STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 29, 2007

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

ATTN: Ms. Jennifer Frye
NCDOT Coordinator

Dear Madam:

Subject: **Nationwide 23 Permit Application** for the Replacement of Bridge No. 90 over Little Coharie Creek on SR 1214, Sampson County, Federal Aid Project No. BRZ-1214 (4); State Project No. 8.2281601; TIP No. B-4269; WBS Element 33610.1.1; Division 3.

Please find enclosed the permit drawings, roadway plans, the Categorical Exclusion (CE), and Natural Resources Technical Report (NRTR) for the above-mentioned project. The North Carolina Department of Transportation proposes to replace existing Bridge No. 90 over Little Coharie Creek on SR 1214 (Boykin Bridge Rd.) in Sampson County. Currently the Let Date is May 15, 2007.

The project involves replacing the bridge on the existing location with a 3-span, cored-slab bridge, approximately 160 feet long and 30 feet wide. Traffic will be detoured off-site during construction. Proposed permanent impacts to riverine wetlands are 0.03 ac.

Impacts to Waters of the United States

General Description: Little Coharie Creek is one of two perennial streams that exist within the project study area. The other perennial stream, an unnamed tributary (UT) to Little Coharie Creek, is located in the southwestern portion of the project area. The streams are located within the Cape Fear River Drainage Basin, Subbasin 03-06-19. Little Coharie Creek [Index No. 18-68-1-17] has been assigned a Best Usage Classification of **C Sw** by the N.C. Division of Water Quality and is in Hydrologic Unit 03030006. Little Coharie Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River, nor is it listed as a 303(d) stream. No designated High Quality Waters (HQW), Outstanding Resource Waters

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

TELEPHONE: 919-733-3141
FAX: 919-715-1501
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

(ORW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project study area.

Permanent Impacts: NCDOT anticipates limited permanent impacts for this project. This project will require 0.03 ac of mechanized clearing in wetlands and 0.003 ac of fill in wetlands resulting from roadway fill.

Temporary Impacts: NCDOT does not anticipate any temporary impacts for this project. Temporary workpads or causeways are unnecessary for the demolition of the existing bridge and construction of the new bridge.

Utility Impacts: There are no jurisdictional impacts due to utilities for this project. Aerial power lines will have a breaker attached during bridge construction activities, and thus will not need to be relocated during construction. Telephone lines will be relocated using directional boring techniques, and will not impact any jurisdictional resources.

Bridge Demolition

Bridge No. 90 includes an eight-span superstructure composed of a reinforced concrete deck on timber joists and a substructure composed of timber caps on timber piles. It is likely that all components can be removed without any appreciable debris falling into the water.

All measures will be taken to avoid any temporary fill from entering Waters of the United States. Best Management Practices (BMP's) for Bridge Demolition and Removal will be implemented.

Avoidance and Minimization

NCDOT has minimized impacts to the fullest extent possible:

- Traffic will be detoured off-site during construction
- The bridge will be built using top-down construction and can therefore be built without the need of a causeway or work pad
- The number of bents in the water is being reduced from three for the existing bridge to one for the new bridge
- There will be no deck drains over the creek
- In compliance with 15A NCAC 02B.0104(m) we have incorporated the use of BMP's in the design of the project
- Fill slopes in wetlands will be at a 3:1 ratio

The National Marine Fisheries Service (NMFS) indicated that the river basin likely supports NMFS trust anadromous fishery resources. However, after discussing the moratorium with Ron Sechler of NMFS, it has been decided to eliminate the moratorium from the project commitments.

Mitigation

NCDOT proposes to mitigate for the 0.03 ac riverine wetland impacts by providing 0.02 ac of the surplus restored riverine wetlands from project B-4271 (Bridge No. 98 over Big Creek on SR 1246, Action ID 200300883) in Sampson County (See attached Wetland Restoration Plan). B-4269 is located 6.3 miles southeast of B-4271. Both projects are located in Sampson County and are within the Cape Fear River Basin (Hydrologic Unit 03030006). Due to the close proximity of the two projects, NCDOT proposes to debit this surplus of restored wetlands at B-4271 at a 1:1 ratio to offset impacts for B-4269.

NCDOT does not propose compensatory mitigation for the remaining 0.01 ac of wetland impacts due to the relative low quality of these wetlands.

Federally Protected Species

As of January 29, 2007, the U.S. Fish and Wildlife Service (FWS) lists four protected species for Sampson County (Table 1). Descriptions of the protected species excluding American chaffseed are provided in the attached NRTR. Habitat surveys were conducted on September 14, 2004 for red-cockaded woodpecker and pondberry. No suitable habitat for these species will be impacted by the project. American chaffseed was not on the protected species list for Sampson County at the time that the NRTR and Categorical Exclusion were written. Thus, a habitat survey for American chaffseed was conducted on December 12, 2006. Species and habitat descriptions for this species are included below. No suitable habitat for any of the listed species was found within the Project Study Area. As such, the Biological Conclusion is "No Effect" for all listed species.

Schwalbea americana (American chaffseed) **Endangered**
Plant Family: Scrophulariaceae
Flowers Present: May – August (1-2 months after a fire)

American chaffseed is an erect perennial herb with unbranched stems (or stems branched only at the base) with large, purplish-yellow, tubular flowers that are borne singly on short stalks in the axils of the uppermost, reduced leaves (bracts). The leaves are alternate, lance-shaped to elliptic, stalkless, 2 to 5 centimeters (1 to 2 inches) long, and entire. Chaffseed fruits are long, narrow capsules enclosed in a sac-like structure that provides the basis for the common name. Fruits mature from early summer in the South to October in the North. Schwalbea is a hemiparasite (partially dependent upon another plant as host). Like most of the hemiparasitic Scrophulariaceae, it is not host-specific, so its rarity is not due to its preference for a specialized host. Currently, 51 populations are known, including one in New Jersey, one in North Carolina, 43 in South Carolina, four in Georgia, and two in Florida. Chaffseed was never considered to be common, but populations have declined and the range has seriously contracted in recent decades.

American chaffseed occurs in sandy (sandy peat, sandy loam), acidic, seasonally moist to dry soils. It is generally found in habitats described as open, moist pine flatwoods, fire-maintained savannas, ecotonal areas between peaty wetlands and xeric sandy soils, and other open grass-sedge systems. Chaffseed is dependent on factors such as fire, mowing, or fluctuating water

tables to maintain the crucial open to partly-open conditions that it requires. Historically, the species existed on savannas and pinelands throughout the coastal plain and on sandstone knobs and plains inland where frequent, naturally occurring fires maintained these sub-climax communities. Under these conditions, herbaceous plants such as Schwalbea were favored over trees and shrubs.

BIOLOGICAL CONCLUSION: **NO EFFECT**

A habitat survey for American chaffseed was conducted on December 12, 2006. Habitats within the project area such as bottomland hardwood forest, cypress-gum swamp, and early successional cut-over are not subject to frequent fire, and do not resemble requisite habitats for this species as described above. The North Carolina Natural Heritage Program database was reviewed on January 5, 2007 and revealed no records of existing populations of American chaffseed within one mile of the project area. Thus, this project will not affect any populations of American chaffseed.

Table 1. Federally Protected Species for Sampson County

Common Name	Scientific Name	Status	Habitat	Biological Conclusion
American alligator	*Alligator mississippiensis*	Threatened (S/A)	N/A	N/A
Red-cockaded woodpecker	*Picoides borealis*	Endangered	No	No Effect
American chaffseed	*Schwalbea americana*	Endangered	No	No Effect
Pondberry	*Lindera melissifolia*	Endangered	No	No Effect

Regulatory Approvals

Section 404 Permit: This project is being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). Therefore, we do not anticipate requesting an individual permit but propose to proceed under a Nationwide 23 as authorized by a Nationwide Permit (67 FR 2020; January 15, 2002).

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

The NCDOT hereby requests that this project be authorized by the North Carolina Division of Water Quality and the U. S. Army Corps of Engineers. If there are any questions, please contact Mr. David E. Bailey at debailey@dot.state.nc.us or (919) 715-7257.

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

Sincerely,

for 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
Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, Project Services Unit
Mr. H. Allen Pope, P.E., Division 3 Engineer
Mr. Mason Herndon, Division 3 Environmental Officer

w/out attachment

Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. John Williams, P.E., PDEA

Wetland Restoration Plan
At Bridge No. 98 over Big Swamp
on SR 1246
Sampson County

TIP B-4271
Federal Aid Project No. BRZ-1246 (2)
WBS No. 33612.1.1

February, 2007

The North Carolina Department of Transportation (NCDOT) will perform on-site mitigation for wetland impacts at the SR 1246 overpass of Big Swamp. This mitigation site occurs within Transportation Improvement Program (TIP) B-4271. The project begins approximately 390 feet west of Bridge No. 98 and continues for approximately 490 feet to the west of the bridge. NCDOT will restore approximately 0.06 acres of coastal plain small stream swamp wetland as onsite mitigation for B-4271. The roadway project will impact 0.04 acres of unavoidable wetlands, leaving approximately 0.02 acres of riverine wetland restoration assets on-site. NCDOT plans to use these assets to offset impacts associated with B-4269.

EXISTING CONDITIONS

The project is located in Sampson County, southwest of Roseboro, approximately 3 miles from the intersection of NC 242 and SR 1246 (Butler Island Rd.) close to the Sampson and Cumberland County line. The project study area land use is primarily comprised of agricultural and forested land.

The Natural Resources Technical Report for TIP B-4271, dated March 2003, provides further details concerning existing roadway and project study area conditions.

The existing embankments of the approaches to Bridge No. 98 are located within the floodplain of Big Swamp within a wetland community known as a Coastal Plain Small Stream Swamp. The wetland is dominated by tulip poplar (*Liriodendron tulipifera*), sweet bay (*Magnolia virginiana*), fetterbush (*Lyonia lucida*) and a herbaceous layer of cane (*Arundinaria gigantea*). The transition zone where the wetland grades into the existing causeway slope is dominated by cane (*Arundinaria gigantea*).

PROPOSED CONDITIONS
DESIGN

The proposed wetland mitigation will consist of restoring 0.06 acres of riverine wetland. Restoration will involve removing causeway fill and transition area along both

approaches to Bridge No. 98 to match the adjacent wetland elevation. Representative spot elevations will be taken in all four quadrants of the bridge project within the adjacent reference wetland to determine target elevations. Excavated areas will be ripped and disked prior to planting of the site if necessary.

The Natural Environment Unit shall be contacted to provide construction oversight to ensure that the wetland mitigation area is constructed appropriately.

VEGETATION PLANTING

The restoration area will be planted following the successful completion of the site grading. The site will be planted with bottomland hardwood species including at least three of the following: water oak (*Quercus nigra*), tulip poplar (*Liriodendron tulipifera*), green ash (*Fraxinus pennsylvanica*), willow oak (*Quercus phellos*), sycamore (*Platanus occidentalis*), water tupelo (*Nyssa aquatica*), swamp chestnut oak (*Quercus michauxii*).

MONITORING

Upon successful completion of construction, the following monitoring strategy is proposed for the mitigation site. NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies.

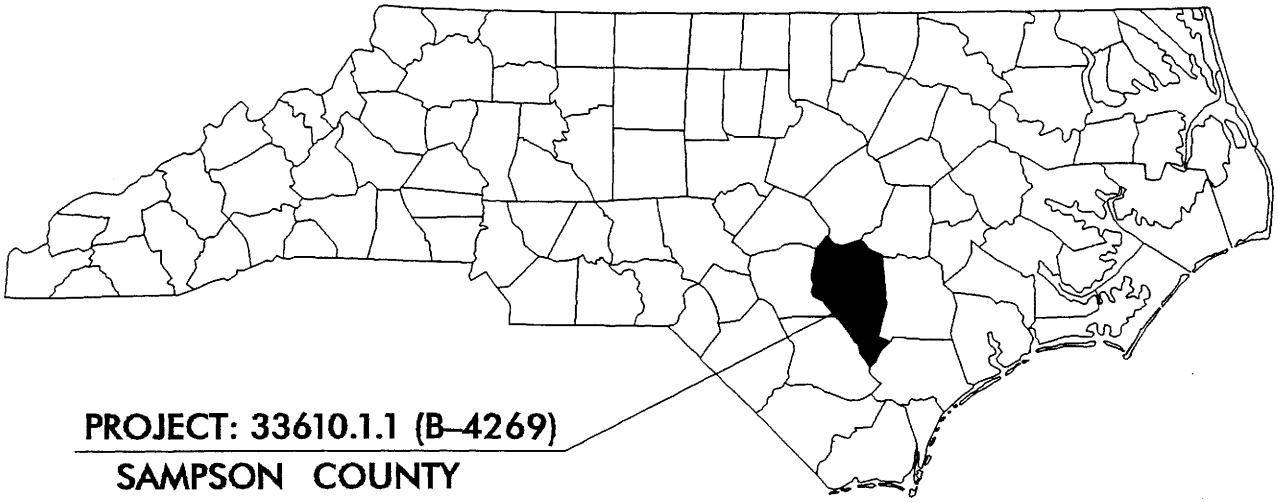
HYDROLOGIC MONITORING

No specific hydrological monitoring is proposed for this restoration site. The target elevation will be based on the reference wetland and verified during construction. Constructing the site at the adjacent wetland elevation will ensure the hydrology in the restored area is similar to the hydrology in the reference area.

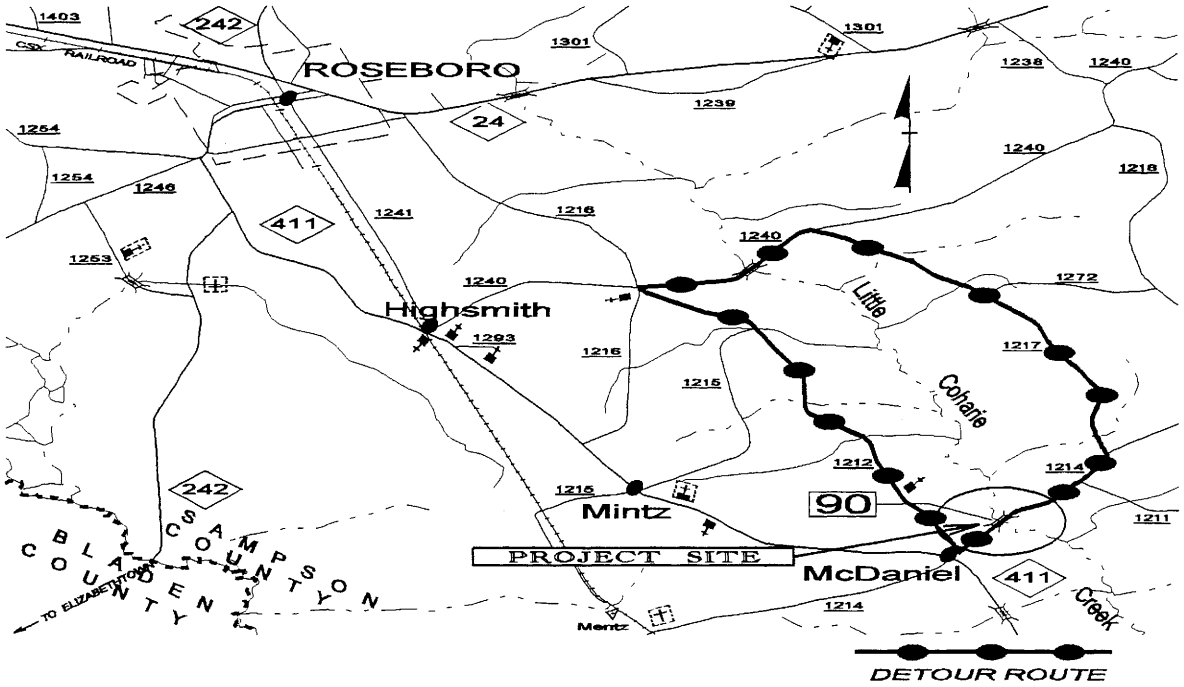
VEGETATION SUCCESS CRITERIA

NCDOT shall monitor the restoration site by visual observation and photo points for survival and aerial cover of vegetation. NCDOT shall monitor the site for a minimum of three years or until the site is deemed successful. Monitoring will be initiated upon completion of the site planting.

NORTH CAROLINA



PROJECT: 33610.1.1 (B-4269)
SAMPSON COUNTY



WETLAND PERMIT
VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
SAMPSON COUNTY
PROJECT: 33610.1.1 (B-4269)
REPLACE BRIDGE #90 OVER LITTLE COHARIE CREEK ON SR 1214

SHEET 1 OF 7

WETLAND LEGEND

WLB — WETLAND BOUNDARY

WLB / WLB — WETLAND

F F — DENOTES FILL IN WETLAND

S S — DENOTES FILL IN SURFACE WATER

P P — DENOTES FILL IN SURFACE WATER (POND)

T T — DENOTES TEMPORARY FILL IN WETLAND

E E — DENOTES EXCAVATION IN WETLAND

TS TS — DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

COIR FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

(DASHED LINES DENOTE EXISTNG STRUCTURES)

12"-48" PIPES

54" PIPES & ABOVE

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE

LEVEL SPREADER (LS)

DITCH / GRASS SWALE

NCDOT

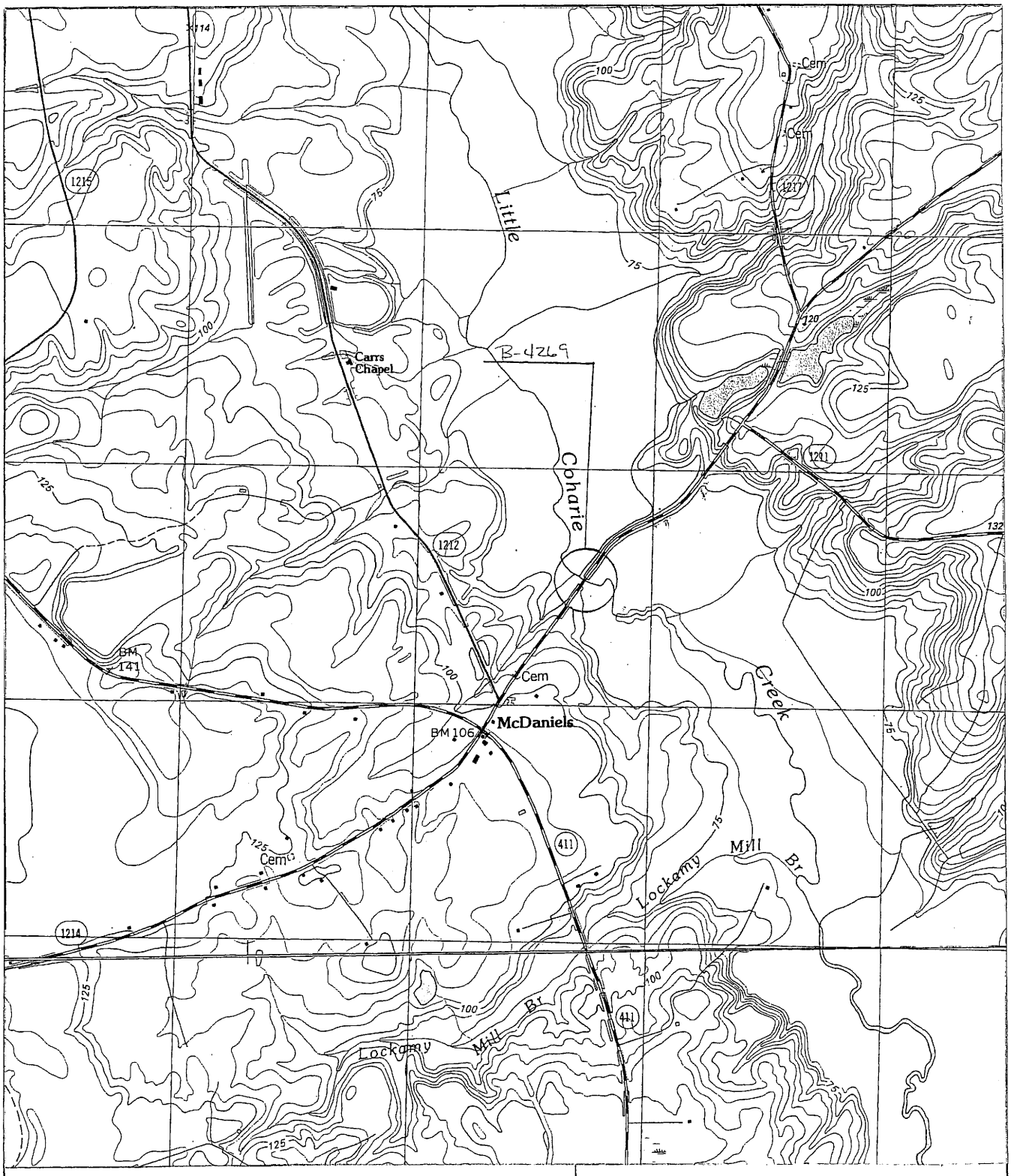
DIVISION OF HIGHWAYS

SAMPSON COUNTY

PROJECT: 33610.1.1 (B-4269)

REPLACE BRIDGE #90 OVER LITTLE COHARIE CREEK ON SR 1214

SHEET 2 **OF** 7



VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS

SAMPSON COUNTY

PROJECT: 33610.1.1 (B-4269)

REPLACE BRIDGE #90 OVER LITTLE COHARIE CREEK ON SR 1214

SHEET 3 OF 7

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	17+00-L- to 22+00-L-	160' 21" Cored Slab	0.003	0.000	0.000	0.030	0.000	0.000	0.000	0	0	0
TOTALS:			0.003			0.030						

Note: less than 0.001 ac surface water impacts due to bridge bents

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRG#90 OVER LITTLE COHARIE CREEK ON SR1214
SAMPSON COUNTY
WBS - 33610.1.1 (B-4269)

SHEET

ATN Revised 3/31/05

4

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	HENRY CARR	100 BADGER CT. CLINTON, N.C. 28441
3	CALVIN SURLES	9965 BAYKIN BRIDGE ROSEBORO, N.C. 28382

NCDOT

DIVISION OF HIGHWAYS

SAMPSON COUNTY

PROJECT: 33610.1.1 (B-4269)

REPLACE BRIDGE #90 OVER LITTLE COHARIE CREEK ON SR 1214

SHEET 5 OF 7

PROJECT REFERENCE NO.	SHEET NO.
B-4269	#6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

REVISIONS

BEGIN PROJECT B-4269
-L- POT Sta. 13 + 50.00

END PROJECT B-4269
-L- POS Sta. 22 + 00.00

-L- TS Sta. 21+22.42

-L- SC Sta. 23+22.42

-L- CS Sta. 26+66.02

SR 1214
BOYKINS BRIDGE RD.

N 36° 00' 03" E

GRAU 350

EXISTING R/W

EXISTING R/W CHORD

GRAVEL DRIVE

PDE

LITTLE COHARIE CREEK

RUINS

WOODS

H.J. CARR JR. (1)

CALVIN HOOVER SURLES (3)

EARL CARTER (2)

15+00

20+00

25+00

RADIUS 1337'

RADIUS 1070'

100' 0' 100' 200' 300'
SCALE: 1"= 100'

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

SITE 1

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PROJECT REFERENCE NO.	SHEET NO.
B-4269	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

REVISIONS

H.J. CARR JR. (1)

CALVIN HOOVER SURLES (3)

WOODS

BEGIN PROJECT B-4269
-L- POT Sta. 13+50.00

15+00

20+00

25+00

END PROJECT B-4269
-L- POS Sta. 22+00.00

EXISTING R/W

SR 1214
BOYKIN BRIDGE RD.

N 36°00'03" E

GRAU 350

IRENE DRIVE

PDE

LITTLE COHARIE CREEK

RUINS

EARL CARTER (2)

-L- TS Sta. 21+22.42

-L- SC Sta. 23+22.42

-L- CS Sta. 26+66.02

EXISTING R/W CHORD

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

100' 0' 100' 200' 300'

SCALE: 1"= 100'

SITE 1

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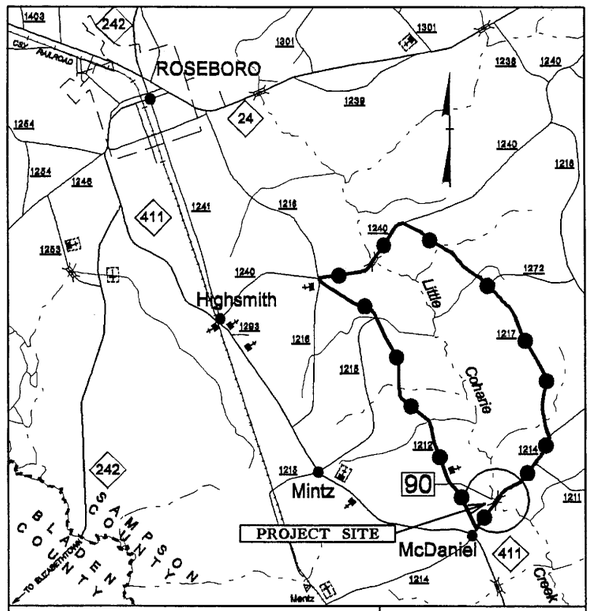
TIP PROJECT: B-4269

CONTRACT:

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



VICINITY MAP | DETOUR ROUTE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

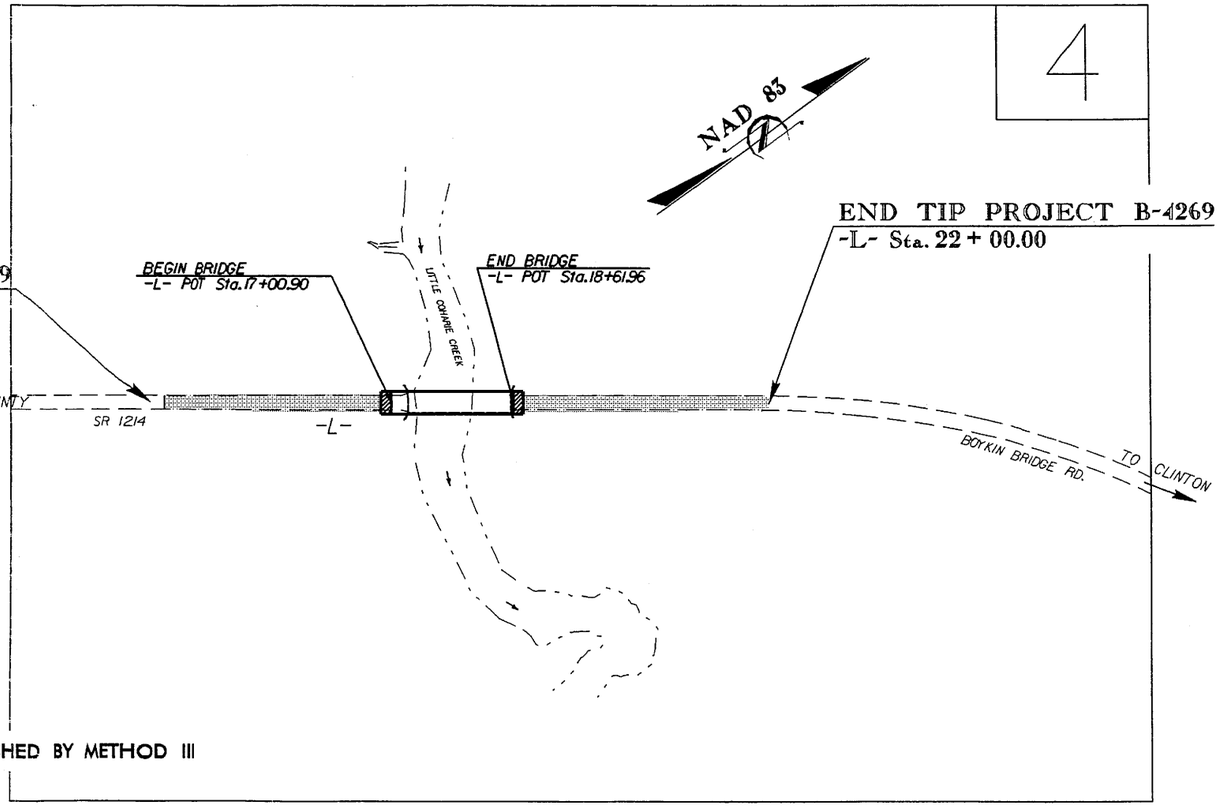
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4269	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33610.1.1	BRZ-1214(4)	PE
33610.2.1	BRZ-1214(4)	R/W & UTL

LOCATION: BRIDGE NO. 90 ON SR 1214 OVER LITTLE COHARIE CREEK

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

4



NOTES: (1) CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III
(2) THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

GRAPHIC SCALES

PLANS: 50′ 25′ 0 50′ 100′
PROFILE (HORIZONTAL): 50′ 25′ 0 50′ 100′
10′ 5′ 0 10′ 20′

DESIGN DATA

ADT 2006 = 1560
ADT 2025 = 2800
DHV = 60 %
D = 10 %
T = 6 % *
V = 60 MPH

* TTST 2% DUAL 4%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4269 = 0.130 MI.
LENGTH STRUCTURE TIP PROJECT B-4269 = 0.031 MI.
TOTAL LENGTH OF TIP PROJECT B-4269 = 0.161 MI.

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MAY 4, 2006

LETTING DATE: AUGUST 21, 2007

ROGER THOMAS, PE
PROJECT ENGINEER

MICHAEL W. LITTLE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
PE

SIGNATURE:

ROADWAY DESIGN ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

AUG-2006 13:52
roadway\proj\b4269_rdy_tsh.dgn
$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4269	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 23
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary — HQ WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- River Basin Buffer — RBB
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Curb Cut for Future Wheel Chair Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

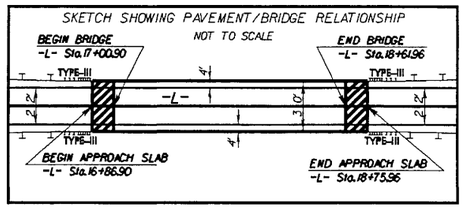
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
B-4269	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

SKETCH SHOWING PAVEMENT/BRIDGE RELATIONSHIP
NOT TO SCALE



-L-

Pls Sta 22+55.81	Pl Sta 24+95.63	Pls Sta 27+32.74
θs = 5°12' 31.3"	Δ = 17° 53' 49.2" (RT)	θs = 5°12' 31.3"
Ls = 200.00'	D = 5°12' 31.3"	Ls = 200.00'
LT = 133.39'	L = 343.60	LT = 133.39'
ST = 66.72'	T = 173.21'	ST = 66.72'
	R = 1,100.00'	

NAD 83

489.80'
S40°30'00"W

S49°54'36"E 69.00'

1
H.J.CARR JR.
DB 830 PG 289

3
CALVIN HOOVER SURLES
DB 768 PG 293

-BL-3 PINC 16+60.50
GPS MON B4269-3
-L- POT STA. 12+79.41
27.51' LT.

-BL-4 PINC 20+87.73 =
T PINC 7+84.75
ELEV=76.11 REBAR AND CAP SET
-L- POT STA. 17+06.44
14.36' LT.

PROPERTY LINE IS CL OF CREEK

S89°40'32"E 108.48'

S55°41'08"E 250.00'

BEGIN PROJECT B-4269
-L- POT Sta. 13+50.00

END PROJECT B-4269
-L- POS Sta. 22+00.00

-BL- 5 POT 28+39.30
-L- POC STA. 24+55.25
20.16' LT.

BEGIN BRIDGE
-L- Sta.17+00.90

END BRIDGE
-L- Sta.18+61.96

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 'A'

PROP.SHLD.BERM GUTTER FROM ANCHOR UNIT TO APPROACH SLAB LT.& RT.

PROP.SHLD.BERM GUTTER FROM BRIDGE TO -L- STA.19+00 LT.& RT.

-L- +50 EXIST.R/W & 50'

-L- +00 65'

-L- +50 50'

-L- +22.42 50'

-L- +00.00 50'

-L- +00.00 EXIST.R/W 33'

-L- +00.00 EXIST.R/W & 50'

15+00

20+00

25+00

-BL-
N 35° 56' 53.2" E
N 37° 45' 51.8" E

SR 1214
BOYKIN BRIDGE RD.
18.00' BST

N 36° 00' 03.1" E

N 37° 34' 49.7" E

EXISTING R/W
EXISTING R/W CHORD
EL DRIVE
GRAVEL DRIVE

GRAU 350

SEAT ELEV=74.96'
BRIDGE = 180'
SEAT ELEV=74.96'

CLASS 'B' RIP-RAP

PDE

120' TAPER

-L- TS Sta. 21+22.42

-L- SC Sta. 23+22.42

-L- CS Sta. 26+66.02

HIGH WATER MARK AS PER JACKIE CRUMPLER WITH NCDOT BRIDGE UNIT 73.2' APPROXIMATELY 9' ABOVE THE CREEK.
PH. # 910-592-8168

BM#2
-BL- STA 21+90.38
87.82 RIGHT
ELEV. 73.05'

BM#3
-BL- STA 28+75.12
11.09' LT
ELEV. 74.78'

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 'A'

LATERAL BASE DITCH
SEE DETAIL 'B'

LITTLE COHARIE CREEK

S87°03'31"E 100.21'

N68°27'00"E 76.71'

S55°27'23"E 71.49'

S63°30'00"E 2497.28'

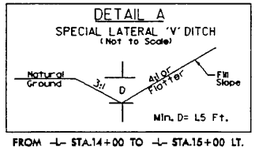
RUINS

WOODS

2
EARL CARTER
DB 1335 PG 326

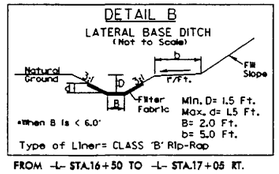
3
CALVIN HOOVER SURLES
DB 768 PG 293

DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM -L- STA.14+00 TO -L- STA.15+00 LT.

DETAIL B
LATERAL BASE DITCH
(Not to Scale)



FROM -L- STA.16+50 TO -L- STA.17+05 RT.

NOTES: (1) SEE SHEET 5 FOR -L- PROFILE
(2) SEE SHEETS S-__ TO S-__ FOR STRUCTURE DETAILS
(3) CONTRACTOR IS TO LEAVE PAVEMENT IN PLACE UNTIL READY TO FINE GRADE

DOC: 2006 13:52
B-4269_rdy_psh.dgn
USERNAME($$$$)

5/28/99

-L-

BM#2 EL 73.05'
RR SPIKE IN 22" TWIN CYPRESS
-BL- STA 21+90.38 (87.82' RT)
-L- STA 18+06.63 (76.26' RT)

PROJECT REFERENCE NO.	SHEET NO.
B-4269	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PI = 15+10.00
EL = 78.34'
VC = 200'
K = 220

PI = 20+60.00
EL = 76.69'
VC = 200'
K = 571

BEGIN GRADE STA 11+00.00
EL = 77.90'

BEGIN BRIDGE STA 14+00.00

END BRIDGE STA 16+16.36

END GRADE STA 22+00.00
EL = 76.76'

(-)3.00% DITCH LT.

(+)0.30000%

(+)0.50000%

(-)15.80% DITCH RT.

(-)2.79%

BEGIN SPECIAL LATERAL 'V' DITCH
-L- STA 11+00.00 LT.
EL = 77.90

END SPECIAL LATERAL 'V' DITCH
-L- STA 15+00.00 LT.
EL = 77.90

BEGIN SPECIAL LATERAL 'V' DITCH
-L- STA 15+50.00 RT.
EL = 75.20

END SPECIAL LATERAL 'V' DITCH
-L- STA 16+50.06 RT.
EL = 73.48

BEGIN LATERAL BASE DITCH

END LATERAL BASE DITCH
-L- STA 17+35.00 RT.
EL = 70.09

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 5000 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 76.48 FT
BASE DISCHARGE	= 7350 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 77.12 FT
OVERTOPPING DISCHARGE	= 7400 CFS
OVERTOPPING FREQUENCY	= 100 YRS
OVERTOPPING ELEVATION	= 77.18 FT

FOR -L- PLAN VIEW SEE SHEET 4

90 80 70 60 50 40 30

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4269	X-1

S.S.78.01

S.S.76.30

VAR.

4:1

3:1

75.22

15+50.00

S.S.78.625

4:1

4:1

3:1

3:1

74.90

75.59

15+00.00

S.S.79.39

S.S.79.020

4:1

4:1

3:1

3:1

76.40

75.88

14+50.00

S.S.79.62

14+00.00

13+50.00
BEGIN CONST.

13+00.00

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4269	X-2

17+50.00

BEGIN BRIDGE STA. 17+00.90

17+00.00

S.S.72.97

S.S.74.97

16+50.00

S.S.75.94

74.42

S.S.76.55

VAR.

16+00.00

S.S.75.92

74.52

— 4 —

8/23/99

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4269	X-3

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

85 80 75 70 65

S.S.7463 B 0.020 0.020 E VAR S.S.7455

19+50.00

80 75 70

75.74 B 0.020 0.020 E 3% S.S.72.96

19+00.00

90 85 80 75 70

END BRIDGE STA. 18+61.96

0.020 0.020

18+50.00

85 80 75 70

0.020 0.020

18+00.00

65

— A —

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	B-4269	X-4

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

22+00.00
END CONST.

4:1
6:1
S.S.73.91

S.S.75.28
3:1
21+50.00

6:1
S.S.75.43
S.S.75.77
21+00.00

S.S.75.55
S.S.75.35
20+50.00

S.S.75.90
S.S.74.85
20+00.00

8/23/99

UG-2006 13:52
C:\projects\4269\4269_dy_rpl.dgn
RPLEMAN

REPLACE BRIDGE NO. 90 ON SR 1214
OVER LITTLE COHARIE CREEK
SAMPSON COUNTY, NORTH CAROLINA

TIP NUMBER B-4269
STATE CONTRACT NO. A304256
STATE WORK ORDER NO. 8.2281601
FEDERAL AID PROJECT NO. BRZ-1214(4)

NATURAL RESOURCES TECHNICAL REPORT
B-4269

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

March 2003

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1.0 INTRODUCTION

The following Natural Resources Technical Report (NRTR) is submitted to assist in the preparation of a Categorical Exclusion (CE) for the proposed project. The purpose of this report is to inventory, describe, and predict impacts that will occur to the natural resources within the proposed NRTR study area. An assessment of the nature and severity of probable impacts to these natural resources are provided along with recommendations for avoidance and minimization measures.

This report identifies areas of environmental concern that may affect the selection of a preferred alignment or may necessitate changes in design criteria. Such environmental concerns should be addressed during the preliminary planning stages of the proposed project in order to maintain environmental quality in the most efficient and effective manner. The analyses contained in this document are relevant only in the context of the existing preliminary boundaries and design. If design parameters and criteria change, additional field investigations may be necessary.

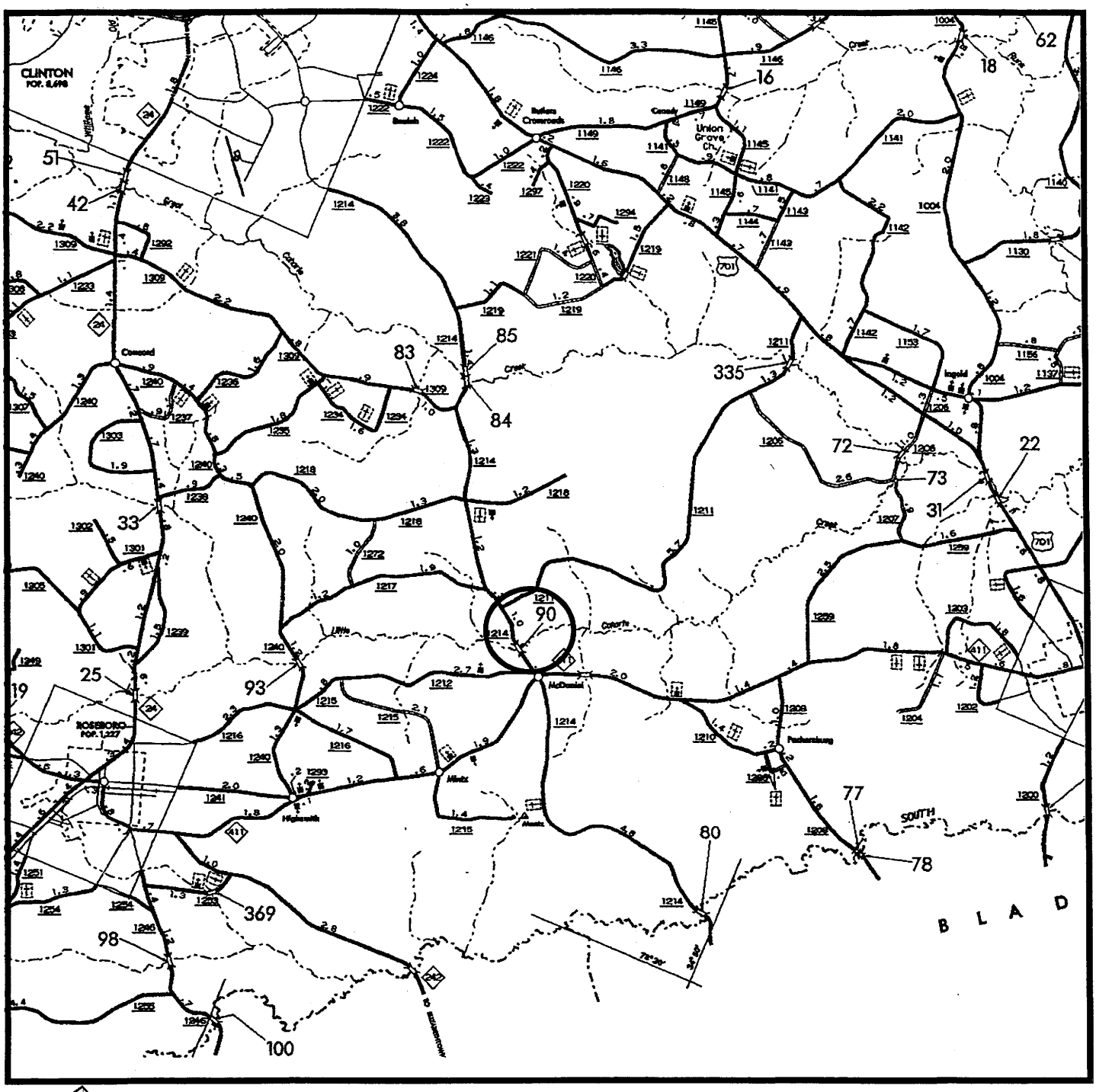
1.1 Project Description

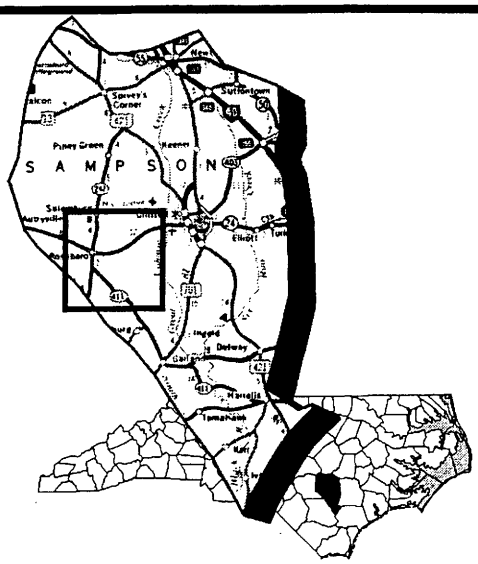
The proposed project calls for the replacement of Bridge No. 90 on SR 1214 in Sampson County, North Carolina. The project crosses Little Coharie Creek approximately 0.5 mi (0.8 km) northeast of McDaniels (Figure 1). The existing bridge is composed of a reinforced concrete deck on a timber joist superstructure on full timber substructure. The project length is approximately 2,550 ft (777 m). There have been no alternatives considered for the bridge replacement at this time.

The utilization of an offsite detour is recommended to minimize stream and wetland impacts if practicable. Should an offsite detour be infeasible, it is recommended that an onsite detour be utilized on the south side of the existing bridge during construction due to existing utilities to the north. Additionally, the NCDOT geotechnical unit may be required to investigate to determine whether the existing wetland soils may be compacted resulting in additional permanent wetland impacts.

1.2 Methodology

Preliminary research was conducted prior to the field investigations. Published resource information pertaining to the project area was collected and reviewed. Data sources used in the project area pre-field investigations include:





	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
SAMPSON COUNTY **REPLACE BRIDGE NO. 90 ON SR 1214** **OVER LITTLE COHARIE CREEK** **B-4269**	
Figure 1	

- United States Geological Survey (USGS) 7.5–minute topographic quadrangle map (Bonnetsville, NC 1986).
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) map for 7.5–minute Bonnetsville, N.C. quadrangle (1994).
- U.S. Department of Agriculture, Preliminary Natural Resources Conservation Service (NRCS) soil survey of Sampson County, North Carolina (1985).
- N.C. Department of Transportation (NCDOT) aerial photographs of the project area (1:2,400 scale).

The water resource information used for this report was obtained from publications of the North Carolina Department of Environment and Natural Resources (NCDENR 1993, 1999a, and 2000). Information concerning the occurrence of federal and state protected species in the study area was obtained from the USFWS list of protected and candidate species (January 29, 2003), the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats, and the North Carolina Wildlife Resources Commission (NCWRC) Proposed Critical Habitats for aquatic species.

All water resources within the project area were identified, categorized, and their physical characteristics documented. Additionally, all major biotic communities were identified, documented, and mapped in the field along with their associated wildlife.

All wetlands subject to regulation by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899 were identified and delineated according to methods prescribed in the 1987 *Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1)* and the USACE's March 6, 1992 *Clarification and Interpretation of the 1987 Manual.* Additionally, the values of all wetlands delineated were assessed using the *Guidance for Rating the Values of Wetlands in North Carolina* (NCDENR 1995). The wetland types were classified based on the USFWS's *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979) and *A Field Guide to North Carolina Wetlands* (NCDEHNR 1996). All jurisdictional surface water determinations were made using the North Carolina Division of Water Quality (NCDWQ) *Internal Guidance Manual N.C. Division of Water Quality Stream Classification Method* (NCDENR 1999b).

1.3 Investigator Qualifications

Hayes, Seay, Mattern, and Mattern Inc. (HSMM) environmental scientists Eric Black and Wendee Smith conducted natural resource field investigations within the project area on January

13 and 14, 2003. The qualifications of the environmental scientists who conducted the field investigations are provided below.

Investigator: Timothy E. Black
Education: B.S. Biology, E. Tennessee State University (ETSU)
M.S. Environmental Health, Water Resources Management, ETSU
Experience: Environmental Scientist, HSMM, Inc., Nov. 2001 to present.
Natural Systems Specialist, NCDOT, Mar. 1999 to Nov. 2001.
Environmental Technician, NCDENR-DWQ, Oct. 1997 to Mar. 1999.
Expertise: Section 401 and 404 permits, biotic community inventories and mapping, Section 7 field investigations, wetland delineation, wetland function and value assessments, GPS surveys.

Investigator: Wendee B. Smith
Education: B.S. Natural Resources: Ecosystem Assessment
Minor: Environmental Science
Certification: Certified in Wetland Identification and Delineation (NCSU 2001)
Experience: Environmental Scientist, HSMM, Inc., Jan. 2002 to present
Environmental Scientist II, LandMark Design Group, Sept. 1999 to Jan. 2002
Natural Systems Specialist, NCDOT, May 1999 to Sept.1999
Forestry Technician, NC Forest Service, Jun. 1998 to Aug. 1998
Expertise: Wetland determinations and delineations; threatened and endangered species surveys in North Carolina; community assessment; GPS/GIS

1.4 Definitions

The definitions used for area descriptions in this report are as follows:

- Project Study Area – denotes the area included within the designated study boundaries.
- Project Vicinity – denotes an area extending 0.5 mi (0.8 km) on all sides of the project area.
- Project Region – denotes an area equivalent in size to the area represented by a 7.5-minute USGS quadrangle map with the project occupying the central position.

2.0 PHYSICAL RESOURCES

The physical resources located within the project area such as soils and water resources directly influence management decisions during project construction and the composition and distribution of natural communities present. Descriptions of the project area physical resources are included

in the following sections.

2.1 Regional Characteristics

Sampson County lies in the Coastal Plain Physiographic province of North Carolina. The county encompasses 963 mi^2 (2,494 km^2) and consists of nearly level to gently rolling topography. Elevations within the project vicinity range from approximately 70 to 100 ft (21 to 31 m) above mean sea level (msl), with the streambed near the bridge lying at approximately 515 ft (157 m) above msl (Figure 2).

The Cape Fear River is the state's largest river basin. The river basin in located entirely within the state's boundaries and flows southeast from the north central piedmont region near Greensboro to the Atlantic Ocean near Wilmington (NCDENR 1999a). The river's watershed is approximately 9,322 mi^2 (24,144 km^2) with land use practices in the watershed being comprised of approximately 56% forests, 24% agriculture, and 9% urban areas (NCDENR 2000). Land uses within the project vicinity are comprised of agriculture, forests, and rural residential areas.

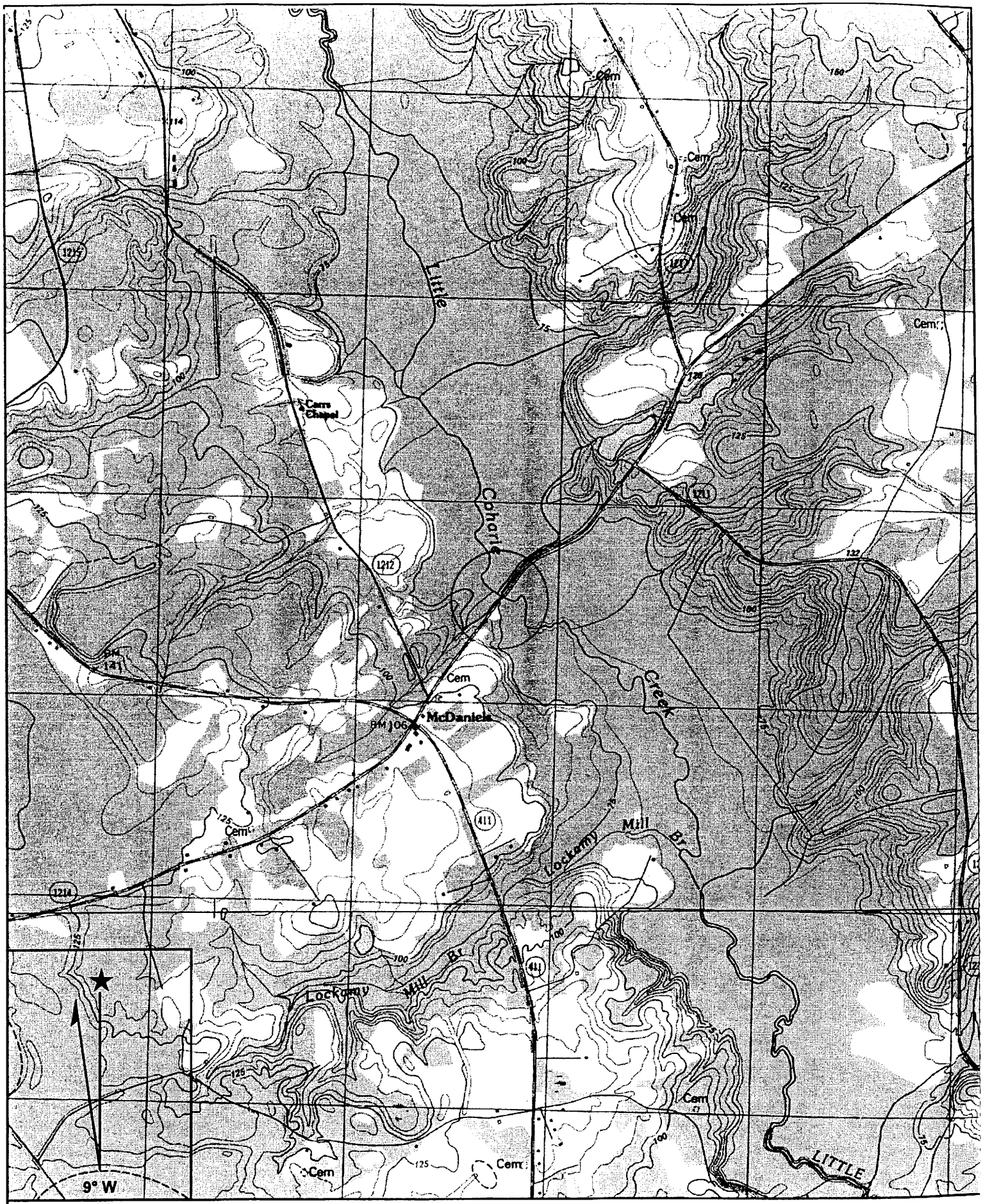
2.2 Soils

There are four major soil types located within the project area. The official soil series descriptions were obtained from the Soil Survey of Sampson County (1985). The project area soil, its drainage characteristics, and hydric classification are presented in Table 1.

Table 1. B-4269 Project Area Soil and Characteristics.

Map Unit Symbol	Specific Map Unit	Percent Slope	Drainage Class	Hydric Class
BH	Bibb & Johnston loam	-	Poorly drained and very poorly drained	Hydric
BoB	Blanton sand	0 to 6	Moderately well drained	Non-hydric
JT	Johnston loam	-	Very poorly drained	Hydric
Px	Paxville fine sandy loam	-	Poorly drained	Hydric

- Bibb and Johnston loam: Bibb and Johnston loams are formed along major streams in loamy fluvial sediments. Permeability is moderate to moderately rapid with a low shrink-swell potential. The seasonal high water table is at or near the surface for several months during the year. The soil is subject to frequent flooding.
- Blanton sand: Blanton sand is formed on broad, smooth sand ridges on uplands. Soil permeability is rapid in the surface layer and moderate in the subsoil. The seasonal high



Name: BONNETSVILLE
Date: 10/4/2001
Scale: 1 inch equals 2000 feet

Location: 034° 53' 19.7" N 078° 26' 35.0" W
Caption: B-4269

water table is below a depth of 5.0 to 6.0 ft (1.5 to 1.8 m).

- Johnston loam: Johnston loam is formed on moderately broad floodplains. Permeability's are moderately rapid in the upper portions of the soil profile and rapid in the lower parts. The seasonal high water table is at or near the surface. This soil is subject to frequent flooding for long periods.
- Paxville fine sandy loam: Paxville fine sandy loams are formed on smooth flats and slight depressions on stream terraces. Permeability is moderate with a low shrink-swell potential. The seasonal water table is at or near the surface for much of the year. This soil is occasionally subject to flooding during periods of high rainfall.

2.3 Water Resources

This section contains information concerning surface water resources likely to be impacted by the proposed project. The relevant water resource information encompasses the physical aspects of the resource, its relationship to major water systems, Department of Environmental Management (DEM) Best Usage Standards, and the "quality" of the water resources. Additionally, the probable impacts to surface water resources and impact minimization are discussed.

Little Coharie Creek is one of two perennial streams that comprise the water resources within the project study area (Figure 2). The other perennial stream, an unnamed tributary (UT) to Little Coharie Creek, is located in the southwestern portion of the project area. The streams are located within the Cape Fear River Drainage Basin in the designated Subbasin 03-06-19 according to the NCDWQ system for cataloging drainage basins, and USGS Hydrologic Unit (HU) 03030006 according to the federal system for cataloging drainage basins. **These streams are not included on North Carolina's 303(d) list of impaired water bodies.**

2.3.1 Best Usage Classification

All North Carolina streams and rivers have been assigned a best usage classification by the NCDWQ. The best usage classification reflects the water quality conditions and potential resource usage. Unnamed tributaries in North Carolina receive the same classification as their named downstream tributaries.

Little Coharie Creek is designated as DWQ Stream Index # 18-68-1-17 and is assigned a primary water resource classification of "C Sw". Class "C" refers to waters that are protected for uses such as secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture and other uses suitable for Class "C". Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. There are no restrictions on watershed

development or types of discharges in Class "C" waters.

The supplemental classification "Sw" refers to swamp waters and is intended to recognize those waters that generally have naturally occurring very low velocities, low pH, and low dissolved oxygen.

There are no surface waters classified as High Quality Water (HQW), Water Supplies (WS-I or WS-II), or Outstanding Resource Waters (ORW) located within 1.0 mi (1.6 km) of Bridge No. 90 over Little Coharie Creek. The HQW classification is intended to protect waters with quality higher than state water quality standards. This classification includes those streams that have previously been classified as WS-I, WS-II, SA (shellfishing), ORW, or for waters which the NCDWQ has received petitions to reclassify as either WS-I or WS-II.

2.3.2 Stream Characteristics

The proposed project crosses Little Coharie Creek on SR 1214. Geomorphic characteristics of the stream include a width of approximately 75 ft (23 m) at the bridge and observed water depths ranging from 3 to 7 ft (1 to 2 m). The channel substrate of Little Coharie Creek is mostly comprised of silt and sand. The stream banks upstream and downstream of the bridge are vegetated.

The UT to Little Coharie Creek is approximately 5 ft (1.5 m) wide with observed water depths ranging from 2.0 to 8.0 in (5.1 to 20.3 cm). The channel substrate is comprised of sand and gravel. The stream banks are partially vegetated with successional vegetation.

2.3.3 Water Quality

This section describes the quality of water resources within the project area and the potential for water pollution from both point and nonpoint sources. The water quality assessments presented are based on published resource information and existing general watershed characteristics. This data provides insight into the value of the water resources within the project area and their ability to meet human needs and provide suitable habitat for aquatic organisms.

2.3.3.1 Biological Monitoring

The NCDWQ has initiated a basinwide approach to water quality management for North Carolina's 17 river basins. NCDWQ accomplishes this objective by collecting biological, chemical, and physical data that can be used for basinwide assessment and planning. The Basinwide Monitoring Program, managed by the NCDWQ, includes an ambient water quality monitoring program that addresses long-term trends in water quality. This program monitors

ambient water quality by sampling at fixed sites for chemical parameters and selected benthic macroinvertebrate organisms sensitive to water quality conditions.

Biological monitoring of macroinvertebrates is useful because of its ability to assess long-term water quality shifts, as opposed to chemical monitoring that can only assess short-term presence of pollutants. Different macroinvertebrate taxa have different tolerances to pollution and many benthic macroinvertebrates have life cycle stages that can last from six to twelve months. Consequently, the adverse effects of short-term pollution are not overcome until the next generation thus long-term changes in water quality conditions can be identified by population shifts from pollution sensitive to pollution tolerant organisms. A stream's water quality is therefore reflected by the overall species present, population diversity, and biomass.

Current NCDWQ macroinvertebrate protocols use the number of taxa of intolerant groups (Ephemeroptera, Plecoptera, Tricoptera, or "EPT") present and a North Carolina biotic index value for all samples collected. The biotic index and EPT taxa richness values primarily reflect the effects of chemical pollution. These two rankings are given equal weight in final site water quality classification. The effects of physical pollutants such as sediment are not assessed. **Benthic samples have been taken near the bridge crossing of SR 1214 over Little Coharie Creek. Ratings were "Good to Fair" in 1993 and 1998.**

The condition of a watershed's fishery is one of the most meaningful indicators of ecological integrity to the public. Fish occupy the upper levels of the aquatic food web and are both directly and indirectly affected by chemical and physical changes in the environment. Water quality conditions that significantly affect lower levels of the food web will affect the abundance, species composition, and condition of the fish population (NCDENR 1996). To assess a stream's biological integrity, NCDWQ uses the North Carolina Index of Biotic Integrity (NCIBI) as a method for examining the structure and health of the fish community. The NCIBI accomplishes this by summarizing the effects of all classes of factors influencing fish communities. Specific information incorporated into the index includes: species richness and composition, trophic composition, fish abundance, and fish condition (NCDENR 1996).

The assessment of biological integrity using the NCIBI is provided by the cumulative assessment of 12 parameters (metrics). The values provided by these metrics are converted into scores on a 1, 3, 5 scale. A score of 5 represents conditions expected for undisturbed streams in the specific river basin or ecoregion, while a score of 1 indicates that conditions vary greatly from those expected in an undisturbed stream of the region. The scores are summed to attain the overall NCIBI score. A NCIBI score is then assigned an integrity class, which ranges from "No Fish" to

"Excellent". The index has previously been modified and is continually being redefined for its applicability to wadeable streams in North Carolina. **No fish surveys have been conducted within 1.0 mile (1.6 km) of Bridge No. 90 over Little Coharie Creek.**

2.3.3.2 Point and Nonpoint Source Discharges

The National Pollutant Discharge Elimination System (NPDES) permit program implements the CWA's prohibition on unauthorized discharges by requiring a permit for every discharge of pollutants from a point source to "waters of the United States". A point source discharge is defined as "any discharge that enters surface waters through a pipe, ditch, or any other well-defined point" (NCDEHNR 1993). This term commonly refers to those discharges associated with wastewater treatment plants, and discharges from industrial and large urban stormwater collection systems. As required by law, all point source discharges are regulated through the NPDES program within North Carolina. **There are no registered NPDES discharges located within 1.0 mile (1.6 km) of Bridge No. 90 over Little Coharie Creek.**

A nonpoint discharge refers to runoff that enters surface waters through stormwater or other precipitation (NCDEHNR 1993). Agricultural activities such as land clearing and plowing may serve as a source for various forms of nonpoint source pollutants. Such activities disturb soils to the degree where they are susceptible to erosion, resulting in widespread stream sedimentation. Other nonpoint source pollutants such as pesticides, chemical fertilizers, and land applied animal waste can also be transported to receiving streams through runoff. The resulting contamination may elevate concentrations of toxic compounds and nutrients in the receiving stream. Additionally, the introduction of animal wastes can be a source of bacterial contamination and elevate biochemical oxygen demand (BOD). **There are no observed nonpoint sources in the project study area excluding runoff from the existing road.**

2.4 Summary of Anticipated Water Quality Impacts

Project construction can result in both physical and chemical impacts to surface waters. Activities likely to result in impacts consist of clearing and grubbing along stream banks, removal of riparian canopy, in-stream construction, use of fertilizers and pesticides as part of revegetation operations, and installation of pavement. The following impacts to surface water resources are likely to result from the previously mentioned construction activities:

- Increases in downstream sedimentation and siltation from construction and/or erosion.
- Changes in incident light levels and turbidity due to increased sedimentation rates and vegetation removal.
- Alteration of water levels and flows due to interruptions and/or additions of surface water

and groundwater during construction.

- Increases in nutrient loading during construction through runoff from temporarily exposed land surfaces.
- Increases in the potential for the release of toxic compounds (such as petroleum products) from construction equipment and other vehicles.
- Changes in water temperature regimes due to removal of vegetation within or overhanging the watercourse.
- Increases in concentrations of pollutants typically associated with roadway runoff.
- Stream channel losses due to pipe installation or channel fill.

While actual stream footage may be lost due to channel manipulation, precautions should be taken to minimize project area water quality impacts. *NCDOT's Best Management Practices for the Protection of Surface Waters* must be strictly enforced during construction (NCDOT 1997). **The means to minimize impacts will include (1) using construction methods that will limit in-stream activities as much as practicable, (2) restoring the stream bed as needed, and (3) revegetating stream banks within 30 days following the completion of grading (tall fescue is not an acceptable groundcover for erosion control). Additionally, provisions to preclude contamination by toxic substances during the construction interval must also be strictly enforced.**

3.0 BIOTIC RESOURCES

The biotic resources located in the project area include both aquatic and terrestrial communities. This section describes those communities encountered and the relationships between the communities' flora and fauna. The composition and distribution of the biotic communities located throughout the project area are reflective of the topography, hydrologic influences, and past and present land uses. Descriptions of the observed terrestrial systems are presented in the context of dominant plant community classifications and where possible follow those presented by Schafale and Weakley (1990). Additionally, the fauna observed, or likely to occur, in each community are described and discussed.

Scientific nomenclature and the common names (when applicable) are included for each described plant and animal species. The plant taxonomy generally follows Radford, et al. (1968) while the animal taxonomy follows Burt and Grossenheider (1976), Conant (1986), Martof et al. (1980), Peterson (1980), and Webster et al. (1985). All subsequent references to a previously described organism include only the common name. The fauna observed during the site visit are denoted with an asterisk (*). Spoor evidence or tracks equate to observation of the species. The

published range distributions and habitat analysis are also used in estimating fauna expected to be present within the project area.

3.1 Terrestrial Resources

There are five terrestrial communities located within the project area (Figure 3). Community boundaries within the study area are generally well defined without a significant transition zone between them. The observed communities consist of the (1) Coastal Plain Bottomland Hardwood (Blackwater Subtype), (2) Cypress-Gum Swamp (Blackwater Subtype), (3) Early Successional Cutover, (4) agriculture, and (5) maintained/disturbed community.

3.1.1 Coastal Plain Bottomland Hardwoods (Blackwater Subtype)

The Coastal Plain Bottomland Hardwood (Blackwater Subtype) is typically located on relatively high parts of the floodplain away from the channel (Schafale and Weakley 1990). Canopy species observed in the Coastal Plain Bottomland Hardwood Forest include loblolly pine (*Pinus taeda*), river birch (*Betula nigra*), red maple (*Acer rubrum*), swamp chestnut oak (*Quercus michauxii*), water oak (*Quercus nigra*), laurel oak (*Quercus laurifolia*), and willow oak (*Quercus phellos*). Observed shrub/sapling species include ironwood (*Carpinus caroliniana*), sweet pepper bush (*Clethra alnifolia*), red maple, silky dogwood (*Cornus amomum*), sweet bay (*Magnolia virginiana*), red bay (*Persea borbonia*), river birch, sweet-gum (*Liquidambar styraciflua*), sweet leaf (*Symplocos tinctoria*), American beech (*Fagus grandifolia*), bald cypress (*Taxodium distichum*), and American holly (*Ilex opaca*). Observed herbaceous and woody vine species include giant cane (*Arundinaria gigantea*), poison ivy (*Toxicodendron radicans*), and grape (*Vitis* sp.) (Community No. 1 of Figure 3).

3.1.2 Cypress-Gum Swamp

The Cypress-Gum Swamp is located along Little Coharie Creek. This community is dominated by bald cypress and gums (*Nyssa* sp.). The shrub/sapling layer contained few species consisting of sweet-gum, red maple, and sweet pepper bush. The herb layer contained such species as giant cane, sedges (*Carex* sp.), and Japanese grass (*Microstegium vimineum*) (Community No. 2 of Figure 3).

3.1.3 Early Successional Cutover

The early successional cutover is located south of Little Coharie Creek. This community contains vegetation that is in the early stages of succession; therefore, it is lacking a canopy. Shrub/sapling species include sweet-gum, red maple, loblolly pine, sweet pepper bush, water oak, wax myrtle (*Myrica cerifera*), and blackberry (*Rubus* sp.). Observed woody vine and herbaceous species include grape, greenbrier (*Smilax rotundifolia*), broom sedge (*Andropogon*

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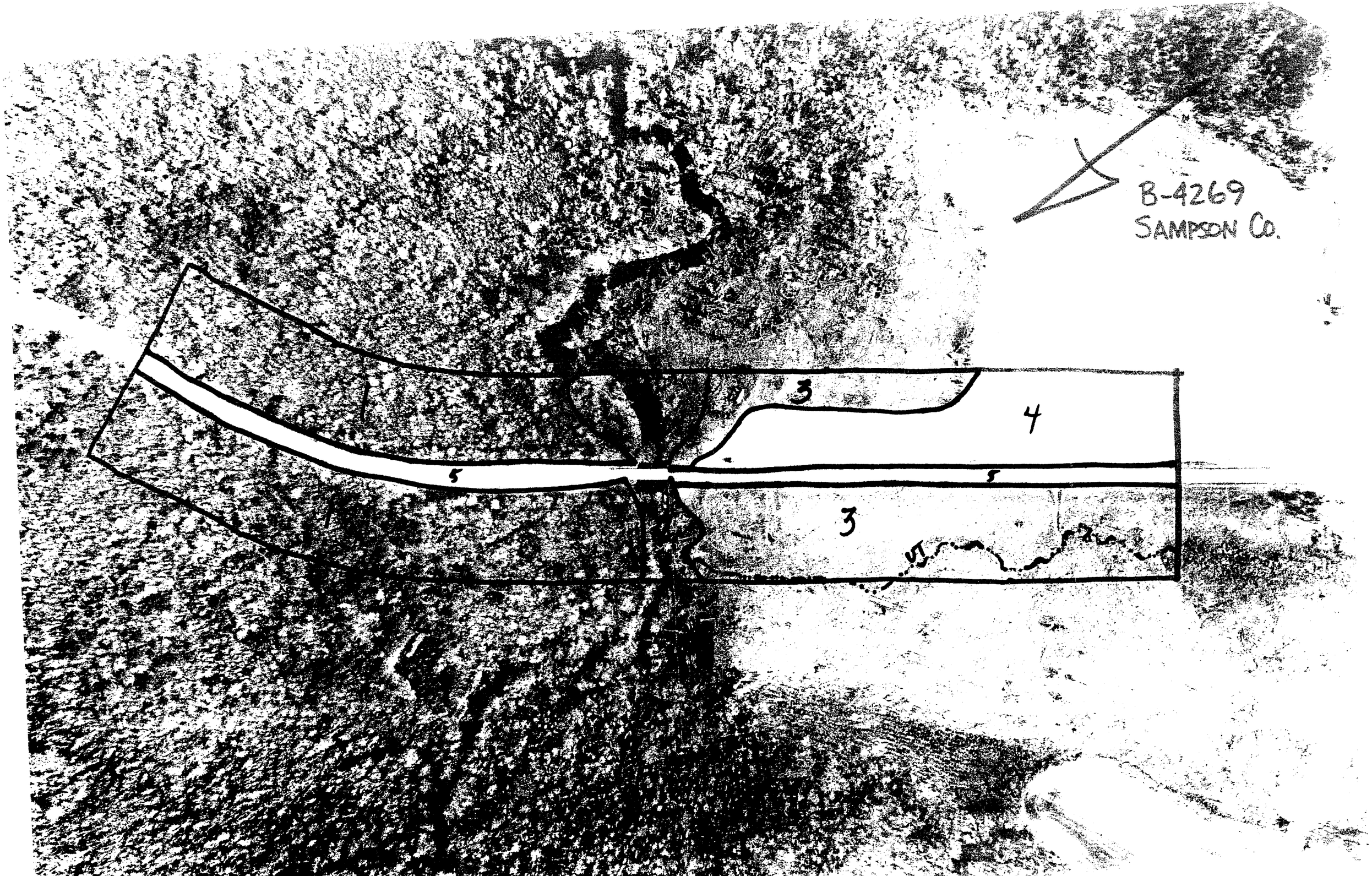

virginicus), bushy bluestem (*Andropogon glomeratus*), aster (*Aster* sp.), soft rush (*Juncus effusus*), and giant cane (Community No. 3 of Figure 3).

3.1.4 Agriculture

The agriculture community is located in the southern portion of the project study area. At the time of the field investigation, no commodity crops were planted. The dominant vegetation observed consisted of grasses (Poaceae) (Community No. 4 of Figure 3).

3.1.5 Maintained/Disturbed Community

The maintained/disturbed community includes those areas found along the agricultural areas and road shoulders. These areas include shrubs, saplings, and other plant species typically found in areas of early succession. Observed herbaceous and woody vine species include fescue (*Festuca* sp.), soft rush, henbit (*Lamium amplexicaule*), wild geranium (*Geranium carolinianum*), wild onion (*Allium canadense*), beggar ticks (*Bidens* sp.), aster, broom sedge, dog fennel (*Eupatorium capillifolium*), blackberry, crab grass (*Digitaria* sp.), greenbrier, and yellow jessamine (*Gelsemium sempervirens*), Japanese honeysuckle (*Lonicera japonica*), and grape. (Community No. 5 of Figure 3).

3.2 Terrestrial Fauna

Many fauna species are highly adaptive and may populate or exploit the entire range of biotic communities located within the project area. Each species present fills its own ecological niche and there are often complex interactions between all species present. Examples of these relationships include symbiotic, competitive, and predator/prey relationships. The fauna species presented in the following sections include taxonomic groups from the Kingdom Animalia.

The forest and forest edge habitats located in the project area provide opportunities for foraging and shelter for avian species. Birds that might use these habitats include the American crow* (*Corvus brachyrhynchos*), American robin* (*Turdus migratorius*), northern cardinal* (*Cardinalis cardinalis*), ruby-crowned kinglet* (*Regulus calendula*), Carolina chickadee (*Parus carolinensis*), Carolina wren* (*Thryomanes ludovicianus*), hermit thrush* (*Catharus guttatus*), eastern phoebe* (*Sayornis phoebe*), blue jay (Cyanocitta cristata), mockingbird (Mimus polyglottos), turkey vulture (Cathartes aura), and red-tailed hawk* (*Buteo jamaicensis*).

A variety of reptile and amphibian species may use terrestrial communities located in the project area. These animals include the cottonmouth (*Agkistrodon piscivorus*), rat snake (*Elaphe obsoleta*), eastern box turtle (*Terrapene carolina*), Carolina anole* (*Anolis carolinensis*), and mud salamander (*Pseudotriton montanus*).

3.3 Aquatic Resources

The aquatic community consists of Little Coharie Creek below the mean high water line. Dominant instream habitats include sticks, leaf packs, and root mats. Other aquatic habitat present includes pools. The pool habitats present in the project area are infrequent with a variety of sizes. Riffle habitats are absent within the project study area. The riparian buffer is a contiguous, well-vegetated corridor within the project study area, excluding areas immediately adjacent to the existing bridge.

The vegetation associated with the aquatic community includes those species located along the stream banks of Little Coharie Creek. Canopy species observed along the banks of Little Coharie Creek include bald cypress and river birch. The observed shrub/sapling species include silky dogwood and sweet-gum. Herbaceous and woody vine species include soft rush and greenbrier.

Aquatic or water-dependent vertebrates observed or expected within the project area include the green treefrog (*Hyla cinerea*), two-lined salamander (*Eurycea bislineata*), redbelly water snake (*Nerodia erythrogaster*), redfin pickerel (*Esox americanus*), crappie (*Promoxis* sp.), and black-banded sunfish (*Enneacanthus chaetodon*). Aquatic or water-dependent invertebrates observed or expected within the project area include crayfish (Cambaridae) and aquatic snail (*Physa* sp.).

A NCWRC sunfish moratorium applies to this portion of Little Coharie Creek from April 1 to June 30. There are no NCWRC "proposed critical habitats for aquatic species" located within the project area.

3.4 Summary of Anticipated Impacts

The construction related activities in or near the previously described resources have the potential to impact biological functions. This section quantifies and qualifies both temporary and permanent impacts to the natural resources and ecosystems in terms of area. These impacts are addressed, where possible, from the perspective of resource functions and values. The practicable means to avoid or minimize impacts are also evaluated and recommended.

3.4.1 Terrestrial Impacts

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

project area concentrates wildlife into smaller areas of refuge, therefore causing some species to become more susceptible to disease, predation, and starvation.

Ecological impacts can also occur outside of the project area because of habitat reduction. Typically, those areas modified by construction (but not paved) will become road shoulders and early successional habitat. The increased traffic noise and reduction/change of habitat, while attracting other wildlife, may displace existing wildlife further from the roadway. The animals displaced by construction activities may repopulate other areas suitable for the species. However, the increased animal density can result in an increase in competition for the remaining resources. Table 2 summarizes the quantitative losses to these biotic communities resulting from project construction.

Table 2. B-4269 Natural Communities Impacts.

Community	Impacts ac (ha)	
	Terrestrial	Wetland
Coastal Plain Bottomland Hardwoods		
Cypress-Gum Swamp		
Early Successional Cutover		
Agriculture		
Maintained/Disturbed Community		
TOTAL IMPACTS		

3.4.2 Aquatic Impacts

The replacement of Bridge No. 90 over Little Coharie Creek will result in certain unavoidable impacts to the stream's aquatic community. Probable impacts resulting from changes in water quantity and quality will include the physical disturbance of the benthic and water column habitats. Significant disturbance of stream segments can also have an adverse effect on aquatic community composition by reducing species diversity and the overall quality of aquatic habitats. Physical alterations to aquatic habitats can result in the following impacts to aquatic communities:

- Inhibition of plant growth.
- Resuspension of organic detritus and removal of aquatic vegetation that can lead to

increased nutrient loading. Nutrient loading can lead to algal blooms and ensuing depletion of dissolved oxygen levels.

- Increases in suspended and settleable solids that can lead to clogging of feeding structures of filter-feeding organisms and the gills of fish.
- Loss of benthic macroinvertebrates through increased scouring and sediment loading.
- Loss of fish shelter through removal of overhanging stream banks and snags.
- Increases in seasonal water temperatures resulting from removal of riparian canopy.

Unavoidable impacts to aquatic communities within and immediately downstream of the project area will be minimized to the fullest degree practicable through strict adherence to NCDOT's *Best Management Practices for the Protection of Surface Waters* (NCDOT 1997). **Means by which impacts will be minimized include (1) using construction methods that will limit in-stream activities as much as practicable, (2) using silt curtains during bridge construction, (3) restoring stream beds as needed, and (4) revegetating stream banks within 30 days following the completion of grading.** The estimated stream impacts are included in Table 3.

Table 3. B-4269 Stream Impacts.

Stream Name	Linear Impacts ft (m)	Area Impacts ac (ha)
Little Coharie Creek		
UT to Little Coharie Creek		

4.0 JURISDICTIONAL TOPICS

The following sections provide an assessment of possible impacts to (1) "waters of the United States" and (2) rare and protected species. "Waters of the United States" and rare and protected species are of particular significance when assessing impacts because of federal and state mandates that regulate their protection. The following sections address those measures that will be required in order to comply with regulatory permit conditions prior to project construction.

4.1 Waters of the United States

The U.S. Army Corps of Engineers (USACE) promulgated the definition of "waters of the United States" under 33 CFR §328.3(a). "Waters of the United States" include most interstate and intrastate surface waters, tributaries, and wetlands. A wetland is an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR §328.3(b)). Wetlands generally include swamps, marshes, bogs, and other similar areas. Any action that proposes to place dredged or fill materials into

"waters of the United States" falls under the jurisdiction of the USACE, and must follow the statutory provisions under Section 404 of the CWA (33 U.S.C. 1344).

4.1.1 Characteristics of Wetlands and Surface Waters

All potential wetland systems were investigated using the guidelines specified in the 1987 *Corps of Engineers Wetlands Delineation Manual.* The Corps guidelines use a three-parameter approach where hydric soils, hydrophytic vegetation, and prescribed hydrologic characteristics must all be present for an area to be considered a wetland.

There are five wetland systems located within the project study area. These wetlands include a bottomland hardwood/ cypress- gum wetland system (bisected by the existing road), a headwater wetland, and three seep wetlands (NCDHENR 1996). A description of the wetland vegetation, soil, and hydrology are provided in the following paragraphs.

Bottomland Hardwood/Cypress-Gum Complex: Vegetation observed within the wetland includes bald cypress, gum, river birch, laurel oak, and red maple. The soils within the wetland area have a texture of sandy clay loam from 0 to 10 in (0 to 25 cm), with a matrix color of 7.5YR 2.5/1, and few distinct mottles of 7.5YR 5/4. Hydrology primary indicators include saturation within the soil's upper 12 in (31 cm), water marks on trees, sediment deposits, and drainage patterns within the wetlands. The NWI classification for the bottomland hardwood wetland is palustrine, forested, broad-leaved deciduous, and temporarily flooded (PF01A).

Using NCDENR's *Guidance for Rating the Values of Wetlands in North Carolina*, the wetland within the project area has been estimated to have the following rating for values assessed: 8 of 20 for water storage, 4 of 20 for bank/shoreline stabilization, 15 of 25 for pollutant removal, 10 of 10 for wildlife habitat, 16 of 20 for aquatic life value, and 1 of 5 for recreation/education – for a total rating of 54.

Headwater Wetland: Vegetation observed within the wetland includes bulrush (*Scirpus* sp.), soft rush, and *Ludwigia* species. The soils within the wetland area have a texture of sandy loam from 0 to 10 in (0 to 25 cm), with a matrix color of 7.5YR 2.5/1, with no mottles. Hydrology primary indicators include saturation within the soil's upper 12 in (31 cm) and drainage patterns. The NWI classification for the headwater wetland is palustrine, scrub-shrub, broad-leaved deciduous, and seasonally flooded (PSS1C).

Using NCDENR's *Guidance for Rating the Values of Wetlands in North Carolina*, the wetland within the project area has been estimated to have the following rating for values assessed: 4 of 20

for water storage, 4 of 20 for bank/shoreline stabilization, 10 of 25 for pollutant removal, 2 of 10 for wildlife habitat, 8 of 20 for aquatic life value, and 1 of 5 for recreation/education – for a total rating of 29.

Seep 1, 2, and 3: Vegetation within the wetlands consists of soft rush, *Ludwigia* spp., and bulrush. The soil's organic horizon 0 to 2 in (0 to 5 cm) has a loam textures with slightly decomposed organic material and a matrix color of 10YR 2/1. The soil horizon from 2 to 6 in (5 to 13 cm) has a sandy loam texture with a matrix color of 5YR 2.5/2. From 6 to 10 in (13 to 25 cm) the soil's texture is loamy sand with a matrix color of 10YR 5/2, with common, prominent mottles of 10YR 4/6. Hydrology indicators include inundation and saturation within the soil's upper 12 in (31 cm) and drainage patterns. The NWI classification for the seep wetland is palustrine, scrub-shrub, broadleaved deciduous, and seasonally flooded (PSS1C).

Using NCDENR's *Guidance for Rating the Values of Wetlands in North Carolina*, the wetland within the project area has been estimated to have the following rating for values assessed: 4 of 20 for water storage, 0 of 20 for bank/shoreline stabilization, 5 of 25 for pollutant removal, 2 of 10 for wildlife habitat, 0 of 20 for aquatic life value, and 1 of 5 for recreation/education – for a total rating of 12.

All project area streams and their characteristics are discussed in Section 2.3.

4.1.2 Permits

The factors that determine Section 404 Nationwide Permit (NWP) applicability include hydrology, juxtaposition with a major resource, whether the impacts occur as part of the widening of an existing facility, or as the result of construction on a new location. Although an individual site may qualify under NWP authorizations, overall, cumulative impacts from a single and complete project may require authorization under an Individual Permit (IP).

The proposed project consists of replacing Bridge No. 90 over Little Coharie Creek. Under the guidelines of Federal Highway Administration (FHWA) regulation 23 CFR 771.117(d), bridge rehabilitation, reconstruction, replacement, or construction of grade separation to replace existing at-grade railroad crossings may be considered Categorical Exclusions (CE). This classification is designated with FHWA approval provided an applicant submits documentation that demonstrates that the specific condition or criteria for this CE are satisfied and that significant environmental effects will not result.

As an approved CE or as a public linear transportation crossing in non-tidal waters, impacting less

than 0.5 ac (0.2 ha) of "waters of the United States", the proposed bridge construction could be authorized under the provisions of a USACE Nationwide or General Permit. Applicable permits include the Nationwide Permit 23 (Approved Categorical Exclusions), Nationwide Permit 14 (Linear Transportation Projects), or General Permit Number 198200031 (for NCDOT bridge crossings). Other required 404 permits may include a Nationwide Permit 33. This permit is required for temporary construction activities such as stream dewatering, work bridges, or temporary causeways that are often used during bridge construction or rehabilitation.

In addition to the 404 permit, other required authorizations include the corresponding Section 401 Water Quality Certification from the NCDWQ. Section 404 of the CWA requires that the state issue or deny a water quality certification for any federally permitted or licensed activity that may result in a discharge to "waters of the United States". Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land disturbance. A DWQ Section 401 Water Quality General Certification for an approved CE (General Certification 3361) or minor road crossing (General Certification 3375) is required prior to the issuance of a Section 404 Individual Permit. Other required 401 certifications may include a General Certification 3366 for temporary construction access and dewatering.

4.1.3 Mitigation

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

4.1.3.1 Avoidance

Avoidance measures examine all the appropriate and practicable possibilities of averting impacts to "waters of the United States". According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the USACE, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, best available technology (BAT's), and logistics in light of overall project purposes.

4.1.3.2 Minimization

Minimization measures include the examination of appropriate and practicable steps to reduce the adverse impacts to "waters of the United States". The implementation of these steps will be

required through project modifications and permit conditions. Minimization typically focuses on decreasing the proposed project footprint through the reduction of median widths, ROW widths, fill slopes, and/or road shoulder widths. Other practical minimization mechanisms include: strict enforcement of sedimentation control BMP's for the protection of surface waters during the entire life of the project; reduction of clearing and grubbing activity; reduction/elimination of direct discharge into streams; reduction of runoff velocity; re-establishment of vegetation on exposed areas, judicious pesticide and herbicide usage; minimization of in-stream activity; and litter/debris control.

4.1.3.3 Compensatory Mitigation

The use of compensatory mitigation is not considered until anticipated impacts to "waters of the United States" have been avoided and minimized to the maximum extent possible. It is recognized that the "no net loss of wetlands" functions and values may not be achieved in every permit action. Appropriate and practicable compensatory mitigation is therefore required for unavoidable adverse impacts that remain after all appropriate and practicable minimization. Compensatory actions often include restoration, creation, and enhancement of "waters of the United States". Such actions, where possible, should be undertaken in areas adjacent or contiguous to the impact site.

Compensatory mitigation is conventionally required for projects authorized under Individual Permits or certain Nationwide Permits that result in the fill or alteration of more than 0.1 ac (0.04 ha) of wetlands and/or 150 ft (46 m) of streams. Under the nationwide permit program, the District Engineer must be notified if proposed discharge to wetlands will exceed 0.1 ac (0.04 ha). Discharges to wetlands exceeding 0.1 ac (0.04 ha), for which authorization under a Nationwide Permit 14 is being sought, require submittal of a compensatory mitigation plan as part of the notification.

On-site mitigation should be considered as the first mitigation option whenever unavoidable impacts to wetlands occur. On-site mitigation opportunities may include the removal of the existing approach in wetland areas as well as lengthening the proposed bridge.

4.1.4 Bridge Demolition

Bridge No. 90 is a 150 ft (45.7 m) long by 25 ft (7.6 m) wide structure composed of a concrete surface on a full timber deck and substructure. Bridge demolition will occur by removing the concrete surface prior to removal of the bridge structure. The remainder of the timber components will be removed without dropping them into Little Coharie Creek. Consequently, there will be no temporary fill resulting from bridge demolition. Because of the stream's silt and

sand substrate, it is recommended that turbidity curtains be used during bridge demolition.

4.2 Protected Species

Some populations of flora and fauna have been, or are in the process of decline due to natural forces and/or their inability to coexist with human activities. The Endangered Species Act of 1973, as amended, requires that any action likely to adversely affect a species listed as a federally protected threatened or endangered species is subject to review by the USFWS. Other species (such as state-listed threatened or endangered species) may receive additional protection under separate state laws.

4.2.1 Federally Threatened and/or Endangered Species

Plants and animals with federal classifications of endangered (E), threatened (T), proposed endangered (PE), and proposed threatened (PT) are protected under the provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003, the USFWS lists three federally protected species for Sampson County (Table 4). A brief description of the characteristics and habitat requirements for this species is provided in the following section.

Table 4. Federally Threatened and/or Endangered Species.

Scientific Name	Common Name	Federal Status	Biological Conclusion
Alligator mississippiensis	American alligator	TS/A	No Survey Required
Picoides borealis	Red-cockaded woodpecker	Endangered	Not likely to adversely affect
Lindera melissifolia	Pondberry	Endangered	Unresolved

TS/A - Threatened due to similarity of appearance --a species that is threatened due to similarity of appearance with other rare species and is listed for its protection. These species are not biologically endangered or threatened and are not subject to Section 7 consultation.

Name: *Alligator mississippiensis* (American alligator)
Family: Alligatoridae
Federal Status: Threatened Due to Similarity of Appearance
Listed: June 4, 1987

Characteristics:
The alligator is a large aquatic reptile, measuring 5.9 to 19 ft (1.8 to 5.8 m) in length, with a broadly rounded snout, heavy body, laterally compressed tail, and a dark gray or blackish color.

Young are black with conspicuous yellow crossbands; the banding may occasionally persist on adults, although very faintly. Unlike the American crocodile, the fourth tooth on the lower jaw of the alligator fits in a notch in the upper jaw and is not exposed when the jaws are closed.

Distribution and Habitat:
The alligator can be found on the east coast of the United States from Tyrrell County, North Carolina to Corpus Christi, Texas, and north in the Mississippi River drainage basin to Arkansas and southeastern Oklahoma. Home ranges may vary considerably, with 3,162 acres for males and 21 acres for females being average. Individuals can travel great distances, both overland and in the water, but males tend to travel more than females.

The alligator is found rivers, streams, canals, lakes, swamps, bayous, and coastal marshes. Adult animals are highly tolerant of salt water, but the young are apparently more sensitive, with salinities greater than 5 parts per thousand considered harmful. The diet consists of anything of suitable size, including mammals, reptiles, amphibians, birds, fish, and crustaceans.

Nesting takes place in late spring and early summer, with the female building a mound of grass and other vegetation that may be two feet high and six feet across. The nest is usually constructed near the water, in a shaded location. The clutch of 30-60 (average 35) eggs is laid in a cavity near the top of the mound, and is incubated by the heat from the decaying vegetation. The female usually remains near the nest until the eggs hatch. Hatching takes place in about nine weeks, at which time the young begin calling to alert the female to excavate the nest.

Threats to Species:
The primary threats to the alligator in the past have been loss of habitat and overhunting. The legal protections in recent years have allowed this species to increase significantly, and it is now considered biologically secure.

Distinctive Characteristics:
The alligator is distinguished from the American crocodile by its broad, rounded snout and the way its fourth tooth of its lower jaw fits into a notch in the upper jaw when the jaws are closed, and is therefore not exposed when the jaws are closed.

Biological Conclusion: **No Survey Required**
This species is listed as Threatened Due to Similarity of Appearance, and is therefore not protected under Section 7 of the Endangered Species Act. However, in order to control the illegal trade of other protected crocodilians such as the American crocodile, federal regulations

(such as hide tagging) are maintained on the commercial trade of alligators. No survey is required for this species.

Name: *Picoides borealis* (red-cockaded woodpecker)
Family: Picidae
Federal Status: Endangered
Date Listed: 10/13/70

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

Distribution and Habitat:

The RCW uses open old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. A forested stand must contain at least 50% pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are ≥ 60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 500.0 ac (200.0 ha). This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 12 to 100 ft (3.6 to 30.3 m) above the ground and average 30 to 50 ft (9.1 to 15.7 m) high. They can be identified by a large incrustation of running sap that surrounds the tree. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 10 to 12 days later.

Biological Conclusion: **Not likely to adversely affect**
Site investigations revealed that habitat in the form of open, old growth stands of pines were not present in the project study area. Additionally, a January 2003 review of the North Carolina Natural Heritage Program (NCNHP) database of rare species and unique habitats revealed no known populations within 1.0 mile (1.6 km) of the project study area. Consequently, the proposed project is "Not likely to adversely affect" the red-cockaded woodpecker.

Name: Pondberry (*Lindera melissifolia*)
Family: Laurel (Lauraceae)
Federal Status: Endangered
Date Listed: July 31, 1986
Best Search Time: February-September

Characteristics:
Pondberry is a deciduous shrub growing to approximately 2 meters tall, and spreading by means of stolons. The leaves are thin, drooping, prominently veined, and pubescent beneath, ovate to elliptical, and have rounded bases. Leaves emit a sassafras-like odor when crushed. This species is dioecious (male and female flowers are on separate plants), and the flowers of both sexes are pale yellow, small, and appear before the leaves emerge in the spring. The fruit is a bright red drupe containing one seed, which forms in the late summer or fall and is supported on a stout pedicel that remains on the branch after the fruit falls. Vegetative reproduction (stolons) seems to be more common than sexual reproduction (seeds).

Distribution and Habitat:
Pondberry is known from several widely scattered locations across the Southeast, in Arkansas, Georgia, Mississippi, Missouri, North Carolina, and South Carolina. In interior areas, habitat for pondberry consists of seasonally flooded wetlands, sandy sinks, pond margins, and swampy depressions (Steyermark 1949). In the coastal plain of the Carolinas, pondberry is found along the margins of sinks, ponds, and pineland depressions. Soils in these areas are sandy with a high peat content, and have a high water table. Fire may have been an important factor in maintaining suitable habitat in the past. This species is most often found in shade, but may be seen in full sun in areas of full sun where competition is not as intense.

Threats to Species:
The greatest threat to this species is loss of habitat through ditching wetlands for residential, commercial, or agricultural development. Other activities that can adversely affect this species are disturbance by livestock and timber harvesting.

Distinctive Characteristics:
Pondberry can be distinguished from southern spicebush (*Lindera benzoin*) by having drooping foliage, rounded leaf bases rather than tapered, sassafras-like odor of the crushed leaves rather than spicy, and fruit pedicels that persist throughout the winter. Pondberry can be distinguished from bog spicebush (*Lindera subcoriacea*) because the latter's leaves have little or no fragrance when crushed.

Biological Conclusion: **Unresolved**

Site investigations revealed potential habitat for pondberry in the form of wetland areas with sandy soils. Additionally, a January 2003 review of the NCNHP database of rare species and unique habitats revealed no known populations within 1.0 mile (1.6 km) of the project study area. However, surveys of the project study area are recommended and should be conducted during the flowering season in March. Consequently, the biological conclusion for pondberry is "Unresolved".

4.2.2 Federal Species of Concern and State Listed Species

A federal species of concern (FSC) is defined as a species that is under consideration for listing for which there is insufficient information to support listing. The USFWS list thirteen federal species of concern in Sampson County (Table 5). Federal species of concern are not afforded federal protection under the Endangered Species Act and are not subject to any of the provisions included in Section 7 until they are formally proposed or listed as threatened or endangered. The status of these species is subject to change so their status should be periodically monitored prior to project construction if individuals or suitable habitat is present within the project area. Organisms that are listed as endangered (E), threatened (T), or special concern (SC) by the NCNHP list of Rare Plants and Animal Species are afforded state protection under the North Carolina State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979.

Table 5. Federal Species of Concern for Sampson County.

Scientific Name	Common Name	NC Status	Habitat Present
Aimophila aestivalis	Bachman's sparrow	SC	No
Rana capito capito	Carolina gopher frog	SC	No
Ophisaurus mimicus	Mimic glass lizard	SC	No
Corynorhinus (=Plecotus) rafinesquii	Rafinesque's big eared bat	SC	Yes
Heterdon simus	Southern hognose snake	SR	No
Dolania americana	American sand burrowing mayfly	SR	No
Juglans cinerea	Butternut	W5A	No
Macbridea caroliniana	Carolina bogmint	T	Yes
Litsea aestivalis	Pondspice	SR-T	Yes
Solidago verna	Spring-flowering goldenrod	SR-L	No
Dionaea muscipula	Venus flytrap	SR-L, SC	No

Kalmia cuneata	White wicky	SR-L	No
Cylindrocolea andersonii	A liverwort	W2	Yes

"C" A Candidate species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is also either rare throughout its range or disjunct in North Carolina from a main range in a different part of the country or the world.

"T" Any resident species of plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range" (GS 19B 106:202.12). (Regulations are the same as for Endangered species.)

"L" The range of the species is **limited** to North Carolina and adjacent states (endemic or near endemic). These are species, which may have 20-50 populations in North Carolina, but fewer than 50 populations rangewide. The preponderance of their distribution is in North Carolina and their fate depends largely on conservation here. Also included are some species with 20-100 populations in North Carolina, if they also have only 50-100 populations rangewide and declining.

"SC" Any species of plant in North Carolina which requires monitoring but which may be collected and sold under regulations adopted under the provisions of [the Plant Protection and Conservation Act]" (GS 19B 106:202.12). (Special Concern species that are not also listed as Endangered or Threatened may be collected from the wild and sold under specific regulations. Propagated material only of Special Concern species which are also listed as Endangered or Threatened may be traded or sold under specific regulations.)

"SR" A Significantly Rare species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is generally more common elsewhere in its range, occurring peripherally in North Carolina.

"W2" Includes species w/ questionable taxonomy, including taxa of dubious validity, and taxa under study and potentially to be named. If further study reveals that these are valid taxa, they would warrant addition to the Rare Plant List as Endangered, Threatened, Candidate, or Significantly Rare.

"W5A" Rare because of severe decline.

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APPENDIX A

Wetland Data Forms

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4269 - Date: 1/15/03
Applicant/Owner: NCDOT County: Sampson
Investigator: Eric Black, Wendee Smith State: NC

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID: 4-wet
Is the site significantly disturbed (Atypical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes	(No)	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Betula nigra	c/s	FACW[2]
2. Quercus laurifolia	c	FACW
3. Acer rubrum	c	FAC
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW and/or FAC (excluding FAC-): 3/3 = 100%

Remarks: vegetation met wetland criteria ✓

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
✓ Saturated in Upper 12 Inches
✓ Water Marks
___ Drift Lines
✓ Sediment Deposits
✓ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 2:0
___ Other (Explain in Remarks)

Remarks: hydrology met wetland criteria ✓

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4269 - Date: 1/15/03
Applicant/Owner: NCDOT County: Sampson
Investigator: Eric Black, Wendee Smith State: NC

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID: A-UP
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Lonicera japonica	V	FAC-
2. Allium sp.	h	FACU- to FAC
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW and/or FAC: (excluding FAC-): 0/100 = 0

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: ___ (in.)
Depth to Free Water in Pit: ___ (in.)
Depth to Saturated Soil: ___ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Does not meet hydrology criteria to be a wetland

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4269 - Date: 1/15/03
Applicant/Owner: NCDOT County: Sampson
Investigator: Eric Black, Wendee Smith State: NC

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: Seep
Transect ID:
Plot ID: 1-Wet (CH) [14]

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	h	FACW+
2. Scirpus sp.	h	FACW+ to OBL
3. Ludwigia sp.	h	FACW to OBL
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW and/or FAC: (excluding FAC-): 3/3 = 100%

Remarks: vegetation met wetland criteria ✓

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: 0 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
✓ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
✓ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
✓ FAC-Neutral Test 3:0
___ Other (Explain in Remarks)

Remarks: hydrology met wetland criteria ✓

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4269 - Date: 1/15/03
Applicant/Owner: NCDOT County: Sampson
Investigator: Eric Black, Wendee Smith State: NC

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID: Seep CH-UP
Transect ID:
Plot ID: 14

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Liquidambar styraciflua	S	FAC+
2. Rubus sp.	S	
3. Juncus effusus	h	FACW+
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW and/or FAC: (excluding FAC-): 2/2 = 100%

Remarks: Vegetation met wetland criteria

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4269 -	Date: 1/15/03
Applicant/Owner: NCDOT	County: Sampson
Investigator: Eric Black, Wendee Smith	State: NC
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (Atypical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: C-wet Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	h	FACW+
2. Scirpus sp.	h	FACW+ to OBL
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW and/or FAC: (excluding FAC-): 2/2 = 100%

Remarks: Vegetation met wetland criteria

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: W/in 12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ✓ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ✓ FAC-Neutral Test 2:0
- ___ Other (Explain in Remarks)

Remarks: hydrology met wetland criteria

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4269 -	Date: 1/15/03
Applicant/Owner: NCDOT	County: Sampson
Investigator: Eric Black, Wendee Smith	State: NC
Do Normal Circumstances exist on the site? Yes (No)	Community ID: C1-UP
Is the site significantly disturbed (Atypical Situation)? (Yes) No	Transect ID:
Is the area a potential Problem Area? Yes No	Plot ID:
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Rubus sp.	h/s		9.		
2. Carex sp.	h		10.		
3. Bacharis hamilifolia	S	FAC	11.		
4. Quercus nigra	S	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW and/or FAC (excluding FAC-): 2/2 = 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: — (in.)

Depth to Saturated Soil: 7/2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

APPENDIX B

Wetland Rating Worksheets

WETLAND RATING WORKSHEET: Fourth Version

(WA)

Project Name B-4269 Nearest Road SR 1214
County Sampson Wetland Area _____ acres Wetland Width _____ feet
Name of evaluator Wendee Smith Date 1/15/03

Wetland Location

___ on pond or lake
✓ on perennial stream
___ on intermittent stream
___ within interstream divide
___ other _____

Soil series Johnston loam

___ predominantly organic - humus, muck, or peat
✓ predominantly mineral - non-sandy
___ predominantly sandy

Hydraulic factors

___ steep topography
___ ditched or channelized
✓ total wetland width ≥100 feet

Adjacent land use
(within 1/2 mile upstream, upslope, or radius)

✓ forested/natural vegetation 75 %
✓ agriculture, urban/suburban 20 %
✓ impervious surface 5 %

Dominant vegetation

(1) Betula nigra
(2) Quercus laurifolia
(3) Acer rubrum

Flooding and wetness

___ semipermanently to permanently flooded or inundated
✓ seasonally flooded or inundated
___ intermittanly flooded or temporary surface water
___ no evidence of flooding or surface water

Wetland type (select one)*

✓ Bottomland hardwood forest
___ Headwater forest
___ Swamp forest
___ Wet flat
___ Pocosin
___ Bog forest
___ Pine savanna
___ Freshwater marsh
___ Bog/fen
___ Ephemeral wetland
___ Carolina Bay
___ Other _____

*the rating system cannot be applied to salt or brackish marshes or stream channels

		weight		
R	Water storage	2	x 4.00 =	8
A	Bank/Shoreline stabilization	1	x 4.00 =	4
T	Pollutant removal	3 *	x 5.00 =	15
I	Wildlife habitat	5	x 2.00 =	10
N	Aquatic life value	4	x 4.00 =	16
G	Recreation/Education	1	x 1.00 =	1

Wetland Rating: 54

*Add 1 point if in sensitive watershed and >10% nonpoint disturbance within 1/2 mile upstream, upslope, or radius

WETLAND RATING WORKSHEET: Fourth Version

WC

Project Name B-4269 Nearest Road SR 1214
County Sampson Wetland Area _____ acres Wetland Width ≥100 feet
Name of evaluator Wendee Smith Date 1/15/03

Wetland Location

___ on pond or lake
✓ on perennial stream
___ on intermittent stream
___ within interstream divide
___ other _____

Soil series Blanton/Bibb-Johnston

___ predominantly organic - humus, muck, or peat
✓ predominantly mineral - non-sandy
___ predominantly sandy

Hydraulic factors

___ steep topography
___ ditched or channelized
✓ total wetland width ≥100 feet

Adjacent land use
(within 1/2 mile upstream, upslope, or radius)

✓ forested/natural vegetation 75 %
✓ agriculture, urban/suburban 20 %
✓ impervious surface 5 %

Dominant vegetation

(1) Juncus effusus
(2) Scirpus sp.
(3) _____

Flooding and wetness

___ semipermanently to permanently flooded or inundated
___ seasonally flooded or inundated
✓ intermittanly flooded or temporary surface water
___ no evidence of flooding or surface water

Wetland type (select one)*

___ Bottomland hardwood forest
✓ Headwater forest (cutover)
___ Swamp forest
___ Wet flat
___ Pocosin
___ Bog forest
___ Pine savanna
___ Freshwater marsh
___ Bog/fen
___ Ephemeral wetland
___ Carolina Bay
___ Other _____

*the rating system cannot be applied to salt or brackish marshes or stream channels

			weight		
R	Water storage	1	x 4.00 =	4	Wetland Rating
A	Bank/Shoreline stabilization	1	x 4.00 =	4	
T	Pollutant removal	2*	x 5.00 =	10	29
I	Wildlife habitat	1	x 2.00 =	2	
N	Aquatic life value	2	x 4.00 =	8	
G	Recreation/Education	1	x 1.00 =	1	

*Add 1 point if in sensitive watershed and >10% nonpoint disturbance within 1/2 mile upstream, upslope, or radius

WETLAND RATING WORKSHEET: Fourth Version (CH)

Project Name B-4269 Nearest Road SR 1214
County Sampson Wetland Area _____ acres Wetland Width <100 feet
Name of evaluator Wendee Smith Date 1/15/03

Wetland Location

___ on pond or lake
___ on perennial stream
___ on intermittent stream
___ within interstream divide
✓ other hillside slope

Soil series Blanton/Bibb-Johnston

___ predominantly organic - humus, muck, or peat
✓ predominantly mineral - non-sandy
___ predominantly sandy

Hydraulic factors

___ steep topography
✓ ditched or channelized
___ total wetland width ≥100 feet

Adjacent land use
(within 1/2 mile upstream, upslope, or radius)

✓ forested/natural vegetation 75 %
✓ agriculture, urban/suburban 20 %
✓ impervious surface 5 %

Dominant vegetation

(1) Juncus effusus
(2) Scirpus sp.
(3) Ludwigia sp.

Flooding and wetness

___ semipermanently to permanently flooded or inundated
___ seasonally flooded or inundated
✓ intermittanly flooded or temporary surface water
___ no evidence of flooding or surface water

Wetland type (select one)*

___ Bottomland hardwood forest
___ Headwater forest
___ Swamp forest
___ Wet flat
___ Pocosin
___ Bog forest
___ Pine savanna
___ Freshwater marsh
___ Bog/fen
___ Ephemeral wetland
___ Carolina Bay
✓ Other seep

*the rating system cannot be applied to salt or brackish marshes or stream channels

		weight		
R	Water storage	1	x 4.00 =	4
A	Bank/Shoreline stabilization	0	x 4.00 =	0
T	Pollutant removal	1	* x 5.00 =	5
I	Wildlife habitat	1	x 2.00 =	2
N	Aquatic life value	0	x 4.00 =	0
G	Recreation/Education	1	x 1.00 =	1

Wetland Rating: 12

*Add 1 point if in sensitive watershed and >10% nonpoint disturbance within 1/2 mile upstream, upslope, or radius

APPENDIX C

Stream Rating Worksheets

NCDWQ Stream Classification Form

Project Name: B-4269 River Basin: Cape Fear County: Sampson Evaluator: Eric Black, Wendee Smith

DWQ Project Number: Nearest Named Stream: Little Coharie Creek Latitude: 34°53'N Signature: Wendee Smith

Date: 1/14/2003 USGS QUAD: Bonnetsville, NC Longitude: 78°26'W Location/Directions: SR 1214 over Little Coharie Creek

*PLEASE NOTE: ***If evaluator and landowner agree that the feature is a man-made ditch, then use of this form is not necessary. Also, if in the best professional judgement of the evaluator, the feature is a man-made ditch and not a modified natural stream—this rating system should not be used****

Primary Field Indicators: *(Circle One Number Per Line)*

I. Geomorphology	Absent	Weak	Moderate	Strong
1) Is There A Riffle-Pool Sequence?	0	1	(2)	3
2) Is The USDA Texture In Streambed Different From Surrounding Terrain?	0	1	2	(3)
3) Are Natural Levees Present?	(0)	1	2	3
4) Is The Channel Sinuous?	0	1	(2)	3
5) Is There An Active (Or Relic) Floodplain Present?	(0)	1	2	3
6) Is The Channel Braided?	(0)	1	2	3
7) Are Recent Alluvial Deposits Present?	(0)	1	2	3
8) Is There A Bankfull Bench Present?	0	1	(2)	3
9) Is A Continuous Bed & Bank Present?	0	1	2	(3)
*(*NOTE: If Bed & Bank Caused By Ditching And WITHOUT Sinuosity Then Score=0*)*				
10) Is A 2nd Order Or Greater Channel (As Indicated On Topo Map *And/Or* In Field) Present?	*Yes*=3		*No*=0	

PRIMARY GEOMORPHOLOGY INDICATOR POINTS: 12

II. Hydrology	Absent	Weak	Moderate	Strong
1) Is There A Groundwater Flow/Discharge Present?	0	1	2	(3)

PRIMARY HYDROLOGY INDICATOR POINTS: 3

III. Biology	Absent	Weak	Moderate	Strong
1) Are Fibrous Roots Present In Streambed?	(3)	2	1	0
2) Are Rooted Plants Present In Streambed?	(3)	2	1	0
3) Is Periphyton Present?	(0)	1	2	3
4) Are Bivalves Present?	(0)	1	2	3

PRIMARY BIOLOGY INDICATOR POINTS: 6

Secondary Field Indicators: *(Circle One Number Per Line)*

I. Geomorphology	Absent	Weak	Moderate	Strong
1) Is There A Head Cut Present In Channel?	0	.5	(1)	1.5
2) Is There A Grade Control Point In Channel?	(0)	.5	1	1.5
3) Does Topography Indicate A Natural Drainage Way?	0	.5	1	(1.5)

SECONDARY GEOMORPHOLOGY INDICATOR POINTS: 2.5

II. Hydrology	Absent	Weak	Moderate	Strong
1) Is This Year's (Or Last's) Leaflitter Present In Streambed?	(1.5)	1	.5	0
2) Is Sediment On Plants (Or Debris) Present?	(0)	.5	1	1.5
3) Are Wrack Lines Present?	0	(.5)	1	1.5
4) Is Water In Channel *And* >48 Hrs. Since Last *Known* Rain? *(*NOTE: If Ditch Indicated In #9 Above Skip This Step And #5 Below*)*	0	.5	1	(1.5)
5) Is There Water In Channel During Dry Conditions *Or* In Growing Season)?	0	.5	1	(1.5)
6) Are Hydric Soils Present In Sides Of Channel (Or In Headcut)?		*Yes*=1.5	*No*=0	

SECONDARY HYDROLOGY INDICATOR POINTS: 6.5

III. Biology	Absent	Weak	Moderate	Strong
1) Are Fish Present?	(0)	.5	1	1.5
2) Are Amphibians Present?	(0)	.5	1	1.5
3) Are AquaticTurtles Present?	(0)	.5	1	1.5
4) Are Crayfish Present?	(0)	.5	1	1.5
5) Are Macrobenthos Present?	0	.5	(1)	1.5
6) Are Iron Oxidizing Bacteria/Fungus Present?	(0)	.5	1	1.5
7) Is Filamentous Algae Present?	0	.5	(1)	(1.5)

8) Are Wetland Plants In Streambed? *(* NOTE: If Total Absence Of All Plants In Streambed As Noted Above Skip This Step UNLESS SAV Present*)*	SAV	Mostly OBL	Mostly FACW	Mostly FAC	Mostly FACU	Mostly UPL
	2	1	.75	.5	0	0

SECONDARY BIOLOGY INDICATOR POINTS: 2.5

TOTAL POINTS (Primary + Secondary)= 32.5 *(If Greater Than Or Equal To 19 Points The Stream Is At Least Intermittent)*

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-4269**
State Project No.	**8.2281601**
W.B.S. No.	**33610.1.1**
Federal Project No.	**BRZ-1214(4)**

A. Project Description:

The purpose of this project is to replace Sampson County Bridge No. 90 on SR 1214 over Little Coharie Creek. The replacement structure will be a bridge 160 feet long with 30 feet clear deck width. The cross section will include two 12-foot lanes and 3-foot offsets. The roadway grade of the new structure will be approximately the same as the existing grade.

The approach roadway will extend 360 feet from the southwest end of the new bridge and 345 feet from the northeast end of the new bridge. The approaches will be widened to include a 24-foot pavement width providing two 12-foot travel lanes. Eight-foot turf shoulders will be provided on each side (11-foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route with a 60 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1).

B. Purpose and Need:

Bridge No. 90 includes an eight-span superstructure composed of a reinforced concrete deck on timber joists. The substructure includes timber caps on timber piles.

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 17.6 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a structural appraisal of 2 out of 9 according to Federal Highway Administration (FHWA) standards and is therefore eligible for FHWA's Highway Bridge Replacement and Rehabilitation Program.

Timber sub-structures typically do not last beyond 30 to 40 years of age due to the natural deterioration rates of wood. Rehabilitation of timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 90 is approaching the end of its useful life.

C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).

   a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
   b. Widening roadway and shoulders without adding through lanes
   c. Modernizing gore treatments
   d. Constructing lane improvements (merge, auxiliary, and turn lanes)
   e. Adding shoulder drains
   f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
   g. Providing driveway pipes
   h. Performing minor bridge widening (less than one through lane)
   i. Slide Stabilization
   j. Structural BMP's for water quality improvement

2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.

   a. Installing ramp metering devices
   b. Installing lights
   c. Adding or upgrading guardrail
   d. Installing safety barriers including Jersey type barriers and pier protection
   e. Installing or replacing impact attenuators
   f. Upgrading medians including adding or upgrading median barriers
   g. Improving intersections including relocation and/or realignment
   h. Making minor roadway realignment
   i. Channelizing traffic
   j. Performing clear zone safety improvements including removing hazards and flattening slopes
   k. Implementing traffic aid systems, signals, and motorist aid
   l. Installing bridge safety hardware including bridge rail retrofit

3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

   a. Rehabilitating, reconstructing, or replacing bridge approach slabs
   b. Rehabilitating or replacing bridge decks
   c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
   (d.) Replacing a bridge (structure and/or fill)

4. Transportation corridor fringe parking facilities.

5. Construction of new truck weigh stations or rest areas.

6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.

7. Approvals for changes in access control.

8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.

9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.

10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.

11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.

12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

13. Acquisition and construction of wetland, stream and endangered species mitigation sites.

14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

D. Special Project Information:

Estimated Costs:

Total Construction	$ 725,000
Right of Way	$ 34,000
Total	$ 759,000

Estimated Traffic:

Year 2002 – 1430 vpd	Year 2025 – 2800 vpd
TTST - 2%	Dual – 4%

Design Exceptions: There are no anticipated design exceptions for this project.

Bridge Demolition: Most timber and steel structures (as is Bridge No. 90) can be removed using standard practices without any resulting fill in the stream.

Offsite Detour: NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would include SR 1212, SR 1240, and SR 1217. The detour for the average road user would result in 12 minutes additional travel time (7.0 miles additional travel). Up to a twelve-month duration of construction is expected on this project. The delay falls within a range where consideration of traffic maintenance onsite begins to be weighed against factors such as environmental impacts and costs. In this particular case, maintaining traffic onsite would result in impacts to wetlands. Sampson County Emergency Services has written that temporary road closure does not create an unworkable situation, however it may delay response time. Sampson County School Transportation have indicated that an offsite detour would add around one hour per day for some of the students riding the bus, but did not indicate that it was unacceptable. The Division recommends road closure with an off-site detour. In view of the cost savings, the lower environmental impacts and no major opposition, an offsite detour is recommended. SR 1240, a leg of the detour, is subject to flooding and the bridge is posted at 20 tons for single vehicles and 29 tons for trucks. This bridge, B-4270 has just been awarded for construction and has a floating availability date but should be completed prior to letting B-4269. If flooding occurs, traffic could continue on SR 1216 to NC 24. SR 1217 has a curve that is posted for 25 MPH.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

ECOLOGICAL	YES	NO
(1) Will the project have a substantial impact on any Unique or important natural resource?		X

(2)	Does the project involve habitat where federally Listed endangered or threatened species may occur?		X
(3)	Will the project affect anadromous fish?		X*
(4)	If the project involves wetlands, is the amount of Permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	X	
(5)	Will the project require the use of U. S. Forest Service lands?		X
(6)	Will the quality of adjacent water resources be adversely impacted by proposed construction activities?		X
(7)	Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?		X
(8)	Will the project require fill in waters of the United States in any of the designated mountain trout counties?		X
(9)	Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?		X

PERMITS AND COORDINATION		YES	NO
(10)	If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?		X
(11)	Does the project involve Coastal Barrier Resources Act resources?		X
(12)	Will a U. S. Coast Guard permit be required?		X
(13)	Will the project result in the modification of any existing regulatory floodway?		X
(14)	Will the project require any stream relocations or channel changes?		X

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES		YES	NO
(15)	Will the project induce substantial impacts to planned growth or land use for the area?		X

(16)	Will the project require the relocation of any family or business?		X
(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?		X
(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	X	
(19)	Will the project involve any changes in access control?		X
(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?		X
(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?		X
(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	X	
(23)	Is the project anticipated to cause an increase in traffic volumes?		X
(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	X	
(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	X	
(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?		X
(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	X	
(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?		X*
(29)	Will the project affect any archaeological remains which are important to history or pre-history?		X
(30)	Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)?		X

(31)	Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended?		X
(32)	Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers?		X

F. Additional Documentation Required for Unfavorable Responses in Part E

***Response to Question 3:** National Marine Fisheries Service indicated that the river basin likely supports NMFS trust anadromous fishery resources. The biologists stated anadromous fish were not present, but adhere to the moratorium. After discussing the moratorium with Ron Sechler of the National Marine Fisheries Service, it has been decided to eliminate the moratorium from the project commitments.

***Response to Question 28:** A historic structure is located in the vicinity but is not affected by the project proposed. If the project plans change from the initial scoping of this project, a survey will be required.

G. CE Approval

TIP Project No.	**B-4269**
State Project No.	**8.2281601**
W.B.S. No.	**33610.1.1**
Federal Project No.	**BRZ-1214(4)**

Project Description:

The purpose of this project is to replace Sampson County Bridge No. 90 on SR 1214 over Little Coharie Creek. The replacement structure will be a bridge 160 feet long with 30 feet clear deck width. The cross section will include two 12-foot lanes and 3-foot offsets. The roadway grade of the new structure will be approximately the same as the existing grade.

The approach roadway will extend 360 feet from the southwest end of the new bridge and 345 feet from the northeast end of the new bridge. The approaches will be widened to include a 24-foot pavement width providing two 12-foot travel lanes. Eight-foot turf shoulders will be provided on each side (11-foot shoulders where guardrail is included). The roadway will be designed as a Rural Local Route with a 60 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1).

Categorical Exclusion Action Classification: (Check one)

__X__ TYPE II(A)
_____ TYPE II(B)

Approved:

3-16-05
Date

Project Planning Unit Head
Project Development & Environmental Analysis Branch

3/16/05
Date

Project Planning Engineer
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

_____
Date

N/A
John F. Sullivan, III, Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS:

Sampson County
Bridge No. 90 on SR 1214
Over Little Coharie Creek
Federal Aid Project No. BRZ-1214 (4)
State Project No. 8.2281601
W.B.S. No. 33610.1.1
T.I.P. No. B-4269

All Design Groups/Division Construction Engineer/State Contract Officer – Request for moratorium; school buses

The North Carolina Wildlife Resources Commission (NCWRC) requests a sunfish moratorium for this portion of Little Coharie Creek from April 1 to June 30. Currently the let date for this project is April 2007. Construction could begin as early as June 1st. Due to Sampson County School Transportation having concerns regarding the construction period during the school year, construction should take place as much as possible during the summer months. For these reasons and since statute or regulations do not require the moratorium, it is not practical to adhere to the entire moratorium. The State Contract Officer should coordinate with Project Development and Environmental Analysis before writing language in the contract regarding this commitment.

All Design Groups/Division Construction Engineer – Temporary fills and undercutting

The United States Army Corps of Engineers has indicated that project commitments should include the removal of all temporary fills from waters and wetland. If undercutting is necessary for temporary detours, the undercut material should be stockpiled on an upland site and later used to restore the site.

All Design Groups/Division Construction Engineer – Considering accelerated construction

Sampson County Emergency Management Services and Sampson County School Transportation have expressed concerns about the length and time of the detour route. During the design, contract and construction phase, consideration should be taken in accelerating the project.

Project Development and Environmental Analysis – Historic Structure

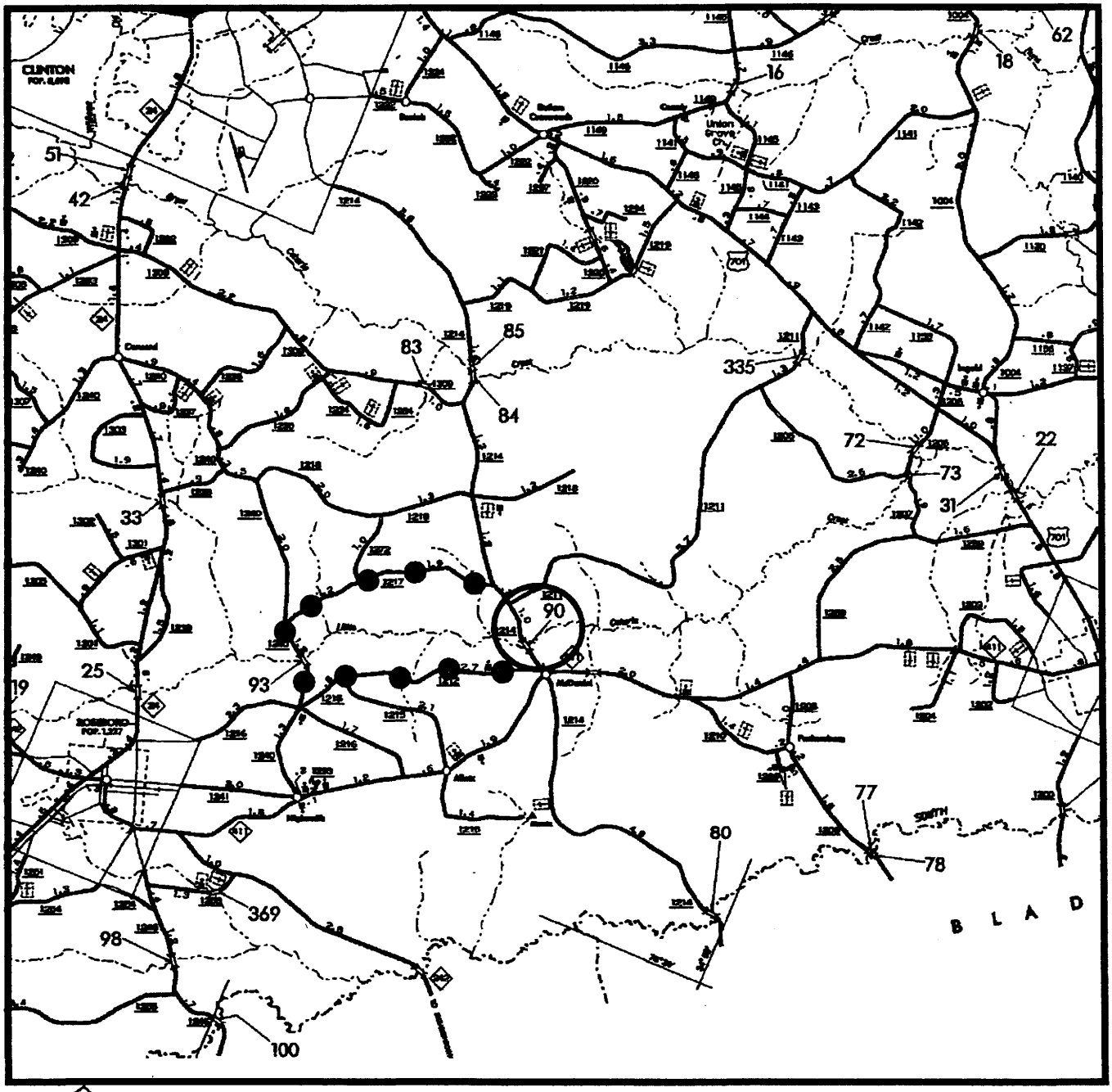
The North Carolina Department of Cultural Resources State Historic Preservation Office is aware of a historic structure located in the vicinity but not affecting the proposed project. If the project plans change from the initial scoping of this project, a survey will be required.

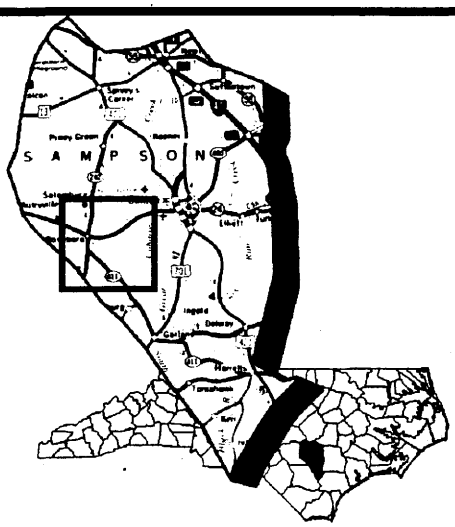
Division Construction Engineer – Detour Route

SR 1240, a leg of the detour, is subject to flooding and the bridge is posted at 20/29. This bridge, B-4270 has just been awarded and has a floating availability date. The bridge may not be completed until as late as April 2006. If flooding occurs, traffic could continue on SR 1216 to NC 24. SR 1217 has a curve that is posted for 25 MPH.

Right of Way of Way Branch – Private boat ramp

A private boat ramp is located in the southwest quadrant near the bridge. During Right of Way, the boat ramp and the driveway will be addressed.





Proposed Detour Route

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

SAMPSON COUNTY
REPLACE BRIDGE NO. 90 ON SR 1214
OVER LITTLE COHARIE CREEK
B-4269

Figure 1

Johnson
Engineer

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

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

Division of Historical Resources

CITIZENS PARTICIPATION
RECEIVED
JAN 28 2004

RECEIVED
JAN 27 2004
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS BRANCH

January 21, 2004

MEMORANDUM

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

FROM: David Brook David Brook by BJB

SUBJECT: Replace Bridge No. 90 on SR 1214, B-4269, Sampson County, ER03-0970

Thank you for your memorandum of January 7, 2004, concerning the above project.

We checked our files and find that on December 16, 2003, we signed a Properties Not Eligible for the National Register of Historic Places concurrence form for Bridge No. 90 on SR 1214.

Therefore, we have no further comment on this undertaking as proposed.

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, 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.

cc: Mary Pope Furr, NCDOT

Federal Aid # BRZ-1214(4) *TIP#* B-4269 *County:* Sampson

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

Project Description: **Replace Bridge No. 90 on SR 1214**

On Dec. 16, 2003 representatives of the

- ☒ North Carolina Department of Transportation (NCDOT)
- ☒ Federal Highway Administration (FHWA)
- ☒ North Carolina State Historic Preservation Office (HPO)
- ☐ Other

Reviewed the subject project at

- ☐ Scoping meeting
- ☒ Historic architectural resources photograph review session/consultation
- ☐ Other

All parties present agreed

- ☐ There are no properties over fifty years old within the project's area of potential effects.
- ☒ There are no properties less than fifty years old which are considered to meet Criteria Consideration G within the project's area of potential effects.
- ☒ There are properties over fifty years old within the project's Area of Potential Effects (APE), but based on the historical information available and the photographs of each property, the properties identified as Bridge are considered not eligible for the National Register and no further evaluation of them is necessary.
- ☐ There are no National Register-listed or Study Listed properties within the project's area of potential effects.
  NOTE: Owen House (NR) DESTROYED
  McDaniels School (SL) not in Area of Potential Effects for B-4269
- ☒ All properties greater than 50 years of age located in the APE have been considered at this consultation, and based upon the above concurrence, all compliance for historic architecture with Section 106 of the National Historic Preservation Act and GS 121-12(a) has been completed for this project.
- ☒ There are no historic properties affected by this project. *(Attach any notes or documents as needed)*

Signed:

R Shuman — Dec. 16, 2003
Representative, NCDOT — Date

Richard C Denison — 12/16/03
FHWA, for the Division Administrator, or other Federal Agency — Date

Representative, HPO — 12/16/03
Date

David Brook — 12-16-03
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
David L. S. Brook, Administrator

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

Division of Historical Resources

October 29, 2003

MEMORANDUM

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

FROM: David Brook

SUBJECT: Replacement of Bridge No. 90 on SR 1214 over Little Coharie Creek, B-4269, Sampson County, ER03-0970

On September 4, 2003, Sarah McBride, our preservation specialist for transportation projects, met with the North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. We reported on our available information on historic architectural and archaeological surveys and resources along with our recommendations. DOT provided project area photographs and aerial photographs at the meeting.

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

In terms of historic architectural resources, we are aware of a historic structure located near the area of potential effect. **If the project plans change from the initial scoping of this project, a survey will be required.**

There are no recorded archaeological sites within the proposed project area. Based on our present knowledge of the area, it is unlikely that any archaeological resources which may be eligible for listing in the National Register of Historic Places will be affected by the project construction. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

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

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

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

cc: Mary Pope Furr, NCDOT

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Habitat Conservation Division
101 Pivers Island Road
Beaufort, North Carolina 28516-9722

July 17, 2003

B-4269

William T. Goodwin, Jr., PE, Unit Head
Bridge Replacement Unit
Project Development and Environmental Analysis Branch
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Goodwin:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed the Natural Systems Technical Reports (NSTR) for 29 bridge replacement projects identified in your April 10, 2003, letter. These projects are scheduled for construction in fiscal year 2006. NOAA Fisheries has identified the following issues and concerns as being relevant to the proposed bridge replacement project:

- Permanent and temporary wetland losses
- Offsite versus onsite detours
- Time of year restrictions on instream work
- Treatment of wetland restoration areas
- Existing bridge demolition and removal
- Lengthening existing bridges as a wetland restoration measure
- Replacing bridges with culverts

The NMFS recommends that these issues should be fully addressed with regard to project related impacts and mitigation.

Section 1. Yellow Light Projects (YLPs) - YLPs are those with issues for which there is an exist coordination mechanism or process. The bridge replacement projects listed below are located in areas that do not support NMFS trust fishery resources. Otherwise, they have normal environmental concerns and, therefore, are identified as YLPs.

Bridge Number	**Project Number**	**Location**
Bridge No. 46	B - 4105	Duplin County
Bridge No. 188	B - 4108	Duplin County
Bridge No. 72	B - 4135	Halifax County
Bridge No. 52	B - 4164	Johnston County

Bridge No. 13	B - 4168	Jones County
Bridge No. 16	B - 4185	Martin County
Bridge No. 36	B - 4188	Martin County
Bridge No. 65	B - 4233	Pitt County
Bridge No. 25	B - 4237	Pitt County
Bridge No. 04	B - 4307	Warren County
Bridge No. 107	B - 4308	Warren County
Bridge No. 38	B - 4309	Warren County

Section II. Red Light Projects (RLPs) - Red Light Projects are those that include extraordinary resources or concerns that will require close coordination to complete successfully. These projects involve high quality wetlands, extremely valuable or rare endangered species habitats, or other limited or unusual resources.

The bridge replacement projects listed below are located in river basins which are likely to support NMFS trust anadromous fishery resources including the threaten shortnose sturgeon and are, therefore, classified as RLPs.

Roanoke River Basin

Bridge Number	**Project Number**	County Location
Bridge No. 11	B - 4027	Bertie
Bridge No. 18	B - 4313	Washington

Cape Fear River Basin

Bridge Number	**Project Number**	**County Location**
Bridge No. 98	B - 4271	Sampson
Bridge No. 90	B - 4269	Sampson
Bridge No. 63	B - 4224	Duplin
Bridge No. 46	B - 4138	Harnett

Waccamaw and Lumber River Basins

Bridge Number	**Project Number**	**County Location**
Bridge No. 20	B - 4079	Columbus
Bridge No. 94	B - 4251	Robeson

Likewise, the bridge replacement projects listed below are located in river basins which are likely to support anadromous fishery resource and are, therefore, classified as RLPs. However, the occurrence of the threatened shortnose sturgeon in these river basins is unknown.

Neuse River Basin

Bridge Number	Project Number	County Location
Bridge No. 212	B - 4085	Craven
Bridge No. 74	B - 4088	Craven
Bridge No. 128	B - 4174	Lenoir
Bridge No. 102	B - 4231	Pitt
Bridge No. 09	B - 4232	Pitt
Bridge No. 121	B - 4236	Pitt
Bridge No. 21	B - 4319	Wayne

Tar-Pamlico River Basin

Bridge Number	Project Number	County Location
Bridge No. 84	B - 4021	Beaufort
Bridge No. 39	B - 4025	Beaufort
Bridge No. 219	B - 4238	Pitt

Perquimans River Basin

Bridge Number	Project Number	County Location
Bridge No. 59	B - 4228	Perquimans

Pasquotank River Basin

Bridge Number	Project Number	County Location
Bridge No. 62	B - 4226	Perquimans

Chowan River Basin

Bridge Number	Project Number	County Location
Bridge No. 13	B - 4073	Chowan

Spawning and nursery habitat for anadromous fishes may be adversely impacted by RLPs unless measures to avoid and minimize impacts to waters and wetlands are included in the project plans. Accordingly, the NMFS may recommend against Department of the Army authorization of these

projects under Nationwide Permit 23 (Categorical Exclusion) unless the issues identified above are addressed and following recommendations are incorporated:

1. Following impact avoidance and minimization, unavoidable wetland losses shall be offset through implementation of a compensatory mitigation plan that has been approved by the Corps of Engineers and in consultation with the NMFS.

2. All construction related activities in waters and associated wetlands shall utilize techniques that avoid and minimize adverse impacts to those systems and their associated flora and fauna.

3. In order to protect anadromous fishery resources that may utilize the project areas as spawning or nursery habitat, work in the waters of the creek shall be restricted to the period October1 to February 15 of any year unless prior approval is granted by the Corps of Engineers following consultation with the NMFS.

If these projects are processed under Nationwide 23, they will be carefully reviewed for incorporation of the recommendations listed above and we may elect to provide additional comments and recommendations that are intended to avoid, minimize, and offset impacts to living marine resources. Also, based the limited information contained in the Natural Resource Technical Reports, it is unlikely that Essential Fish Habitat for Federally managed species occurs at these bridge replacement sites. Our recommendations, if any, will be sent to the Wilmington District, U. S. Army Corps of Engineers, and a copy will be forwarded to you.

Finally, the shortnose sturgeon, a Federally protected species under the purview of the NMFS is found in the Cape Fear and Roanoke Rivers. These comments do not satisfy Federal agency consultation responsibilities under Section 7 of the Endangered Species Act of 1973, as amended. If any activity "may effect" listed species and habitats under NMFS purview, consultation should be initiated with our Protected Resources Division at 9721 Executive Center Drive North, St. Petersburg, Florida 33702.

We appreciate the opportunity for early participation in the review of these bridge replacement projects. If I can be of further assistance, please contact me at the letterhead address or at 252-728-5090.

Sincerely,

Ronald S. Sechler

Ronald S. Sechler
Fishery Biologist

cc:
COE, Wilmington, NC
USFWS, Raleigh, NC
NCDMF, Raleigh, NC