




STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 4, 2004

MEMORANDUM TO: Mr. Jon G. Nance, P.E.
Division 5 Engineer

FROM: Philip S. Harris, III, P.E., Manager 
Office of the Natural Environment
Project Development and
Environmental Analysis Branch

SUBJECT: Vance County; Western Outer Loop from SR 1128 (Ruin Creek Road) to
SR 1101 (Old Country Home Road) near Henderson; Project No.
8.2390201; TIP Project No. U-2527

Attached is the modification of the 404 permit, 401 Water Quality Certification and Tar-Pamlico Buffer Certification.

PSH/mka

Attachment

cc: Mr. Art McMillan, P.E.
Mr. Omar Sultan
Mr. Jay Bennett, P.E.
Mr. David Chang, P.E.
Mr. Randy Garris, P.E.
Mr. Greg Perfetti, P.E.
Mr. Mark Staley
Mr. John F. Sullivan, III, FHWA
Mr. Chris Murray, Division 5 DEO
Ms. Cathy Houser, PE

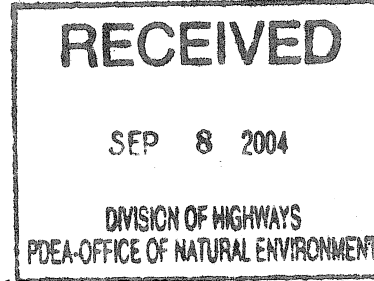
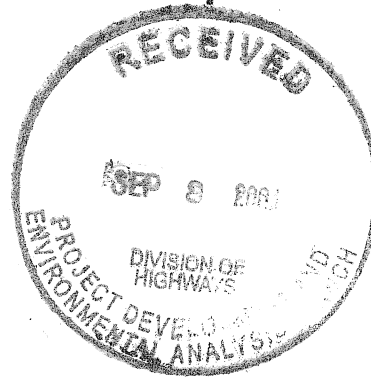


Michael F. Easley, Governor
 William G. Ross Jr., Secretary
 North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
 Division of Water Quality

Haney

September 2, 2004
 Vance County
 TIP No. U-2527
 DWQ No. 031494



Dr. Gregory J. Thorpe, PhD., Manager
 Planning & Environmental Branch
 N.C. Department of Transportation
 1548 Mail Service Center
 Raleigh, North Carolina, 27699-1548

Dear Dr. Thorpe:

Re: Certification Pursuant to Section 401 of the Federal Clean Water Act, Tar-Pamlico Protected Riparian Buffer Certification for Modification to Western Outer Loop from SR 1128 (Ruin Creek Road) to SR 1101 (Old County Home Road) near Henderson, TIP U-2527, Federal Aid Project STP-0509(2), State Project No. 8.2390201, WQC Project No. 031494, Vance County.

Attached hereto is a modification to Certification No. 031494 issued to the North Carolina Department of Transportation on February 13, 2004. The attached modification authorizes an additional 26 linear feet of stream impacts to a UT to Red Bud Creek. The attached modification also authorizes the following Tar-Pamlico protected Riparian Buffer impacts:

Impact Location	Old Buffer Impacts (Square Feet)	New Buffer Impacts (Square Feet)
STA 18+40	17,054 (10,344 Zone 1 + 6,714 Zone 2)	17,060.8 (10,344.1 Zone 1 + 6,716.7 Zone 2)
STA 21+30	23,037 (14,806 Zone 1 + 8,231 Zone 2)	23,260.8 (15,026.4 Zone 1 + 8,234.4 Zone 2)
STA 23+40	21,520 (12,944 Zone 1 + 8,576 Zone 2)	24,122 (14,477.5 Zone 1 + 9,644.5 Zone 2)
STA 23+90 to STA 24+	7,521 (1,356 Zone 1 + 6,165 Zone 2)	7,524 (1,356.3 Zone 1 + 6,167.7 Zone 2)
STA 26+00 to STA 26+	24,662 (16,065 Zone 1 + 8,597 Zone 2)	24,670.9 (16,070.5 Zone 1 + 8,600.4 Zone 2)
STA 35+40 to STA 35+	14,601 (6,994 Zone 1 + 7,607 Zone 2)	14,606.6 (6,996.5 Zone 1 + 7,610.1 Zone 2)
STA 36+40 to STA 37+	35,056 (22,359 Zone 1 + 12,697 Zone 2)	35,542.4 (22,367.4 Zone 1 + 13,175.0 Zone 2)
STA 40+81	20,014 (11,793 Zone 1 + 8,221 Zone 2)	20,020.8 (11,797.2 Zone 1 + 8,223.6 Zone 2)
STA 46+20	50,529 (31,053 Zone 1 + 19,476 Zone 2)	52,226.5 (32,044.2 Zone 1 + 52,226.5 Zone 2)
Total	213,994 (127,710 Zone 1 + 86,284 Zone 2)	219,034.8 (130,480.1 Zone 1 + 88,554.7 Zone 2)

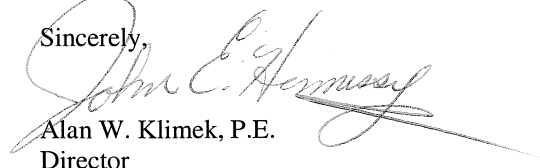
Transportation Permitting Unit
 1650 Mail Service Center, Raleigh, North Carolina 27699-1650
 2321 Crabtree Boulevard, Suite 250, Raleigh, North Carolina 27604
 Phone: 919-733-1786 / FAX 919-733-6893 / Internet: <http://h2o.enr.state.nc.us/hcwetlands>

One North Carolina
Naturally

This modification is applicable only to the additional proposed activities. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated February 13, 2004 and all other corresponding modifications still apply except where superseded by this certification.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,



Alan W. Klimek, P.E.
Director

Attachments:

Modification to WQC No. 031494

cc: Wilmington District US Army Corps of Engineers
Mr. Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
NC DWQ Raleigh Regional Office
Mr. Christopher Militscher, US Environmental Protection Agency – Region IV
Mr. William D. Gilmore, PE Transition Manager, NC Ecosystem Enhancement Program
Mr. Jon G. Nance, PE, Division 5 Engineer, 2612 N. Duke Street, Durham, NC 27704
Mr. Chris Murray, Division 5 Environmental Officer, 2612 N. Duke Street, Durham, NC 27704
Central Files
File Copy

control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.

3. All protected riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated with native woody species upon completion of the project construction. A post-construction as-built with the restoration activities included shall be submitted to the DWQ no later than 60 days after the project is closed out by the Department of Transportation.
4. No live or fresh concrete shall come into contact with waters of the state until the concrete has hardened.
5. Placement of culverts and other structures in waters, streams, and wetlands must be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or stream beds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.
6. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit. Should waste or borrow sites be located in wetlands or stream, compensatory mitigation will be required since it is a direct impact from road construction activities.
7. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by orange fabric fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
8. Compensatory mitigation for 2,394 linear feet of impacts to jurisdictional streams shall be provided by onsite stream relocations of 2,592 linear feet using natural stream design techniques. The onsite stream relocation shall be constructed in accordance with the design submitted in your November 26, 2003 application. All stream relocations shall have 50-foot wooded buffers planted on both sides of the stream. As-Builts for the completed streams shall be submitted to the North Carolina Division of Water Quality Transportation Permitting Unit within 30 days of the completion of the construction of the relocations. If the parameters of this condition are not met, then the NCDOT shall supply additional stream mitigation for the 2,394 linear feet of impacts.
9. Mitigation for impacts to 130,480.1 square feet of protected riparian buffers in Zone 1 and 88,554.7 square feet of protected riparian buffers in Zone 2 will be mitigated for as described below:

Zone of Impact	Impacts (Square Feet)	Replacement Ratio	Total Mitigation Required (Square Feet)
Zone 1	130,480.1	3:1	391,440.3
Zone 2	88,554.7	1.5:1	132,832.05
Total	219,034.8		524,272.35

We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through an in lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP), and that the EEP has agreed to implement the mitigation for the project. Mitigation for unavoidable impacts to Neuse Riparian Buffers shall be provided through an in-lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP) at a rate of \$0.96 per square foot for 524,272.35 square feet of buffer impact. Therefore, a total payment of \$ 503,301.46 shall be submitted to the NCEEP to offset the impacts. No construction

NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, Section .0500. The attached modification authorizes an additional 26 linear feet of stream impacts to a UT to Red Bud Creek. The attached modification also authorizes the following Tar-Pamlico protected Riparian Buffer impacts:

Impact Location	Old Buffer Impacts (Square Feet)	New Buffer Impacts (Square Feet)
STA 18+40	17,054 (10,344 Zone 1 + 6,714 Zone 2)	17,060.8 (10,344.1 Zone 1 + 6,716.7 Zone 2)
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Total	213,994 (127,710 Zone 1 + 86,284 Zone 2)	219,034.8 (130,480.1 Zone 1 + 88,554.7 Zone 2)

This modification is applicable only to the additional proposed activities. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated February 13, 2004 and all other corresponding modifications still apply except where superseded by this certification.

The application provides adequate assurance that the stream and protected riparian buffer impacts in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your application, as described in the Public Notice. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If total wetland fills for this project (now or in the future exceed one acre, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations.

Condition(s) of Certification:

1. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of two manuals. Either the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" (available from the Division of Land Resources in the DENR Regional or Central Offices). The control practices shall be utilized to prevent exceedances of the appropriate turbidity water quality standard (50 NTUs in all fresh water streams and rivers not designated as trout waters; 25 NTUs in all lakes and reservoirs, and all saltwater classes; and 10 NTUs in trout waters).
2. Pursuant to NCAC15A 2B.0259(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without prior approval by the NCDWQ. At this time, the NCDWQ has approved no sediment and erosion control devices in Zone 1 anywhere on this project. Moreover, sediment and erosion

activities in Neuse River Riparian buffers shall begin until payment for buffer mitigation is made and the Ecosystem Enhancement Program receives and clears your check (made payable to DENR – Ecosystem Enhancement Program).

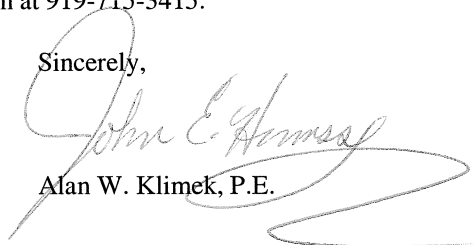
All other conditions written into previous Water Quality Certifications for this project still apply.

Violations of any condition herein set forth shall result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 Permit. This Certification shall expire upon expiration of the 404 permit.

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, P.O. Box 27447, Raleigh, N.C. 27611-7447. This certification and its conditions are final and binding unless you ask for a hearing.

This letter completes the review of the Division of Water Quality under Section 401 of the Clean Water Act. If you have any questions, please contact Nicole Thomson at 919-715-3415.

Sincerely,



Alan W. Klimek, P.E.

JEH/njt

Attachment

cc: Wilmington District US Army Corps of Engineers
Mr. Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
NC DWQ Raleigh Regional Office
Mr. Christopher Militscher, US Environmental Protection Agency – Region IV
Mr. William D. Gilmore, PE Transition Manager, NC Ecosystem Enhancement Program
Mr. Jon G. Nance, PE, Division 5 Engineer, 2612 N. Duke Street, Durham, NC 27704
Mr. Chris Murray, Division 5 Environmental Officer, 2612 N. Duke Street, Durham, NC 27704
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Modification to WQC No. 031494

**NORTH CAROLINA – DIVISION OF WATER QUALITY
401 WATER QUALITY CERTIFICATION
SUMMARY OF PERMITTED IMPACTS AND MITIGATION REQUIREMENTS**

In accordance with 15A NCAC 2H.0500, NCDOT, DWQ Project No. 031494 is authorized to impact the surface waters of the State of North Carolina as indicated below for the purpose of constructing the Western Outer Loop from SR 1128 (Ruin Creek Road) to SR 1101 (Old County Home Road) in Vance County. All activities associated with these authorized impacts must be conducted in accordance with the conditions listed in the attached Certification transmittal letter. **THIS CERTIFICATION IS NOT VALID WITHOUT THE ATTACHMENTS.**

Summary of Impacts

Zone of Impact	Impacts (Square Feet)	Replacement Ratio	Total Square Feet of Mitigation Required
Zone 1	130,480.1	3:1	391,440.3
Zone 2	88,554.7	1.5:1	132,832.05
Total	219,034.8		524,272.35

On-site mitigation to be performed by NCDOT:

- 2,592 linear feet of on-site stream relocation using natural channel design.

COMPENSATORY MITIGATION REQUIREMENTS:

LOCATION: SR 1128 (Ruin Creek Road) to SR 1101 (Old County Home Road)

COUNTY: Vance County

BASIN/SUBBASIN: Neuse River, Hydrologic Unit 03020101

As required by 15A NCAC 2B .0250 and 15A NCAC 2H .0506(h), and the conditions of this Certification, you are required to compensate for the above impacts through the restoration, creation, enhancement or preservation of wetlands, buffers, and surface waters as outlined below *prior* to conducting any activities that impact or degrade waters of the state. Mitigation to be performed by NC Ecological Enhancement Program in Hydrologic Unit 03020201:

- 2,394 linear feet of stream.
- 524,272.35 square feet of Neuse River Riparian Buffer (see table above).

One of the options you have available to satisfy the compensatory mitigation requirements is through payment of a fee to the Ecosystem Enhancement Program per 15A NCAC 2R .0503. If you choose this option, please sign this form and mail it to the address listed below. An invoice for the appropriate amount of payment will be sent to you upon receipt of this form. PLEASE NOTE, THE ABOVE IMPACTS ARE NOT AUTHORIZED UNTIL YOU RECEIVE NOTIFICATION THAT YOUR PAYMENT HAS BEEN PROCESSED BY THE ECOSYSTEM ENHANCEMENT PROGRAM.

Signature

Date

ECOSYSTEM ENHANCEMENT PROGRAM
1652 Mail Service Center
RALEIGH, NC, 27699-1652

SPECIAL PROJECT COMMITMENTS

Western Outer Loop

From SR 1128 (Ruin Creek Road) to SR 1101 (Old Country Home Road) near Henderson,
Vance County, Federal Aid No. STP-0509(2), State Project No. 8.2390201
T.I.P. Project U-2527

In addition to the standard Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, General Certification Conditions, and Section 401 Conditions of Certification, the following special commitments have been agreed to by the NCDOT:

Commitments Developed Through Project Development and Design

Project Development & Environmental Analysis Branch (PDEA), Hydraulics Unit

Conditions for a Nationwide Permit No. 14 (minor road crossings) from the Corps of Engineers applies to the project. The project also requires a 401 Water Quality Certification from the N.C. Division of Environmental Management.

PDEA, Hydraulics Unit

The subject project is now included within the Tar-Pam River Basin; therefore, the Tar-Pam Basin buffer rules apply and NCDOT will need a Buffer Authorization from the NC Division of Water Quality (NCDWQ).

Geotechnical Unit

A field reconnaissance survey identified four underground storage tank (UST) facilities within the project limits. NCDOT will conduct a site assessment of underground storage facilities located within the project area during the right of way acquisition phase of the project. If leaks and contamination have occurred, NCDOT will notify the N.C. Division of Water Quality.

Division 5 Construction Office, Location and Surveys Unit

This project will impact one geodetic survey marker. NCDOT will notify the N.C. Geodetic Survey prior to construction with regards to the geodetic survey marker, located north of SR 1974.

Roadside Environmental Unit (REU), Division 5 Construction Office

Increased stream channelization and sedimentation are the major anticipated impacts to water quality. Scouring of the stream bed, soil compaction, and loss of shading due to vegetation removal are also potential impacts. Increased sedimentation from lateral flows along with erosion is expected. Precautions will be taken to minimize impacts to water resources in the study area. NCDOT's Best Management Practices for the Protection of Surface Waters and Sedimentation Control guidelines will be enforced throughout construction.

REU, Division 5 Construction Office

In order to minimize potential adverse impacts to the dwarf-wedge mussel, wetlands, and stream resources in the study area, the NCDOT's High Quality Water (HQW) Best Management Practices (BMPs) for the Protection of Surface Waters and Sedimentation

Control Guidelines will be strictly enforced during construction of the project. All cleared and grubbed areas along the roadways will be re-vegetated soon after project completion to reduce loss of wildlife habitat. The NCDOT will minimize activities, including clearing and grubbing, in and adjacent to bodies of water.

REU, Division 5 Construction Office

Written notification of the project commencement date will be sent to the North Carolina Wildlife Resource Commission (NCWRC) and the U.S. Fish and Wildlife Service (USFWS).

PDEA, REU, Division 5 Construction Office

Two federally protected species, the dwarf-wedge mussel (*Alasmidonta heterodon*) and bald eagle (*Haliaeetus leucocephalus*), were listed by the USFWS for Vance County as of May 31, 2002. These species were surveyed for and discussed in the Environmental Assessment (EA). This project will not impact any of the species currently listed for Vance County. However, the NCDOT will incorporate HQW BMP's to reduce the potential for impacts to the dwarf-wedge mussel species resulting from construction of the proposed facility.

PDEA, Geotechnical Unit

The EA included a commitment to perform a preliminary hazardous materials site assessment for a residential dumpsite located on SR 1242 (Trueman Avenue). This action was in conjunction with the previously proposed extension of SR 1242 to intersect the proposed Western Outer Loop. Since the extension of SR 1242 is no longer proposed in conjunction with this project, a preliminary site assessment is not necessary.

Commitments Developed Through Permitting

REU, Division 5 Construction Office

Pursuant to NCAC15A 2B.0259(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without approval by the NCDWQ. At this time, the NCDWQ has approved no sediment and erosion control devices in Zone 1 anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.

All protected riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the pre-construction contours and re-vegetated with native woody species upon completion of the project construction. A post-construction as-built with the restoration activities included shall be submitted to the DWQ no later than 60 days after the project is closed out by the NCDOT.

PDEA, REU, Division 5 Construction Office

Mitigation

Compensatory mitigation for 2,394 linear feet of impacts to jurisdictional streams shall be provided by onsite stream relocations of 2,592 linear feet using natural stream design techniques. The onsite stream relocation shall be constructed in accordance with the design submitted in the November 26, 2003 application. All stream relocations shall have 50-foot wooded buffers planted on both sides of the stream. As-Built for the completed streams shall be submitted to the NCDWQ Transportation Permitting Unit within 30 days of the

completion of the construction of the relocations. If the parameters of this condition are not met, then the NCDOT shall supply additional stream mitigation for 2,394 linear feet of impacts.

Compensatory mitigation for impacts to 219,034.8 square feet of Tar-Pamlico Riparian Buffers shall be provided for as described below.

Zone of Impact	Impacts (Square Feet)	Replacement Ratio	Total Square Feet of Mitigation Required
Zone 1	130,480.1	3:1	391,440.3
Zone 2	88,554.7	1.5:1	132,832.05
Total	219,034.8		524,272.35

NCDOT has chosen to perform compensatory mitigation for impacts to protected buffers through an in lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP), and that the NCEEP has agreed to implement the mitigation for the project. Mitigation for unavoidable impacts to Neuse Riparian Buffers shall be provided through an in lieu payment to the NCEEP at a rate of \$0.96 per square foot for 524,272.35 square feet of buffer impacts. Therefore, a total payment of \$503,301.46 shall be submitted to the NCEEP to offset the impacts. No construction activities in Neuse River Riparian buffers shall begin until payment for buffer mitigation is made and the NCEEP receives and clears NCDOT's check (made payable to DENR-Ecosystem Enhancement Program).

Onsite Stream Relocation/Restoration

IMPLEMENTATION: NCDOT shall mitigate for 1,538 linear feet of unavoidable impact to streams with important aquatic function, associated with this project, by completing 2,066 linear feet of onsite stream relocation/restoration, as described in the permit application. The stream relocation/restoration shall be constructed in accordance with the North Carolina Wildlife Resources Commission's (NCWRC) "Stream Relocation Guidelines." NCDOT shall consult with NCWRC on the stream relocation/restoration and implement all practicable recommendations in the design of specific site requirements for re-establishment of bank vegetation, and placement of meanders and habitat structures. Vegetation shall be used to the maximum extent practicable to stabilize banks, and riprap and other man-made structural measures shall be minimized. NCDOT shall construct all channel relocations/restoration in a dry work area, and stabilize the new channel before stream flows are diverted. Whenever possible, NCDOT shall allow new channels to stabilize for an entire growing season.

AS-BUILT SURVEY: NCDOT shall complete an as-built channel survey within sixty days of completion of the stream relocation construction. NCDOT shall document changes in the dimension, pattern, profile, vegetation plantings, and structures installed, of the relocated channel from the proposed design. NCDOT shall also include in the as-built survey: photo documentation at representative segments and structures; and a plan view diagram.

MONITORING SCHEDULE: NCDOT shall perform the following components of Level I monitoring each year for the 5-year monitoring period: Reference photos; plant survival (i.e., identify specific problem areas (missing, stressed, damaged or dead plantings), estimated

causes, and proposed/required remedial action); visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. NCDOT shall submit the monitoring reports to the USACE, Raleigh Regulatory Field Office Project Manager, within sixty days after completing the monitoring. If less than two bankfull events occur during the first 5 years, NCDOT shall continue monitoring until the second bankfull event is documented. The bankfull events must occur during separate monitoring years. In the event that the required bankfull events do not occur during the five-year monitoring period, the USACE, in consultation with the resource agencies, may determine that further monitoring is not required. It is suggested that all bankfull occurrences be monitored and reported through the required monitoring period. NCDOT shall perform and submit photo documentation twice each year (summer and winter) for the 5-year monitoring period, and for any subsequently required monitoring period.

MONITORING DATA/REPORT: NCDOT shall include the following information in the Level I monitoring report for the site: reference photos; plant survival notes and recommendations, as appropriate; and a report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. NCDOT shall complete the Monitoring Data Record, Sections 1, 2 and 3 (pages 1, 2 and 3, attached), for each representative segment of the channel, and for each year of monitoring (twice each year, summer and winter, for reference photos). NCDOT shall include in the monitoring reports a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

STREAM MITIGATION SUCCESS CRITERIA: The mitigation success criteria, and required remediation actions, will be generally based on the attached Appendix II, and the Photo Documentation, Ecological Function, and Channel Stability criteria in the "Stream Mitigation Guidelines", dated April, 2003 (available on the internet at http://www.saw.usace.army.mil/wetlands/Mitigation/stream_mitigation.html), pages 24 and 25, under "Success Criteria: ".

Prior to, and during the construction of the natural stream design from approximate station 41+00 to 47+20, the NCDOT shall coordinate with the North Carolina Wildlife Resources Commission (NCWRC) to ensure that the construction will not result in negative impacts to threatened and endangered mussels located downstream. Should the NCWRC require changes to the proposed stream design or construction activities, a modification to the 401 Water Quality Certification may be required. Any changes to the design authorized by this certification will require written approval from the NC Division of Water Quality.

Prior to incurring impacts anywhere on the project, a revised natural channel design shall be presented to, and approved by, the NC Division of Water Quality. The revised plan shall include proposed construction plans that describe how DOT plans to construct the new stream channel and control downstream transport of sediment to the sensitive species in Red Bud Creek. A copy of the proposed stream design and construction plans shall also be submitted to the NC Wildlife Resources Commission.



REPLY TO
ATTENTION OF:

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

October 1, 2004

Regulatory Division

Action ID. 199708127

Dr. Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA
N.C. Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

Reference the Department of the Army permit issued on March 25, 2004, for construction of the Western Outer Loop of Henderson (T.I.P. No. U-2527), crossing Red Bud Creek, unnamed tributaries, and an adjacent wetland, from SR 1128, to SR 1101, southwest of Henderson, in Vance County, North Carolina. Reference also your written request of July 9, 2004, subsequently modified on August 27, 2004, for permit modification to impact an additional 26 linear feet of stream. These necessary impacts are depicted on the contract construction drawings, but were not included in the permit application drawings.

The permit is hereby modified to include the work as shown on the enclosed modified drawings. Ten linear feet of additional on-site mitigation will be required for the ten linear feet of additional impact to the perennial stream at Site 6. It is understood that all conditions of the original permit remain applicable, with the exception of Special Conditions j and k, which are modified as shown below, and that the expiration date is unchanged.

Mitigation

j. The permittee shall mitigate for 1,538 linear feet of impact to streams with important aquatic function, as described below (2,066 linear feet of onsite stream relocation).

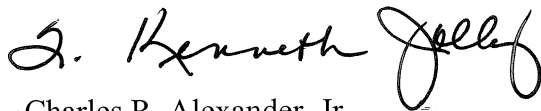
Onsite Stream Relocation/Restoration

k. IMPLEMENTATION: The permittee shall mitigate for 1,538 linear feet of unavoidable impact to streams with important aquatic function, associated with this project, by completing 2,066 linear feet of onsite stream relocation/restoration, as described in the permit application. The stream relocation/restoration shall be constructed in accordance with the North Carolina Wildlife Resources Commission's (NCWRC) "Stream Relocation Guidelines."

NCDOT shall consult with NCWRC on the stream relocation/restoration and implement all practicable recommendations in the design of specific site requirements for re-establishment of bank vegetation, and placement of meanders and habitat structures. Vegetation shall be used to the maximum extent practicable to stabilize banks, and riprap and other man-made structural measures shall be minimized. The permittee shall construct all channel relocations/restoration in a dry work area, and stabilize the new channel before stream flows are diverted. Whenever possible, the permittee shall allow new channels to stabilize for an entire growing season.

If you have questions, please contact Eric Alsmeyer of the Raleigh Regulatory Field Office, at telephone (919) 876-8441, extension 23.

Sincerely,


for Charles R. Alexander, Jr.
Colonel, U.S. Army
District Engineer

Enclosure

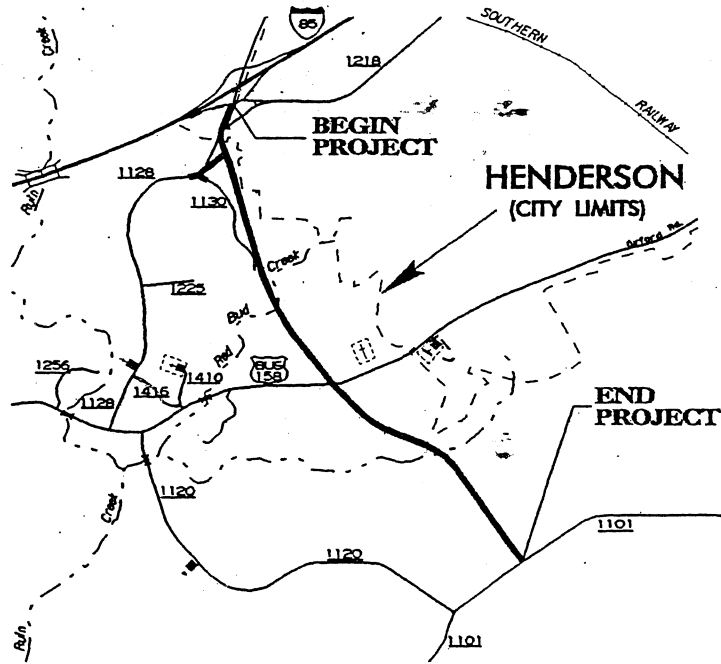
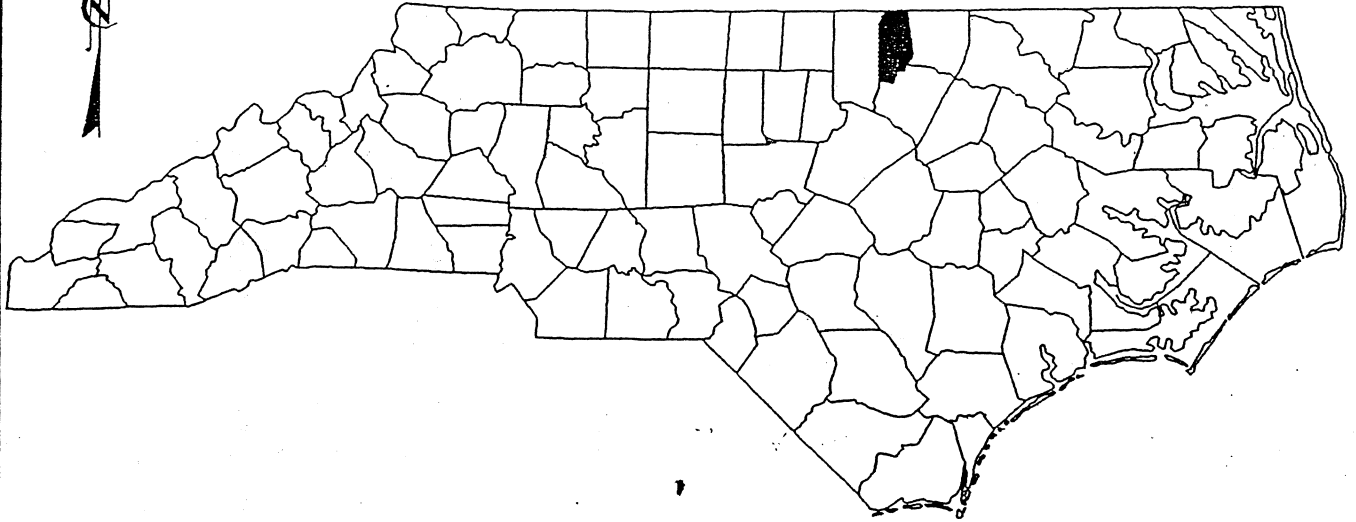
Copies Furnished with enclosure:

Mr. John Dorney
Division of Water Quality-Wetlands Section
North Carolina Department of Environment
and Natural Resources
1650 Mail Service Center
Raleigh, North, Carolina 27699-1650

NCDOT
ATTN: Jon G. Nance, P.E.
2612 Duke Street
Durham, North Carolina 27704

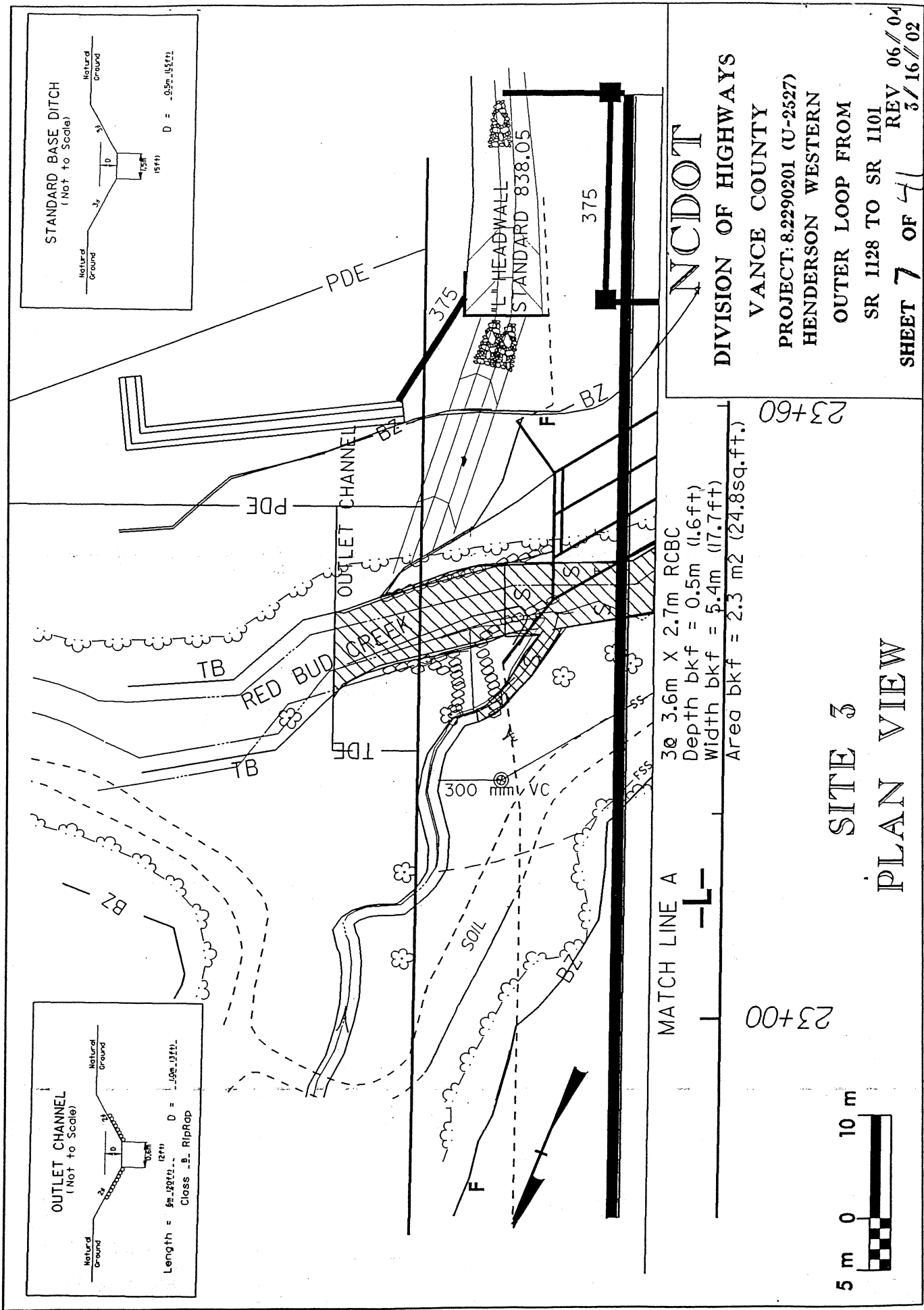
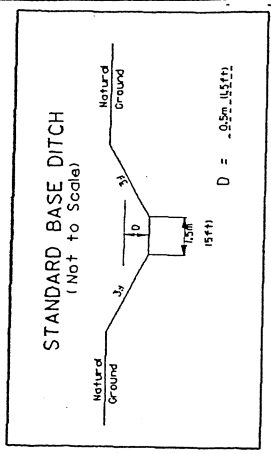
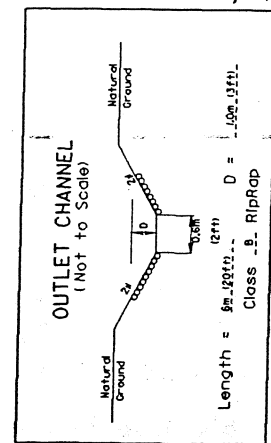
NCDOT
ATTN: Christopher Murray
2612 Duke Street
Durham, North Carolina 27704

NORTH CAROLINA

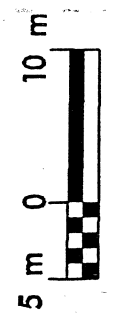


STREAM AND WETLANDS IMPACTS VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
VANCE COUNTY
PROJECT: 8.2390201 (U-2527)
HENDERSON WESTERN
OUTER LOOP FROM
SR 1128 TO SR 1101



MATCH LINE A
 3 @ 3.6m X 2.7m RCBC
 Depth bkf = 0.5m (1.6ft)
 Width bkf = 5.4m (17.7ft)
 Area bkf = 2.3 m² (24.8sq.ft.)



SITE 3
 PLAN VIEW

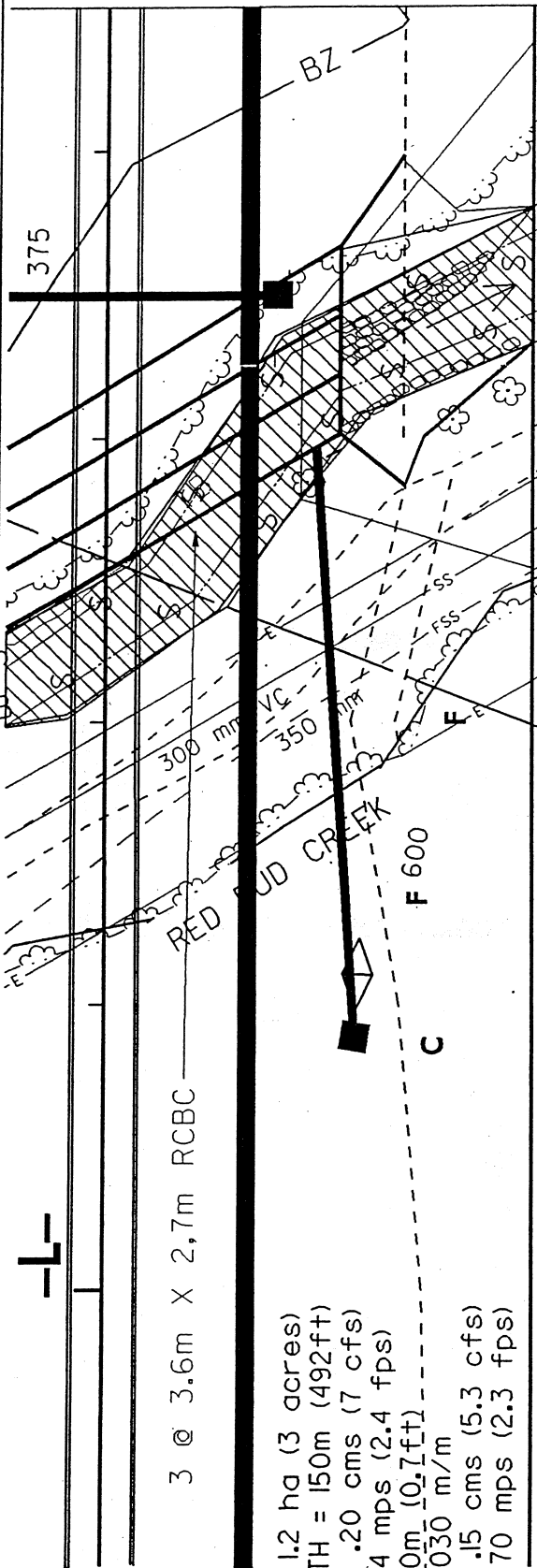
NC DOT
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT: 8.2290201 (U-2527)
 HENDERSON WESTERN
 OUTER LOOP FROM
 SR 1128 TO SR 1101
 REV 06/04
 3/16/02
 SHEET 7 OF 4

23+00

23+60

MATCH LINE A

MATCH STATION 23+90

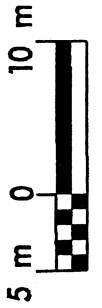
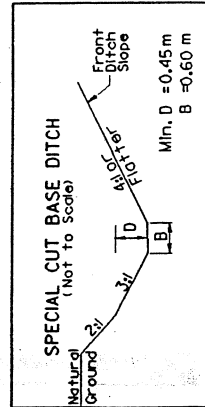


3 @ 3.6m X 2.7m RCBC

3 @ 3.6m X 2.7m RCBC
 Depth bkf = 0.5m (1.6ft)
 Width bkf = 5.4m (17.7ft)
 Area bkf = 2.3 m2 (24.8sq.ft.)

DA = 1.2 ha (3 acres)
 LENGTH = 150m (492ft)
 Q10 = .20 cms (7 cfs)
 V = .74 mps (2.4 fps)
 D = .20m (0.7ft)
 S = 0.030 m/m
 Q2 = .15 cms (5.3 cfs)
 V = .70 mps (2.3 fps)

HARVEY A. WILSON
 &
 GLORIA D. CARVER



SITE 3
 PLAN VIEW

NCDOT

DIVISION OF HIGHWAYS

VANCE COUNTY

PROJECT: 8.2290201 (U-2527)

HENDERSON WESTERN

OUTER LOOP FROM

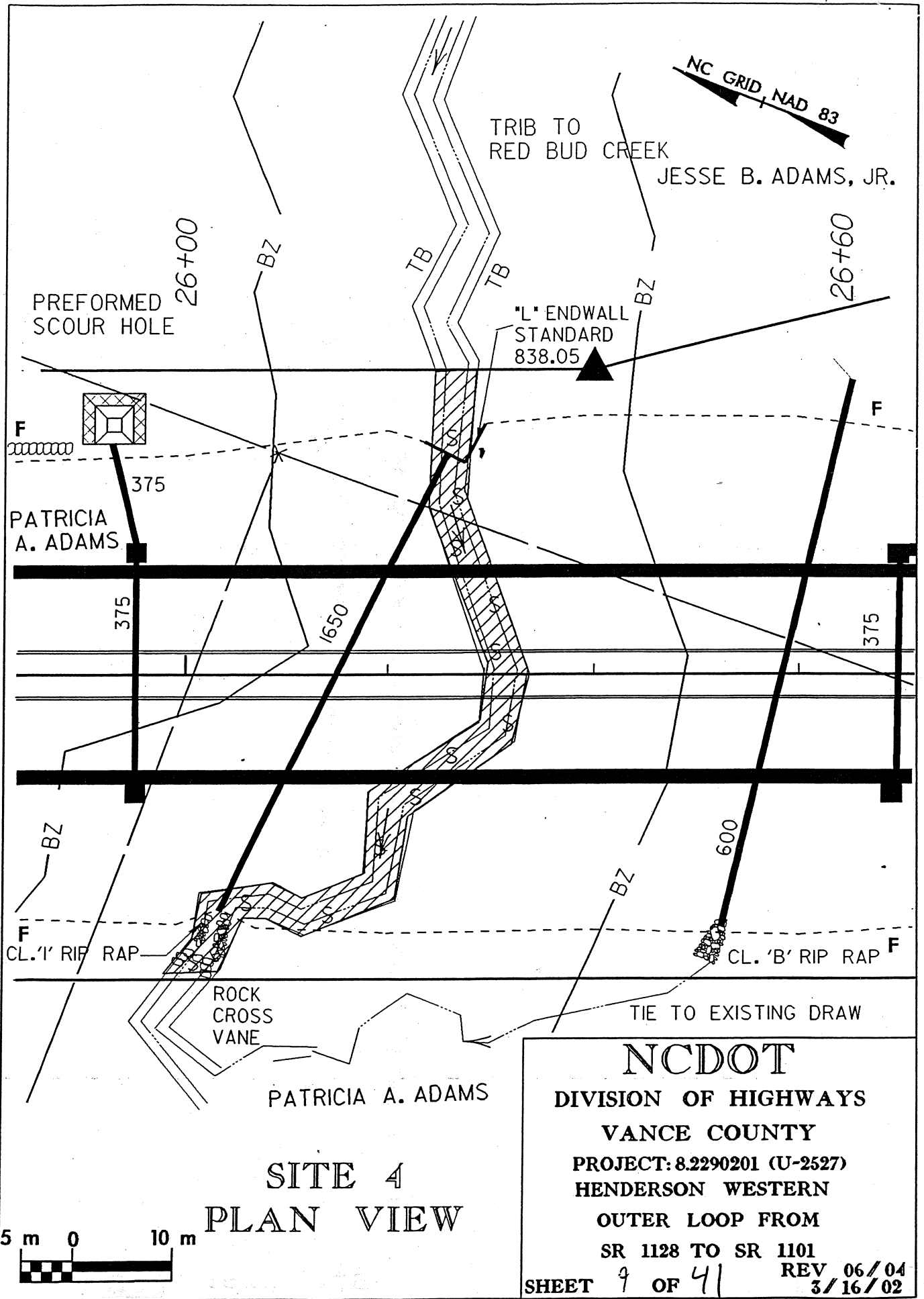
SR 1128 TO SR 1101

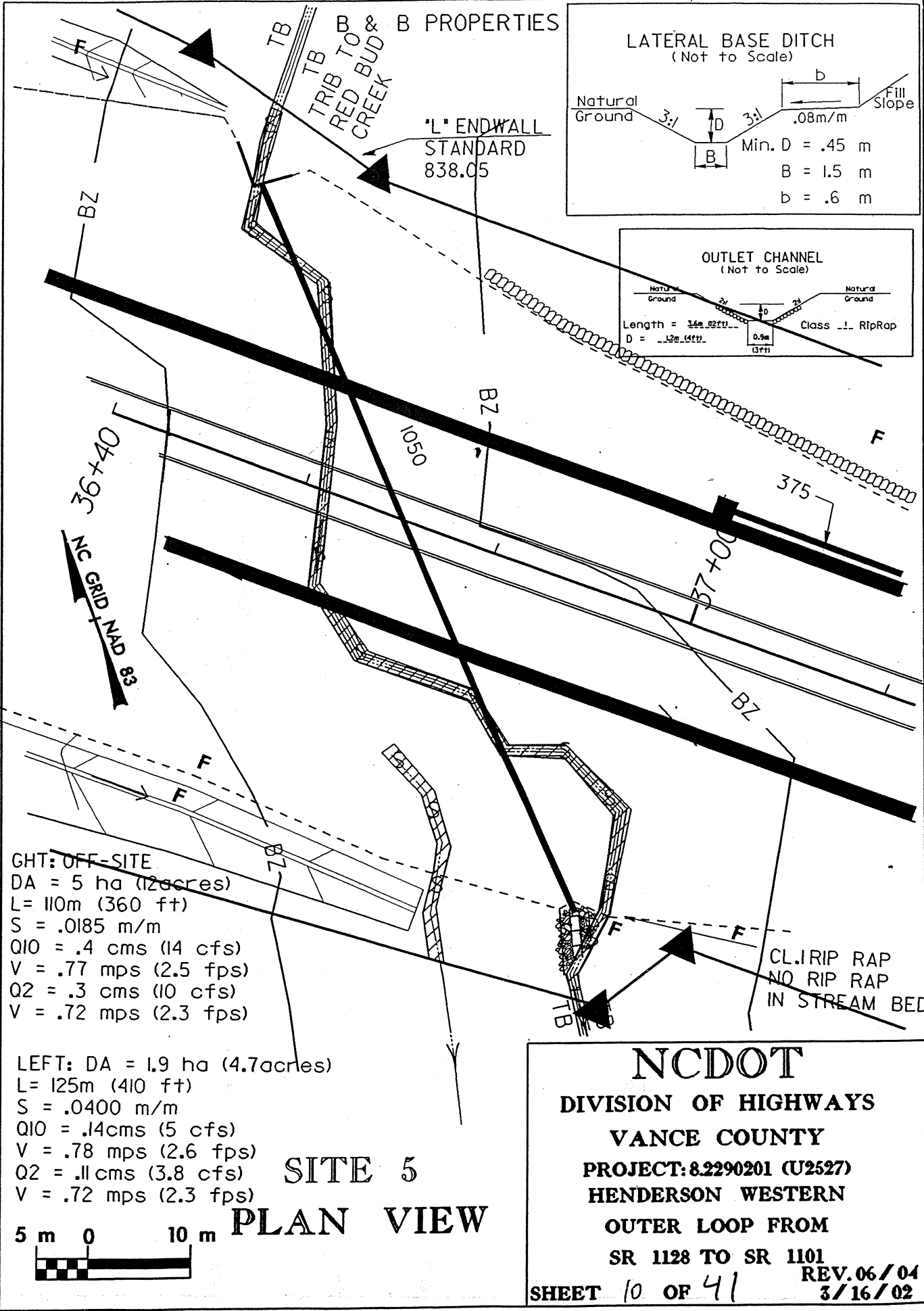
REV 06/04

SHEET 8 OF 41

3/16/02

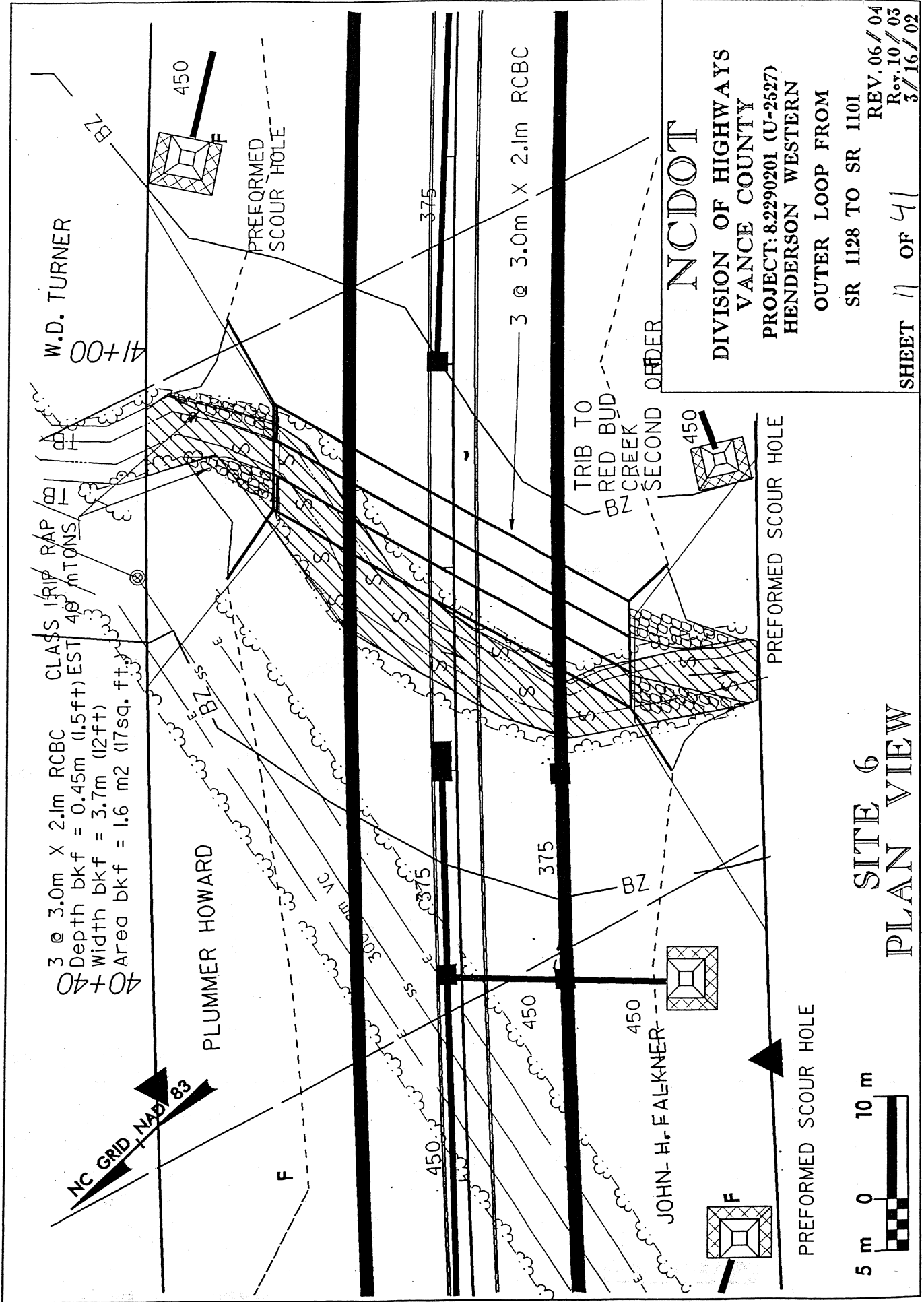
MARJORIE P. LEWIS





SITE 5
PLAN VIEW

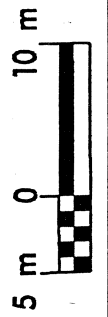
NCDOT
DIVISION OF HIGHWAYS
VANCE COUNTY
PROJECT: 8.2290201 (U2527)
HENDERSON WESTERN
OUTER LOOP FROM
SR 1128 TO SR 1101
REV. 06/04
3/16/02



3 @ 3.0m X 2.1m RCBC CLASS 1 RIP RAP 40 TONS
 Depth bkf = 0.45m (1.5ft) EST
 Width bkf = 3.7m (12ft)
 Area bkf = 1.6 m2 (17sq. ft.)

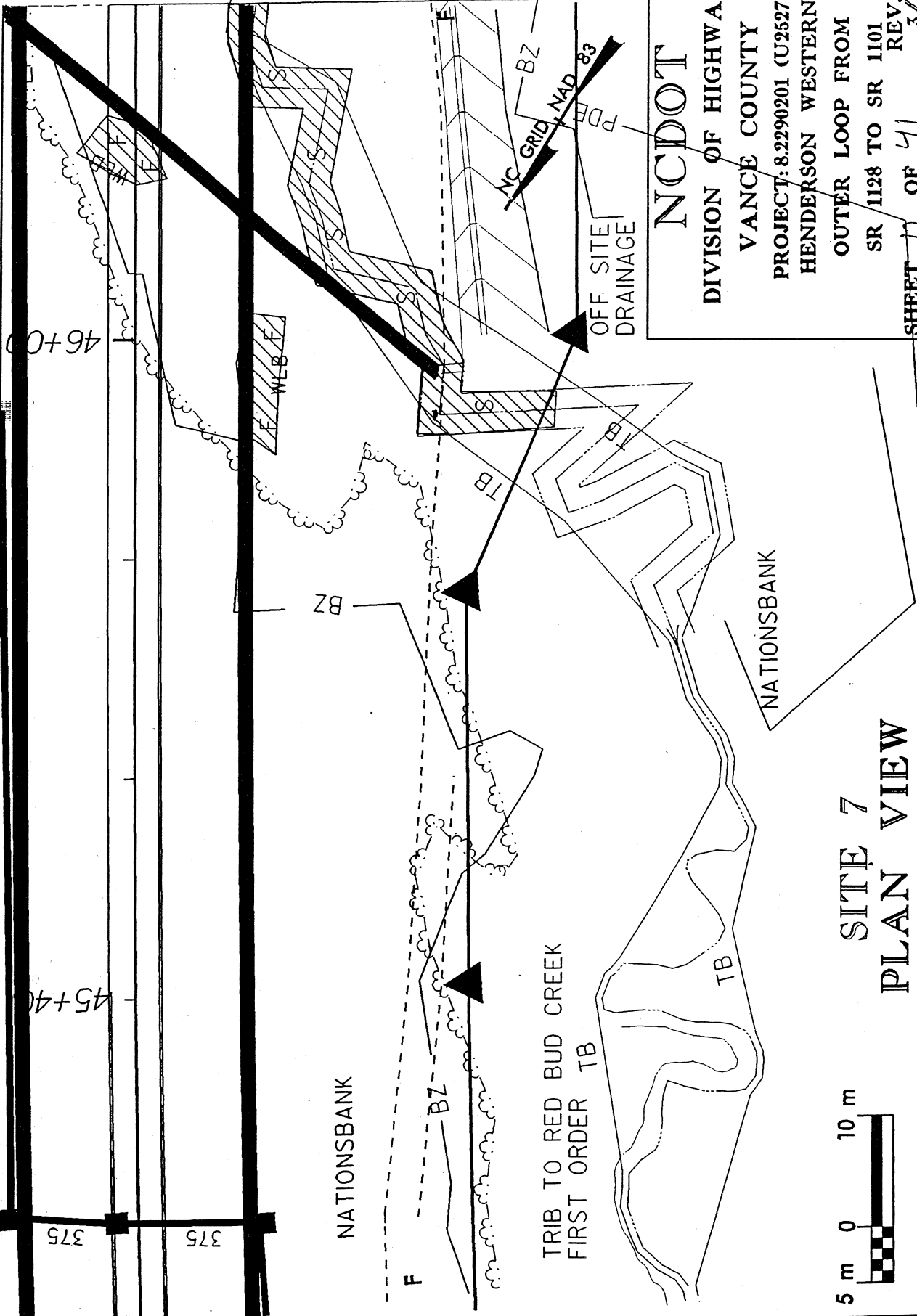
NCDOT
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT: 8.2290201 (U-2527)
 HENDERSON WESTERN
 OUTER LOOP FROM
 SR 1128 TO SR 1101
 REV. 06/04
 Rev. 10/03
 3/16/02

SITE 6
 PLAN VIEW



SHEET 11 OF 41

MATCH STATION 46+30



NC DOT

DIVISION OF HIGHWAYS

VANCE COUNTY

PROJECT: 8.2290201 (U2527)

HENDERSON WESTERN

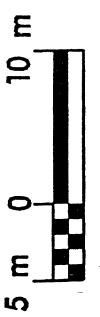
OUTER LOOP FROM

SR 1128 TO SR 1101

REV. 06/04

SHEET 12 OF 41

**SITE 7
PLAN VIEW**



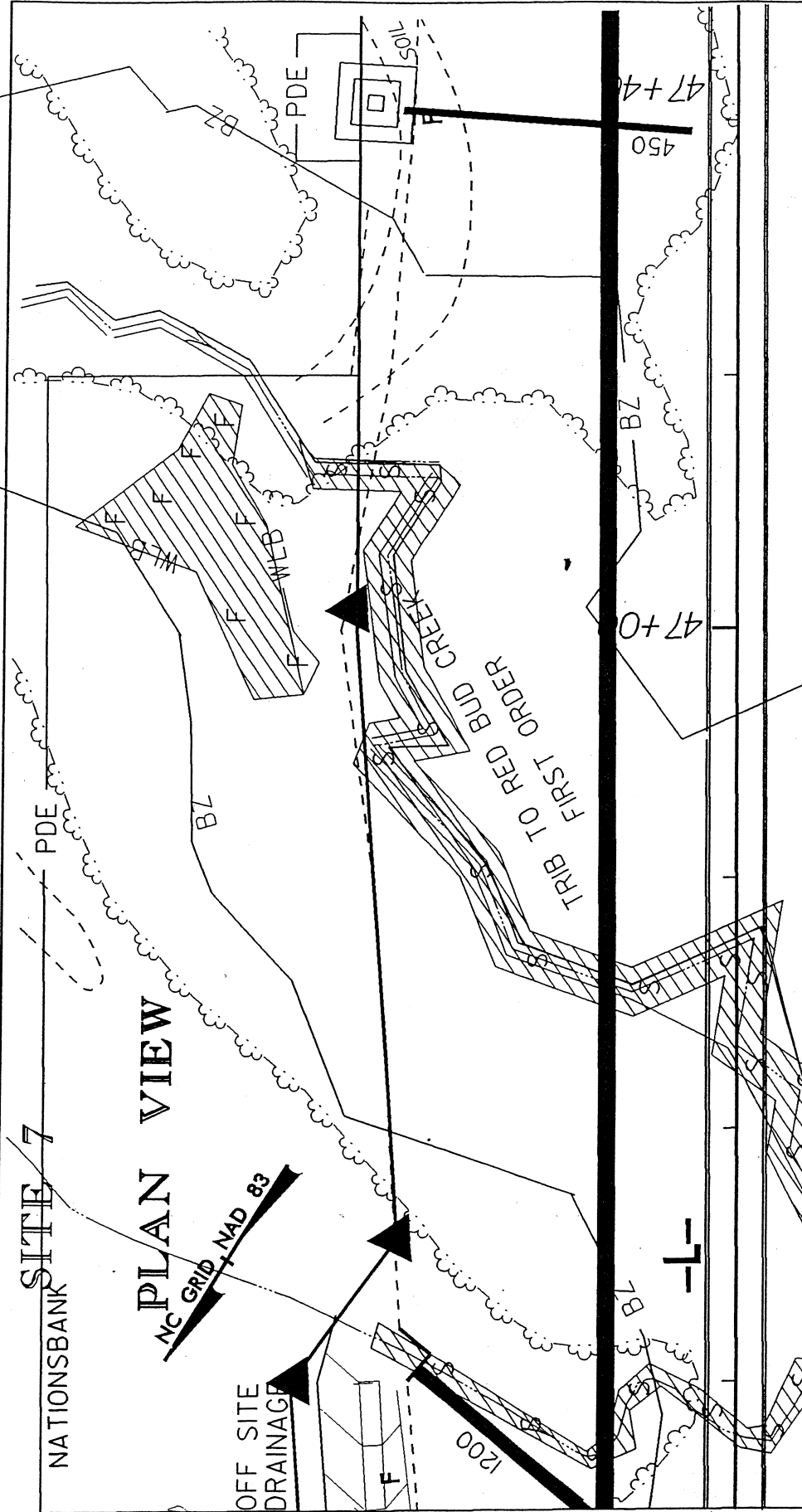
NATIONSBANK SITE 7

PLAN VIEW

NC GRID NAD 83

OFF SITE DRAINAGE

MATCH STATION 46+30



NCDOT

DIVISION OF HIGHWAYS

VANCE COUNTY

PROJECT: 8.2290201 (U-2527)

HENDERSON WESTERN

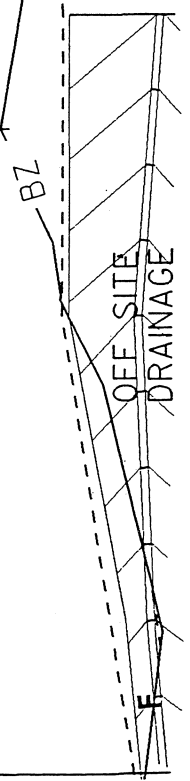
OUTER LOOP FROM

SR 1128 TO SR 1101

SHEET 13 OF 41

REV. 06/04
3/16/02

NATIONSBANK



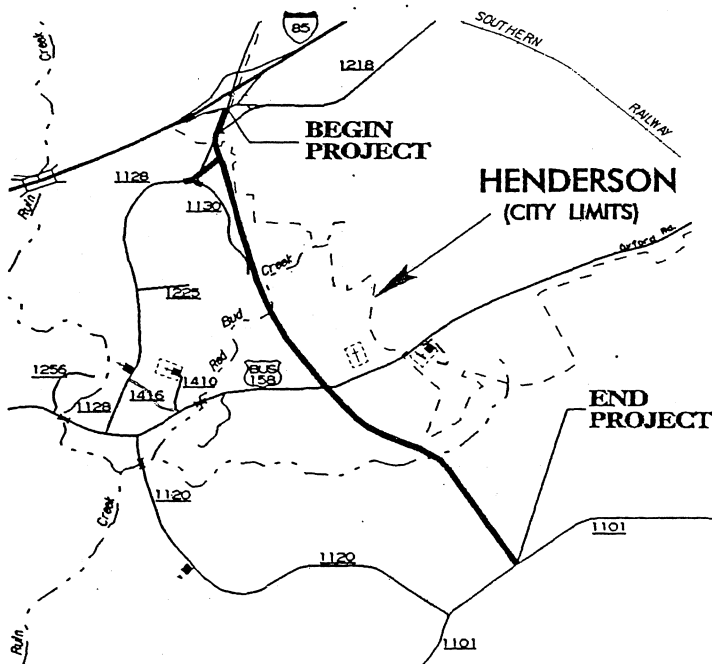
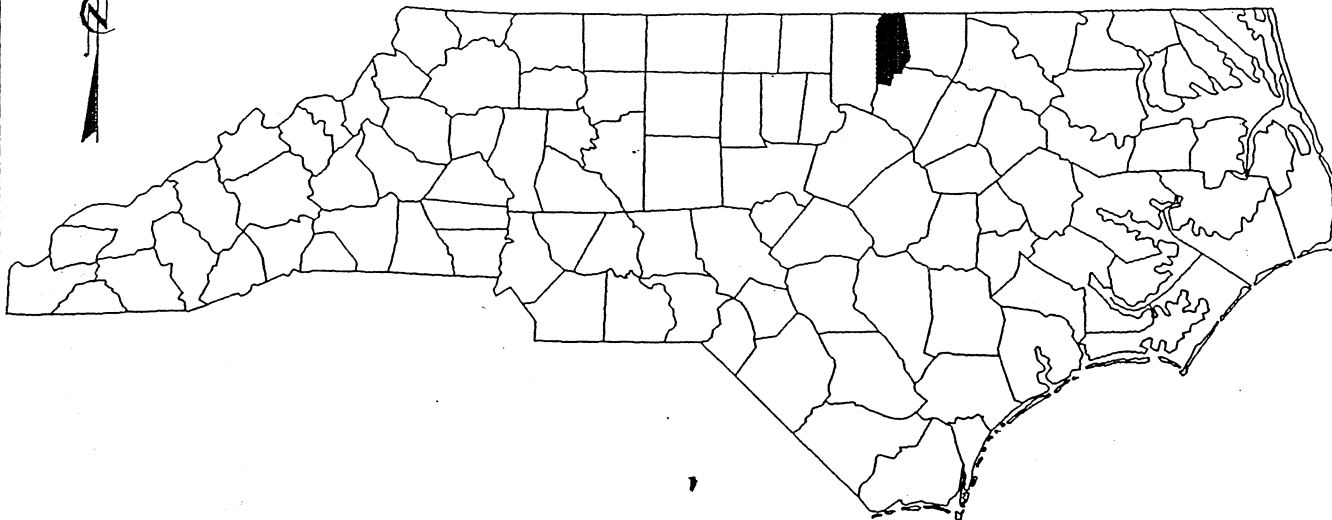
WETLAND PERMIT IMPACT SUMMARY

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	18+40 -L-	600 RCP					0.00										
2	21+30 -L-	600 RCP					0.06										
3	23+40 -L-	CULVERT					0.13										
4	26+00 to 28+30 -L-	1500 RCP					0.07										
5	36+72 -L-	900 RCP					0.03										
6	40+81 -L-	CULVERT					0.11										
7	46+20 -L-	1500 RCP	0.06				0.18										
TOTALS:			0.06	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00	2394.4				0.0

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT 8.2290201 U-2527
 SHEET 14 of 41
 REV.06/04 /2002 Rev.1

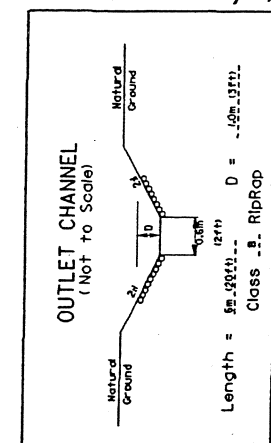
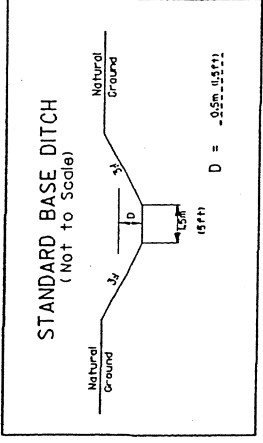
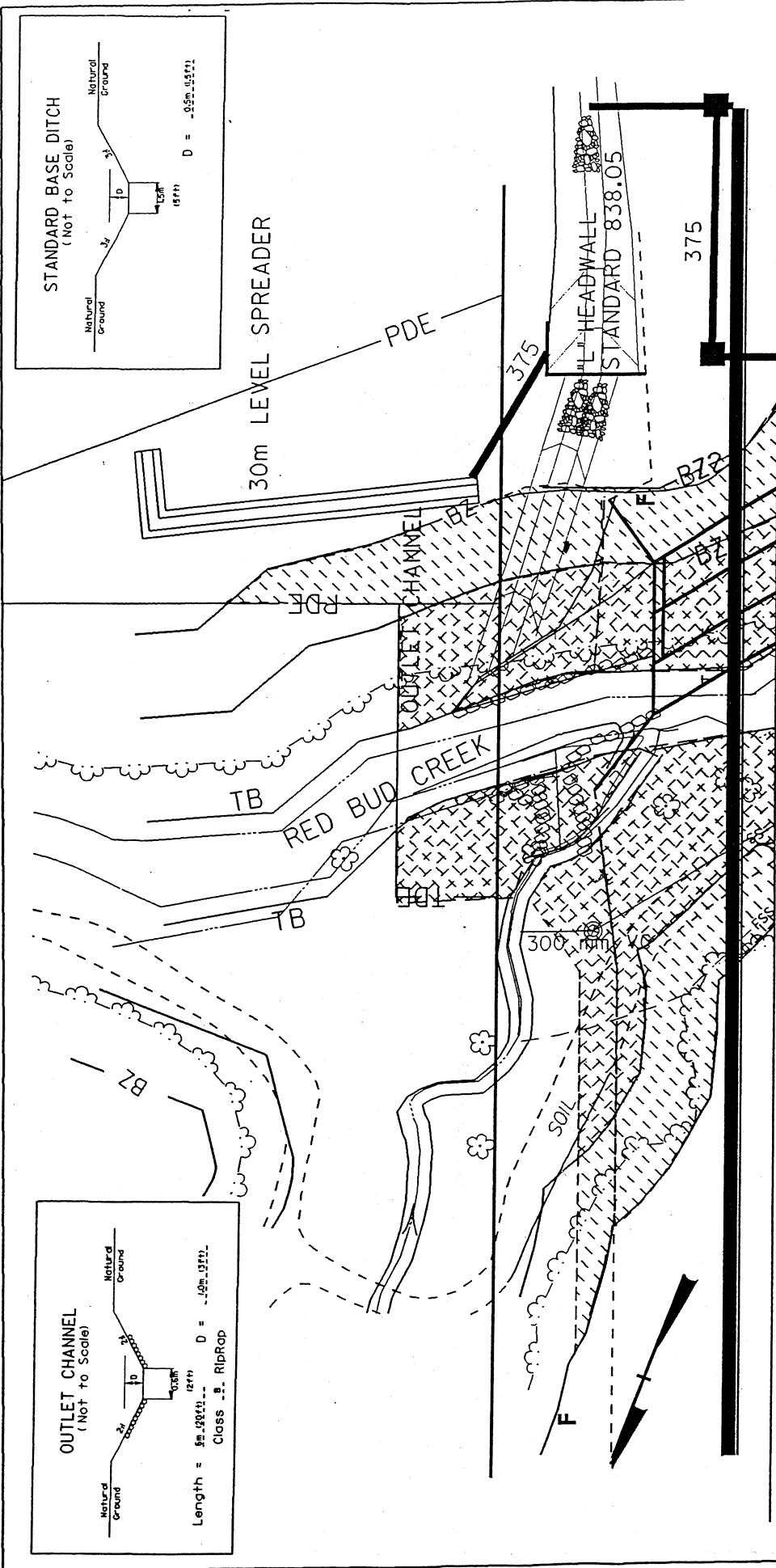
Form Revised 3/22/01

NORTH CAROLINA



BUFFER IMPACTS VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
VANCE COUNTY
PROJECT: 8.2390201 (U-2527)
HENDERSON WESTERN
OUTER LOOP FROM
SR 1128 TO SR 1101



NCDOT
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT: 8.2290201 (U-2527)
 HENDERSON WESTERN
 OUTER LOOP FROM
 SR 1128 TO SR 1101
 SHEET 24 OF 41
 REV 06/04
 3/16/02

MATCH LINE A
 3 @ 3.6m X 2.7m RCBC
 Depth bkf = 0.5m (1.6ft)
 Width bkf = 5.4m (17.7ft)
 Area bkf = 2.3 m² (24.8sq.ft.)
 23+00
 23+60
BUFFER IMPACTS
SITE 3
PLAN VIEW
 5 m 0 10 m

23+00

23+60



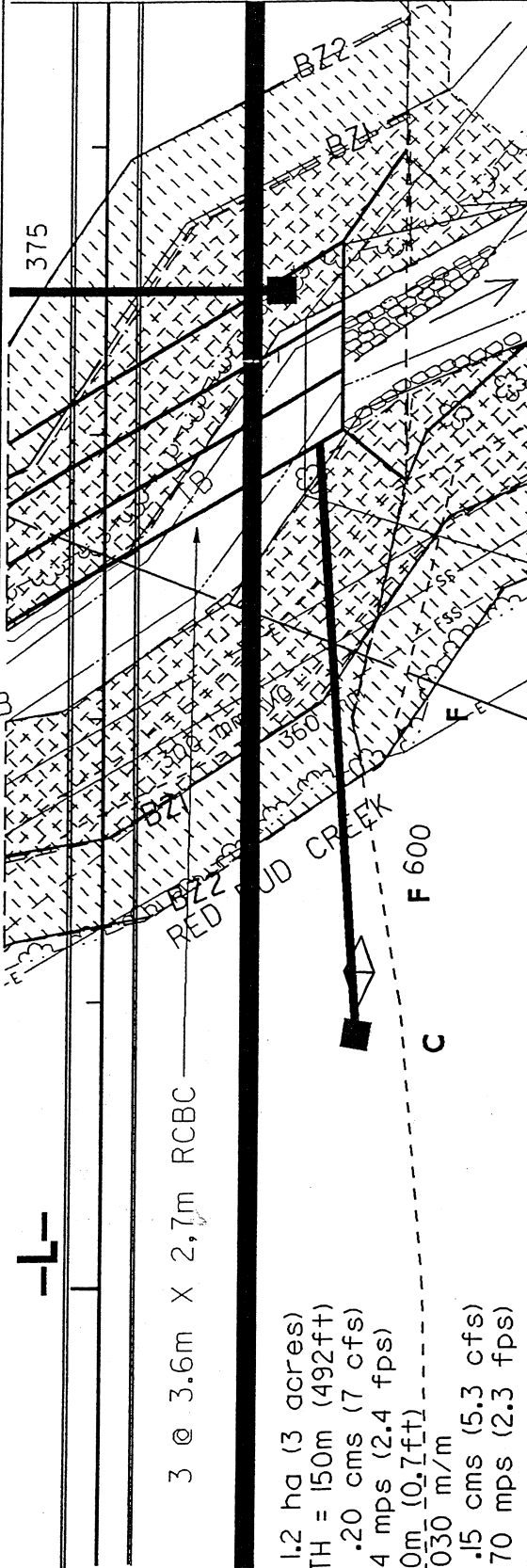
MATCH LINE A

-L-

3 @ 3.6m X 2.7m RCBC

3 @ 3.6m X 2.7m RCBC
Depth bkf = 0.5m (1.6ft)
Width bkf = 5.4m (17.7ft)
Area bkf = 2.3 m2 (24.8sq.ft.)

MATCH STATION 23+90

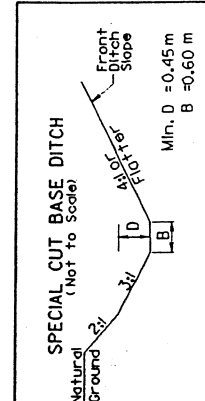


DA = 1.2 ha (3 acres)
LENGTH = 150m (492ft)
Q10 = .20 cms (7 cfs)
V = .74 mps (2.4 fps)
D = .20m (0.7ft)
S = 0.030 m/m
Q2 = .15 cms (5.3 cfs)
V = .70 mps (2.3 fps)

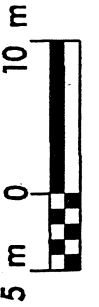
HARVEY A. WILSON
&
GLORIA D. CARVER

MARJORIE P. LEWIS

HARVEY A. WILSON
&
GLORIA D. CARVER



BUFFER IMPACTS SITE 3 PLAN VIEW



NCDOT

DIVISION OF HIGHWAYS

VANCE COUNTY

PROJECT: 8.2290201 (U-2527)

HENDERSON WESTERN

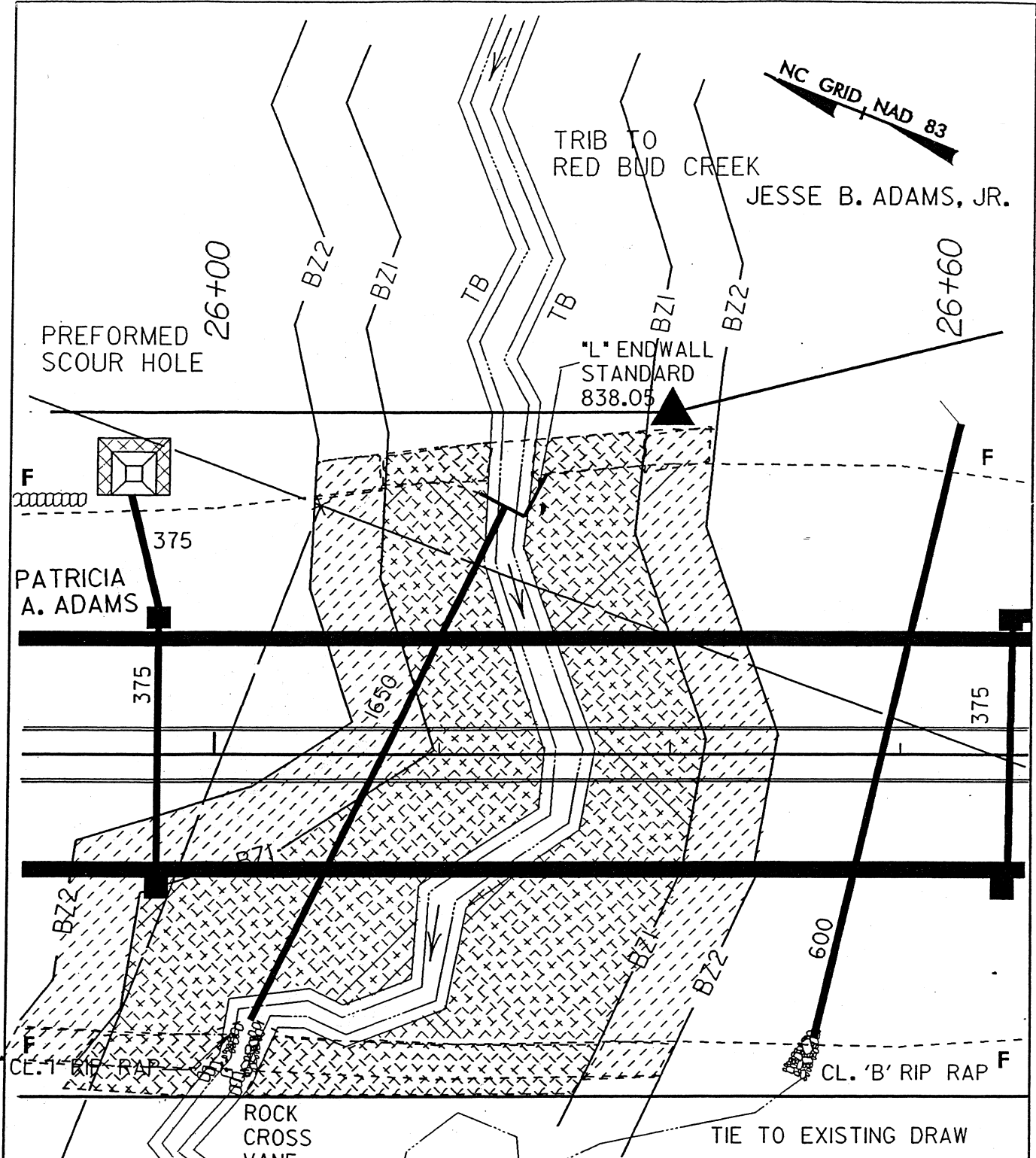
OUTER LOOP FROM

SR 1128 TO SR 1101

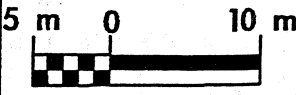
REV 06/04

3/16/02

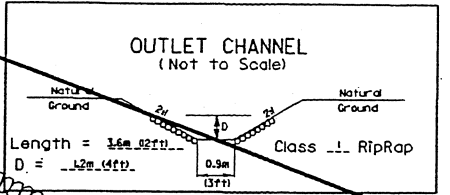
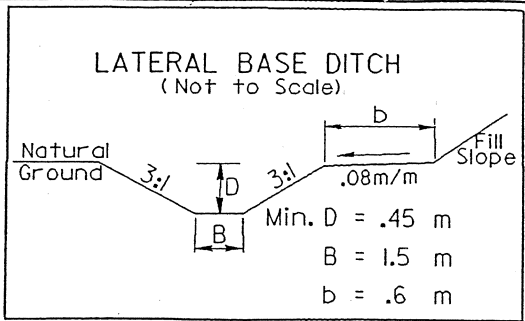
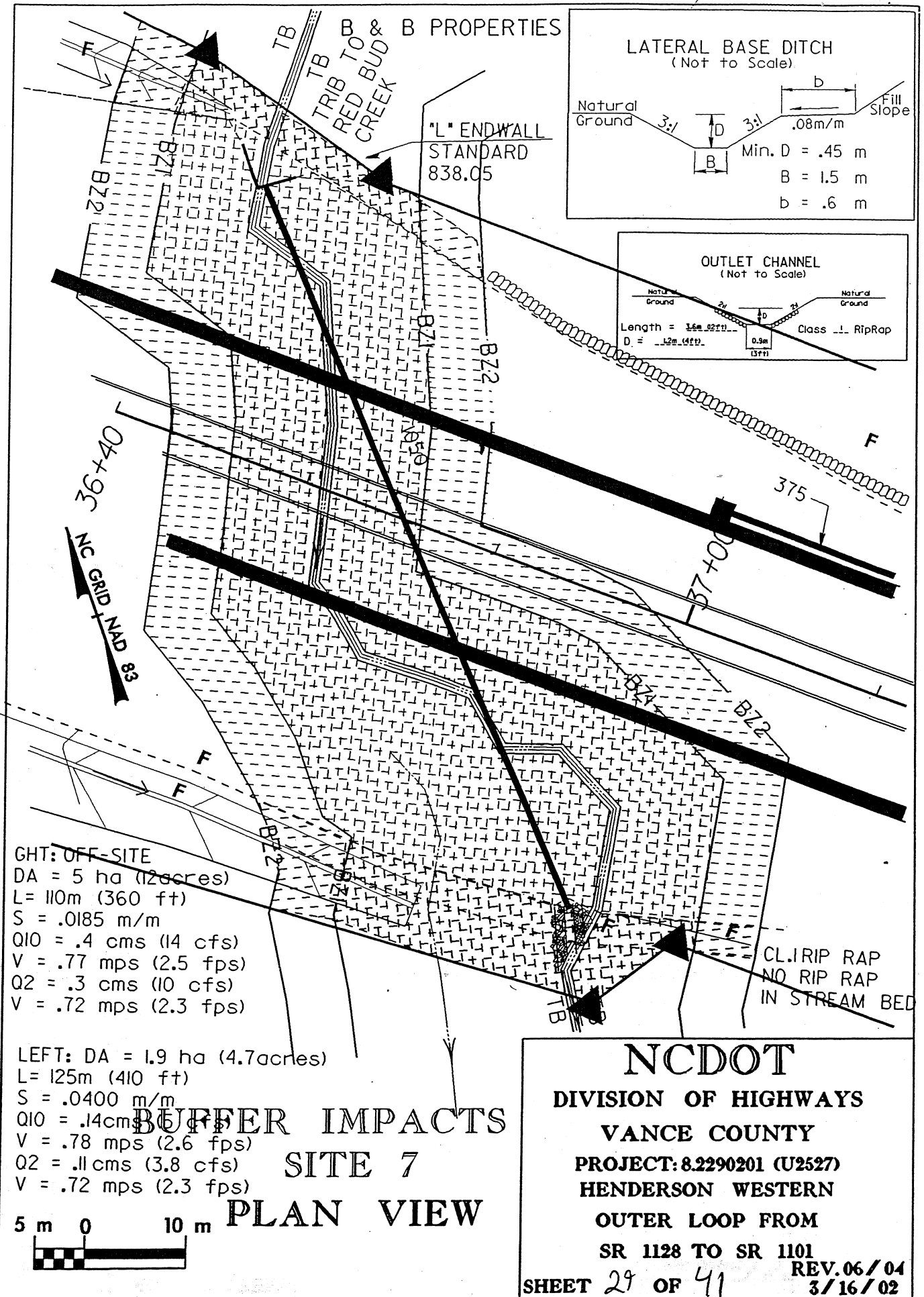
SHEET 25 OF 41



PATRICIA A. ADAMS
**BUFFER IMPACTS
 SITE 5.**
 PLAN VIEW



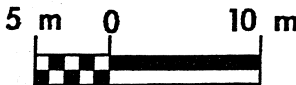
NCDOT
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT: 8.2290201 (U-2527)
 HENDERSON WESTERN
 OUTER LOOP FROM
 SR 1128 TO SR 1101
 SHEET 27 OF 41
 REV 06/04
 3/16/02



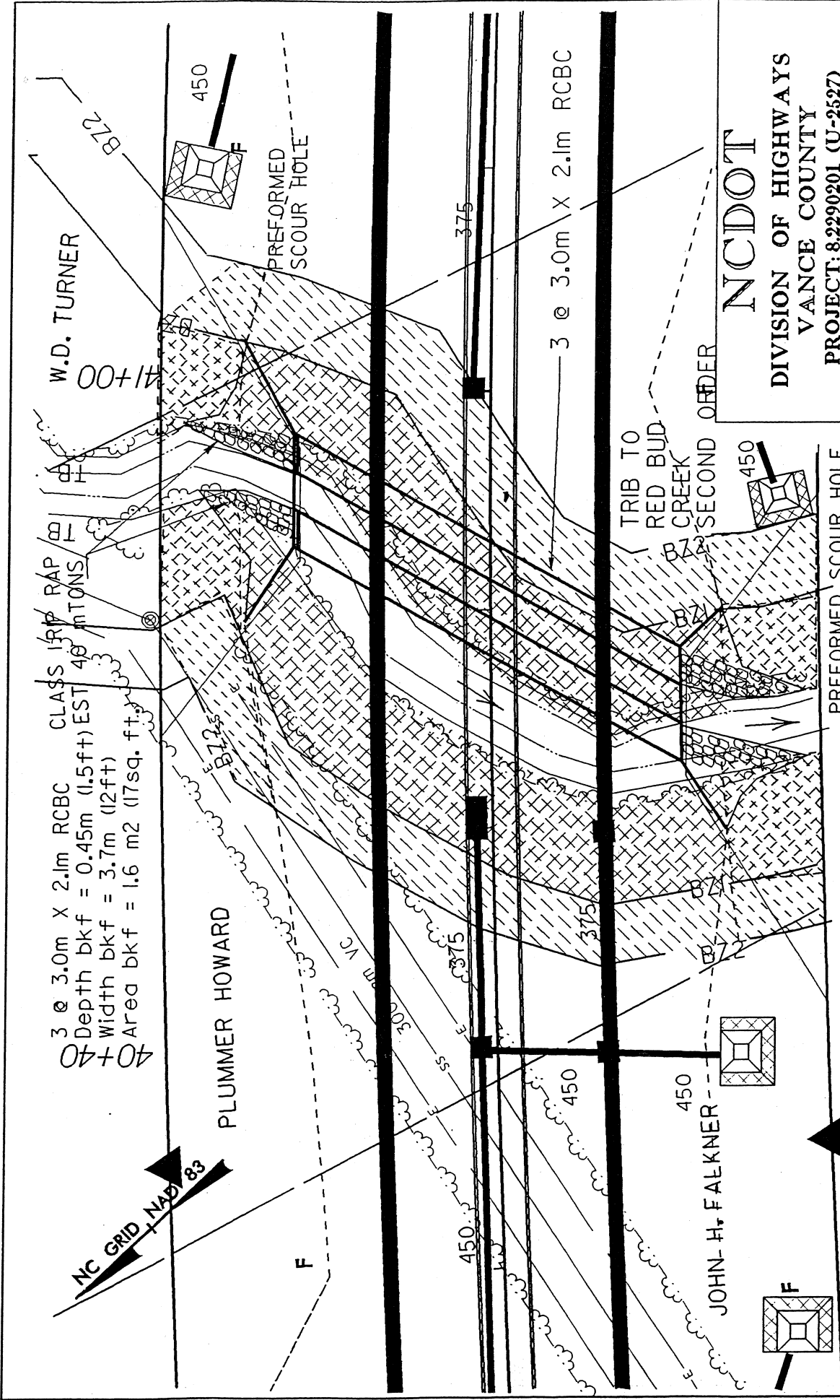
GHT: OFF-SITE
 DA = 5 ha (12 acres)
 L = 110m (360 ft)
 S = .0185 m/m
 Q10 = .4 cms (14 cfs)
 V = .77 mps (2.5 fps)
 Q2 = .3 cms (10 cfs)
 V = .72 mps (2.3 fps)

LEFT: DA = 1.9 ha (4.7 acres)
 L = 125m (410 ft)
 S = .0400 m/m
 Q10 = .14 cms (5 cfs)
 V = .78 mps (2.6 fps)
 Q2 = .11 cms (3.8 cfs)
 V = .72 mps (2.3 fps)

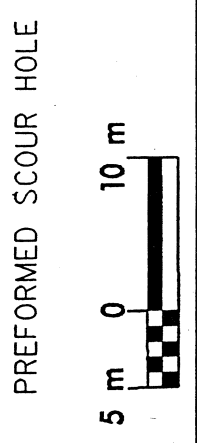
**BUFFER IMPACTS
 SITE 7
 PLAN VIEW**



NCDOT
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT: 8.2290201 (U2527)
 HENDERSON WESTERN
 OUTER LOOP FROM
 SR 1128 TO SR 1101
 SHEET 29 OF 41
 REV. 06 / 04
 3 / 16 / 02

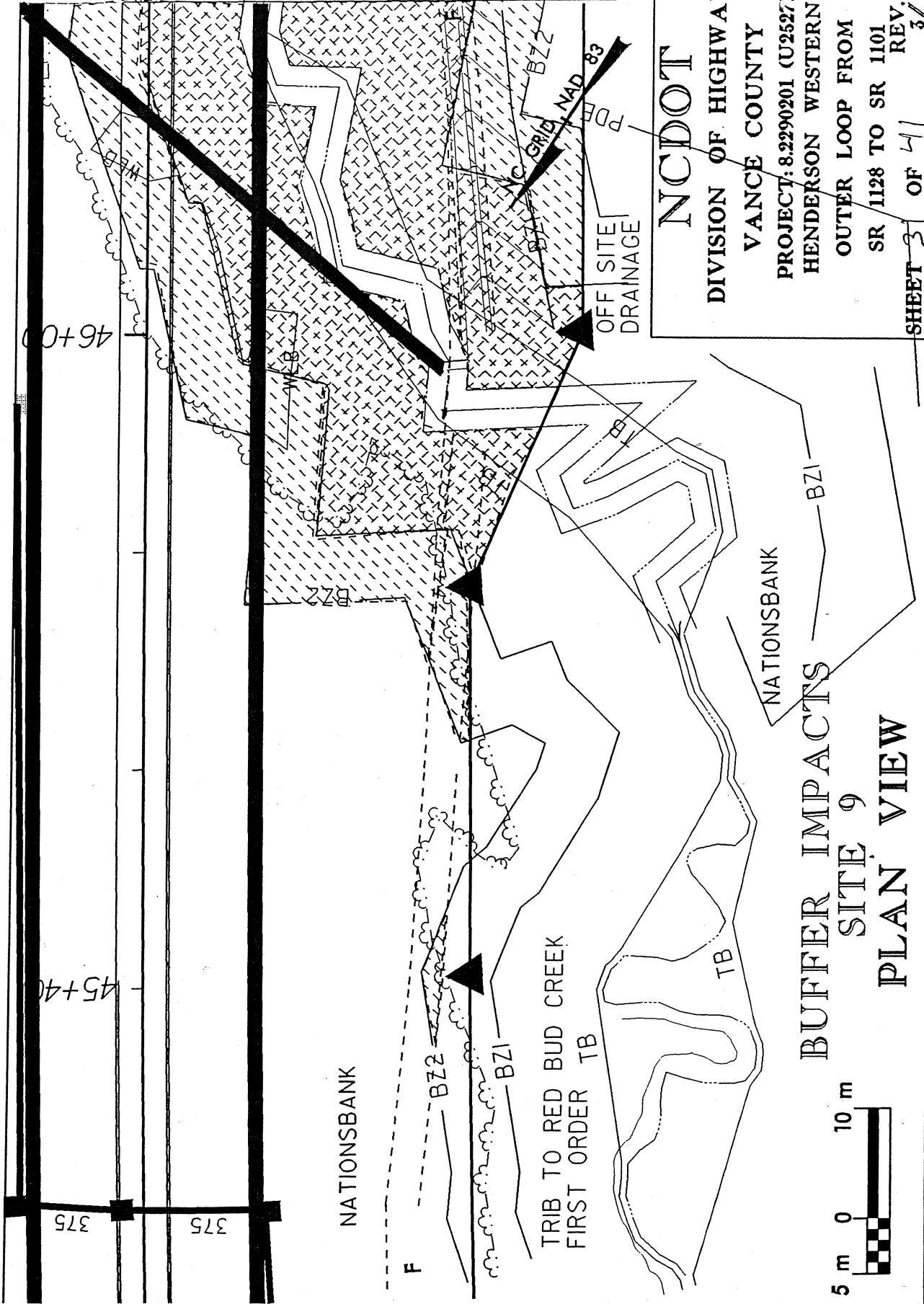


**BUFFER IMPACTS
SITE 8
PLAN VIEW**



NC DOT
 DIVISION OF HIGHWAYS
 VANCE COUNTY
 PROJECT: 8.2290201 (U-2527)
 HENDERSON WESTERN
 OUTER LOOP FROM
 SR 1128 TO SR 1101
 REV.06/04
 Rev.10/03
 3/16/02

MATCH STATION 46+30



NCDOT

DIVISION OF HIGHWAYS

VANCE COUNTY

PROJECT: 8.2290201 (U2527)

HENDERSON WESTERN

OUTER LOOP FROM

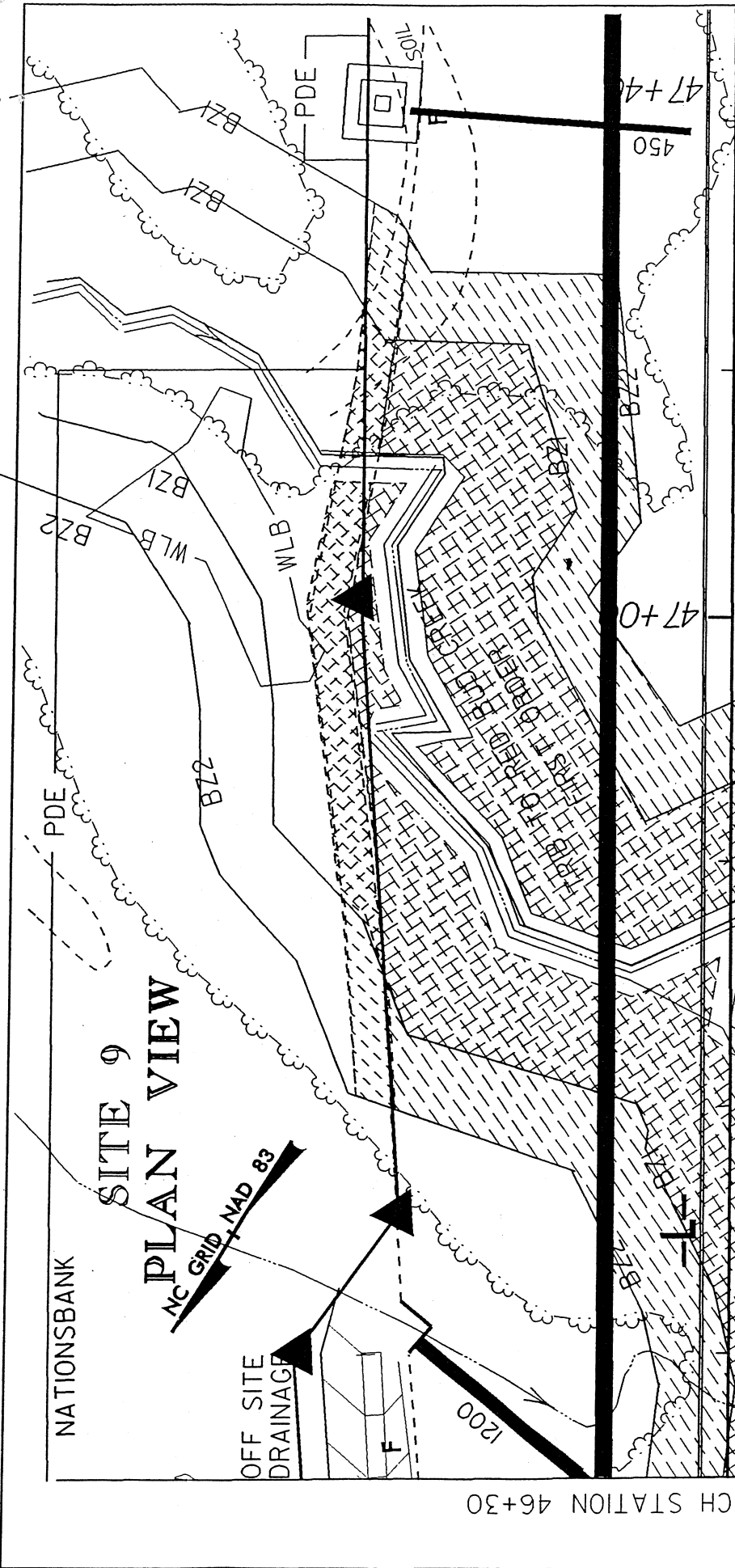
SR 1128 TO SR 1101

REV. 06/04

SHEET 31 OF 41

BUFFER IMPACTS
SITE 9
PLAN VIEW



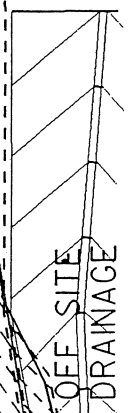


**SITE 9
PLAN VIEW**

BUFFER IMPACTS

NCDOT

DIVISION OF HIGHWAYS
VANCE COUNTY
PROJECT: 8.2290201 (U-2527)
HENDERSON WESTERN
OUTER LOOP FROM
SR 1128 TO SR 1101
REV. 06/04
3/16/02



MATCH STATION 46+30

BUFFER IMPACTS SUMMARY

STRUCTURE SIZE / TYPE		STATION (FROM/TO)	IMPACT										BUFFER REPLACEMENT			
			TYPE			ALLOWABLE			MITIGABLE			REPLACEMENT				
			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	600 RCP	-L- Sta 18+40	X		0.24	0.15	0.39									
2	600 RCP	-L- Sta 21+30	X		0.34	0.19	0.53									
3	culvert	-L- Sta 23+40	X		0.33	0.22	0.55									
4		- Sta 23+90 to 24+		X						0.03	0.14	0.17				
5	1500 RCP	- Sta 26+00 to 26+	X		0.37	0.20	0.57									
6		- Sta 35+40 to 35+		X	0.16	0.17	0.34									
7	900 RCP	- Sta 36+40 to 37+	X		0.51	0.30	0.82									
8	culvert	-L- Sta 40+81	X		0.27	0.19	0.46									
9	1500 RCP	-L- Sta 46+20	X		0.74	0.46	1.20									
TOTAL:					2.96	1.89	4.86			0.03	0.14	0.17				

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

Vance county
PROJECT: 8.2290201 (U-2527)
Henderson Western Outer Loop

11/7/2001 Rev. 10/03 REV. 06/04
SHEET 3 OF 4