STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

September 14, 2006

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

ATTN: Mr. Dave Timpy
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit Application** for the Replacement of Bridge No. 14 over the Black River on NC 411, Sampson County, Federal Aid Project No. BRSTP-411(1); State Project No. 8.1280401; TIP No. B-1381.

Please find enclosed the half-size plans, the Categorical Exclusion (CE), and Natural Resources Technical Report (NRTR) for the above-mentioned project. The North Carolina Department of Transportation proposes to replace existing Bridge No. 14 over the Black River on NC411 in Sampson County.

The project involves replacing the old bridge on the existing location with a new 4-span bridge approximately 204 feet long and 37 feet wide. Traffic will be detoured off-site during construction.

Impacts to Waters of the United States

General Description: The Black River is the only water resource within the study area and is located in the Cape Fear Drainage Basin, Subbasin 03-06-19. The Black River [Index No. 18-68] has been assigned a Best Usage Classification of **C Sw ORW** by the North Carolina Department of Environmental and Natural Resources and is in Hydrologic Unit 03030006. The Black River is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River, nor is it listed as a 303(d) stream. No designated High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project study area.

Permanent Impacts: NCDOT anticipates limited permanent impacts for this project. The only impacts to surface waters will result from the placement of in-water bents. Bents in the water will be 15.72 square feet each for a total of 31.45 square feet or less than .001 acre of permanent impacts.

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

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

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

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

Utility Impacts: NCDOT Utilities reported a power line located on the North side of Bridge No. 14 that travels the length of the project. This line is not in conflict with the project and will remain in place during construction.

Several buried telephone cables are located on the North and South sides of NC 411 and travel aerially on two poles over the Black River. Any adjustments to these cables to clear the area for bridge construction will take place by open trench method outside of any jurisdictional resources.

Bridge Demolition

Bridge No. 14 is composed of a reinforced concrete deck on timber joists and I-beams. The original structure was composed of reinforced concrete caps on timber piles. Temporary steel crutches have been added to reinforce the structure until replacement. It is likely that all components can be removed without any appreciable debris falling into the water.

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

Avoidance and Minimization

NCDOT has minimized impacts to the fullest extent possible. The number of bents in the water is being reduced from five for the existing bridge to two for the new bridge. In compliance with 15A NCAC 02B.0104(m) we have incorporated the use of BMP's in the design of the project. Traffic will be detoured off-site during construction.

An in-stream moratorium from September 1 to January 1 to protect anadromous fish that may use the river as a travel corridor is recommended in the CE. The Wildlife Resources Commission has informed NCDOT that these dates are incorrect. The correct in-stream moratorium will occur from February 15 to June 15.

Mitigation

No mitigation is required for this project due to the limited impacts to the Black River. There are no wetlands within the project area.

Federally Protected Species

As of 27 April 2006, the U.S. Fish and Wildlife Service (FWS) lists four protected species for Sampson County (Table 1). Descriptions of the protected species are provided in the attached Categorical Exclusion. Habitat surveys were conducted on 31 August 2006 for Red-cockaded woodpecker, American chaffseed, and Pondberry. No suitable habitat for any of these species will be impacted by the project. Therefore, Biological Conclusions of "No Effect" remain valid.

Table 1. Federally Protected Species for Sampson County

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

Regulatory Approvals

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

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

United States Coast Guard: A letter of exemption from the USCG is included in the CE. The letter exempts NCDOT from needing an USCG permit for this project.

The NCDOT hereby requests that this project be authorized by the North Carolina Division of Water Quality and the U. S. Army Corps of Engineers. If there are any questions, please contact Ms. Veronica Barnes of my staff at vabarnes@dot.state.nc.us or (919) 715-7232.

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

Sincerely,

E. R. Lusk

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

Cc:

w/attachment
- Mr. John Hennessy, NCDWQ (2 Copies)
- Mr. Travis Wilson, NCWRC
- Mr. Gary Jordan, USFWS
- Mr. Ron Sechler, NMFS
- Mr. Michael Street, NCDMF
- Dr. David Chang, P.E., Hydraulics
- Mr. Mark Staley, Roadside Environmental
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. H. Allen Pope, P.E., Division 3 Engineer
- Mr. Mason Herndon, Division 3 Environmental Officer

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

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-1381**
State Project No.	**8.1280401**
W.B.S. No.	**32594.1.1**
Federal Project No.	**BRSTP-411(1)**

A. Project Description:

This project proposes to replace Bridge No. 14 on NC 411 over the Black River in Sampson County. B-1381 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement and Rehabilitation Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

The replacement structure will consist of a bridge 230-foot long and 30 feet wide. The bridge will be of sufficient width to provide for two 12-foot lanes with three-foot offsets on each side. Traffic will be detoured offsite during construction.

Approach work will extend approximately 150 feet east and 200 feet west of the bridge. The existing 18-foot wide pavement will be widened to 24 feet to provide two 12-foot lanes along the approaches. Eight-foot grass shoulders will be provided on each side (11 feet with guardrail). This roadway will be designed as a rural major collector with a 60 mile per hour design speed.

B. Purpose and Need:

At the time of programming, Federal Highway Administration requires that a bridge have a sufficiency rating of less than 50 paired with being either structurally deficient and/or functionally obsolete in order to qualify for the Federal Highway Bridge Replacement and Rehabilitation Program. Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 26.6 out of a possible 100 for a new structure. The bridge is considered structurally deficient due to a structure appraisal of 2 out of 9 according to Federal Highway Administration (FHWA) standards.

C. Proposed Improvements:

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

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

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

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

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

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

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

4. Transportation corridor fringe parking facilities.

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

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

7. Approvals for changes in access control.

8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near

a street with adequate capacity to handle anticipated bus and support vehicle traffic.

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

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

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

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

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

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

D. Special Project Information:

Project History

A Categorical Exclusion and Programmatic Section 4(f) were signed on June 30, 1995. The project was originally scheduled for Let in 1998 but all bids came in over the estimated cost and were thrown out. The project remained dormant until recently. The purpose of this Programmatic Categorical Exclusion is to update the environmental documentation for the project so that the project may be pursued to construction let once again. The original Programmatic 4(f) is included as an attachment to this document.

Estimated Costs:

Total Construction $ 625,000

Right of Way for this project was purchased prior to the original Let date. The current proposal stays within those R/W Limits.

Estimated Traffic:

Current	-	800
Year 2025	-	1200
TTST	-	2%
Dual	-	1%

Accidents: In a check of a recent three-year period, four accidents occurred in the vicinity of the bridge. None were within the proposed project limits. The nearest was on the curve in the east approach. Because this is an historic district, it is considered appropriate to limit the project to what is currently proposed.

Design Speed: 60 mph

Functional Classification: Rural Major Collector

School Busses: During the school year there are six school bus crossings per day at this location. The Transportation Director for Sampson County Public Schools indicated that re-routing would not be a problem during construction.

Division Office Comments: The Division concurs with the proposed alternate.

Bridge Demolition: Bridge 14 is composed of a reinforced concrete deck on timber joists and I-beams. The original structure was composed of reinforced concrete caps on timber piles. Temporary steel crutches have been added to reinforce the structure until replacement. It is likely that all components can be removed without any appreciable debris falling into the water.

Studied Offsite Detour: NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour. The offsite detour for this project would include SR 1130, NC 903, NC 411 and back to SR 1130. The duration of the project will be approximately 8 months. The detour for the average road user would result in 9.3 minutes additional travel time (7 miles additional travel). According to the Guidelines, these criteria fall within a range where NCDOT would normally consider an onsite detour to be appropriate but if mitigating circumstances are present, an offsite detour might be considered acceptable. The presence of the historic district is a mitigating circumstance on this project. It would not be possible to use an onsite detour without impacts to the historic structures. For this reason, NCDOT has elected to detour traffic offsite during construction.

Design Exception: There will be no design exceptions for this project.

E. Threshold Criteria

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

ECOLOGICAL		YES	NO
(1)	Will the project have a substantial impact on any unique or important natural resource?		X
(2)	Does the project involve habitat where federally listed endangered or threatened species may occur?		X
(3)	Will the project affect anadromous fish?		X
(4)	If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	X	
(5)	Will the project require the use of U. S. Forest Service lands?		X
(6)	Will the quality of adjacent water resources be adversely impacted by proposed construction activities?		X
(7)	Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?	X	
(8)	Will the project require fill in waters of the United States in any of the designated mountain trout counties?		X
(9)	Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?		X

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

		YES	NO
(14)	Will the project require any stream relocations or channel changes?		X
	SOCIAL, ECONOMIC, AND CULTURAL RESOURCES	YES	NO
(15)	Will the project induce substantial impacts to planned growth or land use for the area?		X
(16)	Will the project require the relocation of any family or business?		X
(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?		X
(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	X	
(19)	Will the project involve any changes in access control?		X
(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?		X
(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?		X
(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	X	
(23)	Is the project anticipated to cause an increase in traffic volumes?		X
(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	X	
(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	X	
(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?		X
(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	X	
(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?	X	

(29)	Will the project affect any archaeological remains which are important to history or pre-history?	X	
(30)	Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)?	X	
(31)	Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended?		X
(32)	Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the National System of Wild and Scenic Rivers?		X

F. Additional Documentation Required for Unfavorable Responses in Part E

Documentation for Question 7: The Black River is classified as an Outstanding Resource Water. High Quality Sedimentation and Erosion Control Measures will be implemented to minimize impacts during construction.

Documentation for Question 12: A U.S. Coast Guard Permit will be required since the Black River is historically a navigable water. The new bridge will maintain or increase the vertical and horizontal clearance under the bridge.

Documentation for Question 28: Clear Run Historic District is eligible for the National Register of Historic Places. All efforts have been made to minimize the impacts to the historic district. Section 106 and Section 4(f) documentation were provided in the original CE and are repeated as an attachment to this document.

Documentation for Question 29: There is an archaeological site on the northwest quadrant of the project. As part of the original effort to Let the project to construction, the site was excavated and all appropriate materials recovered and preserved to clear the location for new construction.

Documentation for Question 30: Both the archaeological site and the Clear Run Historic District are considered Section 4(f) resources. All impacts have been minimized and mitigated as part of the previous Administrative Action. The Section 4(f) documentation is included as an attachment to this document.

G. CE Approval

TIP Project No.	**B-1381**
State Project No.	**8.1280401**
W.B.S. No.	**32594.1.1**
Federal Project No.	**BRSTP-411(1)**

Project Description:

This project proposes to replace Bridge No. 14 on NC 411 over the Black River in Sampson County. The replacement structure will consist of a bridge 230-foot long and 30 feet wide. The bridge will be of sufficient width to provide for two 12-foot lanes with three-foot offsets on each side. Traffic will be detoured offsite during construction.

Approach work will extend approximately 150 feet east and 200 feet west of the bridge. The existing 18-foot wide pavement will be widened to 24 feet to provide two 12-foot lanes along the approaches. Eight-foot grass shoulders will be provided on each side (11 feet with guardrail). This roadway will be designed as a rural major collector with a 60 mile per hour design speed.

Categorical Exclusion Action Classification:

____ TYPE II(A)
_X_ TYPE II(B)

Approved:

6/28/04 Teresa Hart
Date — Assistant Manager
Project Development & Environmental Analysis Branch

6-29-04 for William F. Goodwin Jr.
Date — Project Planning Unit Head
Project Development & Environmental Analysis Branch

6/30/04 John D. Williams
Date — Project Planning Engineer
Project Development & Environmental Analysis Branch

6/30/04 for Ronald G. Eller
Date — John F. Sullivan, III, P.E., Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS:

Sampson County
Bridge No. 14 on NC 411
Over the Black River
Federal Aid Project No. BRSTP-411(1)
State Project No. 8.1280401
W.B.S. No. 32594.1.1
T.I.P. No. B-1381

All Design Units/Resident Engineer– Historic District

Because the project lies in the middle of Clear Run Historic District, all design and construction work will be conducted so as to minimize impact to the properties surrounding the bridge to the extent practical.

Structure Design – On Bar Metal Rail

As part of the negotiations with the SHPO, NCDOT has agreed to include 1-bar metal rail as part of the new bridge design.

Office of Natural Environment – Bridge Demolition

Except for the deck the entire bridge is constructed of timber and steel. It is unlikely that there will be any temporary fill resulting from bridge demolition.

Roadside Environmental Unit, Division Resident Engineer – Sensitive Watersheds

The Black River is designated, as Outstanding Resource Waters and will be subject to Design Standards for Sensitive Watersheds.

Office of Natural Environment – Coast Guard Permit not required.

The Black River is historically navigable but currently not used by anything other than small recreational boats. Advance approval has been given by the Coast Guard for the construction of such bridges. An individual Coast Guard Bridge Permit will not be required.

All Design Groups/ Division Resident Engineer – Anadramous Fish, High Quality Wetlands

The North Carolina Wildlife Resource Commission has indicated that a moratorium on in-water construction will be in place from September 1 to January 1 of any given year.

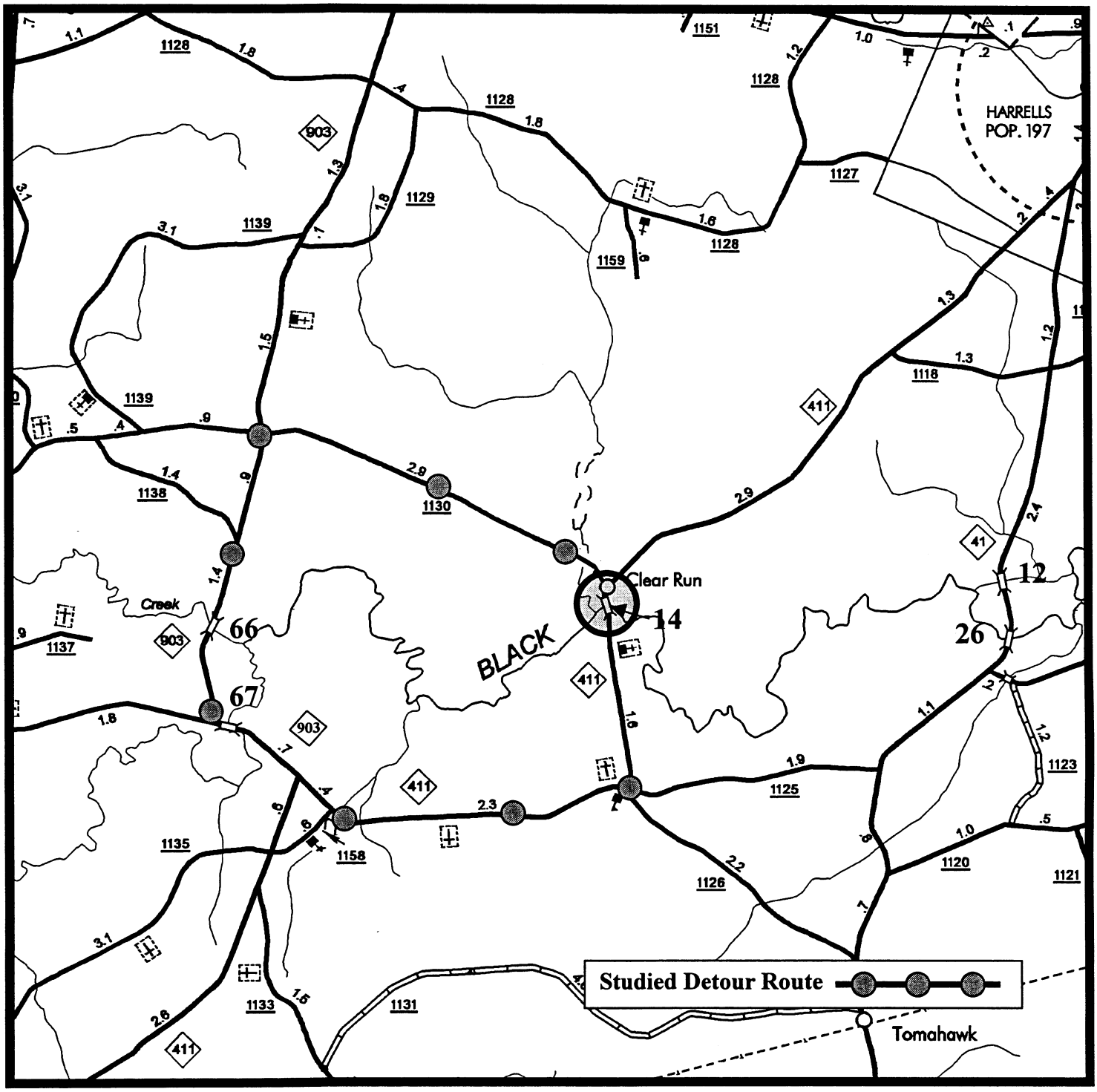
To the extent practical, construction should be accomplished without the use of construction pads.

To the extent practical, bridge demolition should occur without getting into the water.

To the extent practical, the footprint of the proposed project should be minimized.

NCDOT will implement Stream Crossing Guidelines for Anadromous Fish Crossings.

NCDOT will implement High Quality Waters Sedimentation and Erosion Control Measures.



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

SAMPSON COUNTY
REPLACE BRIDGE 14 ON NC 411
OVER BLACK RIVER
B-1381

Figure 1

NORTH CAROLINA DIVISION
FINAL NATIONWIDE SECTION 4(f) EVALUATION AND APPROVAL
FOR FEDERALLY-AIDED HIGHWAY PROJECTS WITH MINOR INVOLVEMENTS
WITH HISTORIC SITES

F. A. PROJECT BRSTP-411(1)

STATE PROJECT 8.1280401

T. I. P. NO. B-1381

DESCRIPTION: Replace Bridge No. 14 on NC 411 over the Black River in Sampson County, State Project No. 8.1280401, Federal Aid Project No. BRSTP-411(1), TIP # B-1381.

		YES	NO
1.	Is the proposed project designed to improve the operational characteristics, safety, and/or physical condition of the existing highway facility on essentially the same alignment?	X	☐
2.	Is the project on new location?	☐	X
3.	Is the historic site adjacent to the existing highway?	X	☐
4.	Does the project require the removal or alteration of historic buildings, structures, or objects?	☐	X
5.	Does the project disturb or remove archaeological resources which are important to preserve in place rather than to recover for archaeological research?	☐	X
6.	a. Is the impact on the Section 4(f) site considered minor (i.e. no effect, no adverse effect)?	X	☐
	b. If the project is determined to have "no adverse effect" on the historic site, does the Advisory Council on Historic Preservation object to the determination of "no adverse effect"?	☐	X

7.	Has the SHPO agreed, in writing, with the assessment of impacts and the proposed mitigation?	X	☐
8.	Does the project require the preparation of an EIS?	☐	X

ALTERNATIVES CONSIDERED AND FOUND NOT TO BE FEASIBLE AND PRUDENT

The following alternatives were evaluated and found not to be feasible and prudent:

		Yes	No
1.	Do nothing	X	☐
	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 a cost or impact of extraordinary measure?	☐	X
2.	Improve the highway without using the adjacent historic site.		
	(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 environmental impacts

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

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

		Yes	No
3.	Build an improved facility on new location without using the historic site.	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 necessary to preserve the historic integrity of the site.	X	☐

2. Measures to minimize harm have been agreed to, in accordance with 36 CFR Part 800, by the FHWA, the SHPO, and as appropriate, the ACHP. X ☐

3. Specific measures to minimize harm are described as follows:

The existing bridge is being replaced on the existing location and all work on approaches is being kept to a minimum. Only work which is absolutely necessary for safety is proposed. That work includes drainage pipes along the side of the road, guardrail extending from each corner of the bridge, and some regrading on the shoulder at the northwest corner of the bridge. A right of way taking of approximately one meter will be required on either side of the east approach in order to accomplish the work described above. A right of way taking of approximately two meters will be required on the north shoulder of the west approach to meet the safety standards for shoulders. Finally, a one bar metal rail is proposed for the bridge instead of the normal jersey barrier. This is to allow for a better view of the historic district as well as the river when crossing the bridge.

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 :

a. State Historic Preservation Officer (SHPO)

NCDOT and FHWA have coordinated with SHPO from the outset of the project to minimize harm to Clear Run Historic District. Attachments 2 through 9 reflect this coordination..

b. Advisory Council on Historic Preservation (ACHP)

NCDOT and FHWA have coordinated with the ACHP through correspondence. They have stated agreement with the determination of "no adverse effect". They also noted that this completes compliance of Section 106 of the National Historic Preservation Act. (See Attachment 9)

c. Property owner

Amos McLamb is the present land owner of all properties surrounding the bridge. NCDOT on behalf of FHWA has contacted Mr. Johnson early in the process and described the project and its effects. Mr. Johnson concurs with the project as described.

d. Local/State/Federal Agencies

NCDOT and FHWA have coordinated from the beginning of the planning process with the FHWA and SHPO to ensure that all known issues were addressed. Attachments 2 through 9 reflect this coordination.

e. US Coast Guard

NCDOT and FHWA have coordinated with the US Coast Guard regarding this project and concurs with the Coast Guard that this project will require a Coast Guard permit since the waters of the Black River are historically navigable at this location. NCDOT will obtain a Coast Guard permit prior to construction as noted in Section II of the document.

SUMMARY OF 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 and prudent alternatives to the use of the historic site.

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

All appropriate coordination has been successfully completed with local and state agencies.

Approved:

6-30-95 _____
Date Asst. Manager, Planning & Environmental Branch NCDOT

6/30/95 _____
Date For Division Administrator, FHWA

U.S. Department of Transportation
United States Coast Guard

Commander
United States Coast Guard
Atlantic Area

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

16590
15 NOV 02

Mr. John Williams
Manager, Project Development and
Environmental Analysis Branch
State of North Carolina, DOT
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Williams:

Our Bridge Staff has reviewed your letter and site plan, dated November 7, 2002, for the replacement of a bridge on State Route 411 over Black River, located in Sampson County, North Carolina.

Black River is considered a navigable waterway of the United States for Bridge Administration purposes. It also meets the criteria for advance approval waterways set forth in Title 33, Code of Federal Regulations, Section 115.70, at the bridge site. Advance approval waterways are those that are navigable in law, but not actually navigated by other than small boats. In such cases, the Commandant of the Coast Guard has given his advance approval to the construction of bridges across such waterways. The Black River bridge project qualifies in the advance approval category. Accordingly, an individual Coast Guard bridge permit will not be required for the new bridge across this waterway.

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

Sincerely,

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

Wayne Elliott

North Carolina Wildlife Resources Commission

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

1 7 1993

MEMORANDUM

TO: L.J. Ward, P.E., Manager
Planning and Environmental Branch
N.C. Department of Transportation

FROM: David Yow, Highway Project Coordinator
Habitat Conservation Program

kwh for David Yow

DATE: September 14, 1993

SUBJECT: Review of Scoping Sheet for Bridge No. 41 on NC 411 over the Black River, Sampson County, North Carolina, TIP No. B-1381.

The N. C. Wildlife Resources Commission (NCWRC) has reviewed the proposed project and possible impacts to existing wildlife and fishery resources in the area. An on-site investigation was conducted on September 9, 1993. 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 North Carolina Department of Transportation (NCDOT) plans to replace an obsolete wood/asphalt bridge over the Black River on existing location. The NCWRC encourages replacement at location for such projects and supports the NCDOT in its choice of this alternative. No significant effect on horizontal or vertical clearance for river navigation is anticipated, although public access to the creek may be temporarily impaired by construction activities.

In addition to on-site replacement with road closure, strict adherence to Best Management Practices for construction activities on the project area should be employed to minimize impacts from erosion on water quality. The NCWRC also recommends that all bridge replacement work within the stream channel be conducted between September 1 and January 1 to minimize impacts

ATTACHMENT 1

to anadromous fish stocks and freshwater game fish. Any instream construction outside of this window should be coordinated with Keith W. Ashley, District Fisheries Biologist, at (919-866-4250). Also, the completed structure and roadway approaches should not obstruct existing public use of the site for boating access. Public access to the unimproved boat landing adjacent to the site should be maintained during construction to the extent practicable.

Thank you for the ongoing opportunity to provide input to the planning stages for this project. If we can provide further assistance, please call David Yow, Highway Project Coordinator, at (919)-528-9887.

cc: Keith W. Ashley, District 4 Fisheries Biologist
Tom Padgett, District 4 Wildlife Biologist
John Williams, NCDOT

North Carolina Department of Cultural Resources

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

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

April 22, 1994

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

Re: Section 106 Consultation, Archaeological Survey Report, Bridge Replacement No. 14 over Black River on NC 411, Sampson County, Federal-aid BRSTP-411(1), State 8.1280401, TIP B-1381, ER 94-8479

Dear Mr. Graf:

Thank you for your letter of March 3, 1994, transmitting the archaeological survey report by Anna L. Gray of the North Carolina Department of Transportation concerning the above project. We apologize for the delay in our response.

The proposed bridge replacement project is located within the boundaries of the National Register-listed Clear Run District. Although the areas of significance for the district were listed as agriculture, architecture, and commerce in the National Register documentation, significant associated archaeological resources are present and discussed in the nomination. During the archaeological survey, Ms. Gray located the remains of a house and a barn within the area of potential effect, but was unable to locate any surface evidence of a blacksmith-cooper shop described in the nomination. Since archaeological resources will be affected regardless of the alternate selected, Ms. Gray recommended that subsurface investigation be undertaken only after the selected alternate has been identified, thereby avoiding unnecessary destruction of significant archaeological resources. We concur with this recommendation.

Based on the results of the investigation, we also concur with the finding by Federal Highway Administration that no visible remains or features would be suitable for public display or interpretation and that preservation in place of the archaeological remains is not warranted. As soon as the selected alternate for the bridge replacement is identified, please forward that information so we may determine appropriate archaeological investigations. By copy of this letter, we also request that Ms. Gray complete and submit to our office archaeological site forms for the house and barn remains identified during her survey.

ATTACHMENT 3

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

Renee Gledhill-Earley

for David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: H. F. Vick
T. Padgett

North Carolina Department of Cultural Resources

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

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

July 11, 1994

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

Re: Replace Bridge No. 14 on NC 411 over Black River, Sampson County, B-1381, ER 94-9126

Dear Mr. Graf:

On June 9, 1994, members of the Historic Preservation Office met with representatives of the Federal Highway Administration (FHwA) and the North Carolina Department of Transportation (NCDOT) to discuss the project's effect upon the National Register-listed Clear Run Historic District. During the meeting, we recommended that the new bridge design include a three-bar metal rail rather than a solid concrete barrier.

We have received additional information from NCDOT concerning the design for the new bridge. We understand that FHwA presently accepts the three-bar metal rail only when used with a sidewalk. Thus, NCDOT has provided us with photographs and details of a two-bar metal rail which is acceptable without a sidewalk.

Based upon our discussions at the June 9 meeting and additional information provided by NCDOT, we concur with FHwA's determination that the project will have no effect upon the Clear Run Historic District if the following conditions are carried out:

1. NCDOT shall stop the guard rail on the north side of NC 411 west of the Clear Run Grocery building.

2. NCDOT shall use the two-bar metal rail design for the new bridge.

3. NCDOT shall conduct archaeological testing at the scattered tree site west of the Black River. Depending upon the information discovered, we may reassess the project's effect upon the Clear Run Historic District.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook

David Brook
Deputy State Historic Preservation Officer

DB:slw

cc: H. F. Vick
B. Church

John W. Williams

TIP # B-1381 Federal Aid # BRSTP-411(1) County SAMPSON

CONCURRENCE FORM FOR ASSESSMENT OF EFFECTS

Brief Project Description REPLACE BRIDGE No. 14 ON NC411 OVER BLACK RIVER

On FEBRUARY 9, 1995, representatives of the

- ✓ North Carolina Department of Transportation (NCDOT)
- ___ Federal Highway Administration (FHwA)
- ✓ North Carolina State Historic Preservation Office (SHPO)
- ___ Other ___

reviewed the subject project and agreed

- ___ there are no effects on the National Register-listed property within the project's area of potential effect and listed on the reverse.
- ___ there are no effects on the National Register-eligible properties located within the project's area of potential effect and listed on the reverse.
- ✓ there is an effect on the National Register-listed property/properties within the project's area of potential effect. The property/properties and the effect(s) are listed on the reverse.
- ___ there is an effect on the National Register-eligible property/properties within the project's area of potential effect. The property/properties and effect(s) are listed on the reverse.

Signed:

John W. Williams — 2-09-95
Representative, NCDOT — Date

Roy C Shelton — 2/21/95
FHwA, for the Division Administrator, or other Federal Agency — Date

Dolores A Hall — 2/9/95
Representative, SHPO — Date

David Brook Doyle — 2/14/95
State Historic Preservation Officer — Date

(over)

ATTACHMENT 7

P # B-1301 Federal Aid # BRSTP-411(1) County SAMPSON

operties within area of potential effect for which there is **no effect**. Indicate if property is National
gister-listed (NR) or determined eligible (DE).

operties within area of potential effect for which there is an effect. Indicate property status (NR or DE)
d describe effect.

CLEAR RUN HISTORIC DISTRICT (NR) - NO ADVERSE EFFECT

WITH THE FOLLOWING CONDITIONS:

1. NCDOT SHALL STOP THE GUARDRAIL ON THE NORTH SIDE OF NC411 WEST OF THE CLEAR RUN GROCERY BUILDING
2. NCDOT SHALL USE THE TWO-BAR METAL RAIL DESIGN FOR THE NEW BRIDGE
3. NCDOT WILL PREPARE AND CARRY OUT A DATA RECOVERY PLAN FOR 31SP300** (the blacksmith/cooper shop) PRIOR TO CONSTRUCTION.

itialed: NCDOT _____ FHwA _____ SHPO

North Carolina Department of Cultural Resources

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

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

March 15, 1995

MEMORANDUM

TO: H. Franklin Vick, P.E., Manager
Planning and Environmental Branch
Division of Highways
Department of Transportation

FROM: David Brook
Deputy State Historic Preservation Officer

SUBJECT: Replace Bridge No. 14 on NC 411 over Black River, Sampson County, B-1381

On March 9, 1995, Debbie Bevin of our staff met with John Williams of the North Carolina Department of Transportation (NCDOT) to discuss the above project. Mr. Williams indicated that NCDOT can use a one-bar metal rail on the replacement bridge. We are pleased to learn this since we prefer the one-bar rail rather than the two-bar rail discussed previously.

Representatives of NCDOT, the Federal Highway Administration, and the State Historic Preservation Office have already signed a concurrence form stating that the project will have no adverse effect on the National Register-listed Clear run Historic District if certain conditions are met. Substitution of a one-bar metal rail for the two-bar rail does not change our determination of effect and provides a further degree of compatibility with the character of the historic district.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: N. Graf
B. Church
J. Williams

ATTACHMENT 8

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

APR 12 1995

Mr. Nicholas L. Graf
Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, NC 27601

REF: Proposed Replacement of Bridge No. 14
Sampson County, North Carolina
Project No. BRSTP-411(1)

Dear Mr. Graf:

On March 30, 1995, the Council received your determination, supported by the North Carolina State Historic Preservation Officer (SHPO), that the referenced undertaking will have no adverse effect upon the Clear Run Historic District, which is listed on the National Register of Historic Places. Pursuant to Section 800.5(d)(2) of the Council's regulations, "Protection of Historic Properties" (36 CFR Part 800), we do not object to your determination. Therefore, you are not required to take any further steps to comply with Section 106 of the National Historic Preservation Act other than to implement the undertaking as proposed and consistent with any conditions you have reached with the North Carolina SHPO.

Thank you for your cooperation.

Sincerely,

MAN

MaryAnn Naber
Historic Preservation Officer
Eastern Office of Review

ATTACHMENT 9

Elliott/Williams

North Carolina Department of Cultural Resources

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

Division of Archives and History
Jeffrey J. Crow, Director

December 30, 1997

Nicholas L. Graf, P.E.
Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, NC 27601

Re: Archaeological Data Recovery Report, Federal-aid Project BRSTP-411(1), B-1381, Sampson County; ER94-7361 & ER98-7820

Dear Mr. Graf:

Thank you for your letter of October 21, 1997, transmitting the above mentioned archaeological report. We apologize for the delay in our comments.

The report of the data recovery excavations of archaeological site 31SP300**1, the Clear Run Blacksmith-Cooper Shop, by Ellen Mayo Brady, Victoria L. Saxe, Clay Swindell, Daniel P. Lynch and Loretta Lautzenheiser of Coastal Carolina Research, Inc. is a very clear and well-written report which fulfills the stipulations of the scope-of-work developed for the project. We concur that the excavations are sufficient to retrieve the important information at the site and together with the report adequately mitigate the effects of the bridge replacement project. We do not recommend any additional archaeological investigations in connection with the bridge replacement.

We look forward to receipt of the final report and believe its wide distribution will be a valuable contribution to the professional archaeological community. Attached are a few minor corrections to be addressed in the final report.

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

Sincerely,

David Brook

David Brook
Deputy State Historic Preservation Officer

DB:slw

Attachment

cc: Frank Vick, NCDOT
Tom Padgett, NCDOT
Loretta Lautzenheiser, Coastal Carolina Research, Inc.

Specific Comments, Data Recovery Excavations, 31SP300**1
ER 94-7361 and ER 98-7820, Sampson County

1. Page 23, last line: Debra should be Deborah
2. Page 30, 2nd full paragraph: Bituminous coal has more sulfur that anthracite coal.
3. Page 52: Figure 29 is upside down.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 7, 2004

Memorandum To: John Williams, P.E.,
Bridge Replacement Unit

From: Brett Feulner
TIP Project Management Team

Subject: Proposed replacement of Sampson County Bridge No. 14 on NC 411 over the Black River. TIP No. B-1381; State Project No. 8.1280401; Federal l Aid Project No. BRSTP-411(1).

The attached Natural Resources Technical Report provides inventories and descriptions of natural resources within the project study area, and estimations of impacts likely to occur to these resources as a result of project construction. Pertinent information concerning Waters of the United States and protected species is also provided.

cc: File

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Proposed replacement of Bridge No 14 on NC 411 over the Black River.

Sampson County

TIP No. B-1381

State Project No. 8.2180401

Federal Aid Project No. BRSTP-411 (1)
WBS Element No 32594.1.1

Natural Resources Technical Report

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

Brett M. Feulner
Environmental Specialist
April 8, 2004

EXECUTIVE SUMMARY

B-1381
SAMPSON COUNTY

Proposed replacement of Bridge No. 14 on NC 411 over the Black River, Sampson County, North Carolina; TIP No. B-1381.

INTRODUCTION

The proposed project calls for the replacement of Bridge No. 14 on NC 411 over the Black River (Figure 1) on existing location with an off-site detour. Project plans call for replacing the existing bridge with a 62.3 meter (207 feet), 9.2-meter (30.2 feet) wide two-lane bridge. The right of way width is 18.3 meters (60 feet) An offsite detour will be make use of SR 1130, SR 1003 and NC 411.

PHYSICAL CHARACTERISTICS

Water Resources

The Black River is the only water resource within the study area and is located in the Cape Fear River Drainage Basin, Subbasin 03-06-19, and Hydrologic Unit 03030006.

Streams have been assigned a best usage classification by the DWQ. The classification of the Black River [Index No. 18-68)] is **C Sw ORW**. Class **C** uses include aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. Swamp waters (Sw) are defined as waters which have low velocities and other natural characteristics which are different from adjacent streams. Outstanding Resource Waters (ORW) are high quality waters that are unique and special waters of exceptional state or national recreation or ecological significance that require special protection to maintain existing uses.

Since the Black River is classified as a ORW, the proposed project is located in a "High Quality Water Zone" which is defined as areas that are within 1 mile and drain into an HQW. Construction that impacts a "High Quality Water Zone" is required to follow Design Standards in Sensitive Watersheds in the Sedimentation Control Guidelines (Title 15A. 4B. 0024).

Biotic Resources

Three terrestrial communities were identified in the project study area: Cypress-Gum Swamp, Mesic Pine Flatwood Forest and maintained/disturbed land. Table 1 shows the impacts of the project on these communities.

Table 1. Anticipated Impacts to Biotic Communities

Community	Impacts (Acres)
Cypress-Gum Swamp	0.1
Mesic Pine Flatwoods	0.0
Maintained Disturbed	1.3
Black River	0.17
Total	1.57

JURISDICTIONAL TOPICS

Surface Waters and Wetlands

The Black River is considered a jurisdictional surface water under Section 404 of the Clean Water Act (CWA). The field investigation revealed no wetlands within the project study area.

Permits

If minor impacts occur to the Black River, a Section 404 permit from the U.S. Army Corps of Engineers (USACE) and Section 401 certification will be required from the state prior to construction. It is anticipated that a Nationwide Permit (NWP) No. 23 [33 CFR 330.5(a)(23)] will be required. Nationwide Permit No. 23 is for projects expected to have minimal impact. In the event that NWP No. 23 does not apply, minor impacts attributed to bridging and associated approach improvements are expected to qualify under a Regional General Bridge Permit designated for NCDOT bridges (Permit No. 031) issued by the Wilmington USACE District (USACOE-WD 1998). Notification to the Wilmington USACE office is required if this general permit is to be utilized. Nationwide Permit No. 33 may be required if temporary construction including cofferdams, access, and dewatering are required for this project. The USACE will determine final permit requirements.

Mitigation

According to 15A NCAC 2H .0506(h) and 40 CFR 1508.20, mitigation will be required for stream impacts to jurisdictional streams requiring mitigation when these impacts are equal to or greater than 150 linear feet per stream. Because the proposed alignment only impacts one jurisdictional stream, it is anticipated that the USACE and NCDWQ will not require mitigation.

Federally-Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the ESA. As of January 29, 2003, there are three federally-protected species (Table 3) listed for Sampson County. The North Carolina Natural Heritage Program (NHP) has no record of the occurrence of either of these species within one mile of the project.

Table 2. Federally-Protected Species for Sampson County

Scientific Name	Common Name	Status
Alligator mississippiensis	American alligator	Threatened (S/A)
Picoides borealis	Red cockaded woodpecker	Endangered
Lindera melissifolia	Pondberry	Endangered

American Alligator
No Biological conclusion is required for the American alligator.

Red cockaded woodpecker: **No Effect**
Potential habitat was found within the project corridor. There were several loblolly pine trees found in the Mesic Pine Flatwoods Forest that were approximately 60 feet tall and 12-14 inch dbh. Current project plans call for replacing this bridge in place, therefore none of the pine trees are expected to be removed. However, if project plans change and the removal of any large pine trees will occur, then this biological conclusion will need to be confirmed. There was no evidence of current or previous nesting on any of the pine trees. Additionally, the understory in this community was much thicker then preferred by the RCW. The NC Natural Heritage Program Database was checked and no occurrences of the RCW were observed within one mile of the project area.

Pondberry: **No Effect**
There was no habitat found within the project study area for the pondberry. There are no seasonally flooded wetlands, sandy sinks, pond margins, swampy depressions sinks, or pineland depressions. Additionally the NC Natural Heritage Program Database was checked and no occurrences of pondberry were reported within one mile of the project area.

CONCLUSIONS
Within the study area for this project, there are no wetlands and one jurisdictional stream, Black River. The Black River is not listed as a 303(d) stream. A Biological Conclusion of "No Effect" has been issued for the pondberry and the red cockaded woodpecker.

Table of Contents

FIGURES AND TABLES

1.0 INTRODUCTION

The following Natural Resources Technical Report is submitted to assist in preparation of a Categorical Exclusion (CE) for the proposed project. The project is situated in Sampson County (Figure 1).

1.1 Project Description

The proposed project calls for the replacement of Bridge No. 14 on NC 411 over the Black River on existing location with an off-site detour. Project plans call for replacing the existing bridge with a 207 feet, 30.2 feet wide two-lane bridge. The right-of-way width is 60 feet An offsite detour will be make use of SR 1130, SR 1003 and NC 411.

1.2 Purpose

The purpose of this technical report is to inventory, catalog and describe the various natural resources likely to be impacted by the proposed action. This report also attempts to identify and estimate the probable consequences of the anticipated impacts to these resources. Recommendations are made for measures that will minimize resource impacts. These descriptions and estimates are relevant only in the context of existing preliminary design concepts. If design parameters and criteria change, additional field investigations will need to be conducted.

1.3 Methodology

Research was conducted prior to field investigations. Information sources used in this pre-field investigation of the study area include: U.S. Geological Survey (USGS) quadrangle map (Ingold), U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Map, Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) soil maps, and NCDOT aerial photographs of project area (1:1200). Water resource information was obtained from publications of the Department of Environment, Health and Natural Resources (DENR, 2003). Information concerning the occurrence of federal and state protected species in the study area was gathered from the Fish and Wildlife Service (FWS) list of protected species and species of concern, and the N.C. Natural Heritage Program (NHP) database of rare species and unique habitats.

General field surveys were conducted along the proposed alignment by NCDOT biologists Brett Feulner and Matt Haney on July 30, 2003 . Plant communities and their associated wildlife were identified and recorded. Wildlife identification involved using one or more of the following observation techniques: active searching and capture, visual observations (binoculars), and identifying characteristic signs of wildlife (sounds, scat, tracks, and burrows).

Figure 1

Jurisdictional wetland determinations were performed utilizing delineation criteria prescribed in the "Corps of Engineers Wetland Delineation Manual" (Environmental Laboratory, 1987).

1.4 Qualifications of Principal Investigator

Investigator:	Brett Feulner, Environmental Biologist NCDOT.
Education:	BS Forest Management, North Carolina State University
Experience:	Environmental Biologist, NCDOT February 2003- Present
	Environmental Scientist, LandMark Design Group June 2001- Dec. 2002
Expertise:	Wetland Delineation, Section 7 field investigations; NEPA investigations.

1.5 Terminology

Definitions for aerial descriptions used in this report are as follows: **Project Study Area** denotes the area bounded by proposed right-of-way limits; **Project Vicinity** describes an area extending 0.5 mile on all sides of the project study area; and **Project Region** is equivalent to an area represented by a 7.5 minute USGS quadrangle map with the project occupying the central position.

2.0 PHYSICAL RESOURCES

2.1 Regional Characteristics

The project study area lies within the Coastal Plain Physiographic Province. The topography in this section of Sampson County is characterized as nearly level to gently sloping. Project elevation is approximately 25 feet above mean sea level (msl). The city of Clinton is approximately 20 miles to the north of the project area. The study area within the proposed right of way is primarily forested.

2.2 Soils

Two soil phases occur within project boundaries: Chipley sand and Bibb and Johnston soils.

- Chipley sand is a moderately well drained soil that occurs on smooth, low ridges. Permeability is rapid, the seasonal high water table is located 2 to 3 ft below the surface and flooding occurs infrequently for brief periods. Chipley sand is listed as non-hydric.
- Bibb and Johnston is a very poorly drained soil along major streams. The seasonal high water table is at or near the surface for several months during the year. This soil is flooded for brief periods. Bibb and Johnston soils are listed as a hydric soil.

Soil core samples taken throughout the project area revealed soils with a sandy texture. The soils did not exhibit hydric conditions, such as low chroma colors, in low areas and adjacent to Black River. Therefore, hydric soil indicators, as defined in the "Corps of

Engineers Wetland Delineation Manual", 1987, were not observed within the project study area.

2.3 Water Resources

This section contains information concerning those water resources likely to be impacted by the project. Water resource information encompasses physical aspects of the resource, its relationship to major water systems, Best Usage Standards and water quality of the resources. Probable impacts to these water bodies are also discussed, as are means to minimize impacts.

2.3.1 Waters Impacted and Characteristics

The Black River will be the only surface water resource directly impacted by the proposed project (Figure 1). The Black River is located in sub-basin 03-06-19, Hydrologic Unit 03030006 of the Cape Fear River Basin, the largest river basin in the state of North Carolina. Currently there are no buffer rules in effect for the Cape Fear River Basin.

The Black River is described as having a slow flow with large pools and low turbidity. The substrate is composed of silt and sand. The Black River at Bridge No. 14, is approximately 70 ft wide and has an approximate depth of 4.5 ft at this location.

2.3.2 Clean Water Act Section 303(d) Streams

The DWQ has assembled a list of impaired waterbodies according to the Clean Water Act Section 303(d) and 40 CFR 130.7, hereafter referred to as the NC 2000 Section 303(d) list. The list is a comprehensive public accounting of all impaired waterbodies. An impaired waterbody is one that does not meet water quality standards including designated uses, numeric and narrative criteria and anti-degradation requirements defined in 40 CFR 131. The standards violation may be due to an individual pollutant, multiple pollutants, pollution, or an unknown cause of impairment. The source of impairment could be from point sources, nonpoint sources, and atmospheric deposition. Some sources of impairment exist across state lines. North Carolina's methodology is strongly based on the aquatic life use support guidelines available in the Section 305(b) guidelines (EPA-841-B-97-002A and -002B). Those streams attaining only Partially Supporting (PS) or Not Supporting (NS) status are listed on the NC 2000 Section 303(d) list. Streams are further categorized into one of six parts within the NC 2000 Section 303(d) list, according to source of impairment and degree of rehabilitation required for the stream to adequately support aquatic life. Within Parts 1, 4, 5, and 6 of the list, N.C. has developed a priority ranking scheme (low, medium, high) that reflects the relative value and benefits those waterbodies provide to the State. **The Black River is not on the NC 2000 Section 303(d) list.**

2.3.3 Best Usage Classification

Streams have been assigned a best usage classification by the DWQ. The classification of the Black River [Index No. 18-68)] is **C Sw ORW**. Class **C** uses include aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. Swamp waters (Sw) are defined as waters which have low velocities and other natural characteristics which are different from adjacent streams. Outstanding Resource Waters (ORW) are high quality waters that are unique and special waters of exceptional state or national recreation or ecological significance that require special protection to maintain existing uses.

Since the Black River is classified as a ORW, the proposed project is located in a "High Quality Water Zone" which is defined as areas that are within 1 mile and drain into an HQW. Construction that impacts a "High Quality Water Zone" is required to follow Design Standards in Sensitive Watersheds in the Sedimentation Control Guidelines (Title 15A. 4B. 0024).

2.3.4 Water Quality

The Benthic Macroinvertebrate Ambient Network (BMAN) is managed by DWQ and is part of an ongoing ambient water quality monitoring program which addresses long term trends in water quality. The program assesses water quality by sampling for selected benthic macroinvertebrate organisms at fixed monitoring sites. Some macroinvertebrates are sensitive to very subtle changes in water quality; thus, the species richness and overall biomass of these organisms are reflections of water quality. **There are no BMAN Stations located within one mile of the project area.**

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine water quality monitoring stations strategically located for the collection of physical and chemical water quality data. The type of water quality data or parameters, that are collected is determined by the waterbody's freshwater or saltwater classification and corresponding water quality standards (DWQ, 1995). Class **C** waters are sampled at a minimum frequency of once per month. Bridge No. 14 over the Black River is designated as a location for a AMS station. A water level/quality monitoring structure is attached to the bridge. The structure consists of a stainless steel box (located approximately 1.2 m above the deck) connected to a section of corrugated galvanized pipe which extends to the creek bottom. The DWQ reports that high conductivity readings and elevated concentrations of nitrate/nitrite-nitrogen have been noted at this location (DWQ, 1995).

Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) Program. Any discharger is required to register for a permit. **There are no point source dischargers located within one mile of the project area.**

2.4 Summary of Anticipated Impacts

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

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

In order to minimize potential impacts to water resources in the project area, NCDOT's Best Management Practices for the Protection of Surface Waters will be strictly enforced during the construction phase of the project. Limiting in stream work activities and re-vegetating stream banks immediately following the completion of the grading will further reduce impacts.

3.0 BIOTIC RESOURCES

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

Scientific nomenclature and the common names (when applicable) are provided for each described animal and plant species. The plant taxonomy generally follows Radford et al (1968). Animal taxonomy follows Lee et al (1982), Martof et al (1980), Potter et al (1980), and Webster et al (1985). All subsequent references to the same organism will include the common name only. Fauna that is observed during the site visit is denoted

with an asterisk (*). Scat evidence or tracks equate to observation of the species. Published range distributions and habitat analysis are used in estimating fauna expected to be present within the project area.

3.1 Terrestrial Communities

Three distinct terrestrial communities are identified in the project study area: Cypress-Gum Swamp, Mesic Pine Flatwood forest and maintained/disturbed community.

3.1.1 Cypress-Gum Swamp

This unique coastal plain swamp community occurs as a fringe along both banks of the Black River. The canopy of this community is dominated by bald cypress (*Taxodium distichum*), sweet gum (*Liquidambar styraciflua*), and red maple(*Acer rubrum*). The understory of this community is composed of saplings of trees found in the canopy as well as water oak (*Quercus nigra*) and willow oak (*Q phellos*).

3.1.2 Mesic Pine Flatwood Forest

The Mesic Pine Flatwood Forest is present along both sides Black River. The transition from the pine forest to maintained/disturbed community is abrupt in some areas due to mowing activities and is more gradual in some areas. The transitional areas between the pine forest and the maintained community exhibit characteristics of a successional community composed of species in the canopy of the pine forest.

The canopy is dominated by loblolly pine (*Pinus taeda*). The midstory is composed of sweet gum, American elm (*Ulmus americana*), sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*), and red maple. The shrub layer consists saplings of the canopy and midstory trees as well as persimmon (*Diospyros virginiana*), southern red oak (*Quercus falcata*), hickory (*Carya* sp.), river birch (*Betula nigra*), red bud (*Cercis* canadensis) and Chinese privet (*Ligustrum sinense*). Virginia creeper (*Parthenocissus quinquefolia*), muscadine (*Vitis rotundifolia*) and trumpet creeper (*Campsis radicans*) comprise the vine layer of this community.

3.1.3 Maintained/Disturbed Community

The maintained/disturbed community is found along an access road to the Black River in the northwest quadrant and along the road shoulders along NC 411 and are present along the entire length of the project. Flora within this periodically maintained community includes: fescue (*Festuca* spp.), bermuda grass (*Cynodon dactylon*), and crabgrass (*Digitaria* sp.),

The maintained habitat within the project area is surrounded by extensive forested areas and represents only a minor constituent of a larger community structure within the project

vicinity. Therefore, faunal species frequenting the maintained community will be largely those species inhabiting the alluvial forest.

3.2 Wildlife

Many faunal species are highly adaptive and may populate or exploit the entire range of biotic communities discussed. Generally, the community boundaries are abrupt with little transitional area between them. The forested tracts and drainageways provide habitat for species requiring a forest community, and provide shelter and movement corridors for other wildlife species within the project vicinity.

Mammals that commonly exploit habitats found within the project area consist of the white-tailed deer* (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), and raccoon* (*Procyon lotor*).

Forests and forest edge habitats located in the project area also provide opportunities for foraging and shelter for avian species such as the belted kingfisher* (*Megaceryle alcyon*), northern cardinal* (*Cardinalis cardinalis*), morning dove* (*Zenaida macoura*), crow* (*Corvus brachyrhynchos*) prothonotary warbler (*Protonotaria citrea*), northern parula (*Parula americana*), tufted titmouse (*Parus bicolor*), red-eyed vireo (*Vireo olivaceus*), and blue-gray gnatcatcher (*Polioptila caerulea*). The barred owl (*Strix varia*) is a permanent resident in this community type.

A variety of reptiles and amphibians may also be expected to utilize the terrestrial communities within the project area. These animals include the broadhead skink (*Eumeces laticeps*), marbled salamander (*Ambystoma opacum*), black racer (*Coluber constrictor*), and eastern box turtle (*Terrapene carolina*).

3.3 Aquatic Communities

This community is contained within the Black River. No submersed or emergent aquatic vegetation was observed within this section of the Black River. Fauna associated with the aquatic community includes various invertebrate and vertebrate species. Common species found in the black river include cottonmouth (*Agkistrodon piscivorus*), banded watersnake (*Nerodia fasciata*), yellow bellied slider (*Chrysemys scripta*), American alligator (*Alligator mississippiensis*) beaver (*Castor canadensis*), and racoon. Fish species that are likely to be found include eastern mosquito fish (*Gambusia affinis*), redfin pickeral (*Esox americanus*), eastern mud minnow (*Umbra pygmae*), yellow bullhead (*Ictalurus natalis*), bowfin (*Amia calva*), longnose gar (*Lepisosteus osseus*), American eel (*Anguilla rostrata*), banded pygmy sunfish (*Elassoma zonatum*), and madtom (*Noturus* sp.)

3.4 Summary of Anticipated Impacts

Construction related activities in or near the previously described resources have the potential to impact biological functions. This section quantifies and qualifies impacts to

the natural resources in terms of area impacted and ecosystems effected. Temporary and permanent impacts are also considered.

Plant communities found within the proposed project area serve as nesting and sheltering habitat for various wildlife species. Replacing Bridge No. 14 and its associated improvements may reduce habitat for faunal species, thereby diminishing faunal numbers. However, due to the size and scope of this project, it is anticipated that impacts to fauna will be minimal.

Areas modified by construction (non-paved) will become road shoulders and early successional habitat. Increased traffic noise and reduced habitat will displace some wildlife further from the roadway while attracting other wildlife by creating more early successional habitat. Animals temporarily displaced by construction activities may repopulate areas suitable for the species. This temporary displacement of animals will result in an increase of competition for the remaining resources.

The calculated impacts to biotic resources reflect the relative abundance of each community present within the study area. Project construction will result in clearing and degradation of portions of these communities. Table 1 summarizes potential losses to these biotic communities resulting from project construction. Estimated impacts are derived using the proposed 60.0-ft ROW on the proposed alignment. Since the entire ROW will probably not be impacted, actual impacts may be considerably less than indicated.

Table 1. Anticipated Impacts to Biotic Communities

Community	Impacts
Cypress-Gum Swamp	0.1
Mesic Pine Flatwoods	0.0
Maintained Disturbed	1.3
Black River	0.17
Total	1.57

Note: Values cited are in acres

4.0 JURISDICTIONAL TOPICS

This section provides descriptions, inventories and impact analysis pertinent to two important issues--Waters of the United States and rare and protected species.

4.1 Waters of the United States

Surface waters and wetlands fall under the broad category of "Waters of the United States" (Waters of the U.S.), as defined in Section 33 of the Code of Federal Register (CFR) Part 328.3. Any action that proposes to dredge or place fill material into surface waters or wetlands falls under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (33 U.S.C. 1344). Surface waters

include all standing or flowing waters which have commercial or recreational value to the public.

4.1.1 Characteristics of Wetlands and Surface Waters

Potential wetland communities were investigated pursuant to the 1987 "Corps of Engineers Wetland Delineation Manual". The three parameter approach is used where hydric soils, hydrophytic vegetation, and prescribed hydrologic characteristics must **all** be present for an area to be considered a wetland. **There were no wetlands found within the project corridor.**

4.1.2 Summary of Anticipated Impacts

Anticipated impacts to "Waters of the US" were determined by using the width and length of the bridge. Impacts to the Black River are approximately 0.16 ac.

4.1.3 Permits

Impacts to jurisdictional surface waters are anticipated. In accordance with provisions of section 404 of the Clean Water Act (33 U.S.C. 1344), a permit will be required from the USACE for the discharge of dredged or fill material into "Waters of the United States."

A Section 404 Nationwide Permit 23 CFR 330.5(a) (23) is likely to be applicable for all impacts to Waters of the United States from the proposed project. This permit authorizes activities undertaken, assisted, authorized, regulated, funded or financed in whole, or part, by another Federal agency or department where that agency or department has determined that pursuant to the council on environmental quality regulation for implementing the procedural provisions of the National Environmental Policy Act;

(1) that the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment, and;

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

A Nationwide Permit No. 33 may be required if temporary construction including cofferdams, access, and dewatering are required for this project. The USACE will determine final permit requirements.

4.1.4 Mitigation

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

4.1.4.1 Avoidance

Avoidance examines all appropriate and practicable possibilities of averting impacts to Waters of the U.S. According to a 1990 Memorandum of Agreement between the Environmental Protection Agency (EPA) and the USACE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes. Wetland impacts can be avoided by confining construction activities within the boundaries of the existing road shoulder (maintained/ disturbed community).

4.1.4.2 Minimization

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

4.1.4.3 Compensatory Mitigation

Compensatory mitigation is not normally considered until anticipated impacts to Waters of the U.S. have been avoided and minimized to the maximum extend possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation, and enhancement of Waters of the U.S. Such actions should be undertaken in areas adjacent to or contiguous to the discharge site.

Projects authorized under Nationwide Permits that result in the fill or alteration of:

- More than 0.1 acre (0.04 ha) may require compensatory mitigation,
- At least 1.0 acre (0.40 ha) of wetlands will require compensatory mitigation, and/or
- At least 150 linear feet (45.7 meters) of streams will require compensatory mitigation.

The impacts from this project do not meet the minimum mitigation threshold. **Therefore, no mitigation requirement is anticipated**. However, final permit/mitigation decisions rest with the USACE.

4.2 Rare and Protected Species

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

4.2.1 Federally-Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Sections 7 and 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003, the FWS lists the following federally-protected species for Durham County (Table 2). A brief description of each species' characteristics and habitat follows.

Table 2. Federally-Protected Species for Sampson County

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

[1] Threatened species are species that are likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

[2] Endangered is defined as a species that is threatened with extinction throughout all or a significant portion of its range.

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

Characteristics:
The alligator is a large aquatic reptile, measuring 1.8-5.8 meters in length, with a broadly rounded snout, heavy body, laterally compressed tail, and a dark gray or blackish color. Young are black with conspicuous yellow crossbands; the banding may occasionally persist on adults, although very faintly. Unlike the American crocodile, the fourth tooth on the lower jaw of the alligator fits in a notch in the upper jaw and is not exposed when the jaws are closed.

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

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

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

No survey or biological conclusion is required for this species.

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

The red-cockaded woodpecker (RCW) once occurred from New Jersey to southern Florida and west to eastern Texas. It occurred inland in Kentucky, Tennessee, Arkansas, Oklahoma, and Missouri. The RCW is now found only in coastal states of its historic range and inland in southeastern Oklahoma and southern Arkansas. In North Carolina moderate populations occur in the sandhills and southern coastal plain. The few

populations found in the piedmont and northern coastal plain are believed to be relics of former populations.

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

The RCW uses open old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. A forested stand must contain at least 50% pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are ≥60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 200 hectares (500 acres). This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 3.6-30.3 m (12-100 ft) above the ground and average 9.1-15.7 m (30-50 ft) high. They can be identified by a large incrustation of running sap that surrounds the tree. The large incrustation of sap is believed to be used as a defense by the RCW against possible predators. A clan of woodpeckers usually consists of one breeding pair and the offspring from previous years. The RCW lays its eggs in April, May, and June and hatch 38 days later. Clutch size ranges in number from 3-5 eggs. All members of the clan share in raising the young. Red-cockaded woodpeckers feed mainly on insects but may feed on seasonal wild fruits.

Biological Conclusion: **No Effect**
Potential habitat was found within the project corridor. There were several loblolly pine trees found in the Mesic Pine Flatwoods Forest that were approximately 60 feet tall and 12-14 inch dbh. Current project plans call for replacing this bridge in place, therefore none of the pine trees are expected to be removed. However, if project plans change and the removal of any large pine trees will occur, then this biological conclusion will need to be confirmed. There was no evidence of current or previous nesting on any of the pine trees. Additionally, the understory in this community was much thicker then preferred by the RCW. The NC Natural Heritage Program Database was checked and no occurrences of the RCW were observed within one mile of the project area.

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

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

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

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

Biological Conclusion: **No Effect**
There was no habitat found within the project study area for the pondberry. There are no seasonally flooded wetlands, sandy sinks, pond margins, swampy depressions sinks, or pineland depressions. Additionally the NC Natural Heritage Program Database was checked and no occurrences of pondberry were reported within one mile of the project area.

4.2.2 Federal Species of Concern and State Listed Species

There are fourteen Federal Species of Concern (FSC) listed by the USFWS for Sampson County. Federal species of concern are not afforded federal protection under the Endangered Species Act of 1973, as amended, and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. However, the status of these species is subject to change, and so should be included for consideration. An FSC is defined as a species that is under consideration for listing for which there is insufficient information to support listing. In addition, organisms which are listed as Endangered (E), Threatened (T), or Special Concern (SC) by the NCNHP list of Rare Plant and Animal Species are afforded state protection under

the NC State Endangered Species Act and the NC Plant Protection and Conservation Act of 1979, as amended.

Table 3 lists Federal Candidate and State listed species, the species state status (if afforded state protection) and the existence of suitable habitat for each species in the study area. This species list is provided for information purposes as the status of these species may be upgraded in the future.

Table 3. Federal Species of Concern for Sampson County.

Scientific Name	Common Name	NC Status
Aimophila aestivalis	Bachman's sparrow	SC
Corynorhinus rrafinesquii	Rafinesque's big-eared bat	SC/PT **
Heterodon simus	Southern hognose snake	SC
Noturus sp.	"Broadtail" madtom	SC
Ophisaurus mimicus	Mimic glass lizard	SC
Rana capito capito	Carolina gopher frog	T
Dolania americana	American sand burrowing mayfly	SR
Dionaea muscipula	Venus flytrap	SR-L, SC
Juglans cinerea	Butternut	W5
Ludwigia brevipes	Long beach seedbox	FSC
Litsea aestivalis	Pondspice	SR-T
Macbridea caroliniana	Carolina bogmint	2
Solidago verna	Spring-flowering goldenrod	SR-L
Cylindrocolea andersonii	A liverwort	SR-P

"T"--A Threatened species is one which is likely to become endangered species within the foreseeable future throughout all or a significant portion of its range.
"SC"--A Special Concern species is one which requires monitoring but may be taken or collected and sold under regulations adopted under the provisions of Article 25 of Chapter 113 of the General Statutes (animals) and the Plant Protection and Conservation Act (plants). Only propagated material may be sold of Special Concern plants that are also listed as Threatened or Endangered.
"C"--A Candidate species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is also either rare throughout its range or disjunct in North Carolina from a main range in a different part of the country or the world.
"SR"--A Significantly Rare species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is generally more common elsewhere in its range, occurring peripherally in North Carolina.
"W2"--A Watch Category 2 species is a rare to uncommon species in North Carolina, but is not necessarily declining or in trouble.
"W5"--A Watch Category 5 species is a species with increasing amounts of threats to its habitat; populations may or may not be known to be declining.
"/P_"--denotes a species which has been formally proposed for listing as Endangered, Threatened, or Special Concern, but has not yet completed the listing process.
* -- 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.

Surveys for these species were not conducted during the site visit, nor were any of these species observed. A review of the N.C. Natural Heritage Program data base of rare species and unique habitats revealed no records of North Carolina rare and/or protected species in or near the project study area.

5.0 CONCLUSIONS

Within the study area for this project, there are no wetlands and one jurisdictional stream, the Black River. Impacts to the Black River are approximately 60 feet. Estimated impacts are derived using the width of the bridge and approximate length of the river at the

location of the bridge. The Black River is not listed as a 303(d) stream. A Biological Conclusion of "No Effect" has been issued for the two species listed as federally protected in Sampson County.

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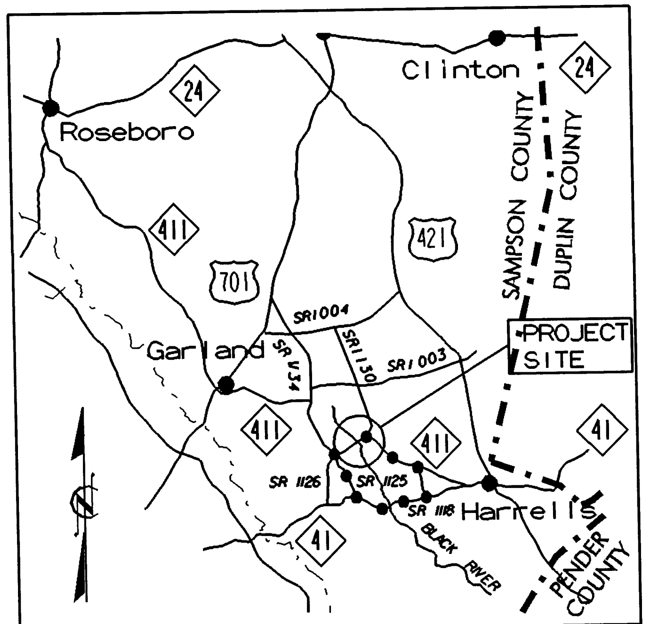
CONTRACT: C200855 TIP PROJECT: B-1381

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



VICINITY MAP

OFF SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

LOCATION: BRIDGE 14 OVER BLACK RIVER AND APPROACHES ON NC 411 (AT CLEAR RUN) WEST OF HARRELLS

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

METRIC

ALL DIMENSIONS IN THESE PLANS ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE SHOWN

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-1381	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
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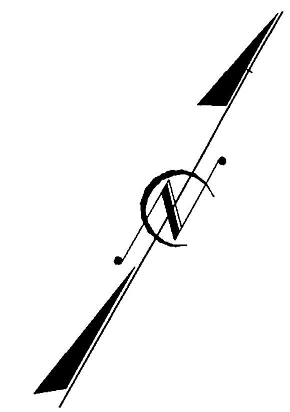
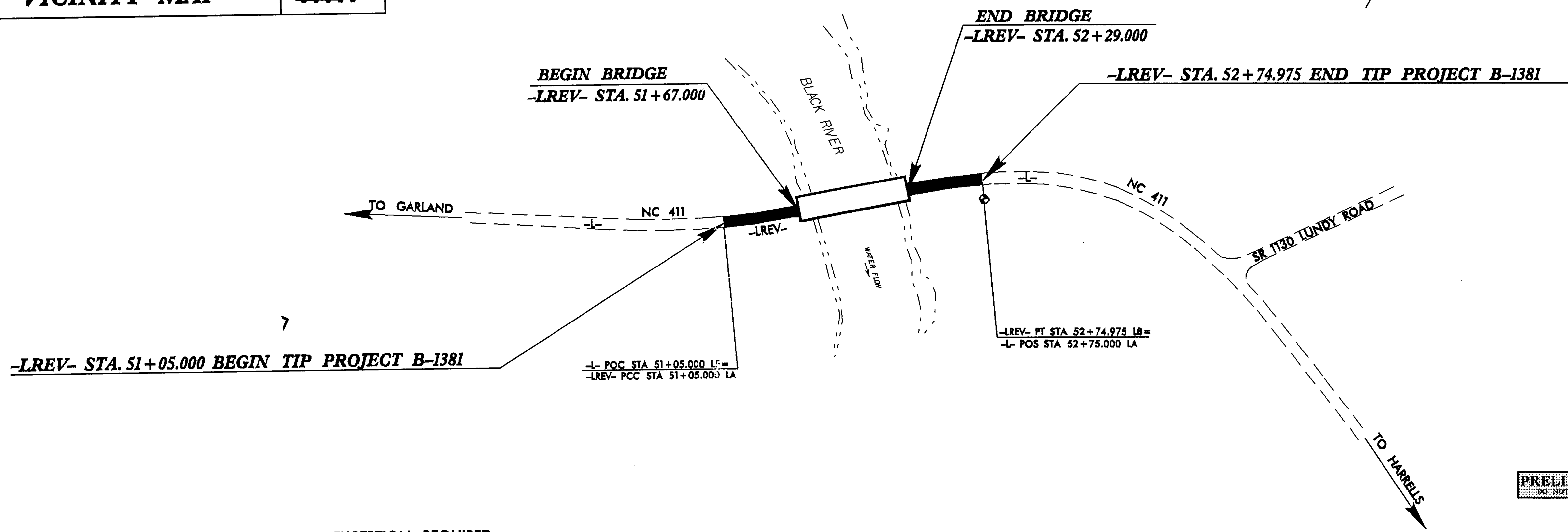
32594.2.1	BRSTP-411(1)	R/W & UTIL





PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

**DESIGN SPEED DESIGN EXCEPTION REQUIRED

GRAPHIC SCALES

5m 0 10m
PLANS

5m 0 10m
PROFILE (HORIZONTAL)

0.5m 0 1m
PROFILE (VERTICAL)

DESIGN DATA

ADT 2006 = 1475
ADT 2025 = 2800
DHV = 10%
D = 60%
*T = 5 %
**V = 65 km/h
*TTST 2% & DUAL 3%
FUNCT. CLASS. = RURAL MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-1381 = 0.108 km

LENGTH STRUCTURE TIP PROJECT B-1381 = 0.062 km

TOTAL LENGTH TIP PROJECT B-1381 = 0.170 km

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 9, 1995
JUNE 30, 2005

LETTING DATE:
MARCH 20, 2007

GLENN W. MUMFORD, PE
PROJECT ENGINEER

SUSAN C. LANCASTER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

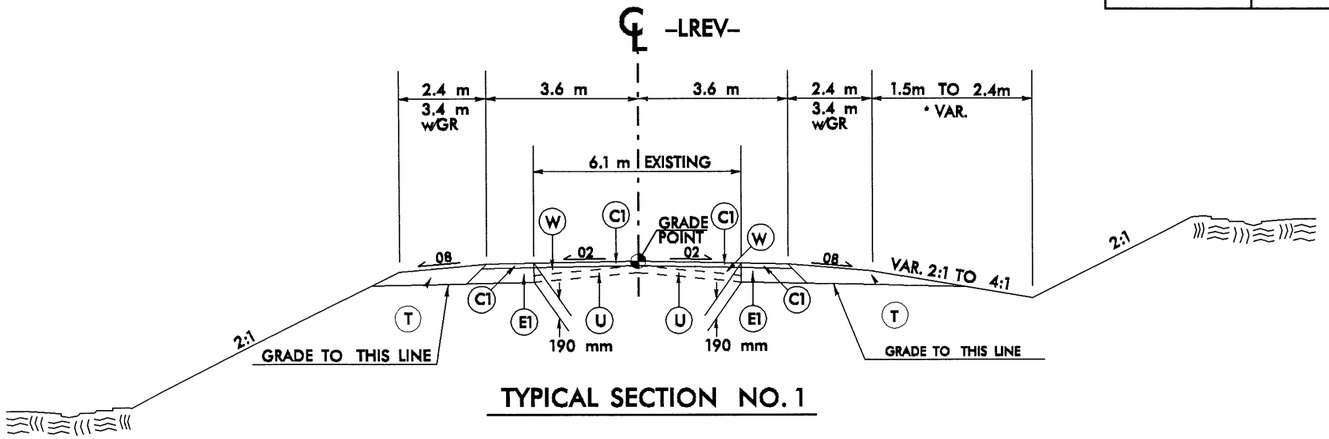
P.E.
STATE DESIGN ENGINEER

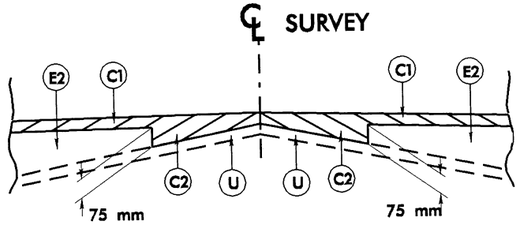
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

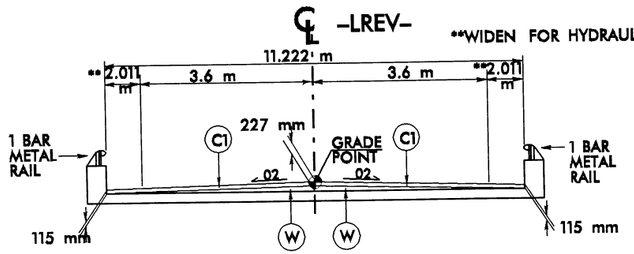
APPROVED
DIVISION ADMINISTRATOR DATE

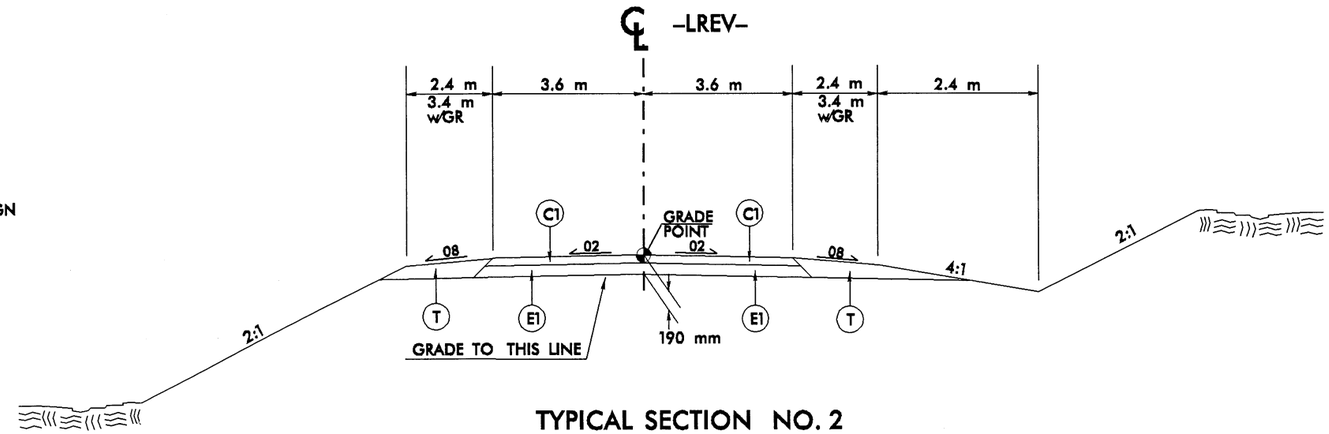
09/09/99

12-SEP-2006 17:01
r:\roadway\proj\b1381.tsh
$$$$USERNAME$$$$









METRIC

PROJECT REFERENCE NO.	SHEET NO.
B-1381	2

ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	PROP. APPROX. 60 mm ASPHALT CONC. SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 72 kg PER SQUARE METER IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5A, AT AN AVERAGE RATE OF 2.40 kg PER SQUARE METER PER 1 mm DEPTH,TO BE PLACED IN LAYERS NOT TO EXCEED 40 mm IN DEPTH.
E1	PROP. APPROX. 130 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 318.5 kg PER SQUARE METER.
E2	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQUARE METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 75 mm IN DEPTH OR GREATER THAN 140 mm IN DEPTH.
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL).

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

TYPICAL SECTION NO. 1

*NOTE: USE 1.5m FROM 52+50 TO 52+74.975 LT.

USE TYPICAL SECTION NO. 1 AS FOLLOWS:

-LREV- STA. 51+05.000 TO STA. 51+40.000 (TRANSITION FROM EXISTING TO T.S NO. 1)
-LREV- STA. 51+40.000 TO STA. 51+55.000
-LREV- STA. 52+39.975 TO STA. 52+74.975 (TRANSITION FROM T.S. NO. 1 TO EXISTING)

DETAIL SHOWING METHOD OF WEDGING

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1

TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AS FOLLOWS:

-LREV- STA. 51+55.000 TO STA. 51+67.000 (BEGIN BRIDGE)
-LREV- STA. 52+29.000 (END BRIDGE) TO STA. 52+39.975

TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:

-LREV- STA. 51+67.000 (BEGIN BRIDGE) TO STA. 52+29.000 (END BRIDGE)

12-SEP-2006 17:01
[illegible]\proj\b1381.tsp
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PROJECT REFERENCE NO.	SHEET NO.
B-1381	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

METRIC

-5 0 10

CONST.REV. _____

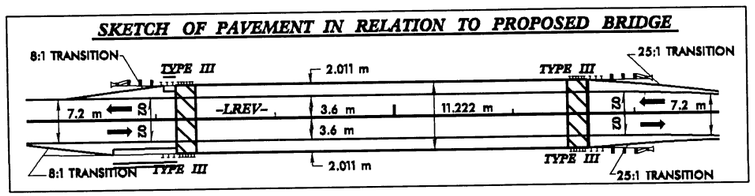
R/W REV. _____

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

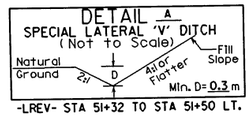
REVISIONS

8/17/98

SKETCH OF PAVEMENT IN RELATION TO PROPOSED BRIDGE

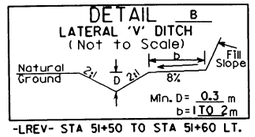


DETAIL A
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



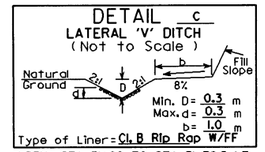
-LREV- STA 51+32 TO STA 51+50 LT.

DETAIL B
LATERAL 'V' DITCH
(Not to Scale)



-LREV- STA 51+50 TO STA 51+60 LT.

DETAIL C
LATERAL 'V' DITCH
(Not to Scale)



Type of Liner = Cl. B Rip Rap W/FF

-LREV- STA 51+60 TO STA 51+78.5 LT.
-LREV- STA 52+24 TO STA 52+30 LT. & RT.

DESIGN SPEED DESIGN EXCEPTION REQUIRED

NAD 83

(1) AMOS McLAMB
DB. 1185, PG. 09
22.13 Ac. (TAX TOTAL)
8.956 Ha

(2) ELIZABETH M. NORRIS
D.B. 1056, PG. 900
3.60 Ac (TAX TOTAL)
1.457 Ha

(3) AMOS McLAMB
D.B. 534, PG. 285
W.B. 13, PG. 739
151.87 Ac (TAX TOTAL)
61.460 Ha

(4) W.I. McLAMB
D.B. 1156, PG. 729
140.06 Ac (TAX TOTAL)
56.680 Ha
RIGHT OF WAY AGREEMENT
D.B. 876, PG. 394

BEGIN TIP PROJECT B-1381
-LREV- POC STA. 51+05.00

END TIP PROJECT B-1381
-LREV- PT STA. 52+74.975

DO NOT DISTURB BUILDING

51+00

52+00

53+00

LATERAL 'V' DITCH W/CLASS 'B' RIP RAP & FF
SEE DETAIL C
EST CLASS B RIP-RAP 15 TONS
EST FILTER FABRIC 41 SM
EST DDE 4.8 CM

LATERAL 'V' DITCH
SEE DETAIL B
EST DDE 6.0 CM

TBDI W/400 CSP W/ELBOW W/ ROD & LUG CONNECTORS

SPECIAL 'V' DITCH
SEE DETAIL A
EST DDE 4.9 CM

LATERAL 'V' DITCH W/CLASS 'B' RIP RAP & FF
SEE DETAIL C
EST CLASS B RIP-RAP 6 TONS
EST FILTER FABRIC 17 SM
EST DDE 1.9 CM

CLASS 'B' RIP RAP
EST CLASS B RIP-RAP 110N
EST FILTER FABRIC 3.3 SM

LATERAL 'V' DITCH
W/CLASS 'B' RIP RAP & FF
SEE DETAIL C
EST CLASS B RIP-RAP 6 TONS
EST FILTER FABRIC 17 SM
EST DDE 1.9 CM

-L- PC 50+56.922

-L- SC 53+18.060

-L- CS 53+60.094

-LREV- PT STA. 52+74.975 LB =
-L- POS STA. 52+75.000 LA

-LREV- PC STA. 52+36.186

END APPROACH SLAB
-LREV- STA. 52+33.265

END BRIDGE
-LREV- STA. 52+29.000

BEGIN APPROACH SLAB
-LREV- STA. 51+62.735

BEGIN BRIDGE
-LREV- STA. 51+67.000

-LREV- PT STA. 51+59.687

-L- POC STA. 51+05.000 LB =
-LREV- PCC STA. 51+05.000 LA

-LREV-

PI Sta 51+32.386	PI Sta 52+55.604
Δ = 7° 50' 00" (LT)	Δ = 6° 57' 20" (RT)
L = 54.687	L = 38.788
T = 27.386	T = 19.418
R = 400.000	R = 319.520
S.E. = SEE PLANS	S.E. = SEE PLANS
INC. = 6m	INC. = 6m

-L-

PI Sta 51+16.735	~~PIs Sta 52+83.029~~	PI Sta 53+39.230	PIs Sta 54+01.455
Δ = 14° 16' 15.0" (LT)	~~Θs = 21° 26' 48.4"~~	Δ = 16° 54' 01.9" (RT)	Θs = 24° 30' 38.0"
L = 119.007	~~Ls = 196.680~~	L = 42.033	Ls = 121.920
T = 59.813	~~LT = 71.649~~	T = 21.170	LT = 82.073
R = 477.800	~~ST = 36.042~~	R = 142.500	ST = 41.362

FOR -L- PROFILE SEE SHEET 5

FOR STRUCTURE PLANS SEE SHEETS S-1 THRU S-

DATUM DESCRIPTION

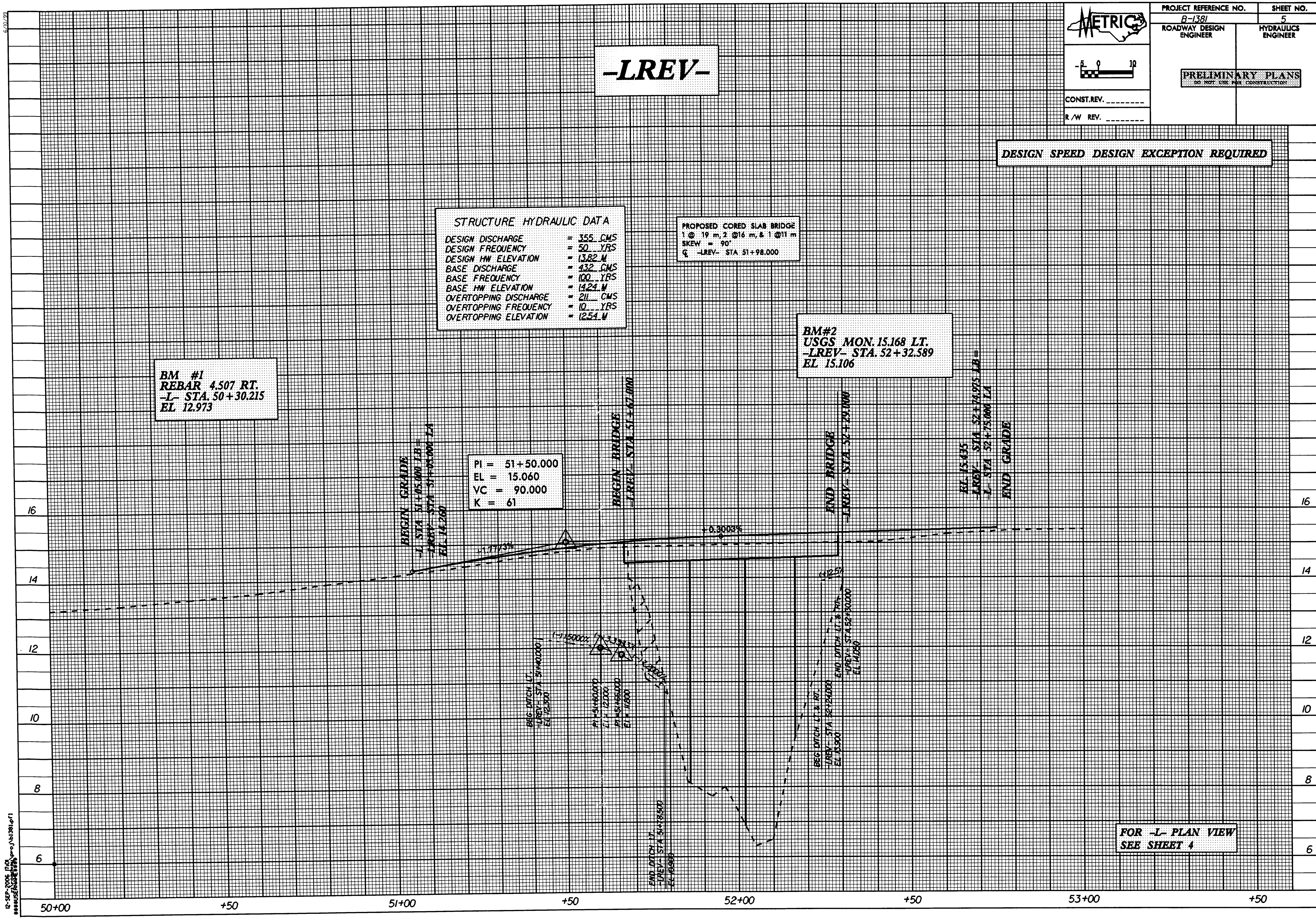
NC DOT GPS FOR MONUMENT " B1381-1 "
WITH NAD 83 STATE PLANE GRID COORDINATES OF
NORTHING: 111461.590 (m) EASTING: 67 4236.161 (m)

(GROUND TO GRID) IS: 0.99991428

THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GROUND DISTANCE FROM
" B1381-1 " TO -LREV- STATION 51+05.000 IS
N 64 19' 11.6" E 427.9054m

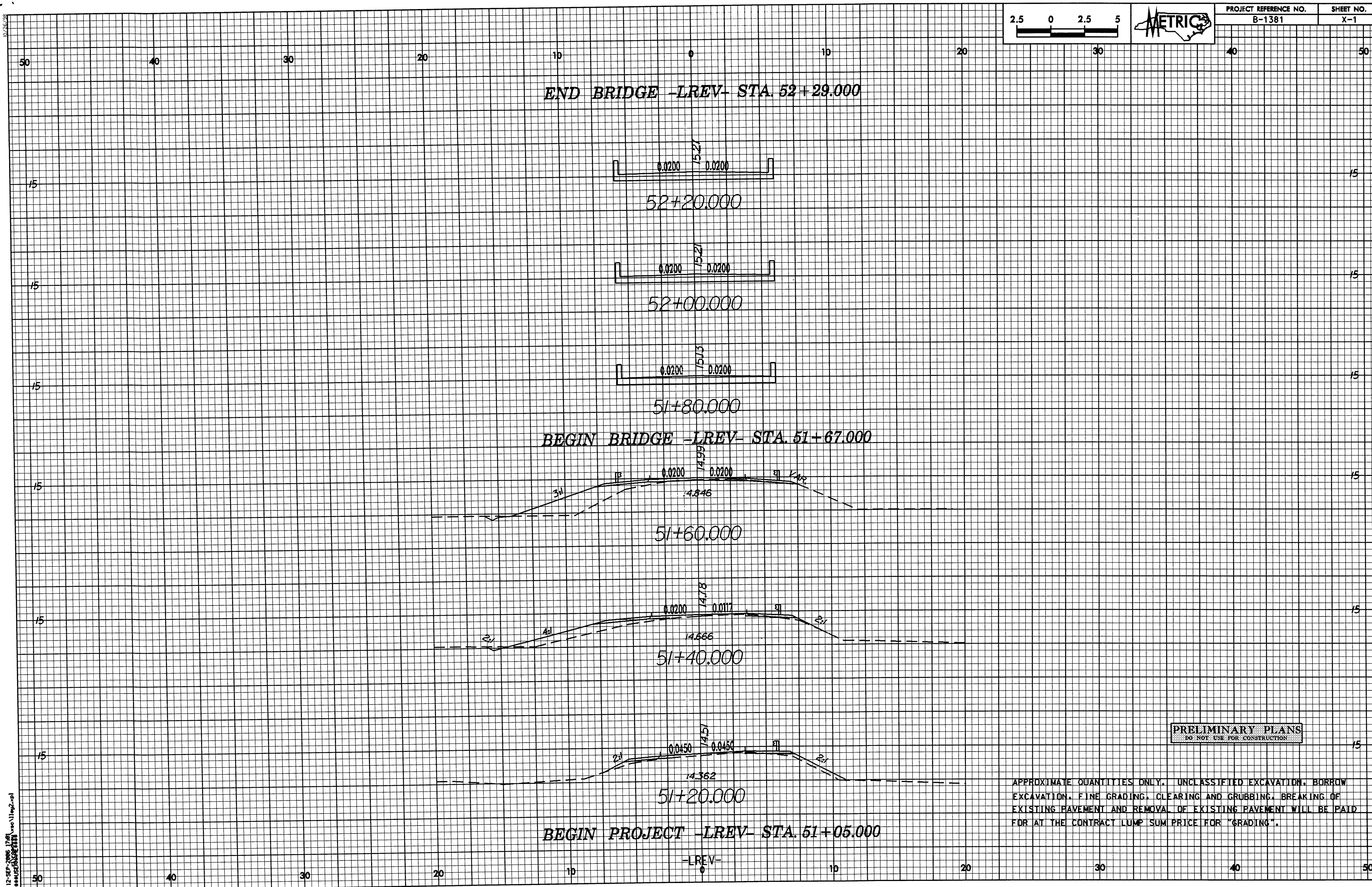
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NGVD 29

12-SEP-2006 11:01



PROJECT REFERENCE NO.
B-1381
SHEET NO.
5
METRIC
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CONST. REV.
R/W REV.
-LREV-
DESIGN SPEED DESIGN EXCEPTION REQUIRED
STRUCTURE HYDRAULIC DATA
DESIGN DISCHARGE = 355 CMS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 13.82 M
BASE DISCHARGE = 432 CMS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 14.24 M
OVERTOPPING DISCHARGE = 211 CMS
OVERTOPPING FREQUENCY = 10 YRS
OVERTOPPING ELEVATION = 12.54 M
PROPOSED CORED SLAB BRIDGE
1 @ 19 m, 2 @16 m, & 1 @11 m
SKEW = 90°
℄ -LREV- STA 51+98.000
BM#2
USGS MON. 15.168 LT.
-LREV- STA. 52+32.589
EL 15.106
BM #1
REBAR 4.507 RT.
-L- STA. 50+30.215
EL 12.973
PI = 51+50.000
EL = 15.060
VC = 90.000
K = 61
BEGIN GRADE
-L- STA 51+05.000 LB=
-LREV- STA 51+05.000 LA
EL 14.260
BEGIN BRIDGE
-LREV- STA 51+67.000
END BRIDGE
-LREV- STA 52+29.000
EL 15.435
-LREV- STA 52+74.975 LB=
-L- STA 52+75.000 LA
END GRADE
-1.7713%
+0.3003%
FOR -L- PLAN VIEW
SEE SHEET 4
16
14
12
10
8
6
50+00
+50
51+00
+50
52+00
+50
53+00
+50

PROJECT REFERENCE NO.	SHEET NO.
B-1381	X-1

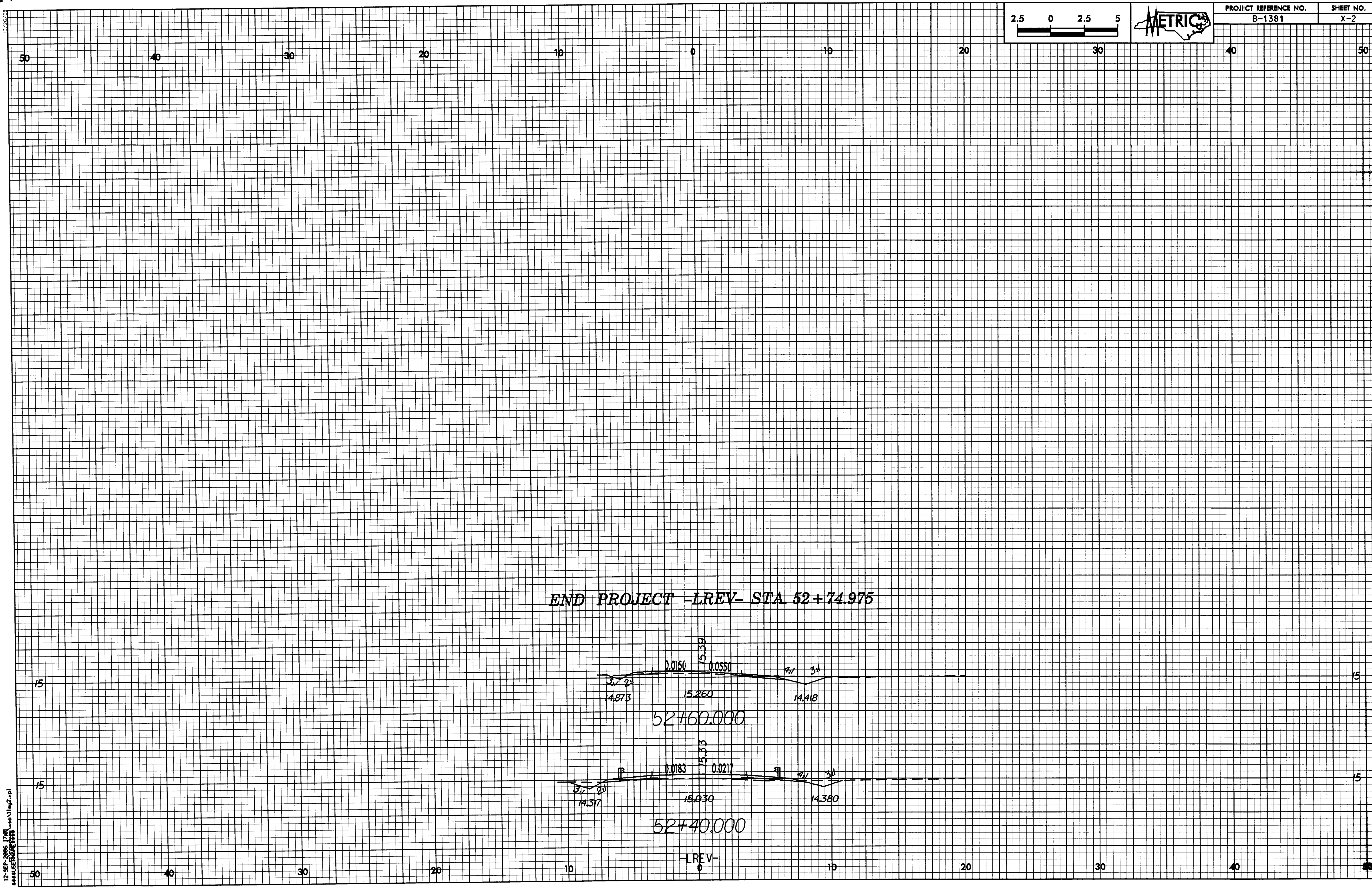


APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, BORROW EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, BREAKING OF EXISTING PAVEMENT AND REMOVAL OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING".

PROJECT REFERENCE NO.	SHEET NO.
B-1381	X-2

METRIC

2.5 0 2.5 5



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####USERNAME####

51+80 52+00 52+20

GRADE DATA
+1.7773% +0.3003%
PI = 51+50.000 -L-
ELEV. 15.060
VC = 90.000m

FILL FACE @ END BENT 1
STA. 51+67.000 -LREV-
EL. 15.047

BEGIN FRONT SLOPE
STA. 51+65.645 -LREV-
EL. 15.036

FIX

SPAN A SPAN B SPAN C SPAN D

EL. 14.1±
EL. 13.7±
2:1 SLOPE NORMAL TO CAP
SEE "DETAIL A"
450 (TYP.)
STEEL PILES

EXP. EXP. FIX EXP. FIX EXP.

HIGH WATER SURFACE EL. 14.300 1928
STEEL PIPE PILE (TYP.)
NORMAL WATER SURFACE EL. 7.860 5-25-95

EL. 8.3±
EL. 8.0±
EL. 7.7±
EL. 8.1±
EL. 7.5±
EL. 6.4±
EL. 6.5±
EL. 9.0±

END BENT 1 BENT 1 BENT 2 BENT 3 END BENT 2

FILL FACE @ END BENT 2
STA. 52+29.000 -LREV-
EL. 15.297

BEGIN FRONT SLOPE
STA. 52+30.378 -LREV-
EL. 15.301

FIX
EL. 14.5±
SEE "DETAIL B"
EXISTING GROUND LINE
STEEL PILES

SECTION ALONG -LREV-

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

W.P. #1
STA. 51+67.000 -LREV-
FILL FACE @ END BENT 1

W.P. #2
STA. 51+86.000 -LREV-
BENT 1 CONTROL LINE

BLACK RIVER

W.P. #3
STA. 52+02.000 -LREV-
BENT 2 CONTROL LINE

W.P. #4
STA. 52+18.000 -LREV-
BENT 3 CONTROL LINE

W.P. #5
STA. 52+29.000 -LREV-
FILL FACE @ END BENT 2

BEGIN FRONT SLOPE
STA. 51+65.645 -LREV-

BEGIN APPROACH SLAB
STA. 51+62.735 -LREV-

BRIDGE IDENT.
STA. 51+98.000 -LREV-

-LREV-

90°-00'-00" (TYP.)

EXISTING SUBSTRUCTURE
(TO BE REMOVED, TYP.)

BEGIN FRONT SLOPE
STA. 52+30.378 -LREV-

TO SR 1130

END APPROACH SLAB
STA. 52+33.265 -LREV-

CLASS I RIP RAP

CLASS I RIP RAP

12.000m 4.000m
19.000m 16.000m 16.000m 11.000m
TOTAL LENGTH OF BRIDGE = 62.000m (FILL FACE TO FILL FACE)

PLAN
PILES NOT SHOWN FOR CLARITY

PROJECT NO. B-1381
SAMPSON COUNTY
STATION: 51+98.000-LREV-

SHEET 1 OF 2 REPLACES BRIDGE No. 14

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PRELIMINARY

GENERAL DRAWING

BRIDGE ON NC 411 OVER
BLACK RIVER BETWEEN
SR 1126 AND SR 1130

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

DRAWN BY : J.P. ADAMS DATE : 5/10/05
CHECKED BY : S.H. SOCKWELL DATE : 5/11/05

14-AUG-2006 11:47
$$$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$