Bridge No. 39

SR 1503

SR 1505

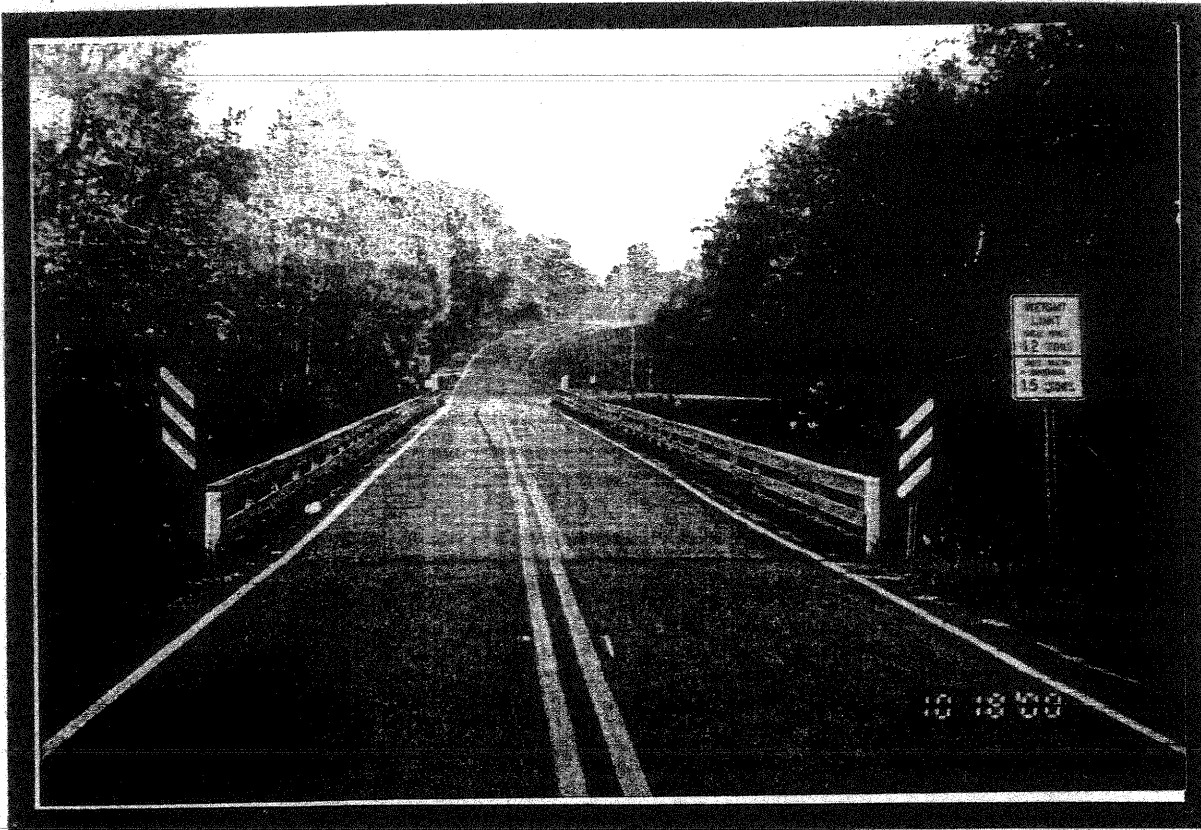


North Carolina Department of
Transportation
Division of Highways
Project Development & Environmental
Analysis Branch

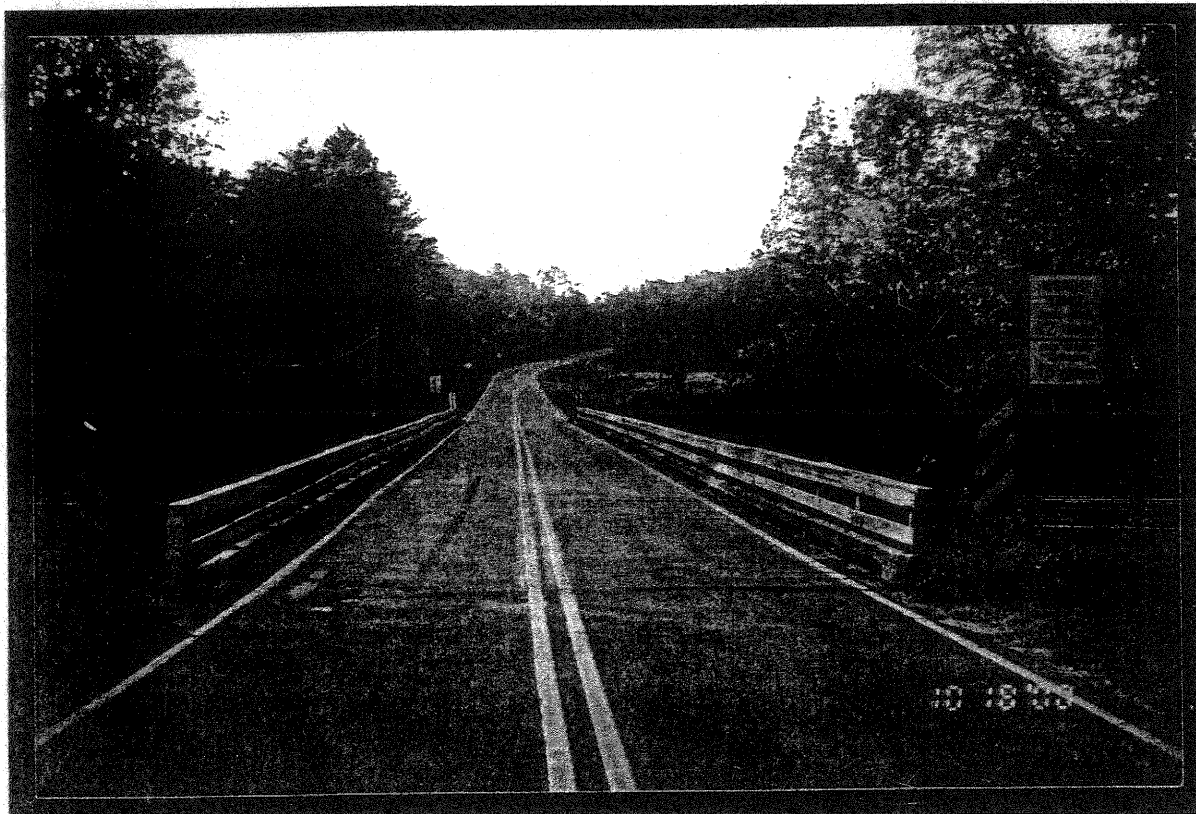
Caswell County
Replace Bridge No. 39 on SR 1503
Over Hogan's Creek
B-4057

Scale 1:1200

Figure 2



Looking east
across Bridge
No. 39



Looking west
across Bridge
No. 39

	<p>North Carolina Department of Transportation Division of Highways Project Development & Environmental Analysis Branch</p>
<p>Caswell County Replace Bridge No. 39 on SR 1503 Over Hogan's Creek B-4057</p>	
<p>Figure Three</p>	



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Pipkin

North Carolina Department of Cultural Resources

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

Division of Archives and History
William S. Price, Jr., Director

January 3, 2000

MEMORANDUM

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

From: David Brook *David Brook*
Deputy State Historic Preservation Officer

Re: Replacement of Bridge No. 39 on SR 1503 over Hogan's Creek,
TIP No. B-4057, Caswell County, ER 01-7941

On November 28, 2000, April Montgomery of our staff met with North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. She 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.

There are no known archaeological sites within the proposed project area. Based on our present knowledge of the area, there is a high probability of the presence of remains of a historic mill within the project area. We, therefore, recommend that an archaeological survey be conducted in connection with this project.

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 any questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919 733-4763.

cc: T. Padgett



7/1/02

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

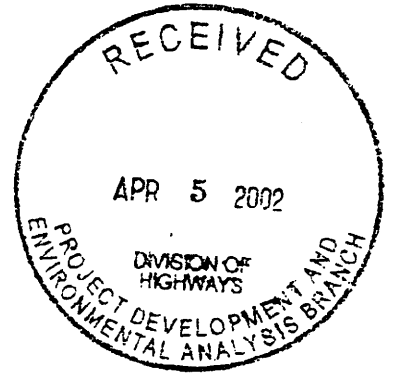
April 1, 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook *David Brook*

SUBJECT: Archaeological Survey Report for Replacement, Bridge #39 on SR 1503 over Hogan's Creek, B-4057, Caswell County, ER 01-7941



Thank you for your letter February 25, 2002, of transmitting the archaeological survey report by Mohler and Overton for the above project.

We have reviewed the report and agree with the stated conclusions. 31CS71 is not considered eligible for inclusion in the National Register of Historic Places, given the amount of disturbance to the site. 31CS70** is outside the current area of potential effect and has not been evaluated. Should plans change and 31CS70** be affected, evaluation will be necessary.

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, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

DB:kgc

cc: Matt Wilkerson, NCDOT

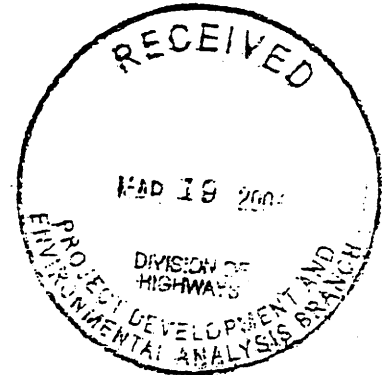


United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

March 17, 2004



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

Dear Dr. Thorpe:

This letter is in response to your letter of March 1, 2004 which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 39 on SR 1503 over Hogan's Creek in Caswell County (TIP No. B-4057) may affect, but is not likely to adversely affect the federally endangered James spinymussel (*Pleurobema collina*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a mussel survey was conducted at the project site on September 26, 2003. The survey extended 100 meters upstream and 400 meters downstream of SR 1503. No mussels of any species were observed. Based on the information provided and other information available, the Service concurs with your conclusion that the proposed bridge replacement may affect, but is not likely to adversely affect the James spinymussel. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: John Thomas, USACE, Raleigh, NC
Beth Barnes, NCDWQ, Raleigh, NC
Trevor Wilson, NCWRC, Creedmoor, NC

Conservation Easement

LEGAL DESCRIPTION**Wetlands Area on Richard Johnston Tract
Walters Mill Road - SR #1503**

Being located in Caswell County, North Carolina, Dan River Township, and being more particular described as follows: beginning at a point in the northern right-of-way line of Walters Mill Road (SR #1503) said point also being in the centerline of Hogans Creek; thence with said right-of-way line, N59° 22'-23" W 129.96' to a point, thence leaving said Walters Mill Road, N33° 11'-47" E 502.67' to an iron pin, thence N12° 34'-32" W 140.96' to an iron pin, N3° 47'-51" E 422.69' to an iron pin, N7° 36'-52" E 667.83' to an iron pin, N87° 01'-11" E 444.21' to an iron pin, N65° 35'-57" E 149.12' to an iron pin, N76° 00'-21" E 138.96' to an iron pin, S82° 40'-24" E 90.56' to an iron pin, S77° 50'-43" E 113.50' to an iron pin, S00° 35'-25" E 194.50' to an iron pin, S27° 14'-39" W 256.96' to an iron pin, S26° 05'-57" W 181.38' to an iron pin, S12° 31'-11" W 153.46' to an iron pin, S20° 49'-03" E 208.07' to an iron pin, S30° 30'-00" W - 78.49' to a point, S66° 00'-24" E 141.04' to a point in the centerline of Hogans Creek; thence with said centerline, S31° 53'-09" W 48.94', S54° 53'-49" W 313.47', S77° 21'-32" W 430.56', S64° 42'-50" W 255.51', S27° 58'-23" W 351.81' to the point of beginning, containing 26.536 acres and being as shown on plat of survey showing wetlands area on Richard Johnston Tract - Walters Mill Road - SR #1503 for United States Department of Agriculture, by Dewberry & Davis, dated August 8, 1996.
