STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 5, 2004

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

Attn: Mr. Michael Bell
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 12, 23 & 33 Permit Application and Buffer Certification.** Replacement of Bridge Nos. 40 and 45 on SR 1003 (Thirteen Bridges Road) over Beech Swamp, Halifax County. Federal Aid Project No. BRSTP-1003(23), State Project No. 8.2301201, TIP Project No. B-3467.

The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge Nos. 40 and 45 on SR 1003 over Beech Swamp (DWQ Index # 28-79-30, Class "C Sw NSW") in Halifax County. The project involves replacing Bridge No. 40 on a new alignment while replacing Bridge No. 45 on the existing alignment. Traffic during the project will be maintained with an approximately 11-mile offsite detour along SR 1100, SR 1102, SR 1103, SR 1105, and SR 1108.

BRIDGE CONSTRUCTION

Bridge No. 40, a 180-foot long structure, will include four 45-foot spans with 36-inch prestressed girders as superstructure. Bridge No. 45, at 130-feet long, will consist of three 43-foot spans with a 36-inch prestressed girder superstructure. The substructure on both bridges will consist of H-pile end bents and 18-inch pipe pile bents. Construction of the bridge will require temporary dewatering due to the placement of temporary work bridges in the stream channel to allow access to the site. These work bridges are described below.

BRIDGE DEMOLITION

Bridge No. 40 is currently 151-feet long and located on SR 1003 over Beech Swamp in Halifax County. The superstructure is composed of prestressed concrete channels with an asphalt-wearing surface. The substructure is an abutment type, consisting of timber end bents with reinforced concrete caps. The interior bents consist of reinforced concrete caps on timber piles.

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.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Bridge No. 45 is currently 121-feet long and is also located on SR 1003 over Beech Swamp in Halifax County. Bridge No. 45 is a three span structure with the maximum span at 40-feet and a clear roadway width of 28-feet. The superstructure consists of steel plank flooring on steel I-beams with an asphalt-wearing surface. The substructure is composed of timber abutments on timber caps with interior bents consisting of timber caps on timber piles.

There is potential for components of the deck and concrete caps of Bridge No. 40 to be dropped into Waters of the United States. The resulting temporary fill is calculated to be approximately 103 cubic yards. Bridge No. 45 is constructed of timber and steel, it can be removed without dropping components into Waters of the United States.

The NCDOT will adhere to appropriate guidelines for bridge demolition and removal including those presented in "Pre-Construction Guidelines for Bridge Demolition and Removal", "Policy: Bridge Demolition and Removal in Waters of the United States", "Best Management Practices for Bridge Demotion and Removal", and "Best Management Practices for the Protection of Surface Waters".

In addition, under the guidelines presented in the documents noted in the previous paragraph, work done in the water for this project would fall under Case 2, which states that no work shall be performed in the water during moratorium periods (March 1 to June 30) associated with fish migration, spawning, and larval recruitment into nursery areas.

IMPACTS TO WATERS OF THE UNITED STATES

Permanent Impacts: Beech Swamp will be impacted by the proposed project. Construction of the proposed project will result in total of 1.75 acres of permanent impacts to jurisdictional wetland. This includes 1.04 acres of permanent fill, 0.04 acre of excavation, and 0.67 acre if mechanized clearing.

TEMPORARY WORK BRIDGES

There will be 0.001 acres of temporary impacts in Beech Swamp from the construction of temporary bridges for the construction of Bridge Nos. 40 and 45. These work bridges will be required to provide access to the site for construction equipment. Temporary work bridge lengths, pile types, and driving methods will be determined during construction by the contractor. Work bridges will be constructed at the elevation and location as shown in the permit drawings. Hand clearing will occur prior to construction of each temporary work bridge

No permanent fill will result from the construction of temporary work bridges. The materials used, as temporary fill in the construction of the work bridges will be removed. The temporary fill areas will be graded back to their original contours. Elevations and contours in the vicinity of the proposed work bridges are available from the field survey notes.

It is assumed that the contractor will begin construction of the proposed work bridges shortly after the date of availability for the project. The Let date is September 21, 2004 with a date of availability of October 18, 2004.

TAR-PAMLICO BASIN BUFFER RULES

This project is located in the Tar-Pamlico River Basin (subbasin 03-03-04, TAR4 03020102), therefore the regulations pertaining to the Tar-Pamlico River Buffer Rules (15A NCAC 2B.0259)

apply. Buffer impacts associated with this project total 3023.0 sq. ft (0.07 acre) for Zone 1 and 3659.0 sq. ft (0.08 acre) for Zone 2. All practicable measures to minimize impacts within buffer zones were followed. Measures used to minimize impacts to the buffer zone include using the current alignment. According to the buffer rules, bridges are ALLOWABLE. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule. These uses require written authorization from the Division or the delegated local authority. Therefore, NCDOT requests written authorization for a Buffer Certification from the Division of Water Quality.

UTILITIES

Currently, electrical lines run parallel along the east side of SR 1003 north of Bridge No. 40 where they then cross over the road and run parallel along the west side of SR 1003 past Bridge No. 45. Aerial telephone lines run parallel to SR 1003 on the east side over the swamp.

Prior to construction, Halifax County Electric Membership Corporation plans to remove two existing power poles and install three new power poles on the north side of Bridge No. 45. These poles will be placed along the existing pole line along the proposed construction limits. Impacts to jurisdictional waters will be limited to the addition of one utility power pole and the reconfiguration of the existing two power poles within the existing utility easement. No additional clearing, digging, or filling will be required to complete this project.

According to the Buffer Rules, overhead electric utility line perpendicular crossings of streams and other surface waters that disturb equal to or less than 150 linear feet of riparian buffer are EXEMPT. Uses designated as EXEMPT are allowed within the riparian buffer. EXEMPT uses shall be designed, constructed, and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable. This project meets this threshold and is therefore EXEMPT from the buffer Rules. Consequently, a Buffer Certification from the Division of Water Quality for utility work is not required.

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 Endangered Species Act of 1973, as amended. As of February 18, 2003, the Fish and Wildlife Service (FWS) lists four federally protected species (Table 1) for Halifax County. Biological conclusions of "No Effect" were rendered for each of these species due to lack of suitable habitat within the project area.

Table 1. Federally-protected species of Halifax County.

Scientific Name	Common Name	Federal Status	Biological Conclusion
Haliaeetus leucocephalus	Bald eagle	T(Proposed for delisting)	No Effect
Picoides borealis	Red-cockaded woodpecker	E	No Effect
Alasmidonta heterodon	Dward wedgemussel	E	No Effect
Elliptio steinstansana	Tar River spinymussel	E	No Effect

Endangered (E) – is defined as a taxon that is threatened with extinction throughout all or a significant portion of its range.

Threatened (T) – A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of it's range."

REGULATORY APPROVALS

Section 404 Permit: We have determined that utility activity will be authorized under Nationwide Permit 12. Therefore, we do not anticipate requesting an individual permit, but propose to proceed under a Section 404 Nationwide 12 as authorized by a Nationwide Permit 12 (FR number 10, pages 2020-2095; January 15, 2002). It is anticipated that the construction of the temporary work bridges will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). We are, therefore, requesting the issuance of a Nationwide Permit 33 authorizing construction of the temporary work bridges. All other aspects of this project are 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 Permits 23 (67 FR 2020; January 15, 2002).

Section 401 Permit: We anticipate 401 General Certifications number 3374, 3403, and 3366 will apply to this project. In accordance with 15A NCAC 2H .0501(a) we are providing two copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their records.

A copy of this permit application will be posted on the DOT website at: http://www.ncdot.org/planning/pe/naturalunit/Permit.html. If you have any questions or need additional information, please Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439.

Sincerely,

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

cc: w/attachment

Mr. John Hennessy, Division of Water Quality (2 copies)
Mr. Travis Wilson, NCWRC
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan III, P. E., FHWA
Mr. A. W. Roper, P.E., Division Engineer
Mr. Jamie Shern, DEO
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)

Office Use Only: Form Version May 2002

USACE Action ID No. _____ **DWQ No.** _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:
   - ☒ Section 404 Permit
   - ☐ Section 10 Permit
   - ☐ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ

2. Nationwide, Regional or General Permit Number(s) Requested: Nationwide 12, 23, & 33

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here: ☒

4. If payment into the North Carolina Wetlands Restoration Program (NCWRP) is proposed for mitigation of impacts (verify availability with NCWRP prior to submittal of PCN), complete section VIII and check here: ☐

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here: ☐

II. Applicant Information

1. Owner/Applicant Information
   Name: North Carolina Department of Transportation
   Mailing Address: 1548 Mail Service Center, Raleigh, NC 27699
   _____
   _____
   Telephone Number: 919-733-7844 Fax Number: 919-715-1501
   E-mail Address: _____

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)
   Name: N/A
   Company Affiliation: _____
   Mailing Address: _____
   _____
   _____
   _____
   Telephone Number: _____ Fax Number: _____
   E-mail Address: _____

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Replacement of Bridge Nos. 40 and 45 on SR 1003 (Thirteen Bridges Rd) over Beech Swamp.

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3467

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Halifax Nearest Town: Enfield
   Subdivision name (include phase/lot number): _____
   Directions to site (include road numbers, landmarks, etc.): Located on SR 1003 between intersections with SR 1108 and SR 1112, east of Enfield over Beech Swamp

5. Site coordinates, if available (UTM or Lat/Long): _____
   (Note – If project is linear, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)

6. Property size (acres): N/A

7. Nearest body of water (stream/river/sound/ocean/lake): Beech Swamp

8. River Basin: Tar-Pamlico
   (Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at http://h2o.enr.state.nc.us/admin/maps/.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application Rural Major Collector. Project area is rural, with undeveloped woodland and swampland dominant.

10. Describe the overall project in detail, including the type of equipment to be used:
Utility power pole replacement using mechanical highway construction equipment.

11. Explain the purpose of the proposed work: Investigations by the Bridge Maintenance Unit indicate that rehabilitation of the existing structures is not feasible due to age and deteriorated conditions. Bridge No. 40 carries a sufficiency rating of 32.1 out of a possible 100 while Bridge No. 45 has a sufficiency rating of 28.6 out of 100. Both structures are considered functionally obsolete. Utility power poles must be replaced before bridge construction commences.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules.

N/A

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.

N/A

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. The applicant must also provide justification for these impacts in Section VII below. All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream

mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

Provide a written description of the proposed impacts: Fill in Wetlands, Excavation, and Mechanized Clearing.

1. Individually list wetland impacts below:

Wetland Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Located within 100-year Floodplain** (yes/no)	Distance to Nearest Stream (linear feet)	Type of Wetland***
15+50-35+50-L-	Fill	1.04	Yes	N/A	swamp
15+50-35+50-L-	Excavation	0.04	Yes	N/A	swamp
15+50-35+50-L-	Mechanized Clearing	0.67	Yes	N/A	swamp

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

** 100-Year floodplains are identified through the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM), or FEMA-approved local floodplain maps. Maps are available through the FEMA Map Service Center at 1-800-358-9616, or online at http://www.fema.gov.

*** List a wetland type that best describes wetland to be impacted (e.g., freshwater/saltwater marsh, forested wetland, beaver pond, Carolina Bay, bog, etc.) Indicate if wetland is isolated (determination of isolation to be made by USACE only).

List the total acreage (estimated) of all existing wetlands on the property:_____
Total area of wetland impact proposed: 1.75

2. Individually list all intermittent and perennial stream impacts below:

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
N/A					
N/A					

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included.

** Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows. USGS maps are available through the USGS at 1-800-358-9616, or online at www.usgs.gov. Several internet sites also allow direct download and printing of USGS maps (e.g., www.topozone.com, www.mapquest.com, etc.).

Cumulative impacts (linear distance in feet) to all streams on site: N/A

3. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.) below:

Open Water Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Name of Waterbody (if applicable)	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)
N/A				
N/A				

* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: fill, excavation, dredging, flooding, drainage, bulkheads, etc.

4. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): N/A

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):

Size of watershed draining to pond:_____ Expected pond surface area:_____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts.

The selected design was chosen due to comparatively lower environmental impacts and construction cost.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on March 9, 2000, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include,

but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCWRP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at http://h2o.enr.state.nc.us/ncwetlands/strmgide.html.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.
   EEP Project _____
   _____
   _____

2. Mitigation may also be made by payment into the North Carolina Wetlands Restoration Program (NCWRP). Please note it is the applicant's responsibility to contact the NCWRP at (919) 733-5208 to determine availability and to request written approval of mitigation prior to submittal of a PCN. For additional information regarding the application process for the NCWRP, check the NCWRP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCWRP is proposed, please check the appropriate box on page three and provide the following information:

   Amount of stream mitigation requested (linear feet): N/A
   Amount of buffer mitigation requested (square feet): _____
   Amount of Riparian wetland mitigation requested (acres): _____
   Amount of Non-riparian wetland mitigation requested (acres): _____
   Amount of Coastal wetland mitigation requested (acres): _____

IX. Environmental Documentation (required by DWQ)

Does the project involve an expenditure of public (federal/state) funds or the use of public (federal/state) land?

Yes ☒ No ☐

If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)? Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.

Yes ☒ No ☐

If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter.

Yes ☒ No ☐

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)?

Yes ☐ No ☐ If you answered "yes", provide the following information:

Identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1	3023.0		Allowable
2	3659.0		Allowable
Total	6682.0		Allowable

* Zone 1 extends out 30 feet perpendicular from near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Conservation Easement, Riparian Buffer Restoration / Enhancement, Preservation or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0260.

XI. Stormwater (required by DWQ)

Describe impervious acreage (both existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property.

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?

Yes ☐ No ☒

Is this an after-the-fact permit application?

Yes ☐ No ☒

XIV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

3/24/04

Applicant/Agent's Signature **Date**

(Agent's signature is valid only if an authorization letter from the applicant is provided.)

Halifax County

SR 1003

Bridge No. 40 and Bridge No. 45 over Beech Swamp

Federal-Aid Project No. BRSTP-1003(23)

State Project No. 8.2301201

T.I.P. No. B-3467

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

9/4/01
DATE

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

9-14-01
DATE

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

Halifax County

SR 1003

Bridge No. 40 and Bridge No. 45 over Beech Swamp

Federal-Aid Project No. BRSTP-1003(23)

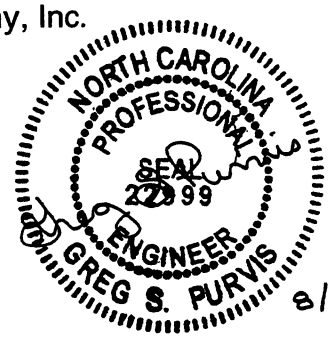
State Project No. 8.2301201

T.I.P. No. B-3467

CATEGORICAL EXCLUSION

August 2001

Document Prepared by:
Wang Engineering Company, Inc.



8/28/01

Greg S. Purvis, P.E.
Project Manager

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

For the North Carolina Department of Transportation

Stacy B. Harris, P.E.
Project Manager
Consultant Engineering Unit

PROJECT COMMITMENTS

Halifax County
SR 1003
Bridge No. 40 and Bridge No. 45 Over Beech Swamp
Federal-Aid Project No. BRSTP-1003(23)
State Project No. 8.2301201
T.I.P. No. B-3467

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

Construction Contract Officer, Division Engineer

A construction moratorium for no in-stream work or discharges into the swamp will be in effect from March 1 to June 30, to protect anadromous fish during spawning.

Division Engineer

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

Roadway Design, Hydraulic Unit, and Division Engineer

The Tar-Pamlico River Buffer Rules will be implemented during the design, construction and maintenance of this project.

Halifax County
SR 1003
Bridge No. 40 and Bridge No. 45 Over Beech Swamp
Federal-Aid Project No. BRSTP-1003(23)
State Project No. 8.2301201
T.I.P. No. B-3467

INTRODUCTION: The replacement of Bridge No. 40 and Bridge No. 45 are included in the 2002-2008 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program (TIP) and the Federal-Aid Bridge Replacement Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion."

I. PURPOSE AND NEED

Bridge Maintenance Unit records indicated Bridge No. 40 has a sufficiency rating of 32.1 out of a possible 100 for a new structure and Bridge No. 45 has a sufficiency rating of 28.6 out of 100. The bridges are considered functionally obsolete and structurally deficient. The replacement of inadequate structures will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

SR 1003 (Thirteen Bridges Road) is classified as a rural major collector. Land use in the project area is predominantly undeveloped wood and swampland.

Bridge No. 40 was constructed in 1968. The south approach of Bridge No. 40 has a 5.5-degree (322.5 meter radius) curve from the south and has a 6.75-degree (261.3 meter radius) curve from the north. The existing structure is 151-feet (45.3-meters) in length, which consists of five spans with the maximum span at 30.5-feet (9.2-meters). The clear roadway width is 29-feet (8.7-meters), providing two 10.5-feet (3.2-meters) travel lanes with four feet (1.2-meters) shoulders. The superstructure is prestressed concrete channels with an asphalt wearing surface. The substructure is an abutment type, consisting of timber end bents with reinforced concrete caps. The interior bents consist of reinforced concrete caps on timber piles. The bed to crown height is 13 feet (3.9 meters). The posted weight limit is 21 tons (19.1 megagrams [Mg]) for single vehicles (SV) and 24 tons (21.8 Mg) for truck-tractors semi-trailers (TTST).

Bridge No. 45 was constructed in 1974. The existing structure is 121-feet (36.3-meters) in length, which consist of three spans with the maximum span at 40-feet (12.0-meters). The clear roadway width is 28-feet (8.4-meters), providing two nine feet (2.7-meters) travel lanes with five foot (1.5-meters) shoulders. The superstructure consists of steel plank flooring on steel I-Beams with an asphalt-wearing surface. Bridge No. 45 consists of timber abutments on timber caps with interior bents consisting of timber caps on timber piles. The bed to crown height is 13 feet (3.9 meters). The posted weight limit is 22 tons (20.0 Mg) for all vehicles. The bridge and approaches are tangent.

The posted speed limit for both bridges is 55 mph (90 kilometers per hour).

The 2001 estimated average daily traffic volume is 850 vehicles per day (vpd) for the bridges. The projected traffic volume is expected to increase to 1,500 vpd by the design year 2025 for

the bridges. The volumes include one (1) percent truck-tractor semi-trailer (TTST) and two (2) percent dual-tired vehicles (DT).

There are electrical lines in the project vicinity. The electrical lines run parallel along the east side of SR 1003 north of Bridge No. 40 where they then cross over the road and run parallel along the west side of SR 1003 past Bridge No. 45. Telephone lines are located on the east side of SR 1003 and run parallel to the roadway. They are aerial over the swamp. There are no utilities attached to the bridges. Utility impacts are anticipated to be low.

Two accidents were reported in the vicinity of the bridge during the period from January 1, 1995 to December 31, 1997.

Three school busses cross these bridges twice daily.

III. ALTERNATIVES

A. Project Description

The proposed structure to replace Bridge No. 40, will provide 34-feet (10.2-meters) of clear roadway width consisting of two 11-foot (3.3-meter) travel lanes including three feet (0.9-meter) of shoulder on the west side, and nine feet (2.7-meters) of shoulder on the east side (Figure 4). Since Bridge No. 40 is in a 4.25 degree (417.5 meter radius) curve, there is six feet (1.8 meters) of extra shoulder on the east side to provide adequate stopping sight distance. The proposed structure to replace Bridge No. 45 will provide 28-feet (8.4-meters) of clear roadway width consisting of two 11-foot (3.3-meter) travel lanes including three foot (one meter) shoulders. The design speed will be 60 mph (100 km/h). The approach work will be approximately 2310 feet (693 meters) in length. The proposed right-of-width is 80 feet (24 meters).

The typical roadway for Bridge No. 45 will consist of two 11-foot (3.3-meter) travel lanes and six foot (1.8-meter) grass shoulders. The typical roadway for Bridge No. 40 will consist of two 12-foot (3.6 meter) travel lanes and six foot (1.8-meter) grassed shoulders.

Based on a preliminary hydraulic analysis, Bridge No. 40 will have a length of approximately 175-feet (52.5-meters). Bridge No. 45 will be approximately 135-feet (40.5-meters) in length. The length and opening size of the proposed bridges may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis, to be performed during the final design phase of the project.

B. Reasonable and Feasible Alternatives

Three (3) reasonable and feasible alternatives studied for replacing the existing bridge are described below.

Alternate B replaces Bridge No. 45 on existing alignment and replaces Bridge No. 40 on new alignment east of the existing bridge. During construction, traffic will be maintained by an onsite detour east of Bridge No. 45 and traffic will be maintained on the existing Bridge No. 40. Alternate B was not selected because of comparatively higher environmental and construction costs.

Alternate C replaces both bridges on a new alignment just east of the existing bridges. During construction, traffic will be maintained on the existing structures. Alternate C was not selected because of comparatively higher environmental and construction costs.

Alternate D (Preferred) replaces Bridge No. 40 on a new alignment, and replaces Bridge No. 45 at the existing location. During construction, traffic will be maintained with an off-site detour along SR 1100, SR 1102, SR 1103, SR 1105, and SR 1108 (Figure 1) that is approximately 11 miles (17.7 km) in length.

C. Alternatives Eliminated From Further Study

Alternate A replaces the bridges at the existing location. During construction, traffic will be maintained by an off-site detour that is approximately 11 miles (17.7 km) in length. A design exception will be required for the existing north 6.75-degree (261.3 meter radius) and south 5.50-degree (322.5 meter radius) approach curve to Bridge No. 40. This alternate was eliminated from consideration because it will require a design exception for the horizontal alignment between the two bridges.

The "do-nothing" Alternative will eventually necessitate removal of the bridge. This is not desirable due to the traffic service provided by SR 1003.

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

D. Preferred Alternative

Alternate D, replacing Bridge No. 40 on new alignment while replacing Bridge No. 45 on the existing alignment, was selected as the preferred alternate. Alternate D was selected because of comparatively lower environmental impacts and construction cost.

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

Halifax County concurs with Alternate D as the preferred alternate

E. Anticipated Design Exceptions

A design exception for the stopping sight distance will be required due to the proposed bridge width. The recommended alternate provides a stopping sight distance at Bridge No. 40 of 50 mph (80 km/h) and includes minimum approach work with traffic maintained by an off-site detour. To improve the stopping sight distance, the bridge would require the east shoulder to be widened, and this is not recommended.

IV. ESTIMATED COST

The estimated costs, based on current 2001 prices, are as follows:

	Alternate B	Alternate C	Alternate D (Preferred)
Structure Removal (existing)	$ 59,000	$ 59,000	$ 59,000
Structure (proposed)	767,800	767,800	713,800
Detour Structure and Approaches	182,800	0	0
Roadway Approaches	483,700	700,700	298,100
Temporary Work Bridge	72,000	72,000	72,000
Miscellaneous and Mobilization	549,700	535,500	407,100
Engineering and Contingencies	335,000	315,000	250,000
ROW/Const. Easements/Utilities:	31,300	31,800	55,800
Total	$2,481,300	$2,481,800	$1,855,800

The estimated cost of replacing Bridge No. 40 and Bridge No. 45, as shown in the 2002-2008 Transportation Improvement Program, is $1,220,000 including $20,000 for right-of-way and $1,200,000 for construction.

V. NATURAL RESOURCES

The project study area is located approximately six miles (9.7 kilometers) east of Enfield, NC. Bridge No. 45 is located about 1000-feet (300-meters) north of Bridge No. 40. All quadrants of the study area for both bridges are undeveloped at this time.

A. Methodology

Informational sources used to prepare this report include but are not limited to: USGS Dawson Crossroads, NC 7.5 minute series topographic map (1960); Halifax County Soil Survey Field Sheet G-11; United States Fish and Wildlife Service (USFWS) National Wetlands Inventory map (Dawson Crossroads, NC, 1994); USFWS Endangered, Threatened, and Candidate Species and Federal Species of Concern in North Carolina (March 22, 2001); North Carolina Natural Heritage Program (NCNHP) (January 2001) computer database, via the Internet, of rare species and unique habitats; and NCDOT aerial photography of the study area. Research using these resources was conducted prior to the field investigation.

A general field survey was conducted along the proposed project corridor on November 10, 1999. Plant communities and associated wildlife were identified using a variety of observation techniques including active searching, and identifying characteristic signs of wildlife such as sounds, tracks, scats, and burrows.

Quantitative impact calculations were based on the worst-case scenario using the full right-of-way limits, the width and length of the replacement structures over water, and the length of the project approaches. Right-of-way limits are 80.0-feet (24.0-meters) for all alternates. The actual construction impacts should be less.

B. Physiography And Soils

The proposed project lies within the Coastal Plain Physiographic Province, which includes all parts of North Carolina east of the Fall Line. This province typically consists of unconsolidated sands, silts, clays, and peats. The topography of the project vicinity can be characterized as nearly level to gently rolling. The flood plain of the Beech Swamp at the site is approximately 3,700 feet (1110 meters) wide. Elevations in the project vicinity range from approximately 65 to 125-feet (19.5 to 37.5-meters) above mean sea level (msl). Elevations in the project area vary from approximately 65 to 95-feet (19.5 to 28.5-meters) above msl. Land use in the project vicinity is a mixture of rural residential, agricultural, and undeveloped properties.

Halifax County currently has no published soil survey. Soil survey field sheets and soil interpretation records were utilized to research the soils in the study area. Soil series within the project area are described below.

Site indices provided within soil series descriptions are a designation of the quality of a forest site. The indices are based on the average height attained by dominant and co-dominant trees in a fully stocked stand at an arbitrarily chosen age.

Chastain and Bibb soils, zero to one percent slopes, frequently flooded, cover the majority of the project area. Bibb soils are poorly drained and have a seasonal high water table of 0.5 to one foot (0.2 to 0.3 meter). Shrink-swell potential is low and the pH ranges from 3.6 to 5.5. Site indices for this soil include 100 for loblolly pine (*Pinus taeda*), 90 for sweetgum (*Liquidambar styraciflua*), and 90 for water oak (*Quercus phellos*).

Chastain soils are very deep and slowly permeable. The seasonal high water table ranges from zero to one foot (zero to 0.3-meter) and shrink-swell potential is moderate. Soil reaction ranges from 4.5 to six. Sweetgum, which has a site index of 95 for Chastain soils, is the only species listed under potential productivity for this soil series. Bibb and Chastain soils are listed as hydric.

Seabrook loamy sand, one to two percent slopes, may be found in small amounts near the northeastern project boundary. The Seabrook series consists of moderately well drained, nearly level, sandy soils. Shrink-swell potential is low and the seasonal high water table is at a depth of two to four feet (0.6 to 1.2-meters). Soil reaction ranges from 4.5 to 6.5. Loblolly pine, which has a site index of 81 for Seabrook loamy sand, is the only species listed for this series under potential productivity.

Construction of a temporary detour along either side of SR 1003 is feasible. No substantial settlement problems due to consolidation of underlying soil would be expected along the detour. However, placement of soil stabilization fabric may be required along the majority of the approaches in order to reestablish the natural ground elevation when the detour embankment is removed. Possible UST sites or other areas of other contamination were not observed at or near the proposed project.

C. Water Resources

1. Surface Waters

The proposed project falls within the Tar-Pamlico River Basin, with a subbasin designation of TAR4 (03-03-04) and a federal hydrologic unit designation of Tar-Pamlico 03020102. The drainage area at the project site is approximately 125 square miles (325 square kilometers). The water depth at Bridge No. 40 was approximately two to three feet (0.6 to 0.9-meters) at the time of the investigation. The water depth at Bridge No. 45 was about three to four feet (0.9 to 1.2-meters). In other areas of the swamp water levels varied to as low as one foot (0.3-meter). Beech Swamp spans the length of both bridges. The flow direction is east at a very slow rate, perceptible only near the center of the channels at both bridges.

2. Stream Characteristics

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. Beech Swamp is a tributary of Fishing Creek. The section of Beech Swamp within the project area and vicinity is classified as "C Sw NSW" by the North Carolina Department of Environment and Natural Resources (NCDENR). Class "C" indicates fresh waters protected for secondary recreation, fishing, aquatic life including propagation and survival, and wildlife. "Sw" is defined as swamp waters, which have low velocities and other natural characteristics that are different from adjacent streams. "NSW" is indicative of Nutrient Sensitive Waters, which require limitations on nutrient inputs. The Classification Index number and date for the above data is 28-79-30 and January 1, 1990.

Point-source discharges located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) program. A search within one mile (1.6 kilometers) of the project was conducted for the NPDES permitted discharges and no discharges were listed within this distance.

Non-point source refers to runoff that enters surface waters through storm water flow or no defined point of discharge. In the project study area, storm water runoff from SR 1003 may cause water quality degradation. Since all quadrants of the project area are undeveloped, there are no other important non-point sources of runoff within the project area.

Benthic macroinvertebrates, or benthos are organisms that live in and on the bottom substrates of rivers and streams. The North Carolina Department of Environment and Natural Resources Division of Water Quality (DWQ) uses benthos data as a tool to monitor water quality since benthic macroinvertebrates are sensitive to subtle changes in water quality. Formerly, the DWQ used the Benthic Macroinvertebrate Ambient Network (BMAN) as a primary tool for water quality assessment but phased this method out several years ago and converted to a basinwide assessment sampling protocol. Each river basin in the state is sampled once every five years and the number of sampling stations has been increased within each basin. Each basin is sampled for biological, chemical, and physical data.

The DWQ includes the North Carolina Index of Biotic Integrity (NCIBI) as another method to determine general water quality in the basinwide sampling. The NCIBI is a modification of the Index of Biotic Integrity (IBI) initially proposed by Karr (1981) and Karr, et al. (1986). The IBI method was developed for assessing a stream's biological integrity by examining the structure and health of its fish community. The Index incorporates information about species richness and composition, trophic composition, fish abundance, and fish condition. The NCIBI summarizes the effects of all classes of factors influencing aquatic faunal communities (water quality, energy source, habitat quality, flow regime, and biotic interactions).

The DWQ does not have any sampling information relevant to the project area. DWQ noted that the waters are probably too slow-flowing for sampling.

3. Anticipated Impacts

a) General Impacts

Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watershed, or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within one mile (1.6 km) of the project study area. Construction of the bridges and approach work may increase sediment loads, which can reduce flow and result in a decrease in oxygen levels in the water. Removal of trees that provide shade along stream banks could result in an increase in water temperature, which can cause oxygen levels in the water to decrease as well. The NCDOT, in cooperation with the DWQ, has developed a sedimentation control program for highway projects that adopts formal best management practices (BMPs) for the protection of surface waters. The following are methods to reduce sedimentation and water quality impacts:

- strict adherence to BMPs for the protection of surface waters during the life of the project;
- reduction and elimination of direct and non-point discharge into the water bodies and minimization of activities conducted in the stream;
- placement of temporary ground cover or re-seeding of disturbed sites to reduce runoff and decrease sediment loadings;
- reduction of clearing and grubbing along the stream.

b) Impacts Related to Bridge Demolition and Removal

In order to protect the water quality and aquatic life in the area affected by this project, the NCDOT and all potential contractors will follow appropriate guidelines for bridge demolition and removal. These guidelines are presented in three NCDOT documents entitled "Pre-Construction Guidelines for Bridge Demolition and Removal", "Policy: Bridge Demolition and Removal in Waters of the United States", and "Best Management Practices for Bridge Demolition and Removal" (all documents final as of 9/20/99). Guidelines followed for bridge demolition and

removal are in addition to those implemented for Best Management Practices for the Protection of Surface Waters.

Dropping any portion of the structure into waters of the United States should be avoided unless there is no other practical method of removal. In the event that no other practical method is feasible, a worst case scenario is assumed for calculations of fill entering waters of the United States. The deck and curbs of the superstructure of Bridge No. 40 are prestressed concrete channels. The end bents are reinforced concrete caps on timber piles. There is potential for components of the deck and concrete caps of Bridge No. 40 to be dropped into waters of the United States. The resulting temporary fill is calculated to be approximately 103 cubic yards (78.6 cubic meters). Bridge No. 45 is constructed of timber and steel and has an asphalt-wearing surface. Since Bridge No. 45 is constructed of timber and steel, it can be removed without dropping components into waters of the United States.

The stream substrate in the project area consists of a clayey layer overlain by sand. Because of the nature of the substrate, increased sedimentation would occur if bridge components were dropped into the water during the demolition and removal process. Due to the potential sedimentation concerns resulting from demolition of the bridge, where it is possible to do so, use of a turbidity curtain will be considered during design to contain and minimize sedimentation in the stream.

Aquatic life that is not very mobile could be harmed when components of the bridge enter the water. Species that filter feed, as well as those species that feed upon them, could be negatively impacted by increased sedimentation. Although submerged aquatic vegetation is not prevalent in the project area, continued sedimentation could negatively impact such species if present by obstructing or reducing the amount of sunlight entering the water.

Under the guidelines presented in the documents noted in the first paragraph of this section, work done in the water for this project would fall under Case 2, which states that no work shall be performed in the water during moratorium periods associated with fish migration, spawning, and larval recruitment into nursery areas.

D. Biotic Resources

1. Plant Communities

Classification of plant communities is based on the system used by the NCNHP (Schafale and Weakley 1990). If a community is disturbed or otherwise modified such that it does not fit into the NCNHP classification system, a name is given to the community that best describes current characteristics. Scientific nomenclature and common names (when applicable) are used for the plant species described. Subsequent references to the same species include the common name only. Vascular plant names follow nomenclature found in Radford et al. (1968) unless more current information is available. The dominant terrestrial communities found at this site are Cypress-Gum Swamp (Brownwater Subtype), Coastal Plain Bottomland Hardwoods (Brownwater Subtype), Scrub-Shrub Wetland, and Man-Dominated Community. Descriptions are given below.

Wetland Rating Worksheets were used to evaluate some wetland communities within the project area and were utilized to compare values among the communities. Although methods from the Corps of Engineers Wetlands Delineation Manual were used to determine the presence of wetlands, since a delineation was not performed at this stage of the project, data forms are only included for selected communities.

a) Cypress-Gum Swamp (Brownwater Subtype)

This is the largest community within the project area. It spans the distance between both bridges east and west of the road and extends north and south of the bridges as well. Although this community classification would be more commonly associated with large river flood plains, Schafale and Weakley (1990) note that featureless, very wet flood plains dominated by cypress and gum should be included in this classification, even though they may not be associated with large rivers. The Brownwater Subtype was chosen since the headwaters of Beech Swamp are just west of I-95, and the soil type in this community fits into the NCNHP classification. However, this community exhibits a mixing of Brownwater and Blackwater Subtype characteristics.

Water tupelo (*Nyssa aquatica*) and baldcypress (*Taxodium distichum*) are the dominant trees in this community. Additional scattered specimens include overcup oak (*Quercus lyrata*), willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), netted chain fern (*Woodwardia areolata*), and royal fern (*Osmunda regalis*). Depending upon location, surface water in the Cypress-Gum Swamp community ranged from approximately one to four feet (0.3 to 1.2-meters), with the deepest areas adjacent to the bridges.

A Wetland Rating Worksheet (Appendix) was utilized to assess wetland values for this community. A total score of 60 was calculated, with the highest weighted scores in the categories of water storage and aquatic life value. These categories rated high due to location of the wetland, canopy cover, and size. Pollutant removal rated the lowest because of the small amount of impervious surfaces in proximity to the project area, and because the permanent body of water was considered to be less than 100-feet (30.5 meters) in width.

b) Coastal Plain Bottomland Hardwoods (Brownwater Subtype)

The Cypress-Gum Swamp grades into Coastal Plain Bottomland Hardwoods north of Bridge No. 45 and south of Bridge No. 40. This community type would more commonly be associated with larger flood plain systems. However soils and vegetation fit well into the classification and this community type is often associated with Cypress-Gum Swamps. Most of the Coastal Plain Bottomland Hardwoods community is estimated to be wetland, with the exception of a small upland area. A Routine Wetland Determination Data Form for the Coastal Plain Bottomland Hardwoods is located in Appendix.

Species in this community consist of swamp chestnut oak (*Quercus michauxii*), willow oak, water oak (*Quercus nigra*), yellow-poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), sweetgum, baldcypress, giant cane (*Arundinaria gigantea*), loblolly pine (*Pinus taeda*), and button bush (*Cephalanthus occidentalis*). Pockets of surface water were present in this community on the day of the field investigation.

A Wetland Rating Worksheet utilized to assess wetland values for this community resulted in a score of 37. The highest weighted scores were in the categories of aquatic life value and water storage. For the purposes of water storage, this wetland was considered to be greater than two acres (0.8 hectares) and 100-feet (30.5-meters) in width, but not contiguous to surface water. The aquatic life value rating may be somewhat high because this community is borderline in meeting the requirements of size and vegetation cover. The wildlife habitat score was low due to community size, even though food and cover was adequate.

c) Scrub-Shrub Wetland

This community is located near the southeastern edge of the project area. It is estimated that this area was cutover approximately four to five years ago. Species regenerating include baldcypress, red maple, sweetgum, loblolly pine, giant cane, yellow-poplar, honeysuckle (*Lonicera japonica*), and greenbriar (*Smilax rotundifolia*). The Scrub-Shrub Wetland was probably part of the Coastal Plain Bottomland Hardwoods community prior to harvest.

d) Man-Dominated Community

The Man-Dominated Community within the project area includes road shoulders and embankments. Often, power line rights-of-way are also included within this community due to the location of the power lines, they are considered a part of the adjacent wetland community.

Road shoulders within the project area average up to five feet (1.5-meters) in width and in some cases are adjacent to embankments that descend approximately three to four feet (0.9 to 1.2-meters). Shoulder areas and embankments are mostly maintained grass, with an occasional mixture of herbaceous weedy species.

2. Wildlife

The presence of wildlife within the project area was determined by sight, sound or tracks. Field guides were also utilized to ascertain what species might be found within the various habitats in the project area.

Species observed in the wetland communities within the project area included raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), cardinal (*Cardinalis cardinalis*), and Virginia opossum (*Didelphis virginiana*). Either a downy woodpecker (*Picoides pubescens*) or a hairy woodpecker (*Picoides villosus*) was also observed, however the view was not adequate to positively identify the species.

Other species that may utilize wetland habitats within the project area include the blue-gray gnatcatcher (*Polioptila caerulea*), ringneck snake (*Diadophis punctatus*), prothonotary warbler (*Protonotaria citrea*), cottonmouth (*Agkistrodon piscivorus*), and painted turtle (*Clemmys guttata*).

Wildlife observed in upland portions of the project area included a common crow (*Corvus brachyrhynchos*), and the carcass of a red fox (*Vulpes vulpes*) along the roadside.

Upland portions within the project area are limited and would not provide significant habitat for wildlife.

3. Aquatic Communities

The aquatic community in the project area exists within Beech Swamp. It is difficult to estimate how much the water fluctuates over the course of a year. However it is expected that levels during the summer months would be quite a bit lower than those observed during the site investigation. The water depth at Bridge No. 40 was approximately two to three feet (0.6 to 0.9 -meter) at the time of the investigation. The water depth at Bridge No. 45 was about three to four feet (0.9 to 1.2- meter). As previously noted, in other areas of the swamp water levels varied to as low as one foot (0.3-meter). Beech Swamp spans the length of both bridges. The flow direction is east at a very slow rate, perceptible only near the center of the channels at both bridges.

A search of the shoreline was conducted for evidence of mussel and clam species. No evidence of such species was observed during the investigation, however a dead crayfish (species undetermined) was observed under Bridge No. 45.

The NCWRC was contacted for their knowledge of common aquatic species in the project area and comments or requests regarding project construction (Appendix). NCWRC requested a total moratorium on in-water work between the time periods of March 1 to June 30. This is due to spawning of anadromous species of American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), alewife (*Alosa pseudoharengus*), and blueback herring (*Alosa aestivalis*). NCWRC also noted that only spanning type structures should be used for the bridge replacements, since culverts have been shown to prevent upstream migration of spawning fish.

4. Anticipated Impacts to Biotic Communities

Biotic community impacts resulting from project construction are addressed separately as terrestrial impacts and aquatic impacts. Impacts to terrestrial communities, particularly in locations exhibiting slopes, can result in the aquatic community receiving sediment loads as a consequence of erosion. Efforts will be made to ensure that no sediment leaves the construction site by following NCDOT's Guidelines for Best Management Practices for the Protection of Surface Waters. Anticipated impacts to terrestrial and aquatic communities for each study alternate are presented in Table 1.

TABLE 1 ANTICIPATED IMPACTS TO TERRESTRIAL AND AQUATIC COMMUNITIES

Bridges No. 40 & 45 Replacement Alternatives	Cypress-Gum Swamp Acre (ha)	Coastal Plain Bottomland Hardwoods Acre (ha)	Scrub-Shrub Wetland Acre (ha)	Total Wetland Community Impacts Acre (ha)	Aquatic Community Acre (ha)	Combined Total Acre (ha)
Alternate B	1.42 (0.58)	0.09 (0.04)	0.13 (0.05)	1.64 (0.67)	0.15 (0.06)	1.79 (0.72)
Detour B	0.69 (0.28)	0.00 (0.00)	0.07 (0.03)	0.76 (0.31)	0.03 (0.01)	0.79 (0.32)
Total B	2.11 (0.86)	0.09 (0.04)	0.20 (0.08)	2.40 (0.98)	0.18 (0.07)	2.58 (1.04)
Alternate C	2.30 (0.93)	0.39 (0.16)	0.23 (0.09)	2.81 (1.14)	0.15 (0.06)	2.96 (1.20)
Alternate D	1.34 (0.54)	0.11 (0.045)	0.35 (0.14)	1.80 (0.73)	0.12 (0.05)	1.92 (0.78)

Notes:

- Permanent impacts are based on 80-feet (24.4-meters) of right-of-way for all alternates.
- Actual construction impacts may be less than those indicated above, calculations were based on the worst-case scenario.
- Values given are in acres (hectares).
- Approximately 0.11 acres (0.04 ha) of Alternate C impacts listed above for the Coastal Plain Bottomland Hardwoods is within the estimated upland area. This amount is not included in the total wetland community impacts for that alternate.

a) Terrestrial Communities

The Man-Dominated Community is the only upland community within the project study area. This community will be most affected by Alternate C (1.50 acre [0.61 hectare]). Plant species in this community are not diverse and very little habitat is available for wildlife. Since these types of disturbed areas are not uncommon, impacts are not considered significant in terms of loss of diversity or potential habitat.

b) Wetland Communities

The Cypress-Gum Swamp is the largest wetland community within the project area, and it will be the most highly impacted by any alternate. Alternate C has the greatest impacts (2.30 acre [0.93 hectare]) due to the new alignment. Although this community scored fairly well in several categories on the Wetland Rating Worksheet, it is already fragmented by the existing road and bridges.

The Coastal Plain Bottomland Hardwoods and Scrub-Shrub Wetland communities will be impacted the most from Alternate C (0.39 acre [0.16 hectare] and 0.23 acre [0.09 hectare] respectively) as well. Impacts to both of these areas from Alternate B (0.09 acre [0.04 hectare] and 0.20 acre [0.08 hectare] respectively) and Alternate D (0.16 acre [0.065 hectare] and 0.15 acre [0.061 hectare] respectively) are minimal. The Coastal Plain Bottomland Hardwoods community would have rated higher in wetland values if it had been larger in size. Impacts related to losses in this community would possibly result in decreased wetland values because of further reduction in size.

c) Aquatic Communities

The replacement of Bridge Nos. 40 and 45 over Beech Swamp will result in 0.21 acre (0.09 hectare) of aquatic impacts for Alternates C and D and 0.34 acre (0.14 hectare) for Alternate B. This figure is obtained by measuring the width of the bridges over water times the length of the bridges over water. BMPs for the protection of surface waters will be strictly enforced to minimize potential adverse impacts due to this project.

There are no known rare aquatic species or habitats within the project study area. Aquatic community impacts will not be substantial.

E. Special Topics

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

Wetlands and surface waters fall under the broad category of "waters of the United States" as defined in 33 CFR §328.3 and in accordance with provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344). Waters of the United States are regulated by the United States Army Corps of Engineers (USACE).

Project construction cannot be accomplished without infringing upon jurisdictional surface waters. Up to 56 linear feet (17.1 linear meters) of jurisdictional surface waters may be impacted by this project.

Investigation into wetland occurrence in the project study area was conducted using methods of the 1987 Corps of Engineers Wetlands Delineation Manual. Wetlands were found within the project study area. A wetland delineation will be undertaken to determine jurisdictional boundaries, and concurrence will be obtained from the USACE.

2. Permits

In accordance with provisions of Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344), a permit is required from the USACE for the discharge of dredged or fill material into "waters of the United States". Since no significant impacts are expected from this project, a Categorical Exclusion (CE) level study has been initiated.

Categorical Exclusions are subject to the provisions of Nationwide Permit 23. This permit authorizes any activities, work and discharges undertaken, assisted, authorized, regulated, funded or financed, in whole or in part, by another federal agency. It states that the activity 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 environment. The CE is submitted to the USACE to document that the terms and conditions of the Nationwide Permit 23 are met. However, final permit decisions are left to the discretionary authority of the USACE.

If wetlands or waters will be impacted by filling from a proposed project, and the USACE determines that a Section 404 Permit is required, then a Section 401 Water Quality Certification would also be required from the North Carolina Division of Water Quality. North Carolina has developed General Certifications that will satisfy Section 401 of the CWA and correspond to the USACE's Nationwide Permits. It is anticipated that a Section 401 Water Quality Certification will be required for this project.

If no practical alternative exists to remove the current bridges other than to drop them into the water, prior to removal of debris off-site, fill related to demolition procedures will need to be considered during the permitting process. A worst-case scenario should be assumed with the understanding that if there is any other practical method available, the bridges will not be dropped into the water. Permitting will be coordinated such that any permit needed for bridge construction will also address issues related to bridge demolition. There is potential for components of Bridge No. 40 to be dropped into waters of the United States, however Bridge No. 45 can be removed without dropping components into the water.

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

Geotechnical work is approved under General 401 Certification No. 3027/Nationwide Permit 6 for Survey Activities. A determination if foundation test borings are necessary will be determined during the final design phase of this project.

3. Riparian Buffer Protection Rules for the Tar-Pamlico River Basin

Since this project is within the Tar-Pamlico River Basin, it is subject to NCDENR riparian buffer rules (15A NCAC 2B.0259). These rules were developed to protect and preserve existing riparian buffers and are part of larger nutrient reduction strategies for the basin.

The buffer rules require that up to 50 feet (15 meters) in width of riparian area be protected and maintained on the banks of waterways in the basin. The rules do not apply to portions of the riparian buffer where a use is existing and ongoing as of January 1, 2000. Existing uses include transportation facilities. It should be noted that only the portion of the buffer that contains the footprint of the existing use is exempt.

Activities in the buffer area beyond the footprint of the existing use are classified as either "exempt", "allowable", "allowable with mitigation", or "prohibited". The following list of activities that may be subject to buffer rules within the study area are provided along with their classifications. Depending upon project alternatives, not all of the uses listed may apply, and other uses not listed here, such as utility crossings and roadside drainage ditches, among others, may be regulated under the buffer rules. Guidelines will be consulted in entirety to review all project related uses subject to the buffer rules.

Activities deemed "exempt" will be designed, constructed, and maintained to minimize soil disturbance and to provide the maximum water quality protection practicable. "Allowable" activities may proceed within the riparian buffer provided that there are no practical alternatives to the requested use. Written authorization from the DWQ or delegated local authority is required. Activities deemed "allowable with mitigation" may proceed within the riparian buffer if there are no practical alternatives to the requested use and an appropriate mitigation strategy has been approved. Written authorization from the DWQ or delegated local authority is required. "Prohibited" activities, none of which are listed above, may not proceed within the riparian buffer unless a variance is granted from the DWQ or delegated local authority.

RIPARIAN BUFFER PROTECTION RULES

USE	Exempt	Allowable	Allowable With Mitigation	Prohibited
Bridges		X		
Road crossings that impact less than or equal to 40 linear ft. (12 linear meters)	X			
Road crossings that impact greater than 40 linear ft. (12 linear meters) but less than or equal to 150 linear ft. (46 linear meters) or 0.33 acres (0.13 hectares) of riparian area		X		
Road crossings that impact greater than 150 linear ft. (46 linear meters) or greater than 0.33 acres (0.13 hectares) of riparian buffer			X	
Temporary roads used for bridge construction or replacement provided that restoration activities such as soil stabilization and revegetation occur immediately after construction		X		

4. Mitigation

The USACE has adopted through the Council on Environmental Quality (CEQ) a wetland mitigation policy that embraces the concept of "no net loss of wetlands." The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of "waters of the United States," specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include: avoiding impacts to wetlands, minimizing impacts, and rectifying impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization, and compensatory mitigation) must be considered sequentially. According to impact estimates in Table 1, and from the perspective of impacted area alone, Alternate D would minimize impacts to wetlands.

The USACE may require compensatory mitigation for activities authorized under Section 404 of the Clean Water Act if there are unavoidable impacts to waters of the United States.

The DWQ may require compensatory mitigation for activities authorized under Section 401 of the Clean Water Act if there are unavoidable impacts to waters of the United States.

A final determination regarding mitigation requirements rests with the USACE and DWQ.

Mitigation related to riparian buffer rules may be required depending upon specific activities within the study area. Refer to guidelines under 15A NCAC 2B .0259 and 15A

NCAC 2B .0260 for applicability. Mitigation requirements may be met by payment of a compensatory mitigation fee to the Riparian Buffer Restoration Fund, donation of real property or of an interest in real property, or restoration or enhancement of a non-forested riparian area.

F. Rare And Protected Species

Some populations of plants and animals are in the process of decline due either to natural forces or human-related disturbances such as destruction of habitat. Rare and protected species listed for Halifax County and any likely impacts to these species as a result of the proposed project construction are discussed in the following sections.

1. Federally Protected Species

Plants and animals with federal classification of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The USFWS lists three federally protected species for Halifax County as of the March 22, 2001 listing (Table 2).

TABLE 2
FEDERALLY-PROTECTED SPECIES
FOR HALIFAX COUNTY

Common Name	Scientific Name	Federal Status
Dwarf wedgemussel	*Alasmidonta heterodon*	Endangered
Tar spinymussel	*Elliptio steinstansana*	Endangered
Red-cockaded woodpecker	*Picoides borealis**	Endangered

NOTES:
- E Denotes Endangered (a species that is in danger of extinction throughout all or a significant portion of its range)
- • Listed as a historic record by NCNHP, listed as current by USFWS.

Species: Dwarf wedgemussel
Family: Unionidae
Date Listed: 3/14/90

The dwarf wedgemussel rarely exceeds 1.5 inches (3.8 centimeters) in length. The outer shell is brown or yellowish brown with faint green rays, and the nacre is bluish or silvery white. The shells of females are somewhat wider than those of males.

This species lives in sand, muddy sand, and gravel substrate in large rivers and small creeks where the current is slow to moderate and fairly silt free. It is generally found in association with other mussels but it is never very numerous. As with other mussel species, the dwarf wedgemussel has suffered from excess siltation in streams and rivers and from the toxic effects of various pollutants entering waterways.

BIOLOGICAL CONCLUSION: NO EFFECT

The swamp waters within the project area are not suitable for this species. NCNHP records do not indicate occurrence of this species in the project area or vicinity. This project will not affect the dwarf wedgemussel.

Species: Tar spinymussel
Family: Unionidae
Date Listed: 7/29/85

The Tar spinymussel measures approximately 2.5 inches (6.4 cm) in length. The outer shell surface of young specimens is orange-brown with greenish rays. Adults are darker colored with inconspicuous rays. The inner shell color is yellow or pinkish at one end and bluish-white at the other. Juveniles may have up to 12 spines, which they tend to lose as they mature.

This species lives in relatively silt-free uncompacted gravel or coarse sand in fast-flowing, well oxygenated stream reaches. It feeds by syphoning and filtering small food particles that are suspended in the water. The Tar spinymussel is found in association with other mussels but it is never very numerous. The known population of this species is estimated to contain 100 to 500 individuals. The Tar spinymussel is often located in the central channel of the river.

BIOLOGICAL CONCLUSION: NO EFFECT

The habitat within the project area consists of swamp waters, which are too slow-flowing for this species. There are no records of occurrence at the NCNHP for the Tar spinymussel within the project area or vicinity. This project will not affect the Tar Spinymussel.

Species: Red-cockaded woodpecker
Family: Picidae
Date Listed: 10/13/70

The red-cockaded woodpecker is a small 7 to 8 inches (18 to 20 cm) long bird with black and white horizontal stripes on its back, a black cap and a large white cheek patch. The male has a small red spot or "cockade" behind the eye.

The preferred nesting habitat of the red-cockaded woodpecker is open stands of pines with a minimum age of 60 to 120 years. Longleaf pines (*Pinus palustris*) are preferred for nesting, however other mature pines such as loblolly (*Pinus taeda*) may be utilized. Typical nesting areas, or territories, are pine stands of approximately 200 acres (81 hectares), however, nesting has been reported in stands as small as 60 acres (24 hectares). Preferred foraging habitat is pine and pine-hardwood stands of 80 to 125 acres (32 to 50 hectares) with a minimum age of 30 years and a minimum diameter of 10 inches (25 cm). The red-cockaded woodpecker utilizes these areas to forage for insects such as ants, beetles, wood-boring insects, and caterpillars, as well as seasonal wild fruit.

BIOLOGICAL CONCLUSION: NO EFFECT

Habitat does not exist in the project area for this species. There are no pine stands of suitable age and size within the project area. NCNHP records report no occurrence of this species within the project area or vicinity. The red-cockaded woodpecker will not be affected by this project.

2. Federal Species of Concern

Federal Species of Concern (FSC) are not legally protected under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Species designated as FSC are defined as taxa, which may or may not be listed in the future. These species were formerly Candidate 2 (C2) species or species under consideration for listing for which there is insufficient information to support listing. Some of these species are listed as Endangered, Threatened, or Special Concern by the NCNHP list of Rare Plant and Animal Species and are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979. Table 3 provides the Federal Species of Concern in Halifax County and their state classifications (March 22, 2001, http://www.ncsparks.net/nhp/element.html).

The NCNHP database shows no recorded occurrences of FSCs within the project vicinity.

TABLE 3
Federal Species of Concern listed for Halifax County

Common Name	Scientific Name	Potential Habitat	State Status
Bachman's sparrow	*Aimophila aestivalis*	No	SC
Cerulean warbler	*Dendroica cerulea*	No	SR
Yellow lance	*Elliptio lanceolata*	No	T
Atlantic pigtoe	*Fusconaia masoni*	No	T
Bog St. John's-wort	*Hypericum adpressum*	No	C
Yellow lampmussel	*Lampsilis cariosa*	No	T
Chowanoke crayfish	*Orconectes virginiensis*	No	SR
Albemarle crayfish	*Procambarus medialis*♦	Yes	NL
Carolina least trillium	*Trillium pusillum* var. *pusillumno*	No	E

NOTES:
C Denotes Candidate (species for which population monitoring and conservation action is recommended).
E Denotes Endangered (species which are afforded protection by state laws).
NL Not Listed
PE Denotes Proposed Endangered (species which are proposed for official listing as endangered).
SC Denotes Special Concern (species which are afforded protection by state laws).

SR Denotes Significantly Rare (species for which population monitoring and conservation action is recommended).

T Denotes Threatened (species which are afforded protection by state laws).

* Historic record, the species was last observed in the county more than 50 years ago (NCNHP).

◆ Listed by USFWS but not by NCNHP.

3. Summary of Anticipated Impacts

This project is not expected to affect any federally protected species. There are no known rare species or unique habitats within the project study area and no species surveys are recommended.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historical Preservation Act of 1966, as amended, implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800. Section 106 requires that for federally funded, licensed, or permitted projects having an effect on properties listed in or eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation be given the opportunity to comment.

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on January 20, 1998. All structures within the APE were photographed, and later reviewed by the North Carolina State Historic Preservation Office (HPO). In a concurrence form dated September 3, 1999, the SHPO concurred that there are no historic architectural resources either listed in or eligible for listing on the National Register of Historic Places within the APE. A copy of the concurrence form is included in the Appendix.

C. Archaeology

The State Historic Preservation Officer (SHPO), in a memorandum dated August 15, 2000, had no comment on the project as was currently proposed. There is little likelihood of any National Register archaeological sites occurring in the project area because of the disturbed landforms, therefore no further action is recommended. A copy of the SHPO memorandum is included in the Appendix.

VII. ENVIRONMENTAL EFFECTS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Halifax County is a participant in the National Flood Insurance Regular Program. This site on the Beech Swamp is included in an approximate F.E.M.A. study. Attached is a copy of the

Flood Insurance Rate Map, on which are shown the approximate limits of the 100-year flood plain in the vicinity of the project (Figure 5).

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

VIII. PUBLIC INVOLVEMENT

Efforts were undertaken early in the planning process to contact local officials to involve them in the project development with scoping letters and newsletters. A Citizens Informational Workshop was held at the Enfield City Hall on May 29, 2001, where preliminary alternatives were reviewed and discussed with concerned citizens and local officials.

Two local citizens attended the Citizens Informational Workshop. The citizens did not oppose any of the proposed alternates nor did they have a preferred alternate.

IX. AGENCY COMMENTS

1. North Carolina Wildlife Resource Commission (NCWRC)

   Comment: *"Total moratoriums should be in place on bridge no's 40 and 45 due to anadromous fish spawning from March 1 to June 30."*

   Response: Construction work will be restricted as noted in the Project Commitments.

2. North Carolina Division of Water Quality (NCDWQ)

   Comment: *"When practical, the DWQ requests that bridges be replaced on the existing location with road closure."*

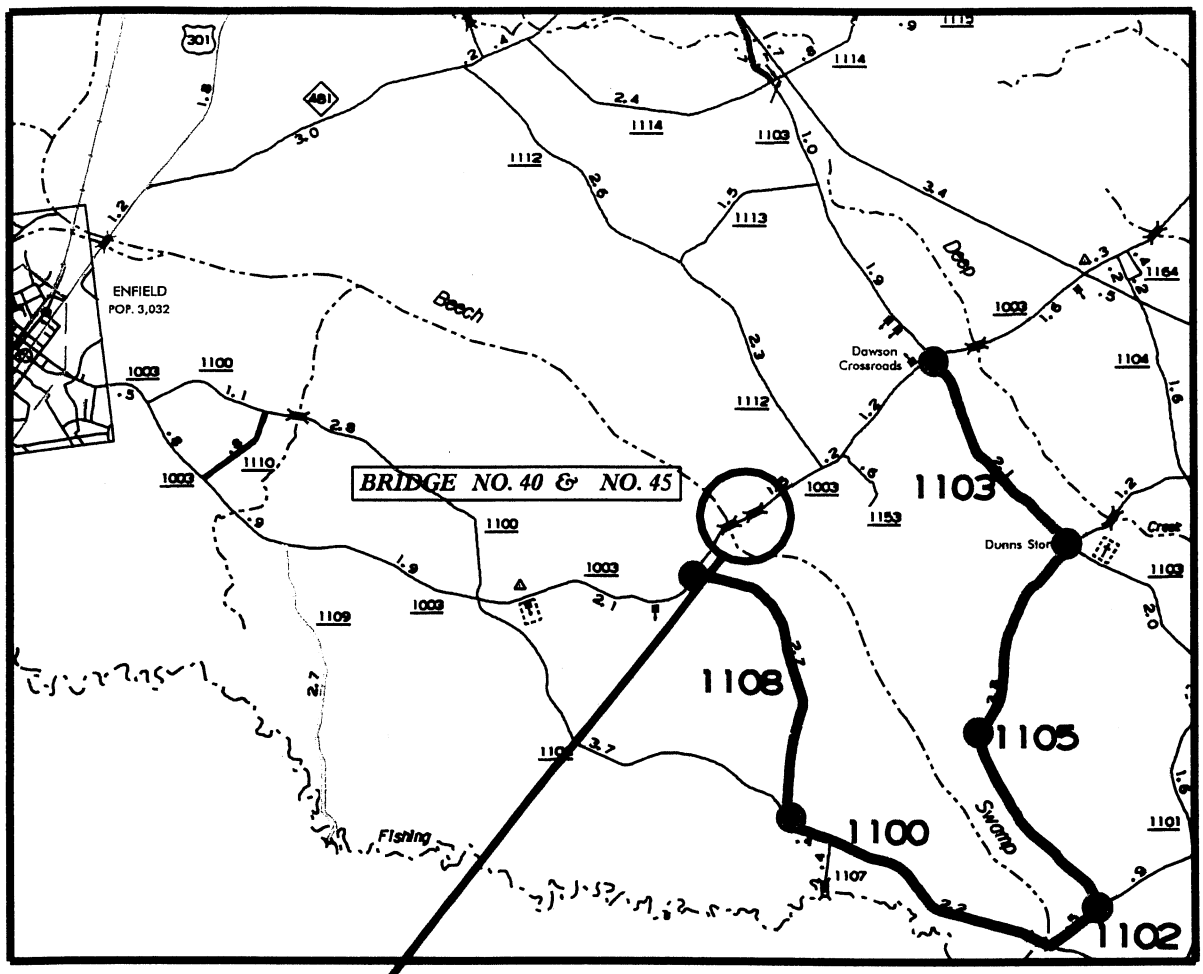
   Response: The preferred alternative replaces the bridges on existing location with an offsite detour to maintain traffic during construction.

3. Halifax County Schools

   Comment: *"Closing of this bridge will cause a major increase in route time for buses if closed during the school year. Students will most likely have to be reassigned to different buses due to the length of the nearest detour. Please notify my office as early as possible if the replacement is to be conducted during the months of August thru May."*

   Response: An offsite detour will be used for this project due to comparatively higher environmental impacts and construction costs for this alternate. Halifax County Schools will be notified by letter of the decision to use an off-site detour.

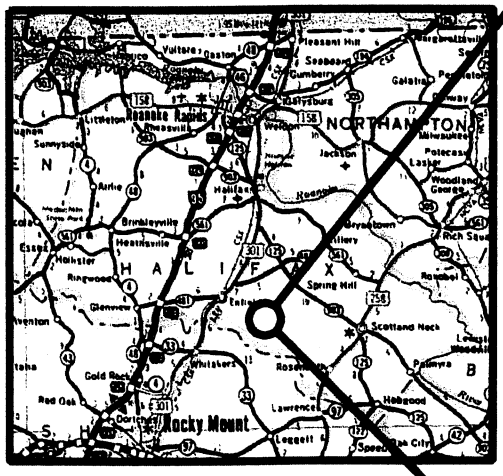
FIGURES

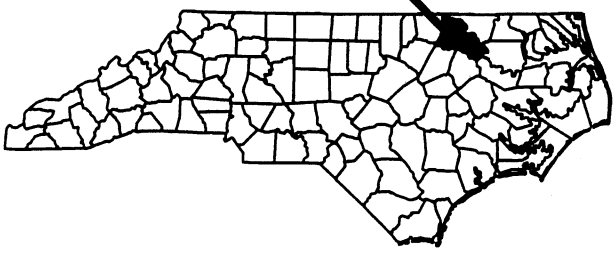


SCALE

1 0 1 2 3 4 MILES

1 0 1 2 3 4 5 6 KILOMETERS





LEGEND

Studied Detour Route

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
HYDRAULICS UNIT

HALIFAX COUNTY

BRIDGE NO. 40 AND NO. 45 ON SR 1003 OVER BEECH SWAMP

TIP NO. B-3467

VICINITY MAP
FIGURE 1

FIGURE 2

ALTERNATE B

PROJECT 8.2301201 (B-3467)

F. A. PROJECT BRSTP-1003(23)

HALIFAX COUNTY

REPLACE BRIDGE NO. 40 AND
NO. 45 ON SR 1003
OVER BEECH SWAMP

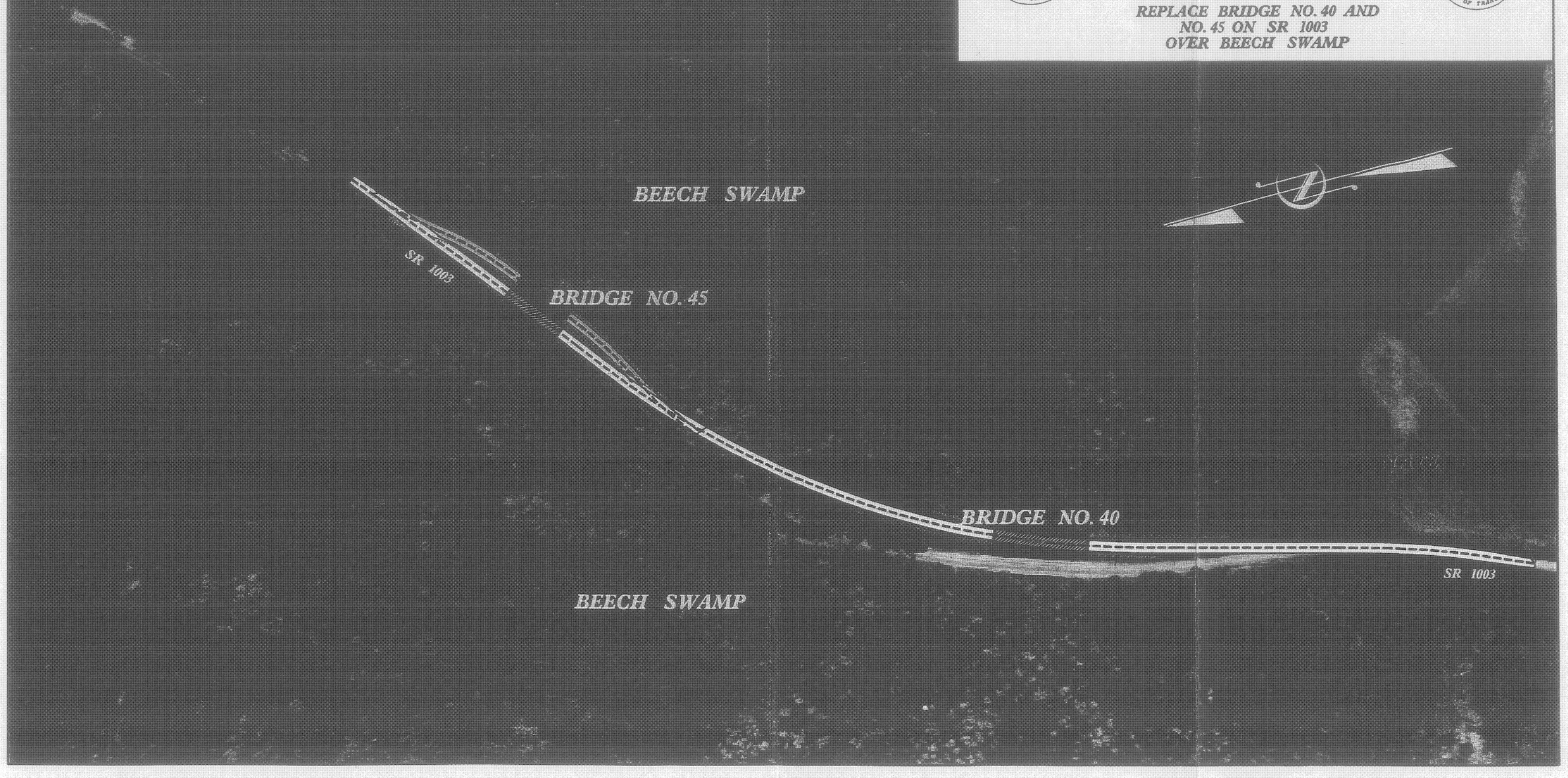


FIGURE 2A

ALTERNATE C

PROJECT 8.2301201 (B-3467)

F. A. PROJECT BRSTP-1003(23)

HALIFAX COUNTY

REPLACE BRIDGE NO. 40 AND
NO. 45 ON SR 1003
OVER BEECH SWAMP

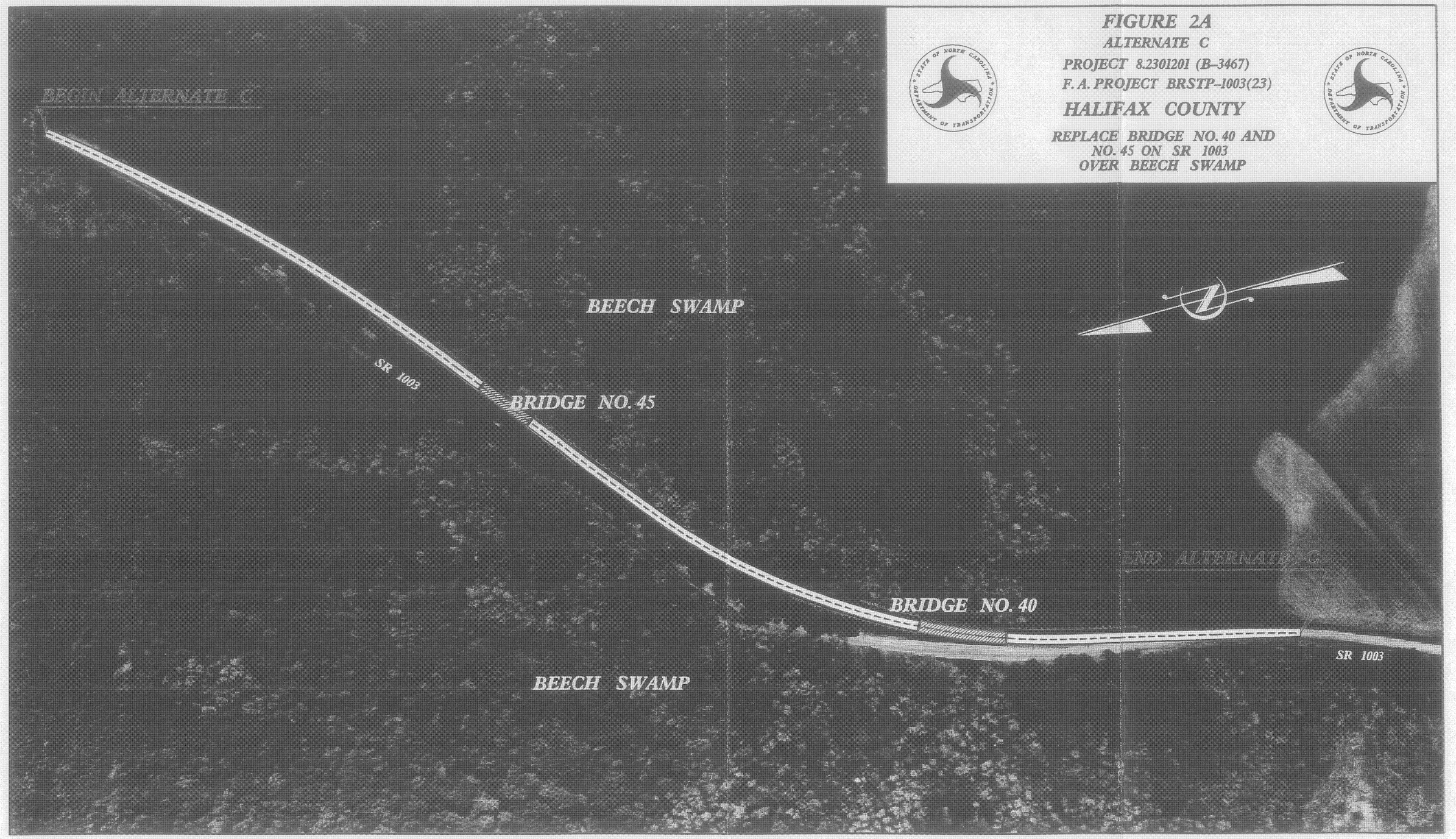


FIGURE 2B

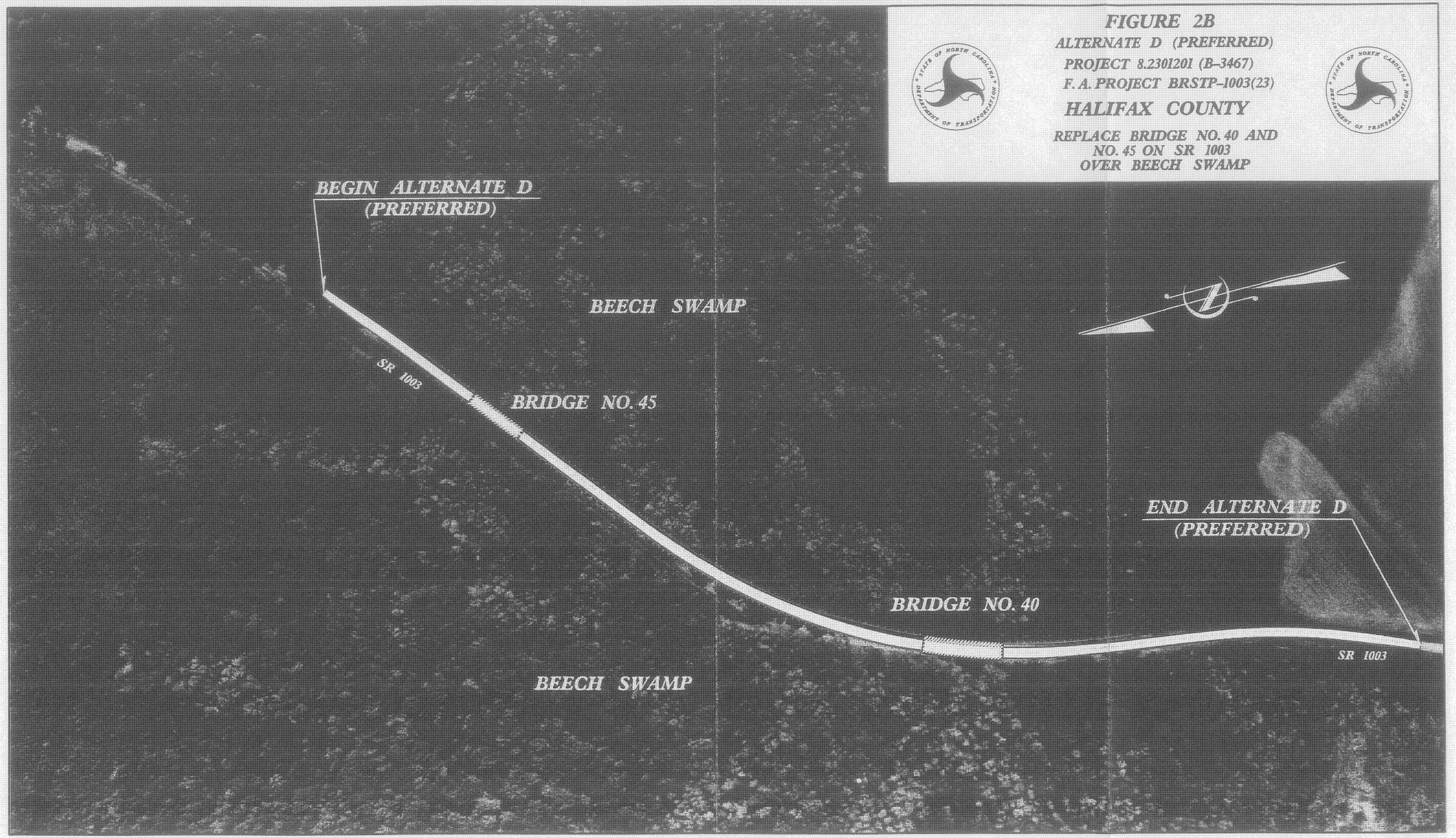
ALTERNATE D (PREFERRED)

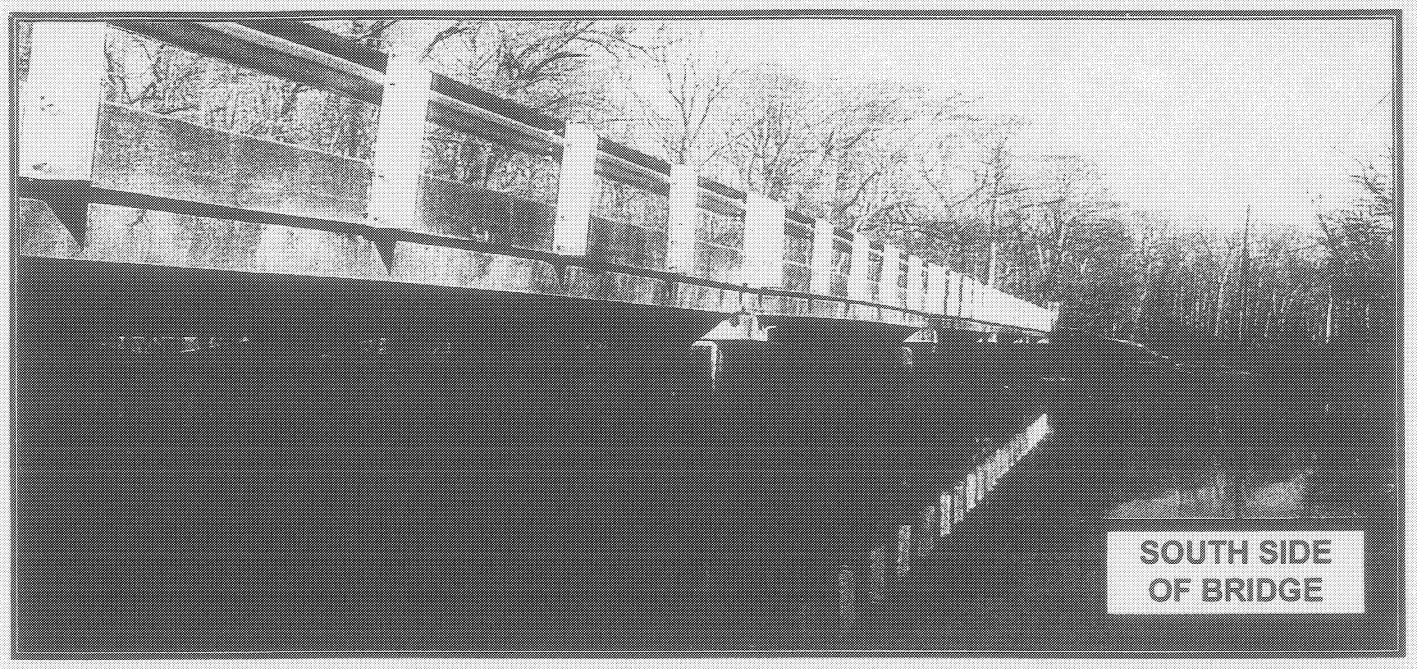
PROJECT 8.2301201 (B-3467)

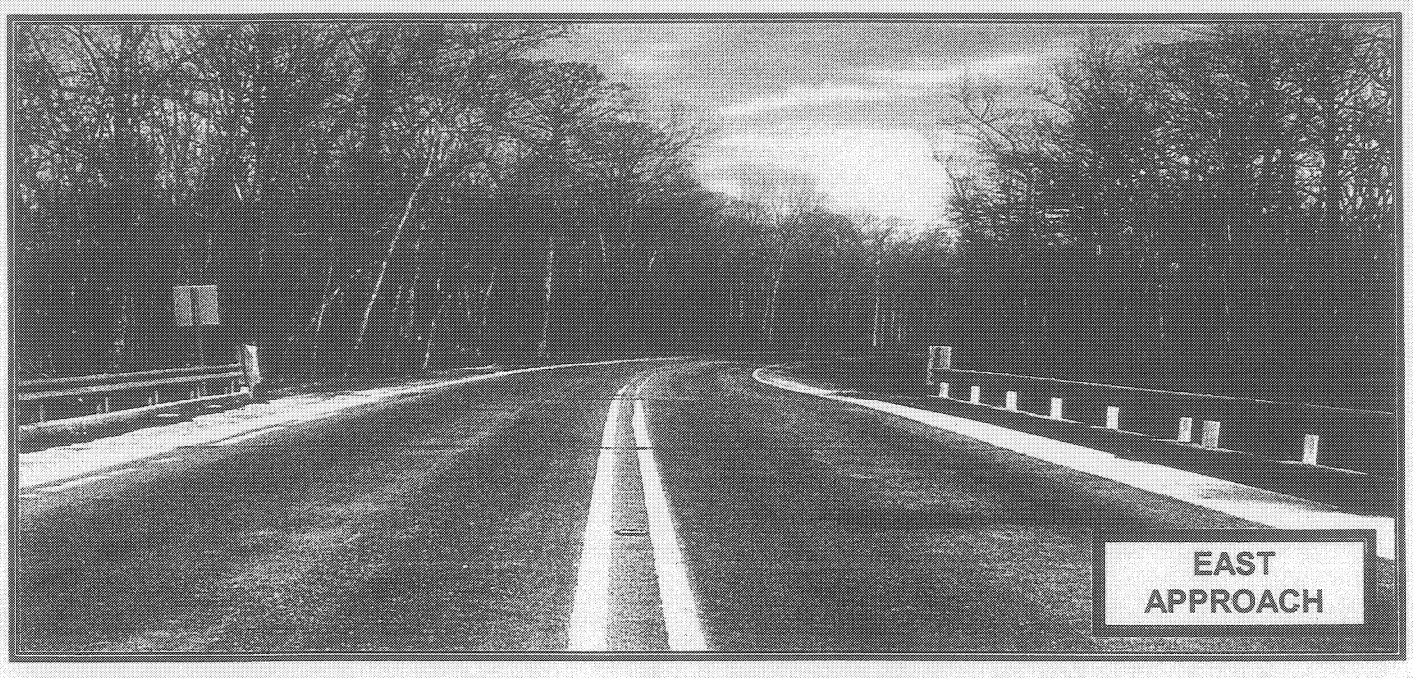
F. A. PROJECT BRSTP-1003(23)

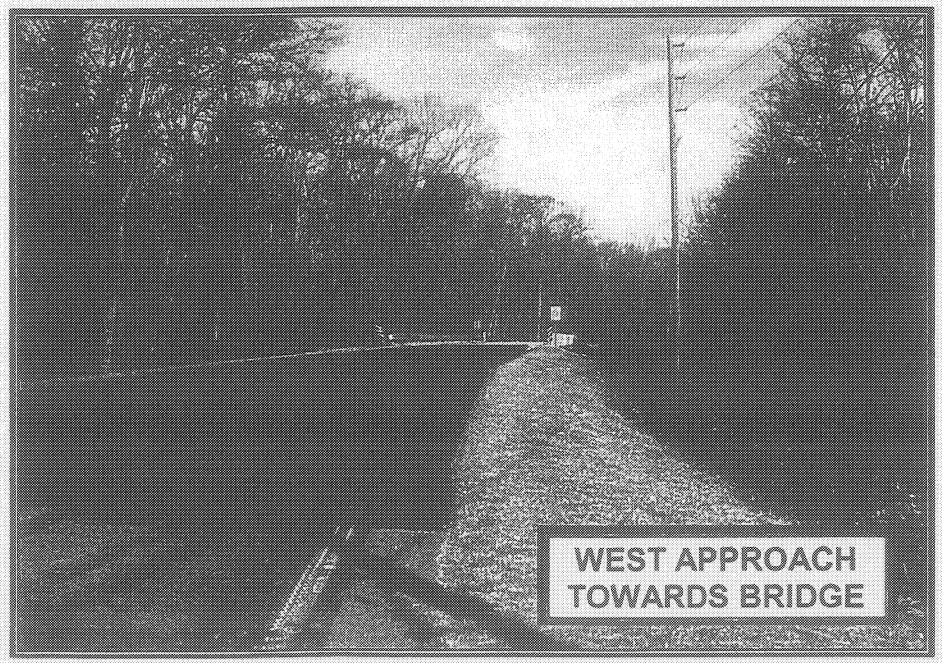
HALIFAX COUNTY

REPLACE BRIDGE NO. 40 AND
NO. 45 ON SR 1003
OVER BEECH SWAMP





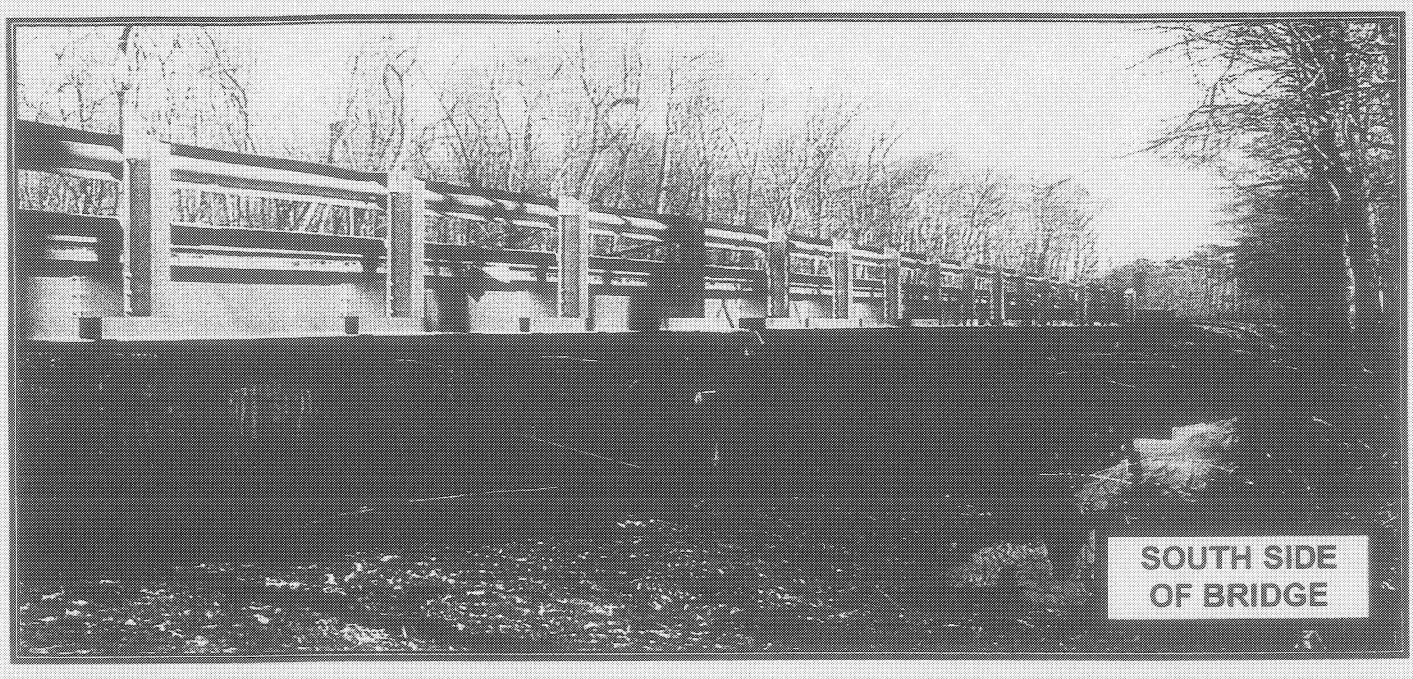


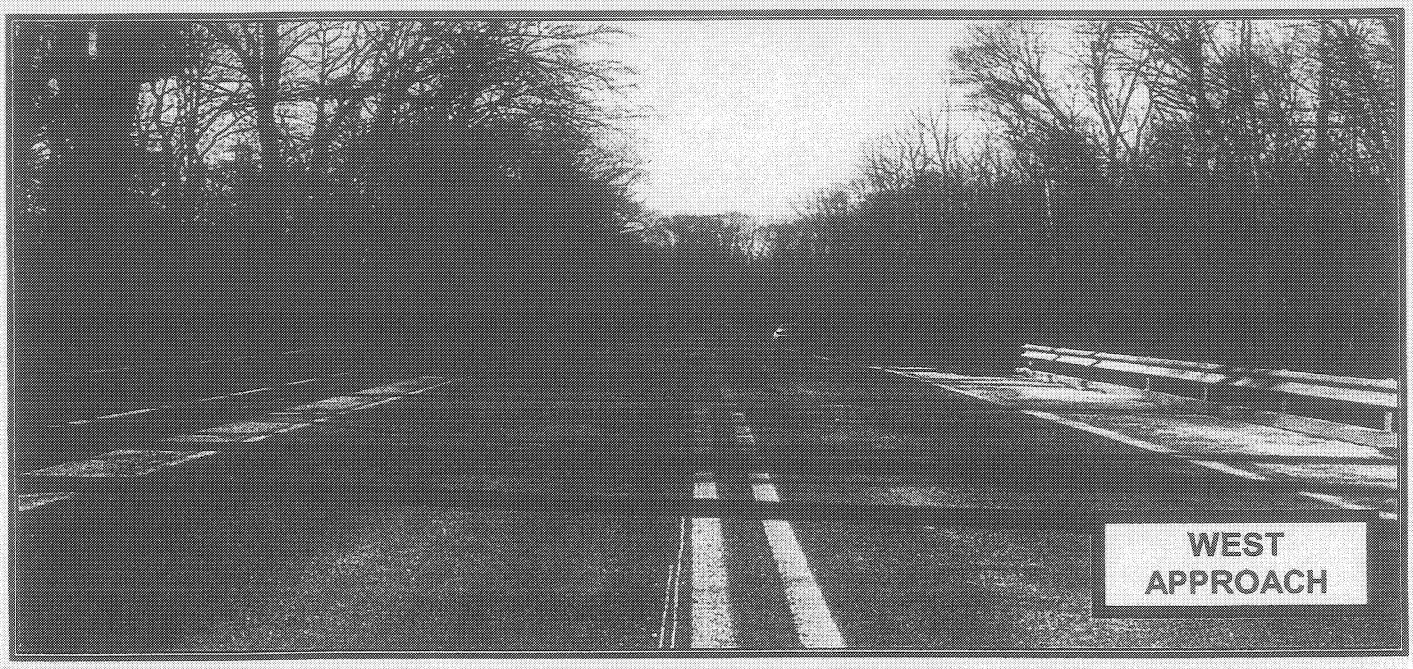


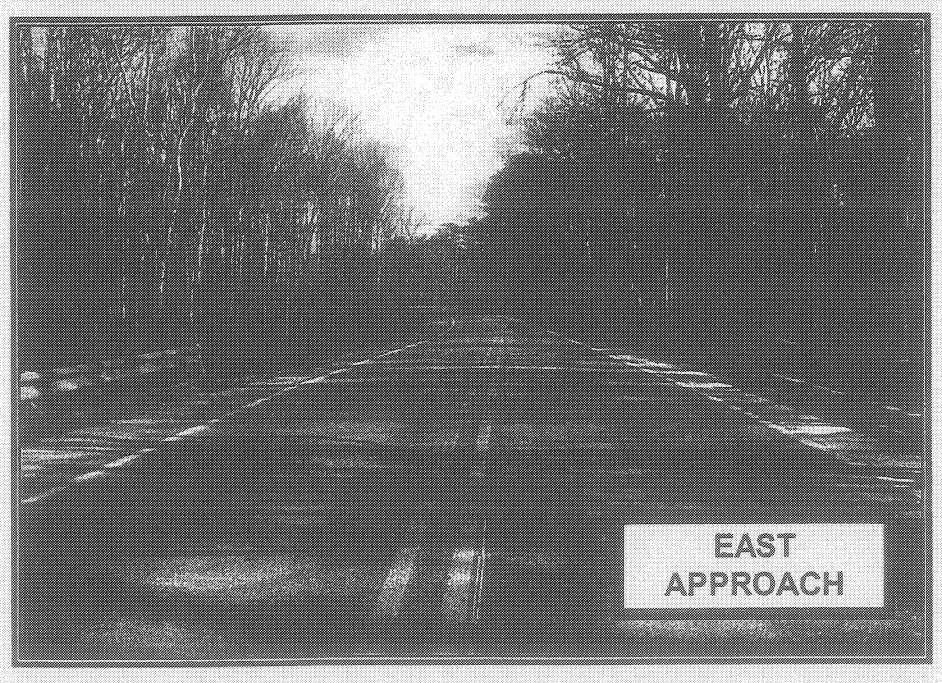
B-3467
Replacement of Bridge No. 40 on SR 1003 Over Beech Swamp
Halifax County

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

FIGURE 3



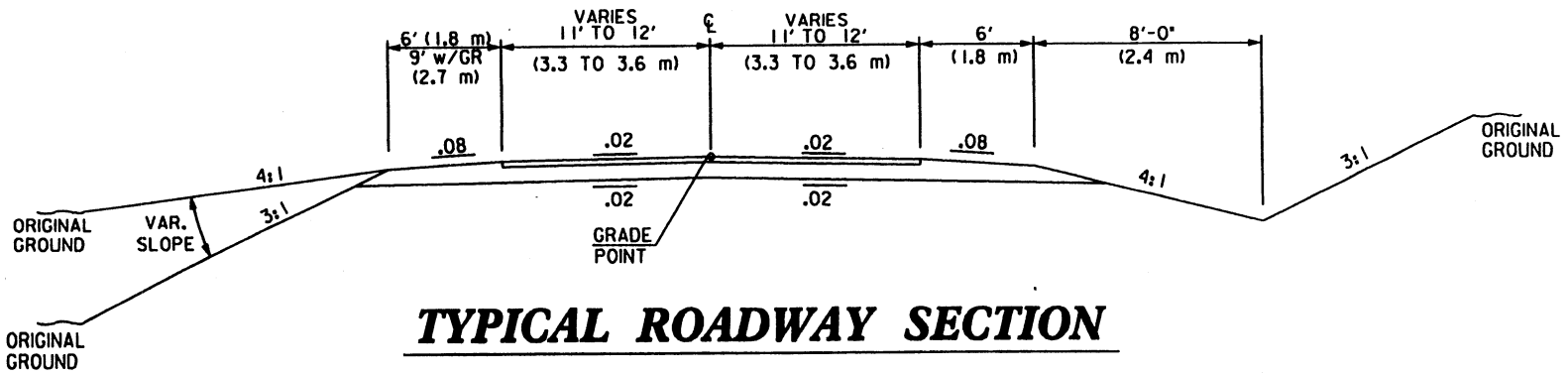




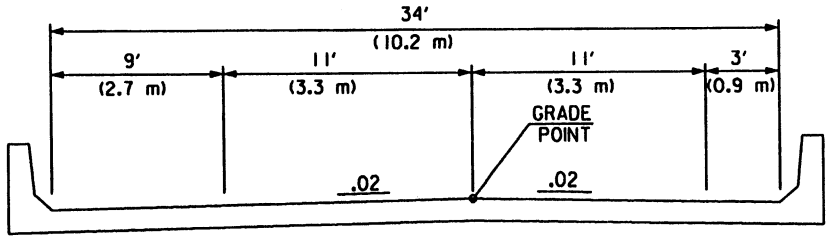
B-3467
Replacement of Bridge No. 45 on SR 1003 Over Beech Swamp
Halifax County

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

FIGURE 3A

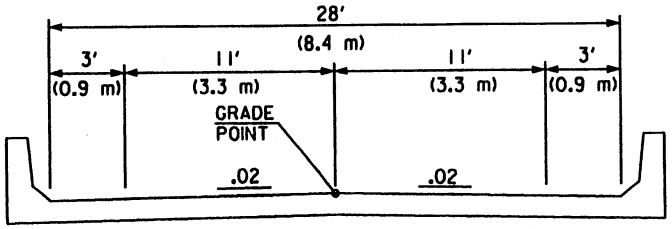


TYPICAL ROADWAY SECTION



TYPICAL BRIDGE SECTION

PROPOSED BRIDGE NO. 40



TYPICAL BRIDGE SECTION

PROPOSED BRIDGE NO. 45

TRAFFIC DATA

ADT 2001	850
ADT 2003	900
ADT 2025	1,500
DUAL	2%
TTST	1%

FUNCTIONAL CLASSIFICATION:
RURAL MAJOR COLLECTOR

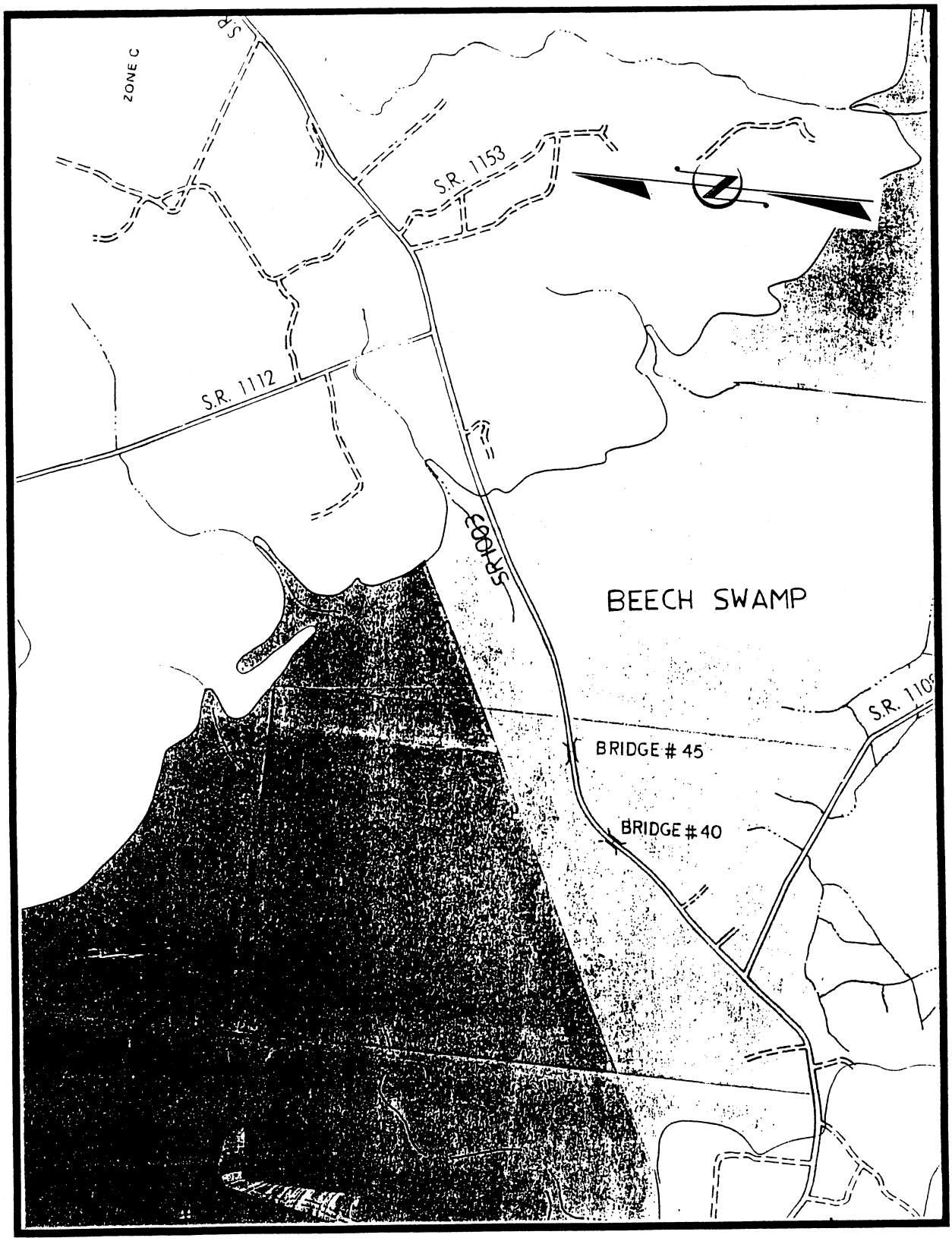
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPEMENT AND
ENVIRONMENTAL ANALYSIS BRANCH

HALIFAX COUNTY

BRIDGE NO. 40 & BRIDGE NO. 45 ON SR 1003
OVER BEECH SWAMP

B-3467

FIGURE 4



FEMA FLOOD STUDY 100 YEAR FLOOD PLAIN

Panel No. 370327 0190B
Date: May 5, 1981
Street Name: SR 1003
Halifax County, North Carolina

1000 ft. 0 1000 ft
305 m Approximate Scale 305 m

FIGURE 5

APPENDIX

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

January 20, 2000

Regulatory Division

Action ID Nos. 200020359-200020362

Mr. William D. Gilmore, P.E., Manager
North Carolina Department of Transportation
Project Development and Environmental
Analysis Branch
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

Reference is made to your request for comments dated November 8, 1999, regarding the proposed Group XXVI Bridge Replacement Projects in Edgecombe and Halifax Counties, North Carolina. The projects involve the replacement of 6 bridges at 4 separate locations. The replacement of Bridge Numbers 17 and 23 is located on US Highway 301 over Fishing Creek and its overflow, southwest of Enfield, in Halifax and Edgecombe Counties, TIP No. 3453 (Action ID 200020359). Bridge Number 128 is located on SR 1002, over a branch of Jacket Swamp, west of Enfield, Halifax County, TIP No. 3466 (Action ID 200020360). Bridge Numbers 40 & 45 are located on SR 1003, over Beech Swamp, southeast of Enfield, Halifax County, TIP No. B-3467 (Action ID 200020361). Finally, Bridge No. 85 on SR 1426 over Chockoyotte Creek, west of Roanoke Rapids, Halifax County, TIP No. B-3468 (Action ID 200020362).

We have reviewed the subject document and have determined that based upon a review of the information provided and available maps, it appears that the projects may impact jurisdictional waters of the United States and their associated wetlands subject to our regulatory authority pursuant to Section 404 of the Clean Water Act. Any discharge of excavated or fill material into waters of the United States and/or any adjacent wetlands that may be present will require Department of the Army (DA) permit authorization. Department of the Army authorization will be determined based upon the extent of jurisdictional area impacted by the project, project design and construction limits. Furthermore, with respect to the replacement of Bridge Numbers 17 and 23 over Fishing Creek and its overflow, you should coordinate the project with the United States Fish and Wildlife Service to ensure that the project will not impact the federally listed Tar spinymussel, which is known to be present in Little Fishing Creek, a tributary to Fishing Creek. Finally, all bridge demolitions should adhere to the latest NCDOT Policy: Bridge Demolition and Removal in Waters of the United States (BDR Policy), including the Best Management Practices for Bridge Demolition and Removal.

Due to the limited information provided regarding the extent of jurisdictional impacts associated with the project, we will be unable to provide specific comments regarding DA permit requirements until additional data are furnished regarding the limits of the jurisdictional impacts within construction limits of the proposed project. When this information becomes available, it should be forwarded to our office for review and comment, as well as a determination of DA permit eligibility.

Any questions related to DA permits for these projects should be addressed to Mrs. Jean B. Manuele, Raleigh Field Office, telephone (919) 876-8441, Extension 24.

Sincerely,

E. David Franklin
Assistant Chief, Regulatory Division

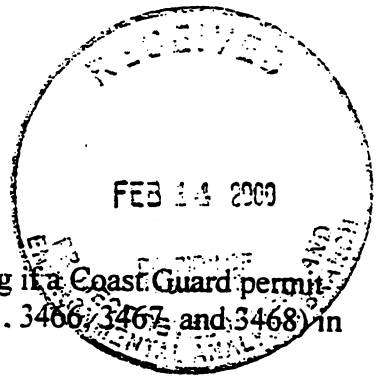
U.S. Department of Transportation
United States Coast Guard

Commander
United States Coast Guard
Atlantic Area

431 Crawford Street
Portsmouth, Va. 23704-5004
Staff Symbol: (Aowb)
Phone: (757)398-6587

16590
08 Feb 00

William D. Grimes, P.E.
North Carolina Dept. of Transportation
P.O. Box 25201
Raleigh, North Carolina 27611-5201



Dear Mr. Grimes:

This is in response to your letter dated November 8, 1999, requesting if a Coast Guard permit would be required for a project to replace five bridges (# 3453, 3461, 3466, 3467, and 3468) in Greene and Halifax Counties, North Carolina.

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses nontidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce. Ms. Pam Williams confirmed such conditions in a telephone conversation on February 4, 2000. Due to this, these bridge projects are exempt, and will not require a Coast Guard Bridge Permit.

The fact that a Coast Guard permit is not required 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 the project.

Sincerely,

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

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

April 17, 2000

IN REPLY REFER TO

Planning Services Section

Mr. William D. Gilmore, P.E.
Project Development and
Environmental Analysis Branch
North Carolina Department of Transportation
Post Office Box 25201
Raleigh, North Carolina 27611-5201

Dear Mr. Gilmore:

This is in response to a letter from Ms. Pamela Williams of Wang Engineering dated February 7, 2000, forwarding your letters of November 5 and 8, 1999, requesting comments on five proposed bridge replacement projects in three eastern North Carolina counties. These counties and TIP Nos. are Greene – B-3461, Edgecombe and Halifax - B-3453, and Halifax - B-3466, B-3467, and B-3468, (Regulatory Division Action ID Nos. 200010326, 200020359, 200020360, 200020361, and 200020362, respectively).

Our comments involve impacts to flood plains and jurisdictional resources that include waters, wetlands, and U.S. Army Corps of Engineers projects. Enclosed are our comments on these issues. Regulatory comments are provided for the Greene County project only, since comments on the others have already been sent to you.

We appreciate the opportunity to comment on these projects. If we can be of further assistance, please contact us.

Sincerely,

W. Coleman Long
Chief, Planning and
Environmental Branch

Enclosure

U.S. ARMY CORPS OF ENGINEERS, WILMINGTON DISTRICT, COMMENTS ON:

Five Bridge Replacement Projects in Three Eastern North Carolina Counties

1. **FLOOD PLAINS: POC - Bobby L. Willis, Planning Services Section, at (910) 251-4728**

All three counties are participants in the National Flood Insurance Program (NFIP). The crossing of Chockoyotte Creek in Halifax County is located partially within the jurisdictional limits of the city of Roanoke Rapids, which is also a participant in the NFIP. This and other crossings involve detailed study streams with 100-year flood elevations determined and floodways defined. The other detailed stream crossings include Contentnea Creek in Greene County and Fishing Creek /Fishing Creek Overflow in Halifax County. The Edgecombe County portion of Fishing Creek and the other stream crossings are mapped approximately without 100-year flood elevations shown. A summary of flood plain information that we have pertaining to the bridges is contained in the following table. This information was taken from the pertinent Flood Insurance Rate Map (FIRM).

Bridge No.	Route No.	County	Study Stream	BFE*	Date Of FIRM
90	SR 1222	Greene	Contentnea Cr.	52	1/83
23	US 301	Edgecombe	Fishing Cr.	Approx.**	8/81
23	US 301	Halifax**	Fishing Cr.	97**	5/81
17	US 301	Halifax	Fishing Cr. Overflow	97	5/81
128	SR 1002	Halifax	Br. Of Jacket Swp	Approx.	5/81
40/45	SR 1003	Halifax	Beech Swamp	Approx.	5/81
85	SR 1426	Halifax***	Chockoyotte Cr.	164***	9/92
85	SR 1426	Halifax***	Chockoyotte Cr.	Approx***	5/81

* Base (100-year) Flood Elevation in feet N.G.V.D.
** Stream mapped approximately in Edgecombe Co. and detailed in Halifax County
*** Stream mapped approximately in Halifax County and detailed in Roanoke Rapids

1. **FLOOD PLAINS: (Continued)**

For the detail study stream crossings, reference is made to the Federal Emergency Management Agency's (FEMA's) "Procedures for `No Rise' Certification for Proposed Developments in Regulatory Floodways", copies of which have been furnished previously to your office. Improvements to the bridges should be designed to meet the requirements of the NFIP, administered by FEMA, and be in compliance with all local ordinances. Specific questions pertaining to community flood plain regulations or developments should be referred to the local building official.

2. **WATERS AND WETLANDS: POC, Greene County- Mike Bell, Project Manager, Washington Field Office, Regulatory Division, at (252)975-1616, Extension 26**

All work restricted to existing high ground will not require prior Federal permit authorization. However, U.S. Department of the Army (DA) permit authorization pursuant to Section 404 of the Clean Water Act of 1977, as amended, will be required for the discharge of excavated or fill material in waters of the United States or any adjacent and/or isolated wetlands in conjunction with your proposed bridge replacement, including disposal of construction debris. Specific permit requirements will depend on design of the project, extent of fill work within waters of the United States, including wetlands (dimensions, fill amounts, etc.), construction methods, and other factors.

Although these projects may qualify as a Categorical Exclusion, in order for the proposal to be considered for authorization under Nationwide Permit No.23, the project planning report should contain sufficient information to document that the proposed activity does not have more than a minimal individual or cumulative impact on the aquatic environment.

Our experience has shown that replacing bridges with culverts often results in sufficient adverse impacts to consider the work as having more than minimal impacts on the aquatic environment. Accordingly, the following items need to be addressed in the project planning report:

a. The report should contain the amount of permanent and temporary impacts to waters and wetlands as well as a description of the type of habitat that will be affected.

b. Offsite detours are always preferable to onsite (temporary) detours in wetlands. If an onsite detour is the recommended action, justification should be provided.

c. Project commitments should include the removal of all temporary fills from waters and wetlands and "time-of-the-year" restrictions on in-stream work if recommended by the North Carolina Wildlife Resources Commission. In addition, if undercutting is necessary for temporary detours, the undercut material should be stockpiled to be used to restore the site.

2. **WATERS AND WETLANDS: (Continued)**

d. All restored areas should be planted with endemic vegetation, including trees, if appropriate.

e. The report should provide an estimate of the linear feet of new impacts to streams resulting from construction of the project.

f. If a bridge is proposed to be replaced with a culvert, NCDOT must demonstrate that the work will not result in more than minimal impacts on the aquatic environment, specifically addressing the passage of aquatic life, including anadromous fish. In addition, the report should address the impacts that the culvert would have on recreational navigation.

g. In addition, to be considered for authorization, discharge of demolition material into waters and wetlands and associated impacts must be disclosed and discussed in the project planning report.

At this time, construction plans are not available for review. When final plans are complete, including the extent and location of any work within waters of the United States and wetlands, our Regulatory Division would appreciate the opportunity to review those plans for a project-specific determination of DA permit requirements.

If you have questions or need further information, please contact Mr. Bell.

United States Department of the Interior

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

April 27, 2000

Mr. William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch
N.C. Division of Highways
P.O. Box 25201
Raleigh, NC 27611-5201

Dear Mr. Gilmore:

Thank you for your letter of April 17, 2000 requesting information from the U.S. Fish and Wildlife Service (Service) for the purpose of evaluating the potential environmental impacts of five bridge replacement projects located in Halifax, Greene, and Edgecombe Counties, North Carolina. This report provides scoping information and is provided in accordance with provisions of the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543). This report also serves as initial scoping comments to federal and state resource agencies for use in their permitting and/or certification processes for this project.

The North Carolina Department of Transportation (NCDOT) proposes to replace the following bridges (Listed by TIP No.):

1. B-3453, Edgecombe/Halifax Counties, Replace Bridge No. 23 & Bridge No. 17 on US 301 over Fishing Creek and Fishing Creek Overflow;

2. B-3461, Greene County, Replace Bridge No. 90 on SR 1222 over Contentnea Creek;

3. B-3466, Halifax County, Replace Bridge No. 128 on SR 1002 over Spring Branch;

4. B-3467, Halifax County, Replace Bridge No. 40 & No. 45 on SR 1003 over Beech Swamp; and.

5. B-3468, Halifax County, Replace Bridge No. 35 on SR 1426 over Chockoyotte Creek.

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

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

The National Wetlands Inventory (NWI) maps of the Dawson Crossroads, Enfield, Roanoke Rapids, and Walstonburg 7.5 Minute Quadrangles show wetland resources in the specific work areas. However, while the NWI maps are useful for providing an overview of a given area, they should not be relied upon in lieu of a detailed wetland delineation by trained personnel using an acceptable wetland classification methodology.

We reserve the right to review any federal permits that may be required for this project, at the public notice stage. We may have no objection, provide recommendations for modification of the project, or recommend denial. Therefore, it is important that resource agency coordination occur early in the planning process in order to resolve any conflicts that may arise and minimize delays in project implementation.

In addition to the above guidance, we recommend that the environmental documentation for this project include the following in sufficient detail to facilitate a thorough review of the action:

1. A clearly defined and detailed purpose and need for the proposed project, supported by tabular data if available, and including a discussion of the project's independent utility;

2. A description of the proposed action with an analysis of all alternatives being considered, including the upgrading of existing roads and a "no action" alternative;

3. A description of the fish and wildlife resources, and their habitats, within the project impact area that may be directly or indirectly affected;

4. The extent and acreage of waters of the U.S., including wetlands, that are to be impacted by filling, dredging, clearing, ditching, or draining. Acres of wetland impact should be differentiated by habitat type based on the wetland classification scheme of the National Wetlands Inventory (NWI). Wetland boundaries should be determined by using the 1987 Corps of Engineers Wetlands Delineation Manual and verified by the U.S. Army Corps of Engineers (Corps);

5. The anticipated environmental impacts, both temporary and permanent, that would be likely to occur as a direct result of the proposed project. The assessment should also include the extent to which the proposed project would result in secondary impacts to natural resources, and how this and similar projects contribute to cumulative adverse effects;

6. Design features and construction techniques which would be employed to avoid or minimize the fragmentation or direct loss of wildlife habitat value;

7. Design features, construction techniques, or any other mitigation measures which would be employed at wetland crossings and stream channel relocations to avoid or minimize impacts to waters of the United States; and,

8. If unavoidable wetland impacts are proposed, we recommend that every effort be made to identify compensatory mitigation sites in advance. Project planning should include a detailed compensatory mitigation plan for offsetting unavoidable wetland impacts. Opportunities to protect mitigation areas in perpetuity, preferably via conservation easement, should be explored at the outset.

The enclosed pages identify the federally-listed endangered and threatened species, and Federal Species of Concern (FSC) that are known to occur in Edgecombe, Greene, and Halifax Counties. The Service recommends that habitat requirements for these federally-listed species be compared with the available habitat at the project site. If suitable habitat is present within the action area of the project, biological surveys for the listed species should be performed. Environmental documentation should include survey methodologies and results. In addition to this guidance, the following information should be included in the document regarding protected species:

1. A map and description of the specific area used in the analysis of direct, indirect, and cumulative impacts;

2. A description of the biology and status of the listed species and the habitat of the species that may be affected by the action, including the results of any on-site inspections;

3. An analysis of the "effects of the action" on the listed species and associated habitat which includes consideration of:

   a. The environmental baseline which is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the species and its habitat;

   b. The impacts of past and present federal, state, and private activities in the project area and cumulative impacts area;

   c. The direct and indirect impacts of the proposed action. Indirect effects are those that are caused by the proposed action and are later in time, but are still

reasonably certain to occur;

d. The impacts of interrelated actions (those that are part of a larger action and depend on the larger action for their justification) and interdependent actions (those that have no independent utility apart from the action under consideration); and,

e. The cumulative impacts of future state and private activities (not requiring federal agency involvement) that will be considered as part of future Section 7 consultation;

4. A description of the manner in which the action may affect any listed species or associated habitat including project proposals to reduce/eliminate adverse effects. Direct mortality, injury, harassment, the loss of habitat, and/or the degradation of habitat are all ways in which listed species may be adversely affected;

5. A summary of evaluation criteria to be used as a measure of potential effects. Criteria may include post-project population size, long-term population viability, habitat quality, and/or habitat quantity; and,

6. Based on evaluation criteria, a determination of whether the project is not likely to adversely affect or may affect threatened and endangered species.

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

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

Sincerely

Tom Augspurger

For Garland B. Pardue
Ecological Services Supervisor

Enclosures

cc:
COE, Raleigh, NC (Eric Alsmeyer)

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

FWS/R4:TMcCartney:TM:04/27/00:919/856-4520 extension 32:\5bridges.tip

Harris

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

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

Division of Archives and History
Jeffrey J. Crow, Director

August 15, 2000

MEMORANDUM

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

From: David Brook
Deputy State Historic Preservation Officer

Re: Replace Bridge Nos. 40 & 45, SR 1003 over Beech Swamp,
B-3467, Halifax County, ER 00-8094

Thank you for your memorandum of October 29, 1999, concerning the above project.

We have conducted a review of the project and are aware of no properties of architectural, historic, or archaeological significance which would be affected by the project. Therefore, we have no comment on the project as currently proposed.

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

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

DB:kgc

cc: Mary Pope Furr, NC DOT
Tom Padgett, NC DOT

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
ARCHAEOLOGY	421 N. Blount St., Raleigh NC	4619 Mail Service Center, Raleigh NC 27699-4619	(919) 733-7342 • 715-2671
RESTORATION	515 N. Blount St., Raleigh NC	4613 Mail Service Center, Raleigh NC 27699-4613	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4618 Mail Service Center, Raleigh NC 27699-4618	(919) 733-6545 • 715-4801

Bridge Group XXVI

Complete

Federal Aid #BRSTP-1003(23) *TIP* #B-3467 *County*: Halifax

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

Project Description: Replace Bridge No. 40 on SR 1003 over Beech Swamp

On August 19, 1999, representatives of the

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

Reviewed the subject project at

- [ ] a scoping meeting
- [X] photograph review session/consultation
- [ ] other

All parties present agreed

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

Signed:

Representative, NCDOT — Date: 8/19/99

FHWA, for the Division Administrator, or other Federal Agency — Date: 8/23/99

Representative, SHPO — Date: 8/19/99

State Historic Preservation Officer — Date: 9/3/99

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

North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27611, 919-733-3391
Charles R. Fullwood, Executive Director

November 8, 1999

Ms Stacy Harris, P.E.
Project Manager, Consulting Engineering Unit
NCDOT Project Development and
Environmental Analysis Branch
P.O. Box 25201
Raleigh, NC, 27611

Comments on B-3453, B-3466, B-3467, and B-3468 Bridge Replacements

Dear Ms Harris:

B-3453 Total moratoriums should be in place on bridge no's 23 and 17 on US 301 over Fishing Creek and Fishing Creek Overflow in Edgecombe and Halifax counties, due to anadromous fish spawning from March 1 to June 30. Additionally, culverts should be avoided at these crossings and replaced only with spanning type structures.

B-3466 No restrictions or requirements for this bridge replacement.

B-3467 Total moratoriums should be in place on bridge no's 40 and 45 due to anadromous fish spawning from March 1 to June 30. Additionally, culverts should be avoided at these crossing and replaced only with spanning type structures.

B-3468 No restrictions or requirements for this structure.

If I can be of any further assistance please feel free to contact me.

Sincerely

T. Wayne Jones

T. Wayne Jones
D-3 Fisheries Biologist
N.C. Wildlife Resources Commission
5044 Sapony Creek Drive
Nashville, NC, 27856

Harris

State of North Carolina
Department of Environment
and Natural Resources
Division of Water Quality

James B. Hunt, Jr., Governor
Bill Holman, Secretary
Kerr T. Stevens, Director

NCDENR

February 3, 2000

MEMORANDUM

To: William D. Gilmore, P.E., Manager, NCDOT, Project Development & Environmental Analysis

From: John Hennessy, NC Division of Water Quality

Subject: Scoping comments on the proposed replacement of Bridge Nos. 40 and 45 on SR 1003 over Beech Swamp in Halifax County, T.I.P. B-3467.

This memo is in reference to your correspondence dated October 29, 1999, in which you requested scoping comments for the referenced project. Preliminary analysis of the project reveals that the proposed bridge will span the Beech Swamp in the Tar-Pamlico River Basin. The DWQ stream index number is 28-79-30 and the stream is classified as C Swamp Nutrient Sensitive Waters. The Division of Water Quality requests that NCDOT consider the following environmental issues for the proposed project:

A. There should be a discussion on mitigation plans for unavoidable impacts. If mitigation is required, it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. While the NCDWQ realizes that this may not always be practical, it should be noted that for projects requiring mitigation, appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.

B. When practical, the DWQ requests that bridges be replaced on the existing location with road closure. If a detour proves necessary, remediation measures in accordance with the NCDWQ requirements for General 401 Certification 2726/Nationwide Permit No. 33 (Temporary Construction, Access and Dewatering) must be followed.

C. If applicable, DOT should not install the bridge bents in the creek, to the maximum extent practicable.

D. Wetland and stream impacts should be avoided (including sediment and erosion control structures/measures) to the maximum extent practical. If this is not possible, alternatives that minimize wetland impacts should be chosen. Mitigation for unavoidable impacts will be required by DWQ for impacts to wetlands in excess of one acre and/or to streams in excess of 150 linear feet.

E. Borrow/waste areas should not be located in wetlands. It is likely that compensatory mitigation will be required if wetlands are impacted by waste or borrow.

F. DWQ prefers replacement of bridges with bridges. However, if the new structure is to be a culvert, it should be countersunk to allow unimpeded fish and other aquatic organisms passage through the crossing.

G. If foundation test borings are necessary; it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3027/Nationwide Permit No. 6 for Survey Activities.

H. In accordance with the NCDWQ Wetlands Rules {15A NCAC 2H.0506(b)(6)}, mitigation will be required for impacts of greater than 150 linear feet to any single perennial stream. In the event that mitigation becomes required, the mitigation plan should be designed to replace appropriate lost functions and values. In accordance with the NCDWQ Wetlands Rules {15A NCAC 2H.0506 (h)(3)}, the Wetland Restoration Program may be available for use as stream mitigation.

I. Sediment and erosion control measures should not be placed in wetlands.

J. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into the creek. Instead, stormwater should be designed to drain to a properly designed stormwater detention facility/apparatus.

K. While the use of National Wetland Inventory (NWI) maps and soil surveys is a useful office tool, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.

Thank you for requesting our input at this time. The DOT is reminded that issuance of a 401 Water Quality Certification requires that appropriate measures be instituted to ensure that water quality standards are met and designated uses are not degraded or lost. If you have any questions or require additional information, please contact John Hennessy at (919) 733.5694.

Pc: Eric Alsmeyer, Corps of Engineers
Mark Cantrell, USFWS
David Cox, NCWRC
File Copy
Central Files

Office of the Director of Transportation

Telephone: (252) 583-2381

November 9, 1999

Ms. Stacy Harris, PE
Project Development and
Environment Analysis Branch
Department of Transportation
PO Box 25201
Raleigh, NC 27611-5201

Ms. Harris,

I am writing in reference to your letter of October 29, 1999, concerning replacement of bridges in Halifax County. I have researched the information that you have provided and determined the following:

B-3453 Bridge No. 23 & No. 17 Total buses daily 0
Comments: Closing of these two bridges will not affect our ability to transport students to and from school.

B-3466 Bridge No. 128 Total buses daily 4 (twice daily)
Comments: Closing of this bridge will cause an increase in route time for buses if closed during the school year. There is the possibility of detouring buses around on SR 1222. Please notify my office as early as possible if the replacement is to be conducted during the months of August thru May.

B-3467 Bridge No. 40 Total buses daily 3 (twice daily)
Comments: Closing of this bridge will cause a major increase in route time for buses if closed during the school year. Students will most likely have to be reassigned to different buses due to the length of the nearest detour. Please notify my office as early as possible if the replacement is to be conducted during the months of August thru May.

B-3468 Bridge No. 85 Total buses daily 4 (twice daily)
Comments: Closing of this bridge will cause an increase in route time for buses if closed during the school year. There is the possibility of detouring buses around on SR 1513. Please notify my office as early as possible if the replacement is to be conducted during the months of August thru May.

PO Box 431 Halifax, North Carolina 27839 Fax No: (252) 583-2303

Thank you for the opportunity to provide input on this analysis. I hope that it will be helpful in developing the best possible plan that will complete the necessary replacements, but not disrupt the flow of transportation for the school year. If I can be of any farther assistance please contact me.

Eric Locklear

Director of Transportation
Halifax County Schools

EL

PC: Charles Chambliss
File

Halifax County
Planning & Development Services
PO Box 69 - 26 North King Street, Halifax, NC 27839
(252) 583-1082 Planning & Zoning (252) 583-4891 Building Inspections
(252) 583-2288 E911 Addressing (252) 583-2735 Fax

November 18, 1999

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

Dear Ms. Harris:

The purpose of this letter is to submit comments concerning four (4) bridge replacement projects in Halifax County as part of the 2000-2006 Transportation Improvement Program (TIP). The following are detailed comments for each replacement project:

(1) Project B-3453 – Replace bridge No. 23 and No. 17 on US 301 over Fishing Creek and Fishing Creek Overflow. Halifax County's position on this project is replacement of the bridge with a new bridge on the existing alignment, maintaining traffic with an on-site temporary detour during construction. This section of US 301 has a traffic count of approximately 5000 vehicles per day. US 301 is a major transportation route for delivery trucks. The county feels that the proposed off-site detour of approximately 12 miles would be an inordinate burden on traffic.

(2) Project B-3466 – Replace bridge No. 128 on S.R. 1002 over Branch Jacket Swamp. Halifax County's position on this project is replacement of the bridge with a new bridge on the existing alignment, maintaining traffic with an off-site detour (road closure) during construction. Although no traffic count data is available for that particular route, the proposed off-site detour of approximately 6 miles does not appear to cause any significant traffic delays.

(3) Project B-3467 – Replace bridge No. 40 on S.R. 1003 over Beech Swamp. Halifax County's position on this project is replacement of the bridge with a new bridge on the existing alignment, maintaining traffic with an on-site temporary detour during construction. Although no traffic count data is available for that particular route the county feels that the proposed off-site detour of approximately 10 miles would cause a significant burden on traffic.

(4) Project B-3468 – Replace bridge No. 85 on S.R. 1426 over Chochoyotte Creek. Halifax County's position on this project is replacement of the bridge with a new bridge on the existing alignment, maintaining traffic with an off-site detour (road closure) during construction. Although no traffic count data is available for that particular route, the proposed off-site detour of approximately 1.5 miles does not appear to cause any significant traffic delays.

The four listed projects are all beneficial to Halifax County. Considering the age of each bridge and the fact that all of the bridges were overflowed with floodwater from Hurricane Floyd, it is crucial to have the bridges replaced before they begin to show any structural weaknesses.

If you have any questions, please contact me at (252) 583-1082. Thank you for this opportunity to express our comments and concerns related to these projects.

Sincerely,

Brian W. Matthews

Brian W. Matthews, Director
Planning & Development Services

cc: Charles Archer, County Manager

WETLAND RATING WORKSHEET - Fourth Version

Project Name B-3467, Bridges 40/45, Beech Swamp Nearest Road SR 1003
County Halifax Wetland Area _____ acres Wetland Width ≥ 100 feet
Name of evaluator L. Warlick Date 11-10-99

Wetland Location

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

Soil series Chastain and Bibb

_____ predominantly organic - humus, muck, or peat
__X__ predominantly mineral - non-sandy
_____ predominantly sandy

Hydraulic factors

_____ steep topography
_____ ditched or channelized
__X__ total wetland width ≥100 feet

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

_____ forested/natural vegetation 80 %
_____ agriculture, urban/suburban 18 %
_____ impervious surface 2 %

Dominant vegetation

(1) *Quercus phellos*
(2) *Nyssa aquatica*
(3) *Taxodium distichum*

Flooding and wetness

_____ semipermanently to permanently flooded or inundated
__X__ seasonally flooded or inundated
_____ intermittently flooded or temporary surface water
_____ no evidence of flooding or surface water

Wetland type (select one)*

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

RATING

		weight	
Water Storage	4	x 4.00 =	16
Bank/Shoreline stabilization	2	x 4.00 =	8
Pollutant removal	1	x 5.00 =	5
Wildlife habitat	4	x 2.00 =	8
Aquatic life value	5	x 4.00 =	20
Recreation/Education	3	x 1.00 =	3
Economic value	_____	x .50=	_____

Wetland Score: 60

WETLAND RATING WORKSHEET - Fourth Version

Project Name B-3467, Bridges 40/45, Beech Swamp Nearest Road SR 1003
County Halifax Wetland Area _____ acres Wetland Width ≥ 100 feet
Name of evaluator L. Warlick Date 11-10-99

Wetland Location

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

Soil series Chastain and Bibb

_____ predominantly organic - humus, muck, or peat
__X__ predominantly mineral - non-sandy
_____ predominantly sandy

Hydraulic factors

_____ steep topography
_____ ditched or channelized
__X__ total wetland width ≥ 100 feet

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

_____ forested/natural vegetation 80 %
_____ agriculture, urban/suburban 18 %
_____ impervious surface 2 %

Dominant vegetation

(1) *Quercus phellos*
(2) *Quercus nigra*
(3) *Pinus taeda*

Flooding and wetness

_____ semipermanently to permanently flooded or inundated
__X__ seasonally flooded or inundated
_____ intermittently flooded or temporary surface water
_____ no evidence of flooding or surface water

Wetland type (select one)*

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

RATING

		weight	
Water Storage	3	x 4.00 =	12
Bank/Shoreline stabilization	0	x 4.00 =	0
Pollutant removal	1	x 5.00 =	5
Wildlife habitat	1	x 2.00 =	2
Aquatic life value	4	x 4.00 =	16
Recreation/Education	2	x 1.00 =	2
Economic value		x .50=	

Wetland Score: 37

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineation Manual)

Project/Site:	B-3467	**Project No:**	**Date:** 10-Nov-1999
Applicant/Owner:	NCDOT		**County:** Halifax
Investigators:	L. Warlick/J. Brooks		**State:** North Carolina
			Plot ID: 1

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** CP Bottomland Hardwoods
Is the site significantly disturbed (Atypical Situation:)?	Yes (No)	**Transect ID:**
Is the area a potential Problem Area?	Yes (No)	**Field Location:**
(If needed, explain on the reverse side)		

VEGETATION **(USFWS Region No. 2)**

Dominant Plant Species(Latin/Common)	Stratum	Indicator	Plant Species(Latin/Common)	Stratum	Indicator
Quercus michauxii Oak,Swamp Chestnut	Tree	FACW-	*Acer rubrum* Maple,Red	Shrub	FAC
Quercus phellos Oak,Willow	Tree	FACW-	*Taxodium distichum* Cypress,Bald	Tree	OBL
Quercus nigra Oak,Water	Tree	FAC	*Arundinaria gigantea* Cane,Giant	Herb	FACW
Liquidambar styraciflua Gum,Sweet	Tree	FAC+	*Cephalanthus occidentalis* Buttonbush,Common	Shrub	OBL
Acer rubrum Maple,Red	Tree	FAC	*Pinus taeda* Pine,Loblolly	Tree	FAC

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 10/10 = 100.00%

FAC Neutral: 5/5 = 100.00%

Numeric Index: 23/10 = 2.30

Remarks:

HYDROLOGY

NO **Recorded Data(Describe in Remarks):**
- N/A **Stream, Lake or Tide Gauge**
- N/A **Aerial Photographs**
- N/A **Other**

YES **No Recorded Data**

Field Observations

Depth of Surface Water:	N/A *(in.)*
Depth to Free Water in Pit:	N/A *(in.)*
Depth to Saturated Soil:	= 2 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- NO **Water Marks**
- NO **Drift Lines**
- NO **Sediment Deposits**
- YES **Drainage Patterns in Wetlands**

Secondary Indicators
- NO **Oxidized Root Channels in Upper 12 Inches**
- YES **Water-Stained Leaves**
- NO **Local Soil Survey Data**
- YES **FAC-Neutral Test**
- NO **Other(Explain in Remarks)**

Remarks:

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

Project/Site: B-3467	**Project No:**	**Date:** 10-Nov-1999
Applicant/Owner: NCDOT		**County:** Halifax
Investigators: L. Warlick/J. Brooks		**State:** North Carolina
		Plot ID: 1

SOILS

Map Unit Name (Series and Phase): Chastain and Bibb
Map Symbol: Cba **Drainage Class:** Poorly drained **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): Typic Fluvaquent **Field Observations Confirm Mapped Type?** Yes (No)
Profile Description

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast		Texture, Concretions, Structure, etc
0-8	A	10YR4/1	7.5YR5/8	Few	N/A	Loam
8-16	B	10YR7/1	10YR6/8	Common	N/A	Sandy loam

Hydric Soil Indicators:

- NO **Histosol**
- NO **Histic Epipedon**
- NO **Sulfidic Odor**
- YES **Aquic Moisture Regime**
- NO **Reducing Conditions**
- YES **Gleyed or Low Chroma Colors**
- NO **Concretions**
- NO **High Organic Content in Surface Layer in Sandy Soils**
- NO **Organic Streaking in Sandy Soils**
- YES **Listed on Local Hydric Soils List**
- YES **Listed on National Hydric Soils List**
- NO **Other (Explain in Remarks)**

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No	Is the Sampling Point within the Wetland? (Yes) No
Wetland Hydrology Present?	(Yes)	No	
Hydric Soils Present?	(Yes)	No	

Remarks:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 16, 2004

Mr. William D. Gilmore, P.E.
EEP Transition Manager
Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699-1652

Attn: Mr. James Stanfill

Dear Sir:

Subject: Proposed replacement of Bridge Nos. 40 and 45 on SR 1003 (Thirteen Bridges Road) over beech swamp, Halifax County. Highway Division 4. Federal Aid Project No. BRSTP-1003(23), State Project No. 8.2301201, TIP Project No. B-3467.

The purpose of this letter is to request that the North Carolina Ecosystem Enhancement Program (EEP) grant confirmation that you are willing to provide compensatory mitigation for the project in accordance with the Memorandum of Agreement (MOA) signed July 22, 2003 by the USACE, the NCDENR and the NCDOT.

NCDOT proposes to replace existing Bridge Nos. 40 and 45 on SR 1003 over Beech Swamp (DWQ Index # 28-79-30, Class "C Sw NSW") in Halifax County. The project involves replacing Bridge No. 40 on a new alignment while replacing Bridge No. 45 on the existing alignment.

RESOURCES UNDER THE JURISDICTION OF SECTION 404 AND 401 OF THE CLEAN WATER ACT.

We have avoided and minimized the impacts to jurisdictional resources to the greatest extent possible as described in the permit application. The remaining impacts to jurisdictional resources will be compensated for by mitigation provided by the EEP program. We estimate that permanent wetland impacts associated with the replacement bridge approach work will be 1.75 acres (which consists of 1.04 acres of fill, .04 acre of excavation, and 0.67 acre of mechanized clearing).

The project is located in the Coastal Plain Physiographic Province (Norther Inner Coastal Plain EEP Ecoregion) in Halifax County, in the Tar-Pamlico River basin in Hydrological Cataloguing Unit TAR4 03020102. The wetlands impacted are non-riverine, cyprus-gum wetlands. We propose to provide compensatory mitigation for the wetland impacts by using the EEP for the 1.75 acres of impacts.

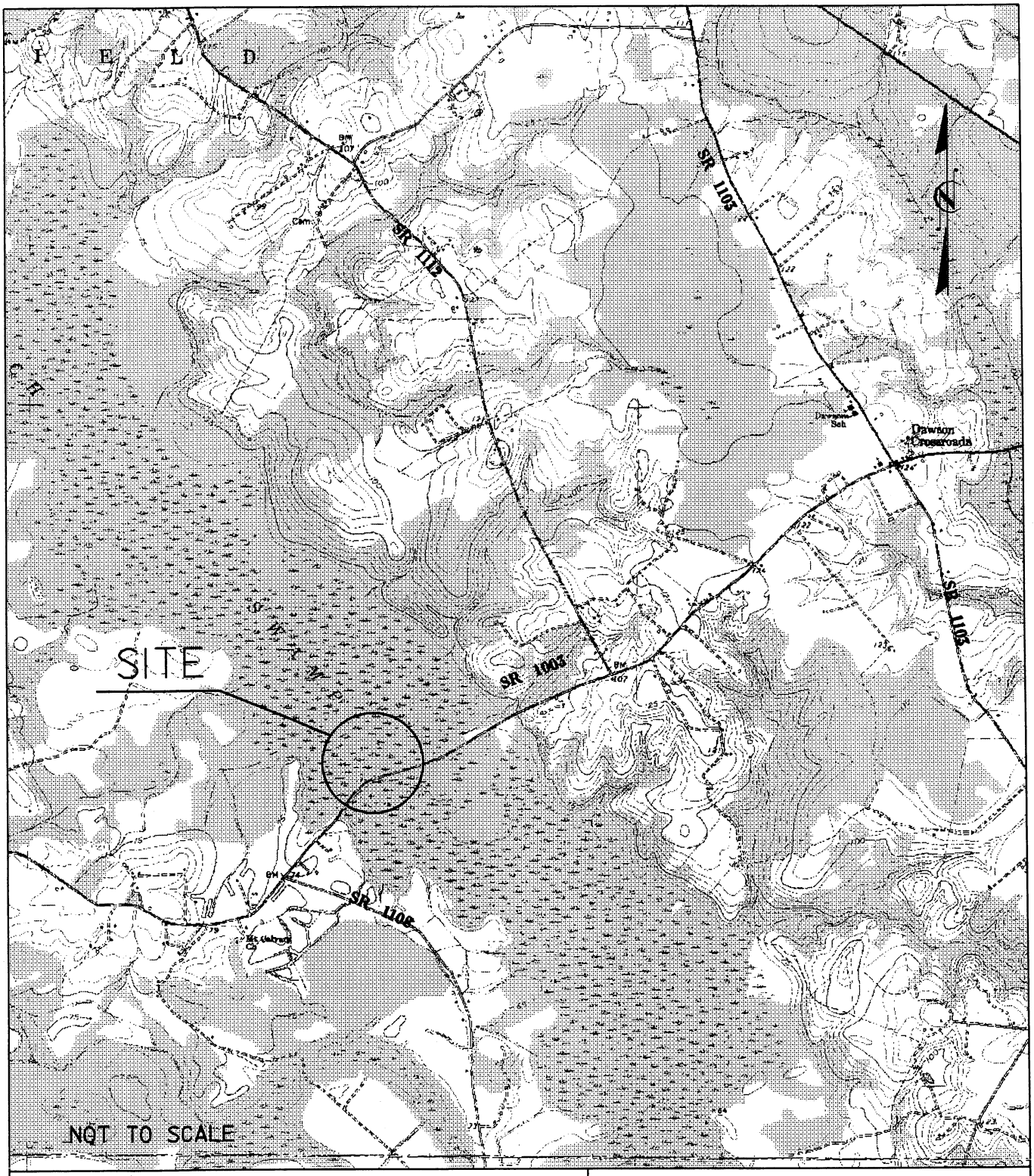
Please send the letter of confirmation to Mr. Michael Bell (USACE Coordinator) at U. S. Army Corps of Engineers Washington Regulatory Field Office, P.O. Box 1000, Washington, NC 27889-1000. Mr. Bell's FAX number is (252) 975-1399. The current let date for the project is September 21, 2004 for which the let review date is August 3, 2004.

If you have any questions or need additional information, please contact Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439.

Sincerely,

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

cc:
Mr. John Hennessy, Division of Water Quality (7 copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, III, FHWA
Mr. M. L. Holder, P.E., Division Engineer
Ms. Trish Simon, DEO
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)



LOCATION MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45
OVER BEECH SWAMP ON SR 1003

SHEET OF 03/26/03

WETLAND LEGEND

WLB — WETLAND BOUNDARY

WETLAND

DENOTES FILL IN WETLAND

DENOTES FILL IN SURFACE WATER

DENOTES FILL IN SURFACE WATER (POND)

DENOTES TEMPORARY FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

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

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE

LEVEL SPREADER (LS)

DITCH / GRASS SWALE

NCDOT

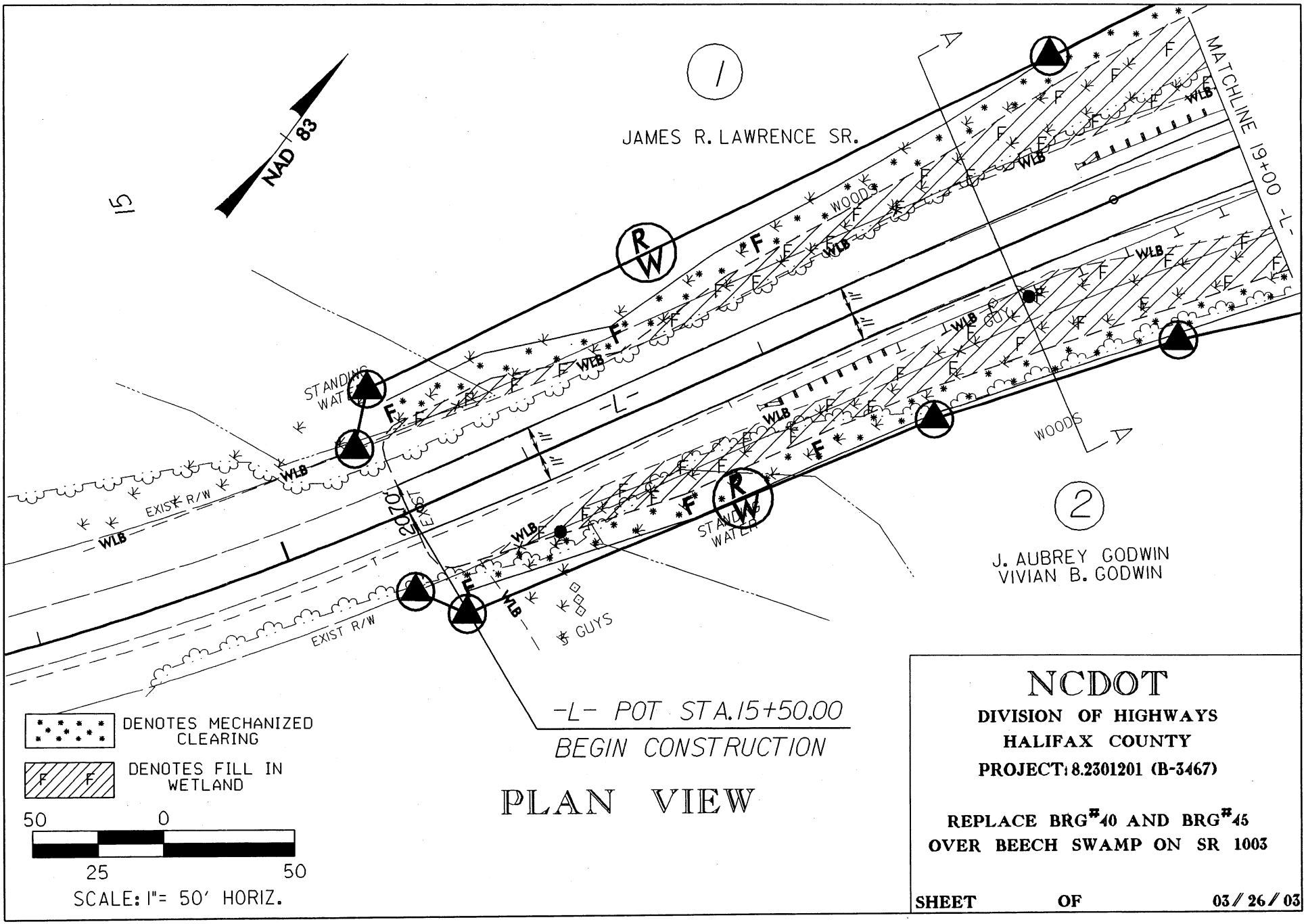
DIVISION OF HIGHWAYS

HALIFAX COUNTY

PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45 OVER BEECH SWAMP ON SR 1003

SHEET **OF** **03/26/03**



PLAN VIEW

NCDOT

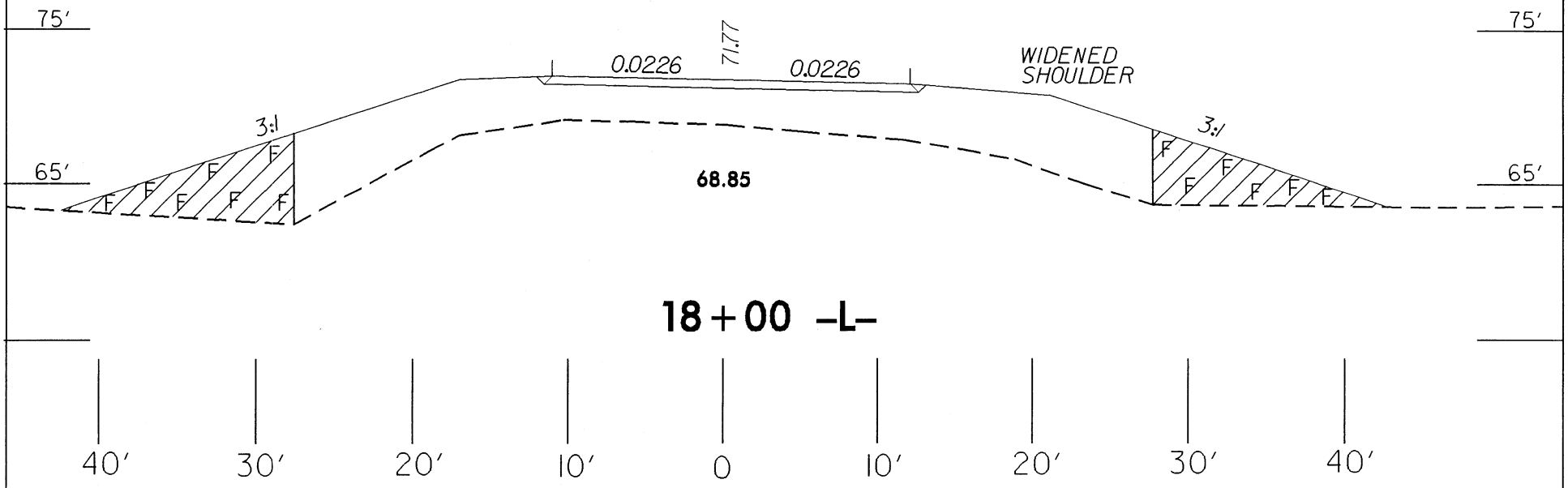
DIVISION OF HIGHWAYS

HALIFAX COUNTY

PROJECT: 8.2301201 (B-3467)

REPLACE BRG# 40 AND BRG# 45 OVER BEECH SWAMP ON SR 1003

SHEET **OF** **03/26/03**



F F DENOTES FILL IN WETLAND

SECTION A-A

10 0 5 10
SCALE: 1"= 10' VERT.

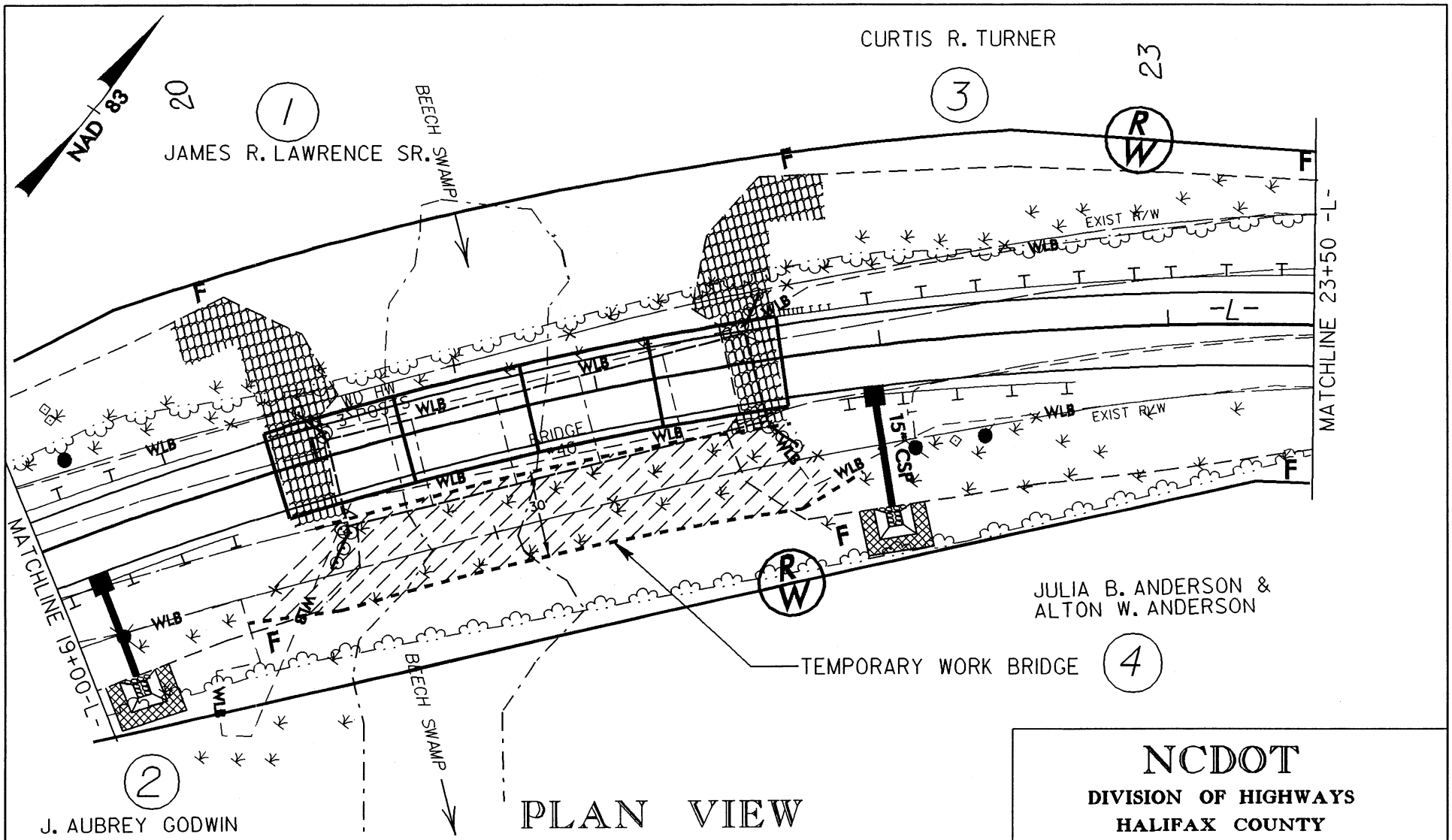
10 0 5 10
SCALE: 1"= 10' HORIZ.

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG# 40 AND BRG# 45 OVER BEECH SWAMP ON SR 1003

SHEET **OF** **03 / 26 / 03**



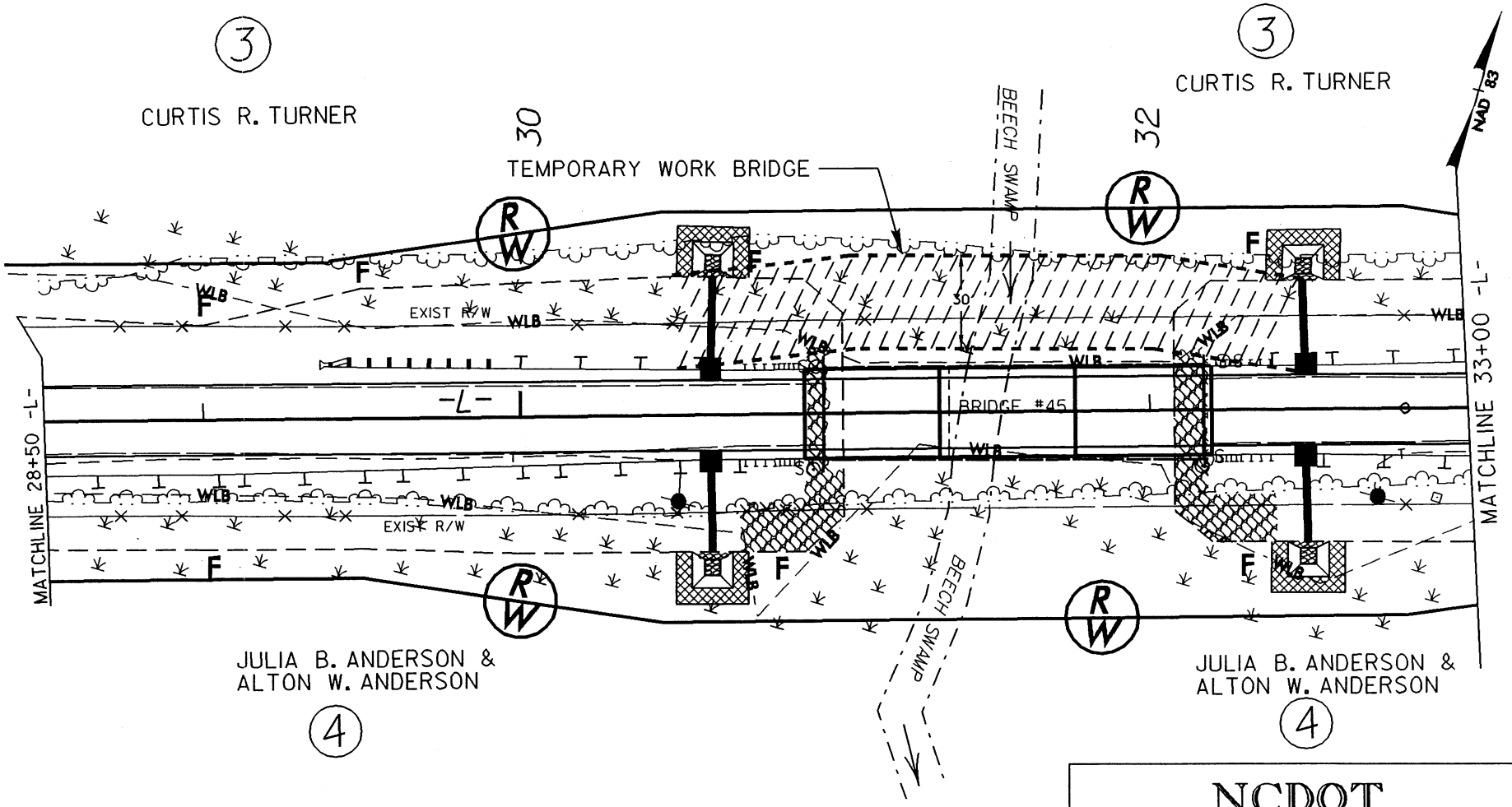
PLAN VIEW

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG# 40 AND BRG# 45
OVER BEECH SWAMP ON SR 1003

SHEET **OF** **01 / 22 / 04**



PLAN VIEW

50 0 25 50

SCALE: 1"= 50' HORIZ.

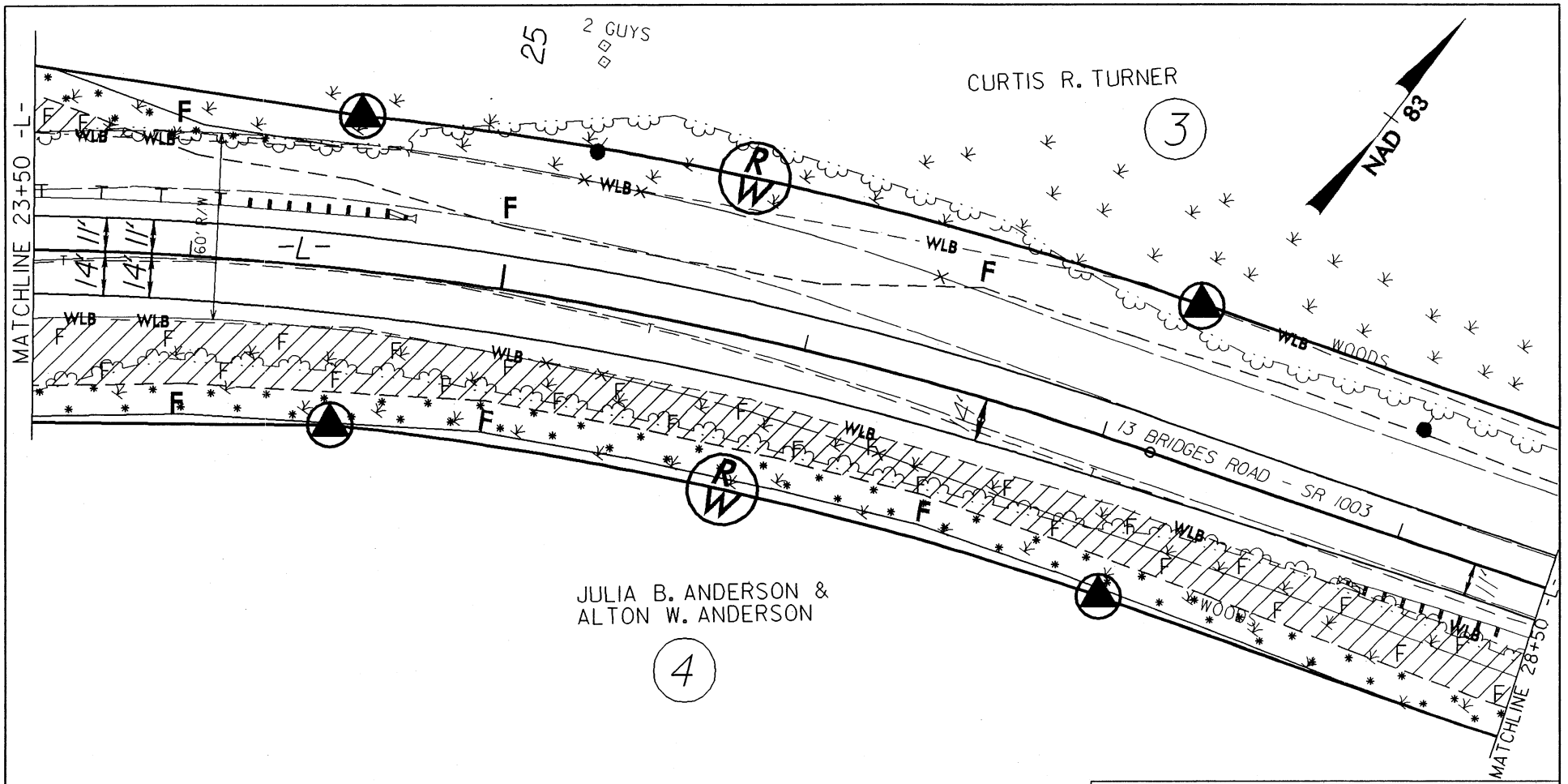
TEMPORARY WORK BRIDGE

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG# 40 AND BRG# 45
OVER BEECH SWAMP ON SR 1003

SHEET **OF** **01/22/04**



DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

50 0 25 50

SCALE: 1"= 50' HORIZ.

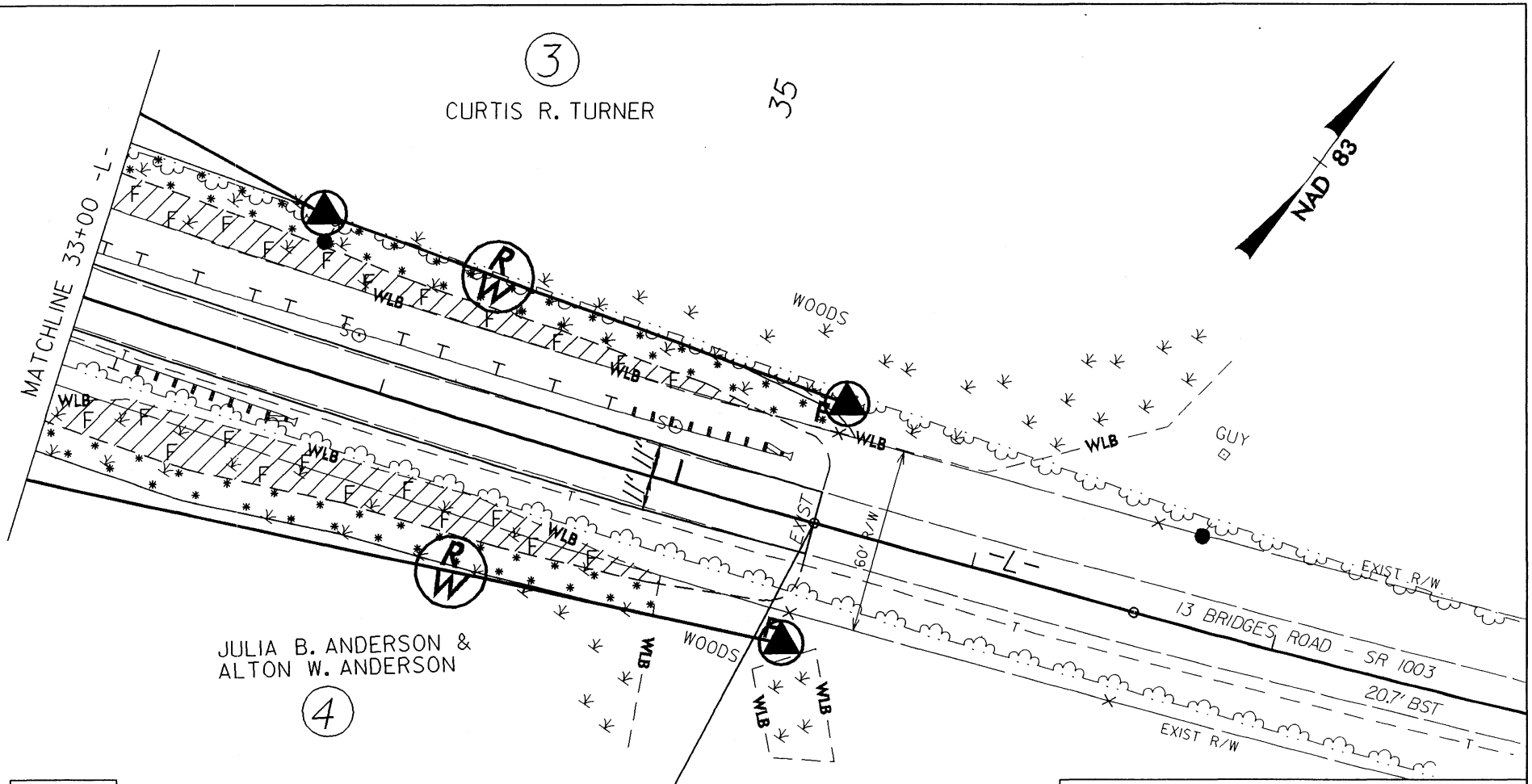
PLAN VIEW

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG# 40 AND BRG# 45
OVER BEECH SWAMP ON SR 1003

SHEET **OF** **03 / 26 / 03**



PLAN VIEW

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45
OVER BEECH SWAMP ON SR 1003

SHEET **OF** **03/26/03**

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation In Wetlands (ac)	Mechanized Clearing (Method III) (ac)	Fill In SW (Natural) (ac)	Fill In SW (Pond) (ac)	Temp. Fill In SW (ac)	Existing Channel Impacted (ft)	Natural Stream Design (ft)
1	15+50-35+50-L-	#40- 4@45', 36" Prestressed	1.04	0	0.04	0.67	0	0	0.001	0	0
		O.A.L.- 180'									
		#45- 3@43', 36"Prestressed									
		O.A.L.- 129'									
TOTALS:			1.04	0	0.04	0.67	0	0	0.001	0	0

Form Revised 3/22/01

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT 8.2301201 (B-3467)

BRIDGE#40 AND #45 OVER BEECH SWAMP ON SR 1003

SHEET OF 3/26/03

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	JAMES R. LAWERENCE SR.	107 NELSON DR. ROANOKE RAPIDS, N.C. 27870
2	J. AUBREY GODWIN	3201 TILGHMAN RD. WILSON, N.C. 27893
3	C.R. TURNER JR.	6 LONG STREET RD. WELDON, N.C. 27890
4	JULIA B. ANDERSON	200 RAILROAD STREET ENFIELD, N.C. 27823

NCDOT

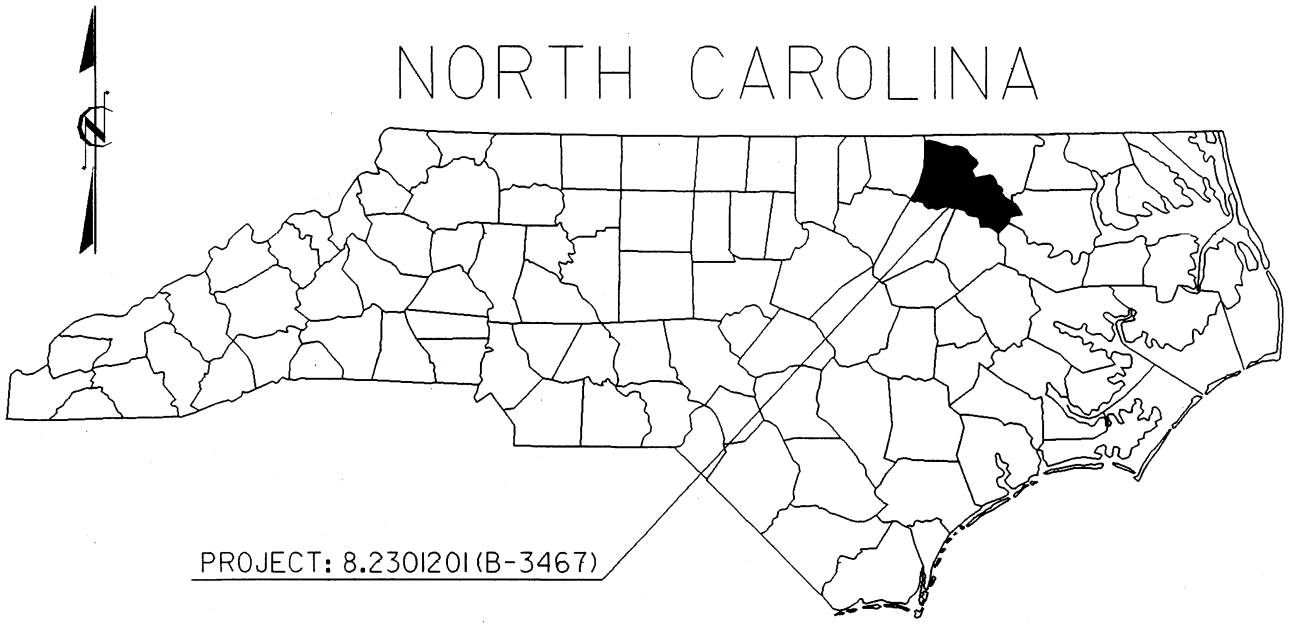
DIVISION OF HIGHWAYS

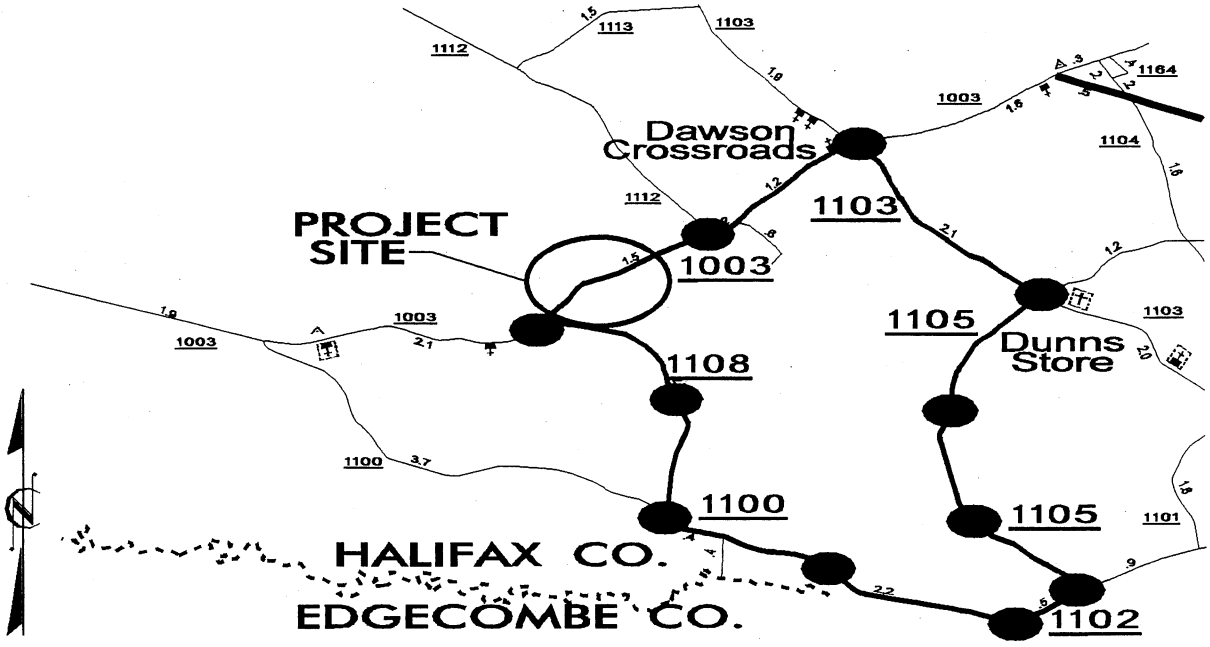
HALIFAX COUNTY

PROJECT: 8.2301201 (B-3467)

REPLACE BRG. #40 AND BRG. #45
OVER BEECH SWAMP ON SR 1003

SHEET OF 03/26/03





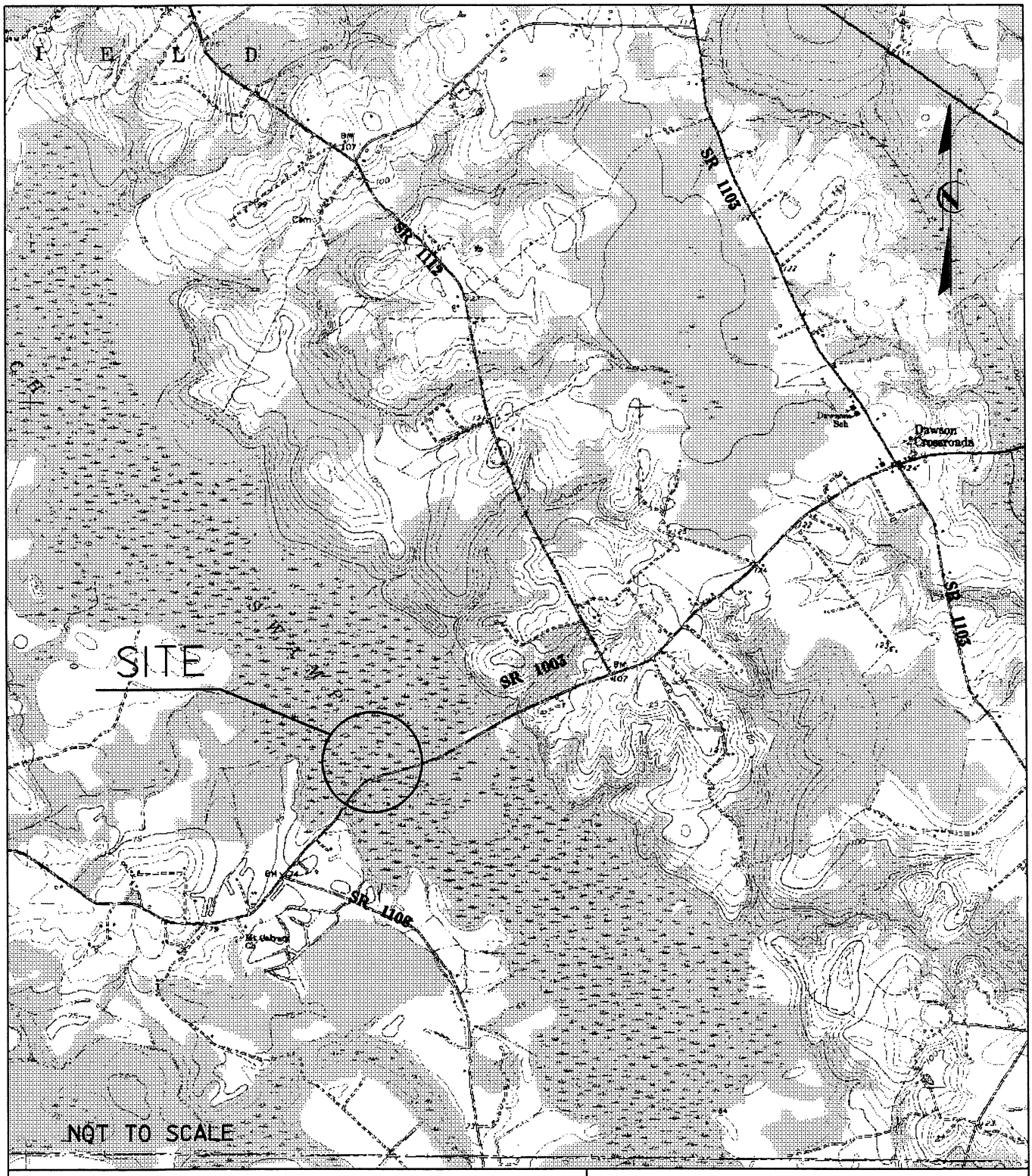
VICINITY MAPS

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45 OVER BEECH SWAMP ON SR 1003

SHEET 1 **OF** 7 **03/27/03**



LOCATION MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45
OVER BEECH SWAMP ON SR 1003

SHEET 2 OF 7 03/26/03

BUFFER LEGEND

WLB — WETLAND BOUNDARY

WETLAND

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

MITIGABLE IMPACTS ZONE 1

MITIGABLE IMPACTS ZONE 2

BZ — RIPARIAN BUFFER ZONE

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

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

FLOW DIRECTION

TB — TOP OF BANK

WE — EDGE OF WATER

C — PROP. LIMIT OF CUT

F — PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG — NATURAL GROUND

PL — PROPERTY LINE

TDE — TEMP. DRAINAGE EASEMENT

PDE — PERMANENT DRAINAGE EASEMENT

EAB — EXIST. ENDANGERED ANIMAL BOUNDARY

EPB — EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

CORE FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

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

(DASHED LINES DENOTE EXISTNG STRUCTURES)

SINGLE TREE

WOODS LINE

DRAINAGE INLET

ROOTWAD

RIP RAP

5 — ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

PREFORMED SCOUR HOLE (PSH)

LEVEL SPREADER (LS)

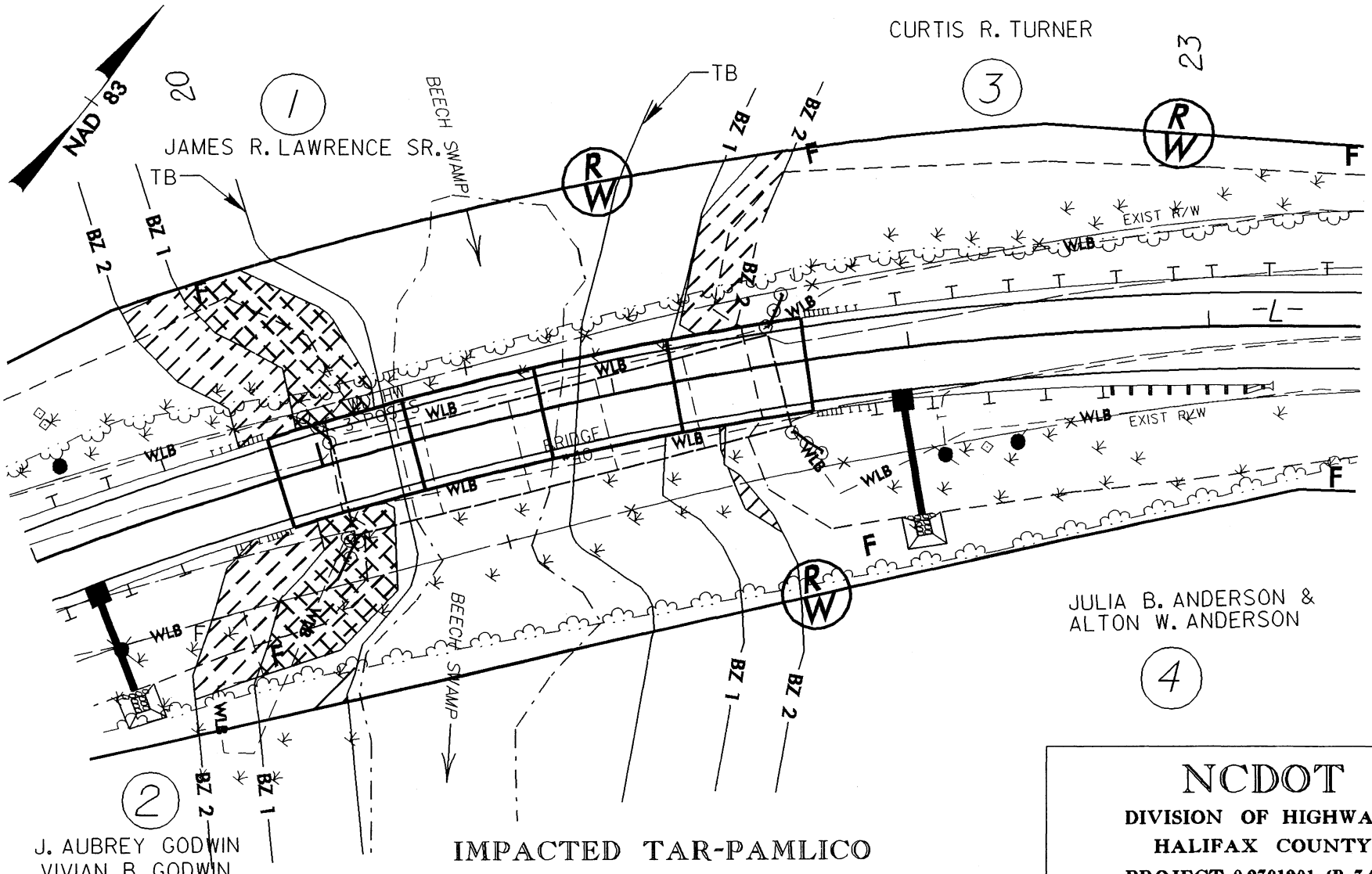
GRASS SWALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HALIFAX COUNTY

PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45
OVER BEECH SWAMP ON SR 1003

SHEET 3 OF 7 03/27/03



IMPACTED TAR-PAMLICO BUFFER ZONES

ZONE ONE IMPACTS

ZONE TWO IMPACTS

50 0 25 50

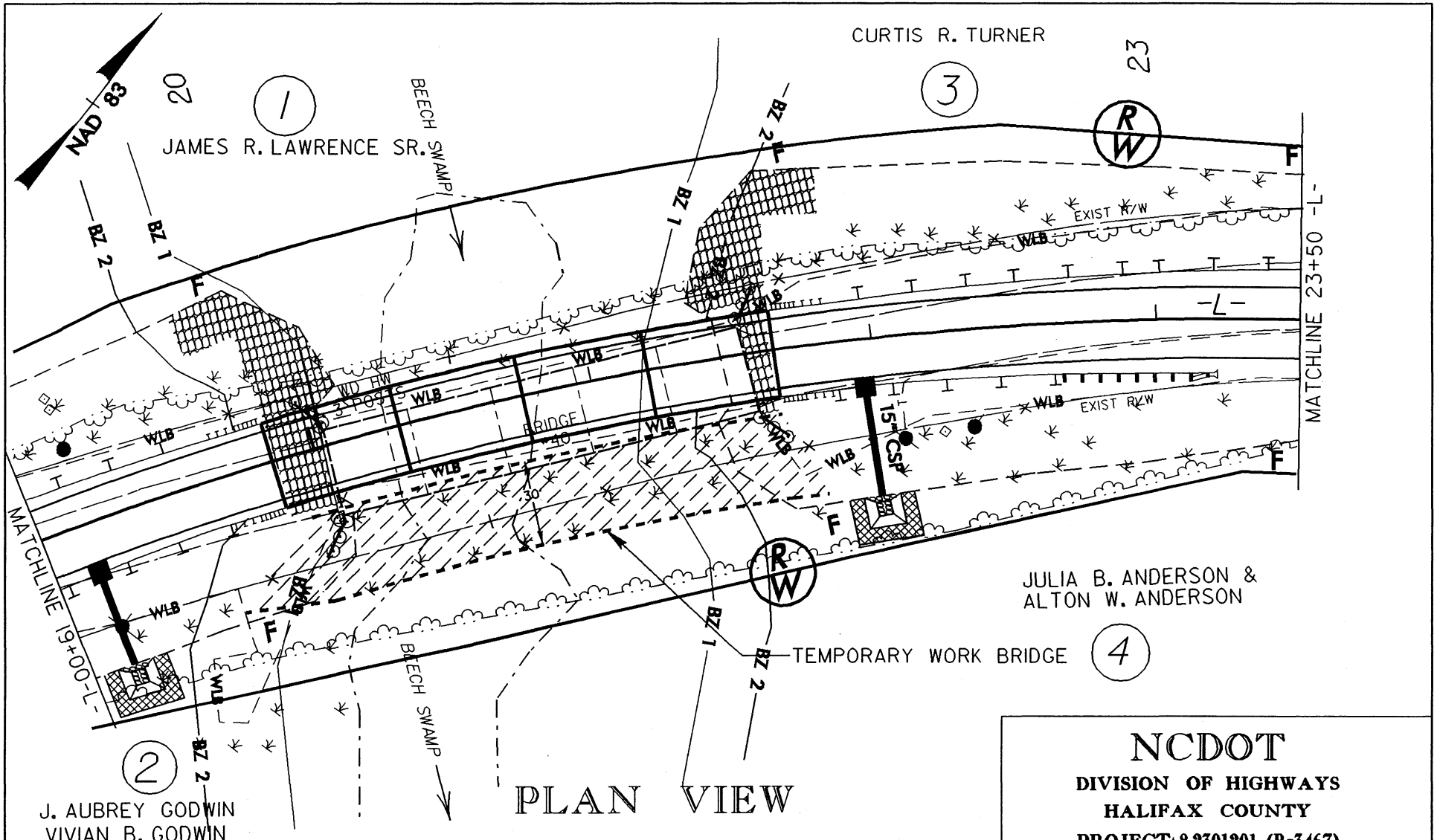
SCALE: 1"= 50' HORIZ.

NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND BRG#45 OVER BEECH SWAMP ON SR 1003

SHEET 4 **OF** 8 **03 / 27 / 03**



NCDOT

DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG# 40 AND BRG# 45
OVER BEECH SWAMP ON SR 1003

SHEET 5 **OF** 7 **01/22/04**

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	Bridge	19+75-21+45-L-	X		3023.0	3659.0	6682.0	0.0	0.0	0.0	0.0	0.0
	4@45', 36"											
	Prestressed											
	O.A.L.-180'											
TOTAL:					3023.0	3659.0	6682.0	0.0	0.0	0.0		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
HALIFAX COUNTY
PROJECT: 8.2301201 (B-3467)

REPLACE BRG#40 AND #45 OVER
BEECH SWAMP ON SR 1003

SHEET 6 OF 7 03/26/03

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	JAMES R. LAWERENCE SR.	107 NELSON DR. ROANOKE RAPIDS, N.C. 27870
2	J. AUBREY GODWIN	3201 TILGHMAN RD. WILSON, N.C. 27893
3	C.R. TURNER JR.	6 LONG STREET RD. WELDON, N.C. 27890
4	JULIA B. ANDERSON	200 RAILROAD STREET ENFIELD, N.C. 27823

NCDOT

DIVISION OF HIGHWAYS

HALIFAX COUNTY

PROJECT: 8.2301201 (B-3467)

REPLACE BRG. #40 AND BRG. #45
OVER BEECH SWAMP ON SR 1003

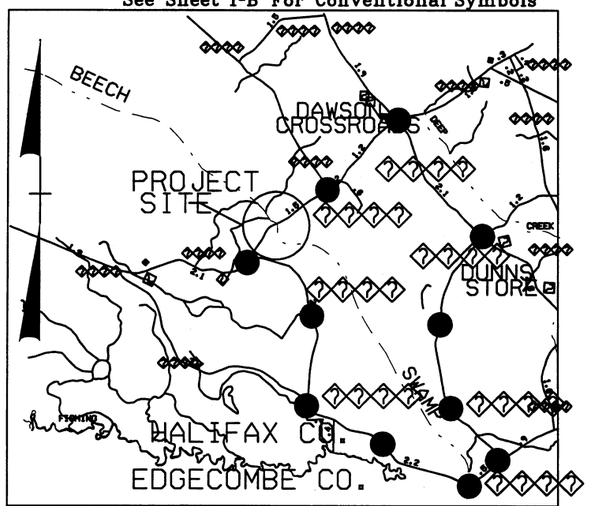
SHEET 7 OF 7 03/11/03

09/08/99

CONTRACT : TIP PROJECT : B-3467

$$$$USERNAME$$$$

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



VICINITY MAP

OFFSITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

HALIFAX COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3467	1	

STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION
33086.1.1	BRSTP-1003(23)	PE
33086.2.1	BRSTP-1003(23)	R/W & UTILITIES
33086.3.1	BRSTP-1003(23)	CONST

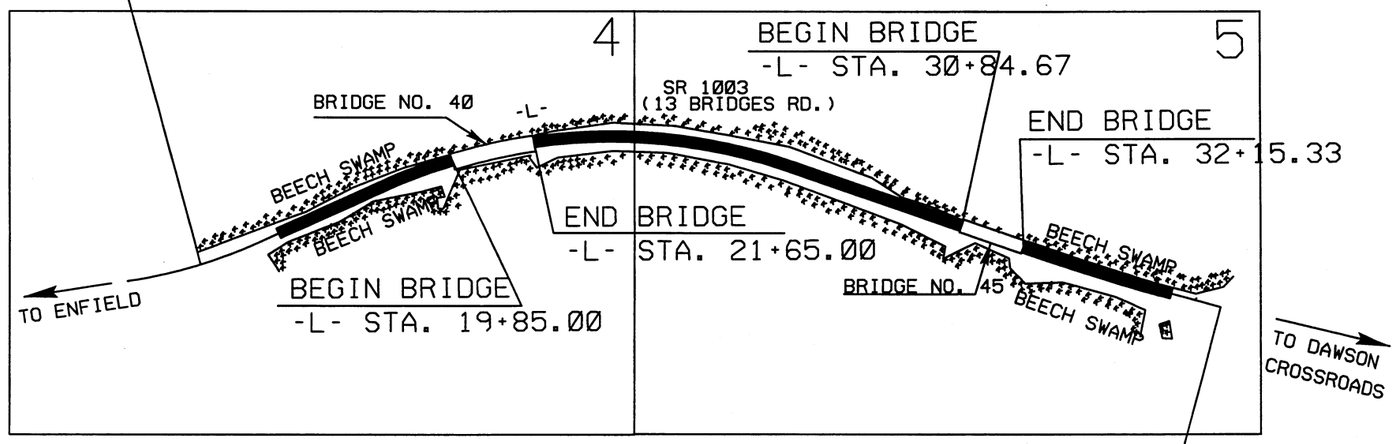
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

LOCATION: BRIDGE NOS. 40 AND 45 OVER BEECH SWAMP
ON SR 1003 (13 BRIDGES ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURES

NAD 83

STA. 13+52.58 -L- BEGIN TIP PROJECT B-3467



STA 36+54.28 -L- END TIP PROJECT B-3467

★DESIGN EXCEPTION FOR HORIZONTAL STOPPING SIGHT DISTANCE REQUIRED

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

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2004- 956
ADT 2024- 1474
DHV - 10 %
D - 60 %
T - 3 % *
V - 55 MPH ★

* TTST 1% DUAL 2%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3467 = 0.377 MI
LENGTH STRUCTURE TIP PROJECT B-3467 = 0.059 MI
TOTAL LENGTH OF TIP PROJECT B-3467 = 0.436 MI

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 BIRCH RIDGE DR., NC. 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 21, 2003

LETTING DATE: SEPTEMBER 21, 2004

GARY LOVERING, PE
PROJECT ENGINEER

ANTHONY C. WEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-3467	L-B

*S.U.E - SUBSURFACE UTILITY ENGINEER

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

EDGE OF PAVEMENT
CURB
PROP. SLOPE STAKES CUT (C)
PROP. SLOPE STAKES FILL (F)
PROP. WOVEN WIRE FENCE
PROP. CHAIN LINK FENCE
PROP. BARBED WIRE FENCE
PROP. WHEELCHAIR RAMP (WCR)
CURB CUT FOR FUTURE WHEELCHAIR RAMP (WCR)
EXIST. GUARDRAIL
PROP. GUARDRAIL
EQUALITY SYMBOL
PAVEMENT REMOVAL

RIGHT OF WAY

BASELINE CONTROL POINT
EXISTING RIGHT OF WAY MARKER
EXIST. RIGHT OF WAY LINE W/MARKER
PROP. RIGHT OF WAY LINE WITH PROPOSED R/W MARKER (IRON PIN & CAP)
PROP. RIGHT OF WAY LINE WITH PROPOSED (CONCRETE OR GRANITE) R/W MARKER
EXIST. CONTROL OF ACCESS LINE
PROP. CONTROL OF ACCESS LINE
EXIST. EASEMENT LINE (E)
PROP. TEMP. CONSTRUCTION EASEMENT LINE (E)
PROP. TEMP. DRAINAGE EASEMENT LINE (TDE)
PROP. PERM. DRAINAGE EASEMENT LINE (PDE)

HYDROLOGY

STREAM OR BODY OF WATER
RIVER BASIN BUFFER (RBB)
FLOW ARROW
DISAPPEARING STREAM
SPRING
SWAMP MARSH
SHORELINE
FALLS, RAPIDS
PROP LATERAL, TAIL, HEAD DITCHES (FLOW)

STRUCTURES

MAJOR
BRIDGE, TUNNEL, OR BOX CULVERT (CONC)
BRIDGE WING WALL, HEAD WALL AND END WALL (CONC WW)

MINOR
HEAD & END WALL (CONC HW)
PIPE CULVERT
FOOTBRIDGE
DRAINAGE BOXES (CB)
PAVED DITCH GUTTER

UTILITIES

EXIST. POLE
EXIST. POWER POLE (P)
PROP. POWER POLE
EXIST. TELEPHONE POLE (Q)
PROP. TELEPHONE POLE
EXIST. JOINT USE POLE (R)
PROP. JOINT USE POLE
TELEPHONE PEDESTAL (T)
U/G TELEPHONE CABLE HAND HOLD (HH)
CABLE TV PEDESTAL (C)
U/G TV CABLE HAND HOLD (HH)
U/G POWER CABLE HAND HOLD (HH)
HYDRANT
SATELLITE DISH
EXIST. WATER VALVE
SEWER CLEAN OUT
POWER MANHOLE
TELEPHONE BOOTH
CELLULAR TELEPHONE TOWER
WATER MANHOLE
LIGHT POLE
H-FRAME POLE
POWER LINE TOWER
POLE WITH BASE
GAS VALVE
GAS METER
TELEPHONE MANHOLE
POWER TRANSFORMER
SANITARY SEWER MANHOLE
STORM SEWER MANHOLE
TANK; WATER, GAS, OIL
WATER TANK WITH LEGS
TRAFFIC SIGNAL JUNCTION BOX
FIBER OPTIC SPLICE BOX
TELEVISION OR RADIO TOWER
UTILITY POWER LINE CONNECTS TO TRAFFIC SIGNAL LINES CUT INTO THE PAVEMENT (TS)

RECORDED WATER LINE
DESIGNATED WATER LINE (S.U.E.*)
SANITARY SEWER
RECORDED SANITARY SEWER FORCE MAIN (FSS)
DESIGNATED SANITARY SEWER FORCE MAIN (S.U.E.*) (FSS)
RECORDED GAS LINE
DESIGNATED GAS LINE (S.U.E.*)
STORM SEWER
RECORDED POWER LINE
DESIGNATED POWER LINE (S.U.E.*)
RECORDED TELEPHONE CABLE
DESIGNATED TELEPHONE CABLE (S.U.E.*)
RECORDED U/G TELEPHONE CONDUIT (TC)
DESIGNATED U/G TELEPHONE CONDUIT (S.U.E.*) (TC)
UNKNOWN UTILITY (S.U.E.*) (UTL)
RECORDED TELEVISION CABLE (TV)
DESIGNATED TELEVISION CABLE (S.U.E.*) (TV)
RECORDED FIBER OPTICS CABLE (FO)
DESIGNATED FIBER OPTICS CABLE (S.U.E.*) (FO)
EXIST. WATER METER
U/G TEST HOLE (S.U.E.*) (ATTUR)
ABANDONED ACCORDING TO U/G RECORD
END OF INFORMATION (E.O.I.)

BOUNDARIES & PROPERTIES

STATE LINE
COUNTY LINE
TOWNSHIP LINE
CITY LINE
RESERVATION LINE
PROPERTY LINE
PROPERTY LINE SYMBOL
EXIST. IRON PIN (EIP)
PROPERTY CORNER (B)
PROPERTY MONUMENT (ECM)
PROPERTY NUMBER (123)
PARCEL NUMBER (6)
FENCE LINE (WW & ISBW)
EXISTING WETLAND BOUNDARIES (WLB)
HIGH QUALITY WETLAND BOUNDARY (HQ WLB)
MEDIUM QUALITY WETLAND BOUNDARIES (MQ WLB)
LOW QUALITY WETLAND BOUNDARIES (LQ WLB)
PROPOSED WETLAND BOUNDARIES (WLB)
EXISTING ENDANGERED ANIMAL BOUNDARIES (EAB)
EXISTING ENDANGERED PLANT BOUNDARIES (EPB)

BUILDINGS & OTHER CULTURE

BUILDINGS
FOUNDATIONS
AREA OUTLINE
GATE
GAS PUMP VENT OR U/G TANK CAP
CHURCH
SCHOOL
PARK
CEMETERY
DAM
SIGN (S)
WELL (W)
SMALL MINE (M)
SWIMMING POOL

TOPOGRAPHY

LOOSE SURFACE
HARD SURFACE
CHANGE IN ROAD SURFACE
CURB
RIGHT OF WAY SYMBOL (R/W)
GUARD POST (GP)
PAVED WALK
BRIDGE
BOX CULVERT OR TUNNEL
FERRY
CULVERT
FOOTBRIDGE
TRAIL, FOOTPATH
LIGHT HOUSE

VEGETATION

SINGLE TREE (X)
SINGLE SHRUB (Y)
HEDGE
WOODS LINE
ORCHARD
VINEYARD

RAILROADS

STANDARD GAUGE
RR SIGNAL MILEPOST (CSX TRANSPORTATION, MILEPOST 35)
SWITCH

revised 02/02/00

6/2/99

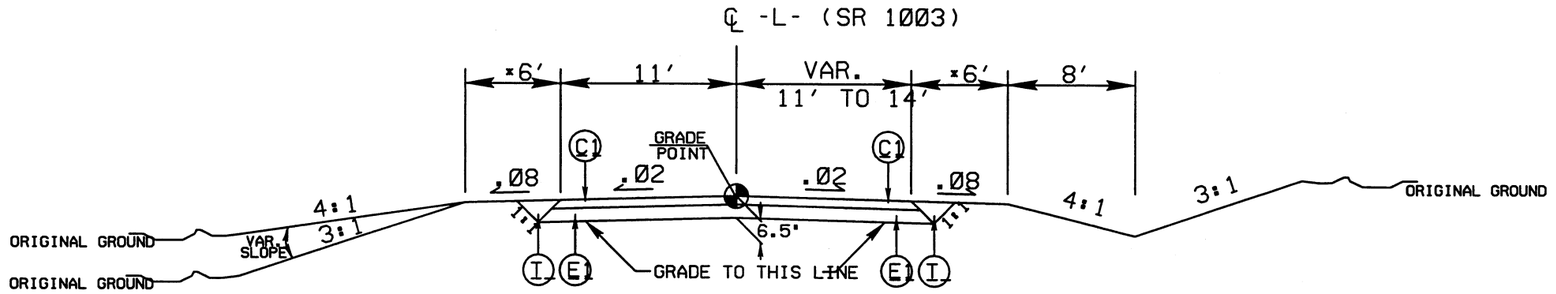
PROJECT REFERENCE NO.	SHEET NO.
B-3467	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.5' ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 140 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 4' ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL.

NOTE: ALL SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN.

* 9' WITH GUARDRAIL



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA. 15+50.00 TO 19+85.00 (BGN BRG)
-L- STA. 21+65.00 (END BRG) TO 30+84.67 (BGN BRG)
-L- STA. 32+15.33 (END BRG) TO 35+46.97

SYSLIMIT
USERNAME

6/16/99

COMPUTED BY: KBH DATE:
CHECKED BY: DATE:

'N' - DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH - DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH - DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W - TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G - GATING IMPACT ATTENUATOR TYPE 350
NG - NON-GATING IMPACT ATTENUATOR TYPE 350

PROJECT REFERENCE NO. B-3467 | SHEET NO. 3-A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH: STRAIGHT	LENGTH: SHOP CURVED	LENGTH: DOUBLE FACED	WARRANT POINT: APPROACH END	WARRANT POINT: TRAILING END	'N' DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH: APPROACH END	FLARE LENGTH: TRAILING END	W: APPROACH END	W: TRAILING END	ANCHORS: TYPE 350	ANCHORS: TYPE III	IMPACT ATTENUATOR TYPE 350: EA	G	NG	REMARKS
-L-	16+93.00	19+85.00 BR	RT	300.00			19+85.00 BR		3'	9'	231.25		3'		1	1				
-L-	18+44.00	19+85.00 BR	LT	150.00				19+85.00 BR	3'	9'		81.25		3'	1	1				
-L-	21+65.00 BR	23+15.00	RT	150.00				21+65.00 BR	3'	9'		81.25		3'	1	1				
-L-	21+65.00 BR	24+64.00	LT	300.00			21+65.00 BR		3'	9'	231.25		3'		1	1				
-L-	27+85	30+84.67 BR	RT	300.00			30+84.67 BR		3'	9'	231.25		3'		1	1				
-L-	29+35	30+84.67 BR	LT	150.00				30+84.67 BR	3'	9'		81.25		3'	1	1				
-L-	32+15.33 BR	33+70.00	RT	162.50				32+15.33 BR	3'	9'		93.75		3'	1	1				
-L-	32+15.33 BR	35+26.00	LT	312.50			32+15.33 BR		3'	9'	243.75		3'		1	1				
			SUBTOTAL	1825.00											8	8	ANCHOR DEDUCTIONS:			
																	TYPE 350 8@50'400'			
		LESS ANCHOR DEDUCTIONS		550.00													TYPE III 8@18.75 150'			
			TOTAL	1275.00													TOTAL - 550'			
			SAY	1300.00																

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT.,RT., OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE): 12"	15"	18"	24"	30"	36"	42"	48"	BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE): 12"	15"	18"	24"	30"	36"	42"	48"	15' SIDE DRAIN PIPE	18' SIDE DRAIN PIPE	24' SIDE DRAIN PIPE	ENDWALLS: STD. 838.11 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS: STD. 838.11 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES: * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' * (1.3 X COL. 'B') LIN. FT. 5.0' THRU 10.0'	QUANTITIES FOR DRAINAGE STRUCTURES: * TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' * (1.3 X COL. 'B') LIN. FT. 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02 PER EACH (0' THRU 5.0')	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME & GRATE STD. 840.16	M.D.I. TYPE 'A' STD. 840.17 OR 840.26	M.D.I. TYPE 'B' STD. 840.18 OR 840.27	M.D.I. TYPE 'D' STD. 840.19 OR 840.28	M.D.I. FRAME WITH GRATE STD. 840.20	M.D.I. FRAME WITH TWO GRATES STD. 840.22	M.D.I. FRAME WITH GRATE STD. 840.29	M.D.I. FRAME WITH TWO GRATES STD. 840.29	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.32 OR 840.29	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	CORR. STEEL ELBOWS NO. & SIZE	CONC. COLLARS CL. 'B' C.Y. STD. 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L-																																																							
19+55	RT	1																								1																													
19+55	RT	1	2														36																																						
21+96	RT	3																								1																													
21+96	RT	3	4														40																																						
30+55	RT	5																								1																													
30+55	RT	5	6														28																																						
30+55	LT	7																								1																													
30+55	LT	7	8														36																																						
32+44	RT	9																								1																													
32+44	RT	9	10														28																																						
32+44	LT	11																								1																													
32+44	LT	11	12														28																																						
TOTALS																	196									6																													6									12@15"				

ABBREVIATIONS

C.B. CATCH BASIN
N.D.I. NARROW DROP INLET
D.I. DROP INLET
M.D.I. MEDIAN DROP INLET
M.D.I. (NARROW SLOT) MEDIAN DROP INLET
J.B. JUNCTION BOX
M.H. MANHOLE
T.B.D.I. TRAFFIC BEARING DROP IN
T.B.J.B. TRAFFIC BEARING JUCTION

USERNAME = DGN

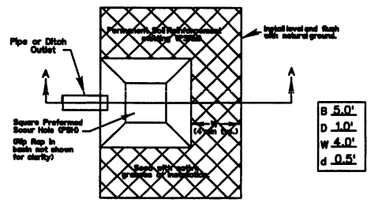
PROJECT REFERENCE NO.	SHEET NO.
B-3467	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

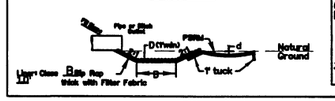
PREFORMED SCOUR HOLE

STA. 19+55 RT.
STA. 21+95 RT.

PLAN VIEW



SECTION A-A



QUANTITIES FOR EACH LOCATION:
17 SM FILTER FABRIC
9 TONS CL B RP RAP
30 SM PSRM

-L- CURVES

PI Sta 14+12.35
D = 15° 22' 30.8" (LT)
D = 5° 22' 47.6'
L = 285.79'
T = 143.76'
R = 1,065.00'
SE = EXIST

PI Sta 23+04.04
D = 43° 25' 27.4" (RT)
D = 5° 00' 00.0"
L = 868.49'
T = 456.30'
* R = 1,145.92'
SE = SEE PLANS
CRV WIDENING = 3'

NAD 83

-L- POT Sta. 10+00.00

-L- PCSta. 12+68.59

-L- PTSta. 15+54.38

-L- PCSta. 18+57.14

BEGIN CONSTRUCTION
-L- STA 15+50.00

15+40.00 -L-
EXIST R/W

BL-3
PINC 12+37.28
16.21' LT.
14+32.64 -L-

BL-2
PINC 8+30.31
14.41' LT.
10+22.77 -L-

BM #1
-BL- STA 7+78.43
31.62 LEFT
ELEV.69.85'

13+52.74 -L-
EXIST R/W

15+40.00 -L-
EXIST R/W

15+54.38 -L-
45.00' RT.

17+50.00 -L-
50.00' LT.

18+47.74 -L-
60.00' RT.

BEGIN BRIDGE
-L- STA.19+85.00

19+50.00 -L-
70.00' LT.

BM #2
-BL- STA 17+33.83
126.45 LEFT
ELEV.70.11'

-T1-101
5+00.00 POT
ELEV= 62.80
REBAR SET

BL-4
PINC 17+67.57
8.51' LT.
19+63.98 -L-
-T1-
6+09.42 PINC
ELEV = 70.14

-T1-102
7+41.34 POT
ELEV= 63.59
REBAR SET

END BRIDGE
-L- STA.21+65.00

22+50.00 -L-
70.00' LT.

23+50.00 -L-
60.00' LT.

23+30.00 -L-
55.00' RT.

MATCHLINE SEE SHT NO. 5

① JAMES R. LAWRENCE SR.
DB 1672 PG 295

② J. AUBREY GODWIN
VIVIAN B. GODWIN
DB 1355 PG 478

③ CURTIS R. TURNER
DB 777 PG 30

④ JULIA B. ANDERSON &
ALTON W. ANDERSON
DB 1322 PG 219
DB 547 PG 488

WOODS
BEGIN TRANSITION FOR CURVE WIDENING
STANDING WATER
BEECH SWAMP
CLASS II RIP RAP TO ELEV.: 67.3'
GRAU 35%
CHORD
TB
BZ

N 44° 56' 41.2" E

S 38° 09'00"E
214.00'

S 48° 38'44"E
200.00'

S 68° 15'44"E
229.72'

N 68° 17'48"E
184.42'

TO ENFIELD
BRIDGES ROAD - SR 1003
24" CONC
INV= 86.30
INV= 85.45

BEGIN TIP PROJECT B-3467
-L- STA. 13+52.58
EXIST R/W

DATUM DESCRIPTION

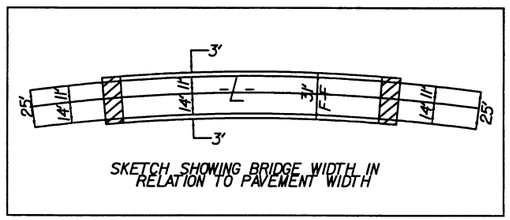
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4134-1" WITH NAD 1983/96 STATE PLANE GRID COORDINATES OF NORTHING: 874849.5069(ft) EASTING: 2446551.5209(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999427 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4134-1" TO -L- STATION 10+00.00 IS S 87 48 39.28 W 22256.5161 FT. ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

PAVEMENT REMOVAL

NOTE: USE FABRIC FOR SOIL STABILIZATION IN LIEU OF UNDERCUT AT -L- STA 16+25 TO 20+00 (RT) AND -L- STA 17+25 TO 20+00 (LT) FROM EXISTING TOE OF SLOPE TO PROPOSED TOE OF SLOPE

QUANTITY = 1260.77 SY

★ DESIGN EXCEPTION FOR HORIZONTAL STOPPING SIGHT DISTANCE REQUIRED
★ AN ADVISORY SPEED LIMIT OF 40 MPH SHOULD BE POSTED AT THIS LOCATION



SKETCH SHOWING BRIDGE WIDTH IN RELATION TO PAVEMENT WIDTH

NOTE: TB = TOP OF BANK
BZ = BUFFER ZONE

SEE SHEET 6 FOR -L- PROFILE

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-3467	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

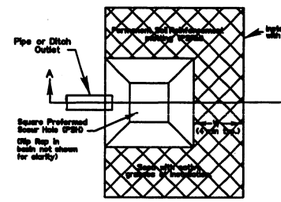
-L- CURVES

PI Sta 23+04.04	PI Sta 34+13.62	PI Sta 38+39.13
D = 43° 25' 27.4" (RT)	D = 3° 49' 17.5" (LT)	D = 4° 42' 16.4" (LT)
D = 5° 00' 00.0"	D = 1° 25' 56.6"	D = 1° 16' 23.7"
L = 868.49'	L = 266.79'	L = 369.50'
T = 456.30'	T = 133.45'	T = 184.85'
* R = 1,145.92'	R = 4,000.00'	R = 4,500.00'
SE = SEE PLANS	SE = SEE PLANS	SE = EXIST
CRV WIDENING = 3'		

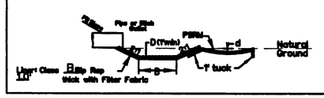
PREFORMED SCOUR HOLE

STA. 30+54 AND 32+44 RT.
STA. 30+56 AND 32+43 LT.

PLAN VIEW

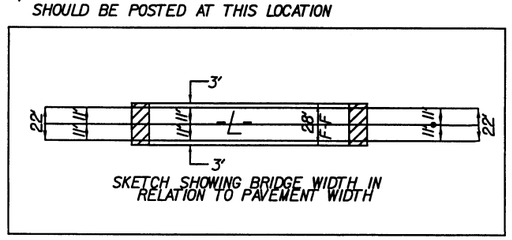


SECTION A-A



QUANTITIES FOR EACH LOCATION:
17 SM FILTER FABRIC
9 TONS CL B RIP RAP
30 SM PSHM

★ DESIGN EXCEPTION FOR HORIZONTAL STOPPING SIGHT DISTANCE REQUIRED
★ AN ADVISORY SPEED LIMIT OF 40 MPH SHOULD BE POSTED AT THIS LOCATION



SKETCH SHOWING BRIDGE WIDTH IN RELATION TO PAVEMENT WIDTH

PAVEMENT REMOVAL

NOTE: USE FABRIC FOR SOIL STABILIZATION IN LIEU OF UNDERCUT AT -L- STA 21+60 TO 31+00 (RT), 21+60 TO 23+75 (LT), 26+50 TO 31+00 (LT), 32+10 TO 35+47 (RT) AND 32+10 TO 35+47 (LT) FROM EXISTING TOE OF SLOPE TO PROPOSED TOE OF SLOPE

QUANTITY = 3671.71 SY

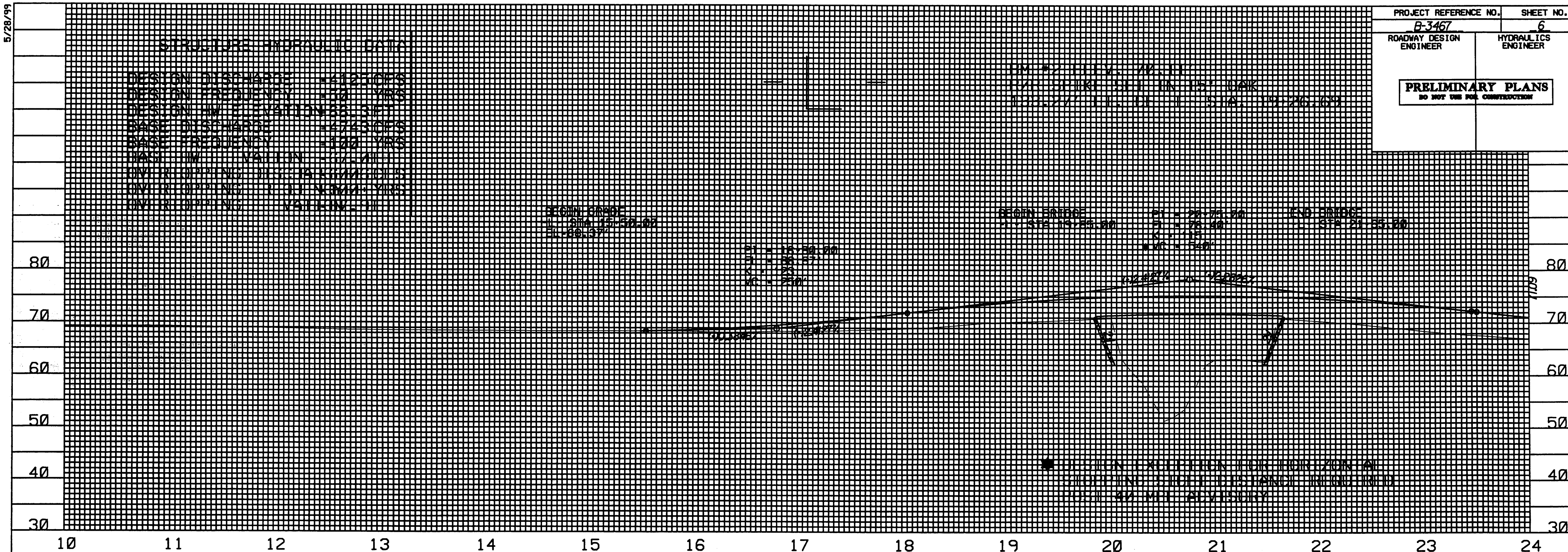
END TIP PROJECT B-3467
-L- PCSTA. 36+54.28
EXIST R/W LT. & RT.

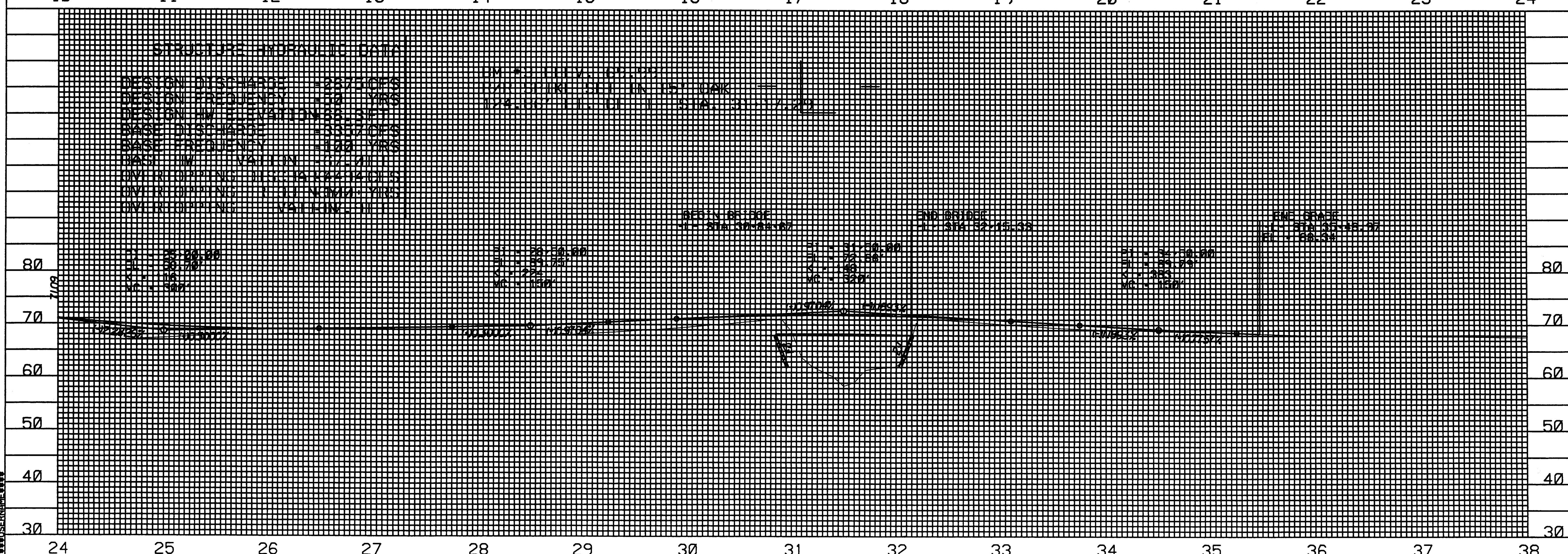
NOTE: TB = TOP OF BANK
BZ = BUFFER ZONE

SEE SHEET 6 FOR -L- PROFILE

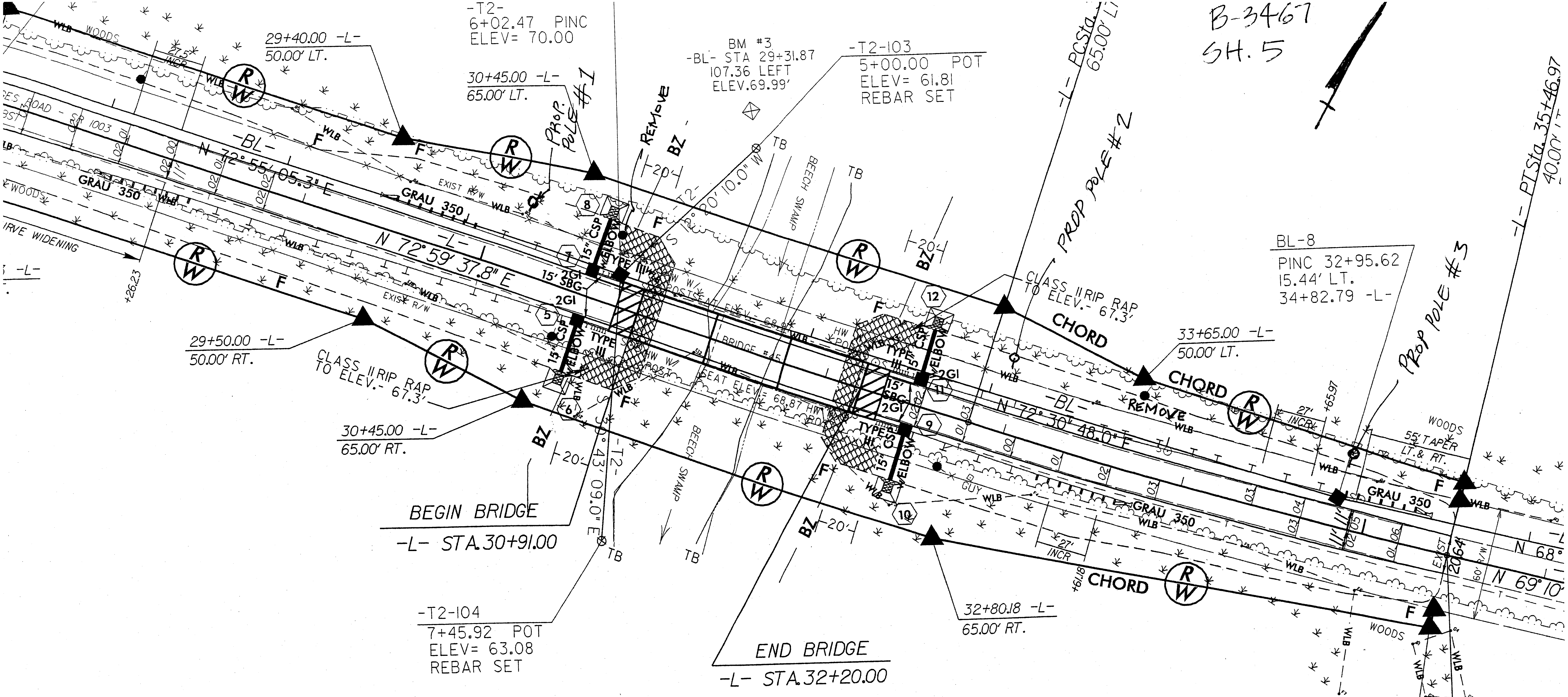
PROJECT REFERENCE NO.	SHEET NO.
B-3467	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





B-3467
SH. 5



G SIGHT DISTANCE REQUIRED

NOTE: USE 6" SCUPPERS ON 12' CENTERS FROM STA. 30+91 TO STA. 31+03 AND STA. 32+08 TO 32+20 LT. AND RT.

END CONST
-L- STA.3

35+46.97 -L-
EXIST R/W
40.00' RT.

UTILITY:
HALIFAX ELECTRIC
MEMBERSHIP CORP.
208 W. WHITFIELD ST.
ENFIELD NC 27823-0667

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