STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 22, 2005

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

Attn: Mr. Bill Biddlecome
NCDOT Coordinator

Dear Sir:

Subject: **Individual Section 404 and 401 Permit Application** for the proposed replacement of Bridge No. 17 over Fishing Creek Overflow and Bridge No. 23 over Fishing Creek on US 301, in Halifax and Edgecombe Counties. Federal Aid Project No. BRSTP-301(10), State Project No. 8.1301801, TIP No. B-3453.

The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 17 over Fishing Creek Overflow and Bridge No. 23 over Fishing Creek (DWQ Index # 28-79-(29), Class "C NSW"), on US 301 in Halifax and Edgecombe Counties. The project involves replacing both bridges at the existing locations using staged construction.

Stage One will involve building 31 feet in width of the proposed structures and roadway approaches. During construction of Stage One, traffic will be maintained on the existing bridges. Stage Two will include shifting traffic to the new structure, removing the existing bridges, and completing the proposed structures. Bridge No. 17 will be approximately 155 feet in length and Bridge No. 23, 175 feet long. The proposed structures will provide a 40-foot clear roadway width to allow for two 12-foot travel lanes with eight-foot shoulders, including four-foot paved shoulders. The proposed right-of-way width is 100 feet.

Water Resources

Permanent Impacts: Fishing Creek and Fishing Creek Overflow will be impacted by the proposed project. Construction of the proposed project will result in a total of 1.752 acres of permanent impacts to jurisdictional resources at both sites. This includes 1.552 acres of permanent fill in wetlands, 0.401 acre of impact to surface water, and 0.200 acre of mechanized clearing.

Schedule:
A moratorium for in-stream work for anadromous fish will occur between March 1 and June 30. 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 April 19, 2005.

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

TELEPHONE: 919-715-1500
FAX: 919-715-1501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
PARKER LINCOLN BUILDING
2728 CAPITAL BOULEVARD
RALEIGH NC

Avoidance and Minimization

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design. All wetland areas not affected by the project will be protected from unnecessary encroachment. No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.

During project development, an off site detour was investigated, using SR 1224, SR 1522, 1510 and SR 1421. This culminated in a detour totaling 8.3 miles. Subsequently, a road user analysis was performed based on 6,300 vehicles per day, at an average of 8.3 miles of indirect travel. As a result, the cost of additional travel was estimated to be approximately 6.2 million dollars during a twelve-month construction period.

Consequently, the best alternative for the proposed replacement of Bridge Nos. 17 and 23 is the use of staged construction, which will permit US 301 to remain open, by maintaining half of the existing bridge while the new structure is under construction.

Due to the location of the adjacent wetlands, avoidance is not possible. Staged construction will be used to eliminate the need for an on-site detour, but will require slightly wider approaches. The new structures will also be 35 and 49 feet longer (respectively) than the existing structures, which will allow for improved hydraulic connectivity and capacity to Fishing Creek and Fishing Creek Overflow, thus improving the existing floodplain and associated wetland community.

NCDOT's guidelines for Best Management Practices for the Protection of Surface Waters will be enforced throughout the duration of the project construction. In addition, fill slopes in wetlands are at a 3:1 ratio and the NCDOT has made it policy to eliminate lateral ditching in wetlands as much as possible, thus preserving the hydrology of adjacent wetlands.

Bridge Demolition

Bridge No.17 is currently 120 feet long and located on US 301 over Fishing Creek Overflow between Edgecombe and Halifax Counties. The existing structure consists of three 40-foot spans. The clear roadway width is 25.8 feet providing two 11-foot travel lanes with less than two-foot shoulders. The superstructure is composed of reinforced concrete deck and deck girders with an asphalt-wearing surface. The substructure is an abutment type, consisting of reinforced concrete square nose post and web interior bents.

Bridge No. 23 is currently 126 feet long and is also located on US 301 over Fishing Creek between Edgecombe and Halifax Counties. The existing structure consists of three spans at approximately 42 feet each. The clear roadway width is 26.1 feet providing two 11-foot travel lanes with less than two-foot shoulders. The superstructure consists of reinforced concrete floor on reinforced concrete deck girders with an asphalt-wearing surface. The substructure is an abutment type with reinforced concrete post and web interior bents.

The rails of both bridges will be removed without dropping into Waters of the United States, however, there is potential for components of the deck and interior bents of both bridges to be dropped into Waters of the United States. The resulting maximum temporary fill is calculated to be approximately 205 cubic yards for Bridge No. 17 and 271 cubic yards for Bridge No. 23.

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 aforementioned, work shall not be performed in the water during the moratorium period (March 1 to June 30) associated with fish migration, spawning, and larval recruitment into nursery areas.

Utilities

Currently, aerial electric power lines, and underground and over-head telephone lines run parallel along both sides of US 301 throughout the project area. Prior to construction, Dominion Power plans to remove two poles for over-head power lines, and place three new ones in jurisdictional areas. In addition, Sprint Corp. will remove 8 aerial telephone poles and remove all buried lines. Telephone lines will be secured to the same poles with electric power lines. Hand clearing will be used to prepare the utility easement extending 15 feet from the project right-of-way. Please reference the attached utility plans.

According to the Tar-Pamlico Riparian 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.

Independent Utility

The subject project is in compliance with 23 CFR Part 771.111(f) which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:
(1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope,
(2) The project is usable and a reasonable expenditure, even if no additional transportation improvements are made in the area;
(3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Indirect and Cumulative Impact Analysis

Existing rules for the 401 Water Quality Certification Program (15A NCAC 2H .0506(b)(4) require that the DWQ determine that a project "does not result in cumulative impacts, based on past or reasonably anticipated future impacts, that cause or will cause a violation of downstream water quality standards."

This project consists of replacing two deficient structures. Capacity, traffic patterns and access improvements are not a part of the project's scope of work. Thus, changes in the patterns of development and/or land uses in the vicinity of the bridge project would not be anticipated as stemming from the bridge's replacement. This type of project is not anticipated to alter the existing land uses or increase accessibility to adjacent parcels. Thus, a detailed cumulative impacts study is not necessary.

There are no impaired (303d) streams listed in the project area.

Cultural Resources

Historical Structures: A field survey of the Area of Potential Effects (APE) was conducted on June 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 State Historic Preservation Officer (SHPO) concurred that there were 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 of the Categorical Exclusion.

Archaeology: The 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, the SHPO recommends no further action. A copy of the SHPO memorandum is included in the Appendix of the Categorical Exclusion.

Wild and Scenic River System: The project will not impact any designated Wild and Scenic Rivers or any rivers included in the list of study rivers (Public Law 90-542, as amended).

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 16,988.4 sq. ft (0.39 acre) for Zone 1 and 9,147.6 sq. ft (0.21 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 less than 150 feet wide 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.

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 January 29, 2003, the Fish and Wildlife Service (FWS) lists four federally protected species (Table 1) for Halifax and Edgecombe Counties. 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 and Edgecombe Counties.

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."

FHWA Step Down Compliance

All compensatory mitigation must be in compliance with 23 CFR Part 777.9, "Mitigation of Impacts" that describes the actions that should be followed to qualify for Federal-aid highway funding. This process is known as the FHWA "Step Down" procedures:

1. Consideration must be given to mitigation within the right-of-way and should include the enhancement of existing wetlands and the creation of new wetlands in the highway median, borrow pit areas, interchange areas and along the roadside.

2. Where mitigation within the right-of-way does not fully offset wetland losses, compensatory mitigation may be conducted outside the right-of-way including enhancement, creation, and preservation.

Mitigation

Based upon the agreements stipulated in the "Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), it is understood that the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP), will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for NCDOT projects that are listed in Exhibit 1 of the subject MOA during the EEP transition period which ends on June 30, 2005.

Since the subject project is listed in Exhibit 1, the necessary compensatory mitigation to offset unavoidable impacts to waters that are jurisdictional under the federal Clean Water Act will be provided by the EEP. The offsetting mitigation will derive from an inventory of assets already in existence within the same 8-digit cataloguing unit. The Department has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The remaining, unavoidable impacts to 1.752 acres of jurisdictional wetland will be offset by compensatory mitigation provided by the EEP program. Please see attached EEP acceptance letter.

Regulatory Approvals

Attached for your information are an ENG form 4345, Categorical Exclusion, roadway design plans, and permit drawings for the subject project. Application is hereby made for a Department of the Army Section 404 Individual Permit and a Section 401 Water Quality Certification for the above-described activities. In compliance with Section 143-215.3D(e) of the NCAC we will provide $475.00 to act as payment for processing the Section 401 permit application previously noted in this application (see Subject line). We are providing seven copies of this application to

the North Carolina Department of Environment and Natural Resources, Division of Water Quality.

The NCDOT requests that this project be authorized by the U. S. Army Corps of Engineers. By copy of this letter, the NCDOT requests that the Division of Water Quality also authorize this project. A copy of this permit application will be posted on the DOT website at: http://www.ncdot.org/planning/pe/naturalunit/Permit.html. If you have any questions or need additional information, please contact 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 (7 copies)
Mr. Travis Wilson, NCWRC
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Jim Trogdon, P.E., Division Engineer
Mr. Jamie Shern, DEO
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)

w/o attachment:

Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Mark Staley, Roadside Environmental
Mr. David Franklin, USACE, Wilmington
Ms. Beth Harmon, EEP
Ms. Stacy Baldwin, P.E., PDEA

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT (33 CFR 325)

OMB APPROVAL NO. 0710-003
Expires December 31, 2004

Public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: Rivers and Harbors Act, Section 10, 33 USC 403: Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
North Carolina Department of Transportation Project Development & Environmental Analysis	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
1548 Mail Service Center Raleigh, NC 27699	
7. APPLICANT'S PHONE NOs. W/AREA CODE	**10. AGENT'S PHONE NOs. W/AREA CODE**
a. Residence b. Business 919-733-7844	a. Residence b. Business

11. STATEMENT OF AUTHORIZATION

I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OR PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions

Proposed Replacement of Bridge Nos. 17 and 23 on US 301 over Fishing Creek and Fishing Creek Overflow in Halifax and Edgecombe Counties.

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Fishing Creek and Fishing Creek Overflow

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT

Halifax and Edgecombe NC
COUNTY STATE

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) **Section, Township, Range, Lat/Lon, and/or Accessors's Parcel Number, for example.**

17. DIRECTIONS TO THE SITE

US301North, approximately 10 miles North of Rocky Mount, on border of Edgecombe and Halifax Counties.

18. Nature of Activity (Description of project, include all features)

The project involves replacing Bridge Nos. 17 and 23 using staged construction on the existing alignment.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The replacement of inadequate structures will result in safer and more efficient traffic operations. These bridges are considered functionally obsolete and structurally deficient.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Widening of approaches associated with bridge construction.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

See attached permit drawings.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

1.351 acres of permanent impacts to jurisdictional wetland and 0.401 acre of impact to surface water at both sites. This includes 1.552 acres of permanent fill and 0.200 acre if mechanized clearing.

23. Is Any Portion of the Work Already Complete? Yes ___ No _X_ IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

See Attached List

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
N/A					

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
[signature]	1/22/05		

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Ecosystem Enhancement PROGRAM

January 4, 2005

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-3453, Bridge 23 over Fishing Creek and Bridge 17 over Fishing Creek Overflow, Halifax and Edgecombe Counties

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide riverine wetland mitigation for the subject project. Based on the information supplied by you in a letter dated October 18, 2004, the impacts are located in CU 03020102 of the Tar-Pamlico River Basin in the Northern Inner Coastal Plain (NICP) Eco-Region, and are as follows:

Riverine Wetland Impacts: 1.752 acres

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

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

Sincerely,

James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Mr. Michael Bell, USACE-Washington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3453

Ecosystem Enhancement PROGRAM

January 4, 2005

Mr. Michael Bell
US Army Corps of Engineers
Washington Regulatory Field Office
Post Office Box 1000
Washington, North Carolina 27889-1000

Dear Mr. Bell:

Subject: EEP Mitigation Acceptance Letter:

B-3453, Bridge 23 over Fishing Creek and Bridge 17 over Fishing Creek Overflow on US 301, Halifax and Edgecombe Counties; Tar-Pamlico River Basin (Cataloging Unit 03020102); Northern Inner Coastal Plain Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide 17.52 acres of riverine wetland preservation as compensatory mitigation at a 10:1 ratio for the 1.752 acres of unavoidable riverine wetland impacts of the subject project. The preservation site that will be debited for this mitigation is:

Roanoke River Site (Halifax County) 17.52 acres

The subject TIP project is listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. The compensatory mitigation for the project will be provided in accordance with Section IX, EEP Transition Period, of the Agreement.

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

Sincerely,

James B. Stanfill for

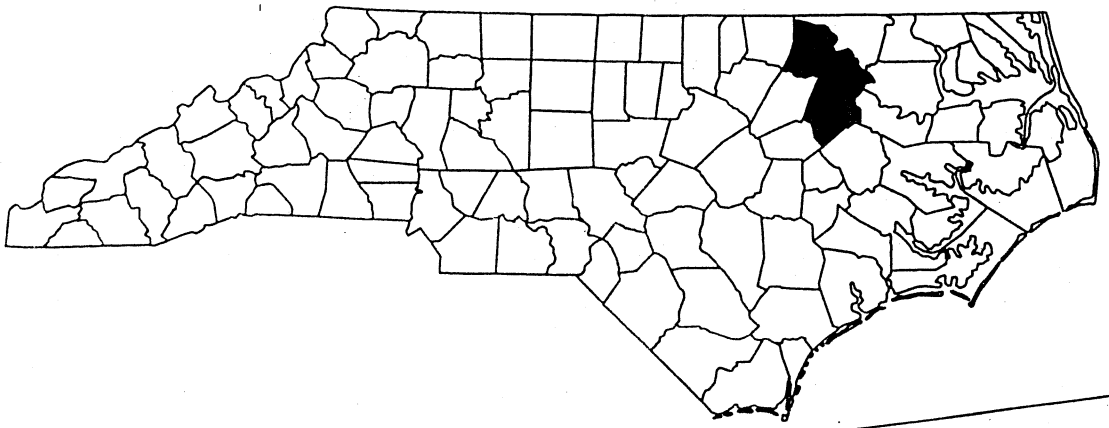
William D. Gilmore, P.E.
EEP Director

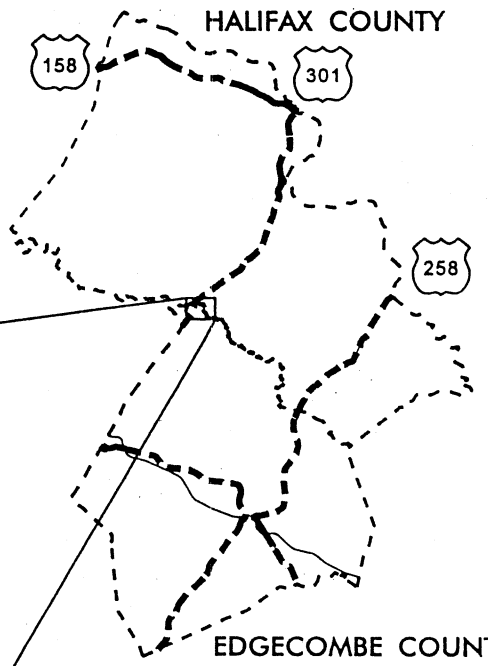
cc: Phil Harris, Office of Natural Environment, NCDOT
John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-3453

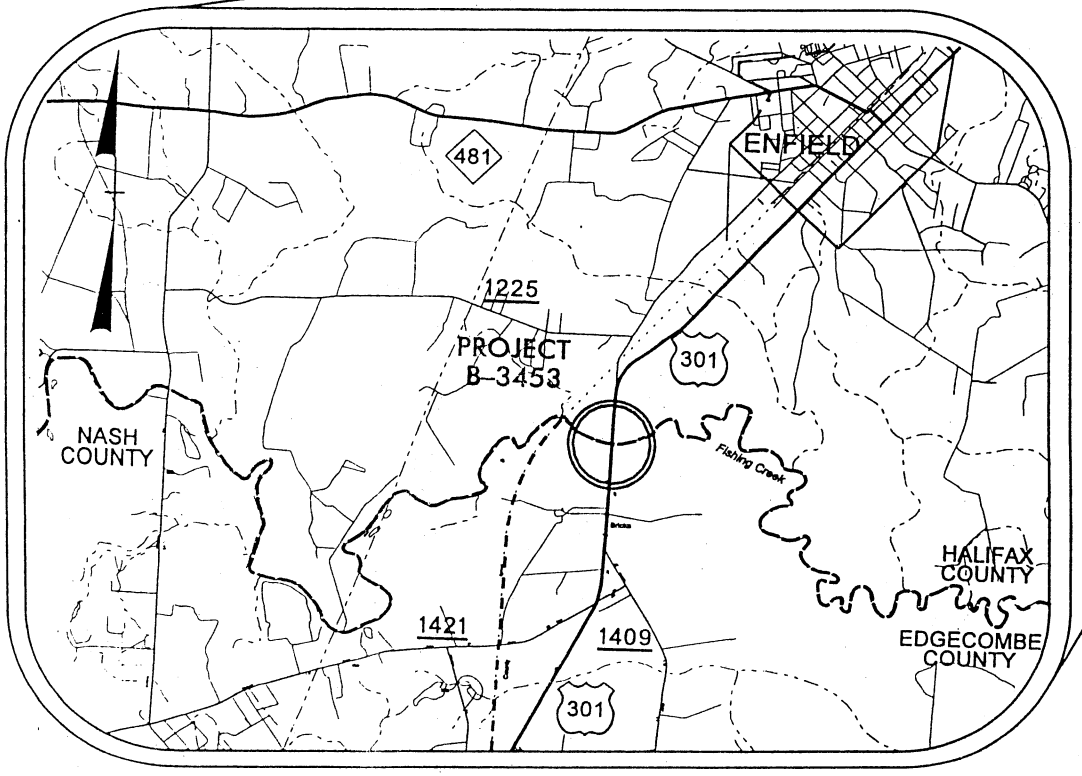
B-3453

EDGECOMBE & HALIFAX COUNTIES

WETLAND IMPACT PERMIT





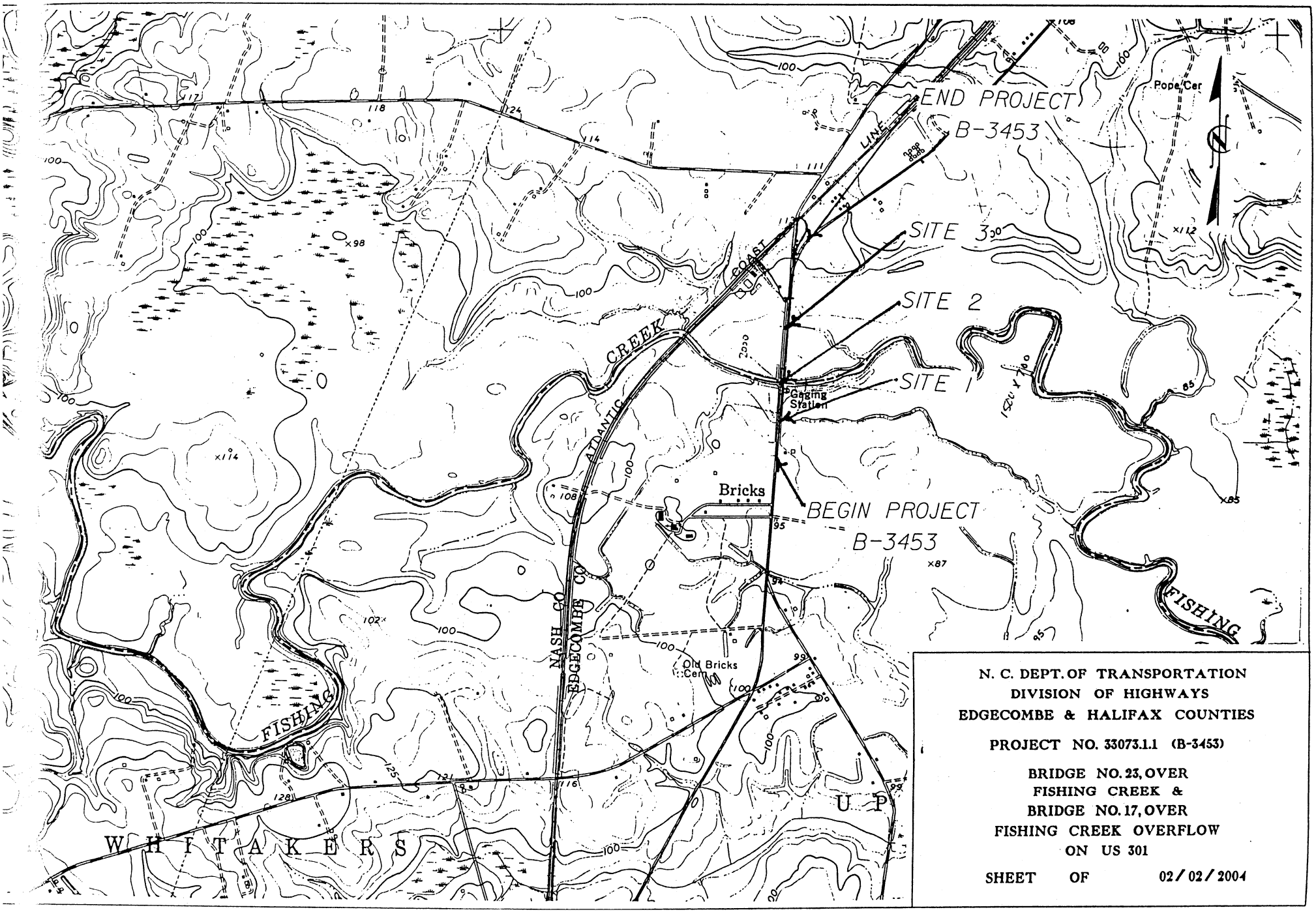


N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02 / 02 / 2004



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

WETLAND LEGEND

WLB WETLAND BOUNDARY

WETLAND

F F DENOTES FILL IN WETLAND

S S DENOTES FILL IN SURFACE WATER

P P DENOTES FILL IN SURFACE WATER (POND)

T T DENOTES TEMPORARY FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

TS TS DENOTES TEMPORARY FILL IN SURFACE WATER

DENOTES MECHANIZED CLEARING

FLOW DIRECTION

TB TOP OF BANK

WE EDGE OF WATER

C PROP. LIMIT OF CUT

F PROP. LIMIT OF FILL

PROP. RIGHT OF WAY

NG NATURAL GROUND

PL PROPERTY LINE

TDE TEMP. DRAINAGE EASEMENT

PDE PERMANENT DRAINAGE EASEMENT

EAB EXIST. ENDANGERED ANIMAL BOUNDARY

EPB EXIST. ENDANGERED PLANT BOUNDARY

WATER SURFACE

LIVE STAKES

BOULDER

COIR FIBER ROLLS

PROPOSED BRIDGE

PROPOSED BOX CULVERT

PROPOSED PIPE CULVERT
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

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

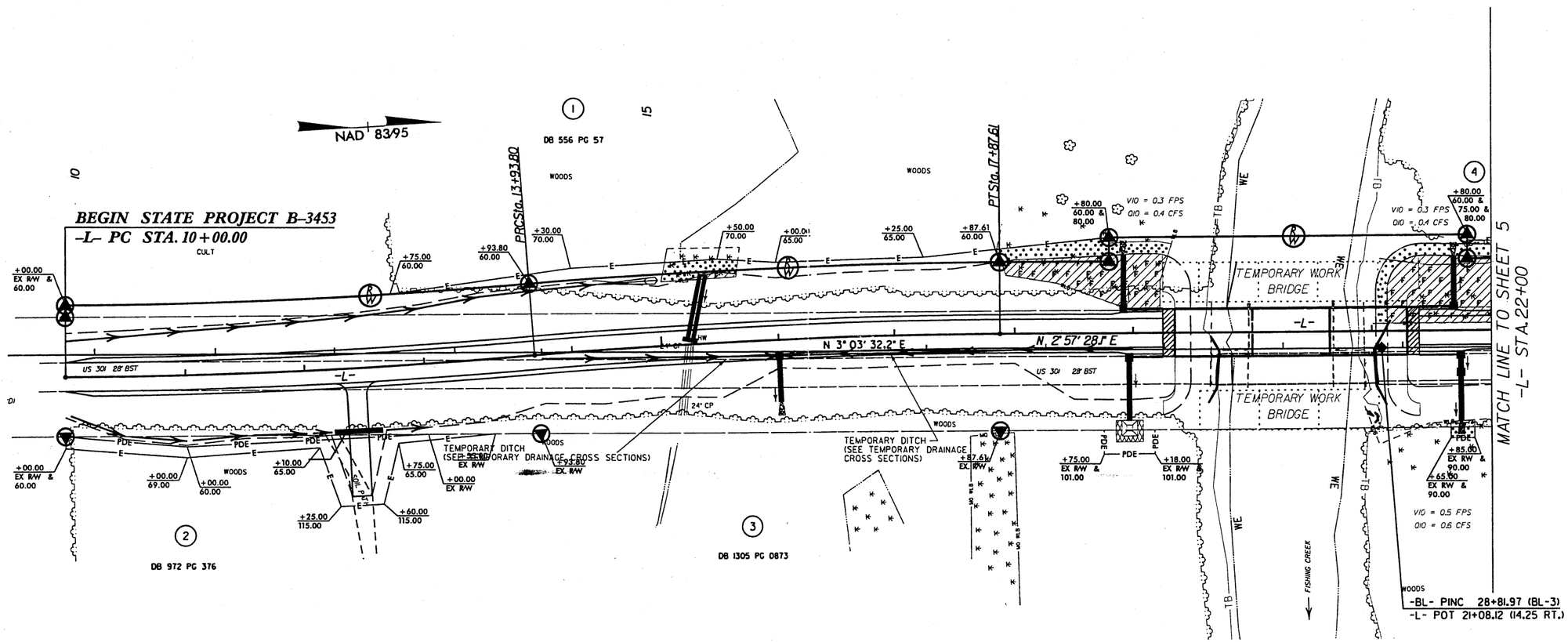
BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02 / 02 / 2004

SITE 1 -L- STA. 15+02 TO 15+67

SITE 2 -L- STA. 17+88 TO 22+00

ENGLISH



50′ 0 100′

SCALE: 1" : 100′

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

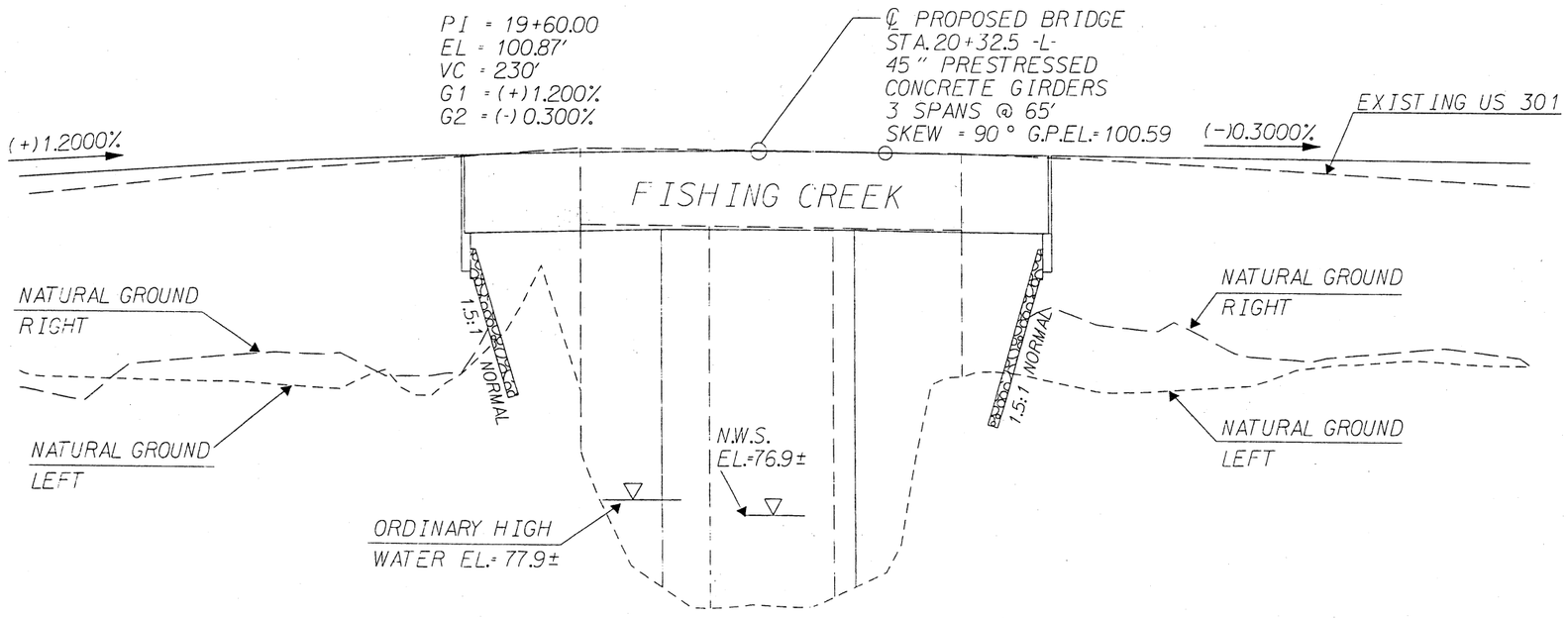
PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301 REV 12/04

SHEET OF 02/02/2004

SITE 2 PROPOSED BRIDGE PROFILE

ENGLISH



100

90

80

70

18 19 20 21 22 23

0 50'

HORIZONTAL SCALE: 1" = 50'

0 10'

VERTICAL SCALE: 1" = 10'

N. C. DEPT. OF TRANSPORTATION

DIVISION OF HIGHWAYS

EDGECOMBE & HALIFAX COUNTIES

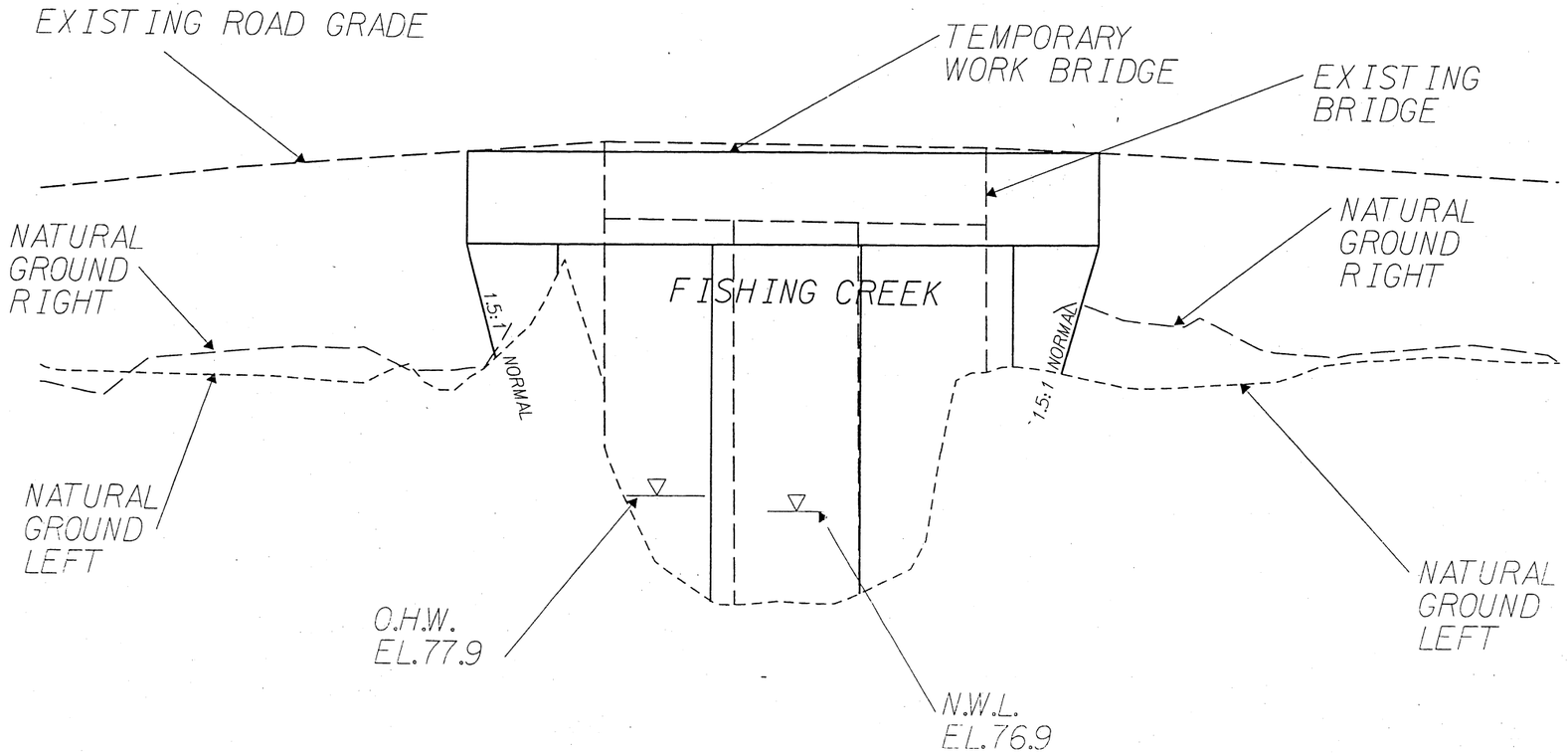
PROJECT NO. 33073.1.1(B-3453)

BRIDGE NO. 25, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 2 TEMPORARY WORK BRIDGE PROFILE (WEST SIDE)

ENGLISH



25′ 0 50′

HORIZONTAL SCALE: 1" : 50′

5′ 0 10′

VERTICAL SCALE: 1" : 10′

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

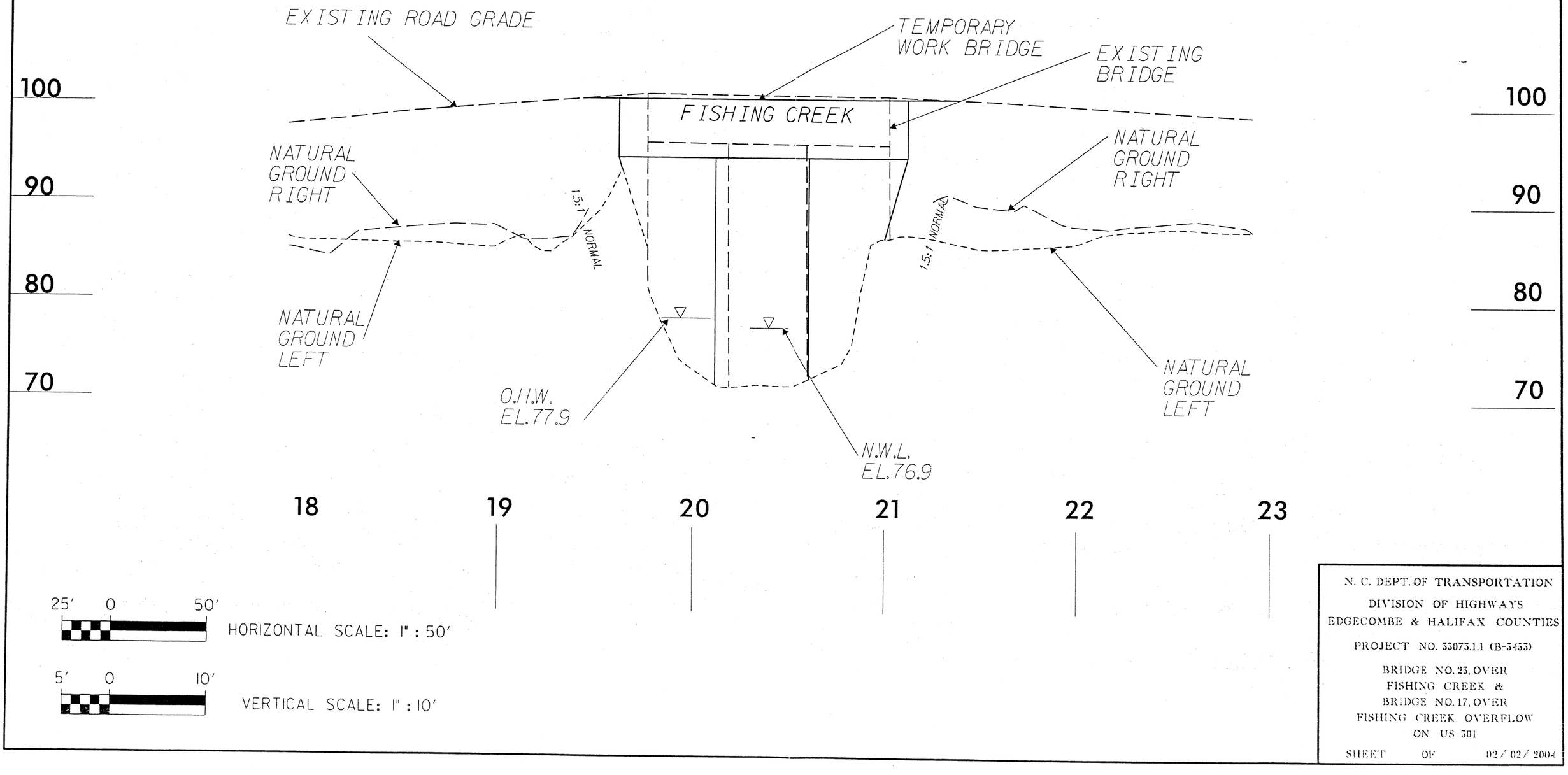
PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 25, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 2 TEMPORARY WORK BRIDGE PROFILE (EAST SIDE)

ENGLISH



25′ 0 50′

HORIZONTAL SCALE: 1" : 50′

5′ 0 10′

VERTICAL SCALE: 1" : 10′

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

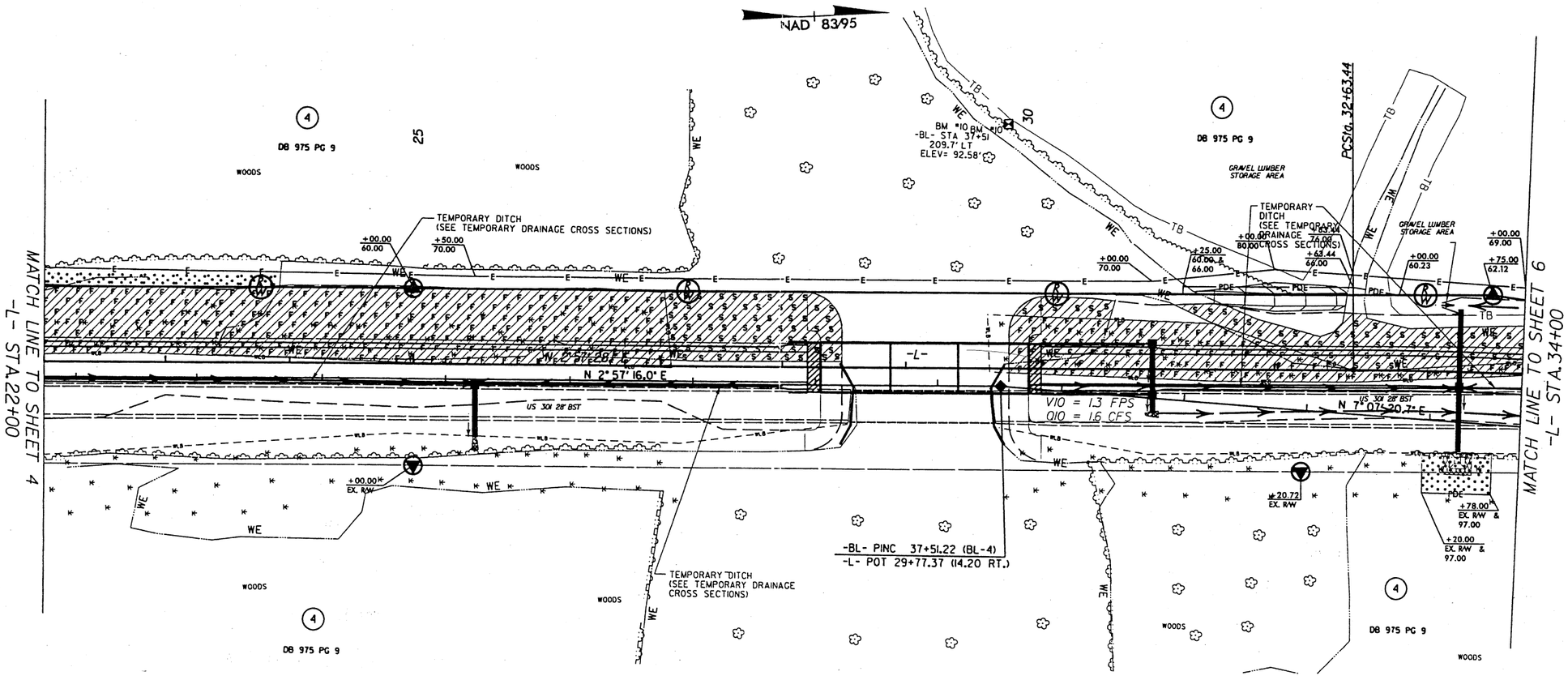
PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02 / 02 / 2004

SITE 3 -L- STA. 22+00 TO 34+88

ENGLISH



50' 0 100'

SCALE: 1" : 100'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

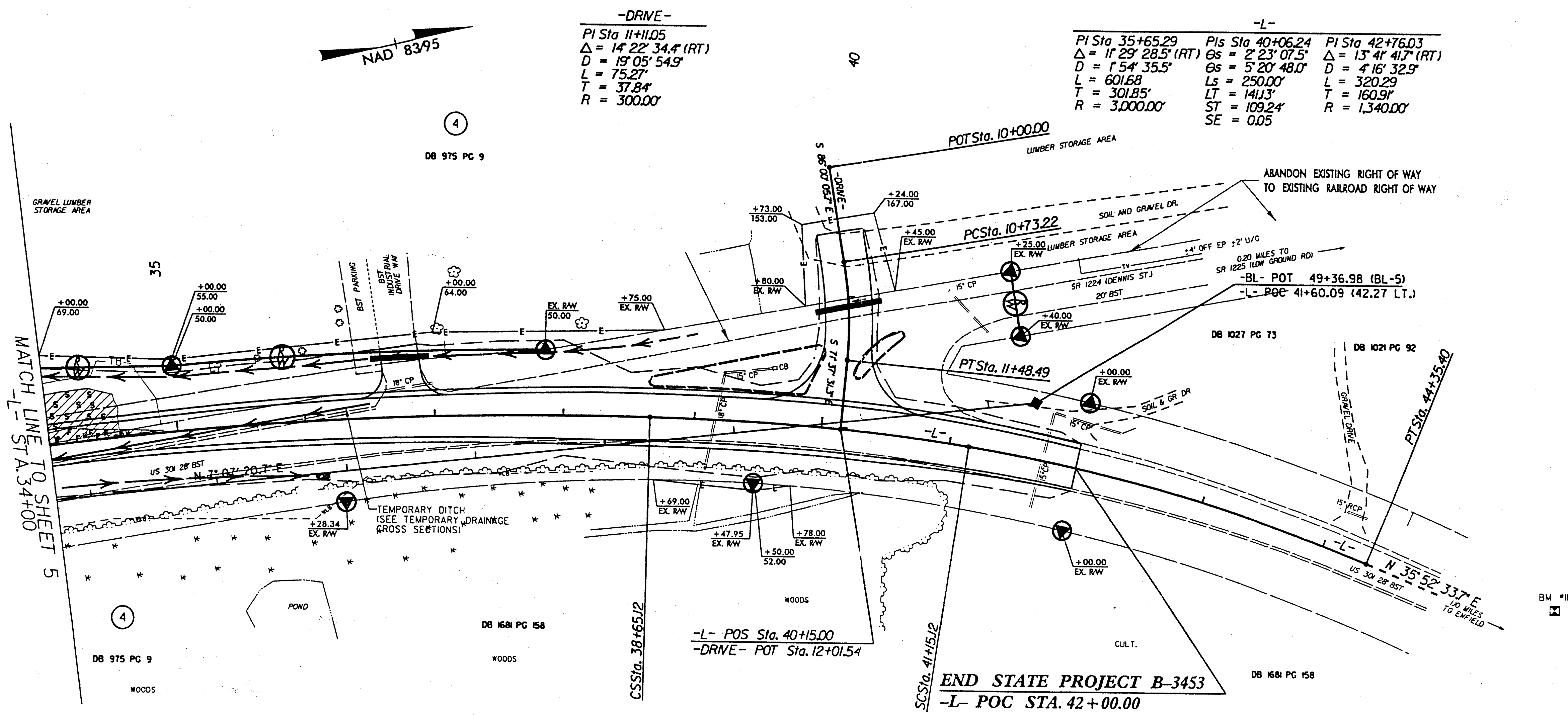
PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 3 -L- STA. 22+00 TO 34+88

ENGLISH


-DRIVE-
PI Sta 11+11.05
Δ = 14° 22' 34.4" (RT)
D = 19° 05' 54.9"
L = 75.27'
T = 37.84'
R = 300.00'
-L-
PI Sta 35+65.29
Δ = 11° 29' 28.5" (RT)
D = 1° 54' 35.5"
L = 601.68
T = 301.85'
R = 3,000.00'
PIs Sta 40+06.24
θs = 2° 23' 07.5"
θs = 5° 20' 48.0"
Ls = 250.00'
LT = 141.13'
ST = 109.24'
SE = 0.05
PI Sta 42+76.03
Δ = 13° 41' 41.7" (RT)
D = 4° 16' 32.9"
L = 320.29
T = 160.91'
R = 1,340.00'
NAD 83/95
POT Sta. 10+00.00
PCSta. 10+73.22
PTSta. 11+48.49
PTSta. 44+35.40
ABANDON EXISTING RIGHT OF WAY TO EXISTING RAILROAD RIGHT OF WAY
-BL- POT 49+36.98 (BL-5)
-L- POC 41+60.09 (42.27 LT.)
MATCH LINE TO SHEET 5 -L- STA. 34+00
TEMPORARY DITCH (SEE TEMPORARY DRAINAGE CROSS SECTIONS)
-L- POS Sta. 40+15.00
-DRIVE- POT Sta. 12+01.54
CSSta. 38+65.12
SCSta. 41+15.12
END STATE PROJECT B-3453
-L- POC STA. 42+00.00
US 301 28' BST
N 7° 07' 20.7" E
N 35° 52' 33.7" E
SR 1224 (DENNIS ST)
LUMBER STORAGE AREA
GRAVEL LUMBER STORAGE AREA
SOIL AND GRAVEL DR.
DB 975 PG 9
DB 1681 PG 158
DB 1027 PG 73
DB 1021 PG 92
WOODS
POND
CULT.
BM #11
1.0 MILES TO ENFIELD
0.20 MILES TO SR 1225 (LOW GROUND RD)

50' 0 100'

SCALE: 1" : 100'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
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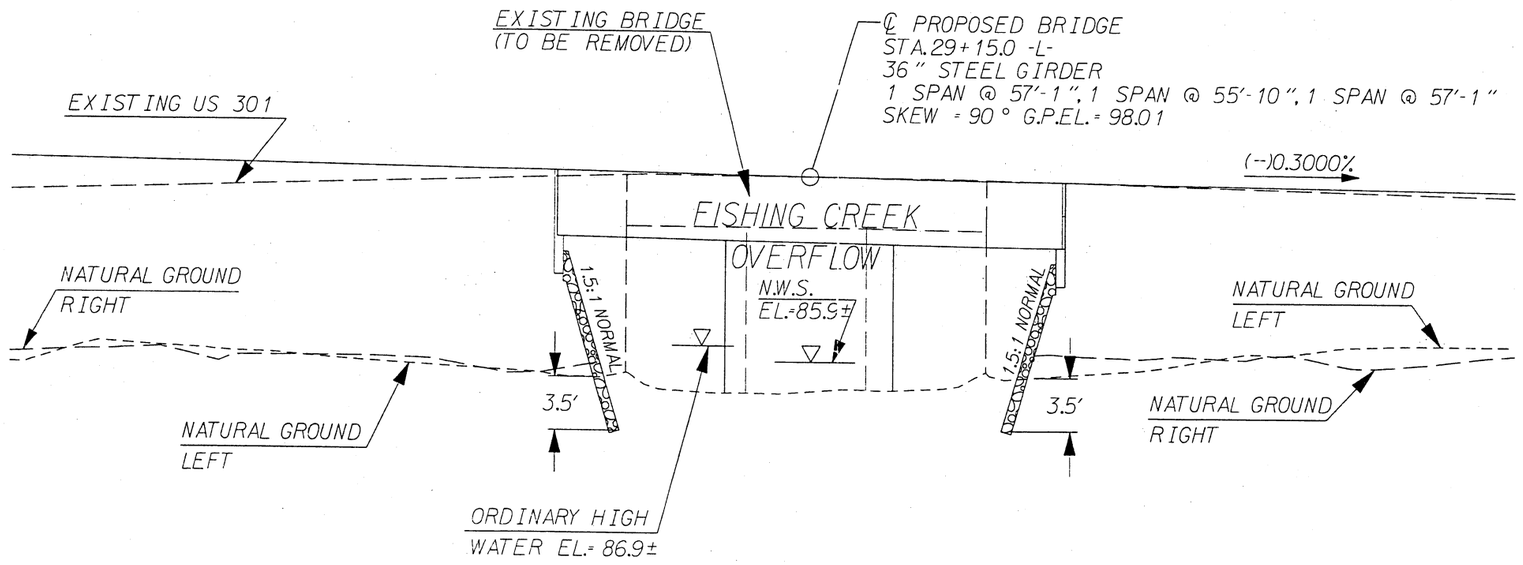
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 3 PROPOSED BRIDGE PROFILE

ENGLISH



25' 0 50'
HORIZONTAL SCALE: 1" = 50'

5' 0 10'
VERTICAL SCALE: 1" = 10'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3455)

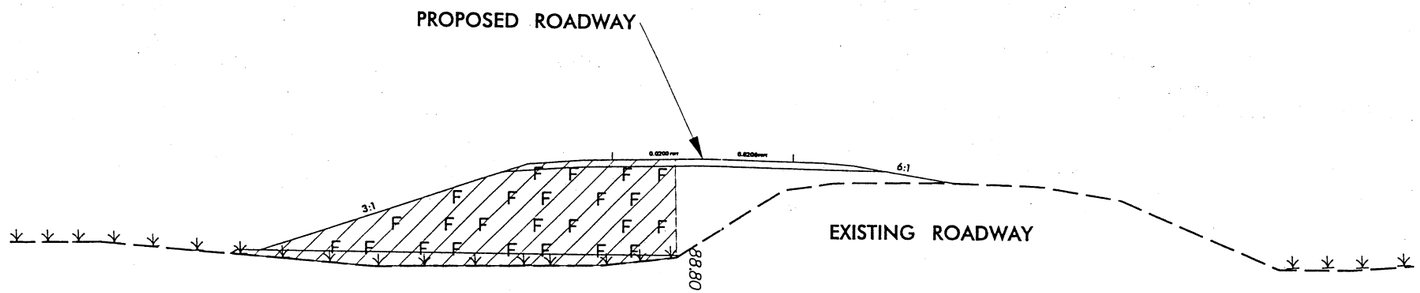
BRIDGE NO. 25, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02 / 02 / 2004

SITE 3 SECTION VIEW

ENGLISH

TYPICAL SECTION OF NEW ROADWAY FROM 22+00 TO BEGIN BRIDGE AND FROM END BRIDGE TO 34+88



10' 0 20'

SCALE: 1" : 20'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

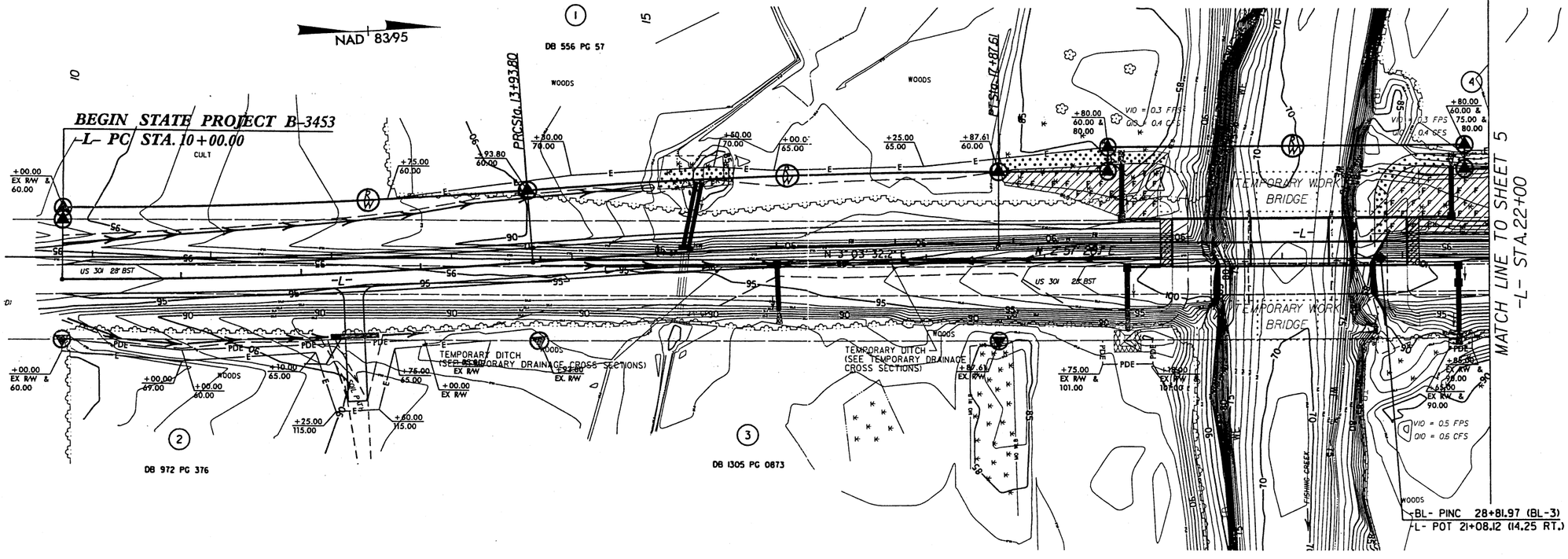
PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 1 -L- STA. 15+02 TO 15+67
SITE 2 -L- STA. 17+88 TO 22+00

ENGLISH



50' 0 100'

SCALE: 1" : 100'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
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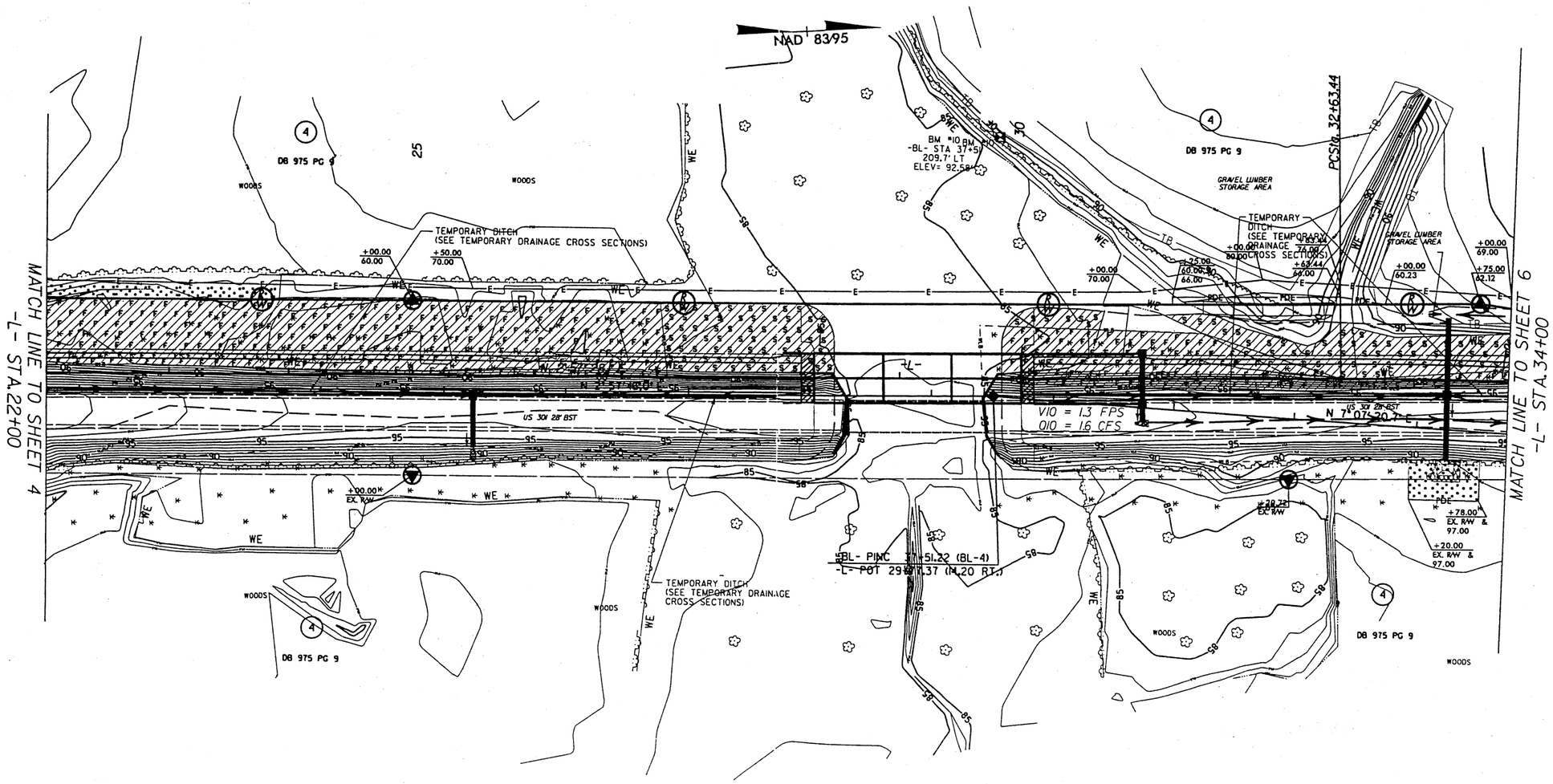
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301 Rev 12/04

SHEET OF 02/02/2004

SITE 3 -L- STA. 22+00 TO 34+88

ENGLISH



50' 0 100'

SCALE: 1" : 100'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

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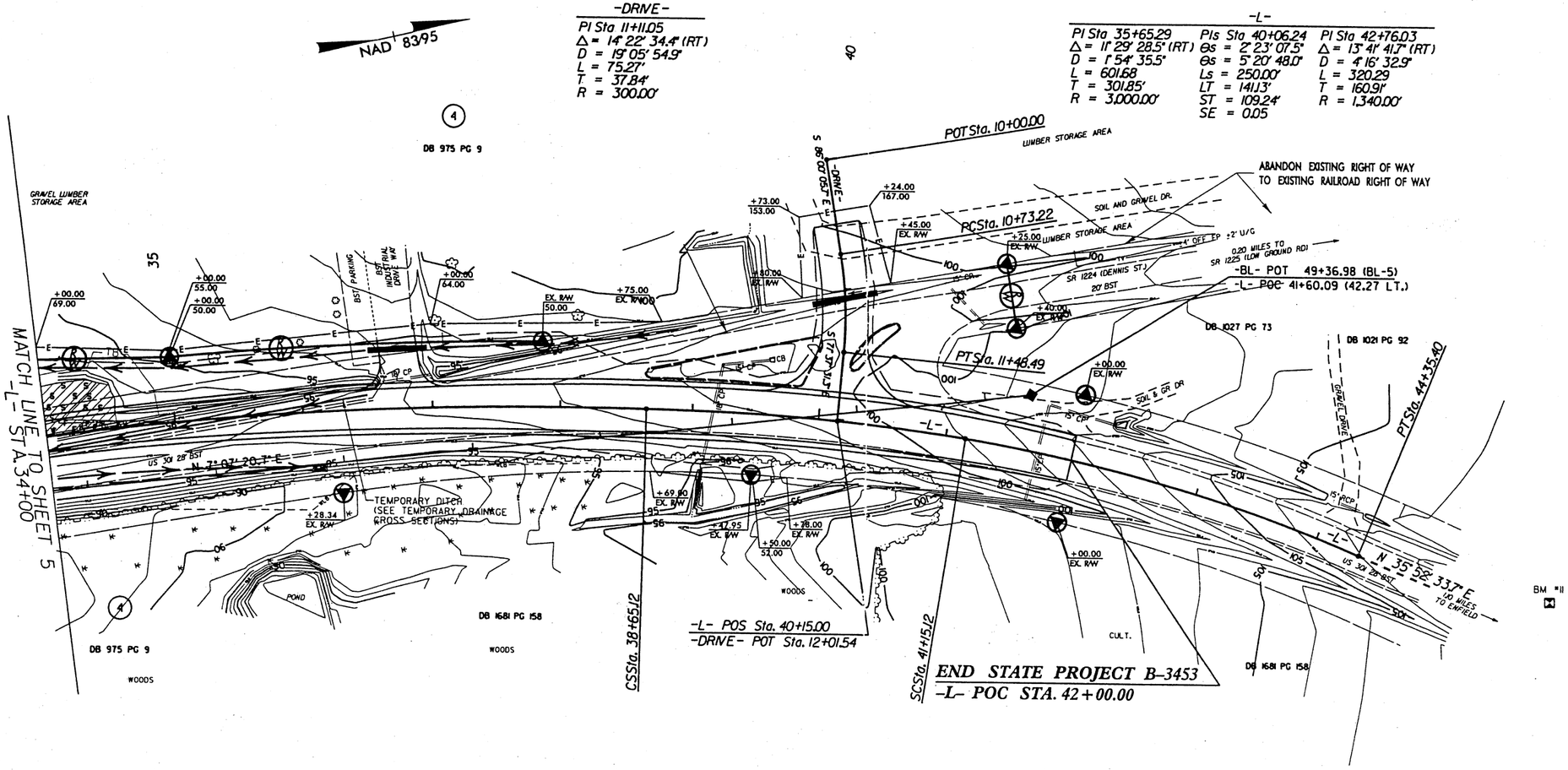
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 3 -L- STA. 22+00 TO 34+88

ENGLISH



50' 0 100'

SCALE: 1" : 100'

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

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FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

PROPERTY OWNERS

PARCEL NO.	NAMES	ADDRESSES
1	FRANKLINTON CENTER, INC.	
2	ROBERT N. WHITAKER.	
3	SUSTAINABLE FORESTS, L.L.C.	
4	QUALITY FOREST PRODUCTS, INC.	

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
-EDGECOMBE & HALIFAX COUNTIES

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BRIDGE NO. 23, OVER
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ON US 301

SHEET OF 02/02/2004

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				
			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+02 to 15+67	EXTENSION OF 2 @ 24" RCP W/ COLLARS	0.003			0.019					
2	17+88 TO 22+00	BRIDGE; 3 SPAN (3 @ 65 FT) = 195 FT. 45" PRESTRESSED CONCRETE GIRDERS	0.202			0.078					
3	22+00 TO 34+88	BRIDGE; 3 SPAN (1@57 FT, 1@56 FT, 1@ 57 FT) 36" STEEL GIRDERS	0.945			0.102	0.401				
TOTALS:			1.151			0.200	0.401				

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE & HALIFAX COUNTIES

PROJECT 33073.1.1 (B-3453)
ON US 301

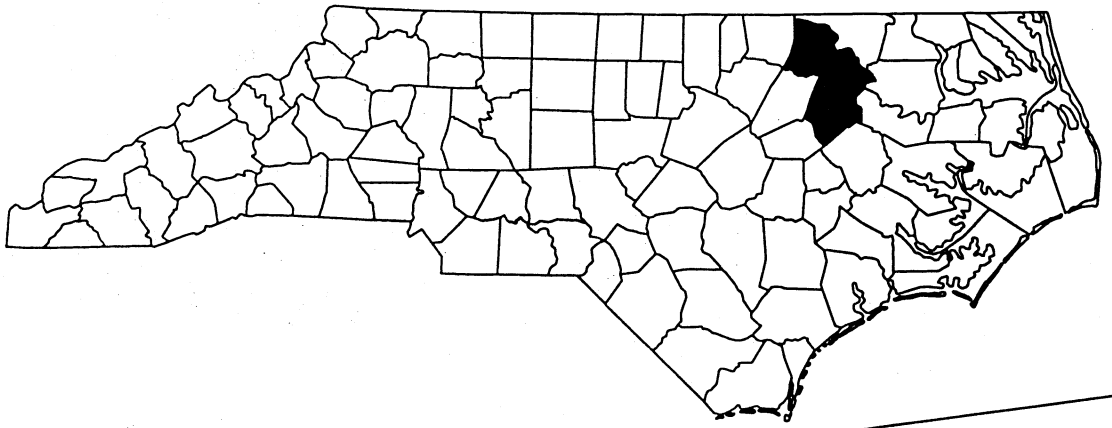
SHEET OF 02/02/04

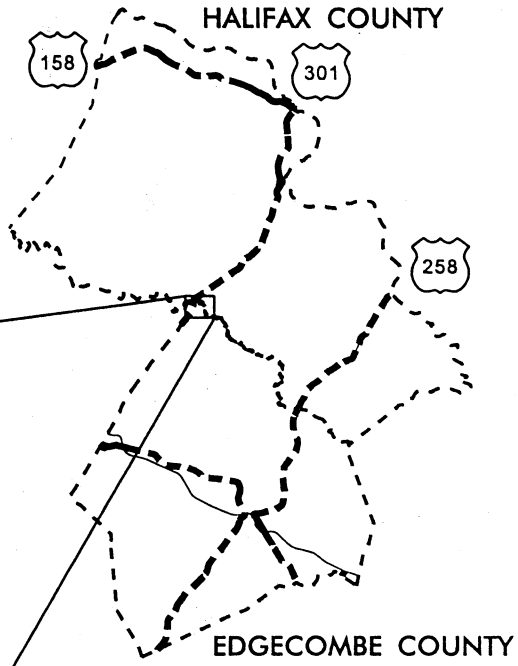
Form Revised 3/22/01

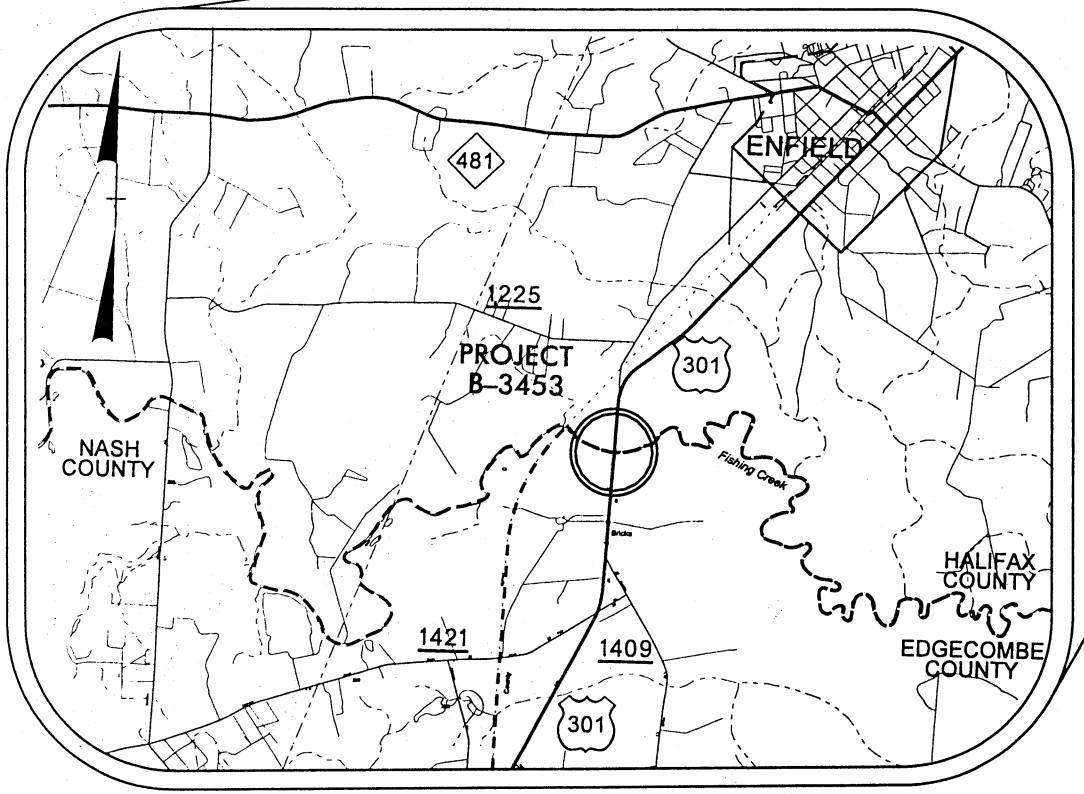
B-3453

EDGECOMBE & HALIFAX COUNTIES

BUFFER IMPACT PERMIT







N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

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BRIDGE NO. 23, OVER
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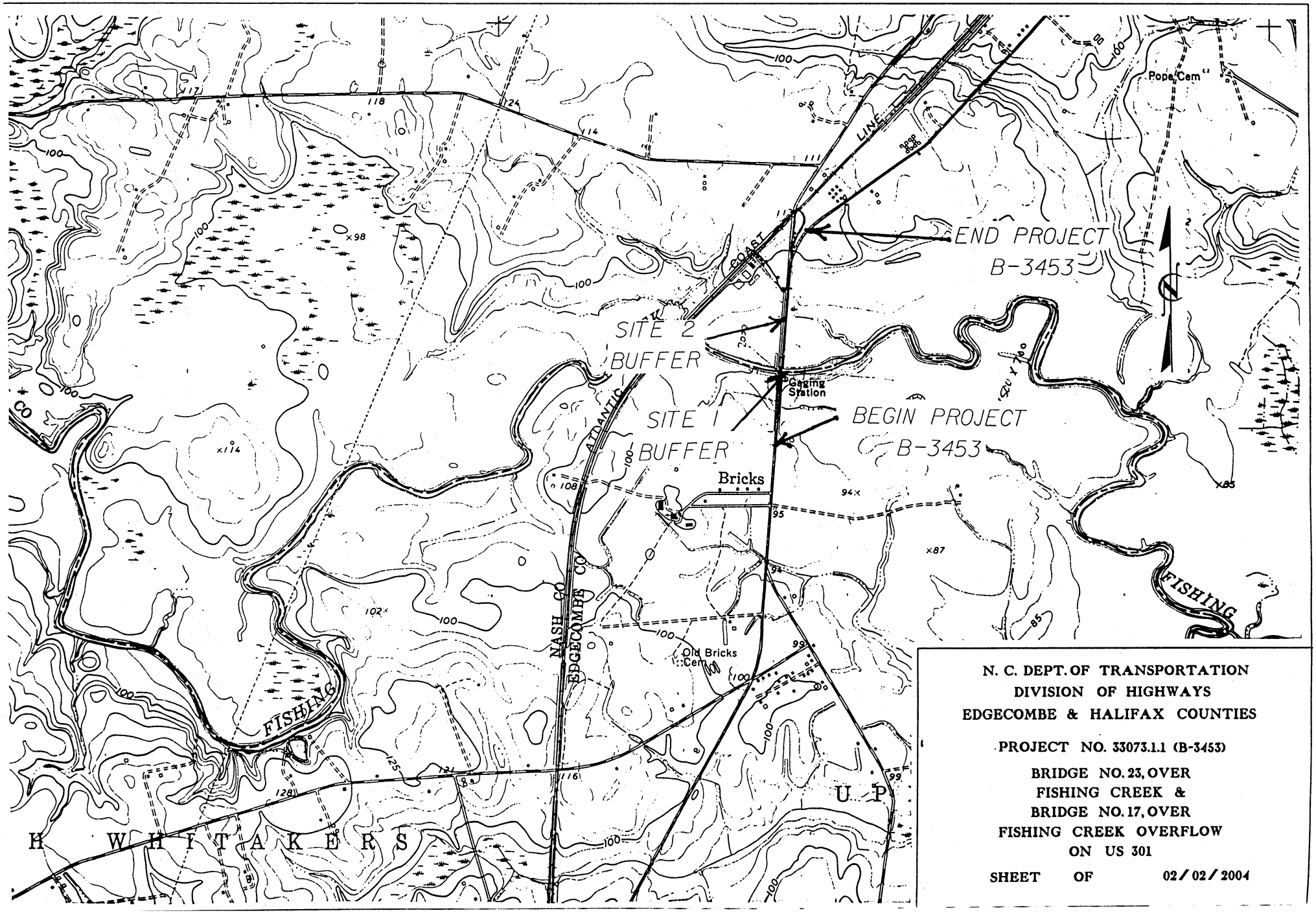
SHEET OF 02 / 02 / 2004



N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

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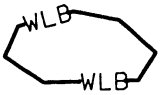
ON US 301

SHEET OF 02/02/2004

BUFFER LEGEND

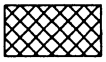
WLB WETLAND BOUNDARY

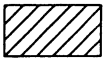


WETLAND


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

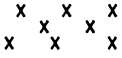
TDE TEMP. DRAINAGE EASEMENT

PDE PERMANENT DRAINAGE EASEMENT

EAB EXIST. ENDANGERED ANIMAL BOUNDARY

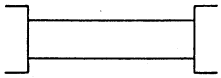
EPB EXIST. ENDANGERED PLANT BOUNDARY

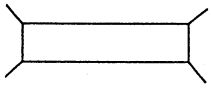
WATER SURFACE


LIVE STAKES


BOULDER

COIR FIBER ROLLS

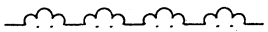

PROPOSED BRIDGE


PROPOSED BOX CULVERT

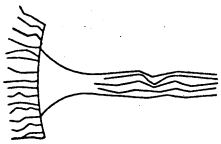

PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE

(DASHED LINES DENOTE EXISTNG STRUCTURES)


SINGLE TREE


WOODS LINE

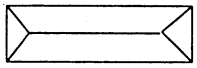

DRAINAGE INLET

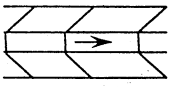

ROOTWAD


RIP RAP

ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE


PREFORMED SCOUR HOLE (PSH)


LEVEL SPREADER (LS)


DITCH/ GRASS SWALE

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

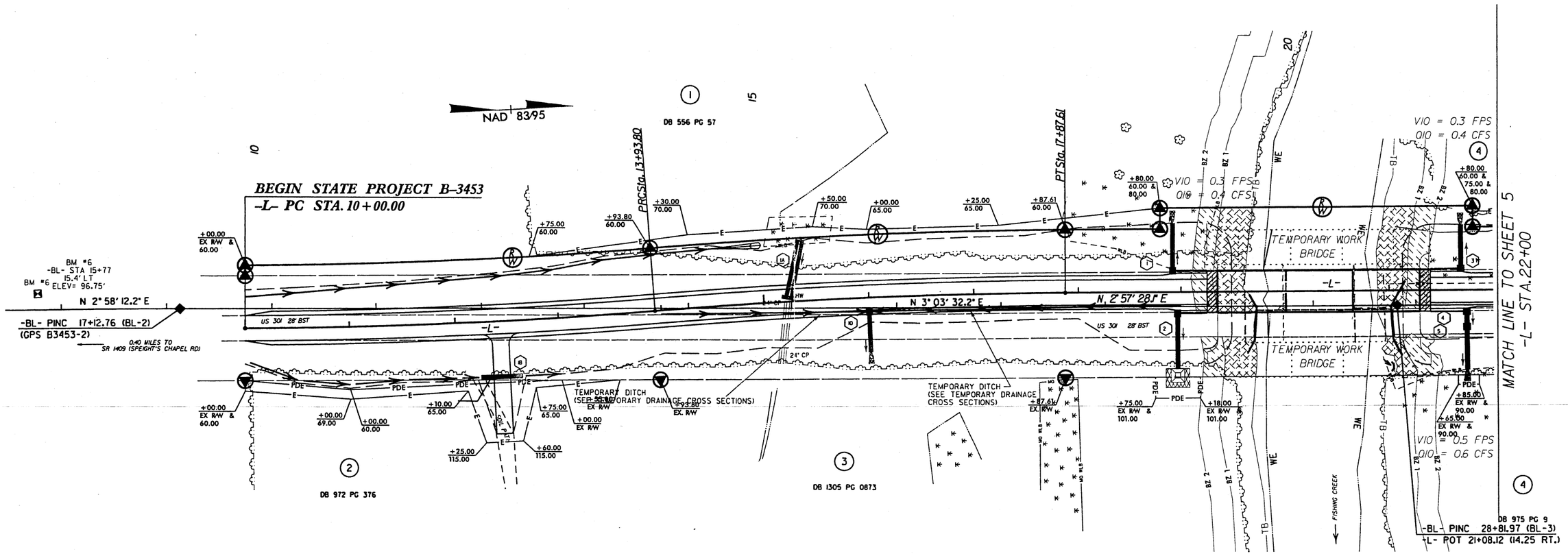
PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 1 -L- STA. 19+11 TO 21+38

ENGLISH



50' 0 100'

SCALE: 1" : 100'

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
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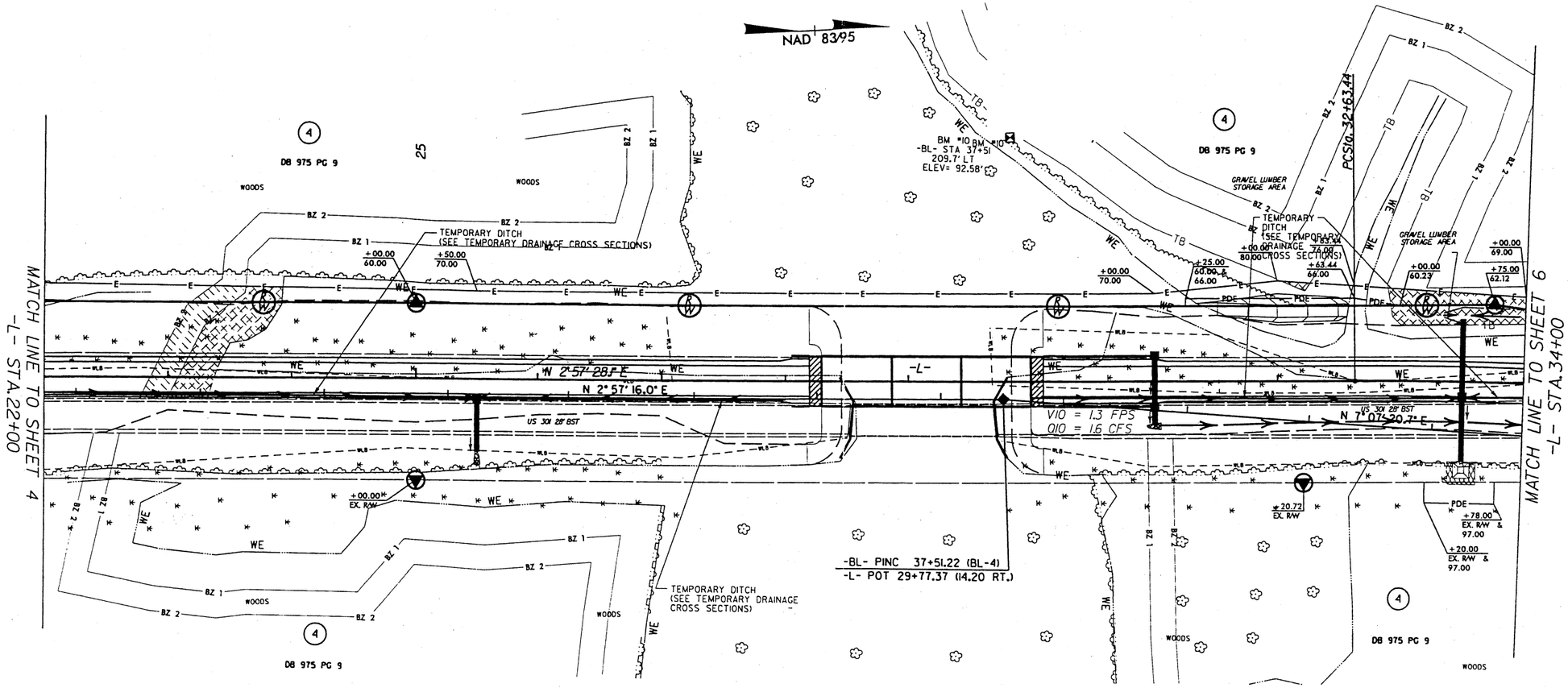
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF

02/02/2004

SITE 2 -L- STA. 22+86 TO 35+39

ENGLISH



50' 0 100'

SCALE: 1" : 100'

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

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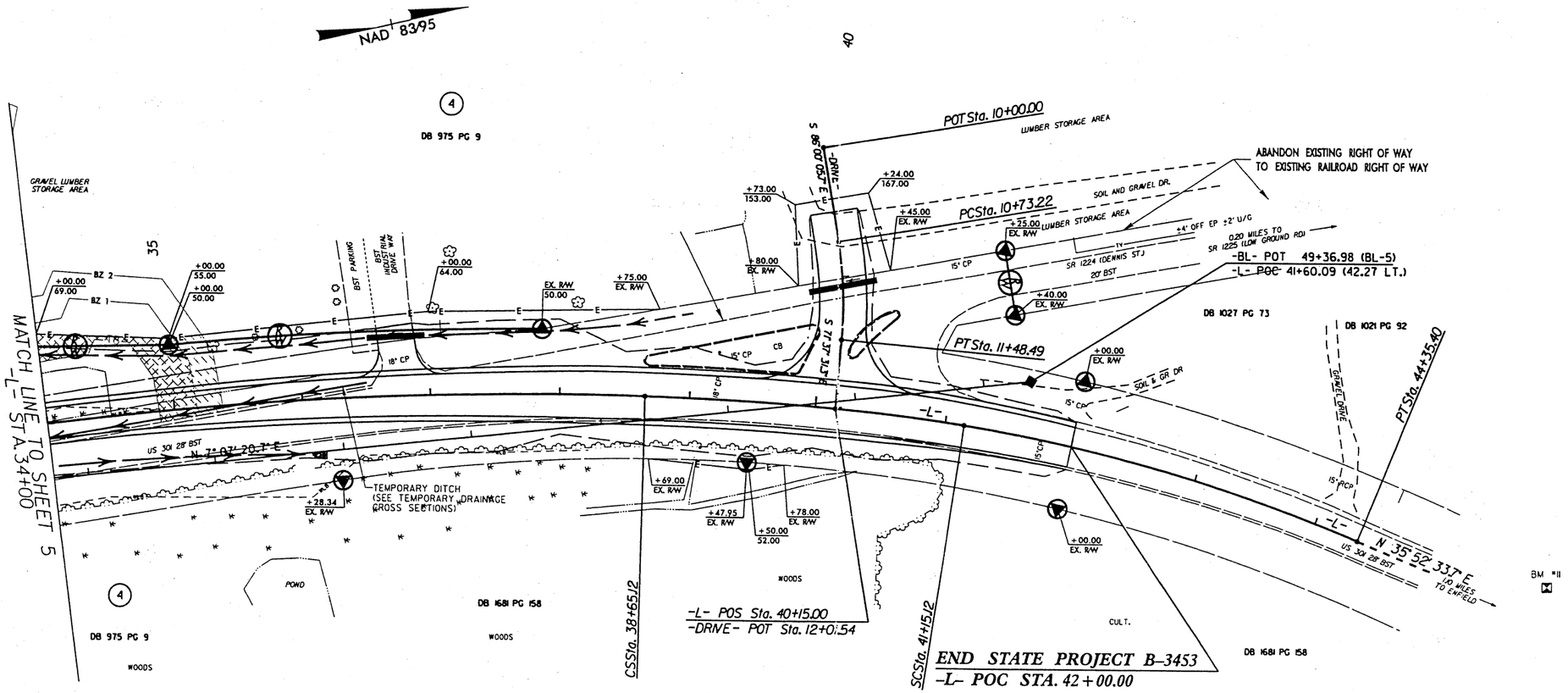
ON US 301

SHEET OF 02/02/2004

SITE 2 -L- STA. 22+86 TO 35+39

ENGLISH



50' 0 100'

SCALE: 1" : 100'

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

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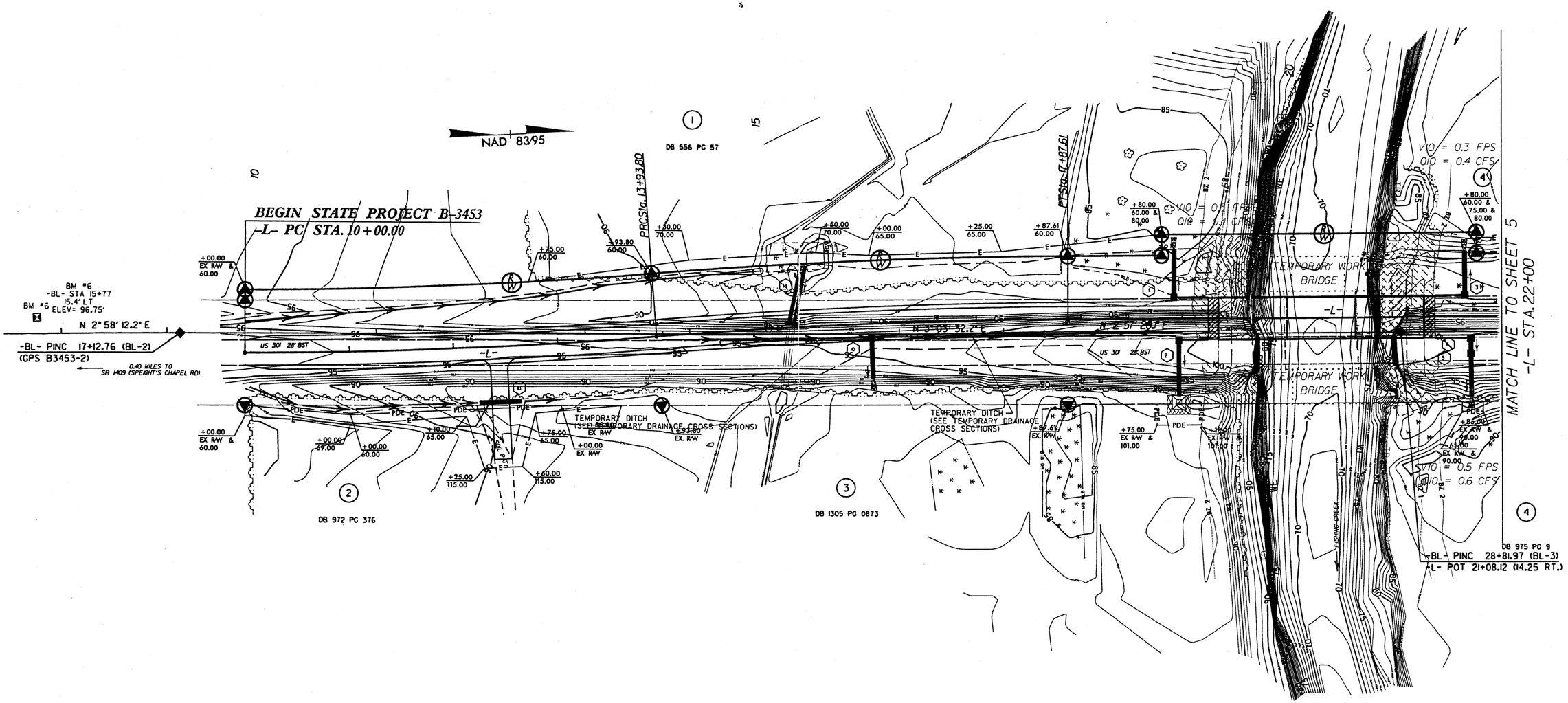
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

SITE 1 -L- STA. 19+11 TO 21+38

ENGLISH



50' 0 100'

SCALE: 1" : 100'

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

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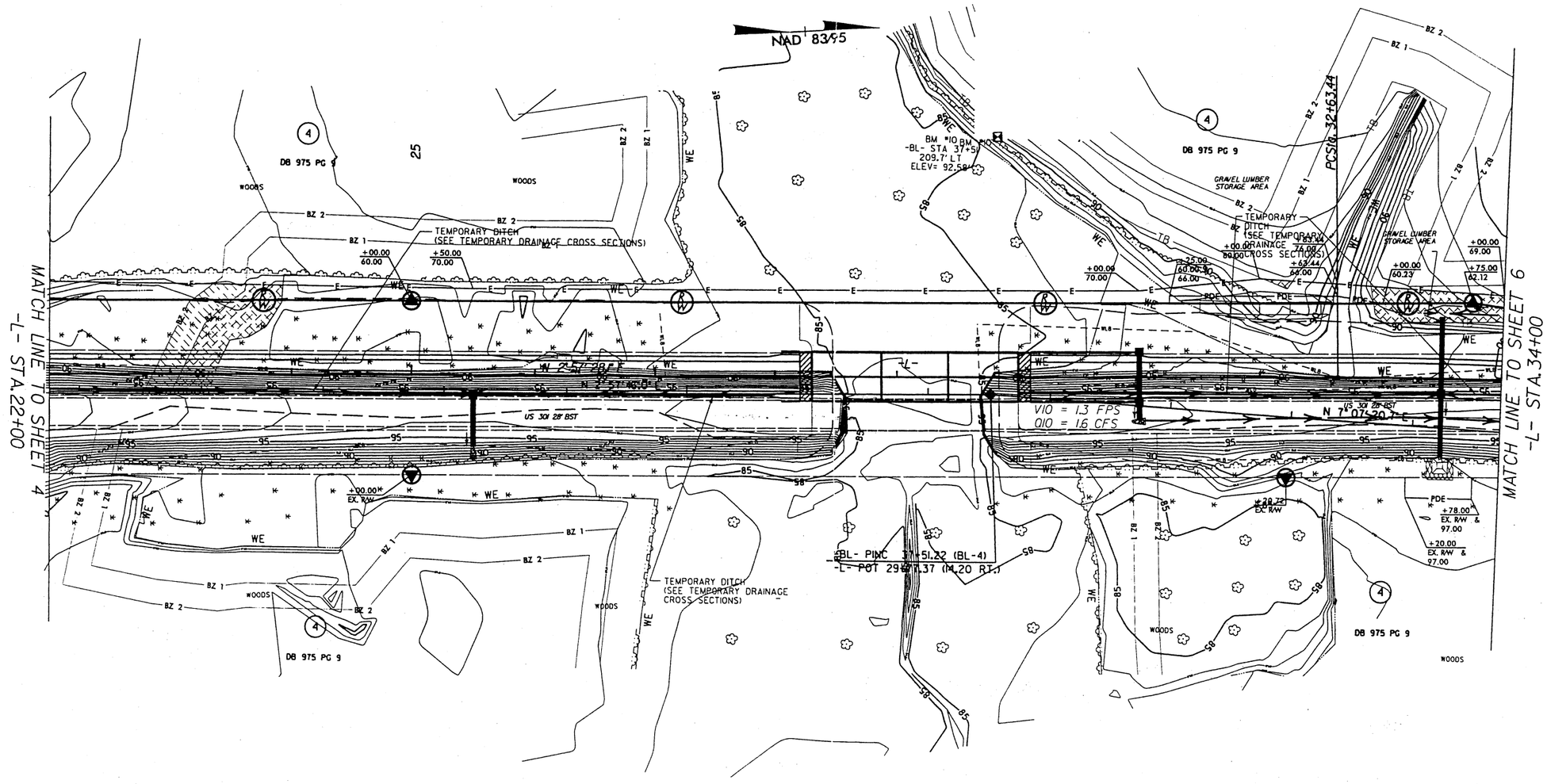
SITE 2 -L- STA. 22+86 TO 35+39

ENGLISH



50' 0 100'

SCALE: 1" : 100'

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

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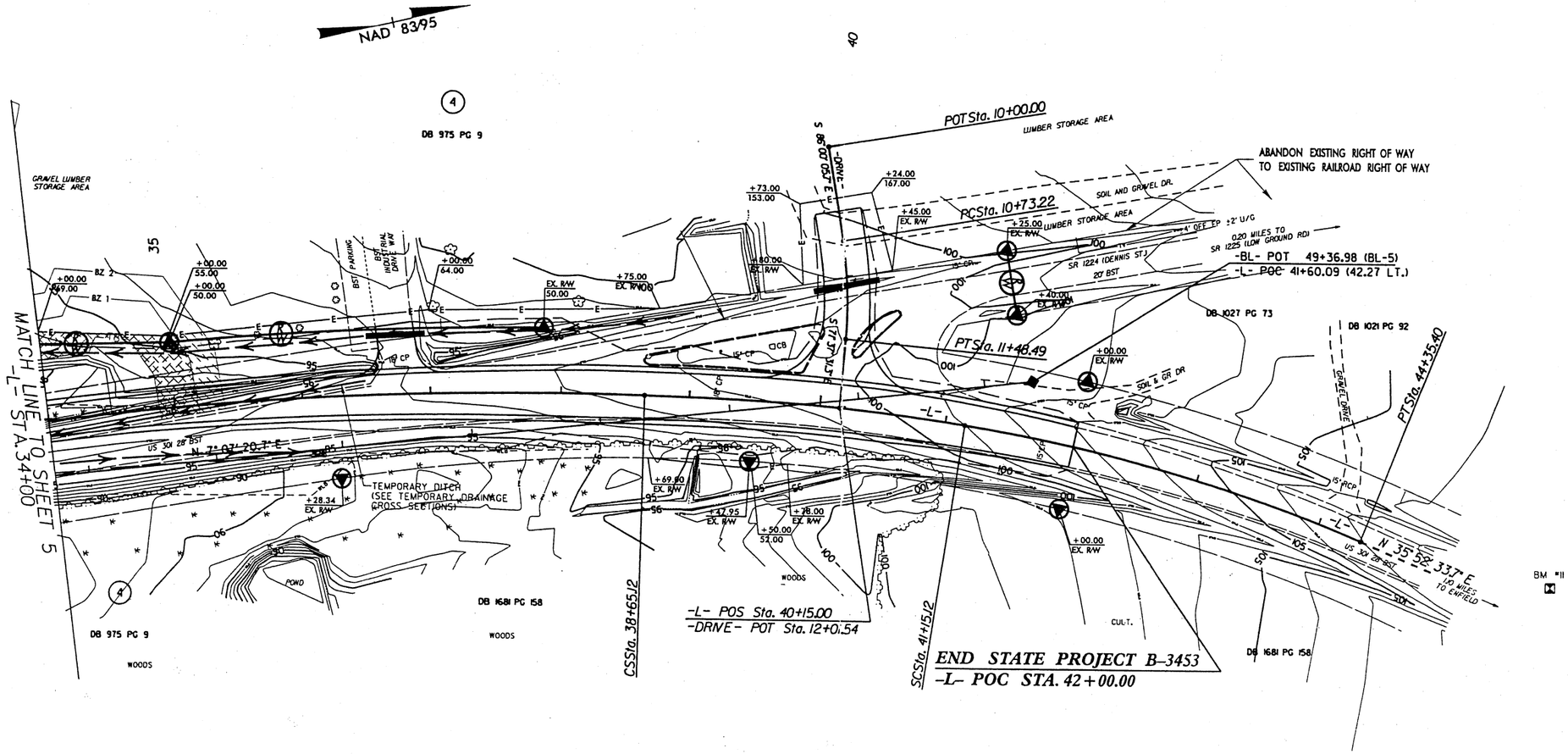
ON US 301

SHEET OF 02/02/2004

SITE 2 -L- STA. 22+86 TO 35+39

ENGLISH



50' 0 100'

SCALE: 1" : 100'

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
FISHING CREEK &
BRIDGE NO. 17, OVER
FISHING CREEK OVERFLOW
ON US 301

SHEET OF 02/02/2004

PROPERTY OWNERS

PARCEL NO.	NAMES	ADDRESSES
1	FRANKLINTON CENTER, INC.	
2	ROBERT N. WHITAKER.	
3	SUSTAINABLE FORESTS, L.L.C.	
4	QUALITY FOREST PRODUCTS, INC.	

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE & HALIFAX COUNTIES

PROJECT NO. 33073.1.1 (B-3453)

BRIDGE NO. 23, OVER
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ON US 301

SHEET OF 02/02/2004

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
			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, 3 SPAN (3 @ 65 FT.) = 195 FT.45' PRESTRESSED CONCRETE GIRDERS	-L- Sta 19+11 TO 21+38	X		7840.8	5662.8	13503.6					
2	BRIDGE, 3 SPAN (1 @ 57 FT., 1 @ 56 FT., 1 @ 57 FT.) = 170 FT. 36' STEEL GIRDERS	-L- Sta 22+86 TO 35+39	X		9147.6	3484.8	12632.4					
TOTAL:					16988.4	9147.6	26136.0	0.0	0.0	0.0		

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE & HALIFAX COUNTIES
PROJECT: 33073.1.1 (B-3453)
ON US 301

2/2/2004
SHEET OF

BUFFER IMPACTS SUMMARY

			IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ac)	ZONE 2 (ac)	TOTAL (ac)	ZONE 1 (ac)	ZONE 2 (ac)	TOTAL (ac)	ZONE 1 (ac)	ZONE 2 (ac)
1	BRIDGE, 3 SPAN (3@ 65 FT.) = 195 FT. 45" PRESTRESSED CONCRETE GIRDERS	-L- Sta 19+11 TO 21+38	X		0.18	0.13	0.31					
2	BRIDGE, 3 SPAN (1@ 57 FT., 1@ 56 FT.,1@ 57 FT)= 170 FT. 36" STEEL GIRDERS	-L- Sta 22+86 TO 35+39	X		0.21	0.08	0.29					
TOTAL:					0.39	0.21	0.60			0.00	0.00	0.00

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE & HALIFAX COUNTIES
PROJECT: 33073.1.1 (B-3453)
ON US 301

2/2/2004
SHEET OF

B-3453

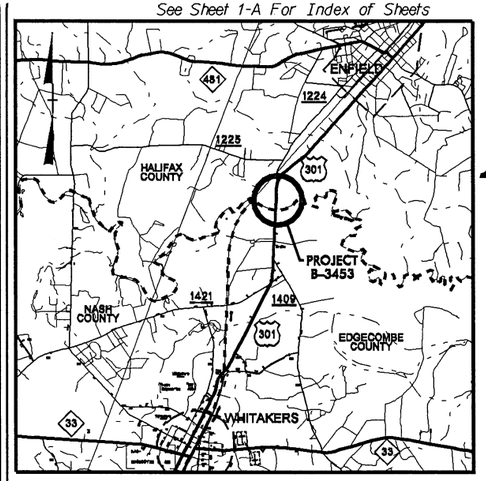
EDGECOMBE & HALIFAX COUNTIES

ROADWAY DESIGN PLANS

09/08/

TIP PROJECT: B-3453

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

EDGECOMBE & HALIFAX COUNTIES

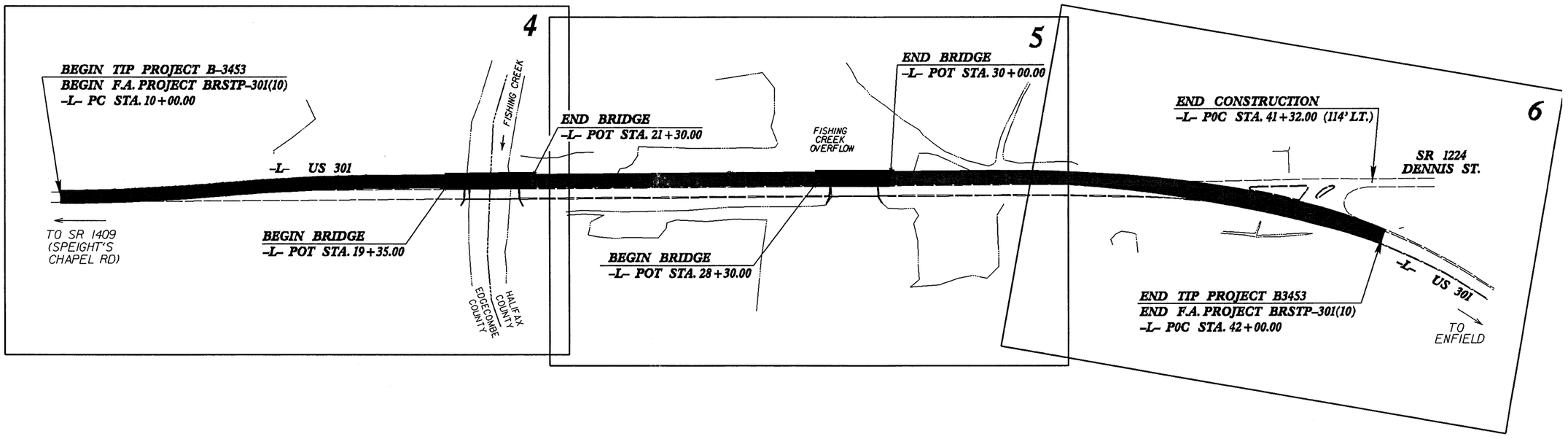
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3453	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33073.1.1	BRSTP-301(10)	PE
33073.2.1	BRSTP-301(10)	R/W, UTILITIES

LOCATION: BRIDGE NO. 23 OVER FISHING CREEK AND BRIDGE NO. 17 OVER FISHING CREEK OVERFLOW ON US 301

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

NAD 83



NCDOT CONTACT:

TERESA M. BRUTON, PE
PROJECT ENGINEER
DESIGN SERVICES UNIT

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

CONTRACT:

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2005 = 7,735
ADT 2025 = 14,900
DHV = 10 %
D = 60 %
T = 13 % *
V = 60 MPH

* TTST 9 % DUAL 4 %

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3453 = 0.537 mi
LENGTH OF STRUCTURES TIP PROJECT B-3453 = 0.069 mi
TOTAL LENGTH OF TIP PROJECT B-3453 = 0.606 mi

Prepared for:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., NC, 27610
Prepared by:
MA ENGINEERING CONSULTANTS, INC.
598 E. CHATHAM STREET, SUITE 137
CARY, NORTH CAROLINA 27511
(919) 297-0220

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

LETTING DATE:
APRIL 19, 2005

R.W. PORTER JR., PE
PROJECT ENGINEER

KEVIN S. HUTCHENS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

06-JAN-2005 08:16
R:\roadway\Proj\b3453_rdy_tsh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-3453	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-3453	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221

DATUM DESCRIPTION

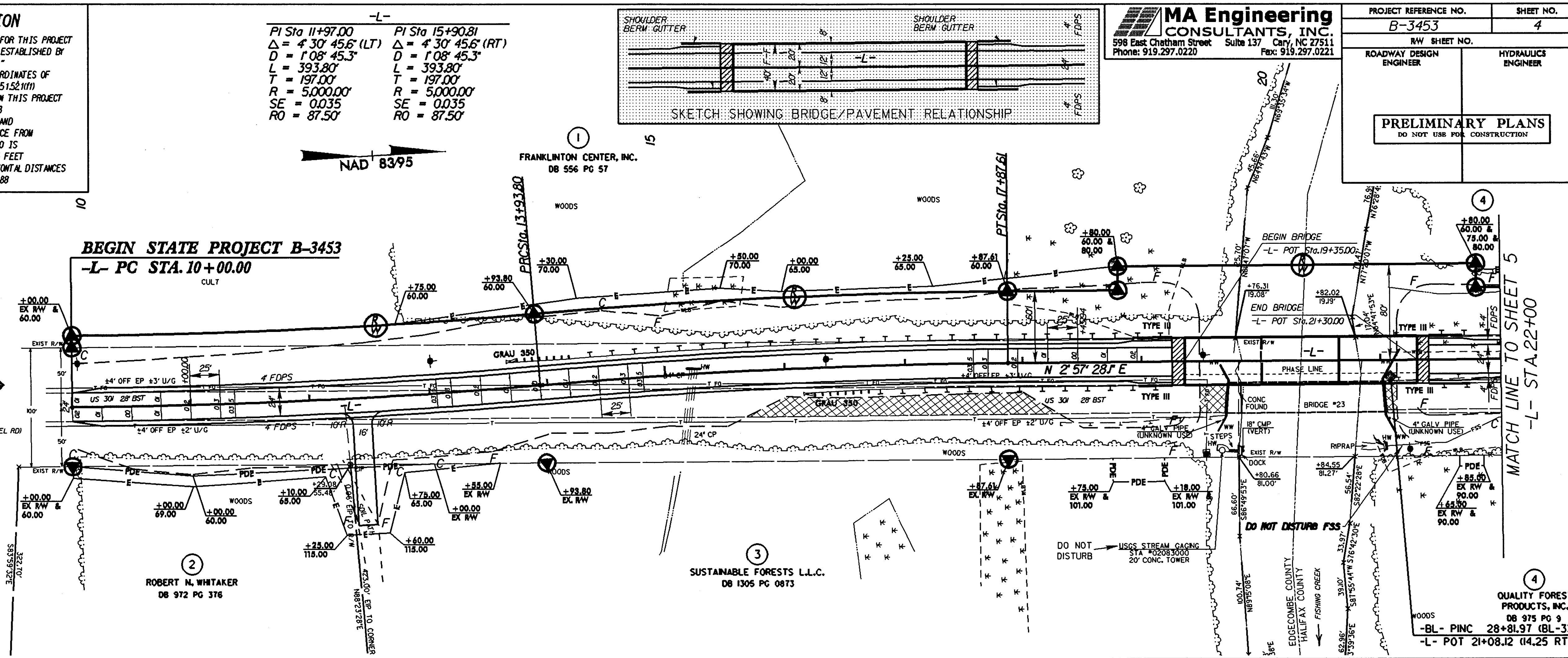
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4134-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 874849.507(ft) EASTING: 2446551.521(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999848
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4134-1" TO -L- STATION 10+00.00 IS
N 89° 30' 27.0" W 60,679.515 FEET
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

-L-

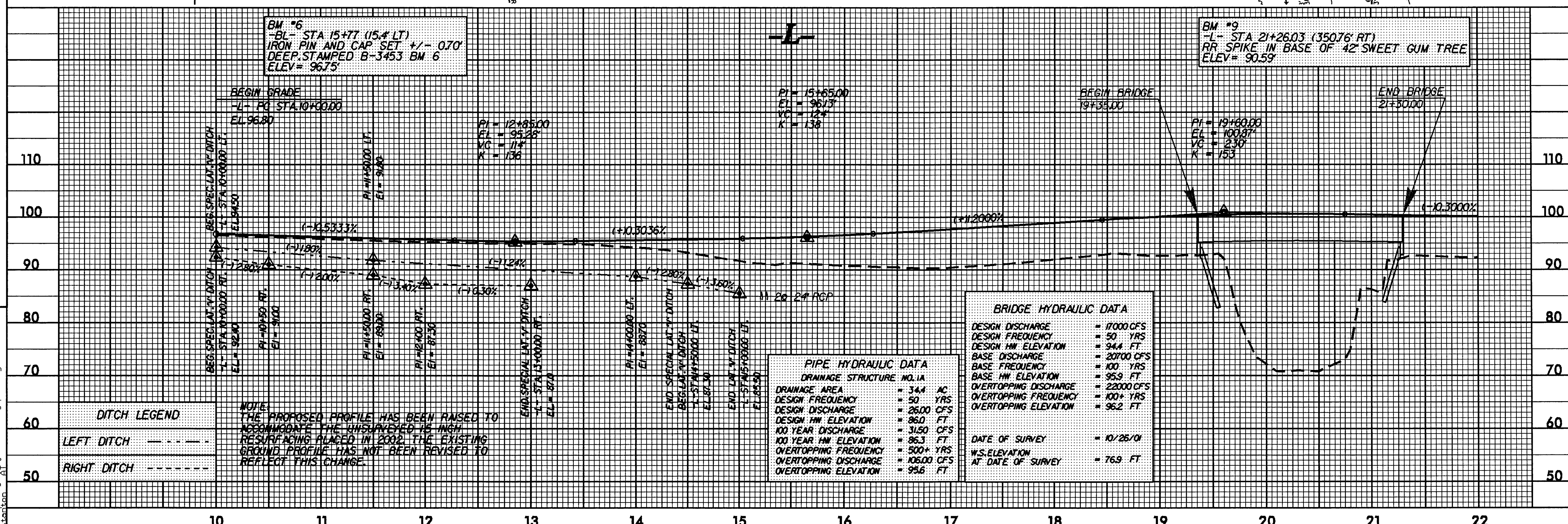
PI Sta 11+97.00	PI Sta 15+90.81
Δ = 4° 30' 45.6" (LT)	Δ = 4° 30' 45.6" (RT)
D = 1° 08' 45.3"	D = 1° 08' 45.3"
L = 393.80'	L = 393.80'
T = 197.00'	T = 197.00'
R = 5,000.00'	R = 5,000.00'
SE = 0.035	SE = 0.035
RO = 87.50'	RO = 87.50'

NAD 83/95

SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



REVISIONS



DITCH LEGEND
LEFT DITCH
RIGHT DITCH

NOTE:
THE PROPOSED PROFILE HAS BEEN RAISED TO ACCOMMODATE THE UNSURVEYED 1.5 INCH RESURFACING PLACED IN 2002. THE EXISTING GROUND PROFILE HAS NOT BEEN REVISED TO REFLECT THIS CHANGE.

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 1A

DRAINAGE AREA	= 34.4	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 26.00	CFS
DESIGN HW ELEVATION	= 86.0	FT
100 YEAR DISCHARGE	= 31.50	CFS
100 YEAR HW ELEVATION	= 86.3	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 106.00	CFS
OVERTOPPING ELEVATION	= 95.6	FT

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 17000	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 94.4	FT
BASE DISCHARGE	= 20700	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 95.9	FT
OVERTOPPING DISCHARGE	= 22000	CFS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 96.2	FT
DATE OF SURVEY	= 10/26/01	
W.S. ELEVATION AT DATE OF SURVEY	= 76.9	FT

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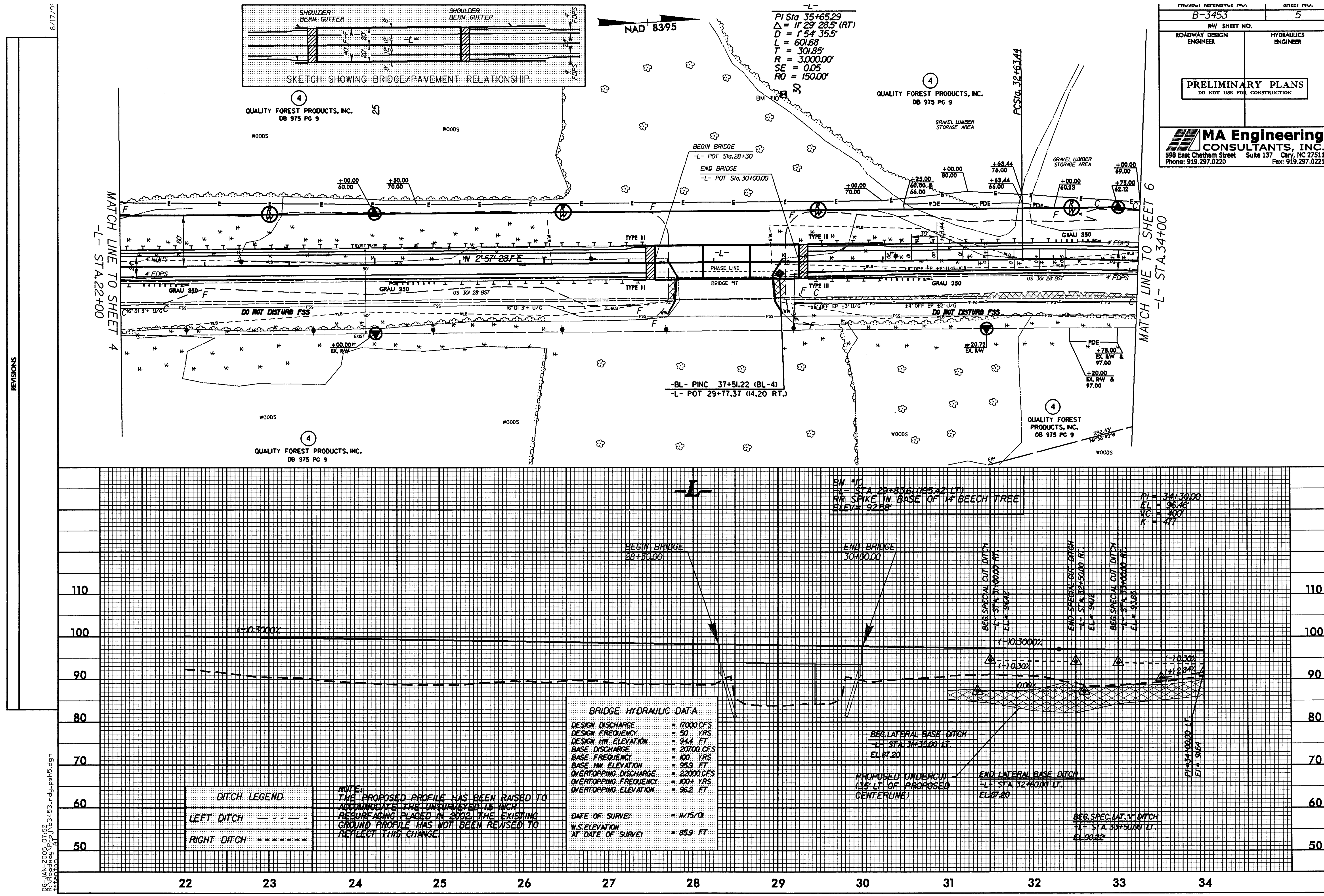
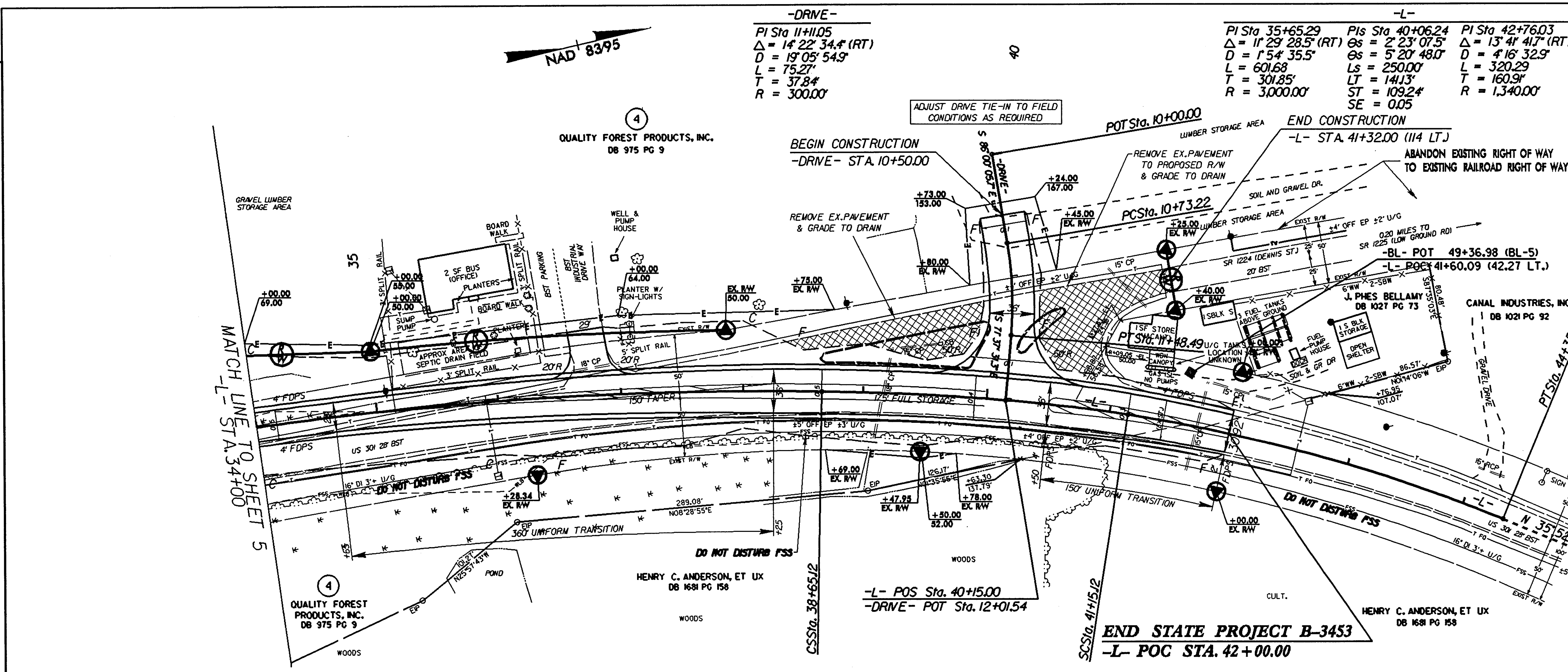


PROJECT REFERENCE NO. B-3453
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
SHOULDER BERM GUTTER
NAD 83/95
-L-
PI Sta 35+65.29
Δ = 11° 29' 28.5" (RT)
D = 1° 54' 35.5"
L = 601.68'
T = 301.85'
R = 3,000.00'
SE = 0.05
RO = 150.00'
QUALITY FOREST PRODUCTS, INC.
DB 975 PG 9
WOODS
BEGIN BRIDGE -L- POT Sta. 28+30
END BRIDGE -L- POT Sta. 30+00.00
GRAVEL LUMBER STORAGE AREA
PCSta. 32+63.44
BM #10
MATCH LINE TO SHEET 4 -L- STA. 22+00
MATCH LINE TO SHEET 6 -L- STA. 34+00
N 2° 57' 28.3" E
US 301 28' BST
GRAU 350
TYPE III
PHASE LINE
BRIDGE #17
DO NOT DISTURB FSS
-BL- PINC 37+51.22 (BL-4)
-L- POT 29+77.37 (14.20 RT.)
REVISIONS
-L-
BM #10
-L- STA 29+83.61 (195.42' LT)
RR SPIKE IN BASE OF 14" BEECH TREE
ELEV= 92.58'
PI = 34+30.00
EL = 96.46'
VC = 400'
K = 477
BEGIN BRIDGE 28+30.00
END BRIDGE 30+00.00
(-)0.3000%
BEG. SPECIAL CUT DITCH -L- STA. 31+00.00 RT. EL = 94.42
END SPECIAL CUT DITCH -L- STA. 32+50.00 RT. EL = 94.14
BEG. SPECIAL CUT DITCH -L- STA. 33+00.00 RT. EL = 93.26
BEG. LATERAL BASE DITCH -L- STA. 31+35.00 LT. EL 87.20
PROPOSED UNDERCUT (35' LT OF PROPOSED CENTERLINE)
END LATERAL BASE DITCH -L- STA. 32+60.00 LT. EL 87.20
BEG. SPEC. LAT. "V" DITCH -L- STA. 33+50.00 LT. EL 90.22'
BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 17000 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 94.4 FT
BASE DISCHARGE = 20700 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 95.9 FT
OVERTOPPING DISCHARGE = 22000 CFS
OVERTOPPING FREQUENCY = 100+ YRS
OVERTOPPING ELEVATION = 96.2 FT
DATE OF SURVEY = 11/15/01
W.S. ELEVATION AT DATE OF SURVEY = 85.9 FT
DITCH LEGEND
LEFT DITCH
RIGHT DITCH
NOTE: THE PROPOSED PROFILE HAS BEEN RAISED TO ACCOMMODATE THE UNSURVEYED 1.5 INCH RESURFACING PLACED IN 2002. THE EXISTING GROUND PROFILE HAS NOT BEEN REVISED TO REFLECT THIS CHANGE.
110
100
90
80
70
60
50
22 23 24 25 26 27 28 29 30 31 32 33 34

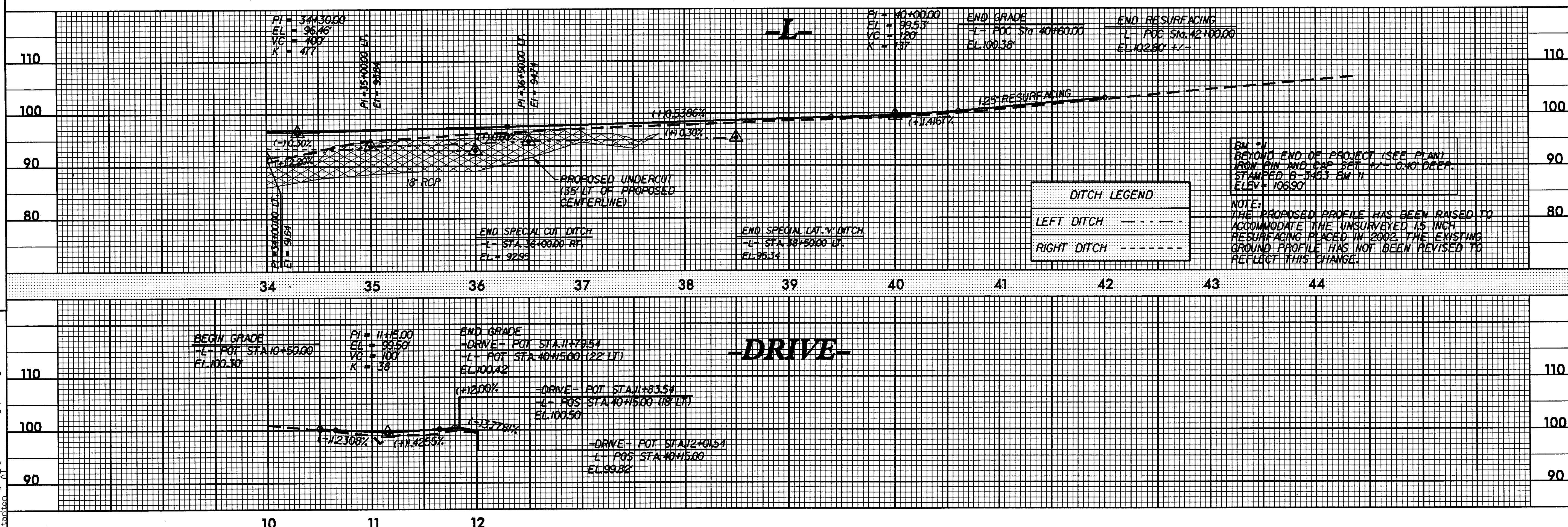
PROJECT REFERENCE NO.	SHEET NO.
B-3453	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221



-DRIVE-
PI Sta 11+11.05
Δ = 14° 22' 34.4" (RT)
D = 19° 05' 54.9"
L = 75.27'
T = 37.84'
R = 300.00'
-L-
PI Sta 35+65.29
Δ = 11° 29' 28.5" (RT)
D = 1° 54' 35.5"
L = 601.68
T = 301.85'
R = 3,000.00'
PIs Sta 40+06.24
θs = 2° 23' 07.5"
θs = 5° 20' 48.0"
Ls = 250.00'
LT = 141.13'
ST = 109.24'
SE = 0.05
PI Sta 42+76.03
Δ = 13° 41' 41.7" (RT)
D = 4° 16' 32.9"
L = 320.29
T = 160.91'
R = 1,340.00'
NAD 83/95
QUALITY FOREST PRODUCTS, INC.
DB 975 PG 9
ADJUST DRIVE TIE-IN TO FIELD CONDITIONS AS REQUIRED
BEGIN CONSTRUCTION
-DRIVE- STA. 10+50.00
POT Sta. 10+00.00
END CONSTRUCTION
-L- STA. 41+32.00 (114 LT.)
ABANDON EXISTING RIGHT OF WAY TO EXISTING RAILROAD RIGHT OF WAY
REMOVE EX. PAVEMENT TO PROPOSED R/W & GRADE TO DRAIN
REMOVE EX. PAVEMENT & GRADE TO DRAIN
PCSta. 10+73.22
PT Sta. 11+48.49
GRAVEL LUMBER STORAGE AREA
LUMBER STORAGE AREA
-BL- POT 49+36.98 (BL-5)
-L- POC 41+60.09 (42.27 LT.)
J. PHES BELLAMY
DB 1027 PG 73
CANAL INDUSTRIES, INC.
DB 1021 PG 92
PT Sta. 44+35.40
MATCH LINE TO SHEET 5
-L- STA. 34+00
US 301 28' BST
150' TAPER
175' FULL STORAGE
150' UNIFORM TRANSITION
360' UNIFORM TRANSITION
DO NOT DISTURB FSS
HENRY C. ANDERSON, ET UX
DB 1681 PG 158
QUALITY FOREST PRODUCTS, INC.
DB 975 PG 9
-L- POS Sta. 40+15.00
-DRIVE- POT Sta. 12+01.54
CSSta. 38+65.12
SCSta. 41+15.12
END STATE PROJECT B-3453
-L- POC STA. 42+00.00
N 35°52' 33.7" E
BM #11
WOODS
CULT.
POND



-L-
PI = 34+30.00
EL = 96.46'
VC = 400'
K = 477
PI = 40+00.00
EL = 99.53'
VC = 120'
K = 137
END GRADE
-L- POC Sta 40+60.00
EL 100.38'
END RESURFACING
-L- POC Sta. 42+00.00
EL 102.80' +/-
1.25" RESURFACING
(+)0.5386%
(+)0.30%
(+)1.1416%
(-)0.30%
PROPOSED UNDERCUT (35' LT OF PROPOSED CENTERLINE)
18" RCP
END SPECIAL CUT DITCH
-L- STA. 36+00.00 RT.
EL= 92.95
END SPECIAL LAT. 'V' DITCH
-L- STA. 38+50.00 LT.
EL 95.34
DITCH LEGEND
LEFT DITCH
RIGHT DITCH
BM #11
BEYOND END OF PROJECT (SEE PLAN)
IRON PIN AND CAP SET +/- 0.40' DEEP.
STAMPED B-3453 BM 11
ELEV= 106.90'
NOTE:
THE PROPOSED PROFILE HAS BEEN RAISED TO ACCOMMODATE THE UNSURVEYED 1.5 INCH RESURFACING PLACED IN 2002. THE EXISTING GROUND PROFILE HAS NOT BEEN REVISED TO REFLECT THIS CHANGE.
34 35 36 37 38 39 40 41 42 43 44
-DRIVE-
BEGIN GRADE
-L- POT STA. 10+50.00
EL 100.30'
PI = 11+15.00
EL = 99.50'
VC = 100'
K = 38
END GRADE
-DRIVE- POT STA. 11+79.54
-L- POT STA. 40+15.00 (22' LT)
EL 100.42
-DRIVE- POT STA. 11+83.54
-L- POS STA. 40+15.00 (18' LT)
EL 100.50
-DRIVE- POT STA. 12+01.54
-L- POS STA. 40+15.00
EL 99.82'
(+)2.00%
(-)1.2308%
(+)1.4255%
(-)13.778%
10 11 12

REVISIONS

8/17/99

06-JAN-2005 07:53
R:\Roadway\Proj\b3453_rdy_psh6.dgn

B-3453

EDGECOMBE & HALIFAX COUNTIES

UTILITY PLANS

K/W BYRD 12-30-03

09/08/99

TIP PROJECT: B-3453

CONTRACT:

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3453	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33073.1.1	BRSTP-301(10)	PE	
33073.2.1	BRSTP-301(10)	R/W, UTILITIES	

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

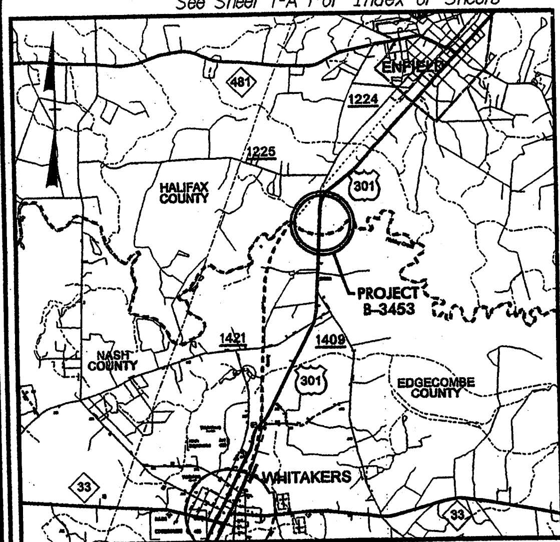
EDGECOMBE & HALIFAX COUNTIES

LOCATION: BRIDGE NO. 23 OVER FISHING CREEK AND BRIDGE NO. 17 OVER FISHING CREEK OVERFLOW ON US 301

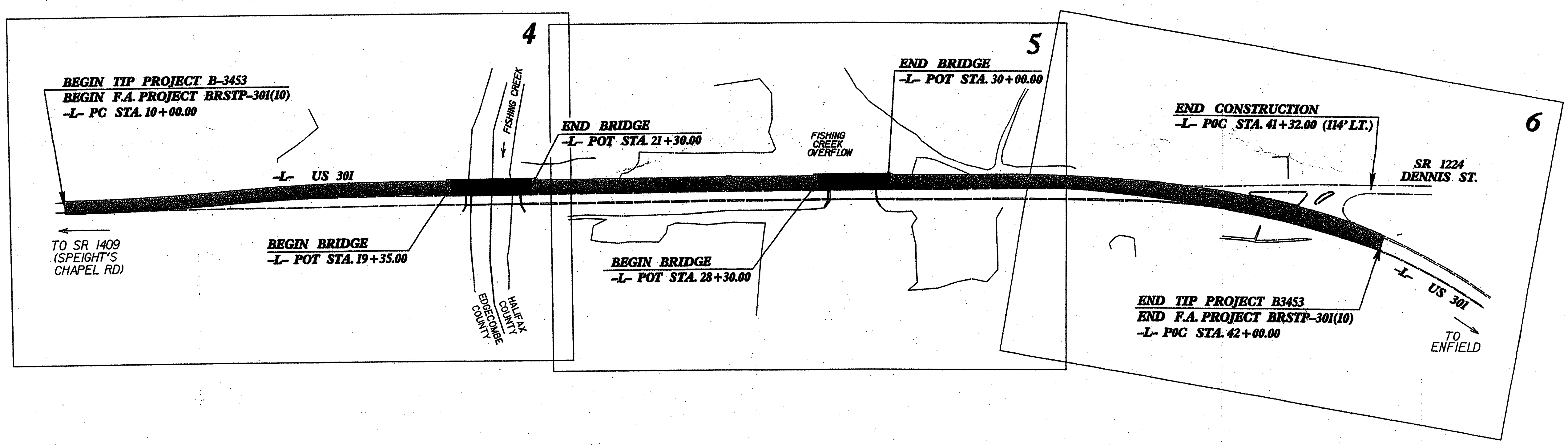
TYPE OF WORK: GRADING, DRAINAGE, STRUCTURES, PAVING, AND GUARDRAIL

Sprint plans

See Sheet 1-A For Index of Sheets



VICINITY MAP



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

NCDOT CONTACT:
TERESA M. BRUTON, PE
PROJECT ENGINEER
DESIGN SERVICES UNIT

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 2005 = 7,735
ADT 2025 = 14,900
DHV = 10 %
D = 60 %
T = 13 % *
V = 60 MPH
* TTST 9 % DUAL 4 %

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT B-3453	=	0.537 mi
LENGTH OF STRUCTURES TIP PROJECT B-3453	=	0.069 mi
TOTAL LENGTH OF TIP PROJECT B-3453	=	0.606 mi

Prepared for:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., NC, 27610
Prepared by:
MA ENGINEERING CONSULTANTS, INC.
598 E. CHATHAM STREET, SUITE 137
CARY, NORTH CAROLINA 27511
(919) 297-0220

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 15, 2003

LETTING DATE: APRIL 19, 2005

R.W. PORTER JR., PE — PROJECT ENGINEER

KEVIN S. HUTCHENS — PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

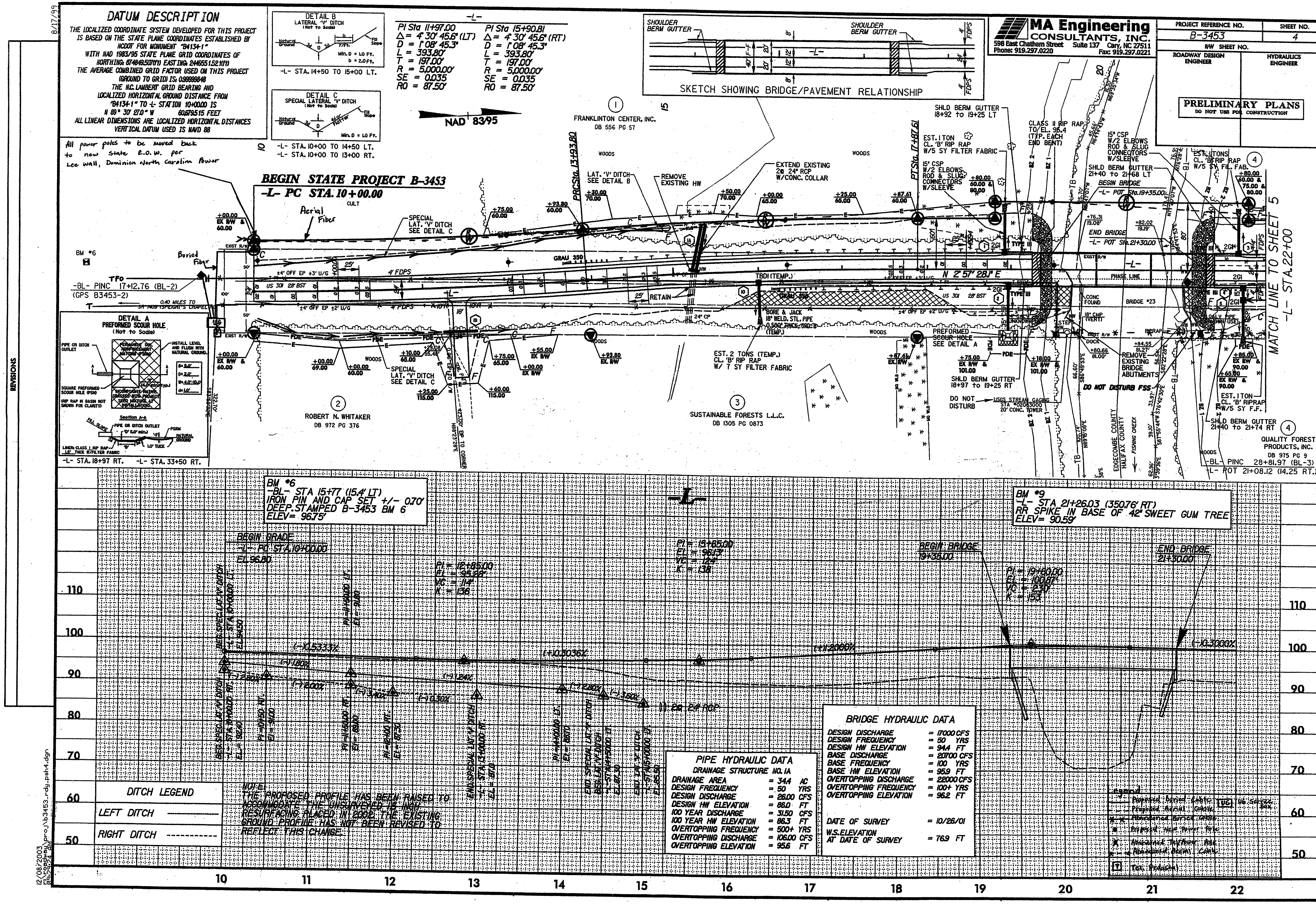
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

12/08/2003
...proj\b3453_rdy_tsh.dgn



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 1983/95 STATE PLANE GRID COORDINATES OF NORTHING 874848.507(ft) EASTING 2446551.521(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999848
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4134-1" TO -L- STATION 10+00.00 IS N 89° 30' 27.0" W 60679.515 FEET
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88
DETAIL B
LATERAL 'V' DITCH
(Not to Scale)
-L- STA. 14+50 TO 15+00 LT.
DETAIL C
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
-L- STA. 10+00 TO 14+50 LT.
-L- STA. 10+00 TO 13+00 RT.
-L-
PI Sta 11+97.00
Δ = 4° 30' 45.6" (LT)
D = 1° 08' 45.3"
L = 393.80'
T = 197.00'
R = 5,000.00'
SE = 0.035
RO = 87.50'
PI Sta 15+90.81
Δ = 4° 30' 45.6" (RT)
D = 1° 08' 45.3"
L = 393.80'
T = 197.00'
R = 5,000.00'
SE = 0.035
RO = 87.50'
NAD 83/95
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
SHOULDER BERM GUTTER
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
PROJECT REFERENCE NO. B-3453
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
All power poles to be moved back to new State R.O.W. per Lee Wall, Dominion North Carolina Power
BEGIN STATE PROJECT B-3453
-L- PC STA. 10+00.00
Aerial Fiber
Buried Fiber
BM #6
-BL- PINC 17+12.76 (BL-2)
(GPS B3453-2)
FRANKLINTON CENTER, INC.
DB 556 PG 57
ROBERT N. WHITAKER
DB 972 PG 376
SUSTAINABLE FORESTS L.L.C.
DB 1305 PG 0873
QUALITY FOREST PRODUCTS, INC.
DB 975 PG 9
EXTEND EXISTING 2@ 24" RCP W/CONC. COLLAR
REMOVE EXISTING HW
EST. 2 TONS (TEMP.) CL. 'B' RIP RAP W/ 7 SY FILTER FABRIC
BORE & JACK 18" WELD. STL. PIPE
PREFORMED SCOUR HOLE SEE DETAIL A
DETAIL A
PREFORMED SCOUR HOLE
(Not to Scale)
SHLD BERM GUTTER 18+92 TO 19+25 LT
SHLD BERM GUTTER 18+97 TO 19+25 RT
SHLD BERM GUTTER 21+40 TO 21+68 LT
SHLD BERM GUTTER 21+40 TO 21+74 RT
BEGIN BRIDGE -L- POT Sta. 19+35.00
END BRIDGE -L- POT Sta. 21+30.00
BRIDGE #23
REMOVE EXISTING BRIDGE ABUTMENTS
DO NOT DISTURB FSS
USGS STREAM GAGING STA #02083000
EDGECOMBE COUNTY
HALIFAX COUNTY
FISHING CREEK
MATCH LINE TO SHEET 5
-L- STA. 22+00
-BL- PINC 28+81.97 (BL-3)
-L- POT 21+08.12 (14.25' RT.)
BM #6
-BL- STA 15+77 (15.4' LT)
IRON PIN AND CAP SET +/- 0.70'
DEEP. STAMPED B-3453 BM 6
ELEV= 96.75'
-L-
BM #9
-L- STA 21+26.03 (350.76' RT)
RR SPIKE IN BASE OF 42" SWEET GUM TREE
ELEV= 90.59'
BEGIN GRADE
-L- PC STA. 10+00.00
EL 96.80
PI = 12+85.00
EL = 95.28'
VC = 114'
K = 136
PI = 15+85.00
EL = 96.37'
VC = 124'
K = 138
PI = 19+60.00
EL = 100.87'
VC = 120'
K = 153
BEGIN BRIDGE 19+35.00
END BRIDGE 21+30.00
(-)0.5333%
(+)0.3036%
(+)1.2000%
(-)0.3000%
DITCH LEGEND
LEFT DITCH
RIGHT DITCH
NOTE: THE PROPOSED PROFILE HAS BEEN RAISED TO ACCOMMODATE THE UNSURVEYED 1.5 INCH RESURFACING PLACED IN 2002. THE EXISTING GROUND PROFILE HAS NOT BEEN REVISED TO REFLECT THIS CHANGE.
REVISIONS

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 1A

DRAINAGE AREA	= 34.4 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 26.00 CFS
DESIGN HW ELEVATION	= 86.0 FT
100 YEAR DISCHARGE	= 31.50 CFS
100 YEAR HW ELEVATION	= 86.3 FT
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING DISCHARGE	= 106.00 CFS
OVERTOPPING ELEVATION	= 95.6 FT

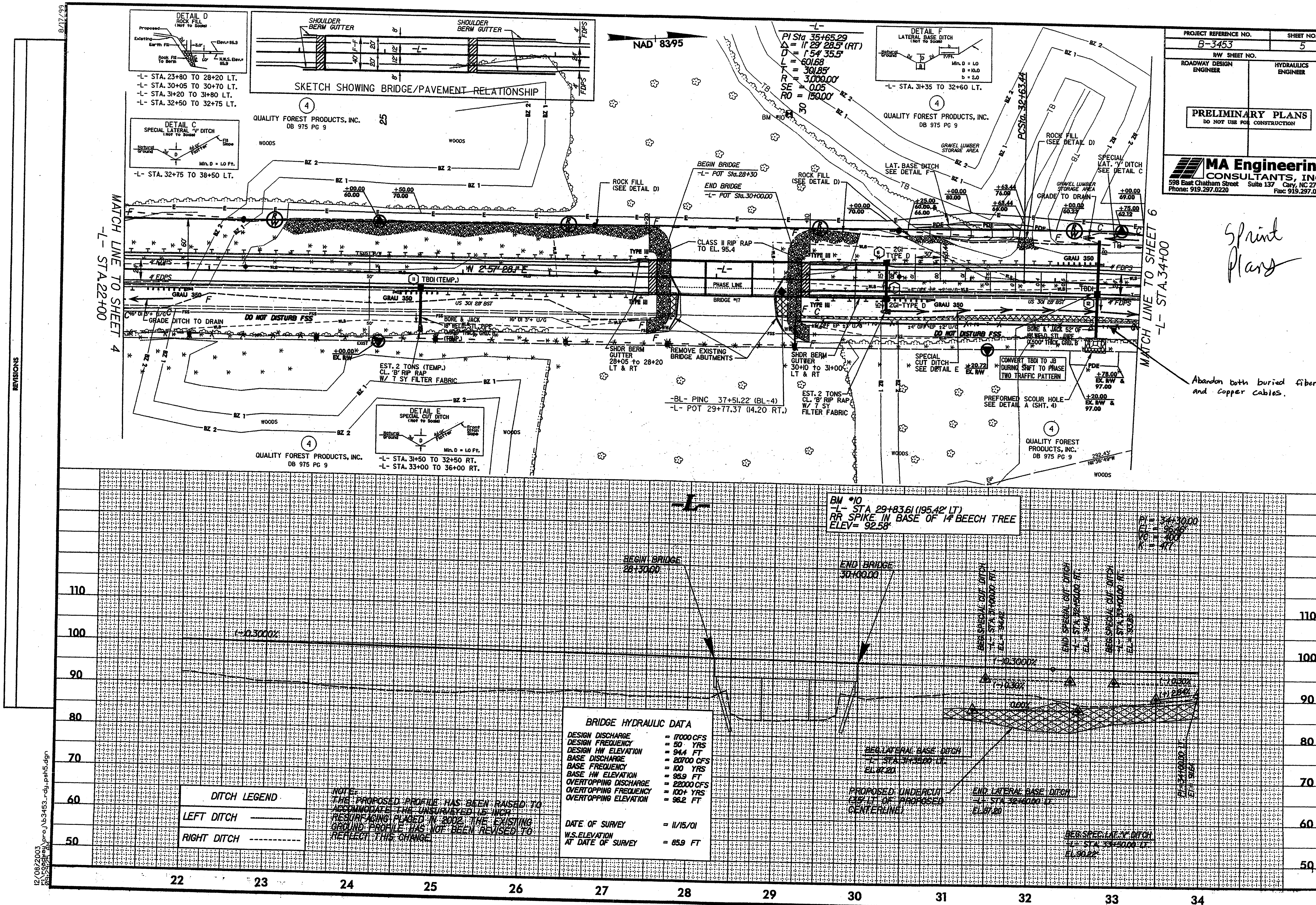
BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 17000 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 94.4 FT
BASE DISCHARGE	= 20700 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 95.9 FT
OVERTOPPING DISCHARGE	= 22000 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 96.2 FT
DATE OF SURVEY	= 10/26/01
W.S. ELEVATION AT DATE OF SURVEY	= 76.9 FT

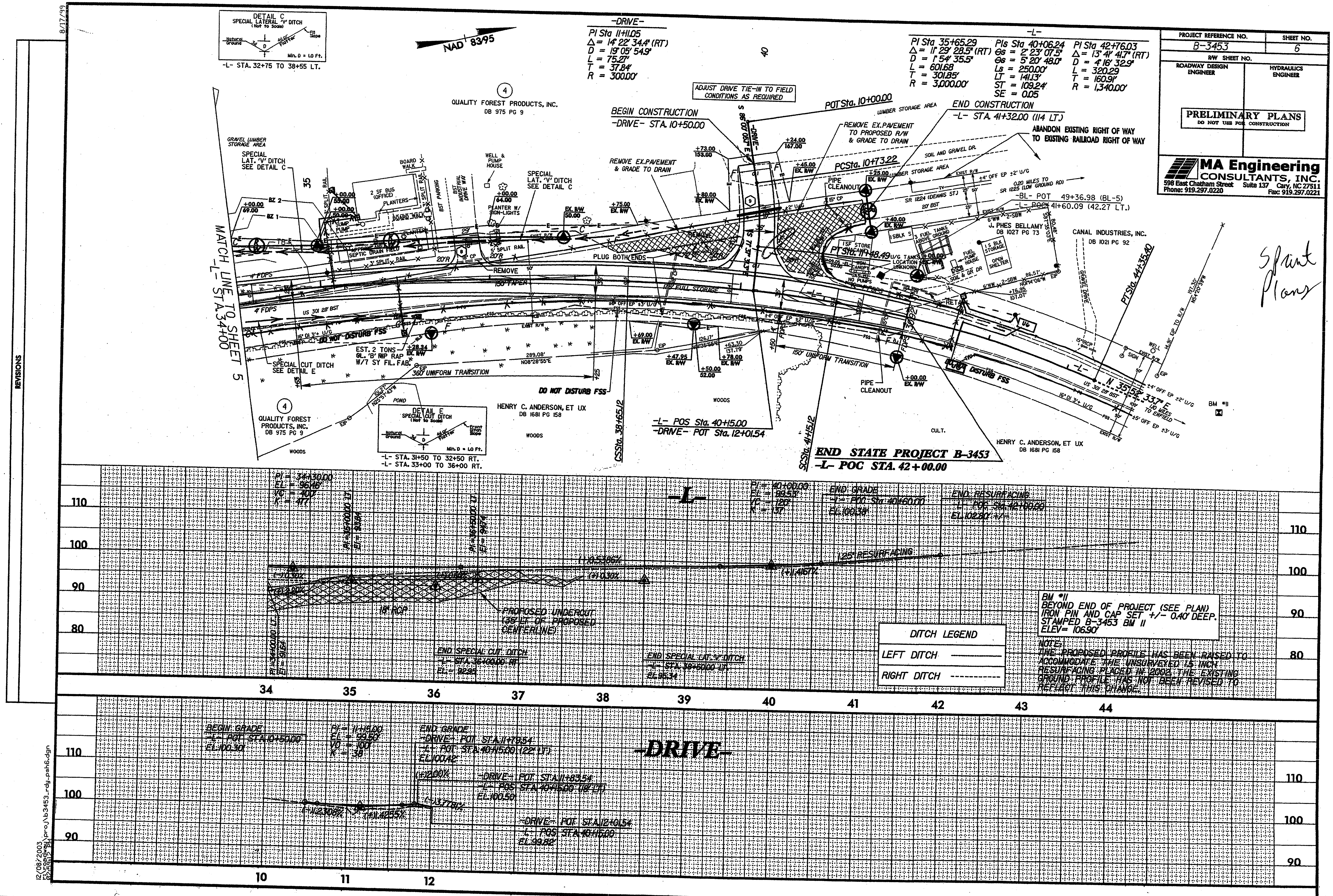
Sprint plans

8/17/99

12/08/2003



PROJECT REFERENCE NO. B-3453
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
Sprint Plans
Abandon both buried fiber and copper cables.
NAD 83/95
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
SHOULDER BERM GUTTER
DETAIL D ROCK FILL (Not to Scale)
-L- STA. 23+80 TO 28+20 LT.
-L- STA. 30+05 TO 30+70 LT.
-L- STA. 31+20 TO 31+80 LT.
-L- STA. 32+50 TO 32+75 LT.
DETAIL C SPECIAL LATERAL "V" DITCH (Not to Scale)
-L- STA. 32+75 TO 38+50 LT.
DETAIL E SPECIAL CUT DITCH (Not to Scale)
-L- STA. 31+50 TO 32+50 RT.
-L- STA. 33+00 TO 36+00 RT.
DETAIL F LATERAL BASE DITCH (Not to Scale)
-L- STA. 31+35 TO 32+60 LT.
-L-
PI Sta 35+65.29
Δ = 11° 29' 28.5" (RT)
D = 1° 54' 35.5"
L = 601.68
T = 301.85'
R = 3,000.00'
SE = 0.05
RO = 150.00'
QUALITY FOREST PRODUCTS, INC. DB 975 PG 9
MATCH LINE TO SHEET 4 -L- STA.22+00
MATCH LINE TO SHEET 6 -L- STA.34+00
BEGIN BRIDGE -L- POT Sta.28+30
END BRIDGE -L- POT Sta.30+00.00
ROCK FILL (SEE DETAIL D)
CLASS II RIP RAP TO EL. 95.4
REMOVE EXISTING BRIDGE ABUTMENTS
SHDR BERM GUTTER 28+05 to 28+20 LT & RT
SHDR BERM GUTTER 30+10 to 31+00 LT & RT
EST. 2 TONS (TEMP.) CL. 'B' RIP RAP W/ 7 SY FILTER FABRIC
EST. 2 TONS CL. 'B' RIP RAP W/ 7 SY FILTER FABRIC
-BL- PINC 37+51.22 (BL-4)
-L- POT 29+77.37 (14.20 RT.)
GRADE DITCH TO DRAIN
DO NOT DISTURB FSS
BORE & JACK
TBDI (TEMP.)
W 2° 57' 28.1" E
US 301 28' BST
SPECIAL CUT DITCH SEE DETAIL E
CONVERT TBDI TO JB DURING SHIFT TO PHASE TWO TRAFFIC PATTERN
PREFORMED SCOUR HOLE SEE DETAIL A (SHT. 4)
LAT. BASE DITCH SEE DETAIL F
ROCK FILL (SEE DETAIL D)
SPECIAL LAT. "V" DITCH SEE DETAIL C
GRAVEL LUMBER STORAGE AREA
GRADE TO DRAIN
BM #10 -L- STA 29+83.61 (195.42' LT) RR SPIKE IN BASE OF 14" BEECH TREE ELEV= 92.58'
BEGIN BRIDGE 28+30.00
END BRIDGE 30+00.00
BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 17000 CFS
DESIGN FREQUENCY = 50 YRS
DESIGN HW ELEVATION = 94.4 FT
BASE DISCHARGE = 20700 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 95.9 FT
OVERTOPPING DISCHARGE = 22000 CFS
OVERTOPPING FREQUENCY = 100+ YRS
OVERTOPPING ELEVATION = 96.2 FT
DATE OF SURVEY = 11/15/01
W.S. ELEVATION AT DATE OF SURVEY = 85.9 FT
DITCH LEGEND
LEFT DITCH
RIGHT DITCH
NOTE: THE PROPOSED PROFILE HAS BEEN RAISED TO ACCOMMODATE THE UNSURVEYED 1.5 INCH RESURFACING PLACED IN 2002. THE EXISTING GROUND PROFILE HAS NOT BEEN REVISED TO REFLECT THIS CHANGE.
PROPOSED UNDERCUT 40' LT OF PROPOSED CENTERLINE
BEG. LATERAL BASE DITCH -L- STA 31+35.00 LT. EL 87.20
END LATERAL BASE DITCH -L- STA 32+60.00 LT. EL 87.29
BEG. SPEC. LAT. "V" DITCH -L- STA 33+50.00 LT. EL 90.22
REVISIONS
12/08/2003


PROJECT REFERENCE NO. B-3453
SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
MA Engineering CONSULTANTS, INC.
598 East Chatham Street Suite 137 Cary, NC 27511
Phone: 919.297.0220 Fax: 919.297.0221
-DRIVE-
PI Sta 11+11.05
Δ = 14° 22' 34.4" (RT)
D = 19° 05' 54.9"
L = 75.27'
T = 37.84'
R = 300.00'
-L-
PI Sta 35+65.29
Δ = 11° 29' 28.5" (RT)
D = 1° 54' 35.5"
L = 601.68
T = 301.85'
R = 3,000.00'
PIs Sta 40+06.24
θs = 2° 23' 07.5"
θs = 5° 20' 48.0"
Ls = 250.00'
LT = 141.13'
ST = 109.24'
SE = 0.05
PI Sta 42+76.03
Δ = 13° 41' 41.7" (RT)
D = 4° 16' 32.9"
L = 320.29
T = 160.91'
R = 1,340.00'
DETAIL C
SPECIAL LATERAL "V" DITCH
(Not to Scale)
-L- STA. 32+75 TO 38+55 LT.
DETAIL E
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 31+50 TO 32+50 RT.
-L- STA. 33+00 TO 36+00 RT.
NAD 83/95
QUALITY FOREST PRODUCTS, INC.
DB 975 PG 9
ADJUST DRIVE TIE-IN TO FIELD CONDITIONS AS REQUIRED
BEGIN CONSTRUCTION
-DRIVE- STA. 10+50.00
POT Sta. 10+00.00
END CONSTRUCTION
-L- STA. 41+32.00 (114 LT.)
ABANDON EXISTING RIGHT OF WAY TO EXISTING RAILROAD RIGHT OF WAY
REMOVE EX. PAVEMENT TO PROPOSED R/W & GRADE TO DRAIN
REMOVE EX. PAVEMENT & GRADE TO DRAIN
PCSta. 10+73.22
PT Sta. 11+48.49
MATCH LINE TO SHEET 5
-L- STA. 34+00
-BL- POT 49+36.98 (BL-5)
-L- POC 41+60.09 (42.27 LT.)
J. PHES BELLAMY
DB 1027 PG 73
CANAL INDUSTRIES, INC.
DB 1021 PG 92
PT Sta. 44+35.40
HENRY C. ANDERSON, ET UX
DB 1681 PG 158
DO NOT DISTURB FSS
360' UNIFORM TRANSITION
150' UNIFORM TRANSITION
-L- POS Sta. 40+15.00
-DRIVE- POT Sta. 12+01.54
CS Sta. 38+65.12
SC Sta. 41+15.12
END STATE PROJECT B-3453
-L- POC STA. 42+00.00
US 301 28' BST
SR 1224 (DENNIS ST)
-L-
PI = 34+30.00
EL = 96.18'
VC = 400'
K = 417
PI = 40+00.00
EL = 99.55'
VC = 120'
K = 37
END GRADE
-L- POC Sta. 40+60.00
EL. 100.38'
END RESURFACING
-L- POC Sta. 42+00.00
EL. 102.80' +/-
1.25" RESURFACING
PROPOSED UNDERCUT (38' LT OF PROPOSED CENTERLINE)
18" RCP
END SPECIAL CUT DITCH
END SPECIAL LAT. "V" DITCH
DITCH LEGEND
LEFT DITCH
RIGHT DITCH
BM #11
BEYOND END OF PROJECT (SEE PLAN)
IRON PIN AND CAP SET +/- 0.40' DEEP.
STAMPED B-3453 BM 11
ELEV= 106.90'
NOTE:
THE PROPOSED PROFILE HAS BEEN RAISED TO ACCOMMODATE THE UNSURVEYED 1.5 INCH RESURFACING PLACED IN 2002. THE EXISTING GROUND PROFILE HAS NOT BEEN REVISED TO REFLECT THIS CHANGE.
-DRIVE-
BEGIN GRADE
-L- POT STA. 10+50.00
EL. 100.30'
PI = 11+15.00
EL = 99.50'
VC = 100'
K = 38
END GRADE
-DRIVE- POT STA. 11+79.54
-L- POT STA. 40+15.00 (122' LT.)
EL. 100.42'
-DRIVE- POT STA. 11+83.54
-L- POS STA. 40+15.00 (118' LT.)
EL. 100.50'
-DRIVE- POT STA. 12+01.54
-L- POS STA. 40+15.00
EL. 99.88'
REVISIONS
Sprint Plans
8/17/99
12/08/2003

Hometown Power Plans

INITIAL STRINGING TENSION IN POUNDS
MEDIUM LOADING – 50% ULTIMATE DESIGN TENSION
300' RULING SPAN BETWEEN POLES IE00 & IF10
BARE 6201 AAAC 1/0 (7) PRIMARY & NEUTRAL
30°=1800#, 45°=1700#, 60°=1550#, 75°=1450#, 90°=1300#

INITIAL STRINGING TENSION IN POUNDS
MEDIUM LOADING – 50% ULTIMATE DESIGN TENSION
450' RULING SPAN BETWEEN POLES IF10 & IF09
BARE 6201 AAAC 1/0 (7) PRIMARY & NEUTRAL
30°=1650#, 45°=1550#, 60°=1400#, 75°=1300#, 90°=1150#

INITIAL STRINGING TENSION IN POUNDS
MEDIUM LOADING – 50% ULTIMATE DESIGN TENSION
300' RULING SPAN BETWEEN POLES IF09 & II42
BARE 6201 AAAC 1/0 (7) PRIMARY & NEUTRAL
30°=1800#, 45°=1700#, 60°=1550#, 75°=1450#, 90°=1300#

01931 IE05
STENCIL POLE
INSTALL–
P502, PBSX10
XD10AB
F3XD, TIE10DBLPIN–3
P10AL3– 287'
S1 (56")
TIE10SPOOL
S10AL– 287'
P/S 12

01931 IF10
STENCIL POLE
INSTALL–
P502, PBSX10
XDEFGLD, FDDEP3
DESHOE10–6
P10AL3– 255'
GI716–2
(30' & 26' LEADS)
SDDESC (62")
DESHOE10–2
S10AL– 255'
G716– 22' LEAD
ANC14PIHS, GG (30' LEAD)
(5 PINS, 9855# TENSION)
ANC14PIHS, GG (26' LEAD)
(5 PINS, 10883# TENSION)
ANC14PIHS, GG (22' LEAD)
(5 PINS, 8017# TENSION)
GRODCUOHF
GROD6CUOH–10
RODS____, OHMS____
P/S 11

01931 IF19
STENCIL POLE
INSTALL–
P502, PBSX10
XDEFGLD, FDDEP3
DESHOE10–6
P10AL3– 434'
GI716–2
(30' & 26' LEADS)
SDDESC (62")
DESHOE10–2
S10AL– 434'
G716– 22' LEAD
ANC14PIHS, GG (30' LEAD)
(5 PINS, 9855# TENSION)
ANC14PIHS, GG (26' LEAD)
(5 PINS, 10883# TENSION)
ANC14PIHS, GG (22' LEAD)
(5 PINS, 8017# TENSION)
P/S 10

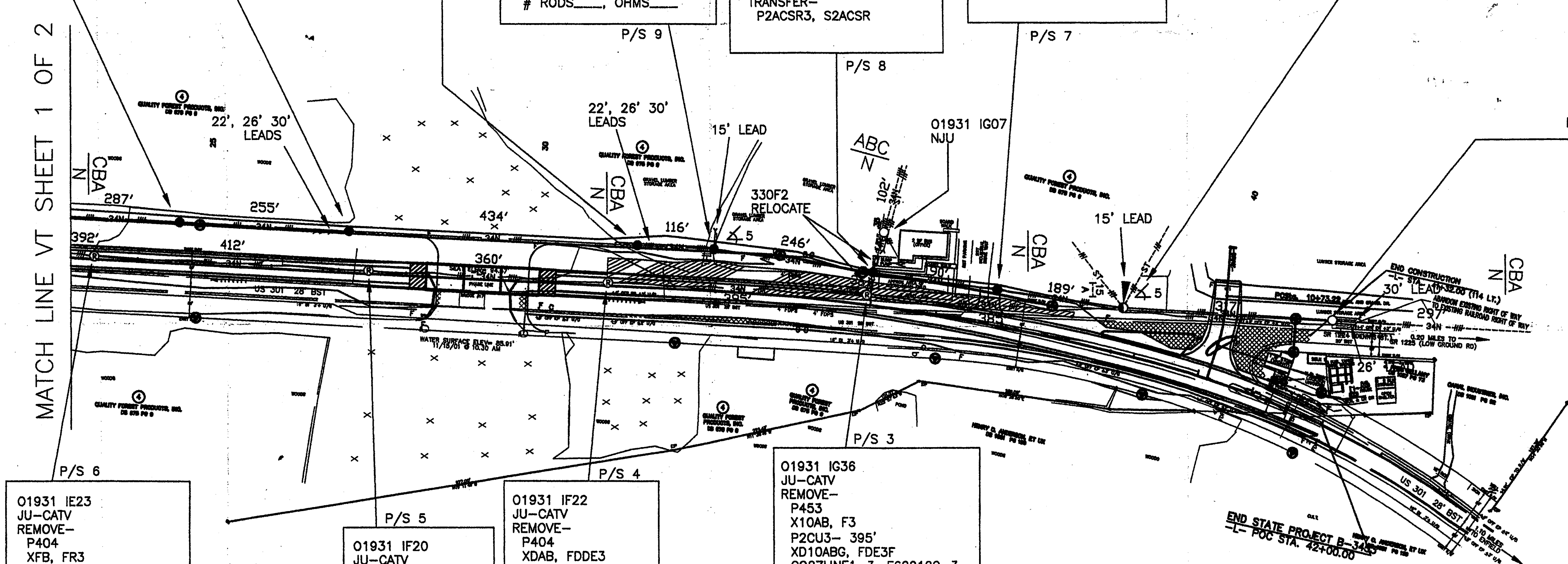
01931 IG24
STENCIL POLE
INSTALL–
P502, PBSX10
XFB, FR3, TIE10PIN–3
P10AL3– 116'
GI516– 15' LEAD
X10GB (30")
LAF3, AR270HMOVP–3
S1 (26"), TIE10SPOOL
S10AL– 116'
G516– 15' LEAD
ANC10PIHS, GGM
(5 PINS, 6583# TENSION)
GRODCUOHF, GROD6CUOH–10
RODS____, OHMS____
P/S 9

01931 IG27
STENCIL POLE
INSTALL–
P502
(SET POLE IN TAP LINE)
XFB, FR3, TIE10PIN–3
P10AL3– 246'
XD10ABG (48")
FDEP3F, DESHOE2–3
CO27LINE1–3
F622100–3
S1 (56"), TIE10SPOOL
S10AL– 246'
SDE1 (4")
TRANSFER–
P2ACSR3, S2ACSR
P/S 8

01931 IG30
STENCIL POLE
INSTALL–
P453
XDAB, FDDEP3
DESHOE10–6
P10AL3– 190'
SDDE1 (56")
S10AL– 190'
P/S 7

01931 IH25
JU–CATV
REMOVE–
P404
XFB, FR3
P2CU3– 385'
TFHF1
S1, STSK–2
S2AL– 385'
TRANSFER–
T1915
CO27LINE1, AR270HMOVP
ST10AL, ST2AL
INSTALL–
P453
XFB, FR3, TIE10PIN–3
P10AL3– 189'
GPB, P453 (BRACE POLE)
TFHF1
SDDE1 (96")
S10AL– 189'
STSK–2 (4")
GRODCUOHF, GROD6CUOH–10
RODS____, OHMS____
P/S 2

01931 II42
45'3, JU–CATV
(CATV DEAD–ENDS & GOES UG)
REMOVE–
XFB, FR3
P2CU3– 317'
S1
S2AL– 317'
TRANSFER–
P2CU3, S2AL
INSTALL–
XDEFGLD, FDDEP3
DESHOE10–3, DESHOE2CU–3
P10AL3– 317'
GI716–2 (30' LEAD)
SDDESC
(55" FROM FIBER GLASS ARM))
DESHOE10, DESHOE2CU
S10AL– 317'
G516– 26' LEAD
ANC12PIHS, GGM (30' LEAD)
(5 PINS, 18191# TENSION)
ANC10PIHS, GG (26' LEAD)
(5 PINS, 6569# TENSION)
P/S 1



P/S 6
01931 IE23
JU–CATV
REMOVE–
P404
XFB, FR3
P2CU3– 392'
LA3, AR270HMOVP–3
S1
S2AL– 392'

P/S 5
01931 IF20
JU–CATV
REMOVE–
P404
XFB, FR3
P2CU3– 412'
S1
S2AL– 412'

P/S 4
01931 IF22
JU–CATV
REMOVE–
P404
XDAB, FDDE3
P2CU3– 360'
S1
S2AL– 260'

P/S 3
01931 IG36
JU–CATV
REMOVE–
P453
X10AB, F3
P2CU3– 395'
XD10ABG, FDE3F
CO27LINE1–3, F622100–3
S1, SDE1
S2AL– 395'

VIRGINIA POWER Sheet 2 of 2
Project NC DOT 8.1301801 (B-3453)
REPLACE BRIDGE 23 & BRIDGE 17
Location US 301 AT THE EDGECOMBE/HALIFAX COUNTY LINE
Work Request # 6158831 | Drawn By C. LEE WALL | Date 11/30/04

DOMINION Power Plans

INITIAL STRINGING TENSION IN POUNDS
MEDIUM LOADING – 50% ULTIMATE DESIGN TENSION
250' RULING SPAN BETWEEN POLES HB91 & ID04
BARE 6201 AAAC 1/0 (7) PRIMARY & NEUTRAL
30°=1800#, 45°=1700#, 60°=1550#, 75°=1450#, 90°=1300#

INITIAL STRINGING TENSION IN POUNDS
MEDIUM LOADING – 50% ULTIMATE DESIGN TENSION
350' RULING SPAN BETWEEN POLES ID04 & IE00
BARE 6201 AAAC 1/0 (7) PRIMARY & NEUTRAL
30°=1800#, 45°=1700#, 60°=1550#, 75°=1450#, 90°=1300#

INITIAL STRINGING TENSION IN POUNDS
MEDIUM LOADING – 50% ULTIMATE DESIGN TENSION
300' RULING SPAN BETWEEN POLES IE00 & IF10
BARE 6201 AAAC 1/0 (7) PRIMARY & NEUTRAL
30°=1800#, 45°=1700#, 60°=1550#, 75°=1450#, 90°=1300#

NAD 83/95

01931 IB87
STENCIL POLE
INSTALL–
P453
XFB, FR3, TIE10PIN–3
P10AL3– 194'
GI516– 20' LEAD
S1 (48"), TIE10SPOOL
S10AL– 194'
G516– 20' LEAD
ANC14PIHS, GGM
(5 PINS, 4744# TENSION)
GRODCUOHF, GROD6CUOH–10
RODS____, OHMS____
P/S 23

01931 IC00
STENCIL POLE
INSTALL–
P453
XFB, FR3, TIE10PIN–3
P10AL3– 195'
S1 (48"), TIE10SPOOL
S10AL– 195'
P/S 22

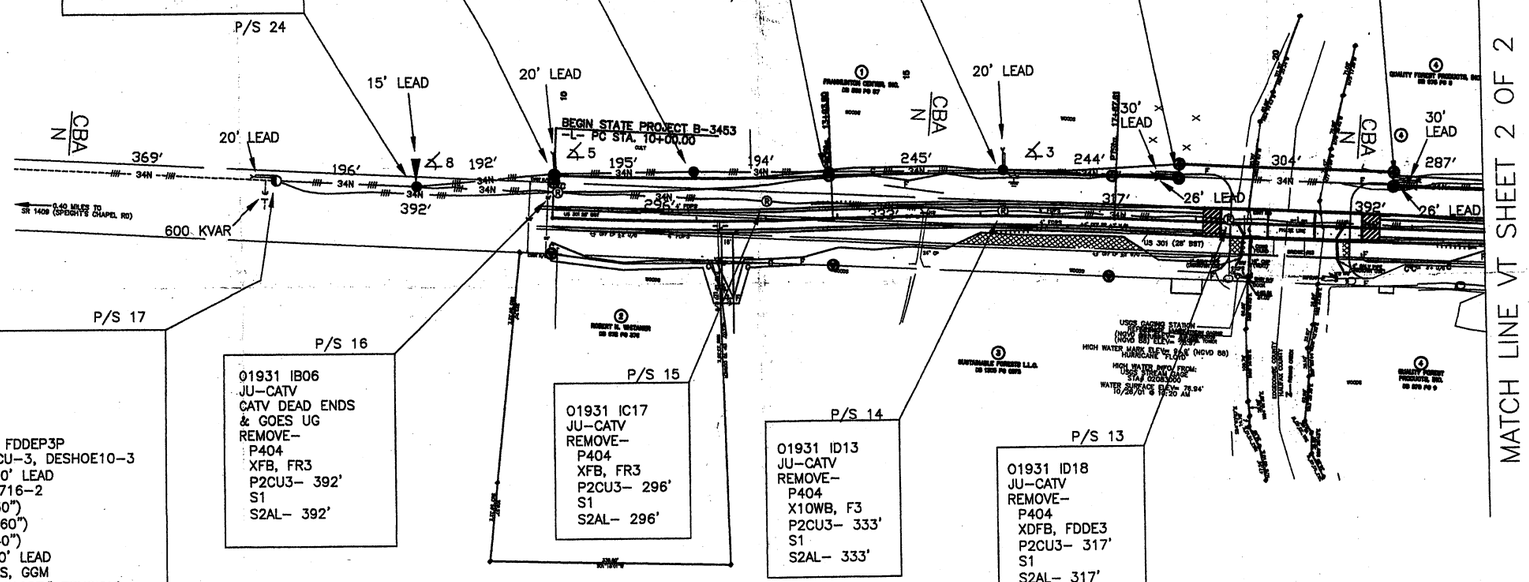
01931 IC09
STENCIL POLE
INSTALL–
P502, PBSX
XFB, FR3, TIE10PIN–3
P10AL3– 245'
GI516– 20' LEAD
GIBREAKR516
X10GB (30")
LAF3, AR270HMOVP–3
S1 (26"), TIE10SPOOL
S10AL– 245'
G516– 20' LEAD
ANC14PIHS, GGM
(5 PINS, 4748# TENSION)
GRODCUOHF, GROD6CUOH–10
RODS____, OHMS____
P/S 20

01931 ID04
STENCIL POLE
INSTALL–
P502, PBSX10
XDEFGLD, FDDEP3
DESHOE10–6
P10AL3– 244'
GI716–2 (30' LEAD)
SDDESC (50")
DESHOE10–2
S10AL– 244'
G516– 26' LEAD
ANC14PIHS, GGM
(5 PINS, 18191# TENSION–PRI. GUYS)
ANC14PIHS, GG
(5 PINS, 6437# TENSION–NEUT GUY)
P/S 19

01931 IE00
STENCIL POLE
INSTALL–
P502, PBSX10
XDEFGLD, FDDEP3
DESHOE10–6
P10AL3– 304'
GI716–2 (30' LEAD)
SDDESC (50")
DESHOE10–2
S10AL– 304'
G516– 26' LEAD
ANC14PIHS, GGM
(5 PINS, 18191# TENSION–PRI. GUY)
ANC14PIHS, GG
(5 PINS, 6437# TENSION–NEUT. GUY)
GRODCUOHF, GROD6CUOH–10
RODS____, OHMS____
P/S 18

01931 IB04
STENCIL POLE
INSTALL–
P453
(SET POLE IN LINE)
XFB, FR3, TIE10PIN–3
P10AL3– 196'
GPB, P453 (BRACE POLE)
S1 (48"), TIE10SPOOL
S10AL– 196'
P/S 24

01931 IC04
STENCIL POLE
INSTALL–
P453, PBSX
XFB, FR3, TIE10PIN–3
P10AL3– 194'
S1 (48"), TIE10SPOOL
S10AL– 194'
P/S 21



01931 HB91
RESTENCIL POLE
OLD # IB03
NJU

REMOVE–	INSTALL–
P404	P453
XFB, FR3	XDEFGLD, FDDEP3P
XABG	DESHOE2CU–3, DESHOE10–3
CAPFX3	GI716– 20' LEAD
S1	GIBREAKR716–2
TRANSFER–	X10GB (30")
P2CU3, S2AL	CAPFX3 (60")
AR270HMOVP–3	SDDE1 (40")
C027LINE1–3	G516– 20' LEAD
F622015–3	ANC14PIHS, GGM
F621657–3	(5 PINS, 11027# TENSION)
CP19200–3	GRODCUOHF, GROD6CUOH–10
	# RODS____, OHMS____

P/S 17

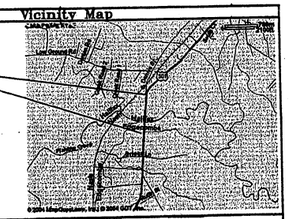
01931 IB06
JU–CATV
CATV DEAD ENDS
& GOES UG
REMOVE–
P404
XFB, FR3
P2CU3– 392'
S1
S2AL– 392'
P/S 16

01931 IC17
JU–CATV
REMOVE–
P404
XFB, FR3
P2CU3– 296'
S1
S2AL– 296'
P/S 15

01931 ID13
JU–CATV
REMOVE–
P404
X10WB, F3
P2CU3– 333'
S1
S2AL– 333'
P/S 14

01931 ID18
JU–CATV
REMOVE–
P404
XDFB, FDDE3
P2CU3– 317'
S1
S2AL– 317'
P/S 13

Vicinity Map



Construction Notes

DUE TO NC DOT PROJECT 8.1301801 (B–3453) TO REPLACE BRIDGE 23 OVER FISHING CREEK & BRIDGE 17 OVER THE FISHING CREEK OVERFLOW ON US 301 AT THE EDGECOMBE/HALIFAX COUNTY LINE, DOMINION HAS BEEN REQUESTED TO RELOCATE ITS FACILITIES THAT ARE IN CONFLICT WITH THIS WORK. DOMINION WILL REMOVE 8 POLES, REPLACE 2 POLES AND INSTALL 13 NEW POLES. ALL WORK WILL BE AT NC DOT'S EXPENSE SINCE DOMINION HAS EXISTING RIGHT–OF–WAY FOR ITS FACILITIES. NC DOT WILL BE BILLED THE ACTUAL COST FOR THIS RELOCATION AND OUR WBS ELEMENT IS 22215.

Field Changes

General Notes

1. WORK SAFELY!
2. CONTACT ULOCO AT 800–632–4949 AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
3. ALL DOMINION WORK WITHIN WETLANDS WILL BE COVERED BY NC DOT'S PERMITS.
4. ALL WATER CROSSINGS WILL BE DOUBLE ENDED & GUYED.
5. FOR NEW CONDUCTORS, SAG USING THE INITIAL SAG TENSIONS AS GIVEN FOR EACH RULING SPAN.
6. USE BOG SHOES & SET POLES ONE FOOT DEEPER THAN NORMAL FOR ALL POLES SET WITHIN THE WETLANDS AREA.
7. IF CONSTRUCTION FEELS TRANSVERSE GUYNNHG IS NEEDED CONTACT THE PROJECT DESIGNER, LEE WALL AT 252–308–1021.
8. SPRINT TELEPHONE & COX CABLE ARE PLANNING TO ATTACH TO THE NEW POLE LINE. CONTACT THE SPRINT ENGINEER, BERT BOSWELL AT 252–446–7746 ONCE THE NEW POLE LINE IS INSTALLED.
9. CLEAR ALL DANGER TREES BEFORE CONSTRUCTION.
10. WBS ELEMENT FOR THIS PROJECT IS 22215.
11. DOUBLE DEAD ENDS ARE DUE TO UPLIFTS EXCEPT AT RIVER CROSSINGS.

Legend

- O – EXISTING DOMINION POLE
- ⊗ – EXISTING DOMINION POLE – TO BE REMOVED
- ◐ – EXISTING DOMINION POLE – TO BE REPLACED
- ● – PROPOSED DOMINION POLE
- ► – PROPOSED DOMINION POLE – USED AS A BRACE
- –///– 34N –///– – EXISTING 3 PHASE PRI WITH NEUT. – 34.5kv
- –///– 34N –///– – PROPOSED 3 PHASE 1/0 AL. PRI WITH 1/0 AL. NEUT. – 34.5kv
- –///– 34N –///– – EXISTING 3 PHASE PRI WITH NEUT. – 34.5kv BEING REMOVED
- –/– – PROPOSED GUY & ANCHOR
- ═/═ – PROPOSED 2 GUYS TO A SINGLE ANCHOR

Project Data

Sub. Sta. WHITAKERS	Cir No. 330	Map No. 0–1931
Tax District 73585 & 75011		Miss "U" 800–632–4949
Easement No. 2 REQUIRED		
		Device No. 330 R1
Customer Billing	WBS #22215	Scale 1"=100'

Sheet 1 of 1

Project NC DOT 8.1301801 (B–3453)
REPLACE BRIDGE 23 & BRIDGE 17
Location US 301 AT THE EDGECOMBE/HALIFAX COUNTY LINE

Work Request #	Drawn By	Date
6158831	C. LEE WALL	12/1/04

Edgecombe & Halifax Counties

US 301

Bridge No. 23 & No. 17 over Fishing Creek & Fishing Creek Overflow

Federal-Aid Project No. BRSTP-301(10)

State Project No. 8.1301801

T.I.P. No. B-3453

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

APPROVED:

01.17.03
DATE

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

01-27-03
DATE

for Donald J. Voelker
Acting Division Administrator, FHWA

Edgecombe & Halifax Counties

US 301

Bridge No. 23 & No. 17 over Fishing Creek & Fishing Creek Overflow

Federal-Aid Project No. BRSTP-301(10)

State Project No. 8.1301801

T.I.P. No. B-3453

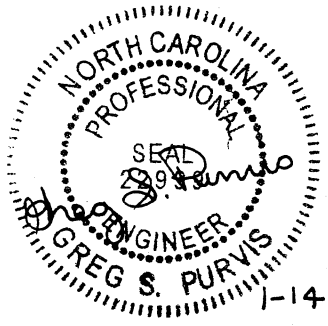
CATEGORICAL EXCLUSION

January 2003

Document Prepared by:
Wang Engineering Company, Inc.

Greg S. Purvis

Greg S. Purvis, P. E.
Project Manager



1-14-03

James Wang

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

For the North Carolina Department of Transportation

John Wadsworth

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

PROJECT COMMITMENTS

US 301
Edgecombe and Halifax Counties
Replacement of Bridge No. 23 and Bridge No. 17
Over Fishing Creek and Fishing Creek Overflow
Federal-Aid Project No. BRSTP-301(10)
State Project No. 8.1301801
T.I.P. No. B-3453

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, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by NCDOT:

Project Development & Environmental Analysis

Mitigation will be provided for any unavoidable wetland losses. The final determination of mitigation requirements and measures rests with the Division of Coastal Management, with input from the US Army Corps of Engineers and the Division of Water Quality.

Division Engineer

An in-water work moratorium will be in effect from March 1 to June 30, to ensure the environmental integrity of anadromous fish during spawning.

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

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

The North Carolina Geodetic Survey will be contacted prior to construction regarding the relocation of a survey marker along the project.

Hydraulics

No deck drainage will be allowed to discharge directly into the water, main channel or Zone 1 (30 feet (nine meters) from the channel banks).

US 301
Edgecombe and Halifax County
Replacement of Bridge No. 23 and Bridge No. 17
Over Fishing Creek and Fishing Creek Overflow
Federal-Aid Project No. BRSTP-301(10)
State Project No. 8.1301801
T.I.P. No. B-3453

INTRODUCTION: The replacements of Bridge No. 17 and Bridge No. 23 are included in the 2002-2008 North Carolina Department of Transportation (NCDOT) Transportation Improvement Program 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

NCDOT Bridge Maintenance Unit records indicate that Bridge No. 17 and Bridge No. 23 have sufficiency ratings of 53.5 and 41.5, respectively, out of a possible 100 for a new structure.

Bridge No. 17 was recommended for addition to the TIP at the February 13, 1996 update meeting. At that time, the Sufficiency Rating was 48.5. The current Sufficiency Rating is 53.5. This bridge is 79 years old with an H-15 Design that is not adequate for today's loads, and should be replaced.

Bridge No. 23 was recommended for addition to the TIP at the January 23, 1995 update meeting. At that time, the Sufficiency Rating was 22.4. The current Sufficiency Rating is 41.5. This bridge is 77 years old with an H-15 Design that is not adequate for today's loads, and should be replaced.

These bridges are considered functionally obsolete and structurally deficient. The replacement of the inadequate structures will result in safer and more efficient traffic operations.

II. EXISTING CONDITIONS

US 301 is classified as a rural minor arterial. This section of US 301 is included in the Edgecombe County Thoroughfare Plan. Land in the project area is predominantly undeveloped, consisting of forested areas and swamp. There are two lumberyards located at the intersection of US 301 and SR 1224 (Dennis Street Extension), north of Bridge No. 17. Discharge pipes are located in the northeast, southeast and southwest quadrants of Bridge No. 23 and drain into Fishing Creek. USGS gauging station 02083000 is located 15 feet (4.5 meters) downstream (southeast quadrant) of Bridge No. 23 at Fishing Creek. Enfield Raw Water Supply is located approximately 800 feet (240 meters) upstream of Bridge No. 23.

Bridge No. 17 over Fishing Creek Overflow was constructed in 1921 and widened in 1940. The existing structure is 120 feet (36 meters) in length, consisting of three spans with the maximum span at 40 feet (12 meters). The clear roadway width is 25.8 feet (7.7 meters), providing two 11-foot (3.3-meter) travel lanes with less than two-foot (0.6-meter) shoulders. The superstructure consists of reinforced concrete deck and deck girders with an asphalt-wearing surface. The substructure is an abutment type with reinforced concrete square nose post and web interior bents. There is no posted weight limit for Bridge No. 17.

Bridge No. 23 over Fishing Creek was constructed in 1923 and widened in 1940. The existing structure is 126 feet (37.8 meters) in length, consisting of three spans with the maximum span at approximately 42 feet (12.6 meters). The clear roadway width is 26.1 feet (7.8 meters) providing two 11-foot (3.3-meter) travel lanes with two-foot (0.6 meters) shoulders. The superstructure consists of reinforced concrete floor

on reinforced concrete deck girders with an asphalt-wearing surface. The substructure is an abutment type with reinforced concrete post and web interior bents.

US 301 approaches to Bridge No. 17 and Bridge No. 23 measure 22 feet (6.6 meters) in width with six to ten foot (1.8 to three meter) shoulders including two to four foot (0.6 to 1.2 meter) paved shoulders. Approximately 520 feet (156 meters) north of Bridge No. 17, US 301 has a 2.5-degree (698.6 meter radius) curve. The posted speed limit is 55 miles per hour (90 kilometers per hour).

The 2002 estimated average daily traffic volume is 6,300 vehicles per day (vpd). The projected traffic volume is expected to increase to 11,800 vpd by the design year 2025. The volumes include eight percent truck-tractor semi-trailer (TTST) and three percent dual-tired vehicles (DT).

Although US 301 is not a designated bicycle route and there are no indications that an unusual number of bicyclists are using this route, bicycle traffic can be presently accommodated on the four-foot (1.2 meter) paved shoulders.

Power lines cross Fishing Creek and Fishing Creek Overflow parallel to the bridges and to the west. Telephone lines cross Fishing Creek and Fishing Creek Overflow parallel to the bridges and to the east. Utility impacts are anticipated to be low.

Four accidents were reported in the vicinity of the bridge during the period from January 1, 1999 to December 31, 2001.

No school buses cross these bridges.

III. ALTERNATIVES

A. Project Description

The proposed structures will provide a 40-foot (12-meter) clear roadway width to allow for two 12-foot (3.6-meter) travel lanes with eight-foot (2.4-meter) shoulders on each side. The approach roadway will consist of two 12-foot (3.6-meter) travel lanes and eight-foot (2.4-meter) shoulders including four-foot (1.2 meter) paved shoulders. The proposed right-of-way width is 100 feet (30 meters) for all alternates.

Based on a preliminary hydraulic analysis, the new structure for Bridge No. 17 will be approximately 155 feet (46.5 meters) in length. The new structure for Bridge No. 23 will be approximately 175 feet (52.5 meters) in length. The elevation of the new structures will be approximately the same as the existing structures. 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. Build Alternatives

Two (2) build alternatives studied for replacing the existing bridge are described below.

Alternate A replaces the bridges at the existing location. During construction, traffic will be maintained by a temporary detour structure located approximately 15.6 feet (4.68 meters) west of the existing bridge. The length of approach work will extend approximately 785 feet (235.5 meters) north of the existing Bridge No. 17 and approximately 572 feet (171.6 meters) south of the existing

Bridge No. 23. Alternate A was not selected as the preferred alternate due to its greater amount of impacted wetlands and its greater construction cost than Alternate C.

Alternate C (Preferred) replaces the bridges at the existing location using stage construction. Stage One will include building 31 feet (9.3 meters) in width of the proposed structures and roadway approaches. During construction of Stage One, traffic will be maintained on the existing bridges. Stage Two will include shifting traffic to the new structure. The existing bridges will be removed and the proposed structures completed. The length of approach work will extend approximately 985 feet (295.6 meters) north of the existing Bridge No. 17 and approximately 1004 feet (301.2 meters) south of the existing Bridge No. 23.

C. Alternatives Eliminated From Further Study

Alternate B replaces the bridges at the existing location. During construction, traffic will be maintained by a temporary detour structure located downstream of the existing bridge. This alternate was eliminated because it had the most wetland impacts and is the least economical.

Alternate D replaces the bridges at the existing location using phase construction. One bridge will be replaced at a time and traffic will be maintained with an onsite detour. Alternate D was eliminated because of the construction duration doubled the other alternates and there are no positive aspects to phasing the construction.

Alternate E replaces the bridges at the existing location. During construction, traffic will be maintained by an off-site detour approximately 8.3 miles (13.3 kilometers) in length. The detour route is along SR 1224 (Dennis Street Extension), SR 1225 (Jarrdott Swamp Road), SR 1522 (Wynn Road of Halifax County, also Bellamy Mill Road of Nash County), SR 1510 (Watson Seed Farm Road), and SR 1421 (Moore Farm Road).

A road user analysis was performed based on 6,300 vpd and an average of 8.3 miles (13.3 kilometers) of indirect travel. The cost of additional travel would be approximately $6.2 million during a twelve-month construction period. The estimated additional cost of replacing the bridge with onsite detour is $990,000. Alternate E was eliminated because the length of the offsite detour combined with the volume of traffic combined for a high road user cost.

The **"Do-Nothing" Alternative** will eventually necessitate removal of the two bridges, effectively removing this section of US 301 from traffic service.

Investigation of the existing structures by the Bridge Maintenance Unit indicates rehabilitating the two old bridges is not feasible due to their age and deteriorated condition.

D. Preferred Alternative

Alternate C, replacing the existing bridge at the existing location with stage construction, was selected as the preferred alternate. Alternate C was selected because wetland impacts and construction cost were less than Alternate A. Alternate C minimizes wetland impacts by minimizing the distance between existing and proposed structures to approximately five feet (1.5 meters).

The NCDOT Division Engineer concurs with Alternate C for the replacement of Bridge No. 17 and Bridge No. 23.

IV. ESTIMATED COSTS

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

	Alternate A	**Alternate C (Preferred)**
Structure Removal (existing)	$ 55,300	**$ 62,200**
Structure (proposed)	847,600	**912,800**
Detour Structure and Approaches	590,400	**0**
Roadway Approaches	315,600	**740,900**
Miscellaneous and Mobilization	800,100	**806,100**
Engineering and Contingencies	391,000	**378,000**
ROW/Const. Easements/Utilities:	35,100	**43,200**
TOTAL	$3,035,100	**$2,943,200**

The estimated cost of the project, as shown in the 2002-2008 Transportation Improvement Program, is $1,500,000 including $100,000 for right-of-way and $1,200,000 for construction.

V. NATURAL RESOURCES

A. Methodology

Informational sources used to prepare this report include but are not limited to: USGS Enfield, NC 7.5 minute series topographic map (1961); Soil Conservation Service (SCS) Soil Survey of Edgecombe County, NC (1979); SCS Soil Survey Field Sheet E-12, Halifax County, NC (March 1992); United States Fish and Wildlife Service (USFWS) National Wetlands Inventory map (Enfield, NC, 1994); USFWS Endangered, Threatened, and Candidate Species and Federal Species of Concern in North Carolina (June 16, 2000); North Carolina Natural Heritage Program (NCNHP) computer database, via the Internet, of rare species and unique habitats (February 4, 2000); 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 9, 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.

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 100 feet (30 meters) for all alternates. The actual construction impacts should be less, but without specific replacement structure design information the worst case was assumed for the impact calculations.

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. Elevations in the project vicinity range from approximately 85 to 110 feet (25.5 to 33 meters) above mean sea level (msl). Elevations in the project area vary from approximately 85 to 90 feet (25.5 to 27 meters) above msl. Current land use in the project vicinity is a mixture of residential, industrial, and agricultural properties.

The soil survey for Edgecombe County (USDA-SCS, 1979) indicates that the Tarboro-Altavista-Wickham soil association is found within the southern portion of the project area. Soils in this association are generally found on stream terraces and are somewhat excessively to moderately well drained, with a loamy subsoil or sandy underlying material. Halifax County does not have a published soil survey, however field sheets and reference tables were available for review. Field conditions generally conform to soil survey maps. Soil series found 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.

Congaree silt loam is located in the project area south of and adjacent to Fishing Creek, east and west of US 301. This well drained soil is usually found in slightly rounded, higher areas on flood plains. Permeability is moderate and shrink-swell potential is low. The seasonal high water table is at a depth of about 2.4 to four feet (0.7 to 1.2 meters) in late winter and early spring. Congaree silt loam is frequently flooded for brief periods. Reaction ranges from strongly acid to very strongly acid, occasionally ranging to neutral. Chewacla, Tarboro, and Wehadkee soils are sometimes found within this map unit. Site indices for Congaree soils include 100 for sweetgum (*Liquidambar styraciflua*), 107 for yellow-poplar (*Liriodendron tulipifera*) and cherry-bark oak (*Quercus falcata var. pagodaefolia*), and 96 for loblolly pine (*Pinus taeda*). Congaree silt loam is not listed as hydric, however Wehadkee and Chewacla soils are listed as hydric (USDA-SCS, via Internet *www.statlab.iastate.edu/soils/hydric/browse/S.html/*).

Wehadkee silt loam is found within the project area adjacent to the Congaree silt loam, east and west of US 301 and south of Fishing Creek. This soil is poorly drained and occurs on broad, flat flood plains along streams. Permeability is moderate and shrink swell potential is low. Reaction is very strongly too slightly acid, and the seasonal high water table is within zero to 2.5 feet (zero to 0.8 meters) of the surface. Wehadkee silt loam is commonly flooded for brief time periods. Chewacla soils are sometimes found as inclusions in this map unit. Site indices for Wehadkee include 102 for loblolly pine, 100 for yellow-poplar, 96 for green ash (*Fraxinus pennsylvanica*), and 90 for willow oak (*Quercus phellos*). This soil is listed as hydric.

Wickham sandy loam, zero to four percent slopes, is located east and west of US 301 near the outer portion of the project area at the southern end. This soil is well drained and found on low ridges and stream terraces. Permeability is moderate, shrink swell potential is low, and reaction ranges from very strongly acid to medium acid. The seasonal high water table is below a depth of six feet (1.8 meters). Included with this mapping unit are a few small areas of Conetoe, State, and Tarboro soils. Also included are a few low-lying areas subject to flooding. Site indices for Wickham sandy loam include 100 for yellow-poplar, and 90 for loblolly pine and slash pine (*Pinus elliottii*). Neither Wickham sandy loam nor any of the included soils are listed as hydric.

Chewacla loam, zero to one percent slopes, occasionally flooded, is mapped on Halifax County Soil Survey Field Sheet E-12 adjacent to Fishing Creek and Fishing Creek Overflow in the northern area of the study site. Chewacla soils are somewhat poorly drained and occur on nearly level flood plains. Shrink-swell potential is low and the seasonal high water table is within 0.5 to 1.5 feet (0.2 to 0.6

meters) of the surface. Soil reaction ranges from 4.5 to 6.5 in the upper 38 inches (97 centimeters). Site indices for this soil include 95 for yellow-poplar, 80 for water oak (*Quercus nigra*), and 95 for loblolly pine. Chewacla soils are listed as hydric.

Roanoke loam, zero to two percent slopes, occasionally flooded, is located adjacent to and north of the Chewacla loam, north of Fishing Creek Overflow. This series consists of very deep, poorly drained soils on terraces. Shrink-swell potential is low in the upper eight inches (20 centimeters) and moderate below that depth. Soil reaction ranges from 3.6 to 5.5 in the upper 52 inches (132 centimeters), and the seasonal high water table is at a depth of zero to one foot (zero to 0.3 meters). Site indices listed for Roanoke loam, zero to two percent slopes, including 86 for loblolly pine, 76 for willow oak, and 90 for sweetgum. This soil is listed as hydric.

Emporia fine sandy loam, zero to two percent slopes, is found within the project area in the outer northern edge. The Emporia series consists of very deep, well-drained soils that formed in loamy and clayey sediments. Shrink-swell potential is low in the upper horizons and moderate below. The seasonal high water table is at a depth of three to four feet (0.9 to 1.2 meters) and Ph ranges from 4.5 to six. Site indices for Emporia fine sandy loam, zero to two percent slopes, include 75 for loblolly pine and 70 for southern red oak (*Quercus falcata*). Emporia soils are not hydric.

Udorthents, loamy, are mapped in the vicinity of the lumberyard in the northwest quadrant of the project area. No information is listed in soil interpretations for this classification. These soils are usually very disturbed by human activity and the natural soil profiles have been removed or mixed.

C. Water Resources

1. Waters Impacted

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 03020102. Waters within the project study area include Fishing Creek, Fishing Creek Overflow, and an unnamed intermittent drainage.

2. Water Resource Characteristics

Fishing Creek is a tributary of the Tar River and has a drainage area of 521 square miles (1349 square kilometers) along the main channel. Within the project study area Fishing Creek flows east and is approximately 120 to 140 feet (36 to 42 meters) in width. The flow was slow on the day of the field investigation. An attempt was made to investigate the creek substrate and depth, however the banks in the vicinity of the bridge are near vertical. An effort was made to reach the creek bottom with a soil auger but the water was too deep even at the edge of the bank to reach the bottom. Judging by the length of the soil auger and arm's reach, the water is at least six feet (1.8 meters) deep.

Within the project area, Fishing Creek is classified as "**C NSW**" by the North Carolina Department of Environment and Natural Resources (NCDENR). However, upstream within approximately 800 feet (240 meters) of the project area, Fishing Creek is classified as "**WS-IV NSW CA**".

Class "**C**" waters are suitable for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. The supplemental classification of "**NSW**" indicates Nutrient Sensitive Waters, which require limits on nutrient inputs. The classifications date and

index number for this portion of the creek is 1/1/90, 28-79-(29). "**WS-IV**" waters are protected as water supplies that are generally in moderately to highly developed watersheds. Local programs to control nonpoint source and stormwater discharge of pollution are required. The supplemental classification of "**CA**" is indicative of a Critical Area. This is due to the location of the Enfield Raw Water Supply Intake approximately 800 feet (240 meters) upstream from the project area.

NCDENR- Division of Water Quality (DWQ) was contacted to provide guidance on the project due to the "**CA**" classification. DWQ responded that due to the "**CA**" classification, the NCDOT will follow best management practices for sensitive watersheds (T15A:04B.0024).

Neither Fishing Creek Overflow nor the unnamed intermittent drainage has separate classifications from Fishing Creek. The intermittent drainage is located in the southern quadrants of the project area. A reinforced concrete pipe of approximately 24 inches (61 centimeters) in diameter extends under US 301 at this point. The USGS map indicates the drainage is located only on the east side of the road, however the Edgecombe County soil survey portrays the drainage east and west of the road, connecting with Fishing Creek to the east. The soil survey is correct.

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 revealed one NPDES permitted discharge. Georgia Pacific/Enfield Plant (NC0039624) is located upstream of the project study area within the search 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, runoff from the lumberyard in the northwest quadrant of the study site as well as storm water runoff from US 301 may cause water quality degradation.

Benthic macroinvertebrates, or benthos, are organisms that live in and on the bottom substrates of rivers and streams. The 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 has 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 has a sampling station located at US 301 and Fishing Creek. This station was last sampled in August of 1997 and received an NCIBI rating of "**Good**". A previous sample taken in July of 1992 also resulted in a rating of "**Good**".

3. Anticipated Impacts to Water Resources

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 kilometers) of project study area.

The placement of support structures in the creek and overflow areas will result in impacts to water resources. In the short term, construction of the bridges and approach work will increase sediment loads. Sediment loading can reduce flow and result in a decrease in oxygen levels. The removal of trees that provide shade along stream banks could result in an increase in water temperature and a decrease in oxygen levels 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 creek;
- 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 creek.

4. 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 dated 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 structures into waters of the United States will 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.

Bridge No. 23 has a concrete deck and concrete bents and rails. The rails of Bridge No. 23 will be removed without dropping them into waters of the United States. There is potential for components of the deck and interior bents to be dropped in waters of the United States. The maximum resulting temporary fill calculated for Bridge No. 23 is approximately 271 cubic yards (207 cubic meters), which is calculated from the superstructure and substructure.

The deck of Bridge No. 17 is composed of reinforced concrete. The substructure consists of reinforced concrete abutments and concrete web piers. The rails of Bridge No. 17 will also be removed without dropping them into waters of the United States. There is potential for components of the deck and interior bents to be dropped into waters of the United States. The maximum resulting temporary fill calculated for Bridge No. 17 is 205 cubic yards (157 cubic meters).

If temporary on-site detours cross waters of the United States they will be constructed of timber and steel. Upon removal, they will not constitute any fill into waters of the United States.

The creek substrate in the project area is undetermined at this point due to the depth of the water and slope of the banks. However it is assumed due to the physiographic location of the project study area that increased sedimentation would occur if the bridges were dropped into the water during the demolition and removal process. Due to the potential sedimentation concerns resulting from demolition of the bridges, where it is possible to do so, a turbidity curtain is recommended to contain and minimize sedimentation in the stream.

Aquatic life that is not very mobile could be harmed when components of the bridges 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. In addition, compaction to the streambed would occur from dropping bridge components into 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 will 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. This conclusion is based upon the classification of the waters within the project area and vicinity, as well as comments received during the reporting process from the North Carolina Wildlife Resources Commission (NCWRC) and NCDENR-DWQ (Appendix).

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 modified or otherwise disturbed such that it does not fit into an NCNHP classification, it is given a name 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. Terrestrial communities found at this site include Coastal Plain Bottomland Hardwoods (Brownwater Subtype), Cypress-Gum Swamp (Brownwater Subtype), Pine-Dominated Wetland, Man-Dominated Community, and Man-Dominated Community Wetlands.

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

a) Coastal Plain Bottomland Hardwoods (Brownwater Subtype)

This community is found throughout the project study area. It is somewhat patchy in places and not all portions are within jurisdictional wetlands. The area southeast of Bridge No. 23 in particular is a mosaic of wetland and non-wetland areas. In transitional and mosaic areas, an approximate wetland line was sketched on figures to estimate jurisdictional boundaries, however the community name was retained whether inside or outside the boundaries if other characteristics did not warrant a change. A Routine Wetland Determination Data Form for this community is located in Appendix.

Vegetation in the Coastal Plain Bottomland Hardwoods community includes willow oak (*Quercus phellos*), sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), swamp chestnut oak (*Quercus michauxii*), loblolly pine (*Pinus taeda*), and ironwood (*Carpinus caroliniana*). A small amount of giant cane (*Arundinaria gigantea*), greenbriar (*Smilax rotundifolia*), grape (*Vitis rotundifolia*), and netted chain fern (*Woodwardia areolata*) is found in some areas as well.

Surface water was present in several areas of this community on the day of the field investigation. A small intermittent drainage is located in this community south of Fishing Creek, with a drainage pipe under US 301. Watermarks on trees in the northern portions of the study area reached approximately 2.5 feet (0.8 meters) in height. Note that the project area was affected by the rains and flooding associated with Hurricane Floyd, which occurred several weeks prior to the site visit.

A Wetland Rating Worksheet (Appendix) was utilized to assess wetland values for this community. A total score of 85 was calculated, with bank/shoreline stabilization and pollutant removal receiving the highest ratings. For purposes of the flow chart used in the rating system, this community was considered to be contiguous to and within 300 feet (90 meters) of surface water, which would cause the rating to be higher in some categories. Due to the patchy nature of this community, it is not always contiguous to surface water. Additionally, there is a berm south of Fishing Creek. As a final note regarding rating methods, the size of the community was deemed to be greater than two acres (0.8 hectare), which would result in a higher rating for some categories. A detailed delineation will be needed to better determine the size of the community.

b) Cypress-Gum Swamp (Brownwater Subtype)

The Cypress-Gum Swamp community is located in the vicinity of Bridge No. 17 and is listed as Fishing Creek Overflow in other areas of this report. It is somewhat small to be classified as a Cypress-Gum Swamp, however Shafale and Weakley (1990) note that if a flood plain contains levees and ridges large enough to support distinctive communities, larger than the zone of edge effect between them, then the low area between them may be classified as Cypress-Gum Swamp.

This community is dominated by baldcypress (*Taxodium distichum*). Pennywort (*Hydrocotyle sp.*), arrow arum (*Peltandra virginica*), cattail (*Typha latifolia*), and floating aquatics from the Lemnaceae family are also found here in some areas near the bridge.

The rating obtained from using a Wetland Rating Worksheet for this community was 30. This rating is less than half that of the Coastal Plain Bottomland Hardwoods community.

Factors such as size, distance away from Fishing Creek, and low abundance and diversity of plant species contributed to the much lower rating in comparison to the bottomland hardwood community. The Cypress-Gum Swamp received the highest rating in the aquatic life value category. It is uncertain whether this area completely dries up during the summer, or whether there may be pockets of standing water for most of the year. The higher rating associated with aquatic life value was assumed due to the uncertainty. In addition, according to the North Carolina Wildlife Resources Commission District Biologist in the project area, this community would be connected to Fishing Creek during times of high water and could be utilized by anadromous fish species.

c) Pine-Dominated Wetland

The Pine-Dominated Wetland community is located in small areas on the east side of US 301 between the two bridges and also south of Bridge No. 23 near the outer portion of the study area. Loblolly pine is the dominant vegetation, but in some places young hardwoods similar to those listed in the Coastal Plain Bottomland Hardwoods community are growing in the understory. Most of this community within the study area appears to be jurisdictional wetland, however it also has a mosaic pattern of wetland and non-wetland areas. A detailed delineation will be needed to better assess jurisdictional boundaries. Roadside ditches, which will be discussed below in another section, appear to be draining this community somewhat, in particular those areas between the two bridges.

No worksheets are included for this community. Wetland ratings for this community would be similar to or lower than that of the Cypress-Gum Swamp. The vegetation is basically that of a monoculture and the community size is small. The Pine-Dominated Wetland does have good canopy cover, which would cause ratings to be higher in some categories.

d) Man-Dominated Community

The Man-Dominated Community includes roadside areas such as shoulders and embankments, as well as a lumberyard in the northwest quadrant of the study area and an agricultural field in the southwest quadrant.

Embankment and road shoulder species consist of blackberry (*Rubus argutus*), goldenrod (*Solidago sp.*), foxtail (*Setaria sp.*), plantain (*Plantago sp.*), and maintained grasses. The agricultural field appears to be used for row crops, most recently peanuts. The lumberyard is a mixture of maintained grass and exposed soil.

e) Man-Dominated Community Wetlands

Man-Dominated Community Wetlands in the project area consist of roadside ditches and a power line right-of-way. These areas appear to be drained somewhat by pipes which discharge into Fishing Creek east and west of US 301 at Bridge No. 23. The ditches and power line right-of-way are several feet below the level of the road. These areas range from fairly narrow to as much as approximately 60 to 75 feet (18 to 22.5 meters) in width in the case of the power line right-of-way between the two bridges. Due to the small size of this community and amount of human disturbance, Wetland Rating Worksheets were not utilized.

Vegetation is variable depending upon location. Some areas are sparse and others are very thick. Species include soft rush (*Juncus effusus*), cattail, parrot-feather (*Myriophyllum sp.*),

umbrella sedge (*Cyperus sp.*), Chinese privet (*Ligustrum sinense*), kudzu (*Pueraria lobata*), and a mixture of young hardwoods such as sweetgum, red maple, and yellow-poplar.

2. Wildlife

Wildlife observed in the Man-Dominated Community and Man-Dominated Community Wetlands on the day of the visit included a turkey vulture (*Cathartes aura*), a painted turtle (*Chrysemys picta*), and carcasses of a raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and eastern cottontail (*Sylvilagus floridanus*). These species could reside or forage within other communities in the project study area as well.

White-tailed deer (*Odocoileus virginianus*) could find appropriate habitat within most communities in the study area. A sign for the White-tail Gun Club is located at the southern edge of the project study area near an unpaved road east of US 301. No other species were observed during the site investigation. Other types of wildlife that might be found within the study area include the blue-gray gnatcatcher (*Polioptila caerulea*), downy woodpecker (*Picoides pubescens*), and eastern box turtle (*Terrapene carolina*). Species that benefit from edge habitat and that are adapted to human influenced areas would likely do best in the habitats within the project study area.

3. Aquatic Communities

The aquatic community in the project study area includes Fishing Creek, and to some extent Fishing Creek Overflow and the roadside ditches. The ditches and overflow area were included under Man-Dominated Community Wetlands and Cypress-Gum Swamp (Brownwater Subtype) plant communities, however some aquatic species should be able to utilize these areas. It is uncertain without further study how the water levels fluctuate within the ditches and overflow on a seasonal basis.

A cursory search of the shoreline was conducted for evidence of mussel and clam species and none were observed. The yellow lampmussel (*Lampsilis cariosa*), which is a Federal Species of Concern, has been found in Fishing Creek about two miles (3.2 kilometers) east of the project study area according to NCNHP records. This issue is addressed in a later section of this report.

NCWRC requests (Appendix) that total moratoriums for in-water work be in place from March 1 to June 30 due to anadromous fish spawning. In addition WRC noted that crossings should be replaced only with spanning type structures. According to WRC, potential aquatic species that might be found in the project area include American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), blueback herring (*Alosa aestivalis*), alewife (*Alosa pseudoharengus*), Roanoke bass (*Ambloplites cavifrons*), and striped bass (*Morone saxatilis*).

According to the Stream Crossing Guidelines for Anadromous Fish Passage, the spring migration period for anadromous fish is considered to fall between the dates of February 15 and June 15.

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. Construction impacts may not be restricted to the communities in which the construction activity occurs. Estimated impacts calculated from project alternatives are listed in Table 1.

Table 1

Anticipated Terrestrial And Aquatic Communities

Bridge Nos. 23/17 Replacement Alternatives	Man-Dominated Wetlands acre (ha)	Coastal Plain Bottomland Hardwoods acre (ha)	Cypress-Gum Swamp Acre (ha)	Pine-Dominated Wetland acre (ha)	Total Wetland Community Impacts acre (ha)	Aquatic Community acre (ha)	Combined Total acre (ha)
Alternate A	2.22 (0.90)	0.45 (0.18)	1.44 (0.58)	0	4.11 (1.66)	0.35 (0.14)	4.46 (1.80)
Alternate C	2.27 (0.92)	0.45 (0.18)	0.57 (0.23)	0.17 (0.07)	3.46 (1.40)	0.16 (0.06)	3.62 (1.46)

NOTES:

- Permanent impacts are based on a 100-foot (30 meter) right-of-way for each alternate.
- Total Wetland Community Impacts includes impacts from all wetland communities, minus any estimated upland pockets within those communities.
- Actual construction impacts may be less than those indicated above, calculations were based on the worst case scenario.

a) Terrestrial Communities

The Man-Dominated Community is the only upland community listed within the project area and consists of the existing roadway shoulders and roadway embankment. Plants found within this community are common and often associated with disturbed areas. Although limited wildlife habitat would be provided, these types of disturbed areas are abundant and therefore the impacts are not considered significant in that regard. Among the other alternates, permanent impacts are similar since all involve replacing the bridges in-place. Most variations in impacts are associated with temporary detours or road closure. If the gauging station southeast of Fishing Creek is impacted, it will be replaced at a new location to be determined by the United States Geological Survey (USGS).

b) Wetland Communities

Alternate A will result in the largest amount of total wetland community impacts (4.11 acres [1.66 hectares]) due to the on-site detour. Among all alternates, the Man-Dominated Community Wetlands will be impacted almost twice that of other wetland communities. Precautions taken to minimize impacts to this community would help to avoid potential erosion and sedimentation that could affect nearby aquatic communities.

Impacts to other wetland communities within the study area are variable depending upon the alternate. Impacts to the Coastal Plain Bottomland Hardwoods and Cypress-Gum Swamp communities are similar, and vary mostly depending upon traffic maintenance during construction. Note that the bottomland hardwoods community received good ratings on wetland values from the worksheet in the Appendix. The Pine-Dominated Wetland impacts are minimal compared to those of other wetland communities, and should not be significant in terms of values this community may provide.

c) Aquatic Communities

The replacement of Bridge No. 23 over Fishing Creek and Bridge No. 17 over Fishing Creek Overflow will result in up to 0.16 acre (0.06 hectare) of aquatic impacts. 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 sensitive watersheds will be strictly enforced to minimize potential adverse impacts due to this project.

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 USACE. Project construction cannot be accomplished without infringing upon jurisdictional surface waters. Up to 56.2 linear feet (16.9 linear meters) of jurisdictional surface waters may be impacted by this project. On-site detours may result in up to an additional 52 linear feet (15.6 linear meters) of temporary surface water impacts.

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. Wetland delineation will be undertaken to determine jurisdictional boundaries, and concurrence with the delineated wetland boundaries will be obtained from the USACE.

2. Permits

a). Section 404 of the Clean Water Act

This project is being processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The COE has made available Nationwide Permit (NWP) No. 23 (61 FR 65874, 65916; December 13, 1996) for CEs due to minimal impacts expected with bridge construction. Activities under this permit are categorically excluded from environmental documentation because they are included within a category of activities that neither individually nor cumulatively have a significant effect on the human and natural environment. Activities authorized under nationwide permits must satisfy all terms and conditions of the particular permit.

b). Section 401 Water Quality Certification

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

c). Bridge Demolition and Removal

If no practical alternative exists to remove the current bridge other than to drop it into the water, prior to removal of debris off-site, fill related to demolition procedures will 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 bridge 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.

d). Coast Guard

The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard bridge permits when the bridge project crosses nontidal waters 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).

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.

USE	Exempt	Allowable	Allowable With Mitigation	Prohibited
Bridges		X		
Road crossings that impact less than or equal to 40 linear feet (12 linear meters)	X			
Road crossings that impact greater than 40 linear feet (12 linear meters) but less than or equal to 150 linear feet (45 linear meters) or 0.33 acres (0.13 hectares) of riparian area		X		
Road crossings that impact greater than 150 linear feet (45 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.

The USACE usually requires compensatory mitigation for activities authorized under Section 404 of the Clean Water Act if unavoidable impacts to waters of the United States total more than one acre (0.45 hectare) of wetlands or 500 linear feet (150 linear meters) of perennial streams.

The DWQ may require compensatory mitigation for activities authorized under Section 401 of the Clean Water Act if unavoidable impacts to waters of the United States total more than one acre (0.45 hectare) of wetlands and/or 150 linear feet (45 linear meters) of perennial streams.

According to impact estimates in Table 1, the USACE and DWQ limitations on impacts to wetlands will be exceeded by all alternates. It is expected that compensatory mitigation will be required for this project. Fill associated with the existing roadbed will not be removed with Alternate C. Therefore, on-site mitigation will not be available for this alternate.

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 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 to factors such as natural forces, competition from introduced species, or human related impacts such as destruction of habitat.

Rare and protected species listed for Edgecombe and Halifax Counties, 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 two federally protected species for Edgecombe County and three for Halifax County as of the May 31, 2002 listing (Table 2).

Table 2
Federally-Protected Species For Edgecombe And Halifax Counties
(May 31, 2002 FWS list)

Scientific Name **Common Name**	**Status**	
	Edgecombe	**Halifax**
Alasmidonta heterodon (Dwarf wedgemussel)	NL	E
Elliptio steinstansana (Tar spinymussel)	E	E
Haliaeetus leucocephalus (Bald Eagle)	NL	T
*Picoides borealis** (Red-cockaded woodpecker)	E	E

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 for both Edgecombe and Halifax Counties by NCNHP, listed as current by USFWS.

Dwarf Wedge Mussel - The dwarf wedge mussel 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 wedge mussel has suffered from excess siltation in streams and rivers and from the toxic effects of various pollutants entering waterways.

> **BIOLOGICAL CONCLUSION:** USFWS and NCNHP records do not indicate that this species has been found in Fishing Creek. A survey was conducted on September 13, 2002 for Bridge 17 and Bridge 23. It was determined that this species does not occur in the project footprint. **NO EFFECT**

Tar Spinymussel - The Tar spinymussel measures approximately 2.5 inches (6.4 centimeters) 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 siphoning 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:** According to NCDOT biologist and mussel specialist the Tar spinymussel was located in Fishing Creek in 1999. A survey was conducted on September 13, 2002 for Bridge 17 and Bridge 23. It was determined that this species does not occur in the project footprint. **NO EFFECT**

Bald Eagle - The bald eagle occurs throughout North America, primarily in association with large lakes and coastal bays and sounds where food is plentiful. Mature eagles (usually four to six years and older) are identified by a white tail and head, dark brown to black body and wings (wingspan to six feet [1.8 meters]), and yellow eyes, bill, and feet. Juveniles are uniformly chocolate-brown and sometimes have whitish mottling on the tail, belly, and wing linings. Maturing individuals become lighter in color and the mottling increases until the adult plumage pattern is acquired. Nest sites occur close to feeding grounds in large trees (predominately pine or cypress), either living or dead. Eagles are opportunistic hunters and scavengers, feeding on a wide variety of aquatic-dependent organisms including fish, snakes, small mammals and large water birds. The primary source of food is carrion and fish taken from ospreys (Potter *et al.* 1980).

Bald eagles occur within the Coastal Plain region of North Carolina. They typically nest in tall, living trees in conspicuous locations near open water. Lack of large open water areas in the study corridor or any large bodies of water nearby, diminish the likelihood the study corridor provides suitable habitat for bald eagle.

> **BIOLOGICAL CONCLUSION** - NHP records have no documentation of this species within Edgecombe County. There are recent records of nesting bald eagles in Halifax County however, the closest known nesting bald eagles are approximately 20 miles (two miles (32.2 kilometers) from the project site. Fishing Creek is approximately 70 ft (21 meters) wide and the overflow is approximately the same width. These creeks are not large enough to supply suitable habitat for bald eagle. Based on available information, this project will not result in an adverse impact to bald eagle. **NO EFFECT**

Red-cockaded woodpecker - The red-cockaded woodpecker is a small seven to eight inches (18 to 20 centimeters) 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 ten inches (25 centimeters). 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:** Habitat does not exist in the project study for this species. There are no pine stands of adequate size and age to provide habitat for this species. In addition, NCNHP records indicate no occurrence of this species within the

project area or vicinity. The red-cockaded woodpecker will not be affected by this project. **NO EFFECT**

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.

Table 3
North Carolina Status Of Federal Species Of Concern
In Edgecombe And Halifax Counties
(May 31, 2002 FWS list)

Scientific Name	Common Name	North Carolina Status		Habitat Present	
		Edgecombe	Halifax	Edgecombe	Halifax
*Aimophila aestivalis**	Bachman's sparrow	NL	SC	No	No
Ammodramus henslowii	Henslow's sparrow	SR	NL	No	No
Dendroica cerulea	Cerulean warbler	NL	SR	No	No
Elliptio lanceolata	Yellow lance	T (PE)	T (PE)	Yes+	Yes+
Fusconaia masoni	Atlantic pigtoe	T (PE)	T (PE)	No	No
*Heterodon simus***	Southern hognose snake	SR	NL	No	No
*Hypericum adpressum**	Bog St. John's-wort	NL	C	No	No
Lampsilis cariosa	Yellow lampmussel	T (PE)	T (PE)	Yes+	Yes+
Lythrurus matutinus	Pinewoods shiner	SR	NL	No	No
Orconectes virginiensis	Chowanoke crayfish	NL	SR	Yes	Yes
Procambarus medialis ♦	Albemarle crayfish	NL	♦	Yes	Yes
Trillium pusillum var. pusillum	Carolina least trillium	NL	E	Yes	Yes

NOTES:
C ~ Candidate E ~ Endangered NL ~ Not listed for this county (PE) ~Proposed Endangered SC ~ Special Concern
SR ~ Denotes Significantly Rare (species for which population monitoring and conservation action is recommended).
T ~ A native or once-native species which is likely to become endangered within the foreseeable future.
* ~ Historic record, the species was last observed in the county more than 50 years ago (NCNHP).
** ~ Historic record, the species was last observed in the county more than 50 years ago (USFWS). Obscure record at NCNHP.
♦ ~ Listed by USFWS but not by NCNHP.
+ ~ Potential habitat, substrate not determined at this point.

3. Summary of Anticipated Impacts

Potential habitat is present in the project area for two federally protected species and several FSCs. A survey will be conducted for the federally protected species. Species impacts can be reassessed once the survey has been completed.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

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

B. Historic Architecture

A field survey of the Area of Potential Effects (APE) was conducted on July 2, 1999. All structures within the APE were photographed, and later reviewed by the North Carolina State Historic Preservation Office (HPO). In a concurrence form dated September 30, 1999, and a memorandum dated August 15, 2000, the State Historic Preservation Officer (SHPO) concurred that there are no historic architectural resources either listed in or eligible for listing in the National Register of Historic Places within the APE. A copy of the concurrence form and the memorandum are included in the Appendix.

C. Archaeology

The SHPO, in a memorandum dated August 15, 2000, had "no comment on the project as currently proposed". 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 an inadequate bridge will result in safer traffic operations.

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

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

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

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

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

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

One North Carolina Geodetic Survey control monument will be impacted during construction of this project. It is NCGS Monument "Gaging Station". The North Carolina Geodetic Survey will be contacted prior to construction regarding the relocation of survey markers along the 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 Edgecombe/Halifax Counties, 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 in the project area.

Edgecombe County is a participant in the National Flood Insurance Regular Program. This site on Fishing Creek is included in a detailed F.E.M.A. flood study. Attached is a copy of the Flood Insurance Rate Map, on which are shown the approximate limits of the 100-year flood plain in the vicinity of the project (Figure 5). There are no buildings in the existing flood plain. The proposed replacement will not adversely affect the floodplain. The structure requirements may be adjusted during the final hydrologic study and hydraulic design as determined appropriate to accommodate design flows. The proposed alternatives will not modify flow characteristics and will have minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected.

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

VIII. AGENCY COMMENTS

1. North Carolina Wildlife Resources Commission (NCWRC)

   Comment: *"Total moratoriums should be in place on bridge no's 23 and 17 on US 301...due to anadromous fish spawning from March 1 to June 30."*

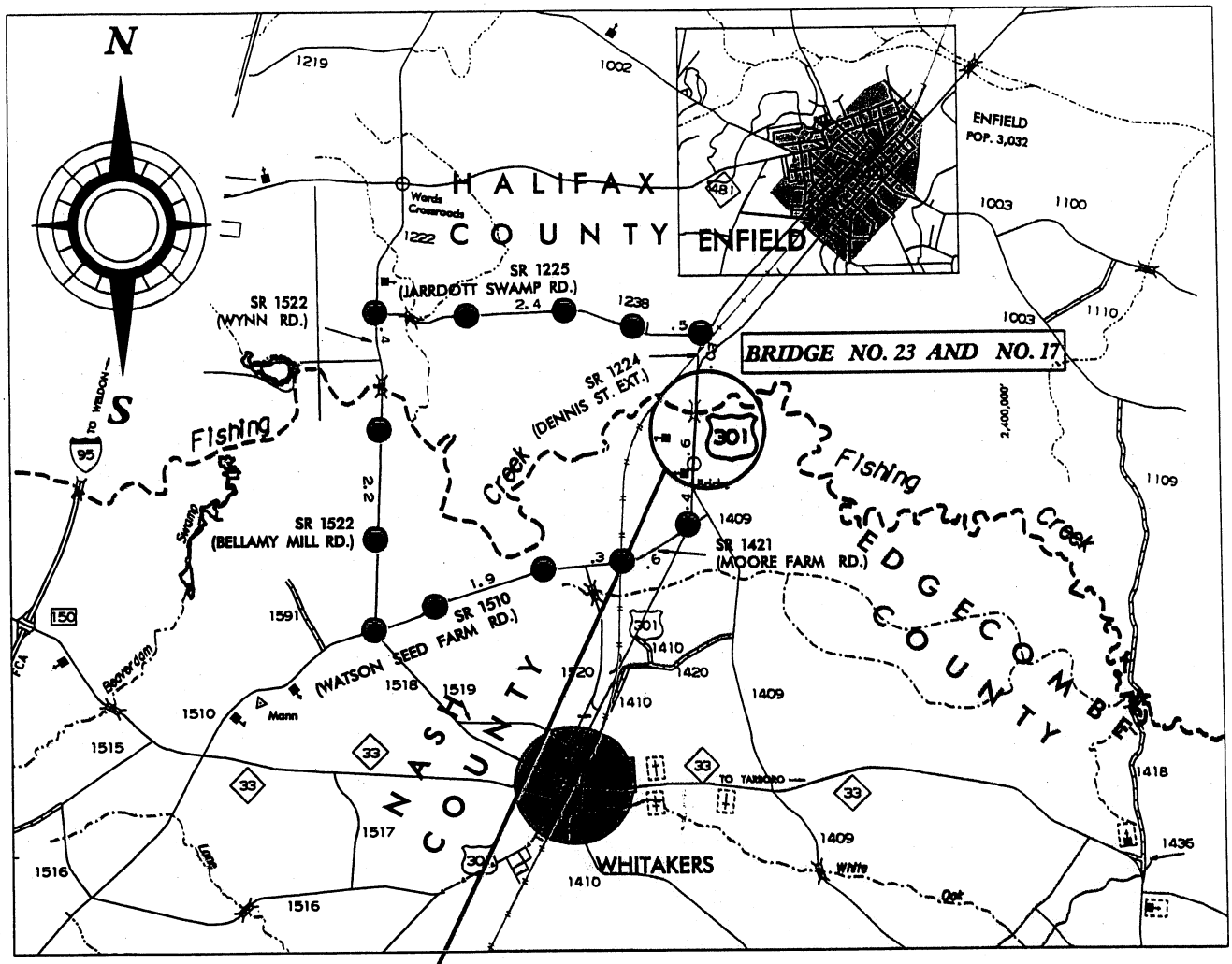
   Response: Construction work will be restricted as noted in the Project Commitments.

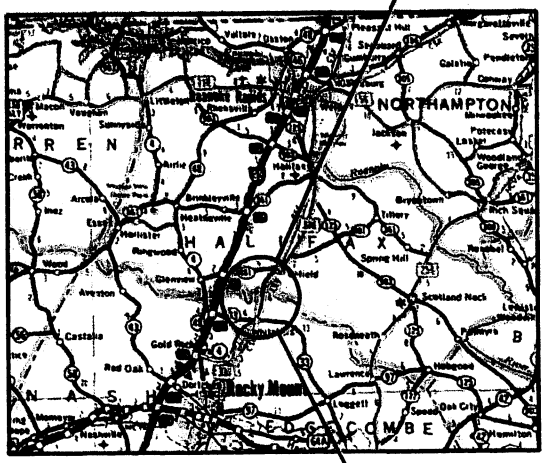
2. Halifax County Planning & Development

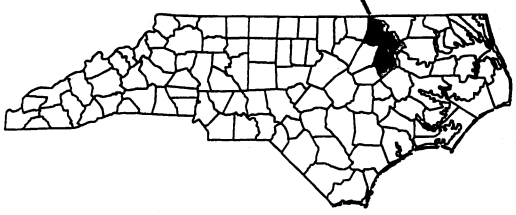
   Comment: *"US 301 is a major transportation route for delivery trucks. The county feels that the proposed off-site detour of approximately 12 miles would be an inordinate burden on traffic."*

   Response: The Preferred Alternate (Alternate C) will replace the bridges at the existing location using stage construction. Stage One will include building 31 feet (9.3 meters) in width of the proposed structures and roadway approaches. During construction of Stage One, traffic will be maintained on the existing bridges. Stage Two will include shifting traffic to the new structure. The existing bridges will be removed and the proposed structures completed. Use of an off-site detour will not be necessary.

FIGURES







LEGEND

MILES

1 0 1 2 3 4

1 0 1 2 3 4 5 6

KILOMETERS

SCALE

Studied Detour Route

Approximate Detour Length = 8.3 miles (13.3 kilometers)

Edgecombe County

Halifax County

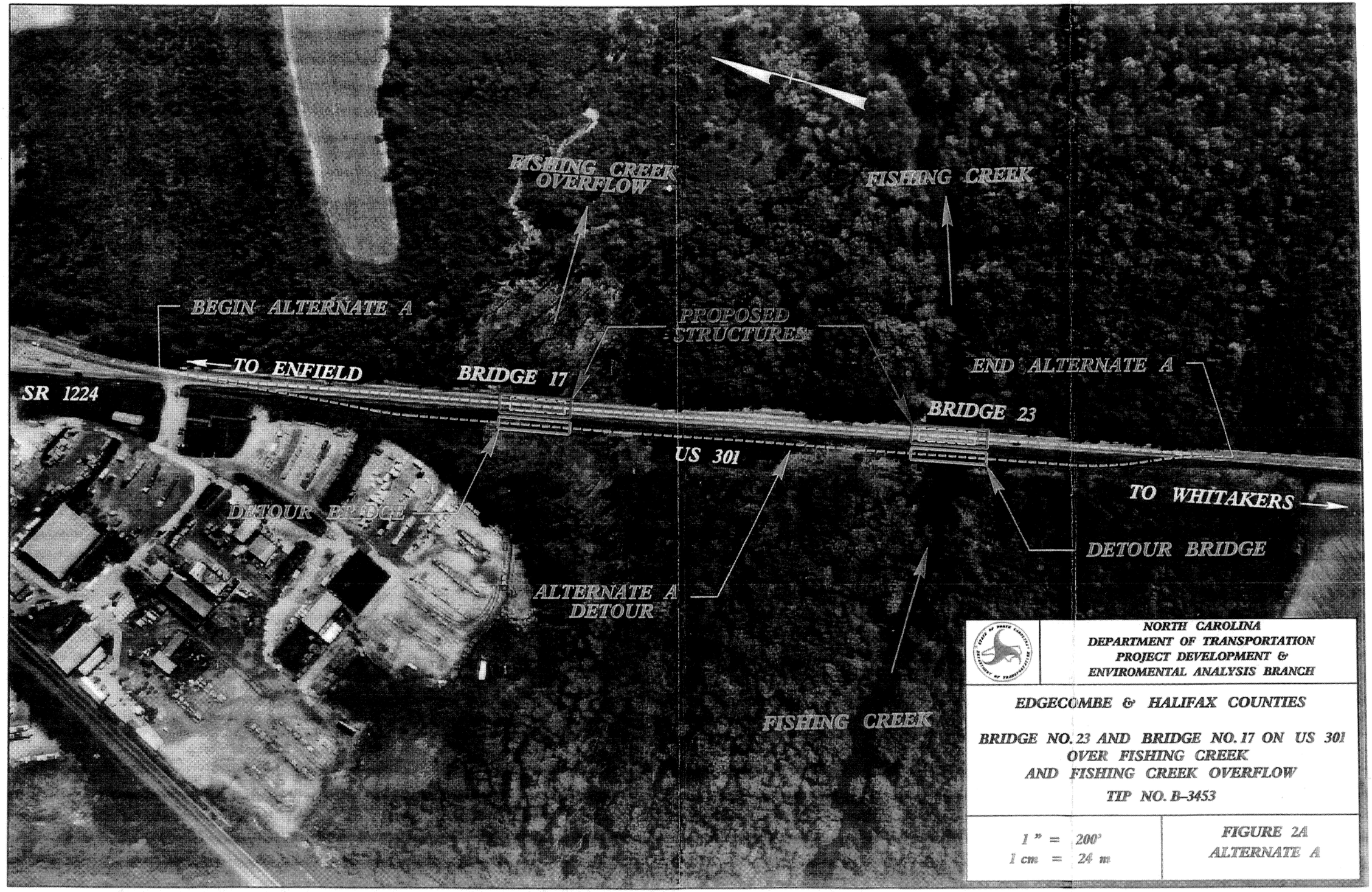
Nash County

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

EDGECOMBE & HALIFAX COUNTIES

BRIDGE NO. 23 AND BRIDGE NO. 17 ON US 301
OVER FISHING CREEK
AND FISHING CREEK OVERFLOW
TIP NO. B-3453

VICINITY MAP | *FIGURE 1*



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIROMENTAL ANALYSIS BRANCH

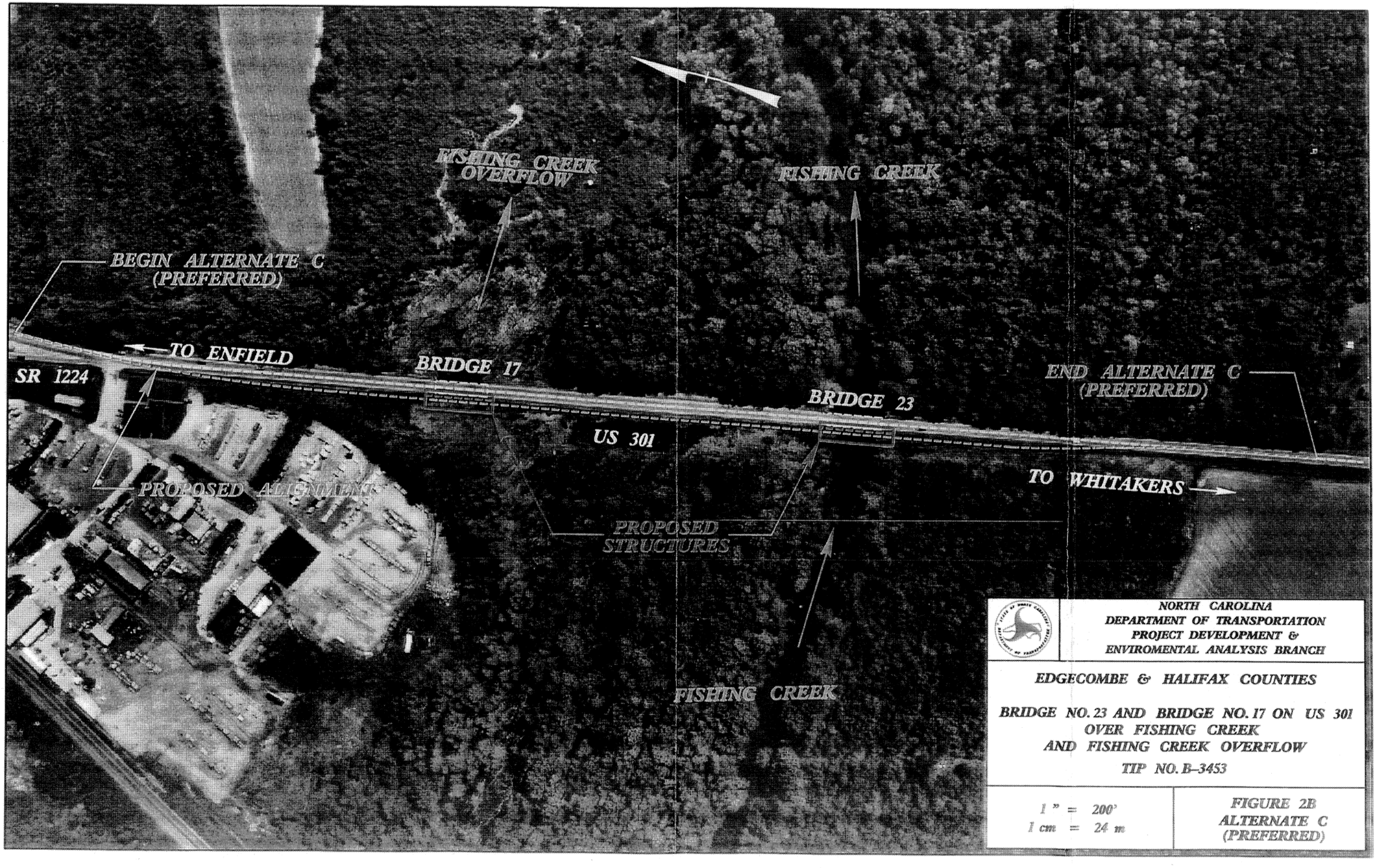
EDGECOMBE & HALIFAX COUNTIES

BRIDGE NO. 23 AND BRIDGE NO. 17 ON US 301
OVER FISHING CREEK
AND FISHING CREEK OVERFLOW

TIP NO. B-3453

1 " = 200'
1 cm = 24 m

FIGURE 2A
ALTERNATE A



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIROMENTAL ANALYSIS BRANCH

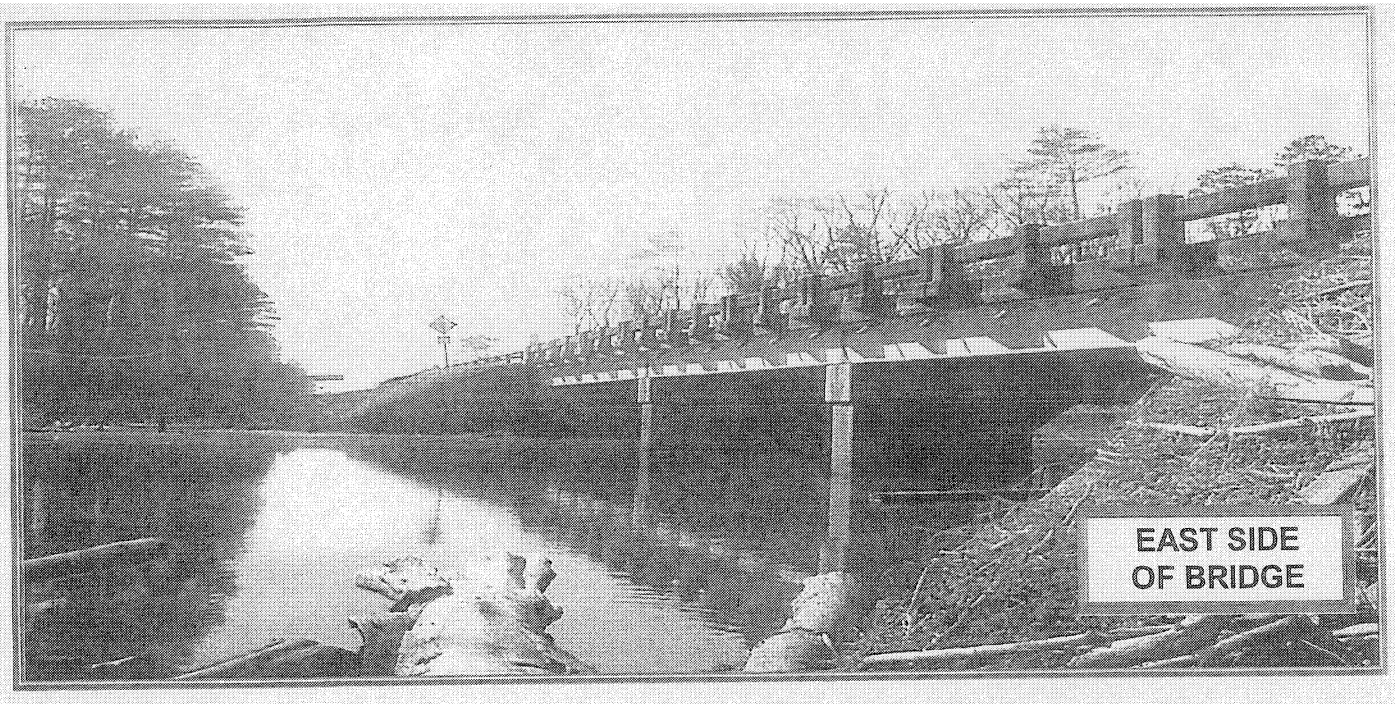
EDGECOMBE & HALIFAX COUNTIES

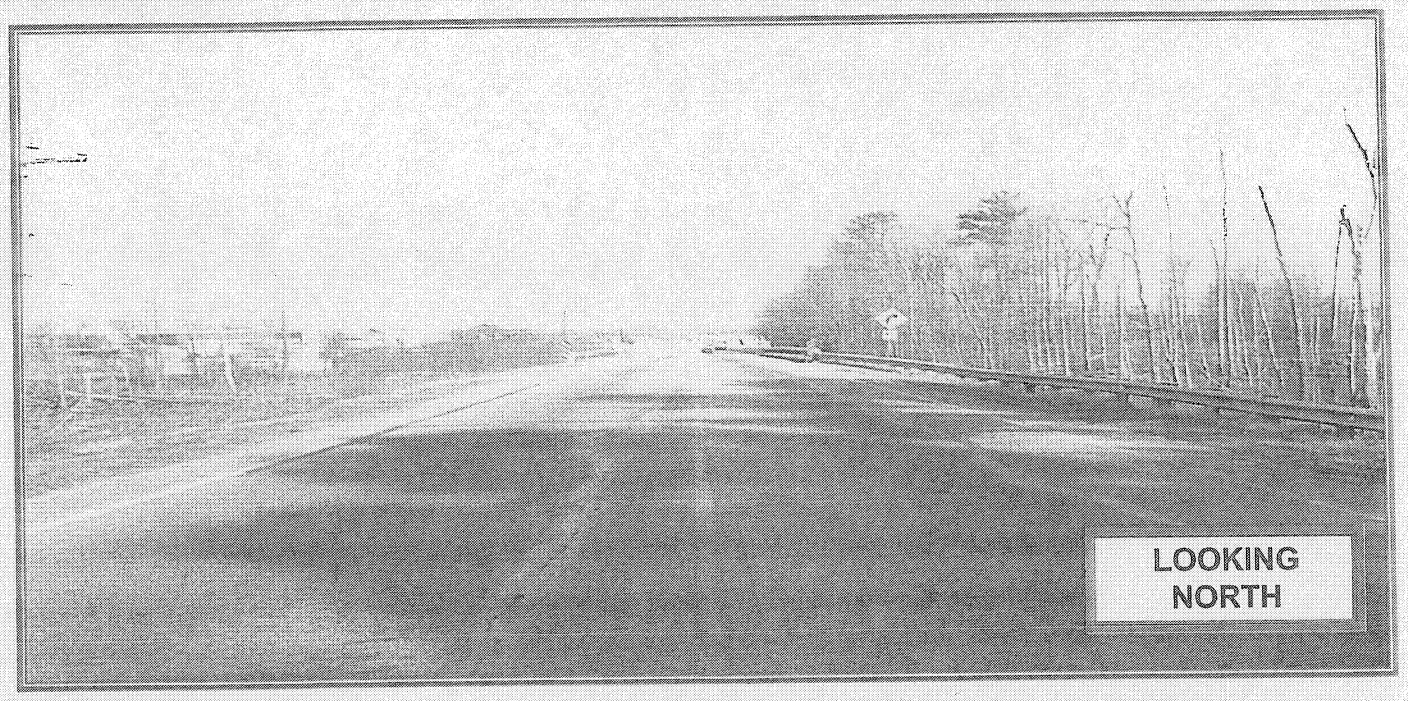
BRIDGE NO. 23 AND BRIDGE NO. 17 ON US 301
OVER FISHING CREEK
AND FISHING CREEK OVERFLOW

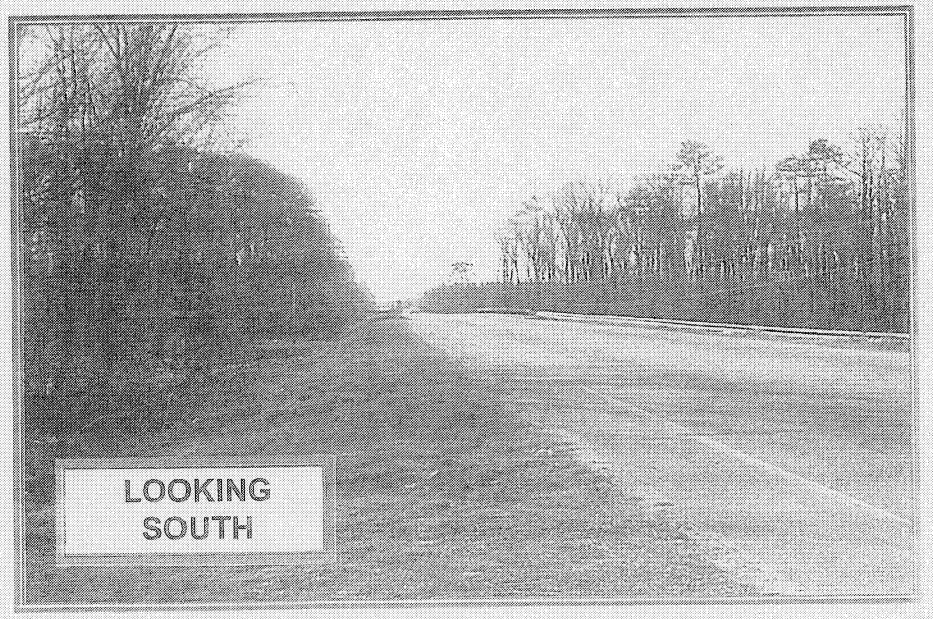
TIP NO. B-3453

1 " = 200'
1 cm = 24 m

FIGURE 2B
ALTERNATE C
(PREFERRED)



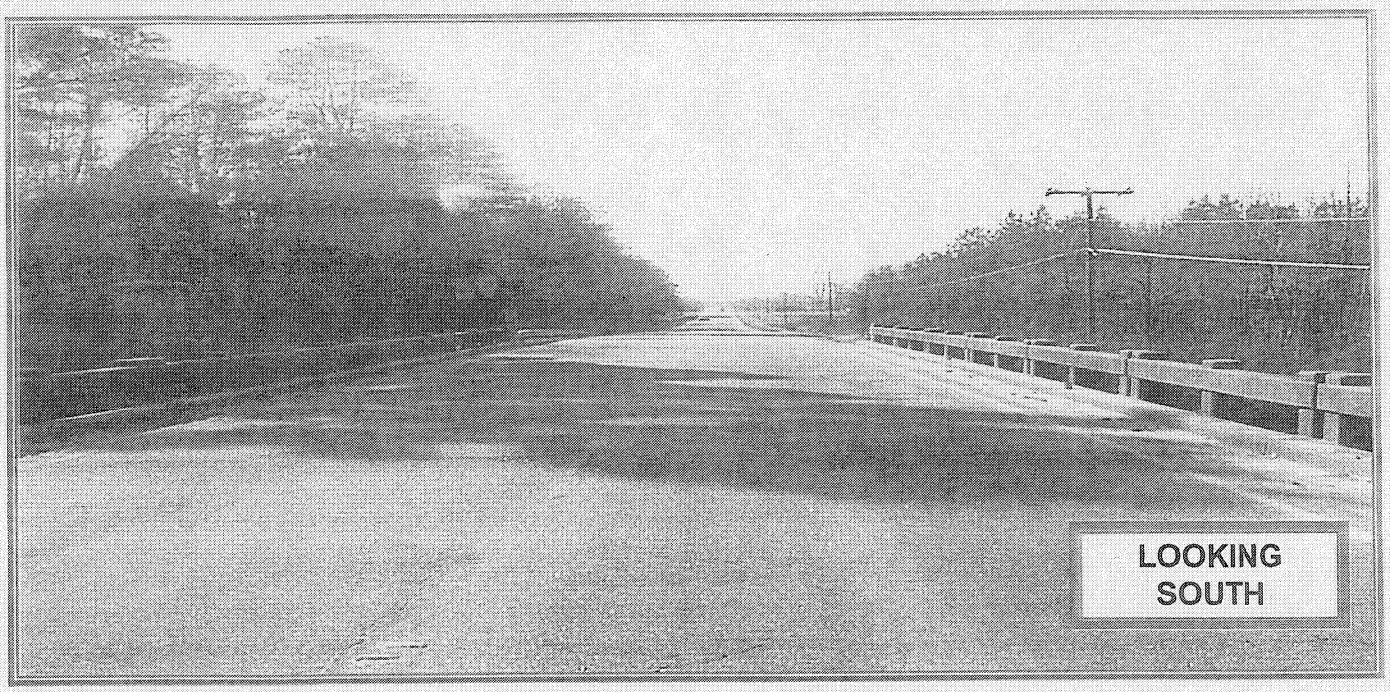


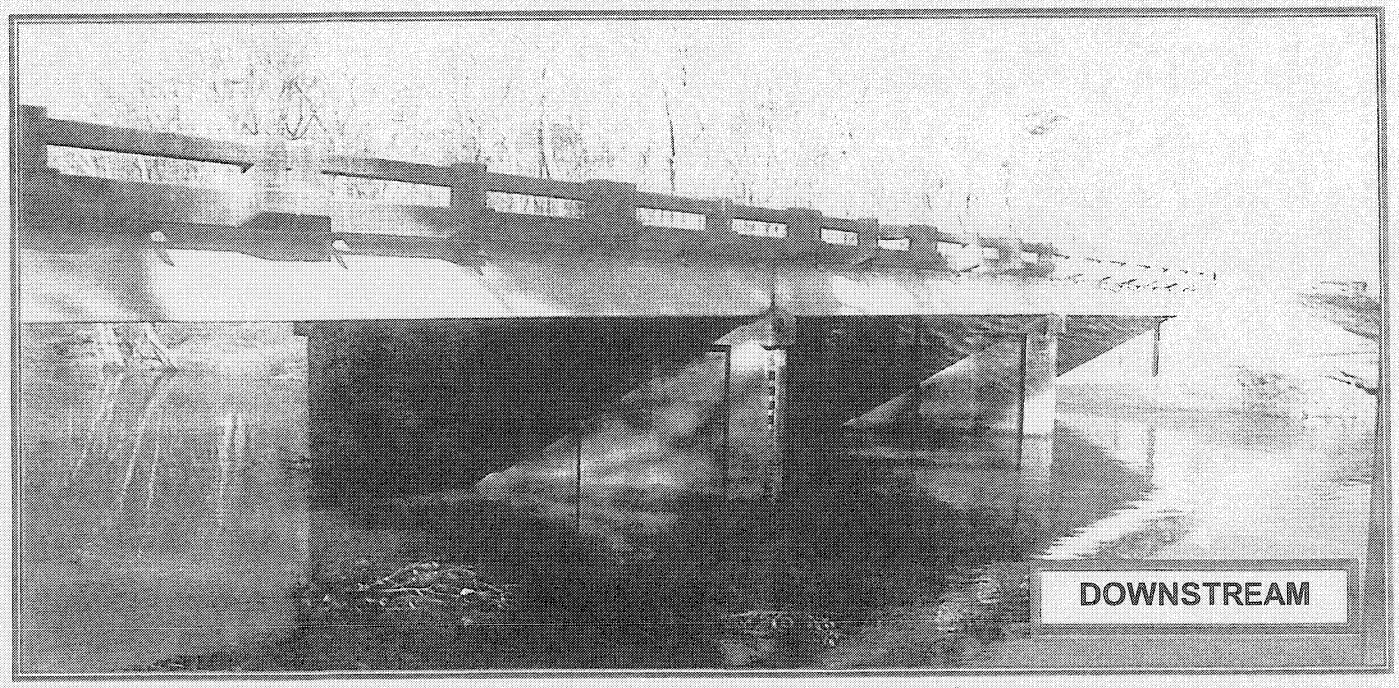


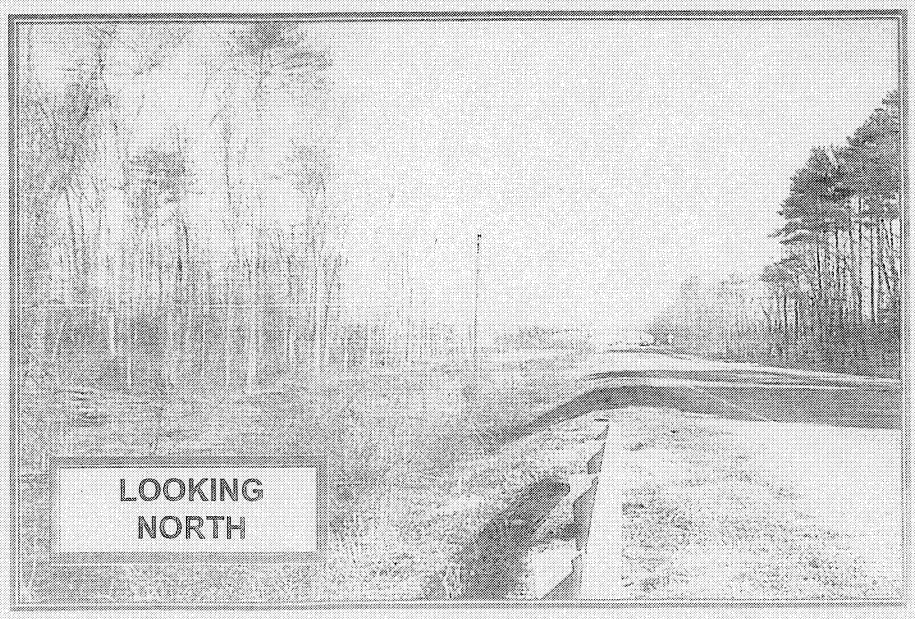
B-3453
Replacement of Bridge No. 17 on US 301 Over Fishing Creek Overflow
Edgecombe-Halifax Counties

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

FIGURE 3A







B-3453
Replacement of Bridge No. 23 on US 301 Over Fishing Creek Edgecombe-Halifax Counties

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

FIGURE 3B

APPENDIX

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

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. 85 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)

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
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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.

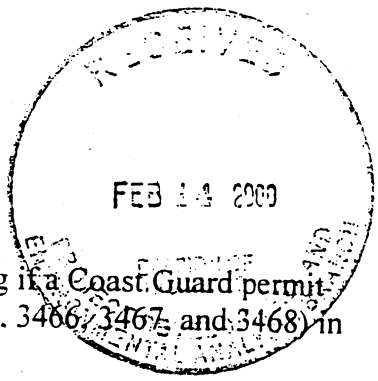
U.S. Department of Transportation
United States Coast Guard

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

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

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 RSG for David Brook
Deputy State Historic Preservation Officer

Re: Replace Bridge Nos. 23 & 17, US 301 over Fishing Creek and Fishing Creek Overflow, B-3453, Edgecombe/Halifax Counties, 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

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

January 31, 2000

MEMORANDUM

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

From: John Hennessy, NC Division of Water Quality JH

Subject: Scoping comments on the proposed replacement of Bridge No. 23 and Bridge No. 17 on US 301over ~~Buffalo~~ Creek in Edgecombe and Halifax Counties, T.I.P. B-3453.
Fishing

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 Fishing Creek in the Tar-Pamlico River Basin. The DWQ index number for the stream is 28-79-(29) and the stream is classified as C 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

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

Federal Aid =BRSTP-301(10) *TIP* =B-3453 *County*: Edgecombe/Halifax

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

Project Description: Replace Bridge Nos. 23 &17 on US 301 over Fishing Creek and overflow

On ~~August 19~~ Sept. 30, 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

- [ ] 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.
- [x] 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 Bridge #23 and Bridge #17 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:

Mary Pope Furr — 9.30.99

Representative, NCDOT — Date

[signature] — 10/5/99

FHWA, for the Division Administrator, or other Federal Agency — Date

[signature]

Representative, SHPO — Date

[signature] — 10/14/99

State Historic Preservation Officer — Date

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

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

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

WETLAND RATING WORKSHEET - Fourth Version

Project Name B-3453, Bridges 23/17, Fishing Ck/Overflw Nearest Road US 301
County Halifax/Edgecombe Wetland Area _____ acres Wetland Width ≥100 feet
Name of evaluator L. Warlick Date 11-9-99

Wetland Location

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

Soil series Congaree, Wehadkee, Roanoke

_____ 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 50 %
_____ agriculture, urban/suburban 30 %
_____ impervious surface 20 %

Dominant vegetation

(1) *Quercus phellos*
(2) *Liquidambar styraciflua*
(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 _____

			weight	
	Water Storage	4	x 4.00 =	16
R	Bank/Shoreline stabilization	5	x 4.00 =	20
A	Pollutant removal	5	x 5.00 =	25
T	Wildlife habitat	3	x 2.00 =	6
I	Aquatic life value	4	x 4.00 =	16
N	Recreation/Education	2	x 1.00 =	2
G				
	Economic value		x .50=	

Wetland Score: 85

WETLAND RATING WORKSHEET - Fourth Version

Project Name B-3453, Bridges 23/17, Fishing Ck/Overflw Nearest Road US 301
County Halifax/Edgecombe Wetland Area _____ acres Wetland Width ≥100 feet
Name of evaluator L. Warlick Date 11-9-99

Wetland Location

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

Soil series Chewacla, Wehadkee

_____ 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 50 %
_____ agriculture, urban/suburban 30 %
_____ impervious surface 20 %

Dominant vegetation

(1) *Taxodium distichum*
(2) _____
(3) _____

Flooding and wetness

__X__ 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 _____

		weight	
Water Storage	1	x 4.00 =	4
Bank/Shoreline stabilization	0	x 4.00 =	0
Pollutant removal	2	x 5.00 =	10
Wildlife habitat	1	x 2.00 =	2
Aquatic life value	3	x 4.00 =	12
Recreation/Education	2	x 1.00 =	2
Economic value	_____	x .50=	_____

Wetland Score: 30

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineation Manual)

Project/Site: B-3453	**Project No:**	**Date:** 9-Nov-1999
Applicant/Owner: NCDOT		**County:** Halifax/Edgecombe
Investigators: L. Warlick/J. Brooks		**State:** North Carolina
		Plot ID: 1

Do Normal Circumstances exist on the site?	(Yes) No	**Community ID:** 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 phellos Oak,Willow	Tree	FACW-	*Carpinus caroliniana* Hornbeam,American	Tree	FAC
Liquidambar styraciflua Gum,Sweet	Tree	FAC+	*Carpinus caroliniana* Hornbeam,American	Shrub	FAC
Acer rubrum Maple,Red	Tree	FAC	*Arundinaria gigantea* Cane,Giant	Herb	FACW
Pinus taeda Pine,Loblolly	Tree	FAC	*Smilax rotundifolia* Greenbrier,Common	Vine	FAC
Quercus michauxii Oak,Swamp Chestnut	Tree	FACW-			

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) 9/9 = 100.00%

FAC Neutral: 3/3 = 100.00%

Numeric Index: 24/9 = 2.67

Remarks:

Sparse herbaceous, time of year prohibits better study, sparse shrub and vine layers.

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:	= 0-2 *(in.)*

Wetland Hydrology Indicators

Primary Indicators
- NO **Inundated**
- YES **Saturated in Upper 12 Inches**
- YES **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:

Pockets of surface water 2-6" deep.

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineation Manual)

Project/Site: B-3453 **Project No:** **Date:** 9-Nov-1999
Applicant/Owner: NCDOT **County:** Halifax/Edgecombe
Investigators: L. Warlick/J. Brooks **State:** North Carolina
Plot ID: 1

SOILS

Map Unit Name (Series and Phase): Wehadkee silt loam
Map Symbol: Wh **Drainage Class:** Poorly drained **Mapped Hydric Inclusion?**
Taxonomy (Subgroup): Typic Fluvaquents **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
0-4	A	10YR5/1	10YR5/8	N/A	N/A	Sandy clay loam
4+	B	10YR7/1	10YR5/8	N/A	N/A	Clay 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
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is the Sampling Point within the Wetland? (Yes) No

Remarks: