



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 17, 2006

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

Attention: Mr. William J. Biddlecome
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit Application and Federal Consistency Decision from the NC Division of Coastal Management** for the proposed replacement of Bridge No. 16 over Merchants Millpond on SR 1400, in Gates County. Federal Aid Project No. BRZ-1400(4), State Project No. 8.2060201, WBS 33188.1.1, TIP No. B-3640.

Please find enclosed the permit drawings, Categorical Exclusion (CE), and half-size plan sheets for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 16 on SR 1400 over Merchants Millpond in Gates County. The project involves replacement of the existing bridge structure with a 135-foot cored slab bridge at approximately the same location and roadway elevation of the existing structure using top-down construction. The approach roadway will consist of two 11-foot travel lanes with shoulder widths of at least 6 feet. There will be 0.19-acre of permanent impacts to Merchants Millpond and adjacent wetlands. In addition to the bridge, an adjacent dam and spillway for the millpond will be replaced, equipped with a fish ladder for anadromous fish passage, resulting in 0.17-acre of impacts to surface water. Traffic will be detoured off-site, along surrounding roads, during construction.

Impacts to Waters of the United States

General Description: The project is located in the Chowan River Basin (Hydrologic Unit 03010203). A best usage classification of "C NSW" has been assigned to Merchants Millpond (Bennetts Creek) [DWQ Index # 25-17]. 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 (1.6 km) of project study area. Neither Merchants Millpond nor Bennetts Creek is designated as a North Carolina Natural or Scenic River, or as a national Wild and Scenic River. The proposed project will avoid impacts to

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

designated Public Trust Waters or Areas of Environmental Concern under the Coastal Area Management Act (CAMA).

Permanent Impacts: Merchants Millpond and adjacent wetlands will be impacted by the proposed project. Construction of the proposed project will result in permanent impacts, including 0.10-acre of fill, 0.069-acre of mechanized clearing, and 0.02-acre of excavation in wetlands (see permit drawings). In addition, a total of 0.17-acre of surface water will be impacted from replacement of the existing dam and spillway in Merchants Millpond. The existing dam and spillway are located under the existing bridge. The new dam and spillway structure will be placed on a new alignment north of the existing in Merchants Millpond.

Temporary Impacts: No temporary impacts to jurisdictional resources will be necessary for the construction of this project.

Utility Impacts: No impacts to jurisdictional resources will occur due to relocation of utilities in the project area. All utility work will be conducted in upland areas and existing road fill.

Bridge Demolition

The existing bridge consists of a timber deck on timber joists with an asphalt-wearing surface. The substructure is a timber abutment design; the interior bents consist of timber caps on timber piles. The spillway for the millpond is a timber structure that is adjacent to the existing bridge. The bridge can be removed without dropping components into Waters of the United States during construction. Best Management Practices for Bridge Demolition and Removal will be followed to avoid any temporary fill from entering Waters of the United States. The bridge demolition is classified as a Case 2 due to the in-stream moratorium for anadromous fish (February 15 to June 30).

Federally Protected Species

As of January 29, 2003 the US Fish and Wildlife Service (USFWS) lists two federally protected species for Gates County (see Table 1). A biological conclusion of “no effect” remains valid for the red-cockaded woodpecker due to lack of suitable habitat. A biological conclusion is not required for the American alligator due to its designation of Threatened (due to similarity of appearance). No species have been added or deleted from the list since the completion of the CE (October 28, 2004).

Table 1. Federally protected species of Gates County.

Scientific Name	Common Name	Federal Status	Biological Conclusion
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	No Effect
<i>Alligator mississippiensis</i>	American alligator	T(S/A)	N/A

(E) – Endangered
 (T) – Threatened
 T (S/A) – “Similarity of Appearance”

Avoidance and Minimization

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

- Use of an off-site detour during construction.
- Construction of a 29-foot longer bridge
- Construction of a fish ladder for anadromous fish passage
- Best Management Practices will also be utilized during demolition of the existing bridge and construction of the new bridge.
- Anadromous Fish Guidelines for Stream Crossings

Mitigation

The North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP) will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 0.19 acre of wetlands. See attached EEP Acceptance Letter dated January 31, 2006.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095, January 15, 2002).

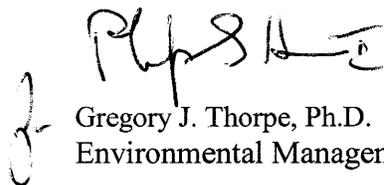
Section 401 Certification: We anticipate 401 General Water Quality Certification number 3403 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200, we are providing copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality for their review.

CAMA: NCDOT certifies that the proposed activity complies with the enforceable policies of North Carolina's approved management program and will be conducted in a manner consistent with such program. NCDOT hereby requests, by copy of this letter, a Federal Consistency Decision from the NC Division of Coastal Management.

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

Thank you for your time and assistance with this project. Please contact Mr. Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439 if you have any questions or need additional information.

Sincerely,



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

Cc W/attachment:

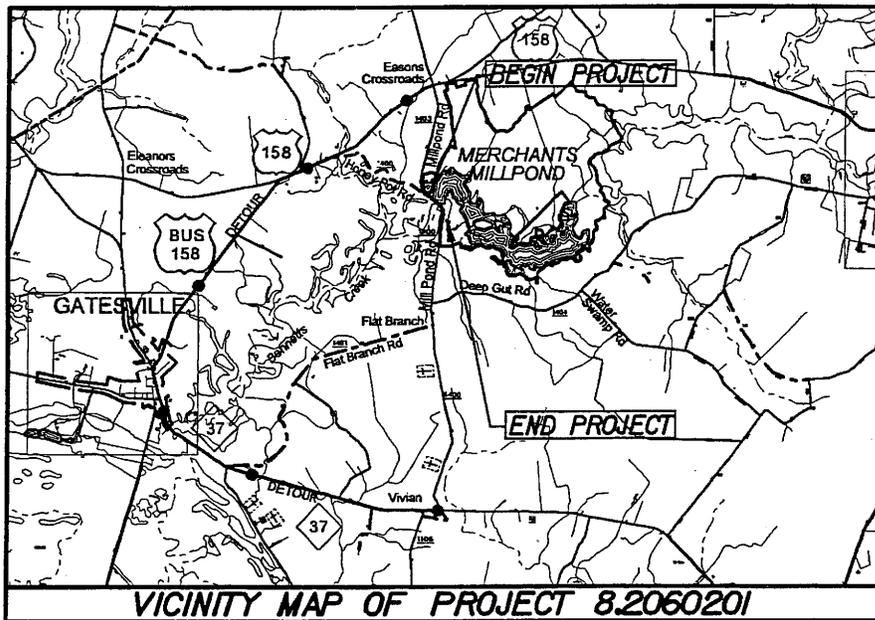
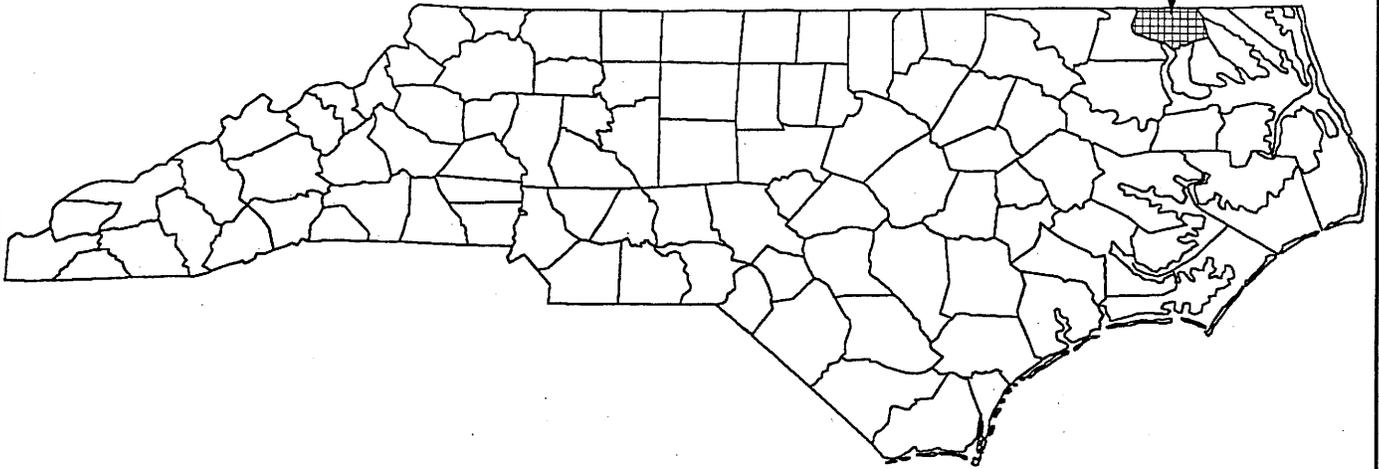
Mr. John Hennessy, NCDWQ (2 Copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF
Ms. Cathy Brittingham, NCDCM
Ms. Wanda Gooden, NCDCM
Dr. David Chang, PE, Hydraulics
Mr. Greg Perfetti, PE, Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Anthony Roper, PE, Division 1 Engineer
Mr. Clay Willis, Division 1 Environmental Officer

Cc W/o attachment:

Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, PE, Roadway Design
Mr. Majed Alghandour, PE, Programming and TIP
Mr. Art McMillan, PE, Highway Design
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Ms. Stacy Baldwin, PE, PDEA

NORTH CAROLINA

GATES COUNTY



VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
GATES COUNTY
PROJECT: 33188.11 (B-3640)
SR 1400 MILL POND ROAD
FROM EAST OF EASTMAINS
CROSSROADS TO FLAT BRANCH

SHEET 1 OF 8

PERMIT DRAWINGS

09/08/99

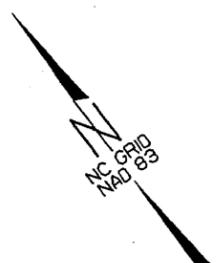
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

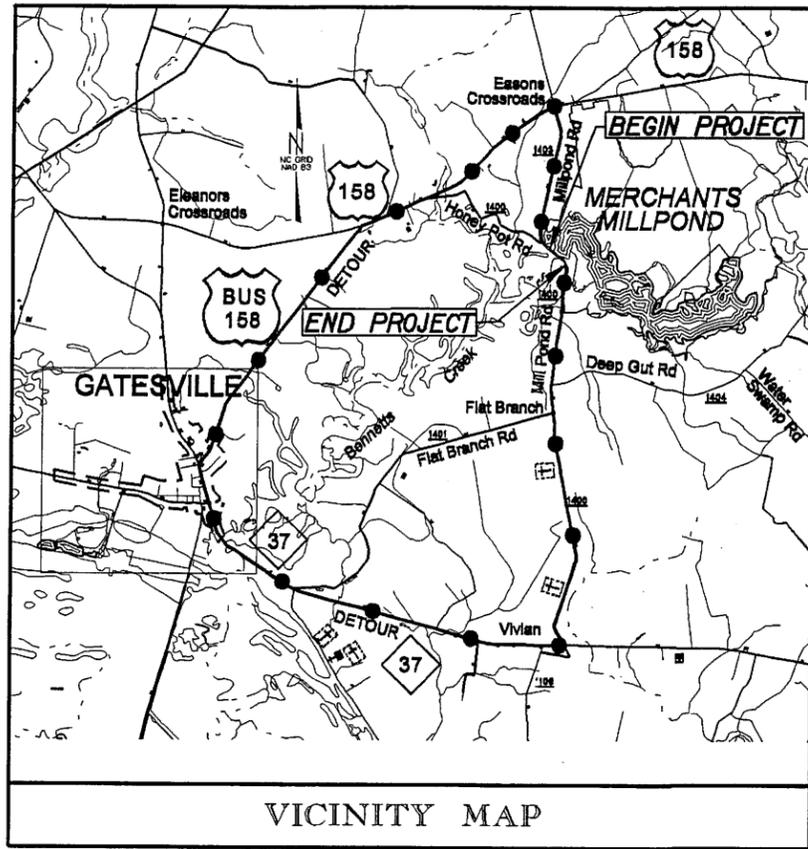
GATES COUNTY

LOCATION: BRIDGE NO. 16 OVER MERCHANTS MILLPOND ON SR 1400
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3640	1	2 of 8
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33188.1.1	BRZ-1400(4)	P.E.	



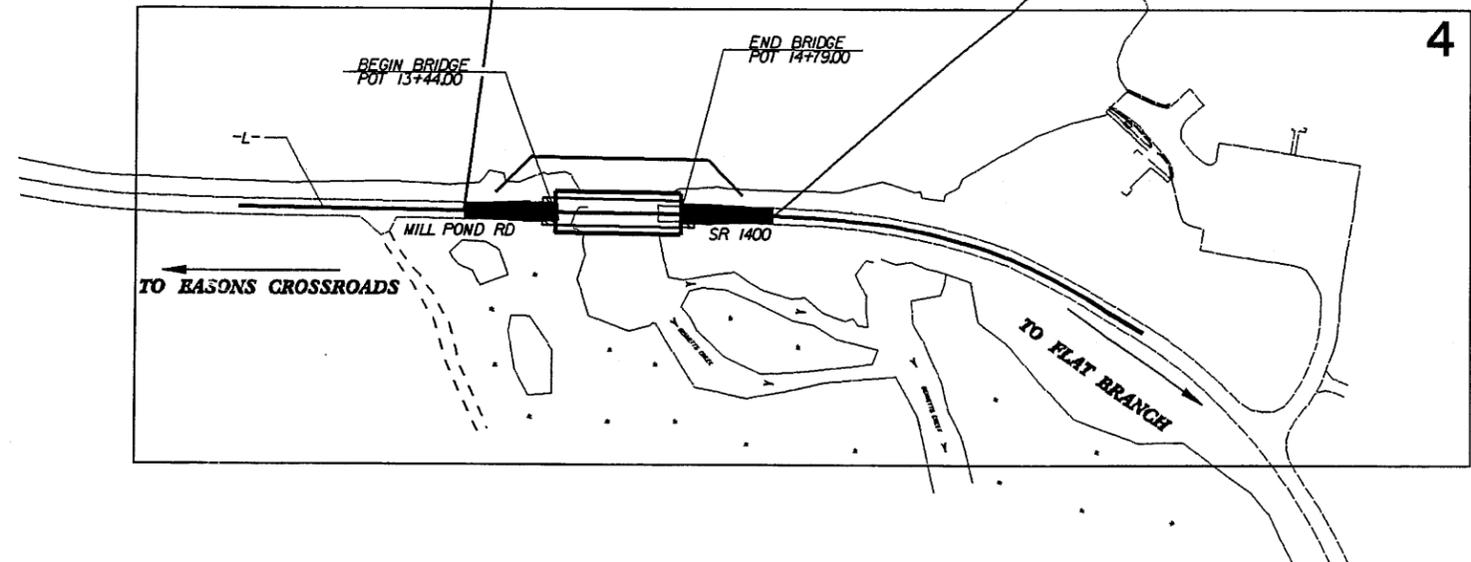
TIP: B-3640



LEGEND: DETOUR ●—●—●—●

STA. 12+45.00 -L- BEGIN TIP PROJECT B-3640

STA. 15+80.00 -L- END TIP PROJECT B-3640



NOTES:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

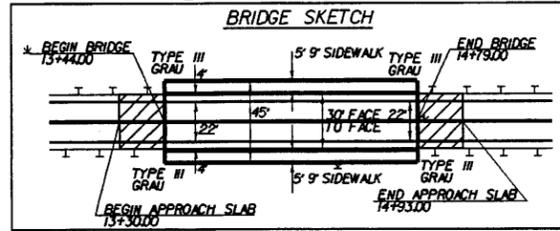
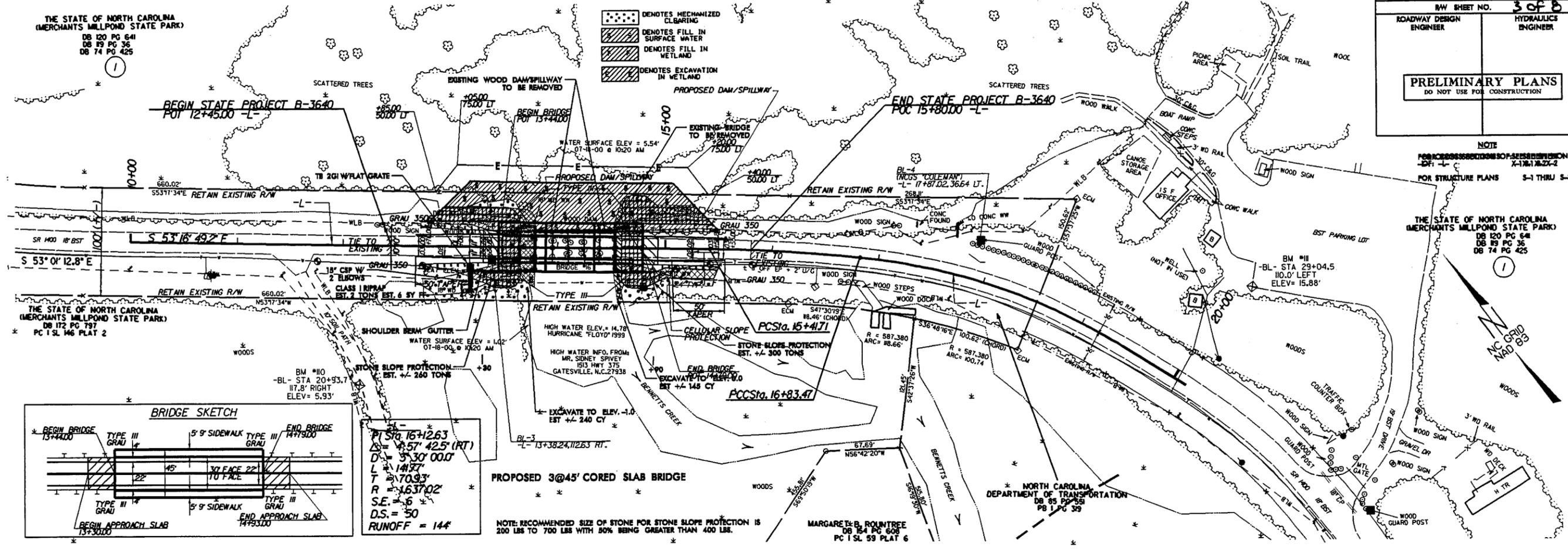
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NCDOT CONTACT: CATHY HOUSER, P.E. - PROJECT ENGINEER - ROADWAY DESIGN - ENGINEERING COORDINATION

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>5 2.5 0 5 10 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2005 = 1000 ADT 2025 = 1600 DHV = 10 % D = 55 % T = 4 % * V = 50 MPH * TTST 1% DUAL 3%</p>	<p>PROJECT LENGTH</p> <p>LENGTH ROADWAY TIP PROJECT B-3640 = 0.037 MILES</p> <p>LENGTH STRUCTURE TIP PROJECT B-3640 = 0.026 MILES</p> <p>TOTAL LENGTH OF TIP PROJECT B-3640 = 0.063 MILES</p>	<p>Prepared in the Office of: WILBUR SMITH ASSOCIATES P.O. BOX 2478 RALEIGH, NC 27602-2478 PHONE (919) 755-0583</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p>
			<p>2002 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: MARCH 18, 2005</p> <p>LETTING DATE: MARCH 21, 2006</p>	<p>THOMAS E. TALLMAN, P.E. PROJECT ENGINEER</p> <p>R.D. ODELL, P.E. PROJECT DESIGN ENGINEER</p>	<p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>

CONTRACT: \$TIMES \$FILES

8/17/99



PT STA. 16+12.63
 ΔS = 457' 42.5" (RT)
 D = 530' 00.0"
 L = 141.57'
 T = 70.93'
 R = 1637.02'
 S.E. = 6
 D.S. = 50
 RUNOFF = 144

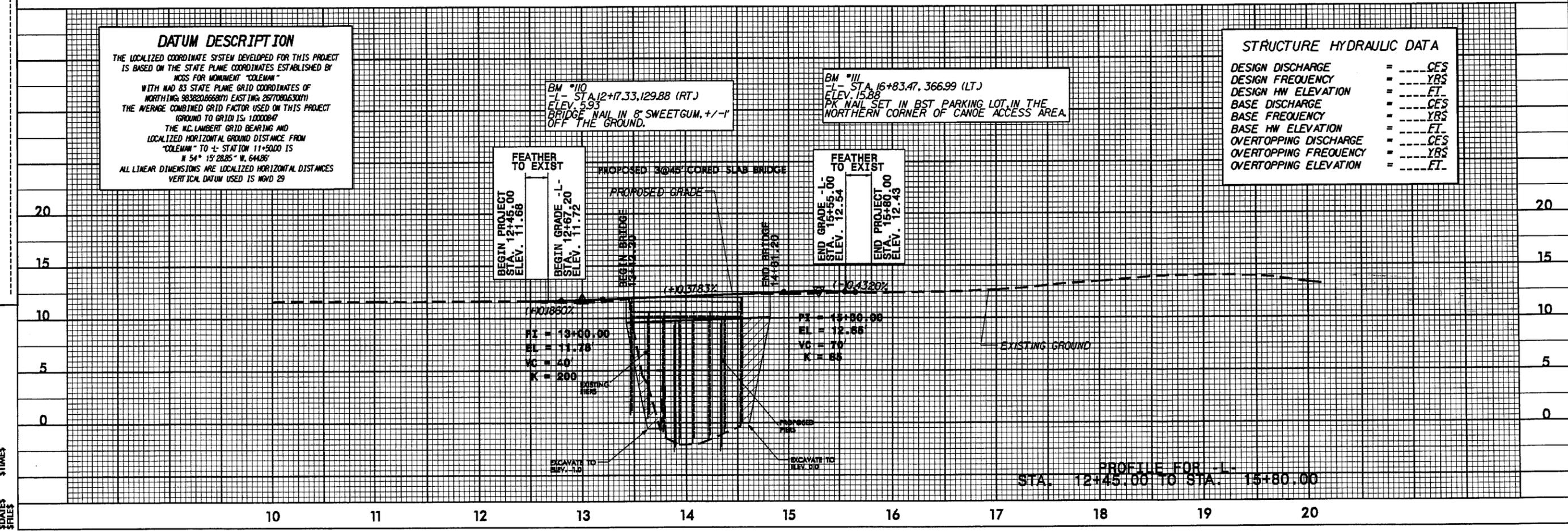
PROPOSED 3@45' CORED SLAB BRIDGE
 NOTE: RECOMMENDED SIZE OF STONE FOR STONE SLOPE PROTECTION IS 200 LBS TO 700 LBS WITH 50% BEING GREATER THAN 400 LBS.

DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCSS FOR MONUMENT "COLEMAN"
 WITH NAD 83 STATE PLANE GRID COORDINATES OF (NORTHING: 983820.666807) EASTING: 267080.6307)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 1.000087
 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GRID DISTANCE FROM "COLEMAN" TO STATION 11+50.00 IS
 N 54° 15' 28.25" W, 644.06'
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NGVD 29

BM #10
 -L- STA. 12+7.33, 129.88 (RT)
 ELEV. 5.93'
 BRIDGE NAIL IN 8" SWEETGUM, +/- 1" OFF THE GROUND.

BM #11
 -L- STA. 16+83.47, 366.99 (LT.)
 ELEV. 15.88'
 PK NAIL SET IN BST PARKING LOT, IN THE NORTHERN CORNER OF CANOE ACCESS AREA.

STRUCTURE HYDRAULIC DATA
 DESIGN DISCHARGE = --- CFS
 DESIGN FREQUENCY = --- YRS
 DESIGN HW ELEVATION = --- FT.
 BASE DISCHARGE = --- CFS
 BASE FREQUENCY = --- YRS
 BASE HW ELEVATION = --- FT.
 OVERTOPPING DISCHARGE = --- CFS
 OVERTOPPING FREQUENCY = --- YRS
 OVERTOPPING ELEVATION = --- FT.



PROFILE FOR -L-
 STA. 12+45.00 TO STA. 15+80.00

REVISIONS

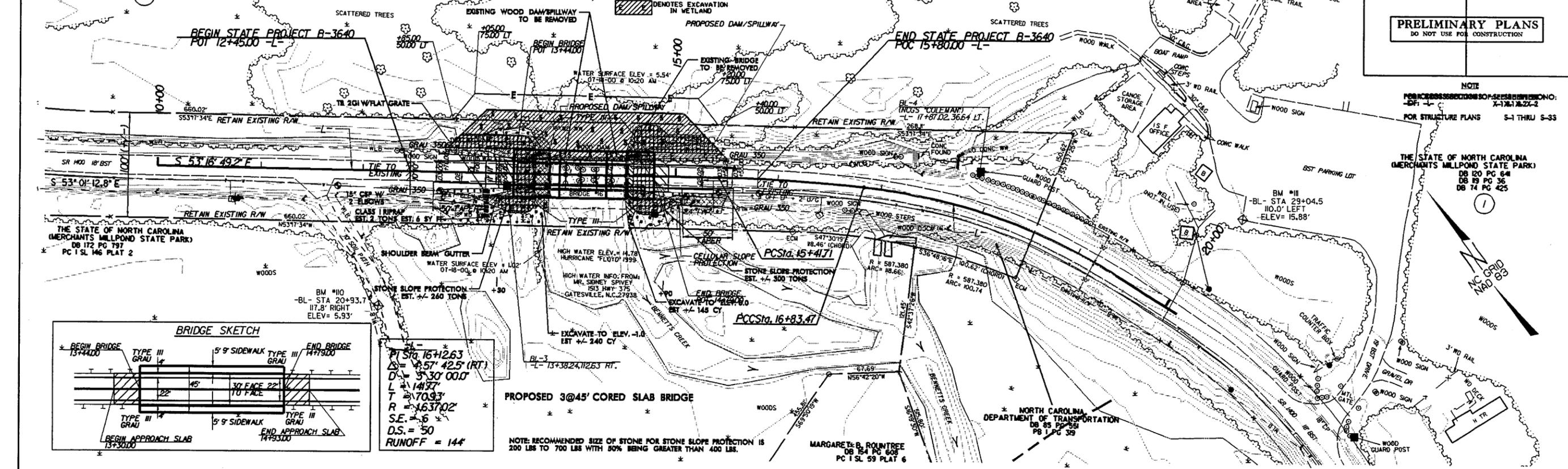
STATES
SIZES

8/17/95

THE STATE OF NORTH CAROLINA
MERCHANTS MILLPOND STATE PARK
DB 120 PG 641
DB 19 PG 36
DB 74 PG 425

- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES EXCAVATION IN WETLAND

PROJECT REFERENCE NO. B-3640	SHEET NO. 4
R/W SHEET NO. 4 of 8	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISIONS

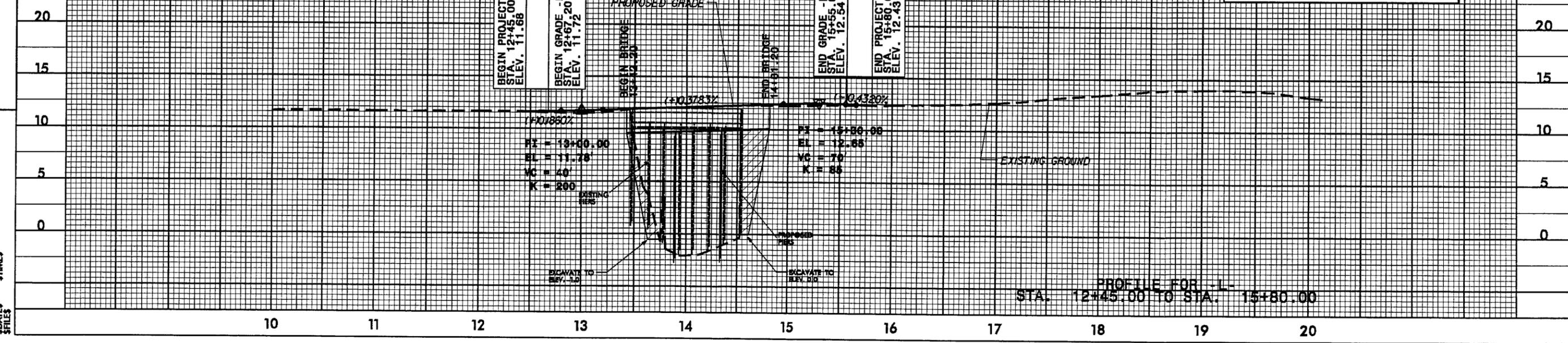
DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "COLEMAN" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING 9838206688M) EASTING 287708030M) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS 1.0000847 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "COLEMAN" TO STATION 11+50.00 IS N 54° 15' 28.85" W, 644.86' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29

BM #10
 L- STA 12+73.33, 129.88 (RT)
 ELEV. 5.93
 BRIDGE NAIL IN 8" SWEETGUM, +/- 1" OFF THE GROUND.

BM #11
 L- STA 16+83.47, 366.99 (LT.)
 ELEV. 15.88
 PK NAIL SET IN BST PARKING LOT IN THE NORTHERN CORNER OF CANOE ACCESS AREA.

STRUCTURE HYDRAULIC DATA

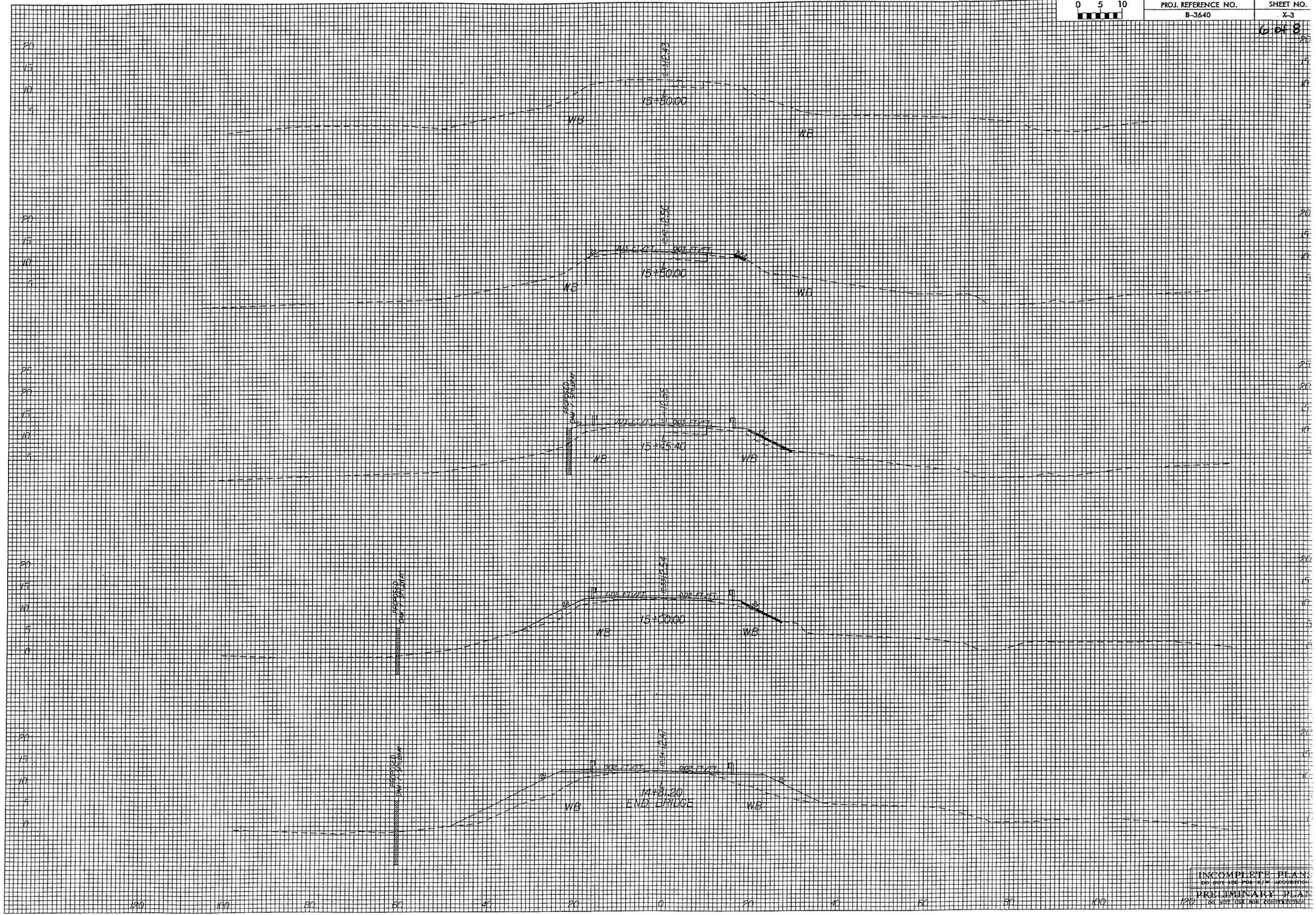
DESIGN DISCHARGE	=	CFS
DESIGN FREQUENCY	=	YRS
DESIGN HW ELEVATION	=	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	=	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT



STATES
SPALES

PROFILE FOR L-
STA. 12+45.00 TO STA. 15+80.00

6 of 8



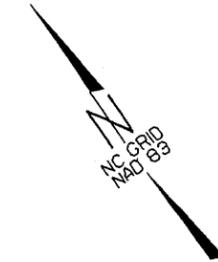
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLAN
DO NOT USE FOR CONSTRUCTION

List of Property Owners:

<u>PARCEL #</u>	<u>PROPERTY OWNER</u>	<u>ADDRESSES</u>
	State of NC Merchants Millpond State Park	
	NCDOT	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GATES COUNTY
33188.1.1 (B-3640)
Replace Br#16 Over Merchants
Millpond
Sheet **7** of **8**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3640	1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION	
33188.1.1	BRZ-1400(4)	P.E.	
33188.2.1	BRZ-1400(4)	R/W	



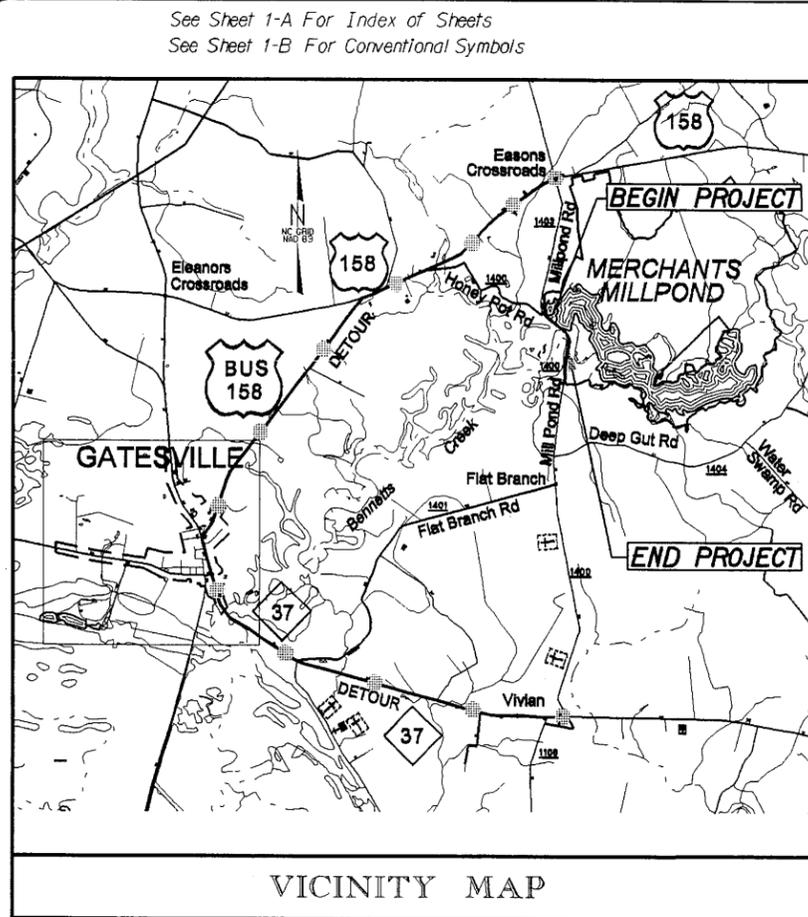
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GATES COUNTY

LOCATION: BRIDGE NO. 16 OVER MERCHANTS MILLPOND ON SR 1400

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

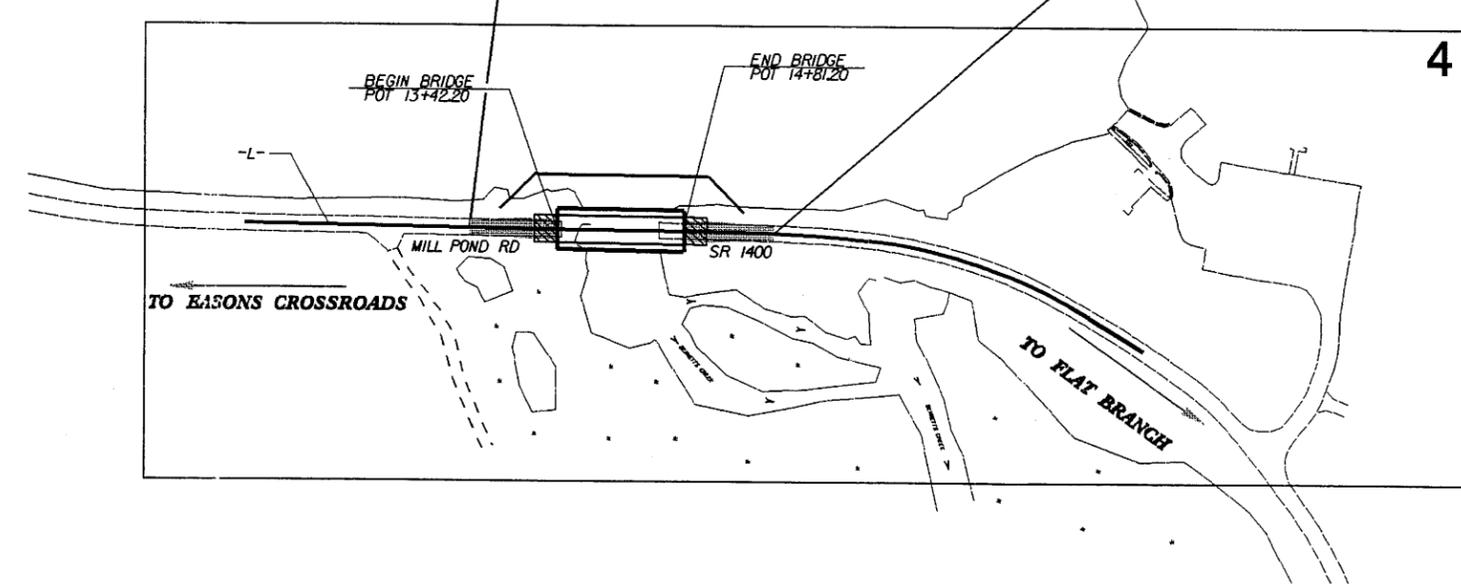
ROADWAY PLANS



LEGEND: DETOUR —●—●—●—

STA. 12+45.00 -L- BEGIN TIP PROJECT B-3640

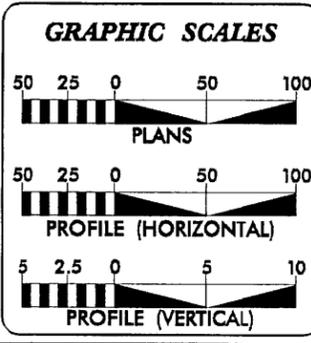
STA. 15+80.00 -L- END TIP PROJECT B-3640



NOTES:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD _____
THIS PROJECT IS NOT LOCATED WITHIN THE BOUNDARIES OF ANY MUNICIPALITY.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NCDOT CONTACT: CATHY HOUSER, P.E. - PROJECT ENGINEER - ROADWAY DESIGN - ENGINEERING COORDINATION



DESIGN DATA

ADT 2005 = 1000
ADT 2025 = 1600
DHV = 10 %
D = 55 %
T = 4 % *
V = 50 MPH
* TTST 1% DUAL 3%

PROJECT LENGTH

LENGTH ROADWAY	TIP PROJECT B-3640 =	0.037 MILES
LENGTH STRUCTURE	TIP PROJECT B-3640 =	0.026 MILES
TOTAL LENGTH OF TIP PROJECT B-3640 = 0.063 MILES		

Prepared in the Office of:
WILBUR SMITH ASSOCIATES
P.O. BOX 2478 RALEIGH, NC 27602-2478 PHONE (919) 755-0583

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 30, 2005

LETTING DATE:
MARCH 21, 2006

THOMAS E. TALLMAN, P.E.
PROJECT ENGINEER

R.D. ODELL, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE DESIGN ENGINEER P.E.

**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED DIVISION ADMINISTRATOR

DATE

PROJECT: 33188.1.1 TIP: B-3640

09/08/05

DATE & TIME
TIME & STATION
STILES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

*S.U.E = SUBSURFACE UTILITY ENGINEER

CONVENTIONAL SYMBOLS

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	-----CCR-----
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	-----▲-----
R/W Marker (Iron Pin & Cap)	▲
Prop. Right of Way Line with Proposed	-----▲-----
(Concrete or Granite) R/W Marker	●
Exist. Control of Access Line	-----C-----
Prop. Control of Access Line	-----C-----
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	-----RBB-----
Flow Arrow	----->-----
Disappearing Stream	-----
Spring	-----
Swamp Marsh	-----
Shoreline	-----
Falls, Rapids	-----
Prop Lateral, Tail, Head Ditches	-----FLDM-----

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	-----TS-----
Signal Lines Cut Into the Pavement	-----TS-----

Recorded Water Line	-----
Designated Water Line (S.U.E.*)	-----
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.*)	-----UTL-----
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	AATUR
End of Information	E.O.L

BOUNDARIES & PROPERTIES

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Property Line Symbol	PL
Exist. Iron Pin	EP
Property Corner	+
Property Monument	ECM
Property Number	123
Parcel Number	6
Fence Line	-----X-----
Existing Wetland Boundaries	-----WW & ISBW-----
High Quality Wetland Boundary	-----WLB-----
Medium Quality Wetland Boundaries	-----HO WLB-----
Low Quality Wetland Boundaries	-----MO WLB-----
Proposed Wetland Boundaries	-----LO 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	-----

RAILROADS

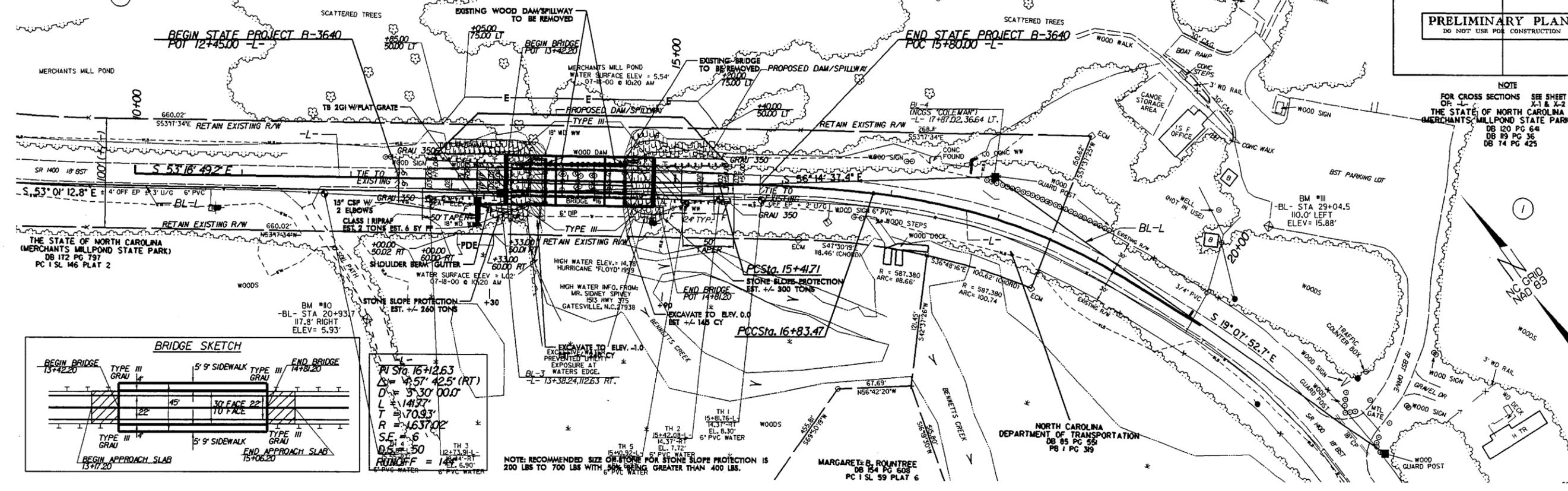
Standard Gauge	-----
RR Signal Milepost	-----
Switch	-----

5/28/94
DATE \$
FILES \$

8/17/99

THE STATE OF NORTH CAROLINA
(MERCHANTS MILLPOND STATE PARK)
DB 120 PG 641
DB 19 PG 36
DB 74 PG 425

PROJECT REFERENCE NO. B-3640		SHEET NO. 4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



NOTE
FOR CROSS SECTIONS SEE SHEET NO. X-1 & X-2
THE STATE OF NORTH CAROLINA
(MERCHANTS MILLPOND STATE PARK)
DB 120 PG 641
DB 19 PG 36
DB 74 PG 425

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCSS FOR MONUMENT "COLEMAN"
WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING 9838208668(M) EASTING 26770806300(M)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS 1.0000847
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "COLEMAN" TO + STATION 11+5000 IS N 54° 15' 28.85" W, 644.86'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS MVD 29

STRUCTURE HYDRAULIC DATA

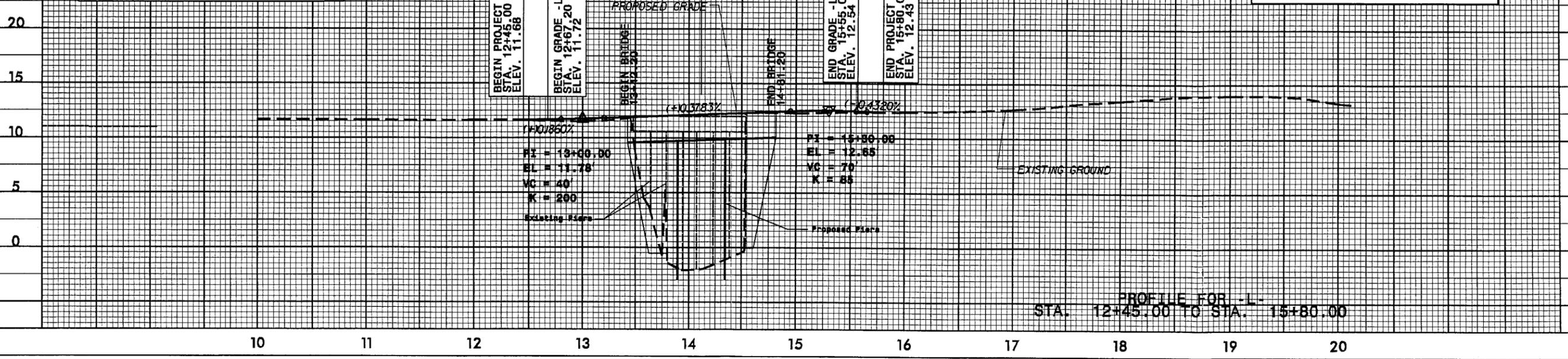
DESIGN DISCHARGE	=	CFS
DESIGN FREQUENCY	=	YRS
DESIGN HW ELEVATION	=	FT
BASE DISCHARGE	=	CFS
BASE FREQUENCY	=	YRS
BASE HW ELEVATION	=	FT
OVERTOPPING DISCHARGE	=	CFS
OVERTOPPING FREQUENCY	=	YRS
OVERTOPPING ELEVATION	=	FT

BM #10
-L- STA 12+73.3, 129.88 (RT)
ELEV. 5.93'
BRIDGE NAIL IN 8" SWEETGUM, +/- 1' OFF THE GROUND.

BM #11
-L- STA 16+83.47, 366.99 (LT)
ELEV. 15.88'
PK NAIL SET IN BST PARKING LOT IN THE NORTHERN CORNER OF CANOE ACCESS AREA.

FEATHER TO EXIST
BEGIN PROJECT STA. 12+45.00
ELEV. 11.68

FEATHER TO EXIST
END PROJECT STA. 15+80.00
ELEV. 12.43



REVISIONS

DATE GRATES
TIME STAKES
FILES

Project Name:

NEW SPILLWAY STRUCTURE DESIGN

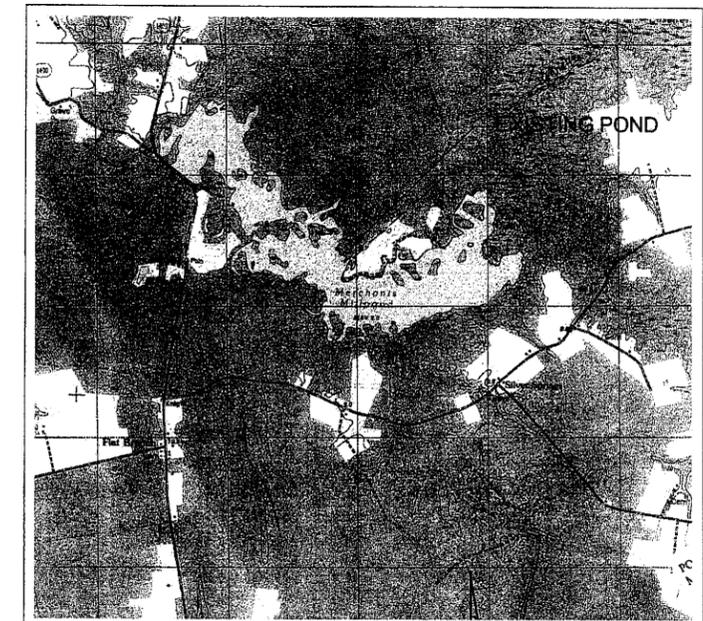
BRIDGE 16 OVER MERCHANTS MILLPOND

STATE PROJECT: 8.2060201

TIP: B-3640

F.A. NUMBER: BRZ-1400(4)

COUNTY: GATES



TOPOGRAPHIC SITE MAP

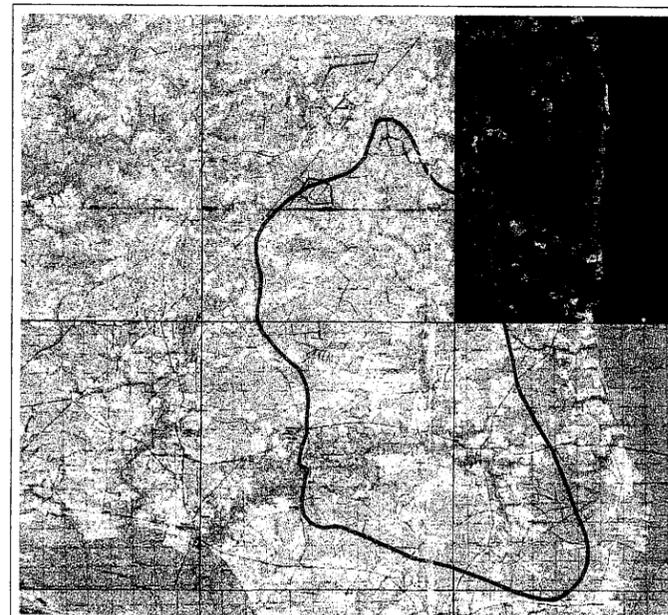
Plan Sheet Index

- 1 SPILLWAY PLAN AND PROFILE
- 2 SPILLWAY DETAILS
- 3 FISH LADDER PLAN AND DETAILS

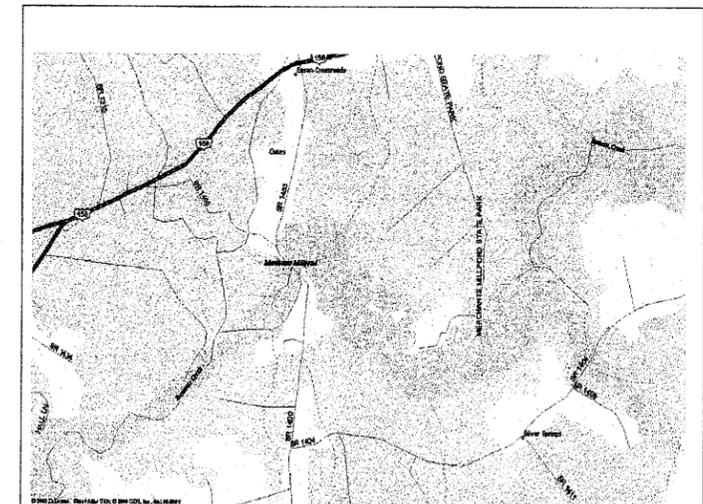
Designer's Name:



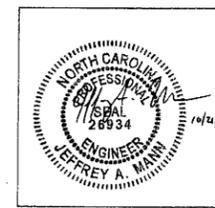
3301 Atlantic Avenue
Raleigh, NC 27604
919.831.8066 work
919.831.8136 fax
jmann@mactec.com
Attn: Jeff Mann



WATERSHED AREA MAP



SITE LOCATION MAP

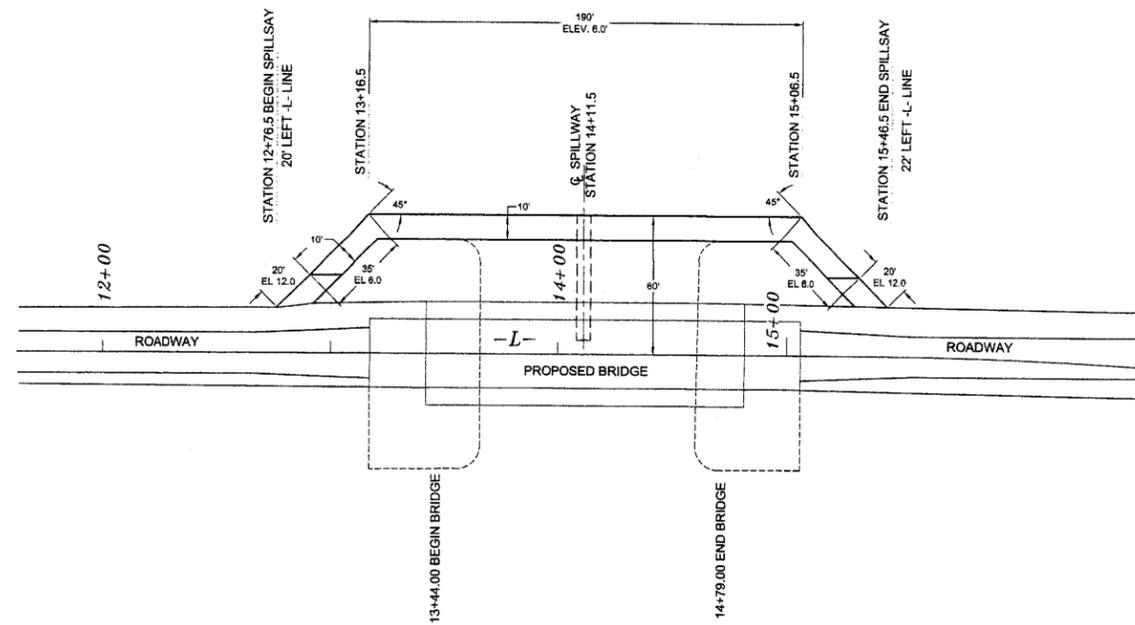


Engineer's Seal

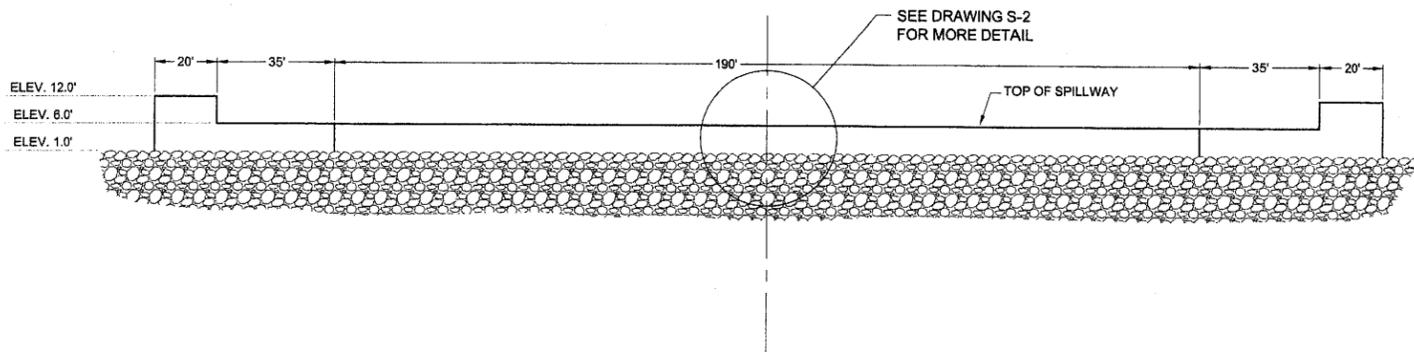
 MACTEC ENGINEERING AND CONSULTING, INC. 3301 ATLANTIC AVENUE, RALEIGH, NORTH CAROLINA	DRAWN: R.R.	MERCHANT'S MILL POND SPILLWAY COVER SHEET
	DFT CHECK: BSH	
	ENG CHECK: JAM	JOB NO. DWG NO. 8468-03-0180 COVER SHEET
	APPROVAL: JAM	
DATE: OCTOBER 2005		
SCALE: AS SHOWN		

P:\4468\4468-03-0180\3640 preliminary plans (5march\jamm)\0468-REV 10-17-05.dwg Plt, 21 Oct 2005 - 2:58pm mds

REFERENCE:



PLAN VIEW
SCALE: 1"=40'



PROFILE
SCALE: 1"=20'

CONSTRUCTION SEQUENCE

1. The appropriate sections of sheet pile and the steel cap shall be coated with coal tar epoxy prior to delivery for construction.
2. The fish ladder, as shown on Drawing S-3, shall be fabricated and assembled prior to installation.
3. Each sluice gate shall be secured to the appropriate section of sheet pile, prior to installation of the sheet-pile sections.
4. Steel sheet pile (z-sections) shall be driven to the specified depth and in the alignment shown on Drawing S-1 and in accordance with the details shown on Drawing S-2.
5. Using the sluice gates, the water level within the pond shall be lowered 6 inches.
6. The steel cap shall be placed on top of the z-section sheet piles and bolted in-place in accordance with the details shown on Drawing S-2.
7. The old spillway and bridge will be removed.
8. The H-pile supports for the fish ladder shall be installed in accordance with the details on Drawing S-3.
9. A section at the top of the sheet pile shall be removed to allow for the installation of the fish ladder, as shown on Drawing S-3. The fish ladder shall be located at the centerline of the spillway.
10. The fish ladder shall be installed and secured to the spillway and H-pile supports as shown on Drawing S-3.
11. Rip-rap shall be placed at the base of the new spillway in accordance with the details shown on Drawing S-2.

Bill of Materials				
Item	Construction of Spillway		Material	
	Lump Sum	Quantity	Unit	
Steel Sheet Piles	Lump Sum	303160	lb	
		16640	ft ²	
Coal Tar Epoxy		8533	ft ²	
Steel Cap	Lump Sum	8420	lb	
		550	ft ²	
Rip-Rap (200-700 lb)	Lump Sum	870	tons	
Rip-Rap (1000-1800 lb)	Lump Sum	1050	tons	
57 stone		225	tons	
Filter Fabric		9000	ft ²	
Aluminum Fish Ladder	Lump Sum	1	each	
H-piles	Lump Sum	8316	lb	
Sluice gate	Lump Sum	2	each	

PROJECT NO. B-3640
GATES COUNTY
 STATION: 14+11.50 -L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SPILLWAY PLAN AND PROFILE

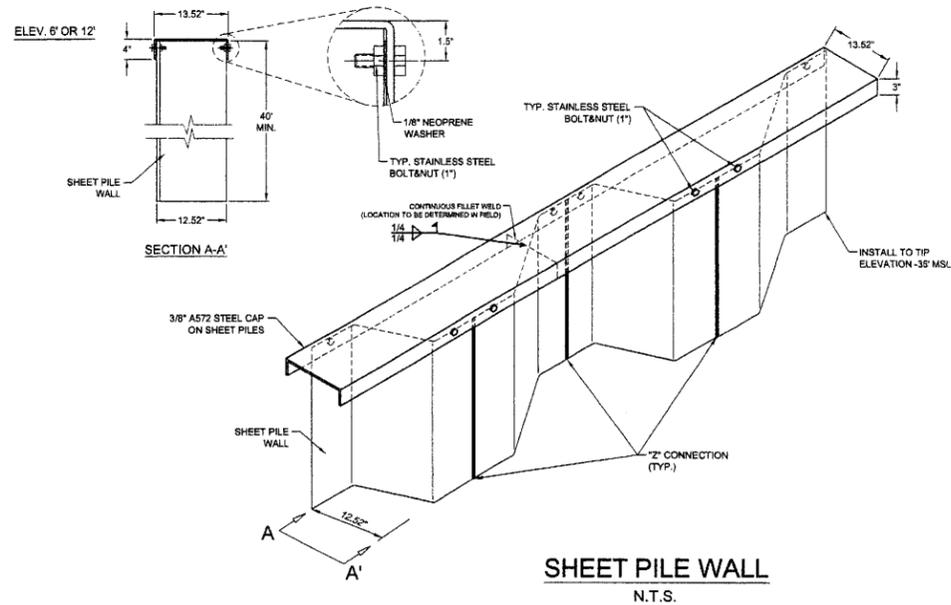
MACTEC
 MACTEC ENGINEERING AND CONSULTING, INC.
 3301 ATLANTIC AVENUE
 RALEIGH, NORTH CAROLINA

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

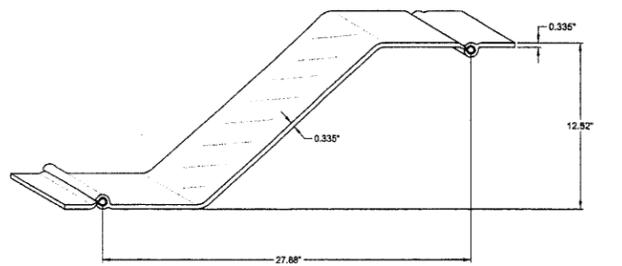
DRAWN BY: J. MANN DATE: 10/21/05 DWG. NO. S-1
 CHECKED BY: J. TICE DATE: 10/21/05

REVISIONS				SHEET NO.
NO.	BY	DATE		
1			3	TOTAL SHEETS
2			4	

FILES & DATES

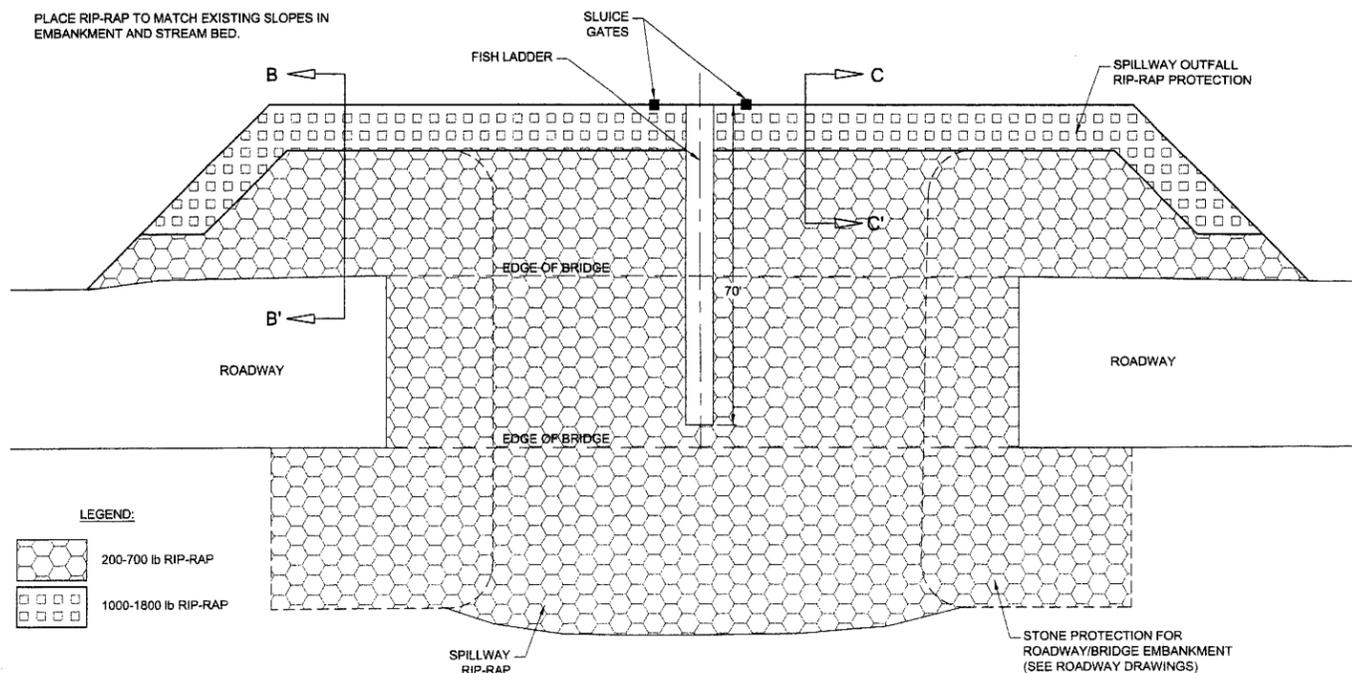


- NOTES:**
1. SPACING OF CAP WELDS SHALL BE DETERMINED IN THE FIELD BY CONTRACTOR.
 2. LOW HYDROGEN ELECTRODES ARE REQUIRED.
 3. ALL WELDING SHALL BE IN ACCORDANCE TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE.
 4. TOP OF CAP SHALL BE AT ELEVATION 6 MSL WHEN COMPLETED.



- NOTES:**
- STEEL PILES : Z SECTION, A572 STEEL WITH COAL TAR EPOXY COATING.
- MINIMUM SECTION MODULUS OF 22 CUBIC INCHES PER FOOT OF WALL.
- DIMENSIONS ARE APPROXIMATE.

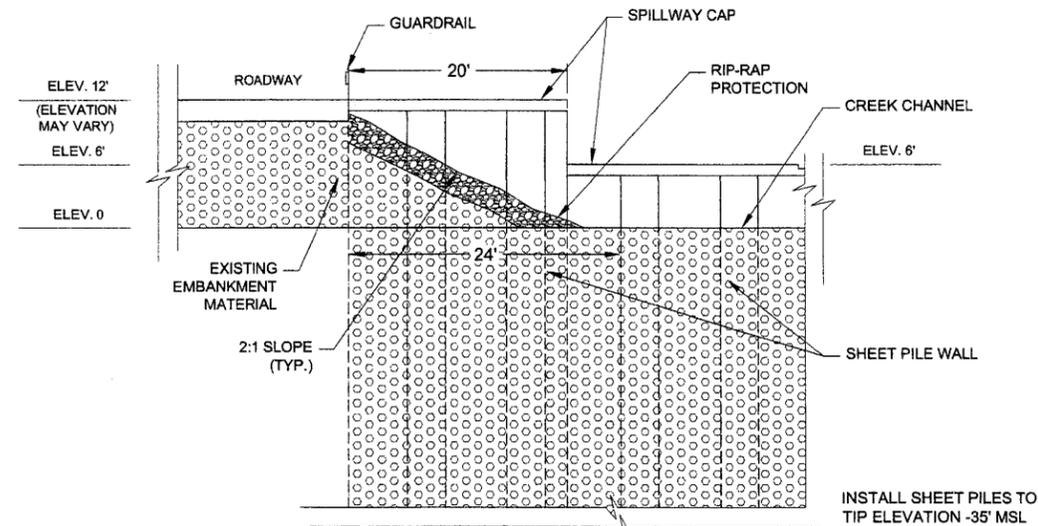
NOTE:
PLACE RIP-RAP TO MATCH EXISTING SLOPES IN EMBANKMENT AND STREAM BED.



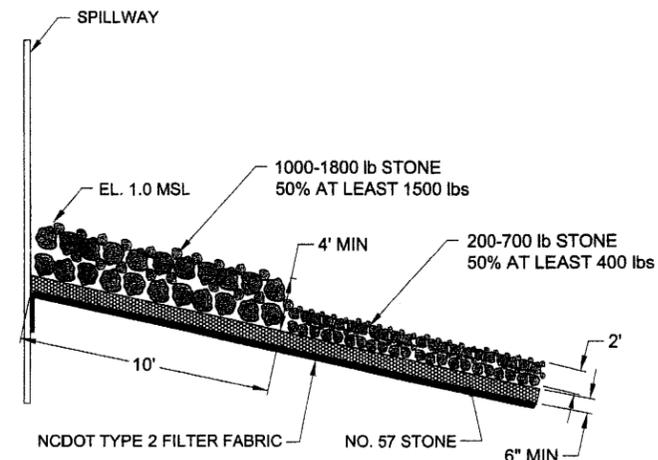
LEGEND:

	200-700 lb RIP-RAP
	1000-1800 lb RIP-RAP

PLAN VIEW - RIPRAP DETAIL
N.T.S.



SECTION B-B'
EMBANKMENT / SHEET PILE CONNECTION
N.T.S.



SECTION C-C'
TYPICAL RIP-RAP
N.T.S.

PROJECT NO. B-3640
GATES _____ COUNTY
STATION: 14+11.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SPILLWAY DETAILS

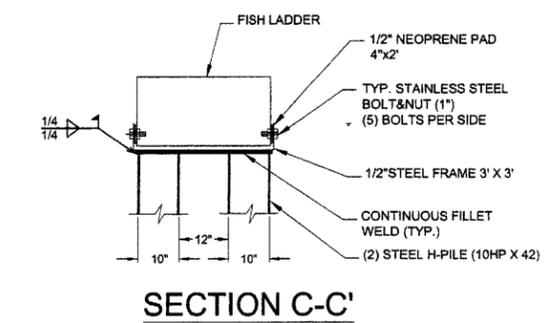
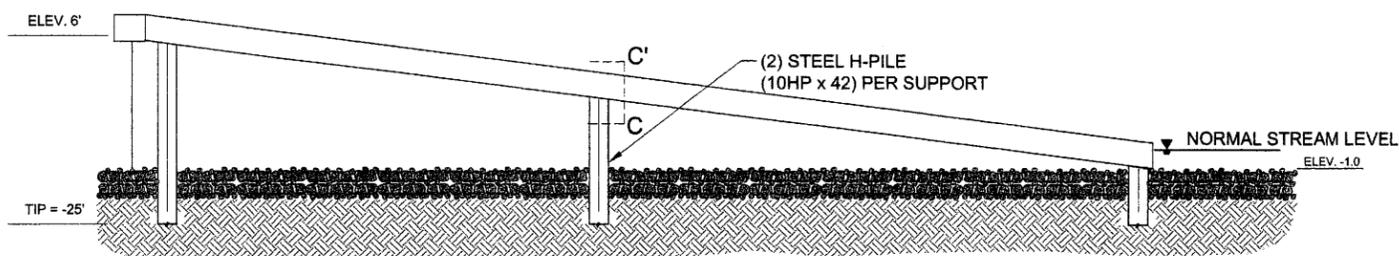
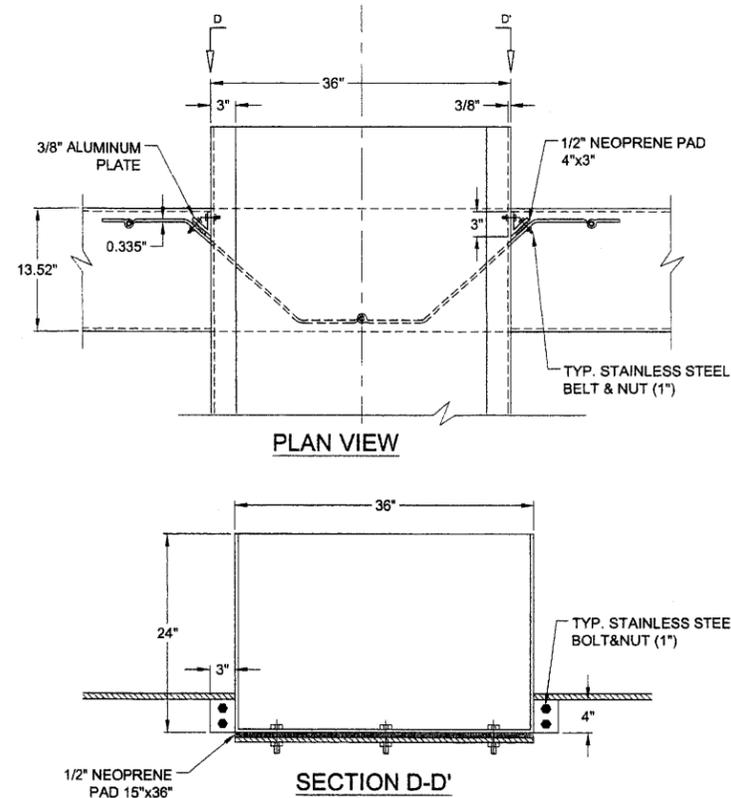
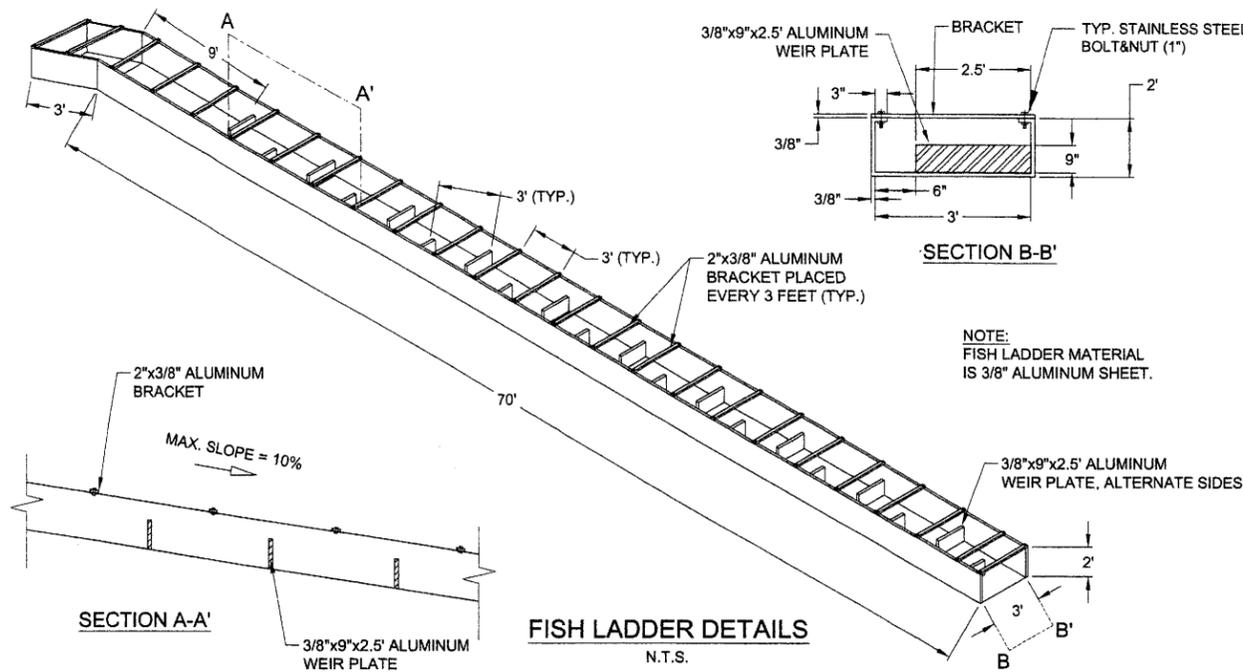
MACTEC
MACTEC ENGINEERING AND CONSULTING, INC.
3301 ATLANTIC AVENUE
RALEIGH, NORTH CAROLINA

DRAWN BY: J. MANN DATE: 12/21/05
CHECKED BY: J. TICE DATE: 12/21/05

DWG. NO. S-2

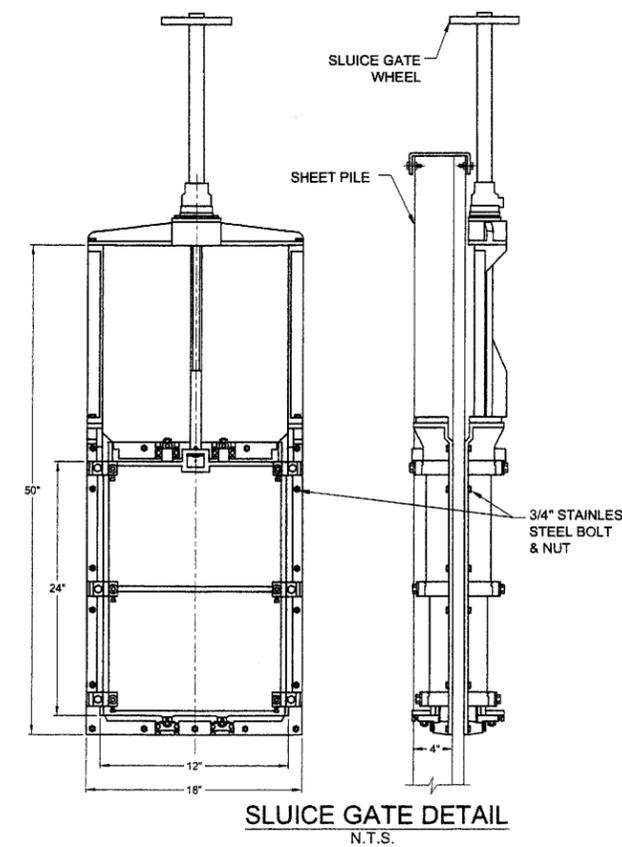
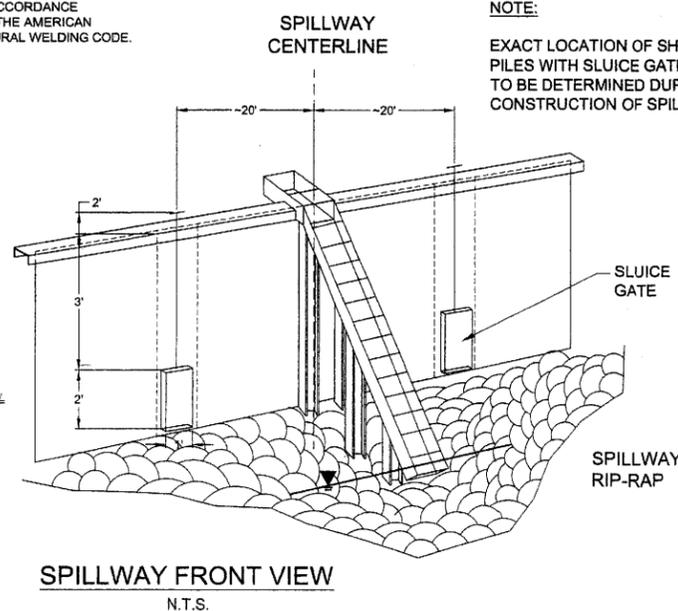
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

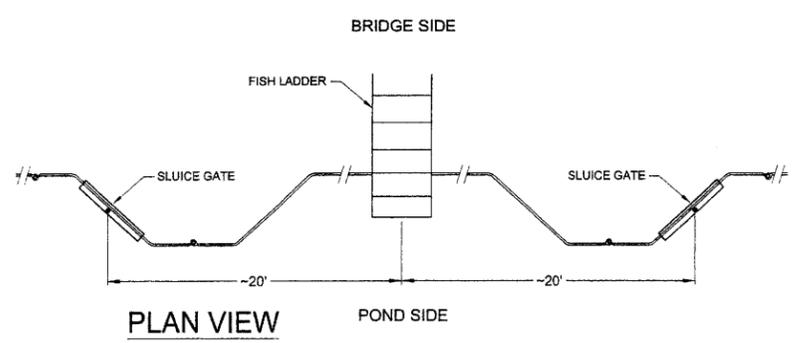
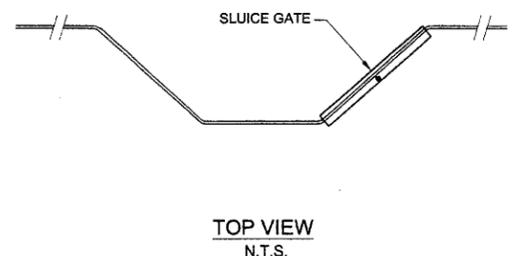


NOTES:
LOW HYDROGEN ELECTRODES ARE REQUIRED.
ALL WELDING SHALL BE IN ACCORDANCE TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE.

NOTE:
EXACT LOCATION OF SHEET PILES WITH SLUICE GATES TO BE DETERMINED DURING CONSTRUCTION OF SPILLWAY.



NOTE:
DETAILS PROVIDED FOR GENERAL SLUICE GATE DIMENSIONS AND LAYOUT. SLUICE GATE SHALL CONFORM TO SPECIFICATION PROVIDED BY MANUFACTURERS (WATERMAN, RODNEY HUNT OR FRESNO VALUE).



PROJECT NO. B-3640
GATES COUNTY
STATION: 14+11.50 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FISH LADDER PLAN AND DETAILS

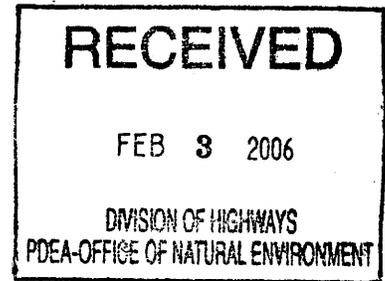
MACTEC
3301 ATLANTIC AVENUE
RALEIGH, NORTH CAROLINA

MACTEC ENGINEERING AND CONSULTING, INC.

DRAWN BY J. MANN DATE 10/21/05 DWG. NO. S-3
CHECKED BY J. TICE DATE 10/21/05

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			



January 31, 2006

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-3640, Bridge 16 over Merchants Millpond on SR 1400, Gates County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide riverine wetland mitigation for the subject project. Based on the information supplied by you in a letter dated June 14, 2005, the impacts are located in CU 03010203 of the Chowan River Basin in the Northern Outer Coastal Plain (NOCP) Eco-Region, and are as follows:

Riverine Wetland Impacts: 0.19 acre

This mitigation acceptance letter replaces the mitigation acceptance letter issued on July 19, 2005. As stated in your letter, the subject project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The mitigation for the subject project will be provided in accordance with this agreement.

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

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Bill Biddlecome, USACE-Washington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3640 Revised

Restoring... Enhancing... Protecting Our State



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

Gates County

SR 1400

Replace Bridge No. 16 Over Merchants Millpond

Federal-Aid Project No. BRZ-1400(4)

State Project No. 8.2060201

T.I.P. No. B-3640

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

10/26/04
DATE

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

10/28/04
DATE

for John F. Sullivan, III
John F. Sullivan, III, P.E.
Division Administrator, FHWA

Gates County

SR 1400

Replace Bridge No. 16 Over Merchants Millpond

Federal-Aid Project No. BRZ-1400(4)

State Project No. 8.2060201

T.I.P. No. B-3640

CATEGORICAL EXCLUSION

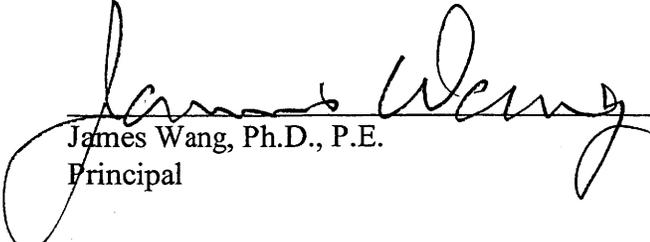
October 2004

Document Prepared by:
Wang Engineering Company, Inc.



Greg S. Purvis, P.E.
Project Manager





James Wang, Ph.D., P.E.
Principal

For the North Carolina Department of Transportation



John Wadsworth, P.E.
Project Manager
Consultant Engineering Unit

PROJECT COMMITMENTS

**Gates County
SR 1400
Replace Bridge No. 16 Over Merchants Millpond
Federal-Aid Project No. BRZ-1400(4)
State Project No. 8.2060201
T.I.P. No. B-3640**

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

Division Engineer

The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

An in-water work moratorium will be in effect from February 15 to June 30, to ensure the environmental integrity of the project area.

Mitigation will be provided for any unavoidable wetland losses.

Design and location of proposed spillway will be coordinated with the Division of Parks and Recreation.

All proposed work shall be contained within the existing right of way except for the proposed spillway.

The existing dilapidated timber spillway structure will be replaced and ownership will be given to the Division of Parks and Recreation.

The existing stairway to the canoe deck will be readjusted if necessary.

Hydraulics

Deck drains will not be allowed to discharge directly into the water or main channel.

The design of the proposed spillway will take into consideration fish passage over the proposed spillway.

Roadway Design

A bridge structure will be utilized with a concrete barrier separating the attached walkways from the roadway.

The guardrail will consist of weathered steel, the bridge railing will be anodized, and a colored additive will be mixed in the concrete to make the new bridge more aesthetically pleasing.

Gates County
SR 1400
Replace Bridge No. 16 Over Merchants Millpond
Federal-Aid Project No. BRZ-1400(4)
State Project No. 8.2060201
T.I.P. No. B-3640

INTRODUCTION: The replacement of Bridge No. 16 is included in the 2004-2010 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and the Federal-Aid Bridge Replacement 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

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 15.1 out of a possible 100 for a new structure. The bridge is considered functionally obsolete and structurally deficient. The replacement of an inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

SR 1400 (Millpond Road) is classified as a rural major collector. Land use in the project area is primarily wooded. Undeveloped woodlands are adjacent on the south side of the study area. A pond is located on the north side of the study area.

Bridge No. 16 was constructed in 1963. The existing structure is 106 feet in length, consisting of seven spans with the maximum span at approximately 17 feet. The clear roadway width is 19.3 feet, providing two nine-foot travel lanes with 0.6-foot shoulders. The existing bridge has four-foot wide sidewalks (fishing walkways). The superstructure consists of a timber deck on timber joists with an asphalt-wearing surface. The substructure is a timber abutment design. The spillway for the millpond is a timber structure that is adjacent to the existing bridge and joins the substructure of the bridge. The interior bents consist of timber caps on timber piles. The bed to crown height is 11.5 feet. The posted weight limit is 11 tons for single vehicles (SV) and 19 tons for truck-tractors semi-trailers (TTST).

The existing bridge and approaches on SR 1400 are tangent. There is a 3.5-degree curve located approximately 80 feet from the southeast end and a 6.5-degree curve located approximately 415 feet from the northwest end of the structure. SR 1400 consists of two nine-foot travel lanes with ten-foot shoulders.

The estimated 2001 average daily traffic volume was 1,000 vehicles per day (vpd). The projected traffic volume is expected to increase to 1,600 vpd by the design year 2025. The volumes include one percent TTST and three percent dual tired vehicles.

The posted speed limit is 45 miles per hour (mph) for the curve immediately north of the bridge and 35 mph for the curve immediately south of the bridge.

SR 1400 is not part of a designated bicycle route and there are no indications that an unusual number of bicyclists are using this route.

Underground telephone cables are present on the west side of SR 1400 and are aerial at Merchants Millpond bridge. There are aerial power lines on the south side of SR 1400 and an

underground water pipe crosses below the waterway on the west side of Merchants Millpond bridge. Utility impacts are anticipated to be low.

There was one accident reported in the vicinity of the bridge during the period from March 1, 2000 to February 28, 2003.

Six school buses cross this bridge twice daily.

III. ALTERNATIVES

A. Project Description

The proposed structure will consist of a 30-foot clear roadway width, providing two 11-foot travel lanes with four-foot shoulders. Bicycle safe bridge rails will be provided along either side of the travel way. A 5-foot pedestrian walkway will be provided along both sides of the bridge outside of the travelway. A 42-inch high outside rail will be provided for the walkways. The proposed approach roadways will provide two 11-foot travel lanes with six-foot grassed shoulders.

Based on a preliminary hydraulic analysis, Bridge No. 16 will be replaced with a bridge. The opening size of the proposed structure may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis to be performed during the final design phase of the project. The existing spillway adjacent to the existing bridge will be replaced upstream of the existing spillway. The proposed spillway will be approximately 300 feet long (See Figure 2A) and the top of the spillway will be at elevation 6.0 feet. The spillway will be constructed of either steel or concrete piles and this will be determined during the final design phase of the project. The method of construction for the proposed spillway will be determined during the final design phase of the project, which may include a work barge system.

B. Build Alternatives

Three (3) build alternatives studied for replacing the existing bridge are described below.

Alternate A (Preferred) replaces the bridge at the existing location with a new structure. During construction, traffic will be maintained by an off-site detour. The proposed bridge will be a cored slab structure. The length of approach work is approximately 200 feet. The bridge length is approximately 139 feet. The design speed is 50 mph. During construction, traffic will be maintained by an off-site detour. The right of way width is 100 feet.

The off-site detour along US 158 Bypass, US 158 Business, and NC 37 is approximately 8.4 miles in length. A road user analysis was performed based on 1,100 vehicles per day (vpd) for construction year 2004 and an average of 8.4 miles of indirect travel. The cost of additional travel will be approximately \$1.1 million dollars during a twelve-month construction period.

Alternate C replaces the existing bridge on new alignment south of the existing bridge. This bridge is offset approximately ten feet from the centerline of the existing bridge. The length of approach work is approximately 1486 feet. The bridge length is approximately 138 feet. During construction, traffic will be maintained by an off-site detour. The design speed for this alternate is 45 mph. The right of way width varies from 100 feet to 110 feet with additional temporary construction easements as required. Alternate C was not selected as the preferred alternate because it has a greater construction cost, greater environmental impacts, and longer construction duration than Alternate A.

Alternate D replaces the existing bridge on new alignment south of the existing bridge. This bridge is offset approximately 23 feet from the centerline of the existing bridge. The length of approach work is approximately 1984 feet. The bridge length is approximately 158 feet. During construction, traffic will be maintained by an off-site detour. The design speed for this alternate is 50 mph. The right of way width varies from 100 feet to 120 feet with additional temporary construction easements as required. Alternate D was not selected as the preferred alternate because it has a greater construction cost, greater environmental impacts, and longer construction duration than Alternate A.

C. Alternatives Eliminated From Further Study

Alternate B replaces the existing bridge on new alignment south of the existing bridge. This bridge is offset approximately 47 feet from the centerline of the existing bridge. The length of approach work is approximately 1158 feet. The bridge length is approximately 178 feet. During construction, traffic will be maintained on existing roadway and bridge except during tie-ins. The design speed for this alternate is 50 mph. The right of way width varies from 100 feet to 150 feet with additional temporary construction easements as required. Alternate B was eliminated from further study because of its excessive environmental impacts.

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge. This is not desirable due to the traffic service provided by SR 1400.

Investigation of the existing structure by the Bridge Maintenance Unit indicates the rehabilitation of the old bridge is not feasible due to its age and deteriorated condition.

D. Preferred Alternative

Alternate A replaces the bridge at the existing location with a new structure. During construction, traffic will be maintained by an off-site detour. Alternate A was selected as the preferred alternate because of its lower construction cost, lower environmental impacts, and shorter construction duration.

The Division Engineer concurs with Alternate A as the preferred alternate.

IV. ESTIMATED COST

The estimated costs, based on current 2004 prices, are as follows:

	Alternate A (Preferred)	Alternate C	Alternate D
Structure Removal (existing)	\$ 22,900	\$ 22,900	\$ 22,900
Structure (proposed)	437,800	434,700	497,700
Structure Miscellaneous and Mobilization	46,100	45,800	52,100
Spillway	90,000	90,000	90,000
Roadway Approaches	70,700	207,300	442,100
Roadway Miscellaneous and Mobilization	24,700	72,500	154,800
Engineering and Contingencies	97,800	116,800	180,400
ROW/Const. Easements/Utilities:	20,000	25,000	30,000
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TOTAL	\$ 810,000	\$ 1,015,000	\$ 1,470,000

The proposed right of way costs reflect that the North Carolina Department of Environment and Natural Resources Division of Parks and Recreation (DPR) will grant permanent easement to all lands affected by the project. The estimated cost of the project, as shown in the 2004-2010 Transportation Improvement Program, is \$450,000 including \$25,000 for right-of-way and \$425,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Materials and research data in support of this investigation have been derived from a number of sources including applicable U.S. Geological Survey (USGS) topographic mapping (Merchants Millpond, NC 7.5 minute quadrangle, 1981), U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI) mapping (FWS NWI 1990), and project plans.

Bridge No. 16 was visited on March 27, 2001. The study corridor was walked and visually surveyed for significant features. For purposes of field surveys, the study corridor was assumed to be approximately 1800 feet in length for Alternate A, 2300 feet for Alternate B, 1700 feet for Alternate C, and 2200 feet for Alternate D. The corridor width is 150 feet from centerline to the north of SR 1400 and 150 feet from centerline to the south of SR 1400 for all four alternatives to ensure proper coverage. Plant community area and wetland area calculations are based on construction limits. Special concerns evaluated in the field include 1) potential habitat for protected species and 2) wetlands and water quality protection in Merchants Millpond and Bennetts Creek.

Plant community descriptions are based on a classification system utilized by North Carolina Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names follow nomenclature found in Radford *et al.* (1968), with adjustments made to reflect more current nomenclature (Kartesz 1998). Jurisdictional areas were evaluated using the three-parameter approach following U.S. Army Corps of Engineers (COE) delineation guidelines (DOA 1987). Wetland jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979). Habitat used by terrestrial wildlife and aquatic organisms, as well as expected population distributions, were determined through field observations, evaluation of available habitat, and supportive documentation (Webster *et al.* 1985, Potter *et al.* 1980, Martof *et al.* 1980, Rohde *et al.* 1994, Menhinick 1991, Palmer and Braswell 1995). Fish and wildlife nomenclature follow current standards. Water quality information for area streams and tributaries was derived from available sources (DWQ 1997a, 1997b). Quantitative sampling was not undertaken to support existing data.

The most current FWS listing of federal-protected species (May 31, 2002) with ranges that extend into Gates County was obtained prior to initiation of the field investigation and reviewed again prior to completion of the report. In addition, NHP records documenting presence of federal- or state-listed species were consulted before commencing the field investigation.

B. Physiography and Soils

The study corridor is located in the Wicomico and Talbot System geologic formation within the Lower Coastal Plain physiographic province of North Carolina. Broad, gently undulating to nearly flat plains and more distinct topography of barrier island systems and beach ridges, characterize this system. Tributaries of the major streams slope gently from their headwaters to their mouths. Valley slopes are a minor part of the landscape except near major streams as they approach the coastal estuaries. Most streams are only a few yards below the uplands. Soil

systems are dominated by marine sediments, which have formed fine- and coarse-loamy soils of siliceous sand mineralogy. Soils are more than five feet thick and are somewhat poorly to poorly drained (Daniels *et al.* 1999). The study corridor is located within the downstream edge of Merchants Millpond and within the floodplain and adjoining terraces of Bennetts Creek. Within the study corridor, the floodplain is shallow and flat. Elevations rise from approximately four feet National Geodetic Vertical Datum (NGVD) at the streamside of Bennetts Creek to ten feet NGVD at the western extreme of the study corridor (USGS Merchants Millpond, NC quadrangle).

The Natural Resources Conservation Service (USDA 1996a) indicates the following soils within the study corridor: Chowan loam (*Thapto-Histic Fluvaquents*), adjacent to and including the channel of Bennetts Creek; Nawney loam (*Typic Fluvaquents*) to the west of the Bennetts Creek; Winton fine sandy loam (*Aquic Hapludults*) at the western end of the study corridor; and Altavista fine sandy loam (*Aquic Hapludults*) at the east end of the study corridor.

The Chowan series consists of nearly level, poorly drained soils on floodplains of small creeks that flow into the Chowan River. During the late winter and early spring, these soils are frequently flooded for very long periods. Permeability is moderately slow in the upper mineral layers, and moderately rapid to slow in the underlying mineral layers. The seasonal high water table is within 0.5 foot of the soil surface.

The Nawney series consists of nearly level, poorly drained soils on floodplains. These soils are frequently flooded for very long periods. Permeability is moderate. The seasonal high water table is within 0.5 foot of the soil surface.

The Winton series consists of moderately steep and moderately well drained soils found on side slopes. Permeability is moderate, and the seasonal high water table is two to four feet below the surface.

The Altavista series is moderately well-drained. These soils are smooth ridges on stream terraces. Permeability is moderate, and the seasonal high water table is 1.5 to 2.5 feet below the surface.

Of the predominant soil map units in the study corridor, the Natural Resources Conservation Service lists the Chowan and Nawney series as hydric. In addition, the Winton series has inclusions of Chowan and Nawney soils in narrow drainageways. The Altavista series has inclusions of Tomotley series soils in depressions. The Tomotley series (*Typic Ochraquults*) are nearly level, poorly drained soils classified as hydric in Gates County (USDA 1996b).

C. Water Resources

1. Surface Waters

The study corridor is located within sub-basin 03-01-01 (Upper Chowan in North Carolina, Wiccacon River and Ahoskie Creek) of the Chowan River Basin (DWQ 1997a). The drainage basin area at the project site is 75.4 square miles. This area is part of USGS accounting unit 03010203 of the South Atlantic-Gulf Coast Region. Bennetts Creek, from its source to the Chowan River (including Merchants Millpond), has been assigned Stream Index Number 25-17 by the N.C. Division of Water Quality (DWQ) (DWQ 1997b).

2. Stream Characteristics

Merchants Millpond is an impoundment of the Bennetts Creek drainage. Bennetts Creek is a fourth-order, blackwater stream in the non-estuarine portion of the Upper Chowan River sub-

basin. Above Merchants Millpond, the Bennetts Creek watershed is characterized by Cypress-Gum Swamps with upland areas used primarily for forestry and agriculture. Within the study corridor, Merchants Millpond is a shallow, blackwater pond with mature cypress (*Taxodium distichum*) and water tupelo (*Nyssa aquatica*) emerging in scattered groups across its surface. Water depths range from a few inches along the pond edges to several feet in front of the spillway. Below the pond, the main channel of Bennetts Creek has been moved approximately 300 feet to the east of the historic location of the millpond wheel (its original alignment). The original channel has been filled and now comprises part of the eastern roadway approach to Bridge No. 16. Within the study corridor, Bennetts Creek is broad and shallow, exhibiting well-developed sinuosity and no noticeable riffle and pool sequence. During the field survey, width of the stream was approximately 70 feet at the point of the bridge crossing. Water depths in Bennetts Creek varied from three to 30 inches. The water level was high, and flow was brisk. Persistent emergent aquatic vegetation in Merchants Millpond includes cypress, water tupelo, and blue flag iris (*Iris virginica*). Duckweed (*Lemna sp.*), fanwort (*Cabomba caroliniana*), and parrot feather (*Myriophyllum aquaticum*) are other aquatic species observed. Persistent aquatic vegetation, other than cypress and water tupelo, was not observed in Bennetts Creek. The stream was clear and tannin-stained during the field visit, with visibility to approximately 18 inches. The substrate is composed of fine sediments underlain by firm sandy or mineral soil. The stream banks are composed of fine textured soil as they rise gently to the level, sandy to loamy floodplain.

The floodplain contains Cypress-Gum Swamp, Small Stream Swamp, and urban/disturbed land. Three areas of hydric soils were located: on both sides of Bennetts Creek as it curves to the east, and extending east and west along the south side of SR 1400; and along the margin of Merchants Millpond north of SR 1400.

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A best usage classification of C NSW has been assigned to Bennetts Creek and Merchants Millpond. The designation C denotes water supply waters that are suitable for aquatic life propagation and protection, agriculture, and secondary recreation. Secondary recreation refers to wading, boating, and other uses not involving human body contact with waters on an organized or frequent basis. The supplementary classification NSW denotes nutrient sensitive waters that need additional nutrient management because they are subject to excessive growth of microscopic and macroscopic vegetation (DWQ 1997b). No designated Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within one mile of the study corridor.

DWQ has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed study corridor is summarized in the Chowan River basin management plan. Water quality samples in the Chowan River, taken in 1995 approximately 26.7 miles downstream of the study corridor, indicated **Good-Fair** water based on macro invertebrate samples. Fish tissue samples taken near the spillway of Merchants Millpond in 1995 showed that one sample in 14 exceeded the U.S. Environmental Protection Agency's standard for mercury content. Bennetts Creek, from its source to the Chowan River, has been listed as **Support Threatened** concerning its Best Usage Classification. Land use within the sub-basin is primarily wetlands and agriculture, and water quality degradation is believed to be mainly due to nonpoint-source runoff. A Lake Assessment of Merchants Millpond also returned a **Support Threatened** rating. Shallow depth and long retention time for water in the pond encourages the growth of aquatic macrophytes covering the water's surface. These aquatic plants are considered a threat to the designated uses of canoeing and fishing. Low dissolved oxygen in the pond also indicates a threat to designated uses. The Chowan sub-basin 03-01-01 supports five minor point-source discharges, with 0.02 million gallons per day total permitted flow. Two of

these discharges are located approximately 6.7 miles upstream of the study corridor. No major dischargers are located in the sub-basin (DWQ 1997a).

3. Anticipated Impacts to Water Resources

All of the proposed project alternatives include complete bridging of Merchants Millpond and Bennetts Creek to maintain the current water quality, aquatic habitat, and flow regime. Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion control schedule and the use of best management practices. Temporary construction impacts may include the removal of the existing spillway and construction of the proposed spillway. The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled "Control of Erosion, Siltation, and Pollution" (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation.

In each of the three build alternatives, the proposed bridge replacement and spillway replacement will allow for continuation of pre-project stream flows in Merchants Millpond and Bennetts Creek, thereby protecting the integrity of this waterway. Long-term impacts resulting from construction are expected to be negligible. In order to minimize impacts to water resources, NCDOT Best Management Practices (BMPs) for the Protection of Surface Waters will be strictly enforced during the entire life of the project.

The existing bridge will be removed without dropping any component into Waters of the U.S. NCDOT's Best Management Practices for Bridge Demolition and Removal (BMP-BDR) will be applied for the removal of this bridge.

D. Biotic Resources

1. Plant Communities

Three distinct plant communities were identified within the study corridor: Cypress-Gum Swamp (Blackwater Subtype); Coastal Plain Small Stream Swamp (Blackwater Subtype); and urban/disturbed land. These plant communities are described below.

a) Cypress-Gum Swamp (Blackwater Subtype)

Cypress-Gum Swamp, Blackwater Subtype occurs within Merchants Millpond and within the floodplain of Bennetts Creek. This community grades into Coastal Plain Small Stream Swamp, Blackwater Subtype, as the floodplain rises gently from the channel of Bennetts Creek and from Merchants Millpond. The community is described by Schafale and Weakley (1990) as occurring in back swamps, sloughs, swales, and featureless floodplains of blackwater rivers that are seasonally to nearly permanently flooded. At the study corridor, canopy dominants are cypress and water tupelo, with green ash (*Fraxinus pennsylvanica*), American elm (*Ulmus americana*), and sycamore (*Platanus occidentalis*) also present. As the cypress-gum swamp grades into Coastal Plain Small Stream Swamp at higher elevations, species associated with dryer areas appear including tulip poplar (*Liriodendron tulipifera*), black walnut (*Juglans nigra*), and sweetgum (*Liquidambar styraciflua*). The subcanopy includes red maple (*Acer rubrum*), American holly (*Ilex americana*), and ironwood (*Carpinus caroliniana*). The sparse shrub layer contains wax myrtle (*Morilla cerifera*), giant cane

(*Arundinaria gigantea*), and strawberry bush (*Euonymus americanus*), among others. Vines include rattan vine (*Berchemia scandens*), cross vine (*Anisostichus capreolata*), and greenbriar (*Smilax rotundifolia*). The understory includes ferns such as Christmas fern (*Polystichum acrostichoides*), ebony spleenwort (*Asplenium platyneuron*), and netted chain-fern (*Woodwardia areolata*) as well as may-apple (*Podophyllum peltatum*) and sphagnum mosses (*Sphagnum sp.*).

b) Coastal Plain Small Stream Swamp (Blackwater Subtype)

Coastal Plain Small Stream Swamp occurs along the edges of Merchants Millpond and on the upper floodplain and low terraces of Bennetts Creek. This community type intergrades with Cypress-Gum Swamp as it approaches lower elevations. Along the road margins and at the northeast extreme of the study corridor, it is bordered by urban/disturbed land. South of SR 1400 and in the northwest quadrant, the forest extends outside of the study corridor. This community is described by Schafale and Weakley (1990) as occurring in floodplains of small, blackwater streams in which separate fluvial features and associated vegetation are too small or poorly developed to be distinguished. The ecological differences between different fluvial landforms are reduced, causing a highly variable mixture of the species associated with larger river floodplains. The small, blackwater streams have highly variable flooding regimes, and soils are various alluvial or organic series. At the Merchants Millpond study corridor, the canopy is dominated by swamp chestnut oak (*Quercus michauxii*), water oak (*Q. nigra*), green ash, tulip poplar, sweetgum, black walnut, blackgum (*Nyssa sylvatica*), and scattered loblolly pine (*Pinus taeda*). The midstory and shrub layer contain ironwood, dogwood (*Cornus florida*), red maple, wax myrtle, box-elder (*Acer negundo*), Chinese privet (*Lonicera japonica*), elderberry (*Sambucus canadensis*), blackberry (*Rubus argutus*), and giant cane. Vines are sparse to common in more open patches, including muscadine (*Vitis rotundifolia*), Japanese honeysuckle (*Lonicera japonica*), cross vine, and greenbriar. The understory is sparse, and includes netted chain-fern, Christmas fern, dock (*Rumex crispus*), and common blue violet (*Viola papilionacea*).

c) Urban/Disturbed Land

Urban/disturbed land occurs along the right-of-way of SR 1400, and at the facilities of Merchants Millpond State Park in the northeast corner of the study corridor. The roadside area is approximately 25 feet wide. The roadside margin and maintained lawns are cloaked with planted and naturally occurring grasses. Volunteer species in maintained areas include Rafinesque's violet (*Viola rafinesquii*), blue-eyed grass (*Sisyrinchium rosulatum*), pussy-toes (*Antennaria sp.*), wild onion (*Allium canadense*), cranesbill (*Geranium carolinianum*), and lyre-leaved sage (*Salvia lyrata*). Shadier areas contain common blue violet and henbit (*Lamium purpureum*). In areas that are not regularly mowed, volunteer species include Japanese honeysuckle (*Lonicera japonica*), Chinese privet, muscadine, blackberry, goldenrod (*Solidago sp.*), and seedlings and saplings of sweetgum and red maple.

2. Plant Communities within the Study Corridor

For Alternates A, C, and D, plant community impacts are estimated based on the amount of each plant community present within the proposed construction easements and from the proposed cut and fill areas. A summary of potential impacts to individual plant communities at Bridge No. 16 for Alternates A, C, and D are presented in Table 1.

Table 1			
Area Of Anticipated Impacts To Terrestrial Plant Communities			
Acres			
Plant Community	Alternate A (Preferred)	Alternate C	Alternate D
Cypress-Gum Swamp	0.02	0.99)	1.57
Coastal Plain Small Stream Swamp	0.01	1.22	1.52
Open Water	0.02	0.16	0.34)
Urban/ Disturbed Land	0.19	5.53	5.50
TOTAL:	0.24	7.90	8.93

Table 1: Potential impacts to plant communities at Bridge No. 16, Gates County, for Alternates A, C, and D. Permanent impacts are based on cut-and-fill areas for new construction and construction easements.

Alternate A replaces Bridge No. 16 in place, with an off-site detour. Of the potentially impacted 0.24 acres 13 percent consists of Small Stream Swamp and Cypress-Gum Swamp communities. Impacts to plant communities are greater for urban/disturbed land than the impacts to Small Stream Swamp and Cypress-Gum Swamp because the project footprint is aligned along the existing bridge and roadway footprint and the urban/disturbed land occurs along the right of way of SR 1400.

Alternate C calls for replacing the bridge and roadway approximately ten feet south (downstream) of the existing alignment. Alternate C includes a project corridor width of 100 feet. Seventy-nine percent of impacts to plant communities involve urban/disturbed land. The proposed roadway and bridge footprint would follow nearly the same alignment as the existing facilities.

Alternate D calls for construction of a new bridge approximately 25 feet south of the existing bridge, with improved alignments at the eastern and western roadway approaches. Alternate D includes a proposed construction corridor 2141 feet in length and 10 to 220 feet in width. Thirty-five percent of the impacts to plant communities involved in Alternate D are to Coastal Plain Small Stream Swamp and Cypress-Gum Swamp.

From an ecological perspective, impacts of upgrading existing road facilities, called for in Alternate A, are minimal. New cut-and-fill areas would extend approximately zero to 30 feet into Cypress-Gum Swamp and Small Stream Swamp plant communities in the Bennetts Creek floodplain, with narrower strips extending into the edge of Merchants Millpond. Alternates C and D would claim wider strips of adjacent natural communities. The southerly shifts of both alternatives would involve minimal cut-and-fill impacts to Merchants Millpond, but would involve substantial fill in the Bennetts Creek floodplain. For Alternate C, fill would extend approximately zero to 60 feet into the floodplain; and for Alternate D approximately 20 to 80 feet. The abandoned footprint of the existing SR 1400 and Bridge No. 16 could be replanted and restored to provide new natural communities on the Merchants Millpond side of the roadway, and provide some mitigation for project impacts. All of the alternatives require some degree of incursion into Cypress-Gum and Coastal Plain Small Stream Swamp, resulting in the removal of a few mature trees. For all alternatives, no new fragmentation of plant communities will be created, as the project will result only in relocation of community boundaries. Alternate D will result in the greatest temporary and permanent impacts to plant communities.

Roadside-forest ecotones typically serve as vectors for invasive species into local natural communities. An example of an undesirable invasive species utilizing roadsides is kudzu (*Pueria*

lobata). The establishment of a hardy groundcover on road shoulders as soon as practicable will limit the availability of construction areas to invasive and undesirable plants.

3. Wildlife

a) Terrestrial

Signs of beaver (*Castor canadensis*), including gnawed stumps, sticks, and scat were seen within the study corridor during the field survey. Two gray squirrels (*Sciurus carolinensis*) and scat of white-tailed deer (*Odocoileus virginianus*) were also observed. Characteristic mammals which are expected to frequent swamps in the Coastal Plain include Virginia opossum (*Didelphis virginiana*), southeastern shrew (*Sorex longirostris*), star-nosed mole (*Condylura cristata*), silver-haired bat (*Lasionycteris noctivagans*), southeastern myotis (*Myotis austroriparius*), red bat (*Lasiurus borealis*), marsh rabbit (*Sylvilagus palustris*), southern flying squirrel (*Glaucomys volans*), cotton mouse (*Peromyscus gossypinus*), raccoon (*Procyon lotor*), bobcat (*Felis rufus*), and mink (*Mustela vison*).

Bird species that were identified during the field survey are yellow warbler (*Dendroica petechia*), Carolina wren (*Thryothorus ludovicianus*), tufted titmouse (*Baeolophus bicolor*), common crow (*Corvus brachyrhynchos*), turkey vulture (*Cathartes aura*), white-breasted nuthatch (*Sitta carolinensis*), Canada goose (*Branta canadensis*), and red-shouldered hawk (*Buteo lineatus*). Other bird species expected to frequent swamps and swamp forest habitats include pied-billed grebe (*Podilymbus podiceps*), great blue heron (*Ardea herodias*), yellow-crowned night heron (*Nyctanassa violacea*), wood duck (*Aix sponsa*), hooded merganser (*Lophodytes cucullatus*), (*Meleagris gallopavo*), American woodcock (*Scolopax minor*), barred owl (*Strix varia*), belted kingfisher (*Megaceryle alcyon*), pileated woodpecker (*Dryocopus pileatus*), Acadian flycatcher (*Empidonax virescens*), wood thrush (*Hylocichla mustelina*), blue-gray gnatcatcher (*Polioptila caerulea*), white-eyed vireo (*Vireo griseus*), prothonotary warbler (*Prothonotaria citrea*), northern parula (*Parula americana*), yellow-rumped warbler (*Dendroica coronata*), swamp sparrow (*Melospiza georgiana*), and white-throated sparrow (*Zonotrichia albicollis*).

No terrestrial reptile or amphibian species were observed within the study corridor. Species that might be expected in this habitat are Fowler's toad (*Bufo woodhousei*), eastern box turtle (*Terrapene carolina*), ringneck snake (*Diadophis punctatus*), rat snake (*Elaphe obsoleta*), rough green snake (*Opheidrys aestivus*), and timber rattlesnake (*Crotalus horridus*).

b) Aquatic

The empty shell of an eastern mud turtle (*Kinosternon subrubrum*) was observed during the field survey. Merchants Millpond provides suitable habitat for many aquatic and semi-aquatic reptiles including snapping turtle (*Chelydra serpentina*), eastern musk turtle (*Sternotherus odoratus*), Florida cooter (*Chrysemys floridana*), painted turtle (*Chrysemys picta*), yellowbelly slider (*Chrysemys scripta*), spotted turtle (*Clemmys guttata*), redbelly water snake (*Nerodia erythrogaster*), rainbow snake (*Farancia erythrogramma*), cottonmouth (*Agkistrodon piscivorus*), and mud snake (*Farancia abacura*). Typical amphibian species for this habitat type include greater siren (*Siren lacertina*), lesser siren (*Siren intermedia*), dwarf mudpuppy (*Necturus punctatus*), marbled salamander (*Ambystoma opacum*), southern dusky salamander (*Desmognathus auriculatus*), two-toed amphiuma (*Amphiuma means*), mud salamander (*Pseudotriton montanus*), many-lined salamander (*Stereochilus marginatus*), green treefrog (*Hyla cinerea*), barking treefrog (*Hyla gratiosa*), little grass frog (*Limnaeodius ocularis*), Brimley's chorus frog (*Pseudacris brimleyi*), bullfrog (*Rana catesbeiana*), and

southern leopard frog (*Rana utricularia*). No mollusks or arthropods were observed, but many crayfish chimneys were found in the study corridor.

No sampling was undertaken in Merchants Millpond to determine fishery potential. Small minnows were seen during visual surveys, but no larger fish were noted. Species which may be present in Merchants Millpond or Bennetts Creek include longnose gar (*Lepisosteus osseus*), bowfin (*Amia calva*), gizzard shad (*Dorosoma cepedianum*), golden shiner (*Notemigonus crysoleucas*), creek chubsucker (*Erimyzon oblongus*), brown bullhead (*Ameiurus nebulosus*), tadpole madtom (*Noturus gyrinus*), redfin pickerel (*Esox americanus*), swampfish (*Chologaster cornuta*), banded killifish (*Fundulus diaphanus*), mud sunfish (*Acantharchus pomotis*), blackbanded sunfish (*Enneacanthus chaetodon*), black crappie (*Pomoxis nigromaculatus*), swamp darter (*Etheostoma fusiforme*), and yellow perch (*Perca flavescens*).

Since the project is in the Coastal Plain and includes the crossing of a stream delineated on the most recent USGS 7.5 minute topographic quadrangle, anadromous fish passage should be considered in the timing of any proposed in-stream activities associated with bridge replacement. Design and scheduling of bridge replacement should avoid the necessity of in-stream activities during the spring migration period. The N.C. Division of Marine Fisheries has requested an in-water work moratorium from February 15 to June 30 (letter of July 13, 2000).

c) Anticipated Impacts to Wildlife

Due to the limited extent of infringement on natural communities, the proposed bridge replacement will not result in substantial loss or displacement of known terrestrial animal populations. No substantial habitat fragmentation is expected since most permanent improvements will be restricted to or adjoining existing roadside margins. Construction noise and associated disturbances will have short-term impacts on avifauna and migratory wildlife movement patterns. Long-term impacts are expected to be inconsequential for Alternate A, with longer recovery periods expected for Alternates C and D. After removal of existing bridge structures and associated fill, the area will be replanted. Potential impacts to downstream aquatic habitats will be avoided by bridging the systems to maintain regular flow and stream integrity. Short-term impacts associated with turbidity and suspended sediments will affect benthic populations. Temporary impacts to downstream habitats from increased sediment during construction will be minimized by the implementation of stringent erosion control measures.

E. Special Topics

1. "Waters of the United States": Jurisdictional Issues

Surface waters within the embankments of Bennetts Creek and Merchants Millpond are subject to jurisdictional consideration under Section 404 of the Clean Water Act as "waters of the United States" (33 CFR section 328.3). Merchants Millpond is an impoundment of Bennetts Creek. The substrate of Merchants Millpond is composed of accumulated organic material and mud, underlain by mineral soils. Bennetts Creek can be characterized as a perennial blackwater stream system with an unconsolidated bottom of sand and mud.

Wetlands adjacent to Bennetts Creek and Merchants Millpond are subject to jurisdictional consideration under Section 404 of the Clean Water Act as "waters of the United States" (33 CFR section 328.3). These areas are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (12.5

percent) of the growing season (DOA 1987). NWI mapping indicates that the floodplain of Bennetts Creek contains wetlands that exhibit characteristics of a palustrine, broad-leaved, deciduous forest system that is seasonally flooded (PF01C). Also included in the study corridor, within Merchants Millpond, are palustrine, deciduous, semipermanently flooded wetlands, some of which are impounded (PF06F, PFO6Fh); and palustrine forested deciduous, intermittently exposed wetlands that are diked or impounded (PFO6Gh) (Cowardin *et al.* 1979). These map units correspond to the plant communities described in this report as Cypress-Gum Swamp and Coastal Plain Small Stream Swamp habitat. Jurisdictional areas delineated and mapped roughly correspond to the NWI map units. Vegetated wetlands occur on both sides of Bennetts Creek and extend into Merchants Millpond, which supports emergent cypress, water tupelo, and other aquatic plant species. Wetlands are isolated from the road, which has been built on an embankment. Wetland and stream areas and reaches proposed to be affected by Alternates A, C, and D are listed in Table 2.

TABLE 2 JURISDICTIONAL AREA WITHIN CONSTRUCTION LIMITS Acres			
Jurisdictional Type	Alternate A (Preferred)	Alternate C	Alternate D
Wetland area	0.03	2.14	2.98

Table 2: Potentially affected areas of jurisdictional wetlands located within the alternative right-of-ways. Permanent impacts to wetlands result from proposed cut-and-fill areas and from construction easements and the existing bridge and roadway footprint to be removed.

Additional permanent encroachment beyond design plans will be avoided. Each alternative involves additional fill in the Bennetts Creek floodplain, downstream of Bridge No. 16. Alternate A proposes permanent impacts less than one acre of jurisdictional areas, while Alternates C and D individually propose permanent impacts to greater than two acres of jurisdictional areas. Compensatory mitigation is presumed to be required for impacts exceeding 0.1 acre.

For all three build alternatives, there is no potential that components of the existing bridge may be dropped into “waters of the United States” during demolition. In consideration of surface water impacts, this project can be classified as Case 2, where no in-stream work may occur during moratorium periods (February 15 to June 30) due to anadromous fish migration. In addition, restrictions outlined in Best Management Practices for Protection of Surface Waters must be followed. NCDOT will coordinate with the various resource agencies during project planning to ensure that all concerns regarding bridge demolition are resolved.

2. Permits

a) Section 404 of the Clean Water Act

This project is being processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The COE has made available Nationwide Permit (NWP) No. 23 (67FR 2019, 2095; January 15, 2002) for CEs due to minimal impacts expected with bridge construction. Activities under this permit are categorically excluded from environmental documentation because they are included within a category of activities that neither individually nor cumulatively have a significant effect on the human and natural environment. Activities authorized under nationwide permits must satisfy all terms and conditions of the particular permit.

b) Section 401 Water Quality Certification

DWQ has made available a General 401 Water Quality Certification for NWP No. 23. However, authorization for jurisdictional area impacts through use of this permit will require written notice to DWQ. In the event that NWP No. 23 will not suffice, minor impacts attributed to bridging and associated approach improvements are expected to qualify under General Bridge Permit 031 issued by the Wilmington COE District.

c) Bridge Demolition and Removal

If no practical alternative exists to remove the current bridge other than to drop it into the water, prior to removal of debris off-site, fill related to demolition procedures will be considered during the permitting process. A worst-case scenario should be assumed with the understanding that if there is any other practical method available, the bridge will not be dropped into the water. For all three build alternatives, there is no potential that components of the existing bridge may be dropped into "waters of the United States" during demolition. Permitting will be coordinated such that any permit needed for spillway and bridge construction will also address issues related to demolition of these structures.

d) Coast Guard

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses nontidal waters that are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. Therefore, this bridge project is exempt, and will not require a Coast Guard Bridge Permit (Appendix).

e) Coastal Area Management Act

The proposed project will occur in one (Gates) of the 20 counties covered by the Coastal Area Management Act (CAMA). The project will avoid Area's of Environmental Concern (AEC's), and N.C. Department of Coastal Management (DCM) will review the project application for consistency with the coastal management program.

3. Mitigation

Compensatory mitigation is recommended for this project due to the scope and nature of potential project impacts. Fill or alteration of streams will require compensatory mitigation in accordance with 15 NCAC 2H .0506(h). Required permits must be obtained from the Division of Water Quality prior to project initiation. Utilization of BMPs is recommended in an effort to minimize impacts.

Mitigation has been defined in National Environmental Policy Act (NEPA) regulations to include efforts which: a) avoid, b) minimize, or c) compensate for adverse impacts to the environment (40 CFR 1598.22 (a-e)).

Avoidance. Jurisdictional areas exist on both sides of the existing SR 1400 and Bridge No. 16, so complete avoidance is not possible. The elimination of staging areas in lowland sites, careful containment of hazardous materials near Bennetts Creek and Merchants Millpond, and employment of strict erosion and sedimentation control procedures are practices which can be used to avoid impacts to jurisdictional areas. Existing stream crossings cannot be avoided by facility improvements.

Minimization. The replacement of the existing bridge in the existing location will minimize wetland losses. Reduction of fill slopes and canopy removal in or near floodplain systems will reduce unnecessary wetland losses.

Compensation. Compensatory mitigation is recommended for all unavoidable losses. Few on-site opportunities are available however; restoration opportunities in or near the project corridor should be investigated for mitigation potential. A final determination regarding mitigation rests with the COE and DWQ.

F. Rare and Protected Species

1. Federally Protected Species

Species with the federal classification of Endangered, Threatened, or officially Proposed for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term “Endangered species” is defined as “any species which is in danger of extinction throughout all or a significant portion of its range”, and the term “Threatened species” is defined as “any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range” (16 U.S.C. 1532). The designation Threatened (S/A) denotes species that are Threatened Due to Similarity of Appearance. This species is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation. Federally protected species listed for Gates County (May 31, 2002 FWS list) are listed in Table 3.

Table 3 Species name and status for federally-protected species in Gates County per the May 31, 2002 FWS list		
Common Name	Scientific Name	Federal Status
American alligator	<i>Alligator mississippiensis</i>	Threatened (S/A)
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered

American alligator - American alligator is listed as threatened based on the similarity in appearance to other federally listed crocodilians; however, there are no other crocodilians within North Carolina. American alligators can be found in a variety of freshwater to estuarine aquatic habitats including swamp forests, marshes, large streams and canals, and ponds and lakes.

The American alligator is believed to be absent north of Albemarle Sound (Martof *et al.* 1980). NHP records document no occurrences of the American alligator within five miles (eight kilometers) of the study corridor, and none were observed during the site visit.

T S/A species are not subject to Section 7 consultation and a biological conclusion is not required. However, this project is not expected to affect the American alligator.

Red-cockaded Woodpecker - This small woodpecker (seven to 8.5 inches [18 to 22 centimeters] long) has a black head, prominent white cheek patch, and black-and-white barred back. Males often have red markings (cockades) behind the eye, but the cockades may be absent or difficult to see (Potter *et al.* 1980). Primary habitat consists of mature to over-mature southern pine forests dominated by loblolly, long-leaf (*P. palustris*), slash (*P. elliotii*), and pond (*P. serotina*) pines (Thompson and Baker 1971). Nest cavities are constructed in the heartwood of living pines, generally older than 70 years that have been infected with red-heart disease. Nest cavity trees

tend to occur in clusters, which are referred to as colonies (FWS 1985). The woodpecker drills holes into the bark around the cavity entrance, resulting in a shiny, resinous buildup around the entrance that allows for easy detection of active nest trees. Pine flatwoods or pine-dominated savannas that have been maintained by frequent natural fires serve as ideal nesting and foraging sites for this woodpecker. Development of a thick understory may result in abandonment of cavity trees. The woodpeckers utilize pine stands in close proximity to the colony site for foraging. Foraging areas, depending on the quality of habitat, have been found to range from 84 acres to over 409 acres. Food sources include wood-boring insects, grubs, beetles, corn worms and other invertebrates found within 0.5 miles of the colony site. Pines greater than 30 years of age dominate stands, preferred by foraging birds,, although mixed pine/hardwood stands are also used.

The study area contains scattered loblolly pine trees, including a few specimens that are possibly old enough to be cavity tree candidates or foraging areas for red-cockaded woodpeckers. However, the Cypress-Gum Swamp and Coastal Plain Small Stream Swamp communities in the study corridor consist mostly of hardwoods. The existence of a well-developed subcanopy and sporadic shrub layer would discourage red-cockaded woodpecker nesting and foraging within the study corridor. According to NHP records, red-cockaded woodpeckers have been documented approximately 1.1 miles southeast and 2.8 miles south of the study corridor. No red-cockaded woodpeckers were observed during the field visit.

BIOLOGICAL CONCLUSION: The study corridor contains no suitable foraging or nesting habitat for red-cockaded woodpeckers. NHP records document no occurrences of red-cockaded woodpeckers within one mile of the study corridor. Based on NHP records, field observations, and professional judgement, the impact of this project on the red-cockaded woodpecker is **NO EFFECT**.

2. Federal Species of Concern

The May 31, 2002 FWS list also includes a category of species designated as "Federal species of concern" (FSC) in Gates County. A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing). A list of FSC species occurring in Gates County is given in Table 4.

Table 4			
Species name, habitat potential within the study corridor, and state status for species federally designated as FSC within Gates County.			
Common Name	Scientific Name	Potential Habitat	State Status**
Henslow's sparrow	<i>Ammodramus henslowi</i>	No	SR
Rafinesque's big-eared bat	<i>Corynorhinus (Plecotus) rafinesquii</i>	Yes	T
Tidewater interstitial amphipod	<i>Stygobromus araeus</i>	Yes	NL
Chapman's sedge	<i>Carex chapmanii</i>	Yes	S3
Pondspice	<i>Litsea aestivalis</i>	Yes	SR-T
Conferva pondweed	<i>Potamogeton confervoides</i>	Yes	SR-D
Virginia least trillium	<i>Trillium pusillum</i> var. <i>virginianum</i>	Yes	E

**State Status Codes:

C - Candidate

E - Endangered

T - Threatened

NL - Not Listed

S3 - Rare or Uncommon

-T - Throughout

SR - Significantly Rare

W1 - Rare, but relatively secure

-D-Disjunct

The FSC designation provides no federal protection under the ESA for species listed. NHP files document the occurrence of Rafinesque's big-eared bat immediately adjacent to the study corridor, and also approximately 2.2 miles to the west. Rafinesque's big-eared bat has been recently documented by park rangers at Merchants Millpond State Park as roosting immediately west of the study corridor, within the floodplain of Bennetts Creek. Conferva pondweed has also been documented adjacent to the study corridor, within Merchants Millpond.

3. State-Protected Species

Plant and animal species which are on the North Carolina state list as Endangered (E), Threatened (T), Special Concern (SC), Candidate (C), Significantly Rare (SR), or Proposed (P) (Amoroso 1999, LeGrand and Hall 1999) receive limited protection under the North Carolina Endangered Species Act (G.S. 113-331 *et seq.*) and the North Carolina Plant Protection Act of 1979 (G.S. 106-202 *et seq.*). NHP records document the occurrence of the four-toed salamander (*Hemidactylium scutatum*) approximately 0.5 mile north of the study corridor. This amphibian has a state status of SC (a species of special concern). Other rare plants documented near the study corridor are water violet (*Holtonia inflata*), yellow water-crowfoot (*Ranunculus flabellaris*), and pale mannagrass (*Torreyochloa pallida*), all approximately 1.5 miles east of the study corridor.

NHP documents Merchants Millpond State Park as a Significant Natural Heritage Area. Significant Natural Heritage Areas are selected on the basis of the occurrence of rare plant and animal species, rare or high quality natural communities and special animal habitats. Merchants Millpond State Park has a significance rating of B. This rating denotes statewide significant natural areas that contain examples of natural communities, rare plant or animal populations, or geologic features that are among the highest quality or best of their kind in the state. In addition to the state park, the NHP documents the Chowan Swamp/Bennetts Creek/Catherine Creek Swamps, 4.2 miles southwest of the study corridor, as a Significant Natural Heritage Area with a significance rating of B.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

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

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on July 2, 1999. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). In a concurrence form dated October 27, 2000 the HPO concurred that there are no historic architectural resources either listed in or eligible for listing on the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated August 15, 2000, recommended "no archeological investigation be conducted in connection with this project". A copy of the SHPO memorandum is included in the Appendix.

VII. SECTION 4(f) RESOURCES

This project consists of the replacement of Bridge No. 16 over Merchants Millpond on SR 1400 in Gates County. Bridge No. 16 is located within Merchants Millpond State Park. The park was established in 1973 and encompasses more than 3,250 acres. The park is a unique mingling of coastal pond and southern swamp forest. The park offers canoeing, camping, fishing, hiking and bird watching among its activities.

Since all bridge approach work will be contained within the existing right of way there is no use of 4(f) resources.

Planning and coordination was undertaken with the Division of Parks and Recreation to incorporate their recommendations into the project.

The following items were agreed upon:

1. The preferred alternate replaces the bridge in its existing location, therefore minimizing impacts to the environment.
2. A cored slab bridge structure will be utilized with a concrete barrier separating the attached walkways from the roadway.
3. The existing walkways will be replaced.
4. The guardrail will consist of weathered steel, the bridge railing will be anodized, and a colored additive will be mixed in the concrete to make the new bridge more aesthetically pleasing.
5. The lanes have been reduced from 12-foot to 11-foot.
6. Deck drains will not be allowed to discharge directly into the water or main channel.

7. The existing dilapidated timber spillway structure will be replaced and ownership will be given to the Division of Parks and Recreation.
8. The existing stairway to the canoe deck will be readjusted if necessary.

VIII. 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 a Federal “Categorical Exclusion” due to its limited scope and lack of significant environmental consequences.

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

The project is not in conflict with any plan, existing land use, or zoning regulation. No significant change in land use is expected to result from 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 anticipated. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The bridge is surrounded by Merchants Millpond State Park, which includes a parking lot, rest rooms, canoe rentals, an office, picnic areas, nature trails, and a boat launch that is located approximately 240 feet south of the bridge. All proposed work, except for a portion of a new spillway structure, will be within the existing highway right of way.

No North Carolina Geodetic Survey control monuments will be impacted during construction of this project.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply.

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

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

The traffic volumes will not increase or decrease because of this project. There are no receptors located in the immediate project area. The project’s impact on noise and air quality will not be significant.

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning will be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NCAC 2D.0520. This evaluation completes the

assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA) and no additional reports are required.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no hazardous waste sites, no regulated or unregulated landfills or dumpsites with in the project area. No facility with Underground Storage Tanks (UST) was identified in the project vicinity.

Gates County is a participant in the National Flood Insurance Regular Program. This site on the Bennetts Creek is included in a detailed F.E.M.A. flood study. Attached is a copy of the Flood Insurance Rate Map, on which are shown the approximate limits of the 100-year flood plain in the vicinity of the project (Figure 5). The structure requirements may be adjusted during the final hydrologic study and hydraulic design as determined appropriate to accommodate design flows. The proposed alternatives will not modify flow characteristics and will have minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected.

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

IX. PUBLIC INVOLVEMENT

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters and newsletters. A Citizens Informational Workshop was held for this project on October 8, 2002 at Gates County High School where preliminary alternatives were reviewed and discussed with concerned citizens and local officials. Attendance at the Citizen's workshop included approximately twelve local citizens. No written comment sheets were received concurring with the preferred alternate A, and no one attending the meeting presented any objections to the preferred alternate A.

X. AGENCY COMMENTS

1. North Carolina Wildlife Resource Commission (NCWRC)

Comment: *"Bridge deck drains should not discharge directly into the stream."*

Response: Deck drains will not be allowed to discharge directly into the water or main channel.

2. Gates County Schools

Comment: *"It would be most helpful if we could notified a week in advance before work begins on the bridge so that we will have ample time to reroute our buses."*

Response: School and emergency management officials will be notified in writing that the preferred alternate will involve road closure and of the proposed detour route.

3. NCDENR - Division of Marine Fisheries (DMF)

Comment: *"Since all of the areas are spawning areas for anadromous fish, the Division requests an in-water work moratorium. This would include removal and new construction. The requested moratorium timeframe is February 15 through June 30."*

Response: See Project Commitments.

4. NCDENR - Division of Parks and Recreation (DPR)

Comment: *“The biggest concern our Division had with any of the four plans that they did not address the wooden dam or spillway that is attached to the existing bridge.”*

Response: The proposed plans have been revised. The spillway will be replaced upstream of the existing spillway. The Division of Parks and Recreation will grant permanent easement to the North Carolina Department of Transportation as needed.

Comment: *“We would suggest that it might be more economical to have a separate walk way independent from the bridge due to traffic safety reasons and appearance sake.”*

Response: A cored slab bridge structure will be utilized with a concrete barrier separating the attached walkways from the roadway.

Comment: *“Our Division prefers the guard rail to be constructed of weathering steel (corten steel) instead of galvanized steel.”*

Response: The guardrail will consist of weathered steel and the bridge railing will be anodized.

Comment: *“Can another material other than concrete be substituted in lieu of the concrete columns (like steel piles to support the structure).”*

Response: NCDOT’s Geotechnical and Soils & Foundations units will investigate the use of steel piles for this project. Also, a colored additive will be utilized to make the bridge concrete rails more aesthetically pleasing.

Comment: *“...there should be a chain link barrier between the vehicles and the fisherman if this cannot be separated from the bridge.”*

Response: The walkways will be separated by a concrete barrier from the bridge.

Comment: *“Please follow all state erosion and sedimentation controls on all disturbed areas.”*

Response: NCDOT’s Guidelines for Best Management Practices for the Protection of Surface Waters will be utilized and all state erosion and sedimentation controls followed.

Comment: *“The existing canoe loading dock on Bennett’s Creek, that was built by the Stewards of Bennett’s Creek (and funded by a public grant), should be relocated....”*

Response: The canoe loading dock should not be affected by the preferred Alternate A.

Comment: *“Since this area has been historically a heavily fished area, should the Wildlife Resources Commission staff be allowed to review these plans?”*

Response: The Wildlife Resources Commission commented on this project in a letter dated 6/8/01.

Comment: *“We prefer the construction start in the early summer, say June, and run through the winter months if possible.”*

Response: There is a construction moratorium from February 15 thru June 30 for anadromous fish spawning and construction will be coordinated with this moratorium.

Comment: *“The bridge access right of way has raised concerns with our natural resource section about how the easements will be handled...”*

Response: The Division of Parks and Recreation has since agreed to grant permanent easement to the North Carolina Department of Transportation as needed.

Comment: *“The posted bridge speed limit is 35 mph and we prefer it to remain that way...”*

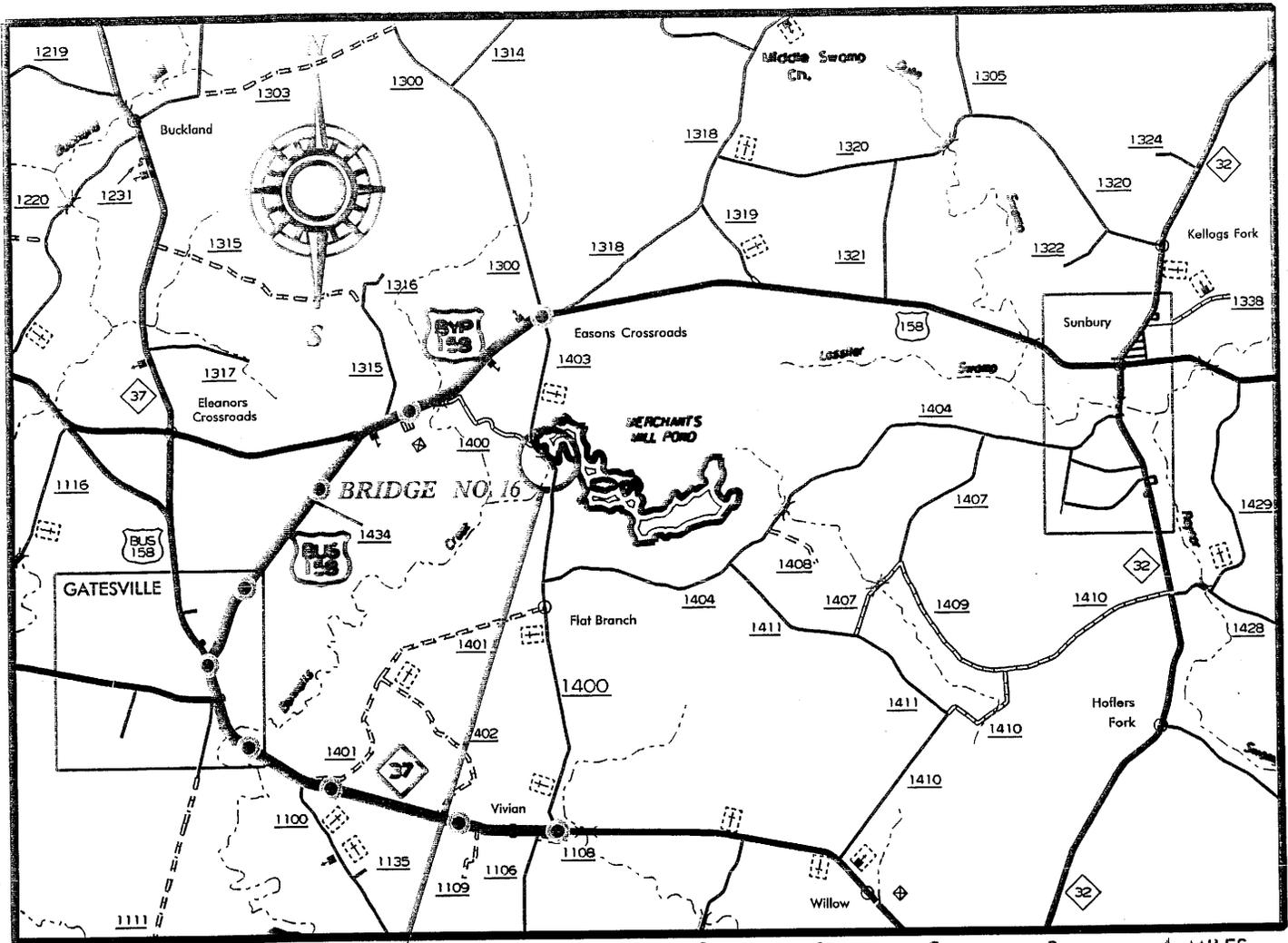
Response: The preferred Alternate A has a design speed of 50 mph. A change in the posted speed limit is not anticipated.

Comment: *“Complete removal of the old bridge and the wooden substructure underneath it and other wooden debris is recommended.”*

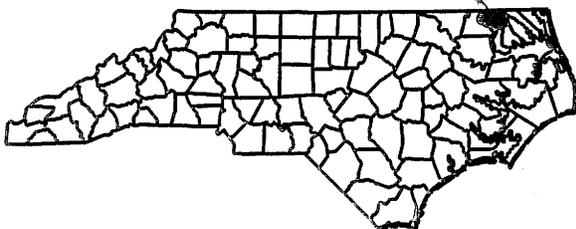
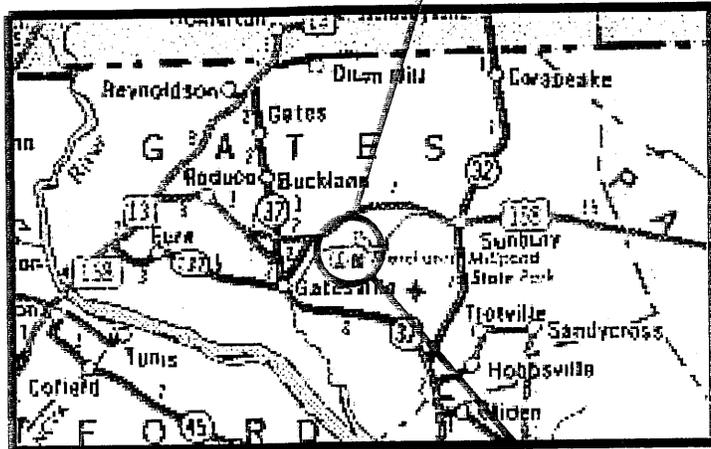
Response: Only the existing bridge and spillway will be removed.

APPENDIX A

FIGURES



SCALE



LEGEND


 Studied Detour Route

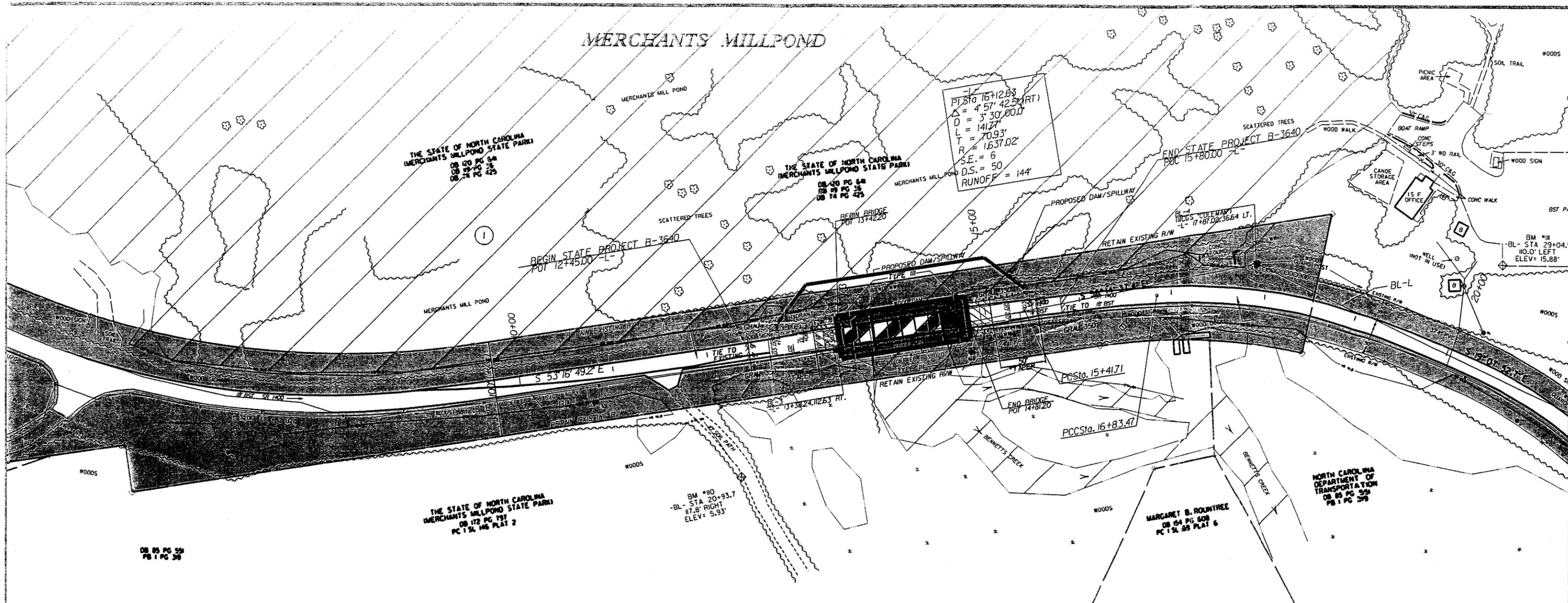


NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 PROJECT DEVELOPMENT &
 ENVIRONMENTAL ANALYSIS

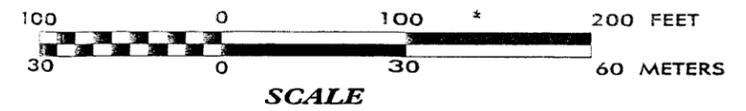
GATES COUNTY
BRIDGE NO. 16 ON SR 1400
OVER BENNETTS CREEK
(MERCHANTS MILLPOND)

TIP NO. B-3640

VICINITY MAP
FIGURE 1



LEGEND	
	EXISTING RIGHT OF WAY
	PROPOSED RIGHT-OF-WAY
	ALL EASEMENTS
	EXISTING ROADWAY
	PROPOSED ROADWAY
	PROPOSED STRUCTURES, ISLAND, CURB AND GUTTER
	EXISTING STRUCTURES, ISLAND, CURB AND GUTTER TO BE REMOVED
	BUILDINGS
	LAKES, RIVER, STREAMS, AND PONDS
$\frac{1,000}{1,600}$	PRESENT ADT (2001) FUTURE ADT (2025)
	PROPERTY LINES



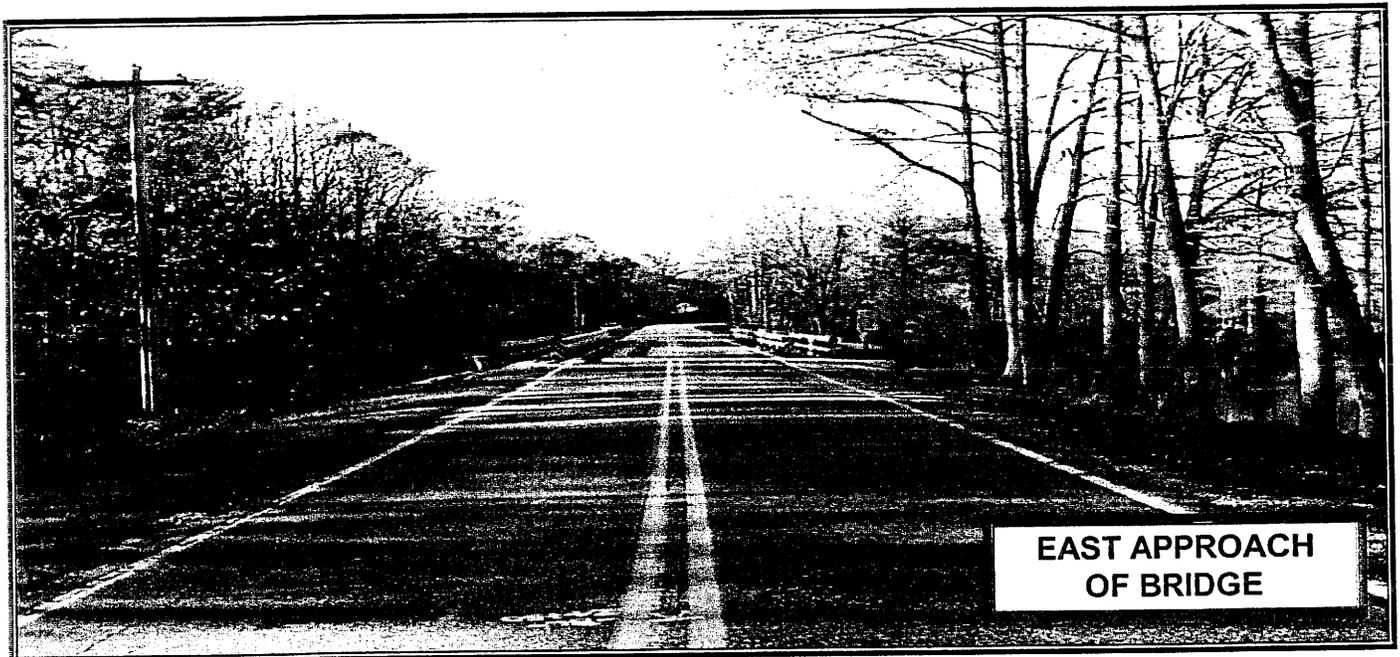
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

GATES COUNTY
BRIDGE NO. 16 ON SR 1400
OVER MERCHANTS MILLPOND
TIP NO. B-3640

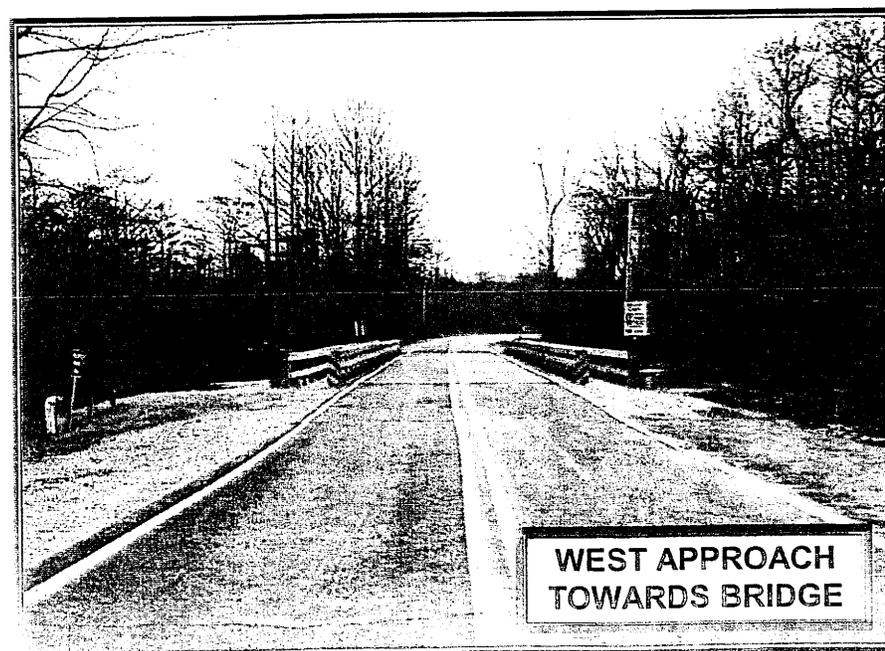
FIGURE 2A
ALTERNATE A
(PREFERRED)



**SOUTH SIDE
OF BRIDGE**



**EAST APPROACH
OF BRIDGE**



**WEST APPROACH
TOWARDS BRIDGE**

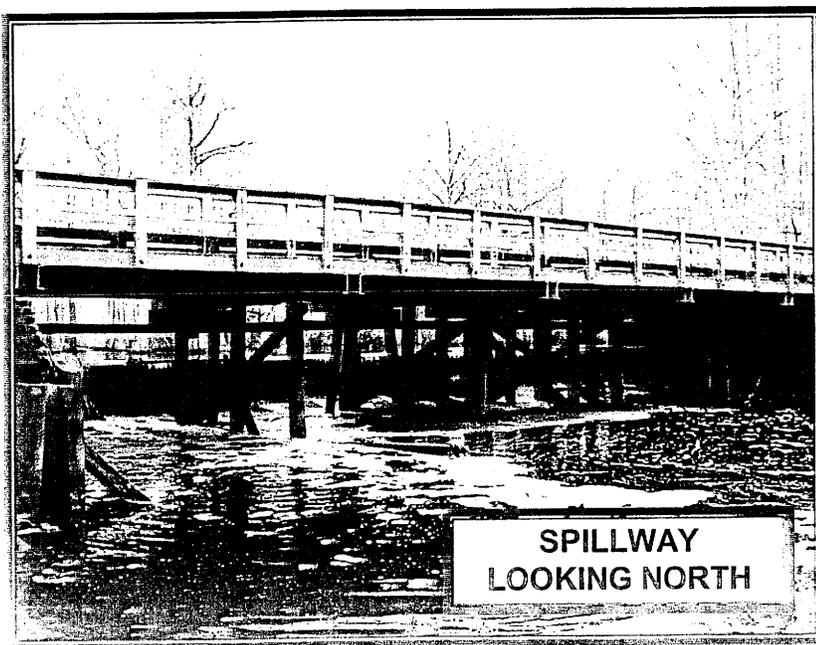
**B-3640
Replacement of Bridge
No. 16 on SR 1400
Over Merchants Millpond
Gates County**



FIGURE 3



**EXISTING
SPILLWAY**

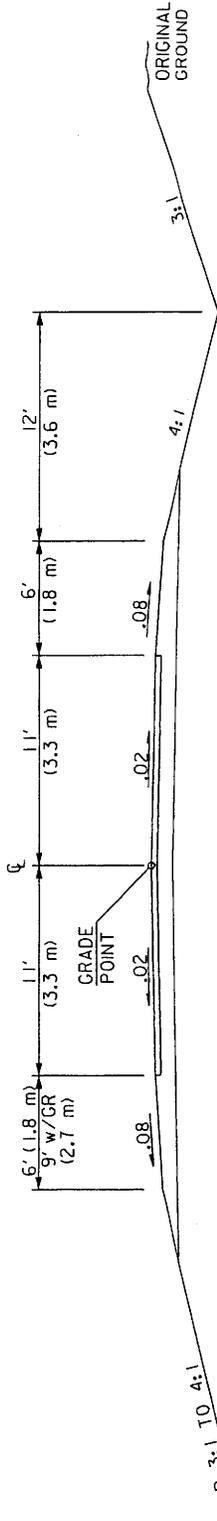


**SPILLWAY
LOOKING NORTH**

**B-3640
Replacement of Bridge
No. 16 on SR 1400
Over Merchants Millpond
Gates County**



FIGURE 3A



TYPICAL ROADWAY SECTION

TRAFFIC DATA

ADT 2001	1,000
ADT 2003	1,000
ADT 2025	1,600
DUAL	3%
TTST	1%

**FUNCTIONAL CLASSIFICATION:
RURAL MAJOR COLLECTOR**



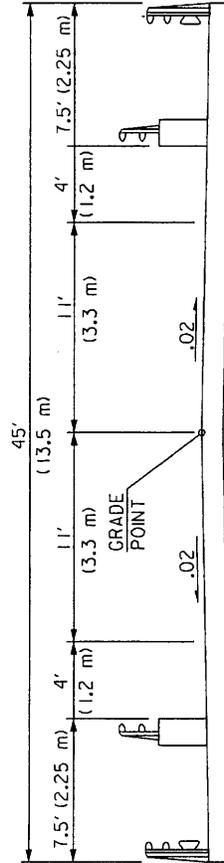
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

GATES COUNTY

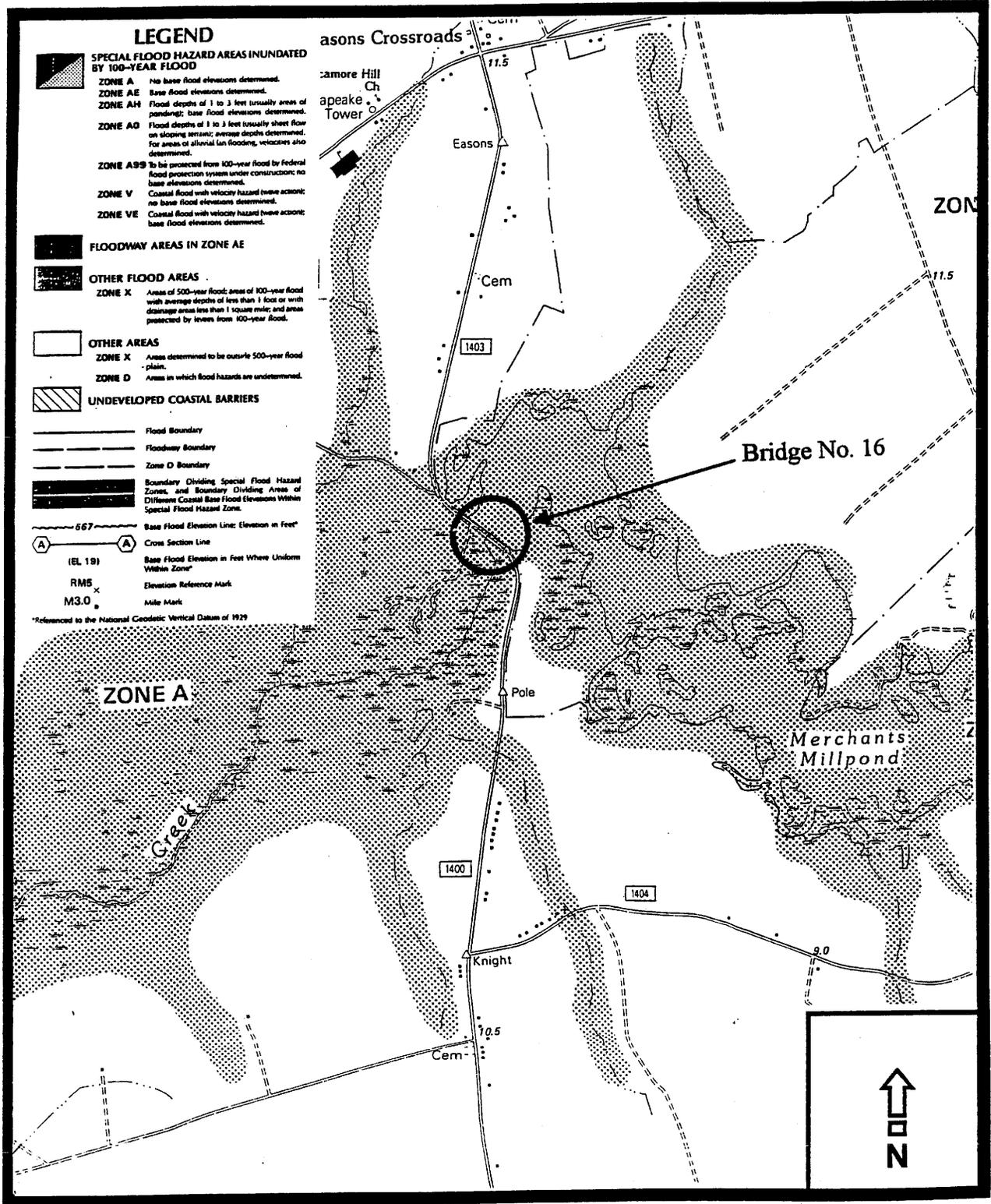
BRIDGE NO. 16 ON SR 1400
OVER MERCHANTS MILLPOND

B-3640

FIGURE 4



TYPICAL BRIDGE SECTION



FEMA FLOOD STUDY 100 YEAR FLOOD PLAIN

Panel No. 370103 0150 B
 Date: July 16, 1991
 Street Name: SR 1123
 Gates County, North Carolina

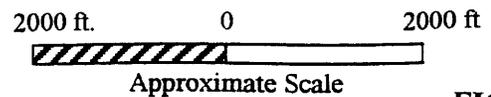


FIGURE 5

APPENDIX B
CORRESPONDENCE

RECORD OF CONTACT

DATE: 7/11/01

CONTACT WITH: Mike Bell, Corps of Engineers – Washington Office

SUBJECT: Bridge Group 27 Scoping comments(B-3612, B-3626, B-3640, B-3684, B-3685, B-3711, B-3712, B-3809, B-3810, and B-3871)

VIA: Telephone 1:00 pm

DISCUSSED: He said he agreed with the specific comments for each bridge from David Cox's(from the North Carolina Wildlife Resource Commission) letter dated 6/08/2001(included in appendix) and the general comments from David Franklin's (of the Corps of Engineers) letter dated 8/2/2000 (included in appendix). He will not be sending out a letter.

Signed: Greg Purvis Greg Purvis, Wang Engineering



North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

TO: Stacy Harris, PE
Project Engineer, NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program *David Cox*

DATE: June 8, 2001

SUBJECT: NCDOT Bridge Replacements in Duplin, Bertie, Carteret, Gates, Pitt, Wayne, Beaufort, Martin, Onslow, and Pender counties of North Carolina. TIP Nos. B-3449, B-3612, B-3626, B-3640, B-3684, B-3685, B-3711, B-3712, B-3809, B-3810, B-3871, B-3884, and B-3887.

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

On bridge replacement projects of this scope our standard recommendations are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. Bridge deck drains should not discharge directly into the stream.
3. Live concrete should not be allowed to contact the water in or entering into the stream.
4. If possible, bridge supports (bents) should not be placed in the stream.
5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • Fax: (919) 715-7643

structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the stream underneath the bridge.
7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.
8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Tim Savidge should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.
9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.
10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.
11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.
12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.
13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.
14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.
15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.
16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for fish passage. Generally, this means that the culvert or pipe invert is buried at least 1 foot below the natural stream bed. If multiple cells are required the second and/or third cells should be placed so that their

bottoms are at stream bankful stage (similar to Lyonsfield design). This could be accomplished by constructing a low sill on the upstream end of the other cells that will divert low flows to another cell. This will allow sufficient water depth in the culvert or pipe during normal flows to accommodate fish movements. If culverts are long, notched baffles should be placed in reinforced concrete box culverts at 15 foot intervals to allow for the collection of sediments in the culvert, to reduce flow velocities, and to provide resting places for fish and other aquatic organisms moving through the structure.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.
3. Culverts or pipes should be situated so that no channel realignment or widening is required. Widening of the stream channel at the inlet or outlet of structures usually causes a decrease in water velocity causing sediment deposition that will require future maintenance.
4. Riprap should not be placed on the stream bed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-3449 – Duplin County – Bridge No. 204 over Northeast Cape Fear River. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 1 to June 15 for areas where there is the potential for Shortnose sturgeon, an endangered species. We request that High Quality Sedimentation and Erosion Control Measures be used due to the presence of HQW waters.
2. B-3612 – Bertie County – Bridge No. 143 over a branch of Indian Creek. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. NCDOT should be aware that NCWRC has designated NCWRC gamelands in the vicinity of this bridge. Impacts to gameland properties should be avoided.
3. B-3626 – Carteret County – Bridge No. 26 over a branch of the New Port River. Standard comments apply. We are not aware of any threatened or endangered species in the project vicinity.
4. B-3640 – Gates County – Bridge No. 16 over Merchant’s Mill Pond. Standard comments apply. We are not aware of any threatened or endangered species in the project vicinity.

5. B-3684 Pitt County – Bridge No. 129 over Tar River. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.
6. B-3685 – Pitt County – Bridge No. 30 over Green Mill Run. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.
7. B-3711 – Wayne County – Bridge No. 42 over the Neuse River Overflow. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.
8. B-3712 – Wayne County – Bridge No 88 over Falling Creek. Standard comments apply. We are not aware of any threatened or endangered species in the project vicinity.
9. B-3809 – Beaufort County – Bridge No. 64 over Pungo Creek. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.
10. B-3810 – Beaufort County – Bridge No. 272 over Big Swamp. Standard comments apply. We are not aware of any threatened or endangered species in the project vicinity.
11. B-3871 – Martin County – Bridge No. 64 over Dog Branch. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.
12. B-3884 Onslow County – Bridge No. 40 over Squires Run. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.
13. B-3887 Pender County – Bridge No. 116 over Shaken Creek. Due to the potential for anadromous fish at this location, NCDOT should closely follow the “Stream Crossing Guidelines for Anadromous Fish Passage”. This includes an in-water work moratorium from February 15 to June 15. We are not aware of any threatened or endangered species in the project vicinity. Standard comments apply.

We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases.

June 8, 2001

Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 528-9886. Thank you for the opportunity to review and comment on these projects.

Gates County Board of Commissioners

EDWARD C. McDUFFIE, CLERK
Gatesville, North Carolina 27938

EDWARD C. McDUFFIE
COUNTY MANAGER
GATESVILLE, NC
TEL. 357-1240
FAX 357-0073

C. SHERWOOD EASON, CHAIRMAN
GATESVILLE, NC

L. FRANK ROUNTREE
HOBBSVILLE, NC

HOLLIS F. CREECY
SUNBURY, NC

WILLIAM H. HARRELL
EURE, NC

MARSHA FAULK LANGSTON
GATES, NC

July 24, 2000

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

Dear Mr. Gilmore:

SUBJECT: B-3640, Gates County, Replace Bridge No. 16
on SR 1400 over Merchants Mill Pond

Gates County has a water line on the west side of the Merchants Mill Pond Bridge. This is a 6" ductile iron pipe running below the bottom of the waterway. Our engineers estimate that it would cost \$35,000.00 to replace if the pipe must be moved or if it is substantially damaged.

This pipe provides 70 gallons of water per minute to the southern portion of our county, so any prolonged interruption would cause severe pressure problems in that area.

Thank you for any consideration you can give us as you design this project.

Sincerely,



Edward C. McDuffie
Gates County Manager

ECM/wk

U.S. Department
of Transportation

United States
Coast Guard



Commander
United States Coast Guard
Atlantic Area

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (Aowb)
Phone: (757)398-6422

16590
15 FEB 01

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

Dear Mr. Gilmore:

Our Bridge Staff has reviewed your plans and specifications dated July 3, 2000, for the replacement of 14 bridges in 10 different counties of North Carolina.

All of the waterways involved in this project are considered navigable waterways of the United States for Bridge Administration purposes. Must also meet the criteria for advance approval waterway set forth in Title 33, Code of Federal Regulations, Section 115.70, at all of the bridge sites. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. In such cases, the Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways. The North Carolina State projects include bridge #143 over Northeast Cape Fear River, bridge #26 over a branch of the Newport River, bridge #16 over Merchants Mill Pond, bridge #30 over Green Mill Run, bridge 42 over Neuse River, bridge #88 over Falling Creek, bridge #64 over Pungo Creek, bridge #272 over Big Swamp, bridge #64 over Dog Branch, bridge #40 over Squires Run and bridge #116 over Shaken Creek which all qualify for the Advance Approval category. Accordingly, individual Coast Guard bridge permits will not be required for the new bridges across these waterways.

The fact that a Coast Guard permit will not be required for these advance approval bridges, does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of these projects.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ann B. Deaton".

ANN B. DEATON
Chief, Bridge Administration Office
By direction of the Commander
Fifth Coast Guard District



North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Marine Fisheries

Preston P. Pate Jr., Director

August 22, 2002

Ms. L. Gail Grimes, P.E., Assistant Manager
North Carolina Department of Transportation
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Ms. Grimes:

I received your letter concerning the replacement of Bridge No. 16 on SR 1400 over Merchant's Millpond (TIP No. B-3640), Gates County.

The North Carolina Division of Marine Fisheries has conducted anadromous spawning and nursery area surveys in Bennetts Creek. This agency has documented spawning of blueback herring and alewife under the existing bridge at the base of the spillway. This documentation began in the 1970s.

River herring are currently classified as overfished by the North Carolina Marine Fisheries Commission. As a result of this status a River Herring Fishery Management Plan was developed by the North Carolina Marine Fisheries Commission in February 2000. An objective³ of the plan is to protect and enhance spawning habitat. The requested in water moratorium time period, February 15 through June 30, is necessary to ensure the environmental integrity of the area is protected during critical times of usage by these species.

The Division has already been considerate with the construction moratorium time period. The standard anadromous moratorium time period is February 15 through September 30 for this area. The requested moratorium allows for an additional three months of work over the standard.

If you have any questions regarding the Division's comments, please contact me (252/264-3911).

Sincerely,

Sara E. Winslow
Northern District Manager

Cc: Mike Street, NCDMF
Mike Bell, USACOE

Harris

State of North Carolina
Department of Environment
and Natural Resources
Division of Marine Fisheries

James B. Hunt, Jr., Governor
Bill Holman, Secretary
Preston P. Pate, Jr., Director



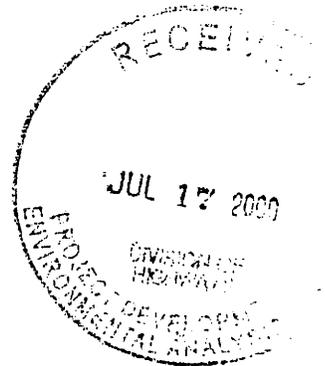
MEMORANDUM:

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

FROM: Sara E. Winslow, Biologist Supervisor *SEW*

SUBJECT: Bridge Replacement Projects – TIP 2000-2006

DATE: July 13, 2000



The North Carolina Division of Marine Fisheries has reviewed the information provided relative to upcoming bridge replacement projects and submits the following comments. All of the bridges to be replaced cross documented anadromous spawning areas. These bridges are:

- B-3612 Bertie County – Replace No. 143
- B-3640 Gates County – Replace No. 16
- B-3684 Pitt County – Replace No. 129
- B-3685 Pitt County – Replace No. 30
- B-3708 Washington/Martin Counties – Replace No. 66
- B-3871 Martin County – Replace No. 64

The Division assumes all of the replacements will be with another bridge.

Since all of these areas are spawning areas for anadromous fish, the Division requests an in-water work moratorium. This would include removal and new construction. The requested moratorium timeframe is February 15 through June 30. This will ensure the environmental integrity is protected during critical times of usage by these species.

The Division also expresses concern relative to wetland impacts associated with removal and construction. The importance of wetlands as spawning and nursery areas, providing food directly and indirectly for aquatic resources and being vital to water quality in the receiving waters has been well documented.

This agency appreciates the opportunity to comment on the proposal. If you have any questions relative to the Divisions comments please contact me at (252) 264-3911.



**North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation**

Michael F. Easley, Governor
August 23, 2002

William G. Ross, Jr., Secretary

Philip K. McKnelly, Director

John Wadsworth
NCDOT- Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699- 1548

Subject: B-3640 Bridge at Merchant's Millpond
SR 1400 Millpond Road
Merchants Millpond State Park
Gates County, North Carolina

Dear Mr. Wadsworth:

The N.C. Division of Parks and Recreation (DPR) is in agreement with the following items that pertain to the above subject project.

1. DPR prefers to replace the bridge in its existing location which will minimize the impact on the environment.
2. DPR agrees to a core slab bridge structure that will be utilized with a concrete barrier separating the attached walkways from the roadway. The walkways will be along both sides of the bridge.
3. DPR agrees for the guard rail to be weathered steel, the bridge railing will be anodized, and a colored additive will be mixed in the concrete to make the new bridge more aesthetically pleasing.
4. DPR agrees to allow the lanes to be reduced from 12-foot to 11-foot lanes.
5. DPR prefers for the bridge drainage not be allowed to run directly into Bennett's Creek.

The above measures shall greatly reduce the environmental impact of this project. If your department needs further documentation on these issues, please call me at (919) 841-4053.

Sincerely,

Alan Jeffreys
Park Engineer, Project Manager

cc: Stacy Harris, PE-NCDOT
Greg Purvis, P.E.,- Wang Engineering Company, Inc.
Dennis Helms, Park Superintendent, NC Division of State Parks
Lewis Ledford, Superintendent of State Parks, NC Division of State Parks



**North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation**

Michael F. Easley, Governor

William G. Ross, Jr., Secretary

Philip K. McKnelly, Director

March 4, 2002

Stacy B. Harris, P.E.
Project Development and Environmental Analysis
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Subject: Bridge Right of Way
Replacement of Bridge 16 on SR 1400 on Merchant's Millpond State Park
TIP No. B-3640
Gates County

Dear Ms. Harris:

The Division of Parks and Recreation appreciated the opportunity to meet with your staff and Mr. Conners Division staff on February 27, 2002 to discuss the bridge and spillway issues. Mr. Simmons, with the Division of Dam Safety, was very informative and willing to work with us on the dam and spillway issue requirements.

In reviewing my files on Friday, I located the information from my meeting on February 23, 1994 with Mr. Ferguson which indicates the Right of Way Section showing the deed, property map, and a section of the 1941 project plans. The 1941 project plan shows a fee for the purchase of a 100-foot right of way of the dam and spillway for the above subject project. This information should address the issues and concerns on ownership of the dam and spillway. A copy of this information is attached with this letter.

Another topic that we discussed briefly at our meeting on Wednesday was the concern for the lost of wetlands on this project. If we design a spillway that can increase the water height from 6 to 12 inches, could you claim this as net gain in wetland acreage and be used as a credit in your wetland mitigation road building program? This may be something that you may want to discuss with your right of way section. I will discuss it with our department to see if there are any concerns with this on our end.

Stacy B. Harris
Page 2
March 4, 2002

If you should have any questions, please call me at (919) 846-9991.

Sincerely,

A handwritten signature in cursive script that reads "Alan Jeffrey".

Alan Jeffrey
Park Engineer

cc: David Allsbrook, NC Department of Transportation
Don Conners, Division 1 Division Engineer NC Department of Transportation
Phil McKnelly, Division Director-N.C. Division of Parks and Recreation
Lewis Ledford, Superintendent of State Parks-Division of Parks and Recreation
Dennis Helms, Park Superintendent -Merchant's Millpond State Park
Sue Regier, Chief of Natural Resource Section-Division of Parks and Recreation

February 25, 2002

Stacy B. Harris, P.E.
Project Development and Environmental Analysis
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Subject: B-3640 Meeting Minutes
Replacement of Bridge 16 on SR 1400 on Merchant's Millpond State Park
TIP No. B-3640
Gates County

Dear Ms. Harris:

Our Merchant's Millpond staff and I'm looking forward to meeting you and your staff to review the items that we discussed at our meeting on February 8, 2002. It will be better to see the project first hand and discuss any differences that we might have and to work together to get this project under construction.

Two representatives from the NC Division of Dam Safety should be present at this meeting to discuss the dam and spillway issues.

You mention in your B-3640 meeting minutes dated 2-15-02, that I stated that DPR is willing to pay 50-50 in the costs on the proposed spillway. I don't remember saying it in exactly that manner. I do remember saying that we will pay for any cost for additional improvement to the spillway such as the cost of adding an additional foot to the spill way and control gates. This could amount to a 50 percent cost share. We will not know this until it can be designed by a consulting engineer firm and an estimated given. The final funding levels will have to be approved by our Department's Secretary. I also stated that it would be best for DPR to own and manage the millpond water level. This also will have to be agreed upon by both Division Secretaries. We can discuss this in further detail at this meeting.

If you should have any more questions, please call me at 846-9991.

Sincerely,

Alan Jeffreys
Park Engineer

cc: David Allsbrook, NC Department of Transportation
cc: Don Conners, Division 1 Division Engineer NC Department of Transportation
Phil McKnelly, Division Director-N.C. Division of Parks and Recreation
Lewis Ledford, Superintendent of State Parks-Division of Parks and Recreation
Dennis Helms, Park Superintendent -Merchant's Millpond State Park



**North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation**

Michael F. Easley, Governor

William G. Ross, Jr., Secretary

Dr. Philip K. McKnelly, Director

January 9, 2002

Stacy B. Harris, P.E.
Project Development and Environmental Analysis
Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Subject: Replacement of Bridge 16 on SR 1400 at Merchant's Millpond State Park
TIP No. B-3640
Gates County

Dear Ms. Harris:

Thank you for giving our agency the opportunity to review this important bridge project that is so critical to the operation of Merchant's Millpond State Park. We appreciate you allowing us the extra review time because of the December holidays and New Year.

The biggest concern our Division had with any of the four plans was that they did not address the wooden dam or spillway that is attached to the existing bridge. We had assumed that this was going to be part of the bridge replacement project costs. Please let us know if this is not the case.

Our Division comments are attached with this letter and address our concerns and recommendations that will need to be resolved before the project is submitted for bids.

After you review these comments, I would like to meet with you or someone from your staff to explain and clear up any misunderstanding about them. I will be glad to meet at your office or visit the park to discuss the comments at the site.

If you should have any questions, please call me.

Sincerely,


Alan Jeffreys

Park Engineer

cc: David Allsbrook, Department of Transportation
Don Connors, Division 1, Department of Transportation
Phil McKnelly, Director, Division of Parks and Recreation
Lewis Ledford, Superintendent of State Parks, Division of Parks and Recreation
Dennis Helms, Park Superintendent, Merchant's Millpond State Park

**NC DIVISION OF PARKS AND RECREATION COMMENTS ON THE NCDOT BRIDGE
NO. 16 LOCATED ON SR 1400 AT MERCHANTS MILLPOND IN GATES COUNTY**

SCHEMATIC DRAWINGS ON FOUR ALTERNATE BRIDGE ALIGNMENTS.

DATE: 01-11-02

1. The biggest concern that our Division has on all four plans is the lack of information on tearing out the **existing wooden dam/spillway** and how this factor will influence the design of the four Alternate bridge alignments that were presented. I know this is a small part of the overall project but is critical for the operation of the millpond. This structure should be concrete with operable flood gates and should be designed to raise the millpond water level by a foot more than its present elevation. Presently the spillway belongs to NCDOT.
2. All four plans have some advantages and disadvantages that we could agree upon, but **Alternate C** was the plan that the majority of our staff selected from the information that was given with **Alternate A** being a close second.
3. Plan **Alternate C** would have the least effect on the disturbance of the existing ground surface and would be more economical in the short term to construct. Our Division is very concerned with the natural resources and the historical use of the area, and this plan would be far less expensive to construct and reduce the damage to the wetlands on the downstream side of the bridge. There is also concern with loss of habitat that is associated with the big-eared bat that is a rare species of bat known to use the area around the bridge site. Plan C would be less damaging to its habitat. Another species of special concern is conferva pondweed that grows around the spillway. This species is currently listed on the Federal Species of Concern, and its protection should be noted in the environmental report that is being written by your consulting firm.
4. The pedestrian walk ways that are attached to both sides of the bridge currently are not addressed in your bridge design. It was our Division's understanding that when the existing bridge was replaced, the pedestrian walkways would be incorporated into the new bridge design. It does not show this on any of the four plans. Will this be included? We would suggest that it might be more economical to have a separate walk way independent from the bridge due to traffic safety reasons and appearance sake. These walk ways can be prefab designed made of steel that rusts and forms a protective coating of rust that is very attractive and blends in with the character of the area. I would like to discuss this option with your bridge designer.
5. Our Division prefers the guard rail to be constructed of weathering steel (corten steel) instead of galvanized steel. We want guard rail only on the downstream side of the bridge to prevent parking on that side of the road.. It appears to be shown this way on the plans.
6. The existing canoe loading deck on Bennett's Creek that was built by the Stewards of Bennett's Creek (and funded by a public grant) should be relocated down stream on the new road-of-way by the Department of Transportation.

7. We understand the bridge will be a precast core slab concrete bridge. This does not blend in well with the character and historical use of the area. Can another material other than concrete be substituted in lieu of the concrete columns (like using steel piles to support the structure). All guard rails should be of the rusting steel type (corten) for esthetic purposes.
8. On the fishing access way, there should be a chain link barrier between the vehicles and the fishermen if this cannot be separated from the bridge.
9. Since this area has historically been a heavily fished area, should the Wildlife Resources Commission staff be allowed to review these plans?
10. By using Alternate C, we realize the road will have to be closed for probably at least 6 to 9 months. We prefer that construction start in early summer, say June, and run through the winter months if possible. Spring is our busiest season.
11. Complete removal of the old bridge and the wooden substructure underneath it and other wooden debris is recommended.
12. The existing overhead power line needs to be relocated and installed underground or be attached to the bridge. If the bridge is located ten feet down stream, it will be too close to the fisherman access walkway.
13. The bridge access right-of-way has raised concerns with our natural resource section about how the easements will be handled since the Merchant's Millpond area is included in the State Nature and Historic Preserve. To transfer the easement right-of-way will require the Council of State approval and could take a while to get this done. Please contact Sue Regier with our Division at (919) 715-8694 and she will be able to explain the right-of-way issues.
14. Please follow all state erosion and sedimentation controls on all disturbed areas, and we request that all vegetative growth and landscaping material be of native species.
15. The posted bridge speed limit is 35 mph and we prefer it to remain that way even though the bridge is being designed for a 45 mph speed limit. The area has such a high use of pedestrian traffic that the slower speed limit would be much safer to our park visitors.
16. Please submit to us a copy of the environmental review plan that your consultant is currently working on.

It appears that we have many issues and concerns on this project, and it will be better if we get them solved early in the planning and design stages before the project is ready for bidding.



NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF PARKS AND RECREATION

July 28, 2000

JAMES B. HUNT JR.
GOVERNOR

MEMORANDUM

BILL HOLMAN
SECRETARY

TO: Ms. Stacy Harris, P.E.
Project Development and Environmental Analysis Branch

FROM: Brian Strong *B2L*
Resource Management Program

SUBJECT: B-3640: Gates County, Replace Bridge No. 16 on SR 1400 over
Merchants Millpond

DR. PHILIP K. MCKNELLY
DIRECTOR

The North Carolina Division of Parks and Recreation (DPR) appreciates the opportunity to comment on your scoping letter dated July 3, 2000, concerning the replacement of bridge No. 16 on SR 1400 over Merchants Mill Pond. Although we have no objections to the project as planned, we would like to express some concerns that will need to be addressed. Our concerns are as follows:

- 1) Currently, Merchants Millpond's water level is controlled by a dam beneath the NCDOT bridge on S.R. 1400. The current structure for controlling the water level of the millpond is deteriorating and is slated for replacement in 2003. The DPR would like to coordinate the replacement of this structure with the replacement of the bridge on S.R. 1400.
- 2) Merchants Millpond has been experiencing water quality and aquatic weed growth, accelerated by sedimentation from agricultural and logging runoff. The DPR requests that particular care and attention be given to mitigation measures, especially those dealing with erosion and sedimentation control, and restoration of disturbed areas.
- 3) The DPR requests that all restoration and landscaping use only native species.
- 4) Merchants Millpond supports a number of rare species of plants and animals. Natural Heritage Program records indicate the presence of conferva pondweed (*Potamogeton confervoides*), a North Carolina candidate for listing as threatened or endangered and a Federal species of concern, near the spillway on S.R. 1400. In addition, Rafinesque's big-eared bat (*Corynorhinus rafinesquii*), a North Carolina species of special concern, is known to roost near the construction site. Special care will need to be taken to ensure that any construction will not impact the unique wildlife or habitat in and around the millpond.



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- 5) DPR would like to see the road closed to traffic during construction rather than construction of a temporary detour around the bridge. The possible environmental impacts of such an action could be significant.
- 6) Any alternative to the current bridge alignment will need to be discussed with DPR. In addition, any options for bridge relocation would require an associated environmental study.

Thank you for the opportunity to review this project. If you have any questions regarding the concerns we have raised please do not hesitate to call me at (919) 715-8711.

cc: Dennis Helms, Superintendent Merchants Millpond
Allan Jeffreys, Parks and Recreation
Project files



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

July 13, 2000

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

DR. PHILIP K. MCKNELLY
DIRECTOR

William D. Gilmore, P.E.
Branch Manager for Planning and Environment Analysis
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, N.C. 27699

Subject: Merchant's Millpond State Park
Division of Parks and Recreation Comments
Replace Bridge #16 on State Road 1400
B-3640, Gates County

Dear Mr. Gilmore:

The Division of Parks and Recreation received your letter dated July 3, 2000 requesting input from our Division concerning any impact that the proposed new bridge will have upon our State Park located at the bridge site.

Attached is a letter sent to your office dated March 29, 2000 addressing several concerns and issues that the Division of Parks and Recreation expressed pertaining to the construction of the new bridge. The Division is definitely in favor of replacing the existing bridge with a new structure. Please consider the ten items discussed in this letter as part of the public record concerning the bridge. I have forwarded a copy of this letter to our Natural Resources section for any more comments that they may have. They will respond to you in a separate letter. Please keep us abreast of the design status of the bridge. We would like the opportunity to review the plans in the schematic phase of design.

If you should have any further questions, please call me at (919) 846-9991.

Sincerely,

Alan Jeffreys
Park Engineer

cc: Don Conners, NCDOT Division Engineer (District I)
Tom Wells, Superintendent of State Parks
Carol Tingley, Chief, Planning and Natural Resources
Dennis Helms, Superintendent, Merchant's Millpond State Park

Attachments

WAJ/mdc





Revised

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES

DIVISION OF PARKS AND RECREATION

March 29, 2000

JAMES B. HUNT JR.
GOVERNOR

BILL HOLMAN
SECRETARY

DR. PHILIP K. MCKNELLY
DIRECTOR

Mr. Bill Gilmore, P.E.
Branch Manager for Planning and Environment Analysis
North Carolina Department of Transportation
Post Office Box 25210
Raleigh, North Carolina 27611

Subject: Merchants Millpond State Park
State Road 1403, Merchants Millpond Bridge # 16
Gates County
TIP Project B-3640

Dear Mr. Gilmore:

The Division of Parks and Recreation appreciated the opportunity to meet with Mr. Richard Davis of your staff and Mr. Don Conners and his staff on March 13, 2000 to discuss the replacement of the Merchant's Millpond Bridge # 16 in Gates County, North Carolina.

We also would like to thank Mr. Philip Godwin for his help and assistance as park advisory chairman, former state legislator, and Transportation board member in getting all parties together for a common goal of improving the transportation problems as they relate to one of our most important environmental sensitive state parks, Merchants Millpond State Park. As we all learned at this meeting, there are several design site issues and special environmental concerns that we will need to address before replacing the bridge. Below is a summary of these issues.

Attendance

Those in attendance at the meeting that was held in the DOT Gates county Maintenance office are as follows: Mr. Don Conner, Mr. R. E. Capehart, Mr. Lindsey Riddick, and Mr. Anthony Roper; NCDOT Division 1 District office, Mr. Richard Davis NCDOT Program Development engineer, Mr. Philip Godwin, Mr. Dennis Helms, Merchants Millpond State Park Superintendent, and Alan Jeffreys, Division of Parks and Recreation.



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Discussion Topics

1. The meeting was held to determine when Bridge #16 is to be replaced and where it is to be placed. The existing wood spillway, attached to the bridge, is owned by (NCDOT). The bridge is scheduled to be replaced in 2003 for a cost of approximately \$550,000. It appeared that this estimate may be underestimated when the cost of the spillway is considered.
2. The Division of Parks and Recreation (DPR) will be doing an environmental study on the millpond to see what effects changing the water level will have on the pond. There will also be an environment assessment done to determine the best water management practices, sedimentation study and an aquatics weed study to determine how best to manage the millpond. This study will be underway by the fall of 2000.
3. DPR requests that the wooden pedestrian walkways that are on the existing bridge be incorporated into the design of the new bridge. Design of the bridge should resemble the historical character of the millpond site. The guard rails and pedestrian walkways should be designed using wood or the Cor-ten steel products.
4. DPR requests that the new spillway be designed with a slide gate where the water elevation can be lower or raised to control weed growth and fish migration. DPR will cost share in the expense of this portion of work. DPR would manage and control the operation of the gates. A memorandum of understanding would have to be executed between the two departments to work out the details of this operation.
5. DPR would like to review all environmental reviews and construction drawings on the bridge before they are submitted for bids.
6. While at the bridge site, it was suggested that the bridge be moved back to where the original mill house stood. This location may be more desirable and more economical to build due to natural topography and the location of the natural stream flow. A large boxed concrete culvert was also discussed. DPR will consider this proposal in its millpond study.
7. NCDOT will be doing a right-of-way study for the new bridge beginning in April 2000. An Environment Impact study, which could take 18 months to complete, will also be required.
8. NCDOT recently completed an aerial topo survey of the bridge site. This will be used to determine the best bridge alignment. There has not been a decision made by NCDOT to close State Road 1403 to traffic. It appears to be more economical and less environmentally damaging to close the road rather than build a temporary detour around the bridge. A detailed cost estimate will establish the costs of each alternative.

9. DPR requested that the overhead power and telephone lines running parallel with the bridge, be relocated on the bridge or placed underground. Road side parking for fisherman is also an issue that needs to be addressed. At the present time fisherman are allowed to park along the side of the road. If a guard rail is required to meet traffic safety standards, some other provision for road side parking needs to be designed.
10. NCDOT will send all correspondence as it relates to the bridge to the following address: N.C. Division of Parks and Recreation - Attention: Alan Jeffreys, Park Engineer, 12700 Bayleaf Church Road, Raleigh, North Carolina 27614. Phone # (919) 870-6843. Park operation issues can be sent to Mr. Dennis Helms, Park Superintendent, Route 1, Box 141-A, Gatesville, North Carolina 27938. Phone (252) 357-1191.

Please keep our division up dated as the design progresses and if you should have any questions please call me at (919) 846-9991.

Sincerely,

Alan Jeffreys
Project Manager

cc: Don Conners, NCDOT Division Engineer I
Philip Godwin, Park Advisory Chairman
Richard Davis, NCDOT Program Development Engineer
Dennis Helms, Superintendent of Merchants Millpond State Park
Cliff Phillips, East District Superintendent
Sue Regier, Head, Resource Management Program
Carol Tingley, Chief, Planning and Natural Resources

AJ/mdc



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

July 25, 2000

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

Dear Mr. Gilmore:

Thank you for your July 3, 2000 request for information from the U.S. Fish and Wildlife Service (Service) on the potential environmental impacts of fourteen proposed bridge replacements in various counties in eastern North Carolina. This report provides scoping information and is provided in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543). This report also serves as initial scoping comments to federal and state resource agencies for use in their permitting and/or certification processes for this project.

The North Carolina Department of Transportation (NCDOT) proposes to replace the following bridge structures:

1. B-3449, Bridge No. 204 on SR 1827 over the Northeast Cape Fear River, Duplin County;
2. B-3612, Bridge No. 143 on SR 1123 over Branch of Indian Creek, Bertie County;
3. B-3626, Bridge No. 26 on SR 1154 over Branch of Newport River, Carteret County;
4. B-3640, Bridge No. 16 on SR 1400 over Merchants Mill Pond, Gates County;
5. B-3684, Bridge No. 129 on SR 1565 over the Tar River, Pitt County;
6. B-3685, Bridge No. 30 on SR 1703 over Green Mill Run, Greenville, Pitt County;
7. B-3708, Bridge No. 66 on SR 1325/SR 1583 over Welch Creek, Washington/Martin Counties;
8. B-3711, Bridge No. 42 on NC 111 over the Neuse River Outflow, Wayne County;

9. B-3712, Bridge No. 88 over SR 1006, Falling Creek, Wayne County;
10. B-3809, Bridge No. 64 on NC 99 over Pungo Creek, Beaufort County;
11. B-3810, Bridge No. 272 on SR 1514 over Big Swamp, Beaufort County;
12. B-3871, Bridge No. 64 on SR 1001 over Dog Branch, Martin County;
13. B-3884, Bridge No. 40 on SR 1308 over Squires Run, Onslow County; and,
14. B-3887, Bridge No. 116 on SR 1520 over Shaken Creek, Pender County.

The following recommendations are provided to assist you in your planning process and to facilitate a thorough and timely review of the project.

Generally, the Service recommends that wetland impacts be avoided and minimized to the maximum extent practical as outlined in Section 404 (b)(1) of the Clean Water Act Amendments of 1977. In regard to avoidance and minimization of impacts, we recommend that proposed highway projects be aligned along or adjacent to existing roadways, utility corridors, or previously developed areas in order to minimize habitat fragmentation and encroachment. Areas exhibiting high biodiversity or ecological value important to the watershed and region should be avoided. Crossings of streams and associated wetland systems should use existing crossings and/or occur on a structure wherever feasible. Where bridging is not feasible, culvert structures that maintain natural water flows and hydraulic regimes without scouring, or impeding fish and wildlife passage, should be employed. Highway shoulder and median widths should be reduced through wetland areas. Roadway embankments and fill areas should be stabilized by using appropriate erosion control devices and techniques. Wherever appropriate, construction in sensitive areas should occur outside fish spawning and migratory bird nesting seasons.

The National Wetlands Inventory (NWI) maps of the Chinquapin, Grantham, Greenville SW, Grimesland, Merchants Mill Pond, Newport, Old Ford, Ransomville, Richlands, SE Goldsboro, Stag Park, Washington, Williamston, and Woodville 7.5 Minute Quadrangles show wetland resources in the specific work areas. However, while the NWI maps are useful for providing an overview of a given area, they should not be relied upon in lieu of a detailed wetland delineation by trained personnel using an acceptable wetland classification methodology. Therefore, in addition to the above guidance, we recommend that the environmental documentation for this project include the following in sufficient detail to facilitate a thorough review of the action.

1. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, or draining. Acres of wetland impact should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory. Wetland boundaries should be determined by using the 1987 Corps of Wetlands Delineation Manual and verified by the U.S. Army Corps of Engineers (Corps).
2. If unavoidable wetland impacts are proposed, we recommend that every effort be made to

identify compensatory mitigation sites in advance. Project planning should include a detailed compensatory mitigation plan for offsetting unavoidable wetland impacts. Opportunities to protect mitigation areas in perpetuity, preferably via conservation easement, should be explored at the outset.

The enclosed lists identify the federally-listed endangered and threatened species, and Federal Species of Concern (FSC) that are known to occur in Beaufort, Bertie, Carteret, Duplin, Gates, Martin, Onslow, Pender, Pitt, Washington, and Wayne Counties. The Service recommends that habitat requirements for the listed species be compared with the available habitats at the respective project sites. If suitable habitat is present within the action area of the project, biological surveys for the listed species should be performed. Environmental documentation that includes survey methodologies, results, and NCDOT's recommendations based on those results, should be provided to this office for review and comment.

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

The Service appreciates the opportunity to comment on this project. Please continue to advise us during the progression of the planning process, including your official determination of the impacts of this project. If you have any questions regarding these comments, please contact Tom McCartney at 919-856-4520, ext. 32.

Sincerely,



Dr. Garland B. Pardue
Ecological Services Supervisor

Enclosures

cc:

COE, Washington, NC (Michael Bell)
COE, Wilmington, NC (David Timpy)
NCDWQ, Raleigh, NC (John Hennessey)
NCDNR, Northside, NC (David Cox)
FHWA, Raleigh, NC (Nicholas Graf)
EPA, Atlanta, GA (Ted Bisterfield)

FWS/R4:TMcCartney:TM:07/24/00:919/856-4520 extension 32:\14brdgs.var

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

Project Description: Replace Bridge No. 16 on SR 1400 over Merchants Mill Pond

On September 21, 2000, representatives of the

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

Reviewed the subject project at

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

All parties present agreed

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

Signed:

Mary Pope 9-21-2000
 Representative, NCDOT Date

Michael C. Dawson 10/24/00
 FHWA, for the Division Administrator, or other Federal Agency Date

April Matejzney 9/21/00
 Representative, SHPO Date

David Brook 10/27/00
 State Historic Preservation Officer Date

If a survey report is prepared, a final copy of this form and the attached list will be included.



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

August 17, 2004

MEMORANDUM

TO: Gregory J. Thorpe, Ph.D., Director
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: Peter Sandbeck *Peter Sandbeck*
Deputy State Historic Preservation Officer

SUBJECT: Replace Bridge No. 16 on SR 1400 over Merchant Mill Pond
B-3640, Gates County, ER 04-1401

Thank you for your letter requesting our comments on the above project. We apologize for the delay in our response.

We have determined that the project as proposed will not affect any historic structures.

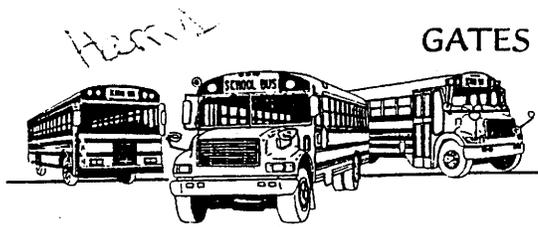
The proposed bridge replacement project has a high probability for affecting archaeological resources if the replacement is to extend outside of the existing right-of-way. At the time the road was re-aligned in the 1940s, a portion of the Merchants Mill site, the associated 19th century farmhouse and a springhouse were damaged or destroyed. While a remnant of the millrace exists, it is possible that remnants of other features of the mill or structures associated with the farmhouse may be present. If the bridge is not to be replaced at its existing location, we recommend an archaeological survey of the proposed Area of Potential Effect (APE). Prior to survey on property outside the right-of-way owned by the State of North Carolina, an Archaeological Resources Protection Act (ARPA) permit will be required.

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

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

PS:w

	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



GATES COUNTY SCHOOL BUS GARAGE

POST OFFICE BOX 125
GATESVILLE, NC 27938
PHONE: (252) 357-0606
FAX: (252) 357-2683

H. Kenneth Jernigan
Director

Janet L. Mizelle
Cost Clerk - TIMS Coord.

July 25, 2000

Mr. William D. Gilmore, P. E. Manager
Project Development and Environmental
Analysis Branch
1548 Mail Service Center
Raleigh, NC 27601

Dear Mr. Gilmore,

I am writing in response to your request for information on school buses crossing the Merchants Mill Pond Bridge. For the 2000-2001 school year, which starts August 1' 2000 we will have a total of six buses crossing the bridge twice on a daily basis making a total of 12 crossings per day.

It would be most helpful if we could be notified a week in advance before work begins on the bridge so that we will have ample time to reroute our buses.

If you need additional information, please contact me at the above number.

Sincerely,

Janet L. Mizelle
Cost Clerk - TIMS Coordinator

jlm

xc: Dr. Robert F. Hahne
John A. Lane