STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 5, 2004

US Army Corps of Engineers
Regulatory Field Office
151 Patton Ave. Room 208
Asheville, NC 28801-5006

ATTENTION: Mr. Steve Lund
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit and Riparian Buffer Authorization Application** for the Replacement of Bridge No. 46 over Catawba River on SR 1223, Burke County, Federal Aid Project No. BRZ-1223(8), State Project No. 8.2852001, TIP B-3419, Division 13.

Please find enclosed three copies of the project planning report for the above referenced project. Bridge No. 46 will be replaced north of the current bridge with a structure approximately 180 feet (54.8m) in length with a recommended 24 foot (7.2 m) clear roadway width. The bridge will completely span the Catawba River. No jurisdictional wetlands will be impacted by the construction of the bridge. There will also be no surface water impacts or temporary fill associated with the project. During construction, traffic will be maintained by an offsite detour using SR 1223, SR 1233, SR 1228, and SR 1230.

Bridge Demolition

Bridge No. 46 is composed of steel planks on salvaged I-beams. The substructure consists of reinforced concrete abutments and mass piers. The existing structure is 81.7 feet (20.14 m) long with an 18.3 foot (5.6 m) clear roadway width. The bridge deck is 17 feet (5.2 m) above the Catawba River. Due to the structural components of the bridge, the potential temporary fill expected to be dropped into the "Waters of the United States" is minimal.

As noted in the project's CE document, NCDOT will observe an in-stream and land disturbance moratorium within 25 feet of the stream construction moratorium from October 15 to April 15 to avoid impacts to trout reproduction.

Buffer Impacts

This project is located on the mainstem of the Catawba River Basin, therefore the regulations pertaining to the buffer rules apply.

The low cord of the bridge deck is expected to be 12 feet (3.6 m) or more above the natural ground. In compliance with the Catawba Buffer Rules, the stormwater from the deck drains will be diffused flow into the buffer area. This project will have 4,791.6 square feet of allowable impact in zone 1 and 5,357.88 square feet of allowable impact in zone 2, resulting in 10,149.48 square feet of total allowable impact. By removing the old structure and approaches, 1,785.96 square feet of buffer area will be replaced in zone 1 and 1,001.88 square feet will be replaced in zone 2.

According to the buffer rules, bridges are allowable. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Sub-Item (8)(a) of this Rule. These uses require written authorization from the Division or the local government with approved riparian buffer ordinance. Therefore, NCDOT is hereby requesting written authorization for a Buffer Certification from the Division of Water Quality.

Federally Protected Species

As of January 29, 2003, the USFWS lists seven federally protected species for Burke County. Table 1 depicts these species. The previous surveys presented in the CE expired, requiring an additional survey. The project site was visited on June 17, 2003 by NCDOT biologists Michael Turchy and Chris Underwood. During these additional surveys, it was noted that potential habitat does exist for the bald eagle and dwarf flowered heartleaf. The biological conclusions should be changed to "May Affect, Not Likely to Adversely Affect. Also, dwarf flowered heartleaf was found approximately 100 feet north of the proposed right-of-way line. No specimans should be impacted with the replacement of Bridge No. 46. The remaining three protected species (bog turtle, spreading avens, mountain golden heather, and Hellar's blazing star) biological conclusion remains: "**No Effect**".

Table 1. Federally protected species for Burke County**

Common Name	Scientific Name	Status	Biological Conclusion
Bog turtle	Clemmys muhlenbergii	T(S/A)	No Effect
Bald Eagle	*Haliaeetus leucocephalus*	T	May Affect, not likely to adversely affect.
Spreading Avens	*Geum radiatum*	E	No Effect
Dwarf flowered heartleaf	*Hexastylis naniflora*	T	May Effect
Mountain golden heather	*Hudsonia montana*	T	No Effect
Small whorled pogonia	*Isotria medeoloides*	T	May Affect, not likely to adversely affect.
Hellar's blazing star	*Liatris helleri*	T	No Effect

*** Obtained from the US Department of the Interior, Fish and Wildlife Service, Threatened and Endangered Species of North Carolina, Burke County, (January 29, 2003).*
Threatened (T) denotes a taxon "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
Threatened (T(S/A)) denotes a taxon threatened due to similarity of appearance with other rare species.
Endangered (E) denotes a taxon "in danger of extinction throughout all or a significant portion of its range."

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 Permit: We anticipate 401 General Certification numbers 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.

Catawba Buffer Rules: This project is located on the mainstem of the Catawba River Basin therefore, the regulations pertaining to the buffer rules apply.

This project will have 4,791.6 square feet of allowable impact in zone 1 and 5,357.88 square feet of allowable impact in zone 2, resulting in 10,149.48 square feet of total allowable impact. By removing the old structure, 1,785.96 square feet will be replaced in zone 1 and 1,001.88 square feet will be replaced in zone 2. A Buffer Certification Application was submitted to the North Carolina Division of Water Quality (NC DWQ) on October 30, 2003. By copy of this application, NCDOT requests written authorization for a Buffer Certification from the Division of Water Quality.

We anticipate that comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers.

A copy of this permit application will be posted on the DOT website at: http://www.ncdot.org/planning/pe/naturalunit/Permit.html.

If you have any questions or need additional information, please contact Mr. Michael Turchy at (919) 715-1468.

Sincerely,

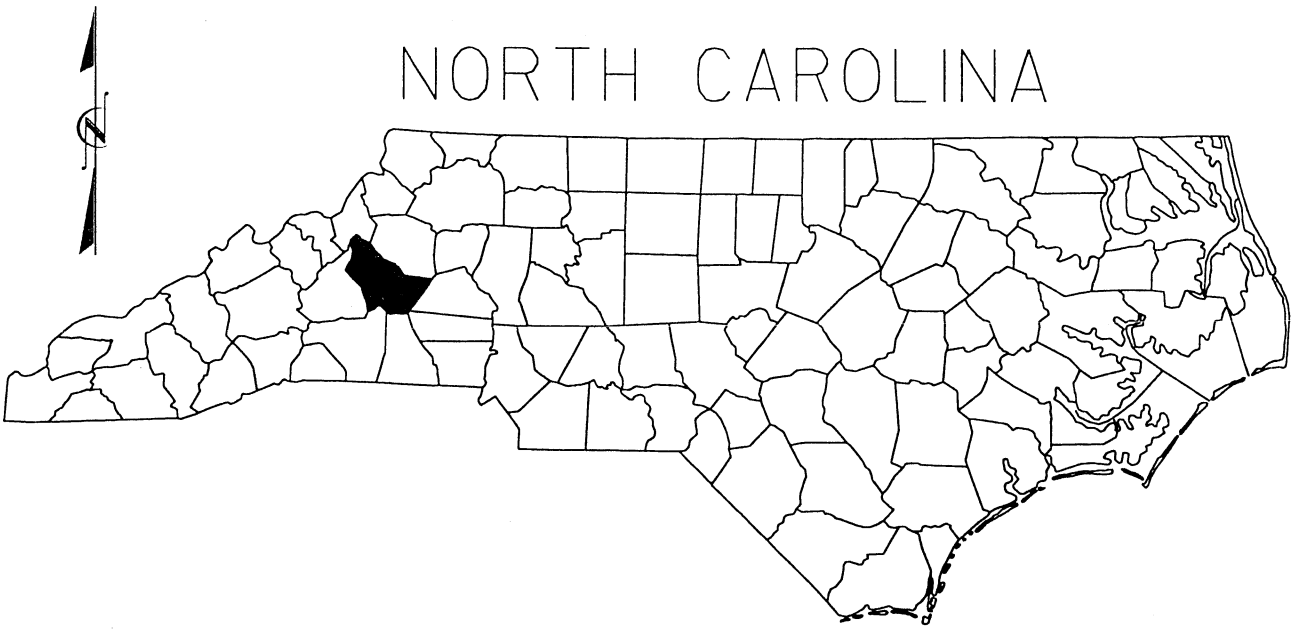
Gregory J. Thorpe, PhD., Environmental Management Director
Project Development and Environmental Analysis Branch

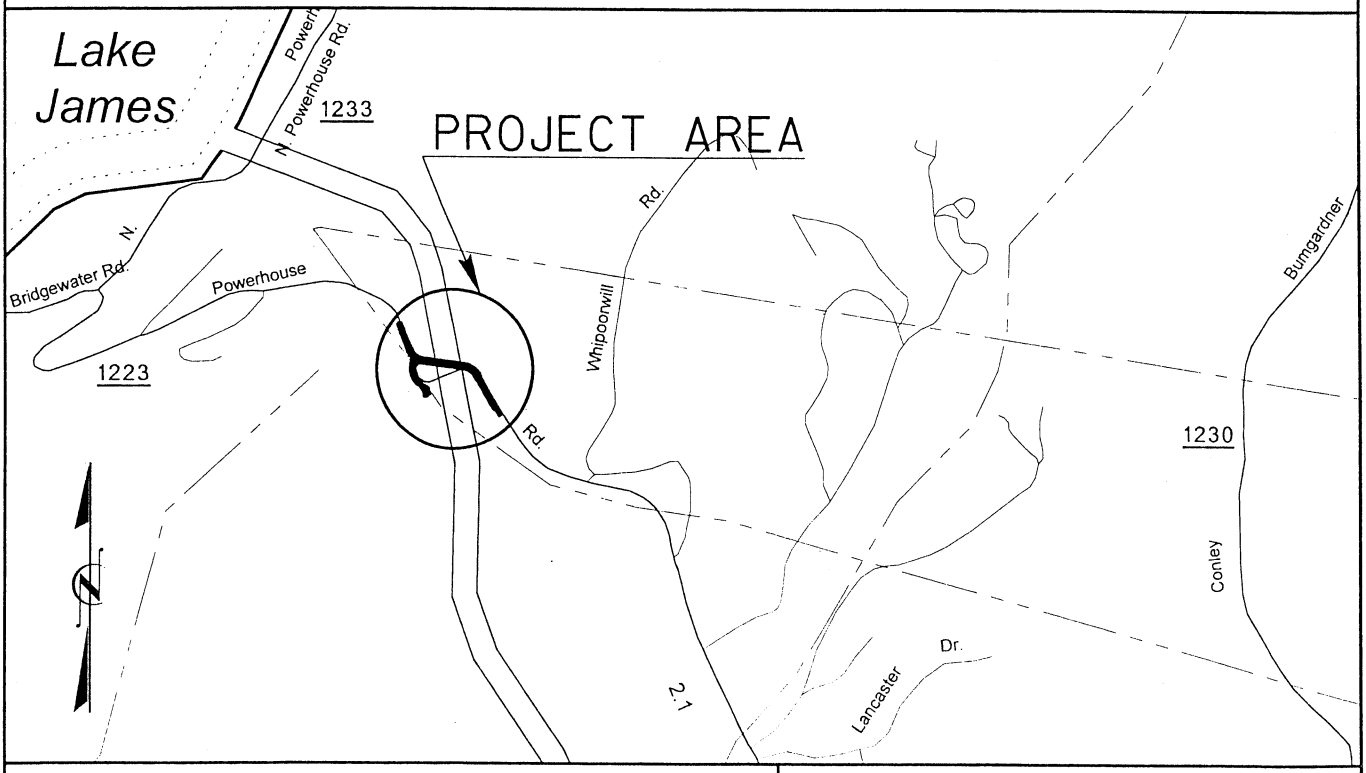
Cc:
w/attachment

Mr. John Hennessy, Division of Water Quality (2 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Greg Perfetti, P.E., Structure Design

w/o attachment

Mr. David Franklin, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, III, FHWA
Mr. J. J. Swain, Jr., P.E. (Div. 13), Division Engineer
Mr. Roger Bryan (Div. 13), DEO
Mr. John Wadsworth, Project Planning Engineer



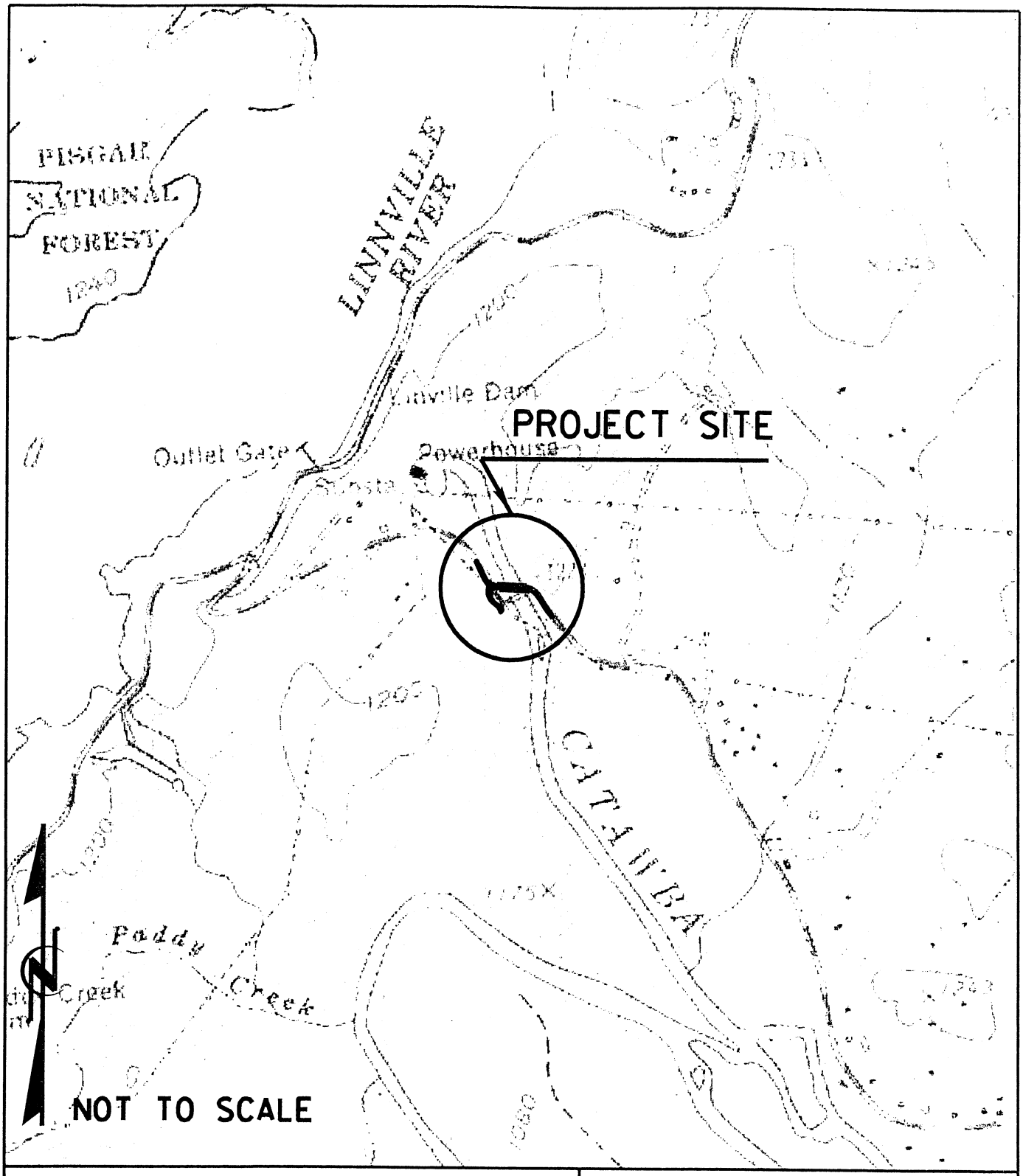


VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
BURKE COUNTY
PROJECT: 8.2852001 (B-3419)
BURKE COUNTY BRIDGE #46 ON SR 1223 (POWERHOUSE ROAD) OVER THE CATAWBA RIVER

SHEET 1 OF 8 3/19/03



CATAWBA RIVER WATER SUPPLY BUFFER

LOCATION MAP

NCDOT

DIVISION OF HIGHWAYS

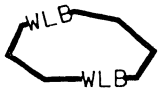
BURKE COUNTY

PROJECT: 8.2852001 (B-3419)

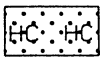
BURKE COUNTY BRIDGE #46 ON SR 1223 (POWERHOUSE ROAD) OVER THE CATAWBA RIVER

BUFFER LEGEND

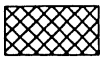
WLB — WETLAND BOUNDARY

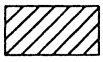


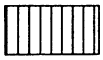
WETLAND

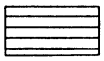


BUFFER HAND CLEARING


IMPACTS ZONE 1


IMPACTS ZONE 2


BUFFER REPLACEMENT ZONE 1


BUFFER REPLACEMENT ZONE 2

—BZ— RIPARIAN BUFFER ZONE

—BZ1— RIPARIAN BUFFER ZONE 1
30 ft (9.2m)

—BZ2— RIPARIAN BUFFER ZONE 2
20 ft (6.1m)

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

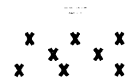
—TDE— TEMP. DRAINAGE EASEMENT

—PDE— PERMANENT DRAINAGE EASEMENT

—EAB— EXIST. ENDANGERED ANIMAL BOUNDARY

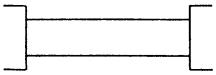
—EPB— EXIST. ENDANGERED PLANT BOUNDARY

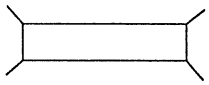
WATER SURFACE


LIVE STAKES


BOULDER

COIR FIBER ROLLS


PROPOSED BRIDGE


PROPOSED BOX CULVERT

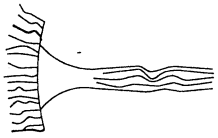

PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)


SINGLE TREE

WOODS LINE

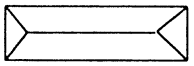
DRAINAGE INLET

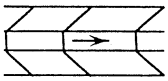

ROOTWAD


RIP RAP

ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE


PREFORMED SCOUR HOLE (PSH)


LEVEL SPREADER (LS)


GRASS SWALE

NCDOT

DIVISION OF HIGHWAYS

BURKE COUNTY

PROJECT: 8.2852001 (B-3419)

BURKE COUNTY BRIDGE #46 ON SR 1223 (POWERHOUSE ROAD) OVER THE CATAWBA RIVER

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

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WATER SURFACE

LIVE STAKES

BOULDER

COIR FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT

12"-48" PIPES

54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)

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

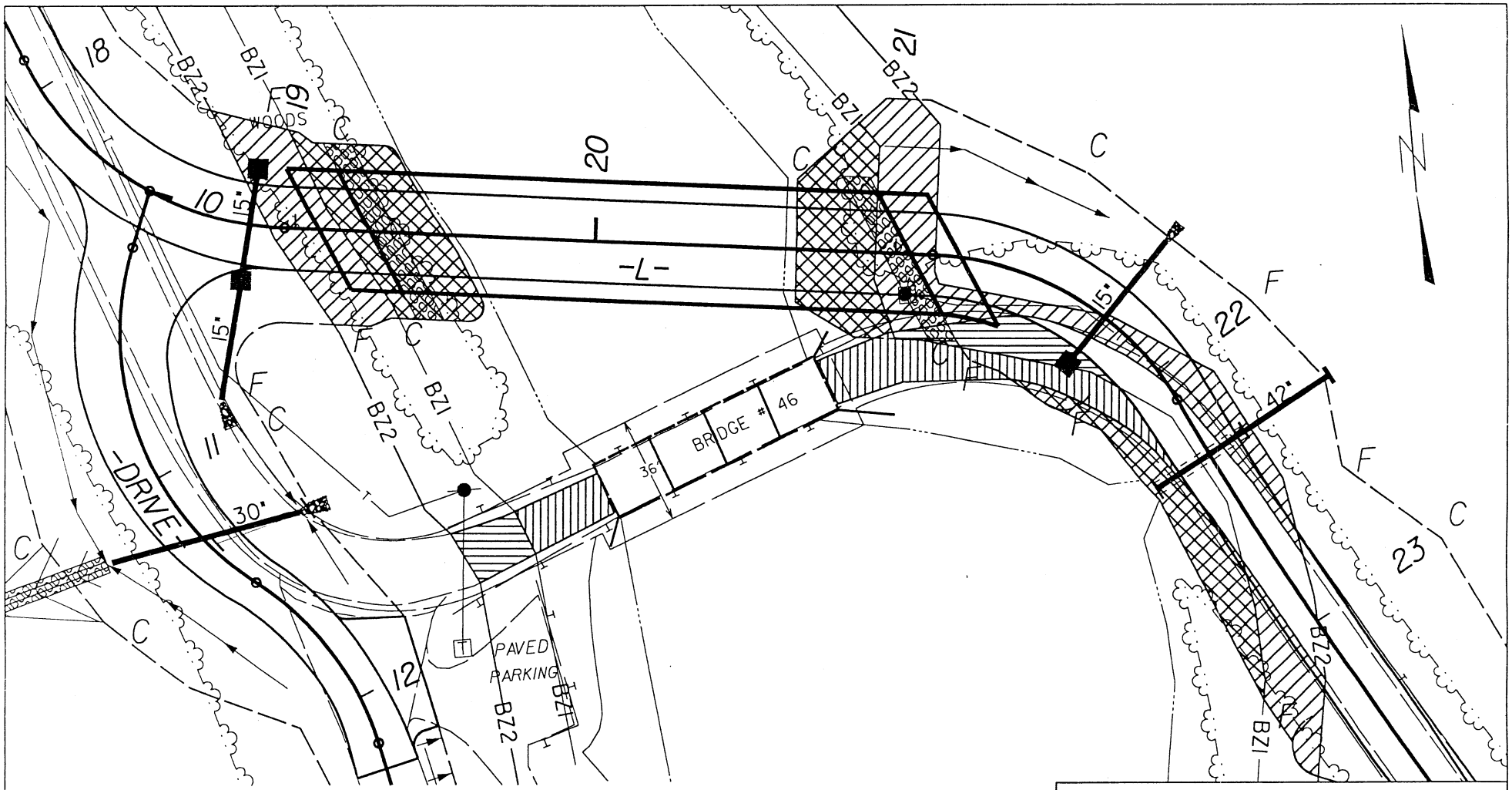
NCDOT

DIVISION OF HIGHWAYS

BURKE COUNTY

PROJECT: 8.2852001 (B-3419)

BURKE COUNTY BRIDGE #46 ON SR 1223 (POWERHOUSE ROAD) OVER THE CATAWBA RIVER

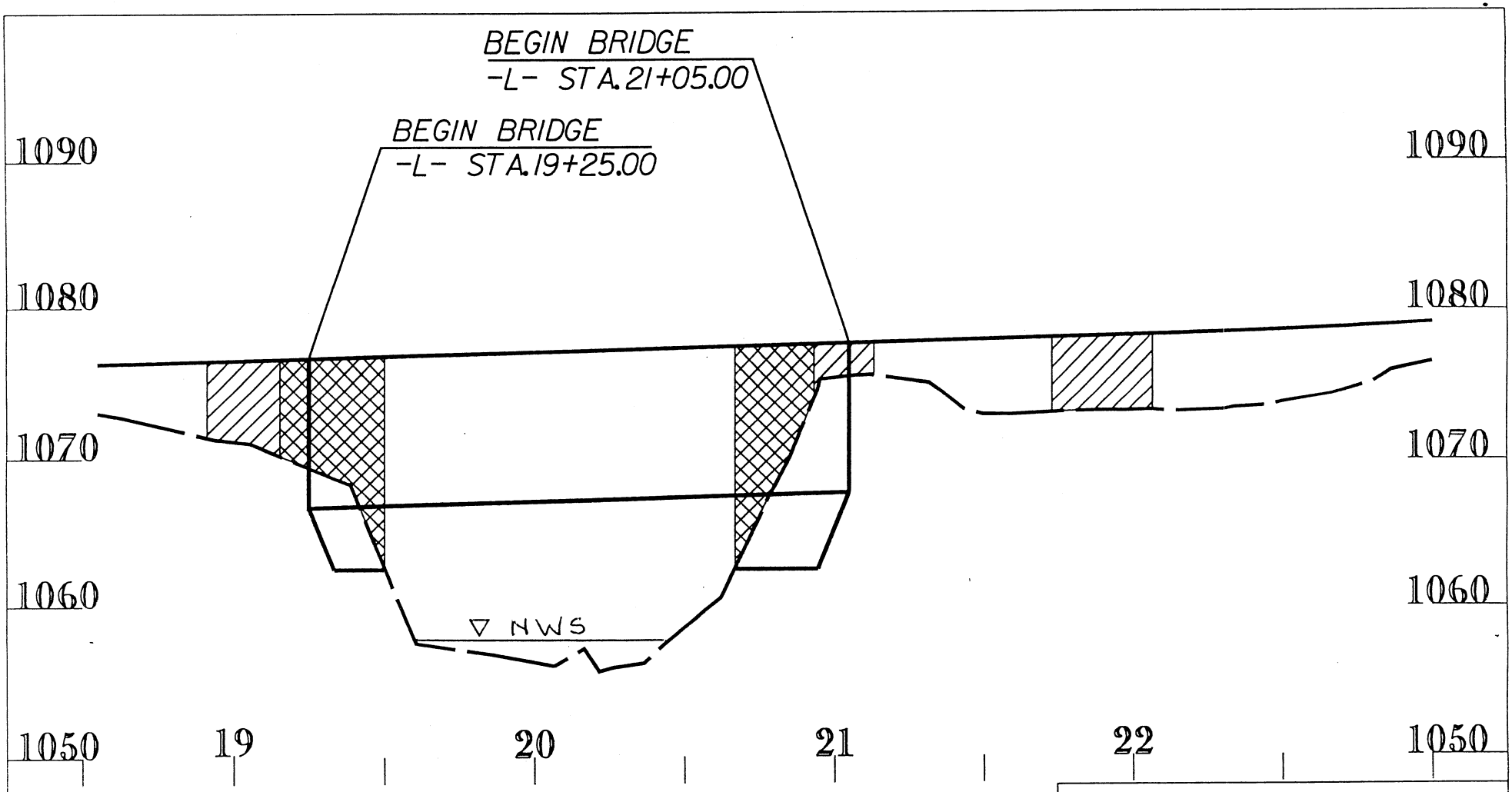


PLAN VIEW
SITE #1

0 50 ft 100 ft

NCDOT
DIVISION OF HIGHWAYS
BURKE COUNTY
PROJECT: 8.2852001 (B-3419)
BURKE COUNTY BRIDGE #46 ON SR 1223 (POWERHOUSE ROAD) OVER THE CATAWBA RIVER

SHEET 5 OF 8 3/26/03



PROFILE VIEW
SITE #1

HORIZONTAL SCALE 0 50 ft 100 ft

VERTICAL SCALE 0 10 ft 20 ft

NCDOT

DIVISION OF HIGHWAYS

BURKE COUNTY

PROJECT: 8.2852001 (B-3419)

BURKE COUNTY BRIDGE #46 ON SR 1223 (POWERHOUSE ROAD) OVER THE CATAWBA RIVER

SHEET 6 OF 8 3/26/03

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		Hand Clearing			Allowable				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	180' Single Span Bridge	-L- Sta 19+25 TO 21+05	X		0.0	0.0	0.0	4791.6	5357.9	10149.4	1786.0	1001.9
TOTAL:					0.0	0.0	0.0	4791.6	5357.9	10149.4	1786.0	1001.9

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

BURKE COUNTY
PROJECT: 8.2852001 (B-3419)

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation In Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing (Method III) (ac)	SURFACE WATER IMPACTS: Fill In SW (Natural) (ac)	SURFACE WATER IMPACTS: Fill In SW (Pond) (ac)	SURFACE WATER IMPACTS: Temp. Fill In SW (ac)	SURFACE WATER IMPACTS: Existing Channel Impacted (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	-L- Sta 19+25	180' Single Span Bridge								0	
	TO 21+05										
TOTALS:			0	0	0	0	0	0	0	0	0

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BURKE COUNTY
PROJECT 8.2852001 B-3419

SHEET 8 OF 8

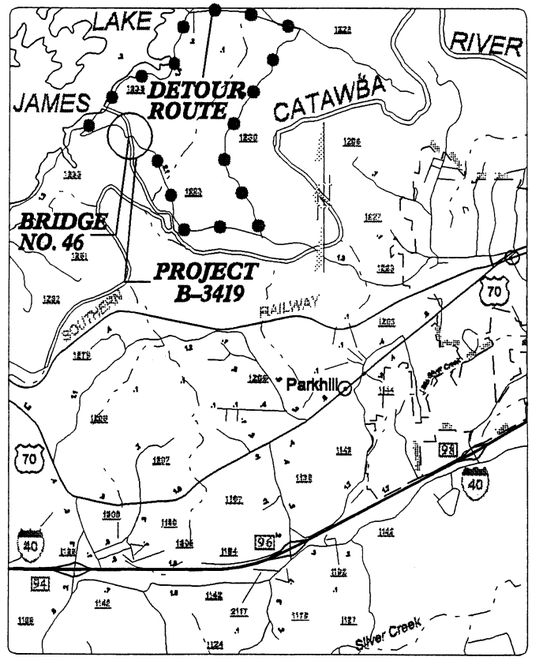
3/17/2003

Form Revised 3/22/01

TIP PROJECT: B-3419

CONTRACT: C200826

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



VICINITY MAP OF B-3419

DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BURKE COUNTY

LOCATION: BRIDGE NO. 46 ON SR 1223 OVER CATAWBA RIVER

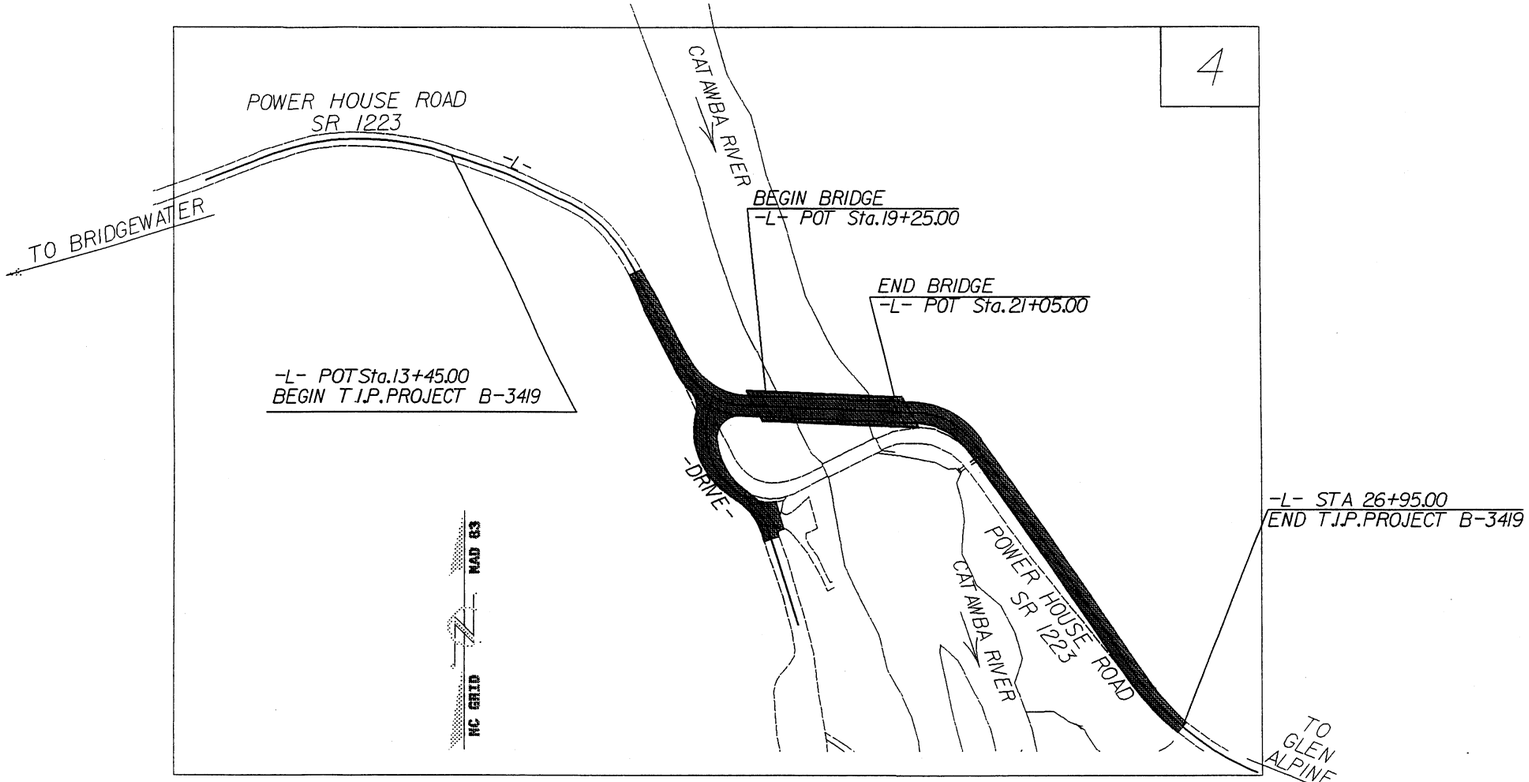
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3419	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34794.1.1	BRZ-1223(2)	PE
34794.3.1	BRZ-1223(3)	ROW, UTIL

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

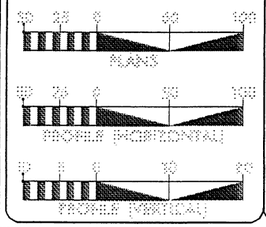


THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

NCDOT CONTACT : CATHY S. HOUSER, P.E., PROJECT ENGINEER, DESIGN SERVICES

GRAPHIC SCALES



DESIGN DATA

ADT 2004 = 611
ADT 2025 = 781
DHV = 10%
D = 60%
T = 3%
V = 60 mph

* DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT, STOPPING SIGHT DISTANCE, AND SUPERELEVATION IS REQUIRED

PROJECT LENGTH

LENGTH ROADWAY T.I.P. PROJECT B-3419	= 0.222 MILES
LENGTH STRUCTURES T.I.P. PROJECT B-3419	= 0.034 MILES
TOTAL LENGTH OF T.I.P. PROJECT B-3419	= 0.256 MILES

2002 STANDARD SPECIFICATIONS

R/W :	MARCH 31, 2003
LETTING DATE :	MARCH 16, 2004

NEIL J. DEAN, P.E.
EARTH TECH PROJECT MANAGER

Prepared in the Office of:
EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
701 Corporate Center Drive
Suite 475
Raleigh, N.C. 27607
(919)-854-6200
FAX (919)-854-6259

HYDRAULICS ENGINEER

SIGNATURE: JOHN D.R. NICHOLS, P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: NEIL J. DEAN, P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
B-3419	4

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

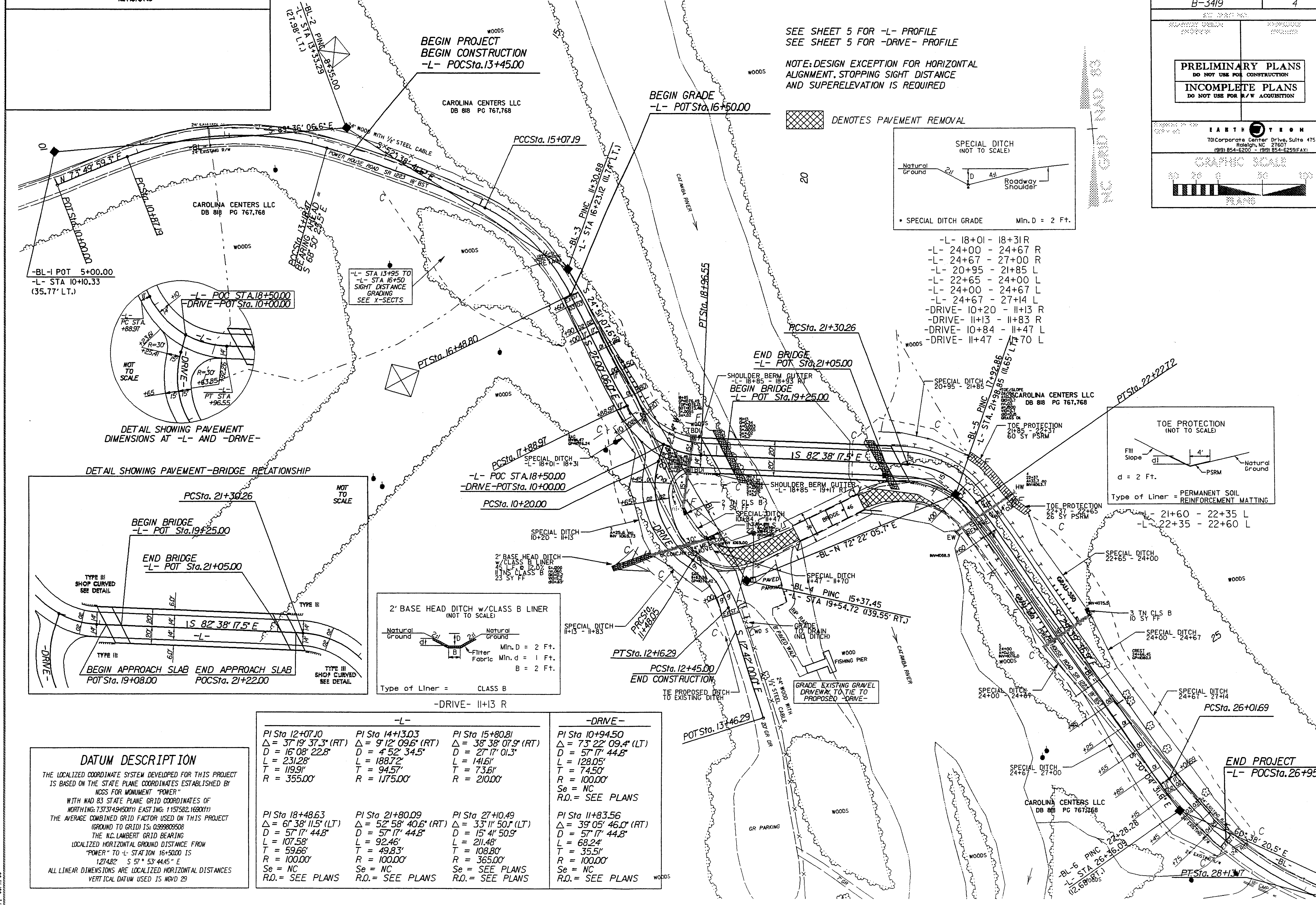
EARTH TECH
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

GRAPHIC SCALE
50 25 0 50 100
PLANS

SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRIVE- PROFILE

NOTE: DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT, STOPPING SIGHT DISTANCE AND SUPERELEVATION IS REQUIRED

DENOTES PAVEMENT REMOVAL



-L-			-DRIVE-
PI Sta 12+07.10 Δ = 37° 19' 37.3" (RT) D = 16° 08' 22.8" L = 231.28' T = 119.91' R = 355.00'	PI Sta 14+13.03 Δ = 9° 12' 09.6" (RT) D = 4° 52' 34.5" L = 188.72' T = 94.57' R = 1,175.00'	PI Sta 15+80.81 Δ = 38° 38' 07.9" (RT) D = 27° 17' 01.3" L = 141.61' T = 73.61' R = 210.00'	PI Sta 10+94.50 Δ = 73° 22' 09.4" (LT) D = 57° 17' 44.8" L = 128.05' T = 74.50' R = 100.00' Se = NC R.O. = SEE PLANS
PI Sta 18+48.63 Δ = 61° 38' 11.5" (LT) D = 57° 17' 44.8" L = 107.58' T = 59.66' R = 100.00' Se = NC R.O. = SEE PLANS	PI Sta 21+80.09 Δ = 52° 58' 40.6" (RT) D = 57° 17' 44.8" L = 92.46' T = 49.83' R = 100.00' Se = NC R.O. = SEE PLANS	PI Sta 27+10.49 Δ = 33° 11' 50.1" (LT) D = 15° 41' 50.9" L = 211.48' T = 108.80' R = 365.00' Se = SEE PLANS R.O. = SEE PLANS	PI Sta 11+83.56 Δ = 39° 05' 46.0" (RT) D = 57° 17' 44.8" L = 68.24' T = 35.51' R = 100.00' Se = NC R.O. = SEE PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "POWER"
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 737374.9450(ft) EASTING: 1157582.1690(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999809508
THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "POWER" TO -L- STATION 16+50.00 IS
1,274.82' S 57° 53' 44.45" E
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

EARTH TECH
701 Corporate Center Drive, Suite 475
Raleigh, NC 27607
(919) 854-5200 - (919) 854-6259(FAX)

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 2500 CFS
DESIGN FREQUENCY	= N/A YRS
DESIGN HW ELEVATION	= 1063.5FT
BASE DISCHARGE	= N/A CFS
BASE FREQUENCY	= N/A YRS
BASE HW ELEVATION	= N/A FT
OVERTOPPING DISCHARGE	= 11,080 CFS
OVERTOPPING FREQUENCY	= N/A YRS
OVERTOPPING ELEVATION	= 1076.2FT
DATE OF SURVEY	= 9/16/2002
W.S.ELEVATION AT DATE OF SURVEY	= 1057.7FT

PIPE HYDRAULIC DATA -L- 22+37 - 48" RCP

DESIGN DISCHARGE	= 21.3 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1066.4FT
BASE DISCHARGE	= 33.9 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1067.0FT
OVERTOPPING DISCHARGE	= 138.1 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1074.7 FT

PIPE HYDRAULIC DATA -L- 24+00 - 18" RCP

DESIGN DISCHARGE	= 0.7 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1076.4FT
BASE DISCHARGE	= 0.8 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1076.5FT
OVERTOPPING DISCHARGE	= 12.6 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1079.0FT

-L-

BENCH MARK NO.1
-BL- STA 7+09.66 (71' LEFT)
4" SPIKE IN ROOT OF 18" PINE TREE

BENCH MARK NO.2
-BL- STA 18+18.59 (70' RIGHT)
3" SPIKE IN ROOT OF 12" PINE TREE

BEGIN GRADE -L- STA.16+50.00
ELEV.= 1077.02

BEGIN BRIDGE
-L- STA.19+25.00

BEGIN BRIDGE
-L- STA.21+05.00

END GRADE -L- STA.25+95.00
ELEV.= 1078.47

PI = 17+80.00
VC = 200'
EL = 1075.91'
K = 142

PI = 22+30.00
EL = 1078.39
VC = 100'
K = 155

PI = 24+70.00
EL = 1080.26'
VC = 380'
K = 156

PROPOSED 18"

PROPOSED 48"

LEFT DITCH

RT DITCH

FOR -L- PLAN VIEW, SEE SHEET 4

NOTE: DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT, STOPPING SIGHT DISTANCE AND SUPERELEVATION IS REQUIRED

-DRIVE-

PIPE HYDRAULIC DATA -DRIVE- 11+24 - 30" RCP

DESIGN DISCHARGE	= 17.5 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1071.8 FT
BASE DISCHARGE	= 27.8 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1072.5FT
OVERTOPPING DISCHARGE	= 35.3 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 1073.1 FT

BEGIN GRADE -DRIVE- STA.10+13.04
ELEV.= 1071.96

END GRADE -DRIVE- STA.12+25.00
ELEV.= 1073.69

PI = 11+75.00
EL = 1073.06
VC = 96'
K = 32

PROP 30"

RT DITCH

LEFT DITCH

FOR -DRIVE- PLAN VIEW, SEE SHEET 4

SR 1223

Burke County

Bridge No. 46 Over Catawba River

Federal Aid Project No. BRZ-1223(2)

State Project 8.2852001

TIP Project No. B-3419

CATEGORICAL EXCLUSION

AND

PROGRAMMATIC SECTION 4(F) EVALUATION

US DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NC DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

08.26.02
DATE

for L. Gail Grimes, P.E., Assistant Manager
Project Development and Environmental Analysis
Branch, NCDOT

8/27/02
DATE

for Nicholas L. Graf, P.E.
Division Administrator, FHWA

SR 1223

Burke County

Bridge No. 46 Over Catawba River

Federal Aid Project No. BRZ-1223(2)

State Project 8.2852001

TIP Project No. B-3419

CATEGORICAL EXCLUSION

AND

PROGRAMMATIC SECTION 4(F) EVALUATION

August 2002

Document Prepared by

EARTH TECH

Yvonne G.G. Howell, P.E.
Project Planning Engineer
Earth Tech

For the North Carolina Department of Transportation

John Wadsworth 8.23.02

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

SR 1223
Burke County
Bridge No. 46 Over Catawba River
Federal Aid Project No. BRZ-1223(2)
State Project 8.2852001
TIP Project No. B-3419

PROJECT COMMITMENTS

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

Division 13

All in-stream work will be prohibited between November 1 and April 15 to avoid impacts to trout reproduction. "Guidelines for Construction Adjacent to or Crossing Trout Waters," as incorporated into Erosion and Sediment Control Guidelines, will be implemented and adhered to throughout the project.

Hydraulics Unit

The Catawba River, below Lake James, currently has temporary buffer rules in effect. The low chord of the bridge deck is expected to be 12 feet (3.6 m) or more above the natural ground, therefore the stormwater from the deck drains will be diffused flow into the buffer.

SR 1223
Burke County
Bridge No. 46 Over Catawba River
Federal Aid Project No. BRZ-1223(2)
State Project 8.2852001
TIP Project No. B-3419

INTRODUCTION: Bridge No. 46 is included in the 2002–2008 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and in the Federal Aid Bridge Replacement Program. The location is shown in **Figure 1**. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 45.8, out of a possible 100 for a new structure. The bridge is considered structurally deficient and the replacement of this inadequate structure will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

SR 1223 (Powerhouse Road) in Burke County is classified as "Local" in the Statewide Functional Classification System.

Through the project area, SR 1223 has a 21-foot (6.4-meter [m]) wide clear roadway width and a 24-foot (7.3-m) wide right-of-way. The horizontal and vertical alignments do not meet current design standards. There is a 20-mile per hour (mph) (32-kilometer per hour [kph]) advisory speed limit posted on SR 1223 at the west approach to the bridge. There is no posted regulatory speed limit in the project area, therefore the statutory speed limit of 55 mph (88 kph) applies.

The existing bridge was constructed in 1958. The superstructure consists of steel planks on salvaged I-beams. The substructure consists of reinforced concrete abutments and mass piers. The abutments are vertical. The existing bridge consists of four spans of 20.7 feet (6.3 m), 19.8 feet (6.0 m), 19.7 feet (6.0 m), and 21.5 feet (6.5 m). Clear roadway width is 18.3 feet (5.6 m). The crown of the roadway is situated approximately 17.0 feet (5.2 m) over the bed of Catawba River. Presently, there is no posted weight limit. The bridge is located in a tangent section of SR 1223 and crosses Catawba River at approximately 90 degrees. Photographs of the approaches to the existing bridge are shown in **Figures 4a and 4b**.

The average daily traffic volume on SR 1223 at Bridge No. 46 is projected at 575 vehicles per day in 2002. By the design year, 2025, the average daily traffic

volume is expected to increase to 1000 vehicles per day. The projected traffic volume includes four percent dual-tired vehicles and one percent truck-tractor semi-trailers.

No school buses cross this bridge as part of a regular route.

SR 1223 is not a designated bicycle route.

One accident was reported at Bridge No. 46 in the period between February 1, 1999 and January 31, 2002. The accident involved one vehicle striking an animal on Bridge No. 46.

III. ALTERNATIVES

A. Project Description

The proposed structure is a bridge with a clear roadway width accommodating two lanes of traffic. The facility will require curve widening to accommodate truck-tractor semi-trailer turning radii, resulting in a minimum lane width of 10 feet (3 m) and a minimum shoulder width of 3 feet (1 m). The proposed approach roadway width will be 28 feet (8.5 m) accommodating two lanes of traffic. The typical section for the proposed approaches and bridge are shown in **Figure 3.**

B. Build Alternatives

Four build alternatives were investigated for the replacement of the subject bridge. Each alternative would replace Bridge No. 46 north (upstream) of the existing alignment.

Alternate 1 would replace Bridge No. 46 with a new 164-foot (50-m) long bridge approximately 200 feet (61 m) north of the existing bridge along a tangent section. Traffic would be maintained on the existing bridge during construction. **Alternative 1** can bee seen in **Figure 2a**.

Alternate 2 would locate the new 215-foot (65.5-m) long bridge within a curve approximately 300 feet (92 m) north of the existing alignment. Traffic would be maintained on the existing bridge during construction. **Alternative 2** can bee seen in **Figure 2b**.

Alternate 3 would construct a new 250-foot (76.2-m) long bridge approximately 100 feet (31 m) north of the existing bridge. Traffic would need to be maintained off-site along SR 1223, SR 1233, SR 1228, and SR 1230 (see **Figure 1** for detour route). All of these roadways are paved. This off-site detour would require motorists to travel 2.6 miles (4.2 km) further than if they merely followed SR 1223. **Alternative 3** can bee seen in **Figure 2c**.

Alternate 4 (preferred) would construct a new 155-foot (47.2-m) long bridge immediately north of the existing bridge. Traffic would be maintained off-site

along SR 1223, SR 1233, SR 1228, and SR 1230, requiring motorists to travel 2.6 miles (4.2 km) further than if they merely followed SR 1223. **Alternative 4** can bee seen in **Figure 2d**.

C. Alternatives Eliminated From Further Study

An alternative proposing bridge replacement to the south (downstream) of the existing structure was considered but eliminated from further study. There is an existing fishing pier, access point, and parking area maintained by N.C. Wildlife Resource Commission (NCWRC) for public use, located immediately to the south of the existing structure; construction of the replacement bridge to the south would interfere with the maintenance and use of these facilities.

An on-site detour was also considered, to be used with alignment alternates. This option was eliminated due to the cost of a temporary on-site structure.

Both rehabilitation of the existing structure and the "no build" alternative were considered early in the project study but were eliminated from further study. Because of the poor bridge condition, rehabilitating the existing structure is not feasible. The "no build" alternative would eventually necessitate closure of the bridge and would thereby eliminate the traffic service provided by SR 1223 in the project area.

D. Preferred Alternative

Alternate 4, replacing Bridge No. 46 immediately north of the existing structure, is the preferred alternative. While this alternative does not completely eliminate curves in the existing alignment at the bridge approaches, it does improve the alignment with minimal environmental impacts. This alignment required the least cut and fill, disturbing a minimum of the surrounding area. The proposed bridge will not encroach on the Catawba River, as is the case with the existing structure. End bents would be constructed outside of the existing riverbanks allowing for proper flow. The off-site detour will ensure the safety of traffic during project construction. The proposed bridge will be constructed at approximately the same elevation as the existing bridge. The Division Engineer concurred with this selection.

This alternative will require a design exception for a design speed of 15 mph (24 kph).

IV. ESTIMATED COSTS

Construction and right-of-way cost estimates for the alternatives studied are presented below in **Table 1**.

Table 1. Estimated Costs

	Alternate 1	Alternate 2	Alternate 3	Alternate 4 (Preferred)
Structure Removal	$ 11,800	$ 11,800	$ 11,800	$ 12,800
Structure	$ 319,800	$ 483,750	$ 562,500	$ 302,250
Roadway Work	$ 272,500	$ 206,060	$ 103,530	$ 154,020
Guardrail Work	$ 23,275	$ 20,925	$ 25,410	$ 21,199
Miscellaneous and Mobility	$ 282,625	$ 327,465	$ 321,760	$ 224,731
Engineering and Contingencies	$ 140,000	$ 150,000	$ 175,000	$ 110,000
Right-of-way/Utilities	$ 45,000	$ 39,000	$ 37,500	$ 37,500
Relocations	0	0	0	0
Total Cost of Alternative	**$1,095,000**	**$1,239,000**	**$1,237,500**	**$862,500**

The estimated cost of the preferred alternative, based on current prices, is $862,500 including $37,500 for right of way, relocation, and utilities, and $825,000 for construction. The estimated cost of right of way and construction of the project, as shown in the Draft 2004-2010 TIP, is $600,000, including $40,000 for right-of-way and $480,000 for construction. Right-of-way acquisition is scheduled for Federal Fiscal Year 2003, with construction to follow in Federal Fiscal Year 2004.

V. NATURAL RESOURCES

The proposed project is in a rural area of Burke County approximately 7.2 miles (11.6 km) west of Morganton, NC. Burke County's major economic resources are the textile, apparel, and furniture industries. The population of Burke County, based on the 2000 Census, was 89,148 (U.S. Census Bureau).

A. Methodology

Published information and resources were collected prior to the field investigation. Information sources used to prepare this report include the following:

- U.S. Geological Survey (USGS) quadrangle map (Glen Alpine, 1993),
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map (Glen Alpine, 1994),
- NCDOT aerial photograph of project area (1:1200),
- Draft soil survey map of Burke County (Natural Resources Conservation Service [NRCS], 1993),
- N.C. Department of Environment and Natural Resources (NCDENR) basin-wide assessment information (NCDENR, 1999),

- USFWS list of protected and candidate species, and
- N.C. Natural Heritage Program (NHP) files of rare species and unique habitats.

Water resource information was obtained from publications posted on the World Wide Web by N.C. Department of Environment and Natural Resources (NCDENR) Division of Water Quality (DWQ). Information concerning the occurrence of Federally protected species in the study area was obtained from the U.S. Fish and Wildlife Service (USFWS) list of protected and candidate species (March 2001), posted on the World Wide Web by the Ecological Services branch of the USFWS in North Carolina. Information about species under State protection was obtained from the N.C. Natural Heritage Program (NHP) database of rare species and unique habitats. NHP files were reviewed for documented sightings of species on State or Federal lists and locations of significant natural areas.

A general field survey was conducted along the proposed project route by Earth Tech biologists on June 6, 2000. Water resources were identified and their physical characteristics were recorded. For the purposes of this study, a brief habitat assessment was performed within the project area of the Catawba River. Plant communities and their associated wildlife were identified using a variety of observation techniques, including active searching, visual observations, and identifying characteristic signs of wildlife (sounds, tracks, scats, and burrows). Terrestrial community classifications generally follow Schafale and Weakley (1990), where appropriate, and plant taxonomy follows Radford et al. (1968). Vertebrate taxonomy follows Potter et al. (1980), Martof et al. (1980), and Webster et al. (1985). Vegetative communities were mapped using aerial photography of the project site. Predictions regarding wildlife community composition involved general qualitative habitat assessment based on existing vegetative communities.

Jurisdictional wetlands, if present, were delineated and evaluated based on criteria established in the U.S. Army Corps of Engineers' *Wetlands Delineation Manual* (USACE, 1987). Wetlands were classified based on Cowardin *et al.* (1979).

B. Physiography and Soils

The project area lies in the western portion of North Carolina at the western limit of the Piedmont physiographic province. Elevations in the project area are approximately 1040 feet (317 m) (National Geodetic Vertical Datum, 1929). The topography of the project vicinity is rolling, with low hills rising from a broad floodplain.

The following information about soils in the project area was taken from the Soil Survey of Burke County (NRCS, 1997). Rhodhiss sandy loam, 25 to 45 percent slopes, is mapped along the banks of the Catawba River within the project area. This soil is a very deep, well-drained soil found on gently sloping to very steep slopes of uplands in the West Central Piedmont. Runoff is medium to rapid and permeability is moderate.

C. Water Resources

This section contains information concerning water resources likely to be impacted, best usage classifications, and water quality aspects of the water resources. Probable impacts to surface waters are also discussed, as well as means to minimize impacts.

1. Waters Impacted

The project is located in the Catawba basin (CTB30 sub-basin). One surface water resource, the Catawba River, will be directly impacted by the proposed project. The Catawba River originates about 27 miles (44 kilometers [km]) southwest of Lake James, on Evans Knob east of the Tennessee Divide and southeast of Black Mountain, NC. From the Linville Dam on Lake James, the river flows southeast 1490 feet (454 m) to the project area. From the project area the Catawba River flows east towards Statesville, NC and then south to its confluence with the Wateree River in South Carolina.

2. Water Resource Characteristics

The Catawba River is approximately 90 feet (27.4 m) wide upstream of Bridge No. 46, widening to about 150 feet (45.7 m) downstream. The river flows south in a straight run in the project area. The channel splits around a vegetated island about 300 feet (91.4 m) downstream of the bridge. The substrate of the Catawba River at this point consists of about 85 percent large cobbles and bedrock, with about 15 percent sand along the banks. Stream flow on the day of the site visit was rapid, and the water was clear. The depth varies according to releases from the dam upstream.

The banks are 15 to 18 feet (4.6-5.5 m) high and nearly vertical. The right bank is lined with rip-rap. A fishing pier is located on the right bank just downstream of the bridge. The left bank is vegetated and slopes steeply down from SR 1223.

Vegetation immediately adjacent to the bridge consists of weeds and shrubs. Further downstream on the left bank, a forested canopy shades about 10 percent of the river.

A tributary to the Catawba River is also crossed by the existing roadway and the three alternates. The tributary has an active channel which is 2-foot (0.6-m) wide

and 1-foot (0.3-m) deep. Water was flowing sluggishly, but clear, at approximately 1-inch (2.54 cm) deep. Close to the existing roadway, the stream has been ditched. The substrate is silt and sediment. The stream has approximately 95 percent canopy cover.

Surface waters in North Carolina are assigned a classification by the DWQ that is designed to maintain, protect, and enhance water quality within the state. The Catawba River [Index # 11-(31)] is classified as a *Water Supply V* (*WS-V*) water body (NCDENR, 1999). *WS-V* waters are protected as water supplies and are generally upstream and draining to *WS-IV* waters or water used by industry. This classification carries no restrictions on watershed development or wastewater discharges, and no local protection ordinances are required.

The Catawba River, below Lake James, currently has temporary buffer rules in effect. These rules provide guidance in designing bridge deck drains over applicable streams, waterways, and other surface waters which need to be considered throughout the planning and design process.

Basin-wide water quality assessments are conducted by the Environmental Sciences Branch, Water Quality Section of the DWQ. The program has established monitoring stations for sampling selected benthic macroinvertebrates, which are known to have varying levels of tolerance to water pollution. An index of water quality can be derived from the number of taxa present and the ratio of tolerant to intolerant taxa. Streams can then be given a bioclassification ranging from Poor to Excellent.

There are no monitoring stations on the Catawba River within 2 miles (3.2 km) of the project area. The nearest station is located about 8.6 miles (13.8 km) downstream of the project area on the Catawba River at SR 1147. It was sampled in August 1997 and classified as Good.

Point source discharges in North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program administered by the DWQ. As of July 1999, there were no permits issued to discharge in the Catawba River in the project vicinity.

3. Anticipated Impacts to Water Resources

a) General Impacts

No waters classified as High Quality Water (HQW), Water Supplies (WS-I or WS-II) or Outstanding Resource Waters (ORW) occur within 1 mile (1.6 km) of the project study area.

Any action that affects water quality can adversely affect aquatic organisms. Temporary impacts during the construction phases may result in long-term impacts to the aquatic community. In general, replacing an existing structure in

the same location with an off site detour is the preferred environmental approach. Bridge replacement at a new location results in more severe impacts, and physical impacts are incurred at the point of detour construction as well as at the point of bridge replacement.

Project construction may result in the following impacts to surface water resources:

- Increased sediment loading and siltation as a consequence of watershed vegetation removal, erosion, and/or construction;
- Decreased light penetration/water clarity from increased sedimentation;
- Changes in water temperature with vegetation removal;
- Changes in the amount of available organic matter with vegetation removal;
- Increased concentration of toxic compounds from highway runoff, construction activities and construction equipment, and spills from construction equipment; and
- Alteration of water levels and flows as a result of interruptions and/or additions to surface and groundwater flow from construction.

Construction impacts may not be restricted to the communities in which the construction activity occurs, but may also affect downstream communities. Efforts will be made to ensure that no sediment leaves the construction site. The NCDOT's *Best Management Practices for the Protection of Surface Waters* will be implemented, as applicable, during the construction phase of the project to ensure that no sediment leaves the construction site. In addition, "Guidelines for Construction Adjacent to or Crossing Trout Waters" as incorporated into *Erosion and Sediment Control Guidelines* will be implemented and adhered to throughout the project.

4. Impacts Related to Bridge Demolition and Removal

The Catawba River in the vicinity of the proposed project is not a special resource water and is not known to provide habitat for aquatic species on the Federal list of threatened and endangered species. However, it is classified as a Public Mountain Trout Water by the NCWRC.

The superstructure consists of steel planks on salvaged I-beams. The substructure consists of reinforced concrete vertical abutments and concrete piers. There are four spans, with three piers in the water and both abutments adjacent to the water. The maximum potential fill is 275 cubic yards (210 cubic meters).

Although the streambed in the project area is not bedrock, turbidity problems are not expected from demolition activities.

D. Biotic Resources

The composition of plant communities in the project area reflects landscape-level variations in topography, soils, moisture, and past or present land use practices. This section describes these communities of flora and fauna, including the dominant plants and animals in each community and their relationships with each other. Scientific nomenclature and common names, where applicable, are used for the initial species reference. Subsequent references to the same species are by the common name only.

1. Plant Communities

Four terrestrial communities occur within the project area (**Figure 2**). Dominant faunal components associated with these terrestrial areas are discussed in the community description.

a) Disturbed Community

This community covers areas along both sides of SR 1223 throughout the project area. It includes maintained grassy road shoulders, weedy areas sloping down to the stream banks adjacent to the bridge, recent cutovers, and a maintained powerline right-of-way. Species in the roadside areas and streambanks include seedlings of sycamore (*Platanus occidentalis*) and yellow poplar (*Liriodendron tulipifera*), violet (*Viola* sp.), fescue (*Festuca* sp.), wingstem (*Verbesina occidentalis*), trumpet creeper (*Campsis radicans*), Virginia creeper (*Parthenocissus quinquefolia*), catbrier (*Smilax glauca*), privet (*Ligustrum sinense*), red clover (*Trifolium pratense*), black medic (*Medicago lupulina*), ragweed (*Ambrosia artemisiifolia*), and Japanese honeysuckle (*Lonicera japonica*). In the right-of-way and cutover areas, species include white pine (*Pinus strobus*), sweetgum (*Liquidambar styraciflua*), slash and poison ivy (*Toxicodendron radicans*) in addition to the species listed above

b) Old Field Community

The old field community probably represents an abandoned agricultural field and covers an area north of SR 1223 and downstream of Bridge No. 46. Young saplings of sycamore, yellow poplar, and white pine dominate the area. Herbaceous species include dog fennel (*Eupatorium capillifolium*), daisy fleabane (*Erigeron strigosus*), ragweed, ox-eye daisy (*Chrysanthemum leucanthemum*), yarrow (*Achillea millifolium*), and Queen Anne's lace (*Daucus carota*).

c) Mixed Hardwood Community

This community includes the remaining fringe of vegetation on the right bank of the Catawba/Linville River upstream of the bridge and the intact forest on the left bank of the river both upstream and downstream of the bridge. Species include sassafras (*Sassafras albidum*), ironwood (*Carpinus caroliniana*), sweetgum, white pine, black walnut (*Cary juglans*), river birch (*Betula nigra*), sweet birch (*Betula lenta*), yellow poplar, mockernut hickory (*Carya tomentosa*), flowering dogwood (*Cornus florida*), hazelnut (*Corylus americana*), privet, pinxter flower (*Rhododendron nudiflorum*), Jack-in-the-pulpit (*Arisaema triphyllum*), giant cane (*Arundinaria gigantea*), Virginia creeper, Japanese honeysuckle, and yellowroot (*Xanthorhiza simplicissima*). On a steep, rocky area of the bank upstream of the bridge, there is a small inclusion of species more typical of mountainous areas such as rosebay rhododendron (*Rhododendron maximum*), doghobble (*Leucothoe axillaris* var. *editorum*), and galax (*Galax aphylla*). This community is equivalent to the Mesic Mixed Hardwood Forest (Piedmont Subtype) as described in Schafale and Weakley (1990).

d) Cultivated

A cultivated field is present downstream of Bridge No. 46, on the south side of SR 1223. It appeared to be a nursery with various species of trees.

2. Wildlife

The animal species present in the disturbed community habitats are opportunistic and are capable of surviving on a variety of resources, ranging from vegetation to both living and dead faunal components. Northern mockingbird (*Mimus polyglottos*), starling (*Sturnus vulgaris*), and American robin (*Turdus migratorius*) are common birds that use these habitats. The area may also be used by gray squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphis virginiana*), Eastern garter snake (*Thamnophis sirtalis*), and American toad (*Bufo americanus*).

Animal species present in the old field community may include all of those listed above for the disturbed community. In addition, the rat snake (*Elaphe obsoleta*), Fowler's toad (*Bufo woodhousei*), field sparrow (*Spizella pusilla*), mourning dove (*Zenaida macroura*), blue grosbeak (*Guiraca caerula*), rufous-sided towhee (*Pipilo erythophthalmus*), red fox (*Vulpes vulpes*), and house mouse (*Mus musculus*) may utilize this habitat.

Animal species likely to utilize the mixed hardwood community include: white-footed mouse (*Peromyscus leucopus*), gray squirrel, eastern chipmunk (*Tamias striatus*), raccoon (*Procyon lotor*), wood thrush (*Hylocichla mustelina*), red-bellied woodpecker (*Melanerpes carolinus*), tufted titmouse (*Parus bicolor*), Carolina

chickadee (*Parus carolinensis*), yellow warbler (*Dendroica petechia*), red-eyed vireo (*Vireo olivaceus*), various transient wood warblers, eastern garter snake (*Thamnophis sirtalis*), redbelly snake (*Storeria occipitomaculata*), green frog (*Rana clamitans*), slimy salamander (*Plethodon glutinosus*), and eastern box turtle (*Terrapene carolina*).

Cultivated fields are used by wildlife mainly for foraging, although some reptiles and small rodents may burrow in them such as black racer (*Coluber constrictor*) and the short-tailed race of deer mouse (*Peromyscus maniculatus*).

3. Aquatic Community

The Catawba River enters Lake James as a mid-gradient, sixth-order stream. Downstream of the Linville Dam, within the project area, the Catawba River has a substrate of mostly boulders and cobbles with a small percentage of sand and gravel. On the day of the site visit, the water was clear and flowing rapidly. The riparian community is a mature forest, except where the banks have been cleared and rip-rapped, and is described in the mixed hardwood community discussion.

Burke County is designated a "trout" county by the NCWRC and the Catawba River is a designated Public Mountain Trout Water. At this location, the river is stocked monthly March through July with rainbow trout (*Onchorhynchus mykiss)*, brown trout (*Salmo trutta*), and brook trout (S*alvelinus fontinalis.*). There is also small spawning run of striped bass (*Morone saxatilis*) in the spring.

An unnamed tributary enters the Catawba River through a culvert on the left bank just downstream of the existing bridge. The substrate is mostly silt. The water was clear but shallow (1 inch or 2.54 centimeters [cm]) and flowing sluggishly the day of the site visit. The riparian community is a mature forest and can be described as mixed hardwood. This stream is apparently an intermittent stream and would not support any fish populations.

4. Anticipated Impacts to Biotic Communities

a) Terrestrial Communities

Project construction will have various impacts to the previously described terrestrial communities. Any construction activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies potential impacts to the natural communities within the project area in terms of the area impacted and the plants and animals affected. Temporary and permanent impacts are considered here along with recommendations to minimize or eliminate impacts.

Table 2. Estimated Areas of Impact to Terrestrial Communities

Impacted Area in Acres (Hectares)				
Community	**Alternate 1**	**Alternate 2**	**Alternate 3**	**Alternate 4** (Preferred)
Disturbed Community	0.75 (0.30)	0.58 (0.23)	0.98 (0.40)	0.44 (0.18)
Old Field	0.31 (0.12)	N/A	0.01 (0.00)	N/A
Mixed Hardwood	1.39 (0.56)	0.53 (0.21)	0.44 (0.18)	0.29 (0.12)
Cultivated	N/A	N/A	N/A	N/A
Total Impact	**2.44 (0.98))**	**1.11 (0.44)**	**1.43 (0.58)**	**0.73 (0.30)**

Destruction of natural communities along the project alignment will result in the loss of foraging and breeding habitats for the various animal species that utilize the area. Animal species will be displaced into surrounding communities. Adult birds, mammals, and some reptiles are mobile enough to avoid mortality during construction. Young animals and less mobile species, such as many amphibians, may suffer direct loss during construction. The plants and animals that are found in these upland communities are generally common throughout western North Carolina.

Impacts to terrestrial communities, particularly in locations having steep to moderate slopes, can result in the aquatic community receiving heavy sediment loads as a consequence of erosion. Construction impacts may not be restricted to the communities in which the construction activity occurs, but may also affect downstream communities. Efforts will be made to ensure that no sediment leaves the construction site.

b) Wetland Communities

No wetlands will be impacted by the project. Project construction cannot be accomplished without infringing on the surface waters. Anticipated surface water impacts fall under the jurisdiction of the USACE and the DWQ. At the preferred alternative crossing, the Catawba River is 90 feet (27.4 m) to 100 feet (30.5 m) wide. The tributary is 2 feet (0.6 m) wide. Using the bridge width of approximately 30 feet (9.1 m) wide for the preferred alternate, construction will impact an area of up to 3,100 square feet (288 square meters) of surface waters.

c) Aquatic Communities

Impacts to aquatic communities include fluctuations in water temperatures as a result of the loss of riparian vegetation. Shelter and food resources, both in the aquatic and terrestrial portions of these organisms' life cycles, will be affected by

losses in the terrestrial communities. The loss of aquatic plants and animals will affect the terrestrial fauna that rely on them as a food source.

Temporary and permanent impacts to aquatic organisms may result from increased sedimentation. Aquatic invertebrates may drift downstream during construction and recolonize the disturbed area once it has been stabilized. Sediments have the potential to affect fish and other aquatic life in several ways, including the clogging and abrading of gills and other respiratory surfaces, affecting the habitat by scouring and filling of pools and riffles, altering water chemistry, and smothering different life stages. Increased sedimentation may cause decreased light penetration through an increase in turbidity. Trout populations are particularly sensitive to water-quality degradation.

Wet concrete should not come into contact with surface water during bridge construction. Potential adverse effects can be minimized through the implementation of the NCDOT *Best Management Practices for Protection of Surface Waters*. In addition, "Guidelines for Construction Adjacent to and Crossing Trout Waters" as incorporated into *Erosion and Sediment Control Guidelines* will be implemented and followed throughout the project. In-stream work and land disturbance within the 25-foot (7.62-m) wide trout stream buffer zone will be prohibited during the brown and brook trout spawning season spanning November 1 through April 15 to protect the egg and fry stages of trout from off-site sedimentation during construction.

E. Special Topics

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

Wetlands and surface waters fall under the broad category of "Waters of the United States" as defined in 33 CFR § 328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344). These wetlands and surface waters are regulated by the U.S. Army Corps of Engineers (USACE). Any action that proposes to dredge or place fill material into surface waters or wetlands falls under these provisions. The Glen Alpine, N.C. NWI map shows no wetlands in the project vicinity. No jurisdictional wetlands were observed within the project area. The Catawba River and the tributary meet the definition of surface waters, and are therefore classified as Waters of the United States. The channel of the Catawba River is 90 feet (27.4 m) wide upstream of Bridge No. 46, widening to about 150 feet (45.7 m) downstream within the project area. The tributary's channel is two feet (0.6 m) wide.

2. Permits

Impacts to jurisdictional surface waters are anticipated from the proposed project. Permits and certifications from various state and federal agencies may be required prior to construction activities.

a) Section 404 of the Clean Water Act

In accordance with Section 404 of the Clean Water Act, construction is likely to be authorized by Nationwide Permit (NWP) No. 23, as promulgated under 61 FR 65874, 65916; December 13, 1996. This permit authorizes activities undertaken, assisted, authorized, regulated, funded, or financed in whole or in part, by another Federal agency or department where said agency or department has determined that, pursuant to the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act:

- the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively has a significant effect on the human environment; and,
- the Office of the Chief Engineer has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination.

b) Section 401 Water Quality Certification

This project will also require a 401 Water Quality Certification or waiver thereof, from the (NCDENR) prior to issuance of the NWP 23. Section 401 of the Clean Water Act requires that the State issue or deny water certification for any Federally permitted or licensed activity that results in a discharge into Waters of the United States. In addition, the project is located in a designated "trout" county, where the NCDOT must obtain a letter of approval from the NCWRC. Final permit decision rests with the USACE.

c) Bridge Demolition and Removal

Demolition and removal of a highway bridge over Waters of the United States requires a permit from the USACE. Effective September 20, 1999, this permit is included with the permit for bridge reconstruction. The permit application henceforth will require disclosure of demolition methods and potential impacts to the body of water in the planning document for the bridge reconstruction.

Section 402-2 "Removal of Existing Structures" of the NCDOT's *Standard Specifications for Roads and Structures* stipulates that "excavated materials shall not be deposited... in rivers, streams, or impoundments," and "the dropping of

parts or components of structures into any body of water will not be permitted unless there is no other practical method of removal. The removal from the water of any part or component of a structure shall be done so as to keep any resulting siltation to a minimum." To meet these specifications, the NCDOT shall adhere to *Best Management Practices for the Protection of Surface Waters*, as supplemented with *Best Management Practices for Bridge Demolition and Removal.*

In addition, all in-stream work shall be classified into one of three categories as follows:

Case 1) In-water work is limited to an absolute minimum, due to the presence of special resource waters or threatened and/or endangered (T&E) species, except for the removal of the portion of the sub-structure below the water. The work is carefully coordinated with the responsible agency to protect the Special Resource Water or T&E species.

Case 2) No work at all in the water during moratorium periods associated with fish migration, spawning, and larval recruitment into nursery areas.

Case 3) No special restrictions other than those outlined in the NCDOT's *Best Management Practices for Protection of Surface Waters*

The Catawba River in the vicinity of the proposed project is not a special resource water and is not known to provide habitat for aquatic species on the Federal list of threatened and endangered species. However, it is classified as a Public Mountain Trout Water by the NCWRC. Therefore, Case 2 applies to the proposed replacement of Bridge No. 46 over the Catawba River.

The superstructure consists of steel planks on salvaged I-beams. The substructure consists of reinforced concrete vertical abutments and concrete piers. There are four spans, with three piers in the water and both abutments adjacent to the water. The maximum potential fill is 275 cubic yards (210 cubic meters).

Because of the potential sedimentation concerns resulting from demolition of the bridge, where it is possible to do so, a turbidity curtain shall be included to contain and minimize sedimentation in the stream. Although the streambed in the project area is not bedrock, turbidity problems are not expected from demolition activities.

d) Temporary Buffer Rules

The low chord of the bridge deck is expected to be 12 feet (3.6 m) or more above the natural ground. In compliance with the temporary buffer rules applying to the Catawba River mainstem, below Lake James, the stormwater from the deck drains will be diffused flow into the buffer.

e) Federal Emergency Regulatory Commission Permit

Duke Power was contacted to determine the need for a Federal Emergency Regulatory Commission (FERC) permit in conjunction with the replacement of Bridge No. 46 over the Catawba River. In a letter dated May 17, 2001, Duke Power stated a permit would not be required (see Programmatic 4(f), attached, for letter).

3. Mitigation

Because this project will likely be authorized under a Nationwide Permit, mitigation for impacts to surface waters may or may not be required by the USACE. In accordance with the Division of Water Quality Wetland Rules [15A NCAC 211 .0506 (h)] "Fill or alteration of more than 1.0 acre (0.4 ha) of wetlands will require compensatory mitigation; and fill or alteration of more than 150 linear feet (45.6 m) of streams may require compensatory mitigation." Because there are no wetlands within the study corridor, wetland mitigation will not be required. A total of 75 linear feet (22.9 m) of the Catawba River and 75 linear feet (22.9 m) of the unnamed tributary are located within the study corridor for the proposed project. The actual stream impacts will likely be lower than the 150 linear feet (45.6 m) threshold, depending on final design plans. However, if the final length of stream impact is greater than 150 linear feet (45.6 m), compensatory mitigation may be required.

F. Rare and Protected Species

Some populations of plants and animals are declining either as a result of natural forces or their difficulty competing with humans for resources. Rare and protected species listed for Burke County, and any likely impacts to these species as a result of the proposed project construction, are discussed in the following sections.

1. Federally Protected Species

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

The USFWS lists six species under federal protection for Burke County as of March 2001 (USFWS, 2002). These species are listed in **Table 3**.

Table 3. Species Under Federal Protection for Burke County

Common Name	Scientific Name	Status
Vertebrates		
Bald eagle	*Haliaeetus leucocephalus*	T
Vascular Plants		
Dwarf-flowered heartleaf	*Hexastylis naniflora*	T
Heller's blazing star	*Liatris helleri*	T
Mountain golden heather	*Hudsonia montana*	T
Small-whorled pogonia	*Isotria medeoloides*	T
Spreading avens	*Geum radiatum*	E

KEY:

E=Endangered - A taxon "in danger of extinction throughout all or a significant portion of its range."

T=Threatened - A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."

A brief description of the characteristics and habitat requirements of each species follows, along with a conclusion regarding potential project impact.

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

Family: Accipitridae
Federally Listed: 1995

The bald eagle is a large raptor with a wingspan reaching 7 feet (2.1 m). Adults have a dark brown body with a pure white head and tail, whereas the juvenile plumage is chocolate brown to blackish with white mottling on the tail, belly and underwings. Adult plumage is fully acquired by the fifth or sixth year.

The bald eagle is primarily associated with coasts, rivers, and lakes, usually nesting near large bodies of water where it feeds. It preys primarily on fish, but will feed on birds, mammals, turtles, and carrion when fish are unavailable.

In the southeast, the nesting and breeding season runs from September to December. Large nests up to 6 feet (2 m) across and weighing hundreds of pounds are constructed from large sticks, weeds, cornstalks, grasses, and sod. Preferred nesting sites are usually within 0.5 mile (0.8 km) of water, have an open view of the surrounding area, and are in the largest living tree, usually a pine or cypress. Excessive human activity may exclude an otherwise suitable site from use. Wintering areas generally have the same characteristics as nesting sites, but may be farther from shores.

The bald eagle ranges throughout all of North America. Breeding sites in the southeast are concentrated in Florida, coastal South Carolina, and coastal Louisiana, and sporadically located elsewhere.

Biological Conclusion: **No Effect**

The project area is adjacent to a large lake that could provide foraging habitat. However, the proximity of the proposed project to a road and recreational area make it unlikely that the bald eagle would utilize the area. No occurrences of the bald eagle within the project vicinity were found in the NHP files and no nests or potential nest sites were observed in the project area. Therefore, it can be concluded that the project will not impact this threatened species.

***Hexastylis naniflora* (dwarf-flowered heartleaf)** **Threatened**

Plant Family: Aristolochiaceae
Federally Listed: 1989

Also known as dwarf-flowered wild ginger, the dwarf-flowered heartleaf is distinguished from other members of the genus *Hexastylis* by the size of the flower. It is the smallest flower in the genus, measuring less than 0.4 inches (10 millimeters [mm]) across. The sepal tubes are never more than 0.02 or 0.03 inches (6 or 7 mm) wide, even in flower. The jug-shaped flowers are beige to dark brown, sometimes green or purplish. As the common name implies, the evergreen leaves are heart-shaped with a leathery texture.

The dwarf-flowered heartleaf requires acidic, sandy loam soils along bluffs and nearby slopes, in boggy areas adjacent to creek heads and streams, and along slopes of hillsides and ravines. It can tolerate either moist or dry conditions if the soil requirement is met. Maximum flowering occurs when plenty of sunlight is available in early spring. The flowering season is from mid-March to early June.

There are 24 known populations of the dwarf-flowered heartleaf in the upper piedmont of North Carolina and South Carolina. In North Carolina, the plant is known from Catawba, Lincoln, Rutherford, Cleveland, and Burke counties.

Biological Conclusion: **No Effect**

An acidic sandy loam soil is mapped in the project area, and a search of the NHP files showed a known population on the upland north of Bridge No. 46. A search for individual plants was conducted on July 16, 2000. A population of a heartleaf species was observed in the same reported location as the known population. No flowers were present, but the species was presumed to be a dwarf-flowered heartleaf based on the location. This population consists of at least 22 plants and is located approximately 260 feet (79 m) from the existing roadway, within the impact area of **Alternative 1**. A second population, also presumed to be a dwarf-flowered heartleaf, is located approximately 160 feet (48.8 m) from the existing road. The second population consists of two isolated individuals. Both **Alternatives 1 and 2** could potentially effect this population. **Alternatives 3 and 4** are not anticipated to impact the species. Since the preferred alternative (**Alternative 4**) does not impact the species locations, this project will have no effect on this species.

***Liatris helleri* (Heller's blazing star)** **Threatened**

Plant Family: Asteraceae
Federally Listed: 1987

Heller's blazing star is a perennial herb with an erect stem from a corn-like rootstock. The stiff stems are purple near the base, turning to green upwards, and are strongly ribbed and angulate. Both basal and cauline leaves are numerous, decreasing in size upward. The leaves are long and narrow, with those at the base 8 to 12 inches (20 to 30 cm) in length. The stems reach up to 16 inches (40 cm) in height and are topped by a showy spike of lavender flowers 0.3 to 8 inches (7 to 20 cm) long. Flowering occurs from July through September.

Heller's blazing star typically occurs on sandy soil on rocky summits, cliffs, ledges, and rocky woods at elevations of 3500 to 6000 feet (1067 to 1829 m). The plants grow in humus or clay loams on igneous and metasedimentary rock. Soils are generally acidic (pH 4) and shallow. Sites occupied by the Heller's blazing star are generally exposed to full sun.

Biological Conclusion: **No Effect**

No habitat exists in the project area for Heller's blazing star. The elevation of the project area is approximately 1040 feet (317 m), whereas this species occurs above 3500 feet (1067 m). There are no areas of sandy soil on rocky summits, cliffs, ledges, or rocky woods that are exposed to full sun. A search of the NHP database found no occurrence of Heller's blazing star in the project vicinity. It can be concluded that the project will not impact this threatened species.

***Hudsonia montana* (mountain golden heather)** **Threatened**

Family: Cistaceae
Federally Listed: 1980

Mountain golden heather is a low-growing shrub with 0.5-inch (1.2-cm) long, needle-like leaves. The yellow-green plants have an open branching pattern and usually grow in clumps 4 to 8 inches (10.1 to 20.3 cm) across and 6 inches (15.2 cm) high. The yellow flowers measure nearly 1-inch (2.5-cm) across and have five blunt-tipped petals. They appear in early to mid-June. The fruit capsules are borne on the end of long stalks and persist on the plant after opening.

Mountain golden heather is known only from Burke and McDowell Counties at elevations of 2800 to 4000 feet (853.4 to 1219.2 m). It grows on quartzite ledges in an ecotone between bare rock and *Leiophyllum*-dominated heath balds that merge into pine-oak forest. It may survive for some time in the shade of pines but does better in open areas.

Biological Conclusion: **No Effect**

No habitat exists in the project area for mountain golden heather. The elevation of the project area is approximately 1040 feet (317 m), whereas this species occurs above 2800 feet (853.4 m). A search of the NHP database found no occurrence of mountain golden heather in the project vicinity. It can be concluded that the project will not impact this threatened species.

***Isotria medeoloides* (small whorled pogonia)** **Threatened**

Family: Orchidaceae
Federally Listed: 1982

The specific epithet of the small whorled pogonia comes from the resemblance of this perennial orchid to young plants of Indian cucumber root (*Medeola virginiana*). However, the small whorled pogonia has a stout, hollow stem in contrast to the solid, slender stem of Indian cucumber root. The stem is 3.7 to 9.8 inches (9.5 to 25 cm) tall, with a terminal whorl of five or six light green leaves that are elliptical in shape and measure up to 3 by 1.5 inches (8 by 4 cm). One or two flowers are borne at the top of the stem, appearing from mid-May to mid-June. The flowers lack fragrance and nectar guides, and apparently are self-pollinating.

The small whorled pogonia was formerly scattered in 48 counties in 16 eastern States. Currently, the majority of populations are found in New England at the foothills of the Appalachian Mountains and in northern coastal Massachusetts. The habitat of the small whorled pogonia varies widely throughout its range, although there are a few common characteristics among the majority of sites. These include sparse to moderate ground cover; a relatively open understory; and proximity to features that create extensive, stable breaks in the canopy, such as logging roads or streams. The pogonia has been found in mature forests as well as stands as young as 30 years. Forest types include mixed-deciduous/white pine or hemlock in New England, mixed deciduous in Virginia, white pine/mixed-deciduous or white pine/oak-hickory in Georgia, and red maple in Michigan. Understory components in the southern part of the range are most commonly found to be flowering dogwood (*Cornus florida*), sourwood (*Oxydendron arboreum*), mountain laurel (*Kalmia latifolia*), American chestnut (*Castanea dentata*), witch hazel (*Hamamelis virginiana*), and flame azalea (*Rhododendron calendulaceum*). Early descriptions placed the small whorled pogonia on dry sites, but it has since been found on sites with high soil moisture.

Biological Conclusion: **No Effect**

Given the fairly general habitat requirements described for the small whorled pogonia, the project area may be considered to have suitable habitat. However, the NHP files showed no occurrences of this species in the project vicinity and no plants were found by Earth Tech biologists, who conducted a survey July 16,

2000, during the flowering season. It can be concluded that the project will have no impact on the small whorled pogonia.

***Geum radiatum* (Spreading avens)** **Endangered**

Plant Family: Rosaceae
Federally Listed: 1990

Spreading avens is a perennial herb having stems with an indefinite cyme of bright yellow, radially symmetrical flowers. Flowers of spreading avens are present from June to early July. Spreading avens has basal leaves which are odd-pinnately compound; terminal leaflets are kidney shaped and much larger than the lateral leaflets, which are reduced or absent.

Spreading avens is found only in the North Carolina and Tennessee section of the Southern Appalachian Mountains. Spreading avens occurs on scarps, bluffs, cliffs, and escarpments on mountains, hills, and ridges. Known populations of this plant have been found to occur at elevations from 5060 to 5800 feet (1535 to 1759 m). Other habitat requirements for this species include full sunlight and shallow acidic soils. These soils are composed of sand, pebbles, humus, sandy loam, and clay loam. Most populations are pioneers on rocky outcrops.

Biological Conclusion: **No Effect**

No habitat exists in the project area for spreading avens. The elevation of the project area is approximately 1040 feet (316.9 m) and known populations occur above 5000 feet (1524 m). A search of the NHP database found no occurrence of spreading avens in the project vicinity. It can be concluded that the project will not impact this endangered species.

2. Federal Species of Concern

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. **Table 4** includes FSC listed for Burke County and their State classifications. Organisms which are listed as E, T, or SC on the NHP list of Rare Plant and Animal Species are afforded State protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. However, the level of protection given to State-listed species does not apply to NCDOT activities.

Table 4. Federal Species of Concern in Burke County

Common Name	Scientific Name	State Status	Habitat Present
Vertebrates			
Alleghany woodrat	*Neotoma magister*	SC	Yes
Southern Appalachain woodrat	*Neotoma floridana haematoreia*	SC	Yes
Invertebrates			
Brook floater	*Alasmidonta varicosa*	T	Yes
Diana fritillary butterfly	*Speyeria diana*	SR	No
Edmund's snaketail dragonfly*	*Ophiogomphus edmundo*	SR	No
Pygmy snaketail dragonfly	*Ophiogomphus howei*	SR	Yes
Vascular Plants			
Butternut	*Juglans cinerea*	W5	Yes
Carolina saxifrage	*Saxifraga caroliniana*	C	No
Sweet pinesap	*Monotropsis odorata*	C	No
Nonvascular Plants			
A liverwort*	*Cephaloziella obtusilobula*	W2	No
A liverwort	*Plagiochila sullivantii var. spinigera*	C	No
A liverwort	*Plagiochila sullivantii* var. *sullivantii*	C	No

Sources: USFWS, 1998; Amoroso, ed., 1997; LeGrand and Hall, eds., 1997
Key: T = Threatened, SC = Special Concern, C = Candidate, SR = Significantly Rare, W2 = Rare, but taxonomically questionable, W5 = Rare because of severe decline
* = Historic record. The species was last observed in the county > 50 years ago

No FSC species were observed during the site visit. According to NHP records, none of these species occur within 2 miles (3.2 km) of the project area.

3. Summary of Anticipated Impacts

Of the six species listed by USFWS for Federal protection in Burke County, the dwarf-flowered heartleaf is present on the **Alternative 1 and 2** alignments. **Alternative 3** and **Alternative 4 (preferred)** will not affect this species. No other Federally protected species are present.

Of the eleven species listed for Burke County as Species of Concern, three have habitat in the project area, however none of these species were observed during the site visit and there are no records of occurrence within 2 miles (3.2 km) of the project area registered with the NHP.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, and implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800. Section 106 requires Federal agencies to take into

account the effect of Federally funded, licensed, or permitted undertakings on properties listed on or eligible for the National Register of Historic Places and afford, the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings.

B. Historic Architectural Resources

A field survey of the Area of Potential Effects (APE) was conducted on September 21, 1999. All structures within the APE were photographed, and later reviewed by the State Historic Preservation Office (HPO). None of the properties were considered eligible, and in a concurrence form dated April 16, 2002, the State Historic Preservation Officer (SHPO) concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix.

C. Archaeological Resources

The State Historic Preservation Officer (SHPO), in a comment dated November 19, 2001, stated that no sites are located within the project area and the project will not involve significant archaeological resources. This statement fulfills the requirements of 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. A copy of the SHPO comment is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

Anticipated impacts to the resources in the project area are described in this section. The project is considered to be a Federal "Categorical Exclusion" because of its limited scope and insignificant environmental consequences. The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

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

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

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

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

project. However, there is 'public access land' maintained by NCWRC associated with the Bridgewater Fishing Pier and corresponding parking area. This area will not be adversely impacted by the proposed project. Access will be maintained to the parking area and the fishing pier will remain undisturbed during and following construction. See **Section IX. 4(f)** of this document for further discussion of this resource.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the U.S. Natural Resources Conservation Service. No prime or important farmlands will be impacted by the proposed project.

This project is an air quality "neutral" project, so it is not required to be included in the regional emission analysis (if applicable) and a project level CO analysis is not required. The project is located in Avery County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR part 51 is not applicable because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

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

Noise levels could increase during construction but will be temporary. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina SIP for air quality in compliance with 15 NAACO 2D.0520. This evaluation completes the assessment requirements for highway traffic noise (23 CFR Part 772) and for air quality (1990 CAAA and NEPA), and no additional reports are required.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the Division of Waste Management revealed no underground storage tanks, hazardous waste sites, regulated or unregulated landfills, or dump sites in the project area.

Burke County is a participant in the National Flood Insurance Program (NFIP). Flood Insurance Study maps for Burke County show Bridge No. 46 is located in a FEMA 100-year floodplain (see **Figure 5**). Replacement of this bridge is not expected to affect the 100-year floodplain.

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

VIII. AGENCY COMMENTS

United States Army Corps of Engineers (email comments)

If the Catawba River is utilized by canoes and other boat traffic, any construction activities would have to allow for continued boat passage. The Corps defers to the North Carolina Wildlife Resources Commission to determine the precise time period of any moratioriums associated with trout spawning seasons in the associated stream. Because this stream is in a trout water county, a pre-construction notification (PCN) will be required for any and all nationwide permits requested.

United States Department of Agriculture

The Natural Resources Conservation Service does not have any comments at this time.

United States Department of the Interior- Fish and Wildlife Service

Federal List of Endangered and Threatened Wildlife and Plants as well as species of Federal concern were sent for Buncombe County. A survey was recommended of the project area for species prior to further planning or on-the-ground activities to ensure no adverse impacts occur to these species.

North Carolina Wildlife Resources Commission

The Catawba River, in the Lake James tailwater, is Designated Public Mountain Trout Water and is classified as Hatchery Supported. The river at this location is stocked with catchable trout from March 1 through July 31 annually and supports wild brown and brook trout. Efforts should be made to minimize in water disturbance during stocking season from March 1 through July 31. No in water work is allowed between November 1 and April 15 to protect trout egg and fry stages from sedimentation. In addition to trout, there are spring runs of striped bass, v-lip redhorse, yellow perch, and walleye from Lake Rhodhiss that travel up to this location attempting to spawn. There are records of a rare mussel, the brook floater (*Alasmidonta varicose*), in this section of the river. Surveys are required to determine the status of this species.

Burke County Public Schools

No school bus routes require the use of Bridge No. 46, therefore no negative impact to school bus routing is associated with the proposed project.

Duke Power

The area affected by the proposed bridge replacement is outside of the project boundary for the Bridgewater Development of the Catawba-Wateree Project (hydroelectric plant). Therefore, no permits will be required for the activities proposed for the replacement of Bridge No. 46.

IX. 4(F)

Duke Power, a division of Duke Energy Corporation has been licensed by the Federal Energy Regulatory Commission (FERC), to operate the Catawba-Wateree Project which impounds the waters of the Catawba River including Lake James, Lake Rhodhiss, Lake Hickory, Lookout Shoals Lake, Lake Norman, Mountain Island Lake, and Lake Wylie in North Carolina.

Duke Power operates a hydroelectric plant, the Bridgewater Hydroelectric Plant, on Lake James. For most non-Federal hydroelectric power plants, the Federal Energy Regulatory Commission (FERC) must issue a license authorizing construction or continued operation of the facility. The FERC license protects the public interest in the case of the use of a natural resource- streams and rivers. As part of the FERC license for the Bridgewater Hydroelectric Plant, Duke Power has entered into an agreement with the North Carolina Wildlife Resources Commission (NCWRC) to provide public access to the Catawba River as an enhancement measure. Duke Power is leasing a 39.8-acre (16.1-ha) tract of land to NCWRC, to be maintained as a public access area. The 39.8-acre (16.1-ha) tract extends approximately 1000 feet (304.8 m) north and 1500 feet (457.2 m) south of Bridge No. 46, along the Catawba River.

The leasing agreement will remain in force until it is terminated by either party or on its expiration date of August 31, 2008, whichever comes first. This termination date correlates to the renewal date of the associated FERC license. Duke Power intends to continue this agreement in association with the continued renewal of the FERC license. A copy of this lease agreement is attached to the Programmatic 4(f).

One portion of this tract, 4.94 acres (2.0 ha) on the Catawba River at the southwest quadrant of the bridge, has been enhanced for public use with a gravel parking area and a fishing pier. The parking area can be accessed from Powerhouse Road (SR 1223) at the western bridge approach.

Bridge No. 46 is being replaced because of poor horizontal alignment and decaying structural elements; the current bridge conditions are unsafe and need to be replaced. The preferred alternative (**Alternate 4**) will replace the existing structure just north of the existing structure. The resulting facility will provide a structure to current safety standards. There will be no impacts to the Bridgewater Fishing Pier or associated parking facility. All project impacts will be in the form of right of way acquisition to the north of the existing facility.

This project necessitates the use of a minor amount of land from a "Public Access Area;" since the project meets the criteria set forth in the Federal Register (December 23, 1986), a Programmatic 4(f) Evaluation has been attached to satisfy the requirements of Section 4(f) of the Department of Transportation Act of 1966. The following alternatives, which avoid use of the

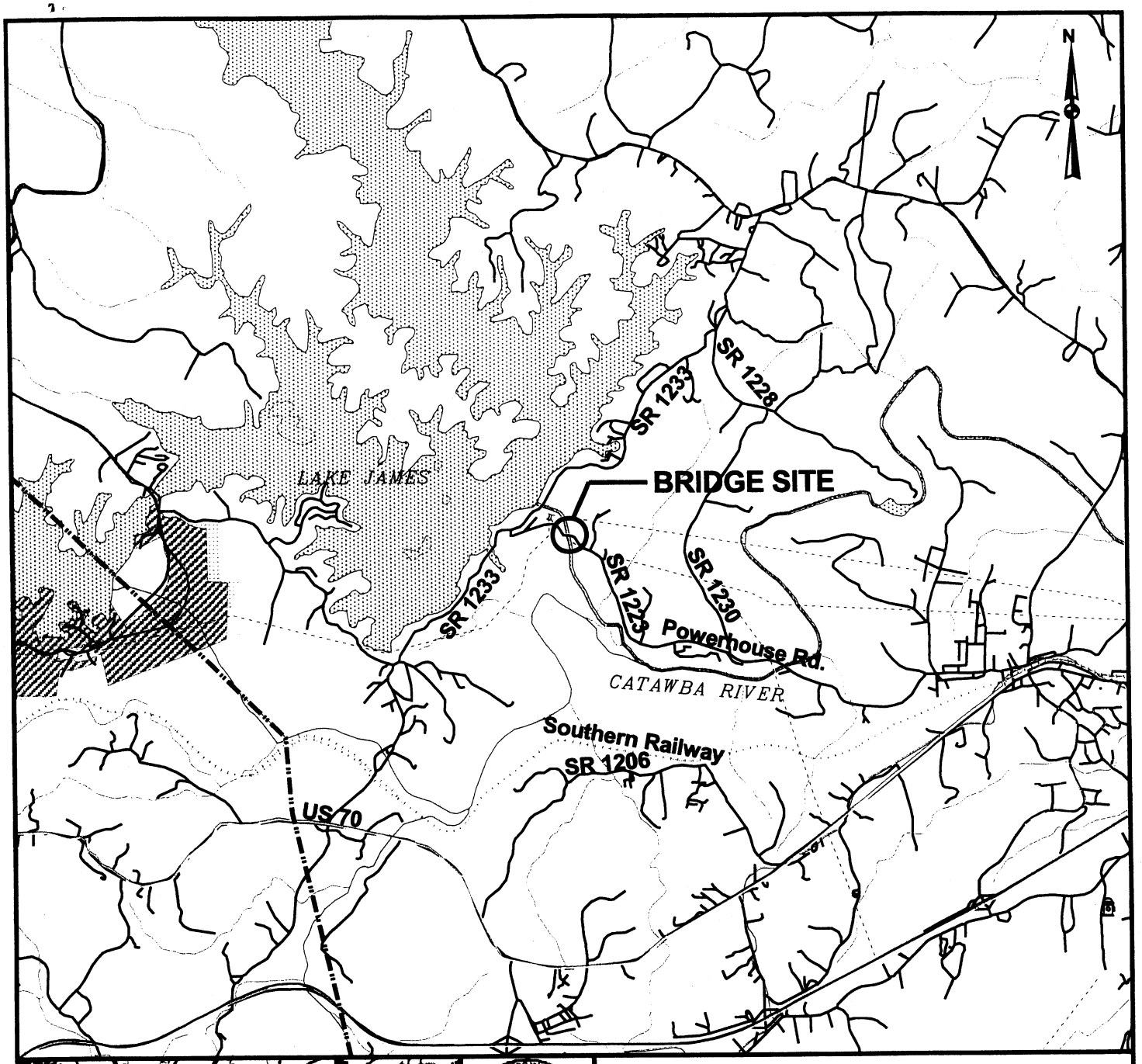
"Public Access Area," have been fully evaluated: (1) do nothing; (2) improve the bridge without using the surrounding "Public Access Area;" (3) build the replacement structure on a new location without using land from the leased tract. These alternatives were not found to be feasible and prudent.

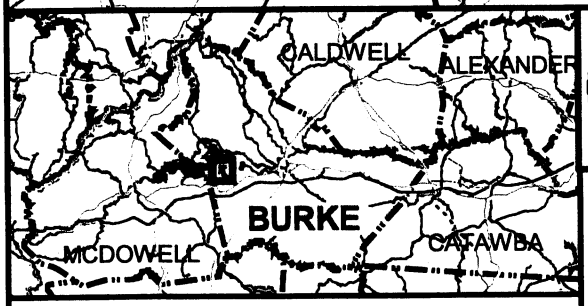
All possible planning to minimize harm to the "Public Access Area" has been performed as an integral part of this project. Measures to minimize harm include the following:

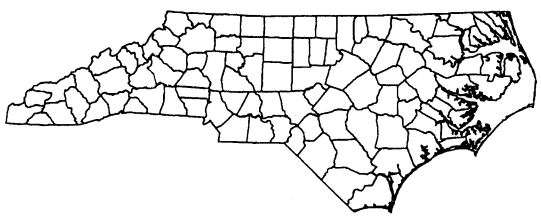
1. Re-alignment of the bridge just north of the existing structure resulting in no impacts to the 4.94-acre (2.0-ha) Bridgewater Fishing Pier and parking. Access to the fishing area will be retained as part of the new alignment.
2. Design speed was dropped to 15 mph (24 kph) from the standard 60 mph (97 kph) to apply design standards associated with lower design speed. The new design standards allow more curve in the road resulting in less overall right of way acquisition.
3. Minimization of necessary right of way by using sideslopes appropriate for a 15 mph (24 kph) design.

This project has been coordinated with the Duke Power Company and the North Carolina Wildlife Resources Commission. Both entities have confirmed that maintenance of the Bridgewater Fishing Pier and parking area will fulfill the requirements of the FERC license and the Public Access Area leasing agreement. Correspondence with Duke Power is attached. The approved Programmatic 4(f) Evaluation addressing the Bridgewater Fishing Pier is also attached.

FIGURES







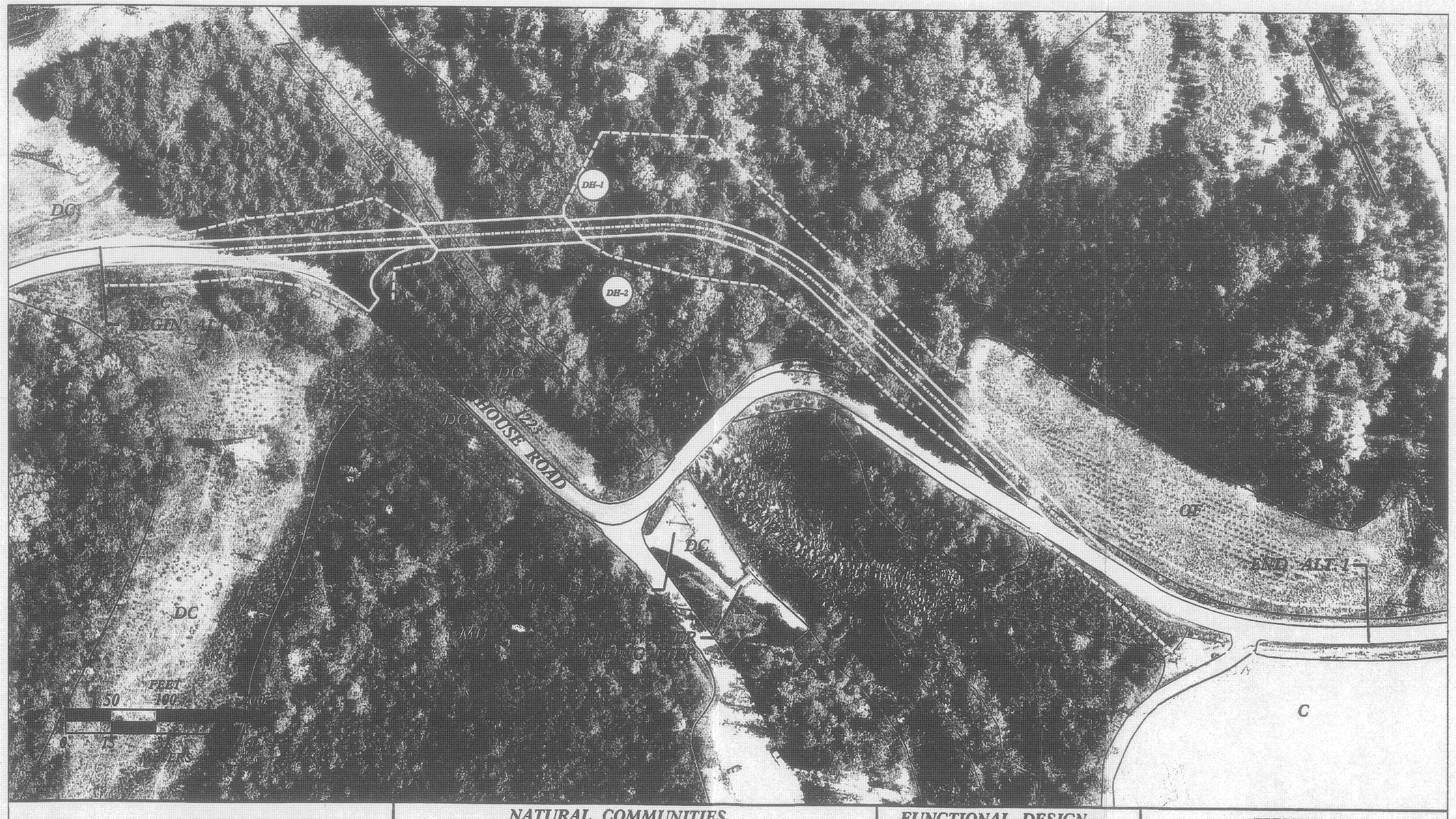
North Carolina - Department of Transportation
Division of Highways
Project Development and Environmental Analysis Branch

FIGURE 1
VICINITY MAP

REPLACEMENT OF BRIDGE NUMBER 46
ON SR 1223 OVER THE CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419

1 0 1 Miles

1 0 1 2 Kilometers



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

NATURAL COMMUNITIES LEGEND

Limits of Natural Communities

DH-1 Dwarf-flowered Heartleaf Occurence 1

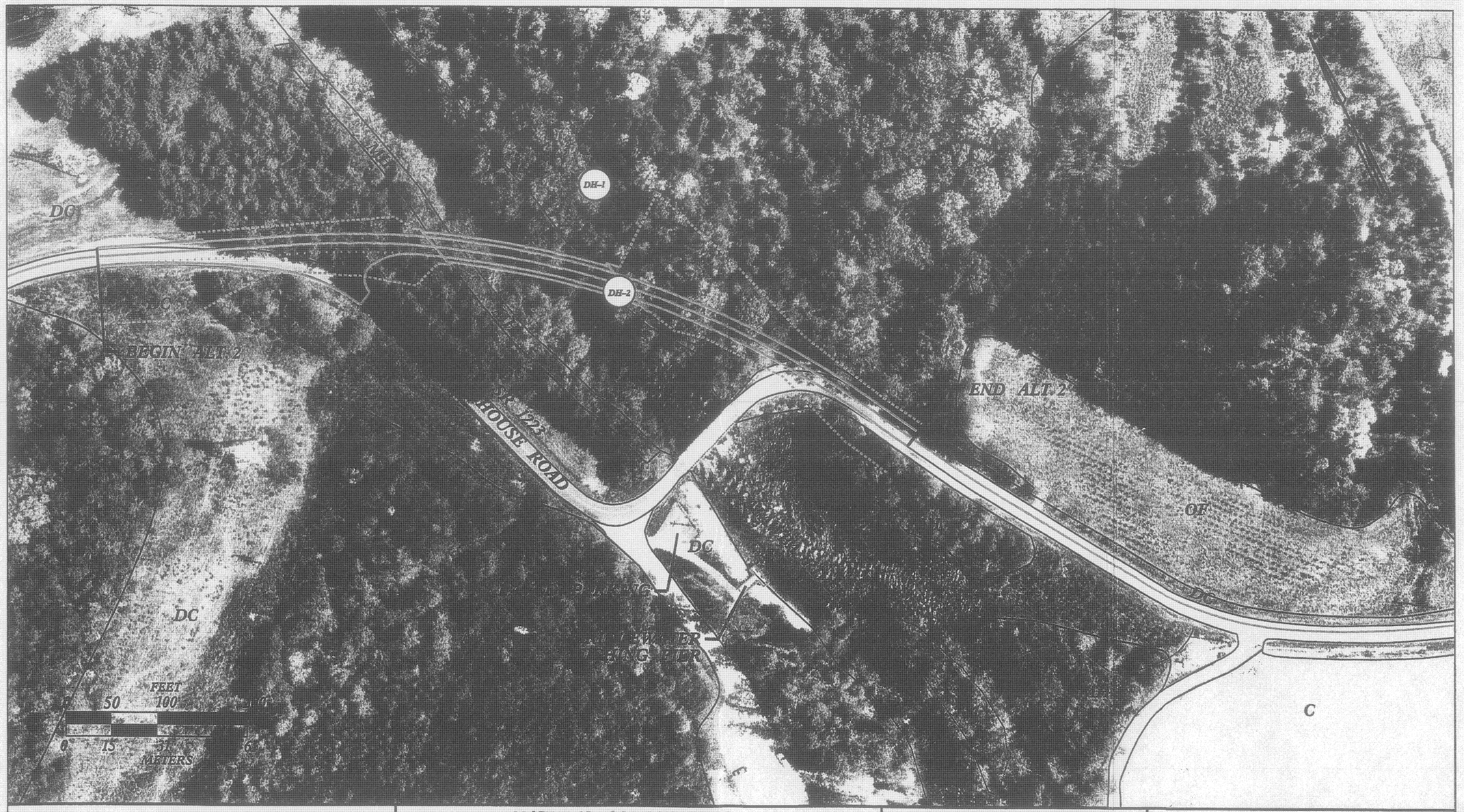
DH-2 Dwarf-flowered Heartleaf Occurence 2

OF – Old Field
C – Cultivated
DC – Disturbed Community
MH – Mixed Hardwood

FUNCTIONAL DESIGN LEGEND

Alt. 1, Centerline
Alt. 1, Edge of Pavement
Alt. 1, Construction Limits

FIGURE 2a
ALTERNATIVE 1
REPLACEMENT OF BRIDGE NO. 46
ON SR 1223 OVER
CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419



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

NATURAL COMMUNITIES LEGEND

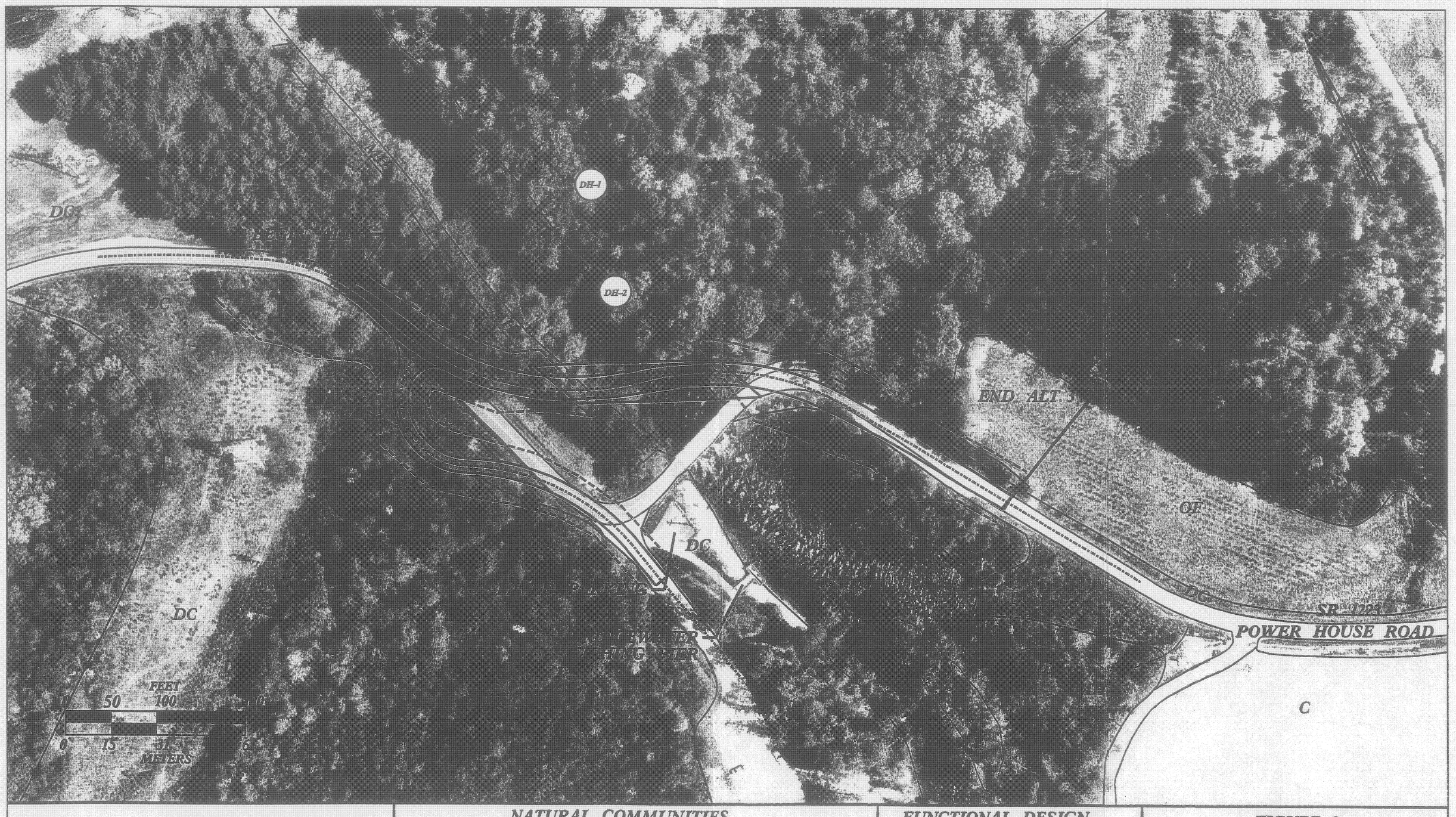
- Limits of Natural Communities
- DH-1 — Dwarf-flowered Heartleaf Occurence 1
- DH-2 — Dwarf-flowered Heartleaf Occurence 2

OF – Old Field
C – Cultivated
DC – Disturbed Community
MH – Mixed Hardwood

FUNCTIONAL DESIGN LEGEND

- Alt. 2, Centerline
- Alt. 2, Edge of Pavement
- Alt. 2, Construction Limits

FIGURE 2b
ALTERNATIVE 2
REPLACEMENT OF BRIDGE NO. 46
ON SR 1223 OVER
CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419



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

NATURAL COMMUNITIES LEGEND

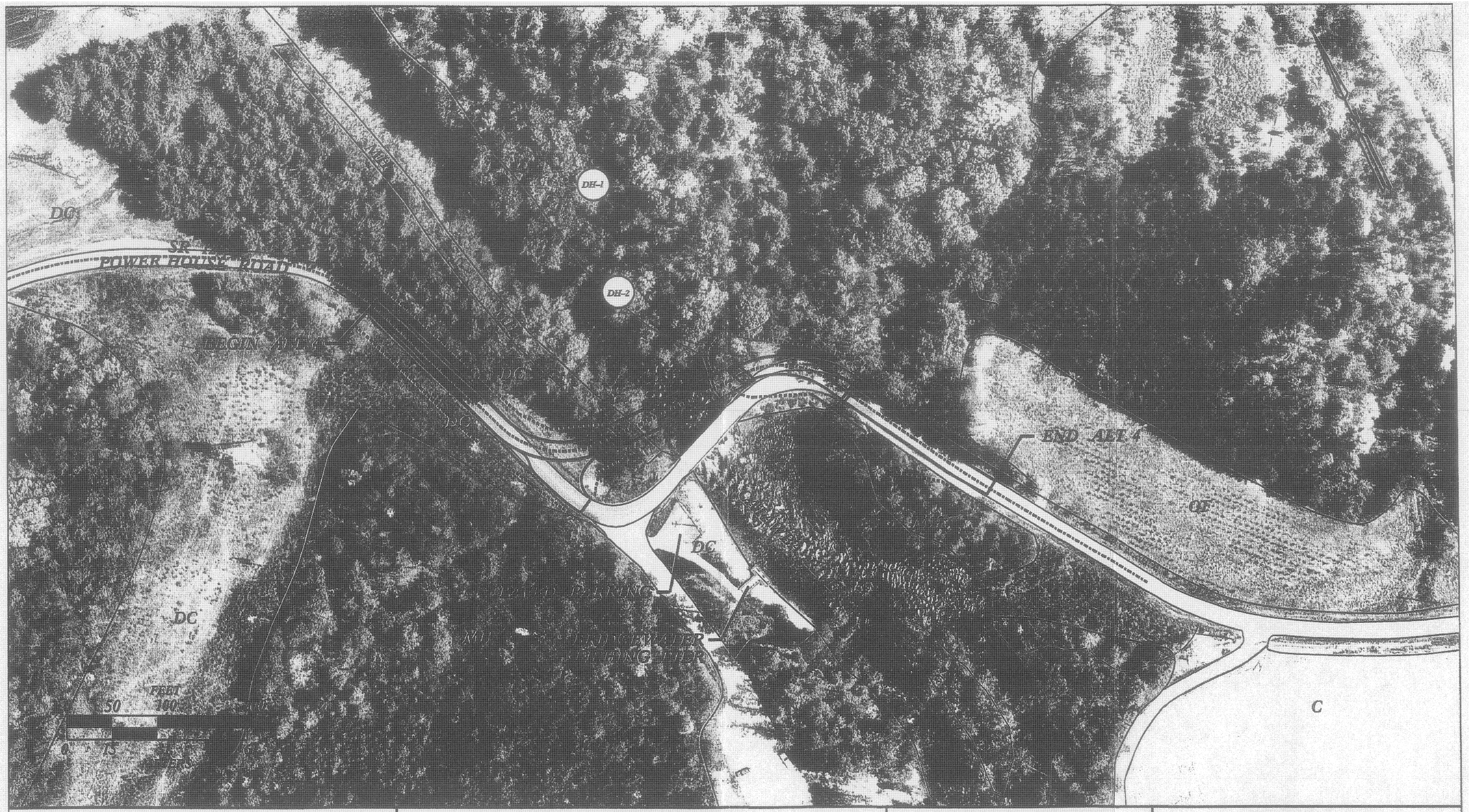
- Limits of Natural Communities
- DH-1 Dwarf-flowered Heartleaf Occurence 1
- DH-2 Dwarf-flowered Heartleaf Occurence 2

OF – Old Field
C – Cultivated
DC – Disturbed Community
MH – Mixed Hardwood

FUNCTIONAL DESIGN LEGEND

- Alt. 3, Centerline
- Alt. 3, Edge of Pavement
- Alt. 3, Construction Limits

FIGURE 2c
ALTERNATIVE 3
REPLACEMENT OF BRIDGE NO. 46
ON SR 1223 OVER
CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419



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

NATURAL COMMUNITIES LEGEND

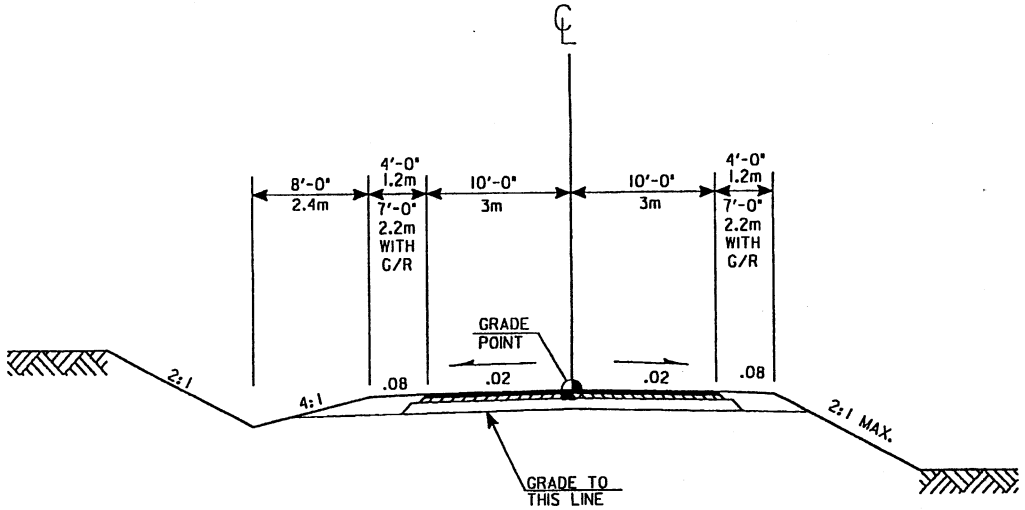
- Limits of Natural Communities
- DH–1 Dwarf–flowered Heartleaf Occurence 1
- DH–2 Dwarf–flowered Heartleaf Occurence 2

OF – Old Field
C – Cultivated
DC – Disturbed Community
MH – Mixed Hardwood

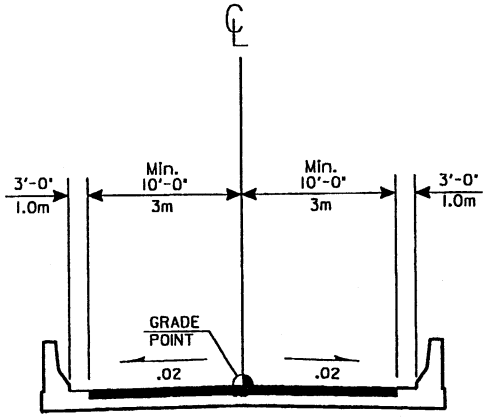
FUNCTIONAL DESIGN LEGEND

- Alt. 4, Centerline
- Alt. 4, Edge of Pavement
- Alt. 4, Construction Limits

FIGURE 2d
ALTERNATIVE 4 (PREFERRED)
REPLACEMENT OF BRIDGE NO. 46
ON SR 1223 OVER
CATWABA RIVER
BURKE COUNTY
TIP NO. B–3419



TYPICAL ROADWAY APPROACH SECTION



TYPICAL SECTION ON STRUCTURE

TRAFFIC DATA

ADT 2002	575
ADT 2025	1000
DUAL	4%
TTST	1%

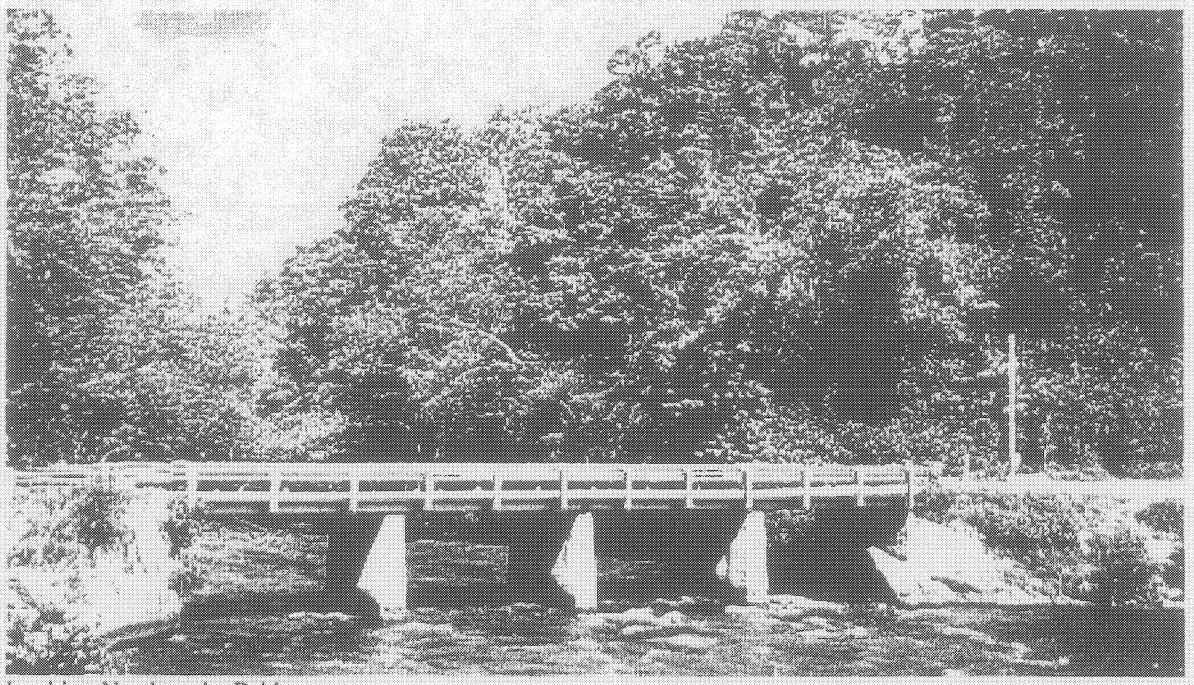
FUNCTIONAL CLASSIFICATION: LOCAL

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

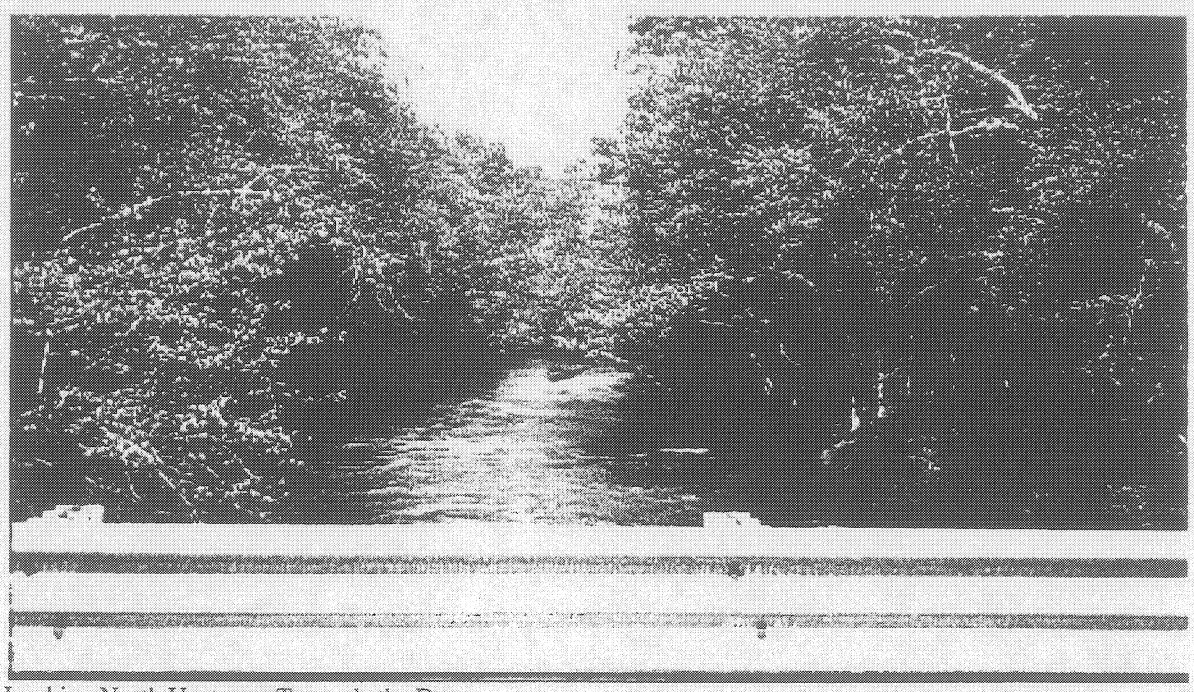
FIGURE 3
BURKE COUNTY
BRIDGE NO. 46 ON SR 1223
OVER CATAWBA RIVER

TIP B-3419

TYPICAL SECTION



Looking North at the Bridge



Looking North Upstream Towards the Dam

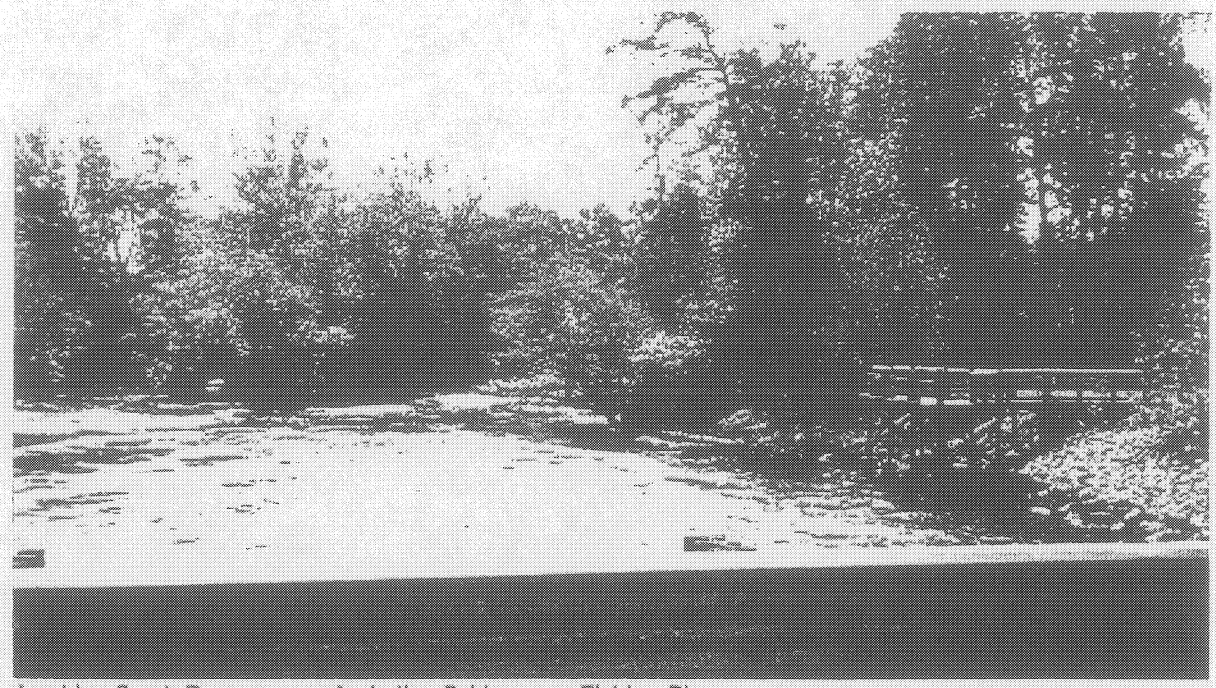
North Carolina – Department of Transportation

Division of Highways

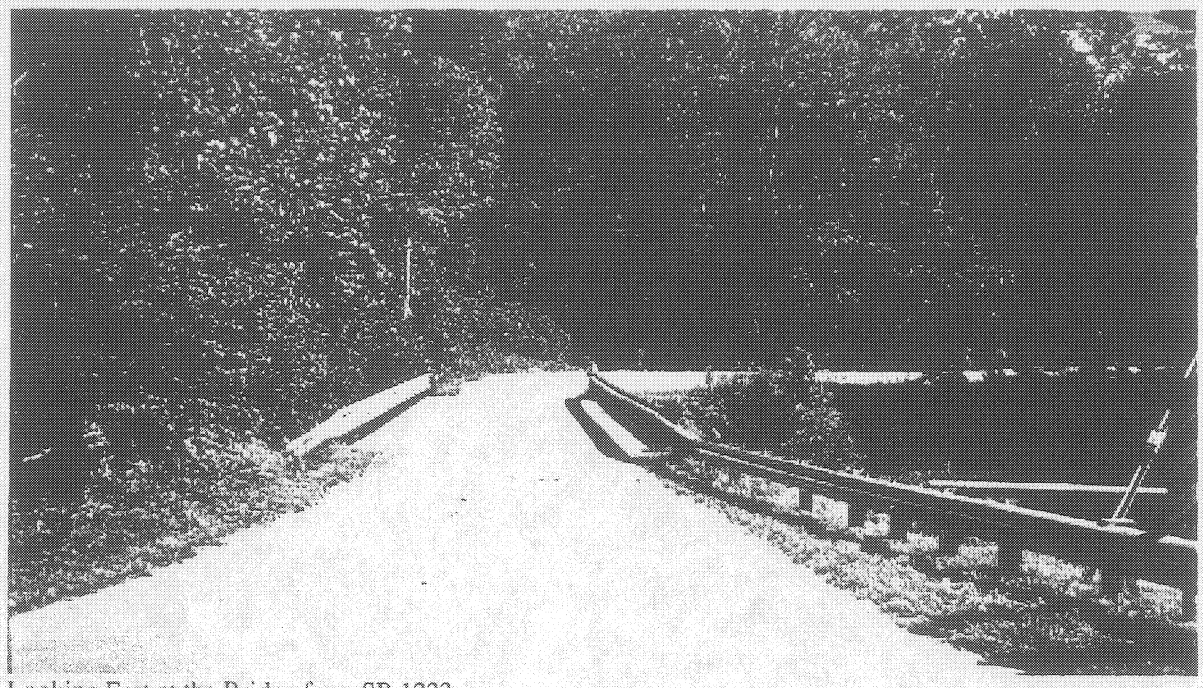
Project Development and
Environmental Analysis Branch

FIGURE 4a
NORTH VIEWS OF BRIDGE

REPLACEMENT OF BRIDGE NUMBER 46
ON SR 1223 OVER CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419



Looking South Downstream; Including Bridgewater Fishing Pier



Looking East at the Bridge from SR 1223

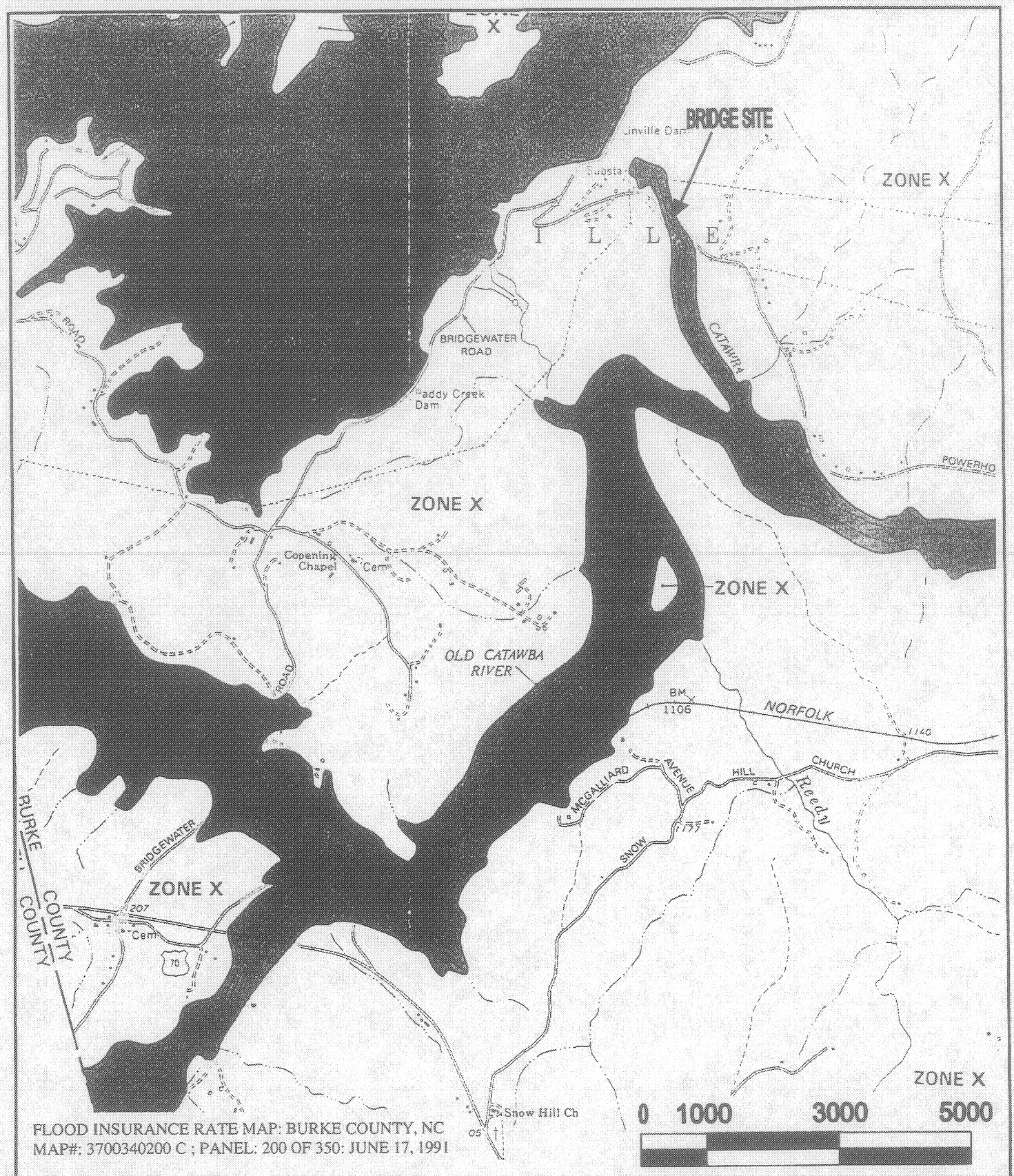
North Carolina – Department of Transportation

Division of Highways

Project Development and
Environmental Analysis Branch

FIGURE 4b
SOUTH AND EAST VIEWS OF BRIDGE

REPLACEMENT OF BRIDGE NUMBER 46
ON SR 1223 OVER CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419



FLOOD INSURANCE RATE MAP: BURKE COUNTY, NC
MAP#: 3700340200 C ; PANEL: 200 OF 350: JUNE 17, 1991

North Carolina – Department of Transportation

Division of Highways

Project Development and Environmental Analysis Branch

FIGURE 5
FEMA 100 – YEAR FLOODPLAIN MAP
REPLACEMENT OF BRIDGE NUMBER 45
ON SR 1223 OVER THE CATAWBA RIVER
BURKE COUNTY
TIP NO. B-3419

PROGRAMMATIC 4(f)

NORTH CAROLINA DIVISION
FINAL NATIONWIDE SECTION 4(f) EVALUATION AND APPROVAL
FOR FEDERALLY-AIDED HIGHWAY PROJECTS WITH MINOR INVOLVEMENT
WITH PUBLIC PARKS, RECREATION LANDS, AND WILDLIFE AND
WATERFOWL REFUGES

F. A. Project BRZ-1223(2)

State Project 8.2852001

T. I. P. No. B-3419

Description: Replacement of Bridge Number 46 on SR 1223 over Catawba River, Burke County

---

		Yes	No
1.	Is the proposed project designed to improve the operational characteristics, safety, and/or physical condition of existing highway facilities on essentially the same location?	X	☐
2.	Is the project on new location?	☐	X
3.	Is the Section 4(f) land a publicly owned public park, recreation land, or wildlife and waterfowl refuge located adjacent to the existing highway?	X	☐
4.	Does the amount and location of the land to be used impair the use of the remaining Section 4(f) land, in whole or in part, for its intended purpose? (See chart below)	☐	X

Total size of section 4(f) site	Maximum to be acquired
less than 10 acres	10 percent of site
10 acres-100 acres	1 acre
greater than 100 acres	1 percent of site

		Yes	No
5.	Do the proximity impacts of the project (e.g., noise, air and water pollution, wildlife and habitat effects, aesthetic values) on the remaining Section 4(f) land impair the use of such land for its intended purpose?	☐	X
6.	Do the officials having jurisdiction over the Section 4(f) land agree, in writing, with the assessment of the impacts of the proposed project on, and the proposed mitigation for, the Section 4(f) lands?	X	☐
7.	Does the project use land from a site purchased or improved with funds under the Land and Water Conservation Act (Section 6(f)), the Federal Aid in Fish Restoration Act (Dingell-Johnson Act), the Federal Aid in Wildlife Act (Pittman-Robertson Act), or similar laws, or are the lands otherwise encumbered with a Federal interest (e.g., former Federal surplus property)?	☐	X
8.	If the project involves lands described in Item 7 above, does the appropriate Federal Agency object to the land conversion or transfer?	☐	N/A
9.	Does the project require preparation of an EIS?	☐	X

ALTERNATIVES CONSIDERED AND FOUND NOT TO BE FEASIBLE AND PRUDENT

	Yes	No
The following alternatives were evaluated and found not to be feasible and prudent:	X	☐

1. Do-nothing.

   Does the "do nothing" alternative:

	(a) correct capacity deficiencies?	☐	X
or	(b) correct existing safety hazards?	☐	X
or	(c) correct deteriorated conditions?	☐	X
and	(d) create costs, unusual problems, or impacts of extraordinary measure?	X	☐

2. Improvement of the highway without using the adjacent public park, recreational land, or wildlife waterfowl refuge. — X ☐

   (a) Have minor alignment shifts, changes in standards, use of retaining walls, etc., or traffic management measures been evaluated? — X ☐

   (b) The items in 2(a) would result in (circle, as appropriate)

   (i) substantial adverse community impact

   or (ii) substantial increased costs

   or (iii) unique engineering, transportation, maintenance, or safety problems

   or (iv) substantial social, environmental, or economic impacts

   or (v) a project which does not meet the need

   and (vi) impacts, costs, or problems which are extraordinary magnitude

	Yes	No
3. Build an improved facility on new location without using the public park, recreational land, or wildlife and waterfowl refuge. (This would be a localized "run around.")	X	☐

(a) An alternate on new location would result in: (circle, as appropriate)

(i) a project which does not solve the existing problems

or (ii) substantial social, environmental, or economic impacts

or (iii) a substantial increase in project cost or engineering difficulties

and (iv) such impacts, costs, or difficulties of truly unusual or unique or extraordinary magnitude

MINIMIZATION OF HARM

	Yes	No
1. The project includes all possible planning to minimize harm.	X	☐

2. Measures to minimize harm include the following:

   (circle those which are appropriate)

   a. Replacement of lands used with lands of reasonably equivalent usefulness and location and of at least comparable value.

   b. Replacement of facilities impacted by the project including sidewalks, paths, benches, lights, trees, and other facilities.

   c. Restoration and landscaping of disturbed areas.

   d. Incorporation of design features and habitat features, where necessary, to reduce or minimize impacts to the Section 4(f) property.

   (e.) Payment of the fair market value of the land and improvements taken or improvements to the remaining Section 4(f) site equal to the fair market value of the land and improvements taken.

   (f.) Additional or alternative mitigation measures as determined necessary based on consultation with the officials having jurisdiction over the parkland, recreation area, or wildlife or waterfowl refuge.

3. A discussion of specific mitigation measures is provided as follows:

   The improved portion of the property (Bridgewater Fishing Pier and parking area) will be avoided and access to this area will be maintained from SR 1223 as part of the new facility.

Note: Any response in a box requires additional information prior to approval. Consult Nationwide 4(f) evaluation.

COORDINATION

The proposed project has been coordinated with the following (attach correspondence):

a. Officials having jurisdiction over the Section 4(f) Land — X
   Duke Power (owners)
   North Carolina Wildlife Resources Commission (requested coordination take place with Duke Power in telephone conversation)
b. Local/State/Federal Agencies — X
c. US Coast Guard (for bridges requiring bridge permits) — ____
d. DOI, if Section 6(f) lands are involved — ____

SUMMARY AND APPROVAL

The project meets all criteria included in the programmatic 4(f) evaluation approved on December 23, 1986.

All required alternatives have been evaluated and the findings made are clearly applicable to this project. There are no feasible or prudent alternatives which avoid use of the Section 4(f) land.

The project includes all possible planning to minimize harm, and there are assurances that the measures to minimize harm will be incorporated in the project.

All appropriate coordination has been successfully completed.

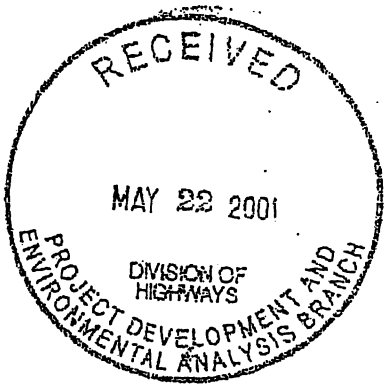
Approved:

8/26/02 — Nancy C Shelton
Date — for Manager, Project Development & Environmental Analysis Branch
NCDOT

9-27-02 — [signature]
Date — for Division Administrator, FHWA

Duke Power
A Duke Energy Company

Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006



May 17, 2001

MAY 23 2001

Mr. Bill Gilmore
NCDOT
Project Development and
Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Re: Replacement of Bridge No. 46 on SR 1223 (Powerhouse Road) over Catawba River, Burke County, TIP No. B-3419

Dear Mr. Gilmore:

This letter is in response to your request concerning clarification of the impact of the bridge replacement (see above) in conjunction with the Federal Energy Regulatory Commission's (FERC) license to Duke Power for the Catawba-Wateree Project No. 2232. The area affected by the bridge replacement and road relocation is outside of the project boundary for the Bridgewater Development of the Catawba-Wateree Project. Therefore, no permits will be required for the activities you propose as long as they stay outside of the project boundary.

Please contact me at 704-382-8587 if you have any further questions.

Sincerely,

Charles J Borawa
Senior Lake Management Representative
Duke Power, Group Environment, Health and Safety

Duke Power
A Duke Energy Company

Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006

January 26, 2001

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

Re: Replacement of Bridge No. 46 on SR 1223

Dear Ms. Harris:

I have reviewed the three alternative plans for the replacement of Bridge No. 46 on SR 1223 and would recommend the adoption of Alternative 3. I am assuming the old bridge will be removed along with the bridge abutments.

The joint development of the fishing pier and other facilities between the NCWRC and Duke was done to minimize the public parking along the shoulders of SR 1223. What type of restrictions will be proposed for the east end of the bridge to minimize the parking and use of the land between SR 1223 and the river other than the guardrails? The installation of the straightened roadway and bridge will probably lead to increased vehicle speed along the road. Every effort should be made to limit or prohibit parking along the east end of the bridge since there is adequate parking on the west side of the river at the Bridgewater Fishing Area.

Another question is if the NCDOT will continue to maintain the road from the Bridgewater Fishing Area to the west end of the new bridge?

Thank you for the opportunity to comment on the replacement bridge on SR 1223.

Sincerely,

Chuck Borawa

Charles J. Borawa
Senior Lake Management Representative
Duke Power, Group Environment, Health and Safety.

Duke Power
A Duke Energy Company

Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006

October 26, 2000

Ms Yvonne Howell
Earthtech
701 Corporate Center Drive, Suite 47 J
Raleigh, NC 27607

Re: Bridge below Bridgewater Hydro

Dear Ms Howell:

In response to your phone call concerning the replacement of the bridge directly below the Bridgewater Hydro Station on Powerhouse Road, I have included a map showing the land in the Bridgewater Fishing Access. As I mentioned the site is under an agreement with the North Carolina Wildlife Resources Commission (NCWRC) and they built the paved parking lot and wooden fishing pier. The NCWRC point of contact is Gordon Myers (919-733-3633 ext. 276) at 1721 Mail Service Center, Raleigh, NC 27699-1721.

Please send us information concerning the location of the proposed new bridge location as soon as possible so we can see how it will affect the public recreation facilities. Under a Federal Energy Regulatory Commission (FERC) license, Duke is required to provide public recreation opportunities at it's lakes. The Bridegwater Fishing Access is one of the facilities that helps to meet those requirements.

Please use me as your current point of contact with Duke Power.

Sincerely,

Chuck Borawa

Charles J. Borawa
Senior lake Management representative
Group Environment, Health and Safety

Cc: Gordon Myers
Don Cofer
Mark Oakley

STATE OF NORTH CAROLINA	)	
	)	
COUNTIES OF ALEXANDER, BURKE, CALDWELL, CATAWBA, FORSYTH, GASTON, IREDELL, LINCOLN, MCDOWELL, MECKLENBURG, AND STOKES	)	PUBLIC ACCESS AREA AGREEMENT

THIS PUBLIC ACCESS AREA AGREEMENT (Agreement) is made this 30th day of March 2000, between DUKE POWER, A DIVISION OF DUKE ENERGY CORPORATION, a North Carolina Corporation ("Grantor"), and the North Carolina Wildlife Resources Commission (NCWRC), an Agency of the State of North Carolina ("Grantee");

WITNESSETH:

WHEREAS, Grantor has been licensed by the Federal Energy Regulatory Commission (FERC), to operate the Catawba-Wateree Project (License Number 2232), which impounds the waters of the Catawba River, including Lake James, Lake Rhodhiss, Lake Hickory, Lookout Shoals Lake, Lake Norman, Mountain Island Lake and Lake Wylie in North Carolina; and,

WHEREAS, Grantor owns and operates Belews Lake, which is an unlicensed industrial cooling pond on Belews Creek at the intersection of Stokes, Rockingham, Forsyth and Guilford Counties; and,

WHEREAS, Grantor owns the tracts of land, here-in-after referred to as "Public Access Areas", the names, acreage and boundaries of which are shown in Exhibits A and B attached hereto, adjacent to the aforementioned lakes which provide access for public recreation purposes; and,

WHEREAS, Grantor desires to lease a portion of the Public Access Areas shown in Exhibits A and B, to state and local governmental agencies, commercial vendors or other interested parties, through its "Access Area Improvement Initiative", which is designed to ensure the development and maintenance of a variety of high quality recreational opportunities for the general public; and,

WHEREAS, the Grantee agrees to: (1) enforce the laws of the State of North Carolina for which it is responsible and its own regulations on all parts of the Public Access Areas which are the subject of this Agreement; and (2) operate and maintain the Public Access Areas shown on Exhibits A and B, except for those portions of the Public Access Areas that have been leased by Grantor to another entity; and,

WHEREAS, Grantor has agreed to pay Grantee $125,000 annually for the maintenance of the Public Access Areas which are the subject of this Agreement and Grantee will make available for improvements on the Public Access Areas on an annual basis a minimum of $125,000 for capital improvements on a matching fund basis, with matching funding sources coming from but not limited the following sources: (1) Grantor, (2) a state or local agency or other governmental agency, (3) a third party lessee, or (4) donation from an individual.

NOW, THEREFORE, the parties enter into the following Agreement, subject to the exceptions and reservations and upon the terms and conditions and for the purposes in this instrument set out, for the portions designated as being maintained by the Grantee on the Public Access Areas, shown on Exhibits A and B of this Agreement.

1. Term: This Agreement shall become effective as soon as signed by the parties hereto and shall remain in force until it is terminated by either party or on its expiration date of August 31, 2008, whichever comes first. Except, however, this Agreement may be renewed after the termination date, but Grantor shall not be obligated to renew.

2. Previous Agreements: This Agreement will supercede all prior existing agreements between Grantor and Grantee for any or all of the Public Access Areas contained in this Agreement, and all such Public Access Areas are now subject to and controlled by the terms and conditions of this Agreement.

3. Public Use of Facilities: Grantee will allow any recreation user of any leased portion of the Public Access Areas to cross and use the portion of the Public Access Area under control of Grantee, for the purpose of viewing the lake or any other lawful recreation activity.

4. Law Enforcement: Grantee has the responsibility under this Agreement to enforce the laws of the State of North Carolina for which it is responsible and to enforce its own regulations, on all portions of all Public Access Areas listed in Exhibits A and B, except those portions of the Public Access Areas that have been leased to another party.

5. Wildlife Protection Access: Grantee, its agents and assigns shall have the rights of ingress and egress upon all of the Public Access Areas of Grantor designated on Exhibits A and B, at any and all times for the protection and propagation of wildlife.

6. Annual Coordination Meeting: At least once each year, Grantor and Grantee will meet, during the period of January to March, to discuss and coordinate future development plans for improvements to the Public Access Areas. Proposed improvements will follow the plan and schedule agreed upon in the most recent version of Duke Power's Shoreline Management Plan, unless both Grantor and Grantee agree to a proposed revision to the plan and schedule. Potential projects for joint funding in any given year will normally be presented and discussed during the previous year's Coordination Meeting, with a final decision made not later than June of the year before

construction is to be initiated. Additional topics for the Coordination Meeting may include any proposed changes in operating hours or the implementation or modification of any user fees. Decisions on projects, operating hours and user fees must be acceptable to both Grantor and Grantee in order to be implemented.

7. Joint Inspection: Grantor and Grantee will perform an annual joint physical inspection of each of the Public Access Areas included in this Agreement, to insure the Public Access Areas are being maintained in a safe manner and to the levels mutually acceptable to Grantor and Grantee.

8. Cost-Share: Grantor has agreed to pay Grantee a $125,000 per year fee to maintain the access areas that are the subject of this Agreement. In return for this annual fee, Grantee has agreed to provide a minimum of $125,000 per year toward capital improvements on Public Access Areas, provided that matching monies are available on a 50-50 match basis. Matching funding can come from numerous sources, including but not limited to (1) Grantor, (2) a state or local agency or other governmental agency, (3) a third party lessee, or (4) donation from an individual. That portion of the funding provided for capital improvements to match Grantee's funds may only be utilized for improvements that directly benefit boating access users or bank fishing persons. The annual cost-share amount can exceed $125,000 if the Grantee has additional funds available for improvements to the Public Access Areas. Further, to insure Grantee retains the potential to utilize "U.S. Fish and Wildlife Sportfish Restoration Funds", the source of matching funds shall not be a federal government source. All capital improvements, constructed with these matching funds, that are not located within the physical boundaries of the Grantee managed portion of the Public Access Area, must remain accessible and free of charge to boating access facility users and for bank fishing persons for the duration of this Agreement. The Grantee's portion of the matching funds will normally be paid via check to Grantor (or the adjacent lessee if the adjacent lessee's funds are being matched) and not later than December 1 of the calendar year within which the capital improvement was completed. The dollar equivalent for materials and labor may on occasion be accepted from either party in lieu of an actual dollar payment, but such acceptance will be project dependent and must be determined, in writing, prior to initiation of any work on the capital improvement being funded.

9. Improvements: Grantee shall have the right to make additions or modifications to its facilities at the Public Access Areas, to change operating hours of such facilities and to implement or modify user fees not inconsistent with the purpose of the Public Access Areas. Grantee shall submit such requests in writing to Grantor and shall receive written approval from Grantor prior to initiating any work or instituting changes to the hours or user fees within the Public Access Areas. Additions to or modifications of any facilities will require the submittal of detailed plans, including but not limited to construction plans and elevation drawings. Major additions or modifications will typically require review by other entities and may require FERC approval.

10. Major Repair Costs: When major "non-routine" repairs or replacement projects become necessary, Grantor and Grantee will combine their available resources, as necessary to make such repairs, including the above mentioned cost-share funding. Further written approval by both parties must be obtained prior to work being initiated. Major "non-routine" repairs may include, but are not limited to replacement of a pier, boat ramp, road, or parking lot.

11. Termination: This Agreement or any part thereof may be terminated by either party upon three (3) months written notice to the other. Grantor may terminate this Agreement at any time if directed to do so by the FERC or its successor agency having jurisdiction over hydroelectric reservoirs that are subject to the Federal Power Act. Upon termination or expiration of this Agreement, Grantee shall have the right to remove any and all buildings, apparatus and materials supplied by them for the purpose of this Agreement for a period of ninety (90) days. If Grantee shall not have removed its personal property, any remaining buildings, apparatus or materials shall become the property of the Grantor.

12. Amendments: Amendments to this Agreement may be proposed by either party upon thirty (30) days written notice to the other, and such amendments shall become effective, if agreed upon by both parties and shall become effective on the date such Amendment is signed by the parties hereto.

13. Transfer or Assignment: Grantee may not transfer or assign this Agreement to any other party or entity.

14. Changes to Public Access Areas: Grantor reserves the right to move, alter or change the location, boundaries or layout of any Public Access Area or private road access to any Public Access Area, wherever and whenever it shall become necessary in order to insure full public utilization of the area or to prevent any noxious or offensive use of any area, or whenever the land then occupied by such Public Access Area or road is necessary to the operations of Grantor. In the event the relocation of any Public Access Area becomes necessary, Grantor will notify the Grantee and will attempt to relocate the affected Public Access Area on land owned by Grantor and at a location satisfactory to the Grantee. Grantor may add, remove or close all or any portion of any Public Access Area, at any time, after notifying the Grantee of the proposed action.

15. Compliance with Federal, State and Local Laws: Grantee agrees that its use of the subject premises as herein provided will be consistent with all FERC orders and regulations regarding recreational opportunities and development at licensed projects, and all other applicable state, federal and local laws as well as all ordinances, rules, regulations and sanctions of any regulatory body or governmental agency (state, federal or local) having jurisdiction in the subject premises, and Grantee's use of the aforesaid subject premises will comply with all applicable Duke Power Lake Management requirements and will not endanger health or safety, create a nuisance or otherwise be incompatible with the overall recreational use of the FERC Project No. 2232 and Belews Lake.

16. Notice of Changes to Design or Operation: Grantor will notify Grantee in writing of all new orders issued by the FERC or any other applicable agency having jurisdiction over the subject premises that in any way affect the design and/or use of the Public Access Areas which are the subject of this Agreement.

17. Response to Increase in Recreation Use: Grantor will in good faith, for the lakes aforementioned of the Catawba-Wateree Hydro Project, endeavor to accommodate future increases in public recreation use of the lakes by arranging for the expansion of the Public Access Areas which are the subject of this Agreement or by arranging for new and/or replacement public recreation facilities on lands that are or may become available for such purposes and when such land areas are consistent with the Shoreline Management Plan and/or the operation of Grantor's business.

18. FERC License Conflicts: Except for the Belews Lake Public Access Areas, this Agreement is subject to the terms and conditions of the license issued by the FERC for the Catawba-Wateree Hydro Project. In the event of any conflict between the terms and conditions of this Agreement and the terms of the license, it is agreed that the terms of the license shall prevail.

19. Reservation of Use: The right to use the Public Access Areas which are the subject of this Agreement for project purposes and for any other purpose consistent with Grantor's business operations is hereby reserved to the FERC project licensee, its successors and assigns.

20. Reservation of Authority: No terms or conditions herein contained shall be construed as limiting or affecting in any way the authority of Grantor in connection with its exercise of proper protection and administration of the Public Access Areas or its FERC license, except NCWRC's responsibility for game and fish conservation.

21. Boat Launching Facilities: Grantor will provide public boat launching facilities for the Public Access Areas, where such facilities are shown on Exhibit A and Exhibit B, for the duration of this Agreement. Should relocation or replacement of public boat launching facilities be required for any of the Public Access Areas that are the subject of this Agreement, the major repair cost measures defined in Item 10 will be implemented to determine the funding for such relocation or replacement.

22. Signage: Grantor will provide all information, entrance and regulation signs as required by the Grantor's FERC License and Grantee will erect and maintain all said signs.

23. Boundary Signage: The Grantee will demarcate the boundaries of each Public Access Area contained within this Agreement with NCWRC approved signs.

24. Fire Protection: In the event of a fire within or threatening to the lands or facilities of any of the Public Access Areas which are a part of this Agreement, Grantee agrees to assist Grantor with the protection of the Public Access Area against such fire.

25. Maintenance: Grantee shall provide routine maintenance and repairs at all the Public Access Areas which are the subject of this Agreement, including but not limited to those items specified in 'a' through 'o' below.

a. Entrance Road: Entrance roads are to be maintained in a safe, open and clear condition and repaired on an as needed basis to ensure roads maintain a good quality surface and drainage. Repairs may include, but are not limited to: repairing asphalt and maintaining gravel drives clear of ruts by grading and/or adding stone, keeping side ditches, water bars and culverts clear of water flow impediments, painting lines, and repairing guardrails.

b. Parking Lots and Turnarounds: Parking lots and turnarounds are to be maintained in a safe condition and repaired on an as needed basis to ensure good drainage. Repairs may include, but are not limited to: repairing asphalt, repainting faded lines and letters, painting new lines and letters as needed, repairing curbing, applying asphalt sealer, maintaining gravel parking lots clear of ruts and ensuring proper drainage by grading and/or adding stone, keeping all areas clear of debris, weeds and grass.

c. Piers and Docks: Any piers and docks provided are to be maintained in a safe condition and repaired on an as needed basis to ensure user safety. Repairs may include, but are not limited to: replacing broken or defective parts, replacing broken or loose pilings, replacing defective floats, insuring pier sections remain attached to each other, maintaining stone level around pier abutments and ramps, insuring nails and fastening devices are flush with pier surfaces, ensuring boat bumpers provided remain in sound condition, and maintaining handrails free of any rough or sharp areas.

d. Boat Launch Ramps: Boat Launch ramps are to be maintained in a safe condition and repaired on an as needed basis to ensure user safety. Repairs may include, but are not limited to: keeping boat ramps clear of debris and silt or any items that could hinder boat launching, maintaining stone at a sufficient level along edges and ends of ramps, and repairing any holes in ramps.

e. Drainage Control Devices: All drainage control devices provided on site are to eliminate erosion problems and are to be maintained in a safe condition and repaired on an as needed basis to ensure good drainage. Repairs may include, but are not limited to: correcting any erosion problems and keeping drainage ditches and culverts clear of all debris, trees and other drainage impediments.

f. Access Area Shoreline: The entire access area shoreline is to be maintained in a safe condition and repaired on an as needed basis to ensure safety of

recreation users and keep erosion under control. Repairs may include, but are not limited to: maintaining or adding erosion control materials and removing brush or trees that threaten to displace erosion control materials or that may threaten the integrity of the bank.

g. Dead or Diseased Tree Removal: Remove all dead or diseased trees or trees and limbs that have fallen on the Public Access Area that are impeding use or maintenance of the area.

h. Tree Maintenance: Ensure that all trees bordering parking areas, roads and/or walkways do not block driver vision, do not interfere with the movement of pedestrians, vehicles and boats on the roads or in parking areas, and do not impede mowing and maintenance of the Public Access Area. Trim any trees that may block vision or interfere with vehicle and boat movement or that have dead limbs that could injure recreation users if they fall.

i. Trash Removal: When trash receptacles are placed in Public Access Areas, ensure that such receptacles are maintained in a safe and sanitary condition and are adequate to handle the volume of debris normally disposed of in the area. All trash receptacles should be emptied weekly or more often so that the accumulation of trash/refuse/junk does not present a safety or health hazard in the Public Access Area. Heavily used Public Access Areas may require more frequent trash removal and frequency of trash removal may need to be increased during peak recreation seasons and on weekends. All trash should be removed from the grounds before mowing. Additionally, all refuse and trash that has been scattered around the Grantee managed portions of the Public Access Areas should be removed on a weekly basis or as often as needed to ensure a safe and hazard free area.

j. Grass and Ground Cover: Ground cover, be it shrubs, grass, or mulch, will be provided throughout the Public Access Areas and should be maintained in a safe, environmentally sound, and aesthetically pleasing condition. Mulch and/or grass areas should be maintained at a height of not less than three (3) inches or more than eight (8) inches. When grass is provided, it is to be mowed to the ditch or tree line along roadways, to the tree line around parking lots and to the tree line in open areas. Mowing an additional four (4) feet (or one mower width of at least three [3] feet) on the opposite side of the ditch line shall be done in May, August and November to keep the growth in check.

k. Use of Herbicides: Environmentally acceptable herbicides approved by the Environmental Protection Agency and/or the North Carolina Department of Agriculture may be utilized in Public Access Areas on an as needed basis to control unwanted vegetation in driveways, parking lots, turnaround areas, designated foot paths, stabilized shoreline areas and on boat ramps. Herbicide may be applied to the first 6 (six) inches of grass around the edges of the parking lots, turnarounds and roads and around the signposts, trash can pads, light poles and culverts to minimize the amount of trimming needed.

l. Use of Fertilizer: Use of fertilizer in the Public Access Areas is permitted on a seasonal and as needed basis. Public Access Areas should be fertilized twice per year or at the times recommended and with the type of fertilizer recommended for the type of material planted and being treated.

m. Use of Grass Seed: Use of grass as a ground cover in Public Access Areas is permitted. The timing of, preparation for and application of grass seed will be dependent on what is recommended for the type of seed being applied in the area.

n. Signage: All signage provided on the Public Access Area must be maintained in safe and readable form.

o. Lighting and Utility Lines: Any lighting provided within the Public Access Areas must be installed to current building and electrical code requirements and maintained in a safe manner. The Grantee will assume all costs associated with any lighting and its maintenance provided at a Public Access Area, including but not limited to payment of power bills. To the maximum extent practicable, new or modified utility lines and/or boating facilities should be designed so that overhead utility lines do not cross boat access roads, access parking lots, turn-around areas, or launch ramps. Any overhead utility lines that have no other practical alternative to being within the areas defined above, must be designed with the height clearances required by the National Electric Safety Code or any other applicable electrical safety codes, whichever is the most restrictive and provides for the greatest height.

26. Leases of Portions of the Public Access Areas: Grantor has the right to lease portions of the Public Access Areas to state or local agencies, third parties or individuals for the provision of additional public recreation facilities and the terms of this Agreement will become a part of the lease on other portions of the Public Access Area, subject to the approval of all parties. The portion of the Public Access Area which is the subject of this Agreement with the Grantee, as shown on the Public Access Area Plats in Exhibits A and B, will be excluded from the lease with any other agency, third party or individual.

27. Entry by Additional Lessees: Grantor has the right to lease portions of the Public Access Area, beyond that portion of the area maintained by the Grantee and such Additional Lessees, its agents and representatives, at all reasonable times may enter, cross and use the portion of the Public Access Areas maintained by the Grantee, for the purpose of installing and maintaining utility lines, roads and trails according to the previously approved facilities improvement plan for the Public Access Area.

28. Utility Easement: Grantor reserves an easement to build, construct, maintain and operate electric distribution/transmission lines on, over, along and above the leased premises. Grantor also reserves the right, privilege and easement to erect, construct, reconstruct, replace, maintain and use towers, poles, wires, crossarms and other appliances and fixtures for the purpose of transmitting or distributing electric power, for said Grantor's communication purposes, and for any other purpose consistent with Grantor's business operations, together with

the right to keep said lines, appliances, and fixtures free of structures, trees and other objects that may endanger or interfere with same.

29. Flooding: Grantor reserves the unlimited right to back or flood the waters of the Catawba River and its tributaries from time to time and at any and all times over and upon the leased premises or any portion of the same, to such extent the flooding may be necessary or convenient in connection with the practical operation of its hydroelectric power plants located or to be located in the future upon the Catawba River. Grantee agrees that any damage it may suffer as a result of such flooding shall not be claimed or charged against Grantor. Grantee hereby waives all claims against Grantor for damages resulting from floods that may occur on the Catawba River or any tributary thereof.

30. FERC Project Restoration: Grantor shall be under no obligation to Grantee to maintain or continue to operate the Project and should said Project be damaged, destroyed or removed, the Grantor shall be under no obligation to restore or rebuild same, and Grantee hereby waives all claims against Grantor for damages to or destruction or removal of the Project.

31. User Fees: User fees on that portion of the Public Access Area contained in this Agreement and under control of Grantee, may only be charged under the following conditions:

a. Review Process: At least sixty (60) days prior to implementation of the user fees, all parties will be provided with a copy of the proposed fee schedule and a written proposal describing how the fees will be collected and how the proceeds will be distributed and utilized. (Note: As a general rule, proceeds from the user fees should be equitably shared among the parties considering the site uses to which the fees apply and the relative proportion of each party's operating and maintenance expenses for those applicable site uses.)

b. Prior Written Approval Required: The user fees will not be implemented until written approval has been received from all involved parties.

c. Review of User Fees: User fees established for the Public Access Areas on the lakes of the Catawba-Wateree Hydro Project or Belews Lake must be a reasonable and customary amount and the user fees proposed or established for the Catawba-Wateree Hydro Project Lakes are subject to review and approval by the FERC to ensure license compliance.

d. Exemptions from User Fees: Grantor's employees, Grantee's employees, third party lessee employees, local law enforcement officials, local environment and public health officials, and local emergency response crews, or any other official operating in his/her official capacity will be exempt from these user fees.

32. Indemnity: Grantee, to the extent allowed by applicable North Carolina law. specifically as may be authorized by the General State of North Carolina, Article 31, Chapters 143-291, entitled "Tort Claims Against State Departments and Agencies", covenants to indemnify and save harmless Grantor from and against any and all claims.

liability, loss or damage, arising from any conduct, work or thing done under the terms of this Agreement, to include injury or damage to any person or persons, including Grantor, or to the property of any person, or persons or corporations occurring on or within the Public Access Areas which are the subject of this Agreement, as the result of any activity of Grantee, its agents, employees, or any other person or entity under the direction of the Grantee, and for any protection, mitigation and enhancement measures or activities required by FERC or its successor agency in connection with the activities conducted by Grantee hereunder. Upon the State of North Carolina (State) contracting with an entity for the purpose of constructing any facilities on the Public Access Areas that are the subject of this Agreement, Duke Power, a division of Duke Energy Corporation shall be named as an insured or an additional insured on a policy of insurance covering the scope of such activity prior to the commencement of any activity by the State, its agents or contractors. Any contractor or subcontractor performing work on property that is the subject of this easement shall have in place prior to commencement of any activity and during the performance of any activity, the following types of insurance and coverage limits:

*General Liability Coverage -- Two million dollars per occurrence

*Auto Liability -- one million dollars per occurrence

*Workers Compensation within statutory limits

*Employers Liability – five hundred thousand dollars each accident

*Contractor's Pollution Liability Coverage -- one million dollars per occurrence

33. Limitation of Liability: Grantor and Grantee agree and warrant that any and all work performed within the Public Access Area will be performed with professional thoroughness and using acceptable standard business practices. Grantor's total cumulative liability to Grantee for claims of any kind whether based on contract, tort (including negligence and strict liability and excluding willful misconduct), under any warranty or otherwise, for any loss or damage relating to this Agreement, shall in no case exceed the cost of completing the work in accordance with acceptable business practice, and Grantee releases Grantor from all further liability in excess of this amount for any work performed under this Agreement. Grantee further releases Grantor from any and all liability resulting from any injury of any employee of Grantee or anyone performing any service at the direction of the Grantee on the Public Access Area, excluding any acts of willful misconduct of the Grantor.

Neither party shall be liable, whether based on contract, tort (including negligence and strict liability), under any services or work performed relating to this Agreement, for any consequential, indirect, special, or incidental loss or damage, any damage (except to the extent damage resulted from willful misconduct) to or loss of any property of equipment.

This limitation of, or protection against liability shall also protect directors, officers, employees, agents, consultants, suppliers, subcontractors, and affiliated entities and their directors, officers, employees, agents, consultants, suppliers, subcontractors, parents, subsidiaries and affiliates of the Grantor and shall apply regardless of the fault (excluding willful misconduct), negligence or strict liability of the respective party.

Grantee waives and will require its insurers to waive all rights to recovery and claims of any kind, including rights and claims to which its insurers or another may be subrogated, against Grantor arising out of damage to, loss of or loss of use of any of Grantee's property, located on the Public Access Area, whether based on contract, tort (including negligence and strict liability), under any warranty or otherwise. These waivers are effective as to all damages to, losses or losses of use of property arising out of or relating to this agreement or deficiencies in the services provided hereunder and Grantee hereby covenants that no such action or claim shall be brought by or through Grantee on any theory whatsoever. In the event Grantee or its insurers recover damages from a third party for losses or damages to which the foregoing waivers apply, Grantee shall indemnify and hold Grantor harmless against any liability for any such losses or damages which said third party recovers from Grantor and any expenses (including attorney fees and other cost of investigation and defense) related hereto.

The limitation of liability in this provision shall apply notwithstanding any other provision of this Agreement.

34. Survival: Provisions of this Agreement for Termination #11, Limitations of Liability #33, Survival #34 and the indemnification provision of this Agreement shall survive the termination or cancellation of this Agreement and shall remain in effect.

35. Notices: Wherever in this Agreement it shall be required or permitted that notice be given by either party to this Agreement to the other, such notices must be in writing and must be given personally or forwarded by certified mail addressed as follows:

To Grantor: Duke Power, a Division of Duke Energy Corporation
Attn: GEH&S, Environmental Engineering, Lake Management
EC12Q
P.O. Box 1006
Charlotte, NC 28201-1006

To Grantee: North Carolina Wildlife Resources Commission
Division of Engineering Services
Attn: Division Chief
1720 Mail Service Center
Raleigh, NC 27699-1720

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed this the day and year first above written.

ATTEST:

Sue C. Harrington
Assistant Secretary

DUKE POWER, A DIVISION OF
DUKE ENERGY CORPORATION

By Curtis Davis
Curtis Davis, Senior Vice-President
Power Generation Division

ATTEST:

Secretary

STATE OF NORTH CAROLINA

By
Executive Director
NC Wildlife Resources Commission

STATE OF NORTH CAROLINA
COUNTY OF Mecklenburg

I, Patricia C. Ross, a Notary Public for the above State and Counties, hereby certify that Curtis Davis personally came before me this day and acknowledged that he is Senior Vice-President, Power Generation Division of DUKE POWER, a Division of DUKE ENERGY CORPORATION, a corporation, and that by authority duly given and as the act of said corporation, the foregoing and annexed instrument was signed in its name by Curtis Davis, its Senior Vice-President, Power Generation Division, sealed with its corporate seal and attested by Sue C. Harrington himself/herself as its Assistant Secretary.

WITNESS my hand and official seal, this the 30 day of March, 2000.

Patricia C. Ross
Notary Public

My Commission Expires: 10-17-2004

[NOTARIAL SEAL]

STATE OF NORTH CAROLINA
COUNTY OF Wake

I, BeLinda Carroll-LeQuire, a Notary Public for the above State and Counties, hereby certify that Charles R. Fullwood personally came before me this day and acknowledged that he is Executive Director of the North Carolina Wildlife Resources Commission, and that by authority duly given and as the act of said Agency of the State of North Carolina, the foregoing and annexed instrument was signed in its name by CHARLES R. FULLWOOD, its EXECUTIVE DIRECTOR sealed with its corporate seal and attested by GORDON S. MYERS as its BOATING PROGRAM ADMINISTRATOR

WITNESS my hand and official seal, this the 3 day of April, 2000.

BeLinda Carroll-LeQuire
Notary Public

My Commission Expires: September 26, 2001

[NOTARIAL SEAL]

ASSISTANT SECRETARY CERTIFICATE

I, Sue C. Harrington Assistant Secretary of Duke Power, a Division of Duke Energy Corporation, do hereby certify that the following is a true and correct excerpt of a Resolution adopted September 22, 1997, by the Management Committee of the Board of Directors of Duke Energy Corporation, and that said quoted Resolution has not been rescinded or amended:

> FURTHER RESOLVED, That Curtis Davis the Senior Vice-President of the Power Generation Division, be and hereby is authorized, to execute any contract, lease, deed or other instrument relating to real property without further action or approval by the Board of Directors of this Committee when deemed by said Senior Vice-President to be necessary or desirable in the operation of the Company's business, subject, however, to a monetary limit of $1,500,000.00 consideration or value in any single transaction, and to execute such documents in any such transaction which is approved by a resolution of this Committee.
>
> FURTHER RESOLVED, That the Secretary or any Assistant Secretary be and hereby is authorized to attest and affix the Corporate seal to any contracts, leases, deeds or other instruments executed under authority of this resolution and may execute any certificate that may be required to certify the incumbency and authority of the officer or manager executing such documents.

I further certify that on March 30, 2000, Curtis Davis was the Senior Vice-President, Power Generation Division, and by reason of holding said position and pursuant to the above quoted Management Committee's Resolution, had full authority to represent and act on behalf of Duke Energy Corporation with respect to the execution of an Agreement between Duke Power, a Division of Duke Energy Corporation and the North Carolina Wildlife Resources Commission for lands located in the Counties of Alexander, Burke, Caldwell, Catawba, Forsyth, Gaston, Iredell, Lincoln, McDowell, Mecklenburg and Stokes, North Carolina and to execute on behalf of Duke Power, a Division of Duke Energy Corporation all documents and instruments relating in any way thereto.

WITNESS my hand and official seal of said Company this 30th day of March, 2000.

Sue C. Harrington
Assistant Secretary

EXHIBIT A

NORTH CAROLINA PUBLIC ACCESS AREAS

NCWRC HAS MAINTENANCE AND ENFORCEMENT ROLE

LAKE JAMES	ACRES
LINVILLE	180.28
BRIDGEWATER FISHING AREA	39.81
BLACK BEAR	163.84
LAKE RHODHISS	
CASTLE BRIDGE	47.68
CONLEY CREEK	67.91
JOHNS RIVER	1.8
HUFFMAN BRIDGE	2.32
RHODHISS	126.93
LAKE HICKORY	
GUNPOWDER	13.32
LOVELADY	44.1
WITTENBURG	13.09
DUSTY RIDGE (1)	78.96
OXFORD	52.88

NOTES:
(1) Leased by Dusty Ridge Rec. Park Inc.

LOOKOUT SHOALS LAKE	
LOOKOUT	30.28
SHARON	8.79

LAKE NORMAN	ACRES
MARSHALL FISHING AREA	2
LONG ISLAND	28.81
PINNACLE	9.36
MCCRARY CREEK	21.24
STUMPY CREEK (2)	83.6
HAGER CREEK	28.25
LITTLE CREEK	7.94
BEATTY'S FORD	23.66
MCGUIRE FISHING AREA	2
ISLAND POINT (undeveloped)	128.28
SLANTING BR9IDGE (undeveloped)	12.59
BUFFALO SHOALS (undeveloped)	10.76

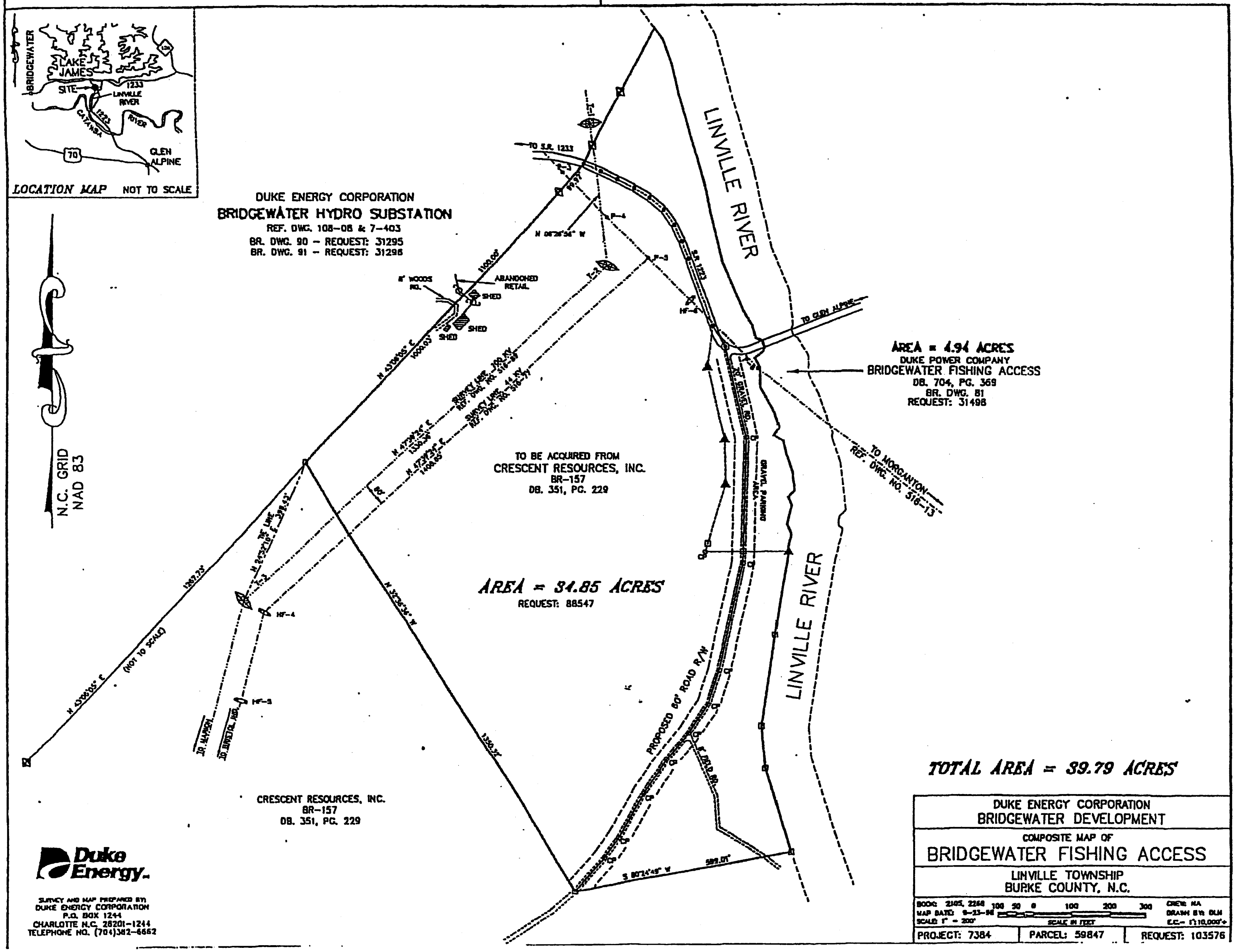
NOTES:
(2) Leased by Iredell County

EXHIBIT A

NORTH CAROLINA PUBLIC ACCESS AREAS

NCWRC HAS MAINTENANCE AND ENFORCEMENT ROLE

MOUNTAIN ISLAND LAKE	
NECK ROAD	6.1
RIVERBEND	24.41
MOUNTAIN ISLAND TAILRACE	38.15
LAKE WYLIE	
ALLEN FISHING AREA	20.98
SOUTH POINT	70
BELEWS LAKE	
PINE HALL	67.9
PINEY BLUFF	93.1


LOCATION MAP NOT TO SCALE
BRIDGEWATER
LAKE JAMES
SITE
1233
LINVILLE RIVER
CATAWBA
1223
RIVER
GLEN ALPINE
70
DUKE ENERGY CORPORATION
BRIDGEWATER HYDRO SUBSTATION
REF. DWG. 108-08 & 7-403
BR. DWG. 90 - REQUEST: 31295
BR. DWG. 91 - REQUEST: 31296
N.C. GRID
NAD 83
LINVILLE RIVER
LINVILLE RIVER
TO S.R. 1233
TO GLEN ALPINE
AREA = 4.94 ACRES
DUKE POWER COMPANY
BRIDGEWATER FISHING ACCESS
DB. 704, PG. 369
BR. DWG. 81
REQUEST: 31498
TO MORGANTON
REF. DWG. NO. 516-13
ABANDONED RETAIL
SHED
SHED
SHED
TO BE ACQUIRED FROM
CRESCENT RESOURCES, INC.
BR-157
DB. 351, PG. 229
AREA = 34.85 ACRES
REQUEST: 88547
PROPOSED 60' ROAD R/W
GRAVEL PARKING AREA
(NOT TO SCALE)
CRESCENT RESOURCES, INC.
BR-157
DB. 351, PG. 229
TOTAL AREA = 39.79 ACRES
Duke Energy
SURVEY AND MAP PREPARED BY:
DUKE ENERGY CORPORATION
P.O. BOX 1244
CHARLOTTE N.C. 28201-1244
TELEPHONE NO. (704)382-6662
DUKE ENERGY CORPORATION
BRIDGEWATER DEVELOPMENT
COMPOSITE MAP OF
BRIDGEWATER FISHING ACCESS
LINVILLE TOWNSHIP
BURKE COUNTY, N.C.
SCALE IN FEET
PROJECT: 7384
PARCEL: 59847
REQUEST: 103576

APPENDIX

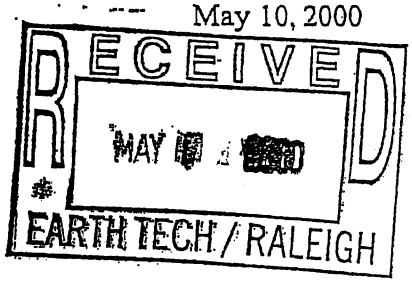
United States
Department of
Agriculture

Natural
Resources
Conservation
Service

4405 Bland Rd.
Suite 205
Raleigh, NC 27609

(919) 873-2134

May 10, 2000



Ms. Stacy Harris, P. E.
Project Development & Environmental Analysis Branch
NC Department of Transportation
P. O. Box 25201
Raleigh, NC 27611-5201

Dear Ms. Harris:

Thank you for the opportunity to provide comments on the following:

1. B-3419, Burke County, North Carolina, Replace Bridge No. 46 on SR 1223 over the Catawba River;
2. B-3343, Haywood County, North Carolina, Replace Bridge No. 48 on SR 1318 OVER Hemphill Creek;
3. B-3310, Buncombe County, North Carolina, Replace Bridge No. 145 on SR 2173 over Dillingham Creek.

The Natural Resources Conservation Service does not have any comments at this time.

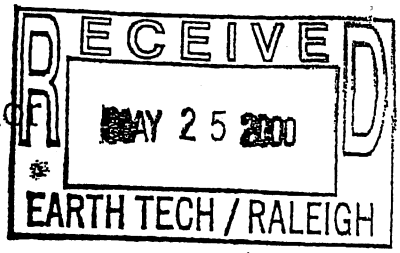
Sincerely,

Mary T. Kollstedt

Mary T. Kollstedt
State Conservationist

B-3419

United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

May 17, 2000

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

Dear Mr. Gilmore:

According to your letter of April 18, 2000 (received April 28, 2000), the North Carolina Department of Transportation is proposing the following three bridge replacement projects:

- B-3419; replacement of Bridge No. 46 on SR 1223 over the Catawba River, Burke County, North Carolina (our Log Number 4-2-00-180)

- B-3343; replacement of Bridge No. 48 on SR 1318 over Hemphill Creek, Haywood County (our Log Number 4-2-00-181)

- B-3310; replacement of Bridge No.145 on SR 2173 over Dillingham Creek, Buncombe County (our Log Number 4-2-00-182)

As requested, we have reviewed the proposed projects and are providing the following comments in accordance with the provisions of Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act), and the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e). The legal responsibilities of a Federal agency or its designated non-Federal representative under Section 7 of the Act are on file with the Federal Highway Administration.

Enclosed is a list of species from Burke, Haywood, and Buncombe Counties that are on the Federal List of Endangered and Threatened Wildlife and Plants, as well as species of Federal concern. Although our records for Haywood and Buncombe Counties indicate no known locations of these species in the project areas, we recommend surveying each of the project areas for these species prior to any further planning or on-the-ground activities to ensure no adverse impacts occur to these species. Our records for Burke County indicate there is a known location

of the federally threatened dwarf-flowered heartleaf (*Hexastylis naniflora*) in the immediate vicinity of Bridge No. 46. The plant occurs on the upland just to the north of the river. If this species occurs in the project area, additional consultation will be required. Additionally, there is a historic record for a species of Federal concern--the brook floater (*Alasmidonta varicosa*)--from a site nearby in the Catawba River. The project area for Bridge No. 46 should be surveyed for these species to ensure they are protected from impacts.

Species of Federal concern are not legally protected under the Act and are not subject to any of its provisions, including Section 7, unless they are formally proposed or listed as endangered or threatened. We are including these species in our response to give you advance notification and to request your assistance in protecting them if any are found in the vicinity of your projects.

The information that accompanied your letter concerning these projects related only to the removal of the existing bridges. According to this information, there will be temporary fill associated with two of the three projects. We recommend that this fill be minimized to the extent possible and that no heavy equipment be operated in the stream channel. To maintain bank stability, any cutting and removal of woody vegetation along the stream banks should be avoided to the maximum extent possible. We also recommend removing any fill in the flood plain associated with the existing structures. These areas should be returned to the natural elevation of the flood plain to restore its natural function. This will minimize the potential for stream-bank and channel scouring that may occur during storm flows as a result of any constriction of the flood plain or stream channel associated with the existing structures.

As stated above, the information you provided addressed only the removal of the existing bridges; no information was provided concerning the types of structures that will replace the existing bridges or what measures will be implemented to minimize the potential effects associated with the new structures and their construction. We recommend that the existing structures be replaced with bridges. We recommend that each new bridge design include provisions for the roadbed and deck drainage to flow through a vegetated buffer prior to reaching the affected stream. This buffer should be large enough to alleviate any potential effects from the run-off of storm water and pollutants. The bridge designs should not alter the natural stream and stream-bank morphology or impede fish passage. Any piers or bents should be placed outside the bank-full width of the streams. The bridges and approaches should be designed to avoid any fill that will result in damming or constriction of the channel or flood plain. If spanning the flood plain is not feasible, culverts should be installed in the flood plain portion of the approaches in order to restore some of the hydrological functions of the flood plain and reduce high velocities of flood waters within the affected areas. We recommend that erosion- and sedimentation-control measures be in place prior to any ground-disturbing activities. Wet concrete should never be allowed to come into contact with the stream.

We appreciate the opportunity to provide these comments. If you have any questions or concerns, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. We have

assigned each of these projects a separate log number; please reference these numbers in any future correspondence concerning these projects.

Sincerely,

Brian P. Cole
State Supervisor

Enclosure

cc:
Mr. Mark Davis, Mountain Region Coordinator, North Carolina Wildlife Resources Commission, 20830 Great Smoky Mtn. Expressway, Waynesville, NC 28786
Mr. Bob Johnson, U.S. Army Corps of Engineers, Asheville Regulatory Field Office, 151 Patton Avenue, Room 143, Asheville, NC 28801-5006
Mr. Roger Bryan, Division 13 Environmental Officer, North Carolina Department of Transportation, P.O. Box 3279, Asheville, NC 28802

ENDANGERED, THREATENED, AND CANDIDATE SPECIES AND FEDERAL SPECIES OF CONCERN BUNCOMBE, BURKE, AND HAYWOOD COUNTIES, NORTH CAROLINA

This list was adapted from the North Carolina Natural Heritage Program's County Species List. It is a listing, for Buncombe, Burke, and Haywood Counties, of North Carolina's federally listed and proposed endangered, threatened, and candidate species and Federal species of concern (for a complete list of rare species in the state, please contact the North Carolina Natural Heritage Program). The information in this list is compiled from a variety of sources, including field surveys, museums and herbariums, literature, and personal communications. The North Carolina Natural Heritage Program's database is dynamic, with new records being added and old records being revised as new information is received. Please note that this list cannot be considered a definitive record of listed species and Federal species of concern, and it should not be considered a substitute for field surveys.

Critical habitat: Critical habitat is noted, with a description, for the counties where it is designated.

Aquatic species: Fishes and aquatic invertebrates are noted for counties where they are known to occur. However, projects may have effects on downstream aquatic systems in adjacent counties.

COMMON NAME	SCIENTIFIC NAME	STATUS
BUNCOMBE COUNTY		
Vertebrates		
Southern Appalachian saw-whet owl	*Aegolius acadicus*	FSC
Bachman's sparrow	*Aimophila aestivalis*	FSC*
Bog turtle	*Clemmys muhlenbergii*	T(S/A)[1]
Rafinesque's big-eared bat	*Corynorhinus (=Plecotus) rafinesquii*	FSC*
Hellbender	*Cryptobranchus alleganiensis*	FSC
Cerulean warbler	*Dendroica cerulea*	FSC
Eastern cougar	*Felis concolor couguar*	Endangered*
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	Endangered
Spotfin chub	*Hybopsis monacha*	Threatened*
Southern Appalachian red crossbill	*Loxia curvirostra*	FSC
Gray bat	*Myotis grisescens*	Endangered***
Eastern small-footed myotis	*Myotis leibii*	FSC
Southern Appalachian woodrat	*Neotoma floridana haematoreia*	FSC
Southern Appalachian black-capped chickadee	*Parus atricapillus practicus*	FSC
Longhead darter	*Percina macrocephala*	FSC*
Paddlefish	*Polyodon spathula*	FSC*
Southern water shrew	*Sorex palustris punctulatus*	FSC
Southern Appalachian yellow-bellied sapsucker	*Sphyrapicus varius appalaciensis*	FSC
Appalachian Bewick's wren	*Thryomanes bewickii altus*	FSC*
Invertebrates		
Appalachian elktoe	*Alasmidonta raveneliana*	Endangered
French Broad crayfish	*Cambarus reburrus*	FSC

COMMON NAME	SCIENTIFIC NAME	STATUS
Tawny crescent butterfly	*Phycoides batesii*	FSC*
Diana fritillary butterfly	*Speyeria diana*	FSC*
Vascular Plants		
Fraser fir	*Abies fraseri*	FSC
Piratebush	*Buckleya distichophylla*	FSC
Cain's reedgrass	*Calamagrostis cainii*	FSC
Glade spurge	*Euphorbia purpurea*	FSC
Spreading avens	*Geum radiatum*	Endangered
Mountain heartleaf	*Hexastylis contracta*	FSC
French Broad heartleaf	*Hexastylis rhombiformis*	FSC
Butternut	*Juglans cinerea*	FSC
Gray's lily	*Lilium grayi*	FSC
Fraser's loosestrife	*Lysimachia fraseri*	FSC*
Sweet pinesap	*Monotropsis odorata*	FSC
Pinnate-lobed black-eyed susan	*Rudbeckia triloba* var. *pinnatoloba*	FSC
Bunched arrowhead	*Sagittaria fasciculata*	Endangered*
Mountain sweet pitcher plant	*Sarracenia jonesii*	Endangered*
Carolina saxifrage	*Saxifraga caroliniana*	FSC
Divided-leaf ragwort	*Senecio millefolium*	FSC
Mountain catchfly	*Silene ovata*	FSC
Virginia spiraea	*Spiraea virginiana*	Threatened
Nonvascular Plants		
Rock gnome lichen	*Gymnoderma lineare*	Endangered

BURKE COUNTY

Critical Habitat Designation:

Mountain golden heather, *Hudsonia montana* - The area bounded by the following: on the west by the 2200' contour; on the east by the Linville Gorge Wilderness Boundary north from the intersection of the 2200' contour and the Shortoff Mountain Trail to where it intersects the 3400' contour at "The Chimneys"--then follow the 3400' contour north until it reintersects the Wilderness Boundary--then follow the Wilderness Boundary again northward until it intersects the 3200' contour extending west from its intersection with the Wilderness Boundary until it begins to turn south--at this point the Boundary extends due east until it intersects the 2200' contour.

Vertebrates		
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Alleghany woodrat	*Neotoma magister*	FSC
Invertebrates		
Brook floater	*Alasmidonta varicosa*	FSC
Edmund's snaketail dragonfly	*Ophiogomphus edmundo*	FSC*
Pygmy snaketail dragonfly	*Ophiogomphus howei*	FSC
Diana fritillary butterfly	*Speyeria diana*	FSC

COMMON NAME	SCIENTIFIC NAME	STATUS
Vascular Plants		
Spreading avens	*Geum radiatum*	Endangered
Dwarf-flowered heartleaf	*Hexastylis naniflora*	Threatened
Mountain golden heather	*Hudsonia montana*	Threatened
Small-whorled pogonia	*Isotria medeoloides*	Threatened
Butternut	*Juglans cinerea*	FSC
Heller's blazing star	*Liatris helleri*	Threatened
Sweet pinesap	*Monotropsis odorata*	FSC
Carolina saxifrage	*Saxifraga caroliniana*	FSC
Nonvascular Plants		
A liverwort	*Cephaloziella obtusilobula*	FSC*
A liverwort	*Plagiochila sullivantii* var. *spinigera*	FSC
A liverwort	*Plagiochila sullivantii* var. *sullivantii*	FSC

HAYWOOD COUNTY

Vertebrates		
Southern Appalachian saw-whet owl	*Aegolius acadicus*	FSC
Bog turtle	*Clemmys muhlenbergii*	T(S/A)[1]
Olive-sided flycatcher	*Contopus borealis*	FSC
Hellbender	*Cryptobranchus alleganiensis*	FSC
Cerulean warbler	*Dendroica cerulea*	FSC
Eastern cougar	*Felis concolor couguar*	Endangered*
Carolina northern flying squirrel	*Glaucomys sabrinus coloratus*	Endangered
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Southern Appalachian red crossbill	*Loxia curvirostra*	FSC
Southern rock vole	*Microtus chrotorrhinus carolinensis*	FSC
Southern Appalachian woodrat	*Neotoma floridana haematoreia*	FSC
Alleghany woodrat	*Neotoma magister*	FSC
Southern Appalachian black-capped chickadee	*Parus atricapillus practicus*	FSC
Southern water shrew	=*Sorex palustris punctulatus*	FSC
Southern Appalachian yellow-bellied sapsucker	*Sphyrapicus varius appalaciensis*	FSC
Appalachian cottontail	*Sylvilagus obscurus*	FSC
Appalachian Bewick's wren	*Thryomanes bewickii altus*	FSC
Invertebrates		
Appalachian elktoe	*Alasmidonta raveneliana*	Endangered
Tawny crescent butterfly	*Phyciodes batesii maconensis*	FSC*
Diana fritillary butterfly	*Speyeria diana*	FSC
Vascular Plants		
Fraser fir	*Abies fraseri*	FSC
Piratebush	*Buckleya disticophylla*	FSC
Mountain bittercress	*Cardamine clematitis*	FSC
Manhart's sedge	*Carex manhartii*	FSC
Tall larkspur	*Delphinium exaltatum*	FSC*

COMMON NAME	SCIENTIFIC NAME	STATUS
Glade spurge	*Euphorbia purpurea*	FSC
Smoky Mountain manna grass	*Glyceria nubigena*	FSC
Small-whorled pogonia	*Isotria medeoloides*	Threatened
Butternut	*Juglans cinerea*	FSC
Fraser's loosestrife	*Lysimachia fraseri*	FSC
Rugel's ragwort	*Rugelia nudicaulis*	FSC
Carolina saxifrage	*Saxifraga caroliniana*	FSC
Mountain catchfly	*Silene ovata*	FSC
Alabama least trillium	*Trillium pusillum* var. *1*	FSC
Nonvascular Plants		
Rock gnome lichen	*Gymnoderma lineare*	Endangered
A liverwort	*Plagiochila sharpii*	FSC
A liverwort	*Plagiochila sullivantii* var. *sullivantii*	FSC
A liverwort	*Sphenolobopsis pearsonii*	FSC

KEY:

Status	Definition
Endangered	A taxon "in danger of extinction throughout all or a significant portion of its range."
Threatened	A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
FSC	A Federal species of concern--a species that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing).
T(S/A)	Threatened due to similarity of appearance (e.g., American alligator)--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.

Species with 1, 2, 3, or 4 asterisks behind them indicate historic, obscure, or incidental records.

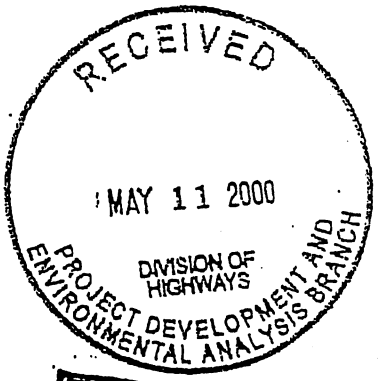
*Historic record - the species was last observed in the county more than 50 years ago.
**Obscure record - the date and/or location of observation is uncertain.
***Incidental/migrant record - the species was observed outside of its normal range or habitat.
****Historic record - obscure and incidental record.

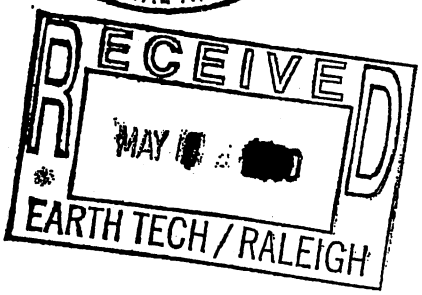
[1]In the November 4, 1997, *Federal Register* (55822-55825), the northern population of the bog turtle (from New York south to Maryland) was listed as T (threatened), and the southern population (from Virginia south to Georgia)was listed as T(S/A) (threatened due to similarity of appearance). The T(S/A) designation bans the collection and interstate and international commercial trade of bog turtles from the southern population. The T(S/A) designation has no effect on land-management activities by private landowners in North Carolina, part of the southern population of the species. In addition to its official status as T(S/A), the U.S. Fish and Wildlife Service considers the southern population of the bog turtle as a Federal species of concern due to habitat loss.

Burke County Public Schools

Office of the Superintendent

Reading is the key to lifelong learning.





May 9, 2000

Mr. William D. Gilmore
N.C. Dept. of Transportation
P.O. Box 25201
Raleigh, NC 27611-5201

Re: Replacement of Bridge #46 Over Catawba River B-3419

Dear Mr. Gilmore:

In response to your letter dated April 18, 2000, we have reviewed the impact that would result to school bus routes if the above referenced bridge was closed for replacement. Please be advised that currently the Burke County Public School System does not have any school bus routes that require the use of Bridge #46 on State Road 1223. With that in mind, there would be no negative impact to school bus routing.

If you have any questions or need any other information, please do not hesitate to contact me.

Sincerely yours,

Randall Brackett
Assistant Superintendent

cc: Gerald H. Knott, N.C. Dept. of Public Instruction

P. O. Drawer 989, Morganton, NC 28680-0989 Phone: (828) 439-4321 Website: www.burke.k12.nc.us
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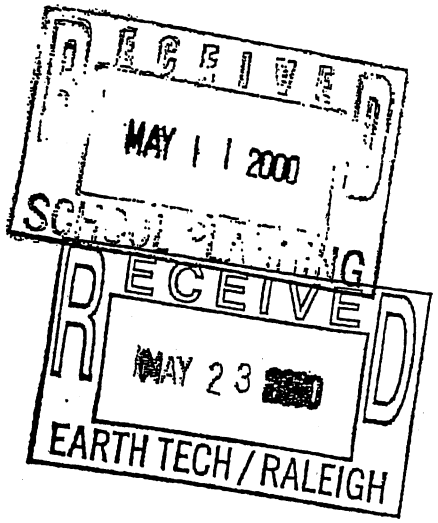
39646

Burke County Public Schools

Office of the Superintendent

Reading is the key to lifelong learning.



May 9, 2000

Mr. William D. Gilmore
N.C. Dept. of Transportation
P.O. Box 25201
Raleigh, NC 27611-5201

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If you have any questions or need any other information, please do not hesitate to contact me.

Sincerely yours,

Randall Brackett
Assistant Superintendent

cc: Gerald H. Knott, N.C. Dept. of Public Instruction

P. O. Drawer 989, Morganton, NC 28680-0989 Phone: (828) 439-4321 Website: www.burke.k12.nc.us
An Equal Opportunity Employer

Federal Aid # BRZ-1223(2) *TIP #* B-3419 *County*: Burke

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

Project Description: Replace Bridge No. 46 on SR 1223 over Linville River
On 4/16/02, representatives of the

- [x] North Carolina Department of Transportation (NCDOT)
- [x] Federal Highway Administration (FHWA)
- [x] North Carolina State Historic Preservation Office (HPO)
- [ ] Other

Reviewed the subject project at

- [ ] Scoping meeting
- [x] 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 ___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.
- [ ] 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.
- [x] There are no historic properties affected by this project. (*Attach any notes or documents as needed*)

Signed:

Richard Sellers — 16 April 2002
Representative, NCDOT — Date

Richard C. Denton — 4/16/02
FHWA, for the Division Administrator, or other Federal Agency — Date

Claudia A Brown — 4-16-02
Representative, HPO — Date

David Brook by BJS — 4-19-02
State Historic Preservation Officer — Date

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

B34179

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

November 19, 2001

MEMORANDUM

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

FROM: David Brook Rec'd for David Brook

SUBJECT: Archaeological Survey Report, Bridge #46 on SR 1223 over Catawba River, Burke County, ER 00-9682

We have received the archaeological survey report for the above project from Thomas Padgett.

During the course of the survey, no sites were located within the project area. The report authors have recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since the project will not involve significant archaeological resources.

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

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

DB:rgE

cc: Paul Mohler, NCDOT

bc: Claggett/Hall (2)
County
Reading

Administration
Restoration
Survey & Planning

Location
[illegible]

Mailing Address
[illegible]

Telephone/Fax
[illegible]

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

TO: Stacy Harris, PE
Project Engineer, NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program

DATE: May 25, 2000

SUBJECT: NCDOT Bridge Replacements in Buncombe, Burke, and Haywood counties of North Carolina. TIP Nos. B-3310, B-3419, and B-3343.

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

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

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

4. If possible, bridge supports (bents) should not be placed in the stream.

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed

areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Tim Savidge should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

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

1. The culvert must be designed to allow for fish passage. Generally, this means that the culvert or pipe invert is buried at least 1 foot below the natural stream bed. If multiple cells are required the second and/or third cells should be placed so that their bottoms are at stream bankful stage (similar to Lyonsfield design). This could be accomplished by constructing a low sill on the upstream end of the other cells that will divert low flows to another cell. This will allow sufficient water depth in the culvert or pipe during normal flows to accommodate fish movements. If culverts are long, notched baffles should be placed in reinforced concrete box culverts at 15 foot intervals to allow for the collection of sediments in the culvert, to reduce flow velocities, and to provide resting places for fish and other aquatic organisms moving through the structure.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated so that no channel realignment or widening is required. Widening of the stream channel at the inlet or outlet of structures usually causes a decrease in water velocity causing sediment deposition that will require future maintenance.

4. Riprap should not be placed on the stream bed.

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

Project specific comments:

1. B-3310 – Buncombe County – Bridge No. 145 over Dillingham Creek. Dillingham Creek is Designated Public Mountain Trout Water and is classified as Hatchery Supported. There is also a high probability of wild trout in this location due to the close proximity of tributaries that contain wild trout. No in-water work should be performed between November 1 and April 15 to protect trout egg and fry stages from sedimentation.

2. B-3419 – Burke County – Bridge No. 46 over the Catawba River. Bridge No. 46 crosses the Catawba River in the Lake James tailwater and is Designated Public Mountain Trout Water and is classified as Hatchery Supported. The river at this location is stocked with catchable trout from March 1 through July 31 annually and supports wild brown and brook trout. Efforts should be made to minimize in-water disturbance during the stocking season from March 1 through July 31. No in-water work should be performed between November 1 and April 15 to protect trout egg and fry stages from sedimentation. In addition to trout, there are spring runs of striped bass, v-lip redhorse, yellow perch and walleye from Lake Rhodhiss that travel up to this location attempting to spawn. There also are records of a rare mussel, the brook floater (*Alasmidonta varicosa*), in this section of the river. NCDOT should perform any necessary surveys to determine the status of this species.

3. B-3343 – Haywood County – Bridge No. 48 over Hemphill Creek. Hemphill Creek is Designated Public Mountain Trout Water and is classified as Hatchery Supported. The headwaters of Hemphill Creek border the Great Smoky Mountains National Park; thus the occurrence of wild trout and in particular brook trout is very likely. No in-water work should be performed between November 1 and April 15 to protect trout egg and fry stages from sedimentation.

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

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

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

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

FROM: Mark S. Davis, Mountain Region Coordinator
Habitat Conservation Program

DATE: May 8, 2000

SUBJECT: Comments on Group XX Bridge Replacement Projects in Buncombe, Burke, and Haywood Counties, North Carolina.

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

The proposed work involves 3 bridge replacement/demolition projects in western North Carolina (listed below). Construction impacts on wildlife and fisheries resources will depend on the extent of disturbance in the streambed and surrounding floodplain areas. We prefer bridge designs that do not alter the natural stream morphology or impede fish passage. Bridge designs should also include provisions for the deck drainage to flow through a vegetated upland buffer prior to reaching the subject surface waters. Demolition plans for the existing bridge structures should be addressed in the environmental documents prepared for these projects, as well as any proposed causeways, temporary access roads or detours. We are also concerned about impacts to Designated Public Mountain Trout Waters (DPMTW) and environmental documentation for these projects should include a description of any streams or wetlands on the project site and surveys for any threatened or endangered species that may be affected by construction.

B-3310 - Buncombe County, Bridge No. 145 on SR 2173 over Dillingham Creek

Dillingham Creek is managed by the NCWRC as Hatchery Supported trout water and also supports wild trout populations in the project area. We recommend that the existing bridge be replaced with another spanning structure. We recommend that instream work be prohibited during the trout spawning period of November 1 through April 15 to protect the egg and fry stages from off-site sedimentation.

B-3419 - Burke County, Bridge No. 46 on SR 1223 over Catawba River

The Catawba River is managed by the NCWRC as Hatchery Supported trout water in the project area. The river also supports a small spawning run of striped bass moving out of Lake Rhodhiss in the spring. We recommend that the existing bridge be replaced with another spanning structure.

B-3343 - Haywood County, Bridge No. 48 on SR 1318 over Hemphill Creek

Hemphill Creek is managed by the NCWRC as Hatchery Supported trout water and also supports wild trout populations in the project area. We recommend that the existing bridge be replaced with another spanning structure. We recommend that instream work be prohibited during the trout spawning period of November 1 through April 15 to protect the egg and fry stages from off-site sedimentation.

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

1. Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. Structures should be inspected and maintained regularly, especially following rainfall events.

2. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

3. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

4. If concrete is used during construction, a dry work area must be maintained to prevent direct contact between curing concrete and stream water. Uncured concrete affects water quality and is highly toxic to fish and other aquatic organisms.

5. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for gamefish and wildlife.

6. **In trout waters, instream construction is prohibited during the trout spawning period of November 1 to April 15 to avoid impacts on trout reproduction.**

7. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

8. If multi-celled reinforced concrete box culverts are utilized, they should be designed so that all water flows through a single cell (or two if necessary) during low flow conditions. This could be accomplished by constructing a low sill on the upstream end of the other cells that will divert low flows to another cell. This will facilitate fish passage at low flows.

9. Notched baffles should be placed in reinforced concrete box culverts at 15 foot intervals to allow for the collection of sediments in the culvert, reduce flow velocities, and to provide resting places for fish moving through the structure.

10. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

11. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

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

cc: Mr. Steve Lund, NCDOT Coordinator, COE, Asheville
Ms. Stacy Harris, P.E., PD & EA Branch, NCDOT, Raleigh
Mr. Ron Linville, Western Piedmont Region Coordinator, NCWRC, Kernersville

Duke Power
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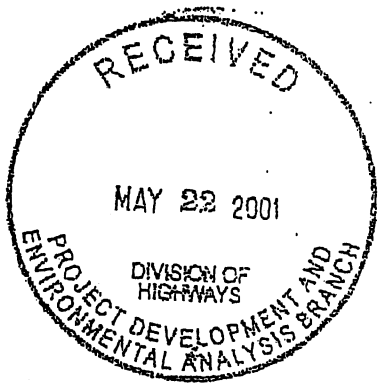

May 17, 2001

MAY 23 2001

Mr. Bill Gilmore
NCDOT
Project Development and
Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Re: Replacement of Bridge No. 46 on SR 1223 (Powerhouse Road) over Catawba River, Burke County, TIP No. B-3419

Dear Mr. Gilmore:

This letter is in response to your request concerning clarification of the impact of the bridge replacement (see above) in conjunction with the Federal Energy Regulatory Commission's (FERC) license to Duke Power for the Catawba-Wateree Project No. 2232. The area affected by the bridge replacement and road relocation is outside of the project boundary for the Bridgewater Development of the Catawba-Wateree Project. Therefore, no permits will be required for the activities you propose as long as they stay outside of the project boundary.

Please contact me at 704-382-8587 if you have any further questions.

Sincerely,

Charles J Borawa
Senior Lake Management Representative
Duke Power, Group Environment, Health and Safety

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Duke Power
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006

January 26, 2001

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

Re: Replacement of Bridge No. 46 on SR 1223

Dear Ms. Harris:

I have reviewed the three alternative plans for the replacement of Bridge No. 46 on SR 1223 and would recommend the adoption of Alternative 3. I am assuming the old bridge will be removed along with the bridge abutments.

The joint development of the fishing pier and other facilities between the NCWRC and Duke was done to minimize the public parking along the shoulders of SR 1223. What type of restrictions will be proposed for the east end of the bridge to minimize the parking and use of the land between SR 1223 and the river other than the guardrails? The installation of the straightened roadway and bridge will probably lead to increased vehicle speed along the road. Every effort should be made to limit or prohibit parking along the east end of the bridge since there is adequate parking on the west side of the river at the Bridgewater Fishing Area.

Another question is if the NCDOT will continue to maintain the road from the Bridgewater Fishing Area to the west end of the new bridge?

Thank you for the opportunity to comment on the replacement bridge on SR 1223.

Sincerely,

Chuck Borawa

Charles J. Borawa
Senior Lake Management Representative
Duke Power, Group Environment, Health and Safety.

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October 26, 2000

Ms Yvonne Howell
Earthtech
701 Corporate Center Drive, Suite 47 J
Raleigh, NC 27607

Re: Bridge below Bridgewater Hydro

Dear Ms Howell:

In response to your phone call concerning the replacement of the bridge directly below the Bridgewater Hydro Station on Powerhouse Road, I have included a map showing the land in the Bridgewater Fishing Access. As I mentioned the site is under an agreement with the North Carolina Wildlife Resources Commission (NCWRC) and they built the paved parking lot and wooden fishing pier. The NCWRC point of contact is Gordon Myers (919-733-3633 ext. 276) at 1721 Mail Service Center, Raleigh, NC 27699-1721.

Please send us information concerning the location of the proposed new bridge location as soon as possible so we can see how it will affect the public recreation facilities. Under a Federal Energy Regulatory Commission (FERC) license, Duke is required to provide public recreation opportunities at it's lakes. The Bridegwater Fishing Access is one of the facilities that helps to meet those requirements.

Please use me as your current point of contact with Duke Power.

Sincerely,

Chuck Borawa

Charles J. Borawa
Senior lake Management representative
Group Environment, Health and Safety

Cc: Gordon Myers
Don Cofer
Mark Oakley