



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

December 12, 2003

MEMORANDUM TO: Mr. B. G. Payne, P.E.
Division 10 Engineer

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

SUBJECT: Cabarrus County, Kannapolis Westside Bypass from NC 73 to
NC 136; State Project Number 9.8103406; TIP Number U-
2009B

Attached are the U. S. Army Corps of Engineers Individual Permit and the DWQ 401 Water Quality Certification for the above referenced project. All environmental permits have been received for the construction of this project.

Attachment

cc: Ms. Debbie Barbour, 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. Larry Thompson, Division 10 DEO

PROJECT COMMITMENTS

Kannapolis Westside Bypass
Cabarras County
From NC 73 to NC 136
State Project No. 9.8103406
T.I.P. No. U-2009B

In addition to the standard Individual Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, General Certification Conditions, and the Section 401 Conditions of Certification, the following Environmental Commitments were developed through Project Development and Design and have been agreed to by NCDOT:

Commitments Developed through Project Development and Design

Division 10

NCDOT will use the most stringent application of all applicable Best Management Practices where the project will affect receiving waters of special designation, such as water supply watersheds, High Quality Waters (HQW), and Outstanding Resource Waters (ORW).

The North Carolina Geodetic Society will be contacted prior to construction regarding the relocation of survey markers along the project.

Prior to the approval of any borrow source developed for use on this project, the contractor shall obtain certification from the State Department of Cultural Resources certifying that the removal of material from the borrow source will have no effect on any known district, site, building, structure, or object that is included or eligible for inclusion in the National Register of Historic Places. A copy of this certification shall be furnished to the engineer prior to performing any work on the proposed borrow source.

During construction of the proposed project, all materials resulting from clearing and grubbing, demolition, and other operations will be removed from the project, burned, or otherwise disposed of by the contractor. Any burning done will be in accordance with applicable local laws, ordinances, and regulations of the North Carolina State Implementation Plan (SIP) for Air Quality in compliance with 15 NCAC 2D.0520. Care will be taken to insure burning will be done at the greatest distance practicable from dwellings and not when atmospheric conditions are such as to create a hazard to the public.

Commitments Developed through Permitting

Division 10

The permittee shall schedule a preconstruction meeting between their representatives, the contractor and a representative of the Corps of Engineers, Asheville Regulatory Field Office prior to any work in jurisdictional waters and wetlands to ensure that there is a mutual understanding of all terms and conditions contained in this Department of Army permit. The permittee shall notify the Corps of Engineers a minimum of thirty (30) days in advance of the meeting.

The permittee and his contractors and/or agents shall not excavate, fill or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands except as authorized by this permit or any modification to this permit. There shall be no excavation from, waste

disposal into, or degradation of jurisdictional waters or wetlands associated with this permit without the necessary modification of this permit to include appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities associated with this project.

To ensure that all borrow and waste activities occur on uplands and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material or to dispose of dredged, fill or waste material. The permittee shall ensure that all such areas comply with Special Condition No. 4 of this permit and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This documentation will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with Special Condition No. 4 above. All information will be available to the Corps of Engineers upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 10 days of the completion of the reclamation work.

The permittee shall require his contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project and shall provide each of his contractors and/or agents associated with construction or maintenance of this project with a copy of this permit.

The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any deviations in the construction design plans will be brought to the attention of the Corps of Engineers, Asheville Regulatory Field Office prior to any active construction in waters or wetlands.

During the clearing phase of the project, heavy equipment must not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

All temporary diversion channels and stream crossings will be constructed of non-erodable materials. Any such structures located outside of the authorized construction limits of the project will be reported in writing to the Corps of Engineers, Asheville Regulatory Field Office, together with a location map and restoration plan for any necessary permit modification.

All mechanized equipment operating near surface waters shall be regularly inspected to prevent contamination of streams from leakage of fuels, lubricants, hydraulic fluids or other toxic materials. No equipment staging or storage of construction material will occur in wetlands.

The permittee will report any violations of the above conditions and any violation of Section 404 of the Clean Water Act from unauthorized work in writing to the Wilmington District, US Army Corps of Engineers within 24 hours of the violation.

NCDOT and its contractors and/or agents shall not excavate, fill, or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this Certification, or any modification to this Certification. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this Certification without appropriate modification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.

Excavation of stream crossings should be conducted in the dry unless demonstrated by the applicant or its authorized agent to be unfeasible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.

Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.

Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.

Heavy equipment should be operated from the bank rather than in the stream channel unless demonstrated by the applicant or its authorized agent to be unfeasible. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids and other toxic substances.

Two copies of the final construction drawings shall be furnished to NCDQWQ prior to the pre-construction meeting. Written verification shall be provided that the final construction drawings comply with the attached permit drawings contained in the Application dated May 17, 2002.

NCDOT and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with Section 303(d) of the Clean Water Act) and any other appropriate requirements of State law and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 2H.0507(d). Before modifying the certification, DWQ shall notify NCDOT and the US Army Corps of Engineers, provide public notice in accordance with 15A NCAC 2H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 2H.0504. Any new or revised conditions shall be provided to NCDOT in writing, shall be provided to the US Army Corps of Engineers for reference in any permit issued pursuant to Section 404 of the Clean Water Act, and shall also become conditions of the 404 Permit for the project.

Division 10/Roadside Environmental Unit

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

Construction shall be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.

The erosion and sediment control measures for the U-2009B project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*. These devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the projects included under this Certification.

For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface*

Mining Manual. The reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, the devices shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.

Riparian vegetation, using native trees and shrubs, must be re-established within the construction limits of the project by the end of the growing season following completion of construction to re-establish the riparian zone and to provide long-term erosion control.

Division 10/Hydraulics Unit

All authorized culverts will be installed to allow the passage of low stream flows and the continued movement of fish and other aquatic life as well as to prevent headcutting of the streambed. For culverts greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream. For culverts 48 inches in diameter or smaller, the bottom of the pipe must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert.

Stormwater shall not be routed to flow directly into streams. Stormwater shall be transported by vegetated conveyance or other means that are appropriate to the site conditions before being discharged into the streams. Existing wooded stream buffers shall not be mowed in order to allow them to provide diffuse stormwater flow and/or streambank stabilization.

The natural dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or changing the depth of the stream.

Division 10/Hydraulics Unit/Roadside Environmental Unit

In order to allow for the continued movement of bed load and aquatic organisms, existing stream channel widths and depths will be maintained at the inlet and outlet ends of culverts. Riprap armoring of streams at culvert inlets and outlets shall be minimized in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted, woody plants.

The removal of vegetation in riparian areas should be minimized. NCDOT is encouraged to use existing on-site vegetation and materials for stream bank stabilization and to minimize the use of rip rap. Rip rap shall not be placed in the stream bottom.

Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that equilibrium shall be maintained if requested in writing by DWQ.

Project Development and Environmental Analysis

Compensatory mitigation for unavoidable impacts to 1.17 acres of wetland and 1141 linear feet of stream channel shall be provided by the Ecosystem Enhancement Program (EEP) as outlined in the September 19, 2003 letter from William D. Gilmore, EEP Transition Manager. The EEP will provide 11.7 acres of preservation of riverine wetlands and 11,410 linear feet of preservation of warm water stream channel in the Southern Piedmont Eco-Region at the Drowning Creek Mitigation Site in Moore County which has

been acquired and protected by the EEP. Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide a minimum of 1.17 acres of restoration of riverine wetlands and 1141 linear feet of restoration of warm water stream channel in the Yadkin River Basin (Hydrologic Cataloging Unit 03040105) by July 22, 2005 and half of the proposed preservation mitigation would be available at that time for mitigation for other project impacts. Construction within wetlands on the permitted highway project shall begin only after the EEP has provided written confirmation to the District Engineer that EEP and not NCDOT is responsible for providing the required mitigation, pursuant to Paragraph VI.B.7 of the MOA. NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

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DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

December 4, 2003

IN REPLY REFER TO

Regulatory Division

Action ID. 200231069; Tip No. U-2009 B

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

Dear Dr. Thorpe:

In accordance with the written request of June 27, 2003 and the ensuing administrative record, enclosed is a permit to discharge dredged or fill material into 1.17 acres of wetland and 1141 linear feet of stream channel in the waters and adjacent wetlands of Afton Run and an unnamed tributary of Irish Buffalo Creek to construct 4.2 miles of the Kannapolis Westside Bypass from NC Highway 73 north to NC Highway 136 west of Kannapolis, Cabarrus County, North Carolina (TIP No. U-2009B, State Project No. 9.8103406).

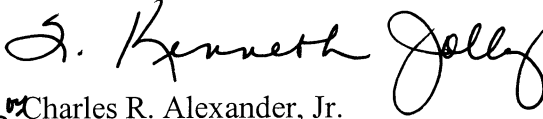
If any change in the authorized work is required because of unforeseen or altered conditions or for any other reason, the plans revised to show the change must be sent promptly to this office. Such action is necessary, as revised plans must be reviewed and the permit modified.

Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant general conditions require that:

- a. You must complete construction before December 31, 2006.
- b. You must notify this office in advance as to when you intend to commence and complete work.
- c. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

Should you have questions, contact Mr. Steven Lund, Regulatory Division, Asheville
Regulatory Field Office, telephone (828) 271-7980 extension 4.

Sincerely,


6x Charles R. Alexander, Jr.
Colonel, U.S. Army
District Engineer

Enclosures

Copy Furnished with enclosures:

Chief, Source Data Unit
NOAA/National Ocean Service
ATTN: Sharon Tear N/CS261
1315 East-West Hwy., Rm 7316
Silver Spring, MD 20910-3282

Copies Furnished with special conditions and plans:

Mr. Garland Pardue, Field Supervisor
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Ron Sechler
National Marine Fisheries
Service, NOAA
Pivers Island
Beaufort, North Carolina 28516

Mr. David Rackley
National Marine Fisheries
Service, NOAA
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

Mr. Ronald Mikulak, Chief
Wetlands Section - Region IV
Water Management Division
U.S. Environmental Protection Agency
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of
Environment and Natural Resources
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Mr. Ronald E. Ferrell, Program Manager
Wetlands Restoration Program
Division of Water Quality
1619 Mail Service Center
Raleigh, North, Carolina 27699-1619

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

DEPARTMENT OF THE ARMY PERMIT

RECEIVED

DEC 03 2003

REGULATORY

Permittee NC Department of Transportation

Permit No. 200231069

Issuing Office USAED, Wilmington

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Discharge dredged or fill material into 1.17 acres of wetland and 1141 linear feet of stream channel in the waters and adjacent wetlands of Afton Run and an unnamed tributary of Irish Buffalo Creek to construct 4.2 miles of the Kannapolis Westside Bypass from NC Highway 73 north to NC Highway 136 west of Kannapolis, Cabarrus County, North Carolina.

Project Location:

From NC Highway 73 north to NC Highway 136 west of Kannapolis, Cabarrus County, North Carolina (TIP No. U-2009B, State Project No. 9.8103406).

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2006. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See enclosed sheet.

Further Information:

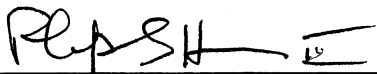
1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
 - (^X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
 - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
 - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.

- e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. **Reliance on Applicant's Data:** The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. **Reevaluation of Permit Decision.** This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
- a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.


Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. **Extensions.** General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

 <hr/> (PERMITTEE)	<div style="font-size: 1.5em; font-family: cursive;">12/1/03</div> <hr/> (DATE)
NC DEPARTMENT OF TRANSPORTATION	

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

 <hr/> (DISTRICT ENGINEER)	<div style="font-size: 1.5em; font-family: cursive;">12/04/03</div> <hr/> (DATE)
for CHARLES R. ALEXANDER, JR. COLONEL	

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

<hr/> (TRANSFEEE)	<hr/> (DATE)
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SPECIAL CONDITIONS (Action ID: 200231069; NCDOT TIP NO. U-2009B)

1. All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit.
2. All conditions of Section 401, Clean Water Act, Water Quality Certification No. 3436, issued by the North Carolina Division of Water Quality on October 8, 2003, will be regarded as conditions of this Department of the Army (DA) permit.
3. The permittee shall schedule a preconstruction meeting between their representatives, the contractor and a representative of the Corps of Engineers, Asheville Regulatory Field Office prior to any work in jurisdictional waters and wetlands to ensure that there is a mutual understanding of all terms and conditions contained in this DA permit. The permittee shall notify the Corps of Engineers a minimum of thirty (30) days in advance of the meeting.
4. The permittee and his contractors and/or agents shall not excavate, fill or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands except as authorized by this permit or any modification to this permit. There shall be no excavation from, waste disposal into, or degradation of jurisdictional waters or wetlands associated with this permit without the necessary modification of this permit to include appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities associated with this project.
5. To ensure that all borrow and waste activities occur on uplands and do not result in the degradation of adjacent waters and wetlands, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material or to dispose of dredged, fill or waste material. The permittee shall ensure that all such areas comply with Special Condition No. 4 of this permit and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This documentation will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with Special Condition No. 4 above. All information will be available to the Corps of Engineers upon request. The permittee shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 10 days of the completion of the reclamation work.
6. The permittee shall require his contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project and shall provide each of his contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit.

7. The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any deviations in the construction design plans will be brought to the attention of the Corps of Engineers, Asheville Regulatory Field Office prior to any active construction in waters or wetlands.
8. Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events.
9. During the clearing phase of the project, heavy equipment must not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.
10. All temporary diversion channels and stream crossings will be constructed of non-erodable materials. Any such structures located outside of the authorized construction limits of the project will be reported in writing to the Corps of Engineers, Asheville Regulatory Field Office, together with a location map and restoration plan for any necessary permit modification.
11. All authorized culverts will be installed to allow the passage of low stream flows and the continued movement of fish and other aquatic life as well as to prevent headcutting of the streambed. For culverts greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream. For culverts 48 inches in diameter or smaller, the bottom of the pipe must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert.
12. In order to allow for the continued movement of bed load and aquatic organisms, existing stream channel widths and depths will be maintained at the inlet and outlet ends of culverts. Riprap armoring of streams at culvert inlets and outlets shall be minimized in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted, woody plants.
13. All mechanized equipment operating near surface waters shall be regularly inspected to prevent contamination of streams from leakage of fuels, lubricants, hydraulic fluids or other toxic materials. No equipment staging or storage of construction material will occur in wetlands.
14. Compensatory mitigation for unavoidable impacts to 1.17 acres of wetland and 1141 linear feet of stream channel shall be provided by the Ecosystem Enhancement Program (EEP) as outlined in the September 19, 2003 letter from William D. Gilmore, EEP Transition Manager. The EEP will provide 11.7 acres of preservation of riverine wetlands and 11,410 linear feet of preservation of warm water stream channel in the Southern Piedmont Eco-Region at the Drowning Creek Mitigation Site in Moore County which has been acquired and protected by the EEP. Pursuant to the EEP Memorandum

of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003, the EEP will provide a minimum of 1.17 acres of restoration of riverine wetlands and 1141 linear feet of restoration of warm water stream channel in the Yadkin River Basin (Hydrologic Cataloging Unit 03040105) by July 22, 2005 and half of the proposed preservation mitigation would be available at that time for mitigation for other project impacts. Construction within wetlands on the permitted highway project shall begin only after the EEP has provided written confirmation to the District Engineer that EEP and not NCDOT is responsible for providing the required mitigation, pursuant to Paragraph VI.B.7 of the MOA. NCDOT shall, within 30 days of the issue date of this permit, certify that sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

15. The permittee will report any violations of the above conditions and any violation of Section 404 of the Clean Water Act from unauthorized work in writing to the Wilmington District, US Army Corps of Engineers within 24 hours of the violation.



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

Alan W. Klinek, P.E., Director
Division of Water Quality
Coleen H. Sullins, Deputy Director
Division of Water Quality

October 8, 2003

Mr. Gregory J. Thorpe, Ph.D., Environmental Director
NCDOT Planning and Environmental Branch
1548 Mail Service Center
Raleigh, NC, 27699-1548

REC-111-111
OCT 2003

Dear Dr. Thorpe:

Re: Water Quality Certification Pursuant to §401 of the Federal Clean Water Act,
Kannapolis Westside Bypass, from NC 73 to NC 136, Cabarrus County.
State Project No. 9.8103406
TIP No. U-2009B
DWQ Project No. 020878

REC-111-111

Attached hereto is a copy of Certification No. 3436 issued to The North Carolina Department of Transportation dated October 8, 2003.

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

Sincerely,

Alan W. Klinek, P.E.

Attachments

cc: Wilmington District Corps of Engineers
Steve Lund, USACE Asheville Field Office
NCDWQ Mooresville Regional Office
Christopher Militscher, US Environmental Protection Agency - Region IV
William Gilmore, NC Ecological Enhancement Program
Central Files
File Copy



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 .0500. This Certification authorizes the NCDOT to incur the following permanent impacts:

- 1.17 acres of wetlands through fill, excavation and mechanized clearing;
- 1,141 linear feet of jurisdictional stream loss;

The U-2009B project shall be constructed pursuant to the application dated May 17, 2002 and supplemental information dated June 27, 2003 to construct the Kannapolis Westside Bypass from NC 73 to NC 136 in Cabarrus County.

The May 17, 2002 Application, the June 27, 2003 supplemental information and the July 2003 *Final Indirect and Cumulative Impact Assessment* provides adequate assurance that the discharge of fill material into the waters of the state 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. All work authorized by this Certification must be done in strict compliance with the plans attached to the Application. If this project changes, incurring additional impacts to streams, wetlands or buffers, you are required to notify the DWQ *in writing*, and you may be required to submit a new application. Additional 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, Non-discharge and Water Supply watershed regulations.

This Certification shall expire three (3) years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding US Army Corps of Engineers Permit, whichever is later.

Condition(s) of Certification:

1. Construction shall be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.
 - a. The erosion and sediment control measures for the U-2009B project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*. These devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the projects included under this Certification.
 - b. For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface Mining Manual*. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

2. Stormwater shall not be routed to flow directly into streams. Stormwater shall be transported by vegetated conveyance or other means that are appropriate to the site conditions before being discharged into the streams. Existing wooded stream buffers shall not be mowed in order to allow them to provide diffuse stormwater flow and/or streambank stabilization.
3. Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, the devices shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.
4. NCDOT and its contractors and/or agents shall not excavate, fill, or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this Certification, or any modification to this Certification. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this Certification without appropriate modification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.
5. Excavation of stream crossings should be conducted in the dry unless demonstrated by the applicant or its authorized agent to be unfeasible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
6. Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.
7. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
8. The natural dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or changing the depth of the stream.
9. The removal of vegetation in riparian areas should be minimized. NCDOT is encouraged to use existing on-site vegetation and materials for stream bank stabilization and to minimize the use of rip rap. Riprap shall not be placed in the stream bottom.
10. Riparian vegetation, using native trees and shrubs, must be re-established within the construction limits of the project by the end of the growing season following completion of construction to reestablish the riparian zone and to provide long-term erosion control.
11. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. 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 streambeds 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.
12. Heavy equipment should be operated from the bank rather than in the stream channel unless demonstrated by the applicant or its authorized agent to be unfeasible. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic substances.

13. *Mitigation:* Compensatory mitigation shall be the same as that approved by the US Army Corps of Engineers as long as the mitigation required equals a ratio of 1:1 restoration or creation of lost wetland acres as described in 15A NCAC 2H.0506 (h)(6).

Site	Wetland Impact (ac.)	Stream Name	Impacts (ft.)	Stream Mit. Ratio	Mitigation Needed
1		UT Afton Run	308	2:1	616
2	0.01	UT Afton Run	197	2:1	394
3	0.96				
4	0.17	UT Irish Buffalo	177	2:1	354
5		UT Afton Run	121	0	
6	0.03 (temp).	UT Afton Run	144	0	
7		UT Afton Run	194	1:1	194
Total	1.17		1141		1558

[Wetland and Stream Impacts as documented in Tables 1 and 2 of the June 27, 2003 Supplemental Information letter.]

- Compensatory mitigation in HU 03040105 shall be provided by the NC Ecological Enhancement Program (EEP) for all jurisdictional stream and wetland impacts. EEP has indicated in a letter dated August 28, 2003 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project.

In accordance with 15A NCAC 2R .0500, this contribution will satisfy NC Division of Water Quality's compensatory mitigation requirements under 15A NCAC 2H.0506(h).

14. Two copies of the final construction drawings shall be furnished to NCDWQ prior to the pre-construction meeting. Written verification shall be provided that the final construction drawings comply with the attached permit drawings contained in the Application dated May 17, 2002.
15. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.
16. NCDOT and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State law and Federal law. If DWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, DWQ may reevaluate and modify this certification to include conditions appropriate to assure compliance with such standards and requirements in accordance with 15A NCAC 2H.0507(d). Before modifying the certification, DWQ shall notify NCDOT and the US Army Corps of Engineers, provide public notice in accordance with 15A NCAC 2H.0503 and provide opportunity for public hearing in accordance with 15A NCAC 2H.0504. Any new or revised conditions shall be provided to NCDOT in writing, shall be provided to the United States Army Corps of Engineers for reference in any permit issued pursuant to Section 404 of the Clean Water Act, and shall also become conditions of the 404 Permit for the project.

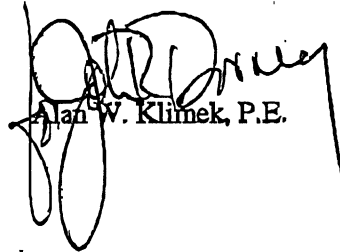
NCDOT shall require its contractors (and/or agents) to comply with all of the terms and conditions of this Certification in the construction and maintenance of this project, and shall provide each of its contractors (and/or agents) a copy of this Certification.

Violations of any condition herein set forth may 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 Permit. This Certification shall expire upon the 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, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This certification and its conditions are final and binding unless you ask for a hearing.

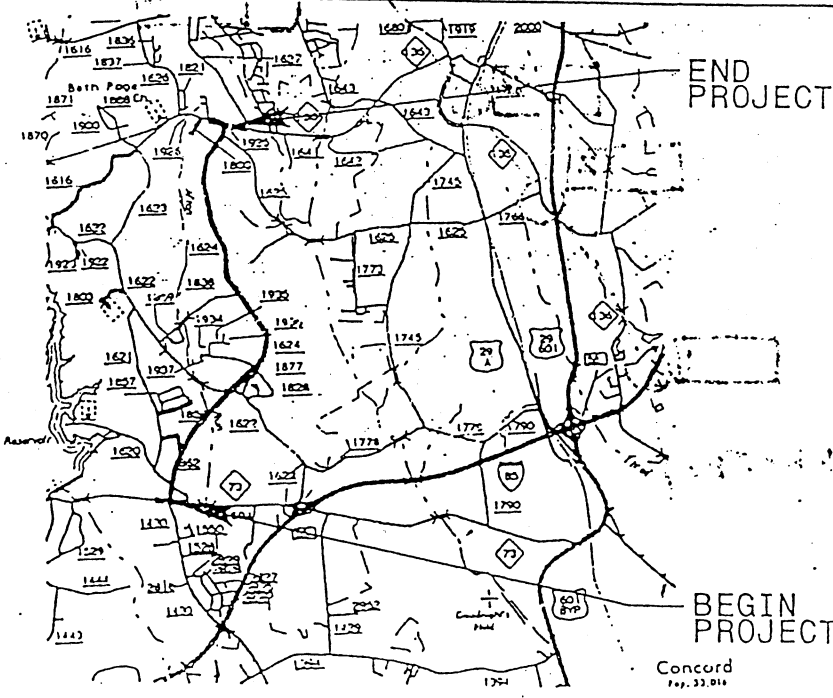
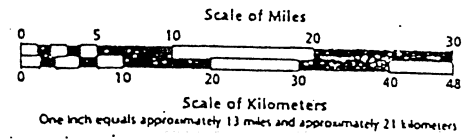
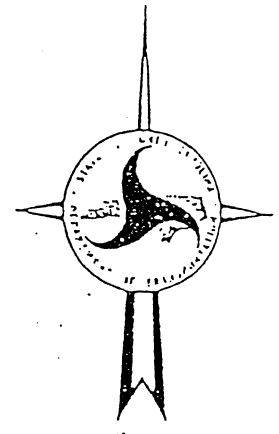
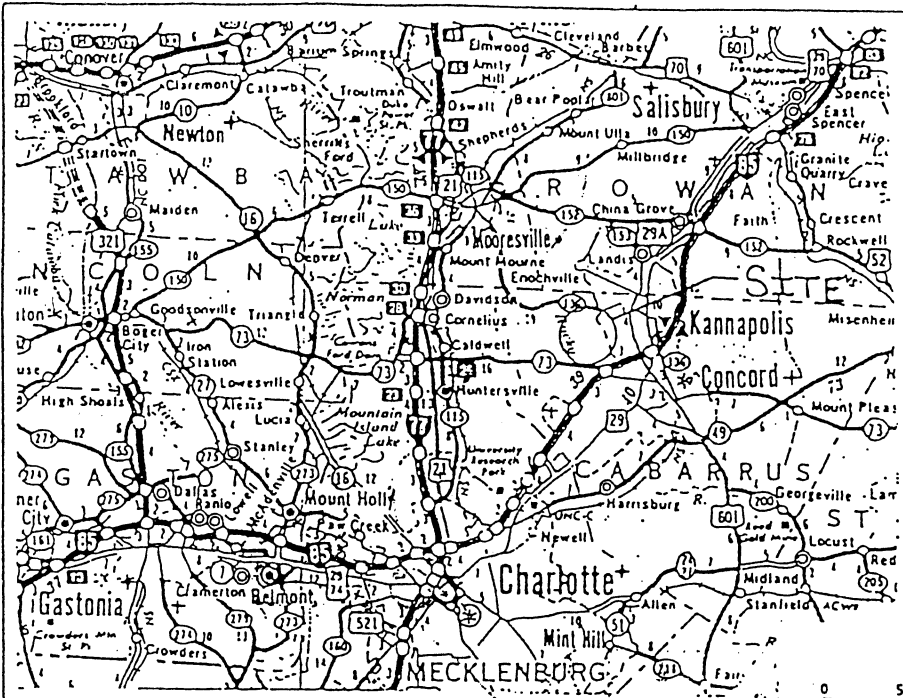
This the 8th day of October 2003

DIVISION OF WATER QUALITY



Alan W. Klimek, P.E.

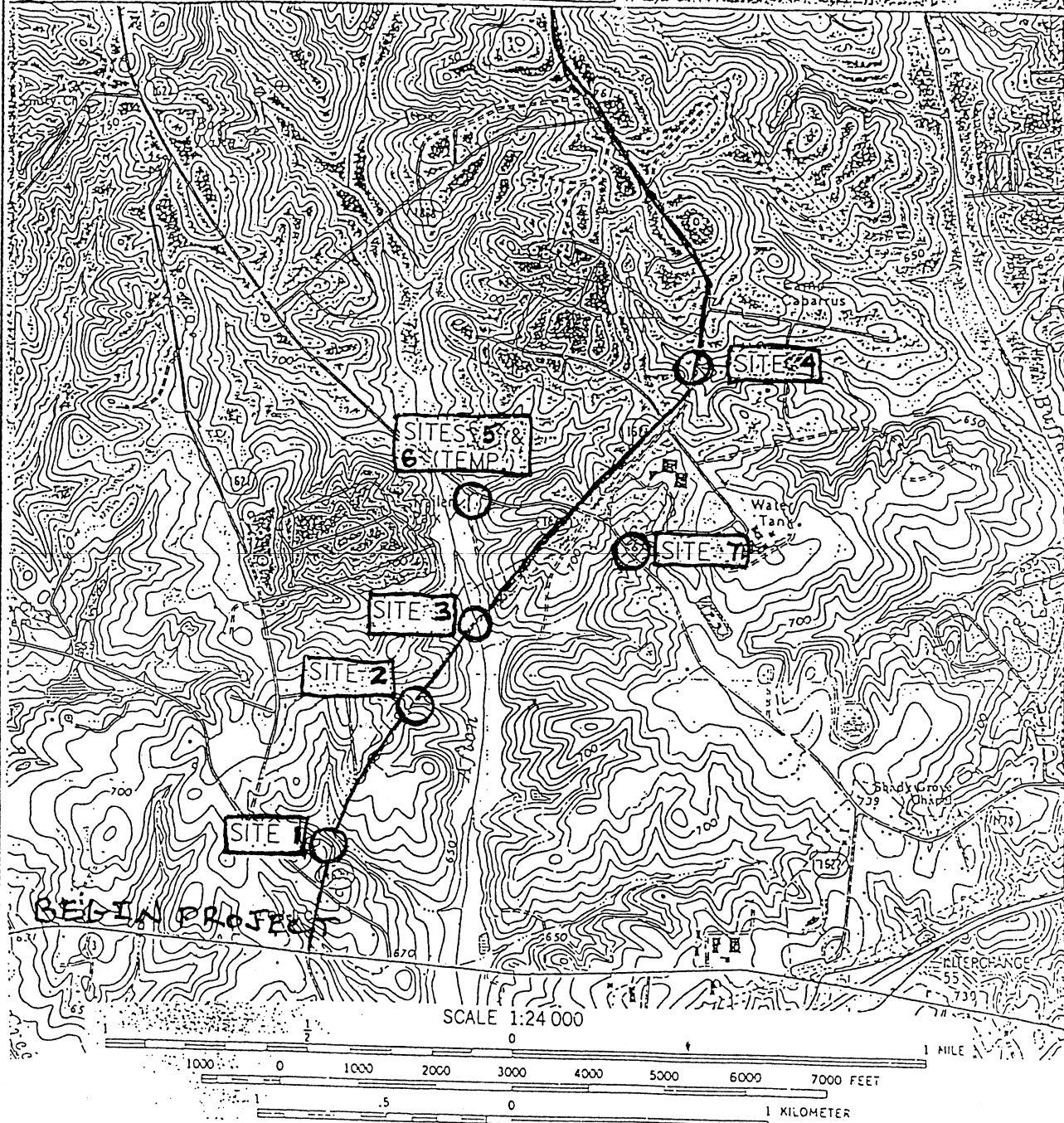
WQC No. 3436



VICINITY MAPS

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009B)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 75 TO NC 136
 DATE: 5/26/98
 REV. DATE: OCT., 2001
 SHEET 1 OF 20

MATCH LINE



SITE MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CABARRUS COUNTY
PROJECT: 9.8105406 (U-2009B)
KANNAPOLIS WEST SIDE BYPASS
FROM NC 73 TO NC 136
DATE: 5/26/98
REV. DATE: OCT., 2001
SHEET 2 OF 20

END PROJECT

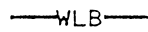

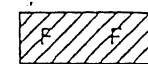
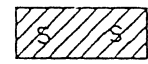

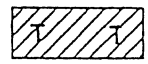
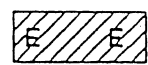
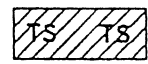
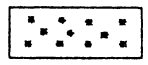
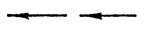

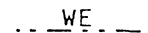
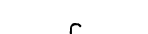
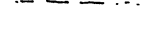
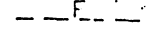

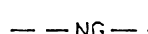
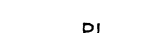


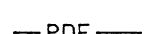

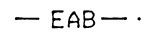

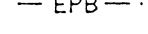
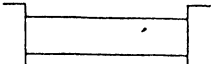
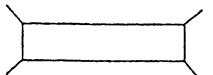







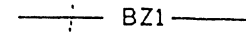
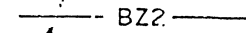


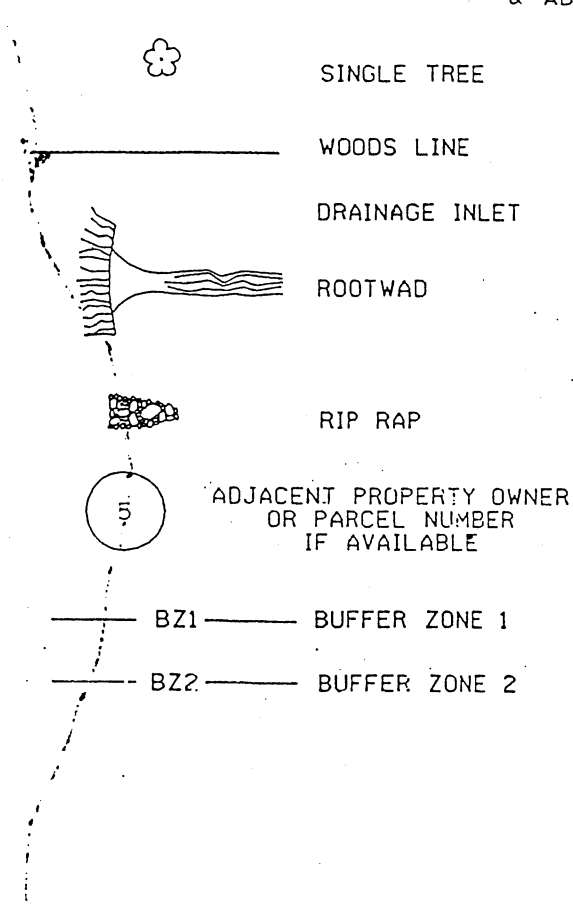
MATCH LINE

SITE MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CABARRUS COUNTY
PROJECT: 9.8105406 (U-2009B)
KANNAPOLIS WEST SIDE BYPASS
FROM NC 73 TO NC 136
DATE: 5/26/98
REV. DATE: OCT., 2001
SHEET 3 OF 20

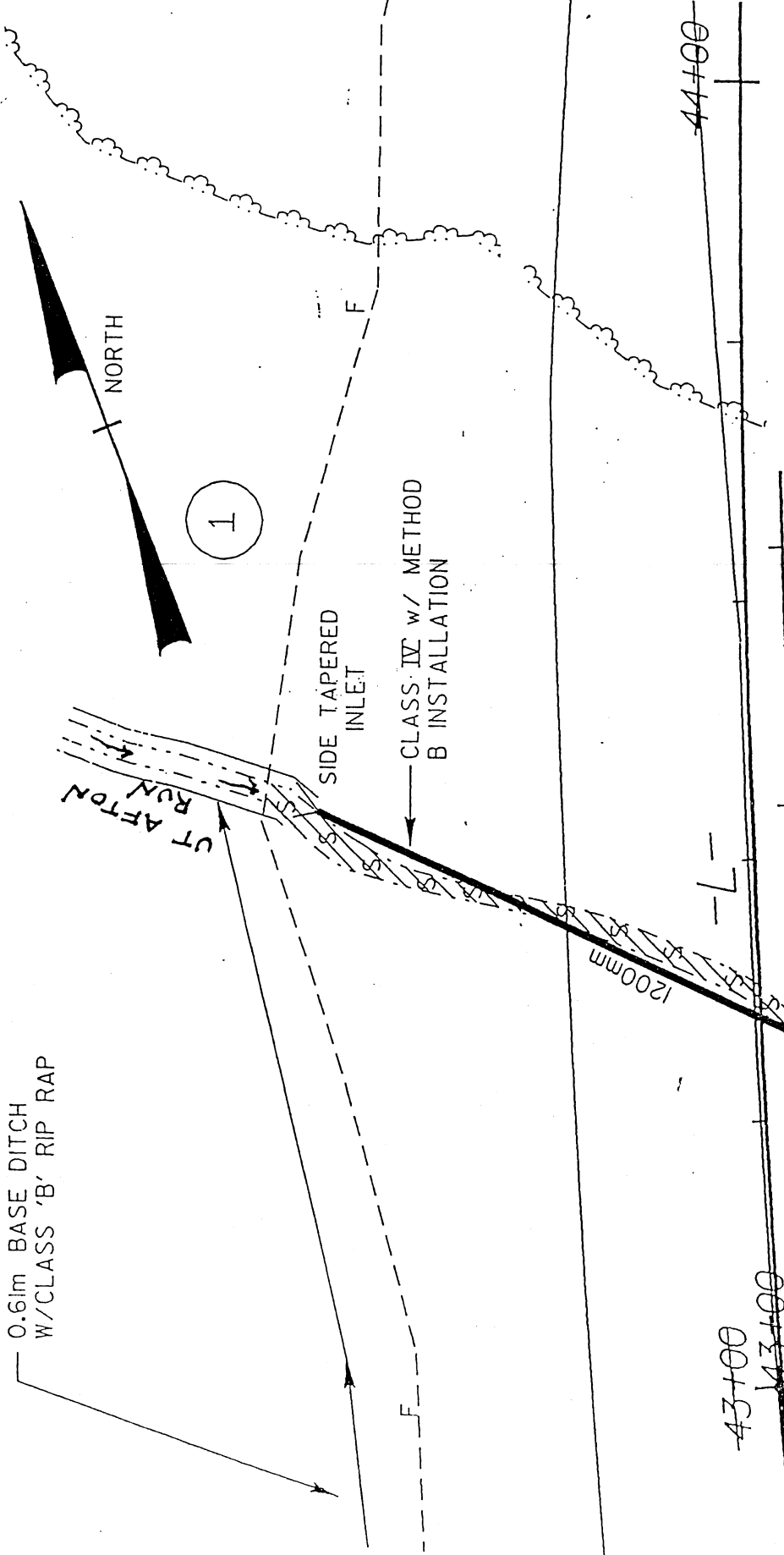
LEGEND

-  WLB — WETLAND BOUNDARY
-  WLB — WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER (DASHED LINES DENOTE EXISTING STRUCTURES)
-  DENOTES FILL IN SURFACE WATER (POND)
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING
-  FLOW DIRECTION
-  TB — TOP OF BANK
-  WE — EDGE OF WATER
-  C — PROP. LIMIT OF CUT
-  F — PROP. LIMIT OF FILL
-  PROP. RIGHT OF WAY
-  NG — NATURAL GROUND
-  PL — PROPERTY LINE
-  TDE — TEMP. DRAINAGE EASEMENT
-  PDE — PERMANENT DRAINAGE EASEMENT
-  EAB — EXIST. ENDANGERED ANIMAL BOUNDARY
-  EPB — EXIST. ENDANGERED PLANT BOUNDARY
-  WATER SURFACE
-  LIVE STAKES
-  BOULDER
-  CORE FIBER ROLLS
-  PROPOSED BRIDGE
-  PROPOSED BOX CULVERT
-  PROPOSED PIPE CULVERT
12"-48" PIPES
54" PIPES & ABOVE
-  SINGLE TREE
-  WOODS LINE
-  DRAINAGE INLET
-  ROOTWAD
-  RIP RAP
-  ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE
-  BZ1 — BUFFER ZONE 1
-  BZ2 — BUFFER ZONE 2



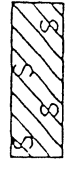
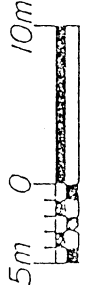
N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009B)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 73 TO NC 136
 DATE: 5/26/98
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0.61m BASE DITCH
W/CLASS 'B' RIP RAP



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009D)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 73 TO NC 136
 DATE: 5/26/98
 REV. DATE: OCT., 2001
 SHEET 5 OF 20

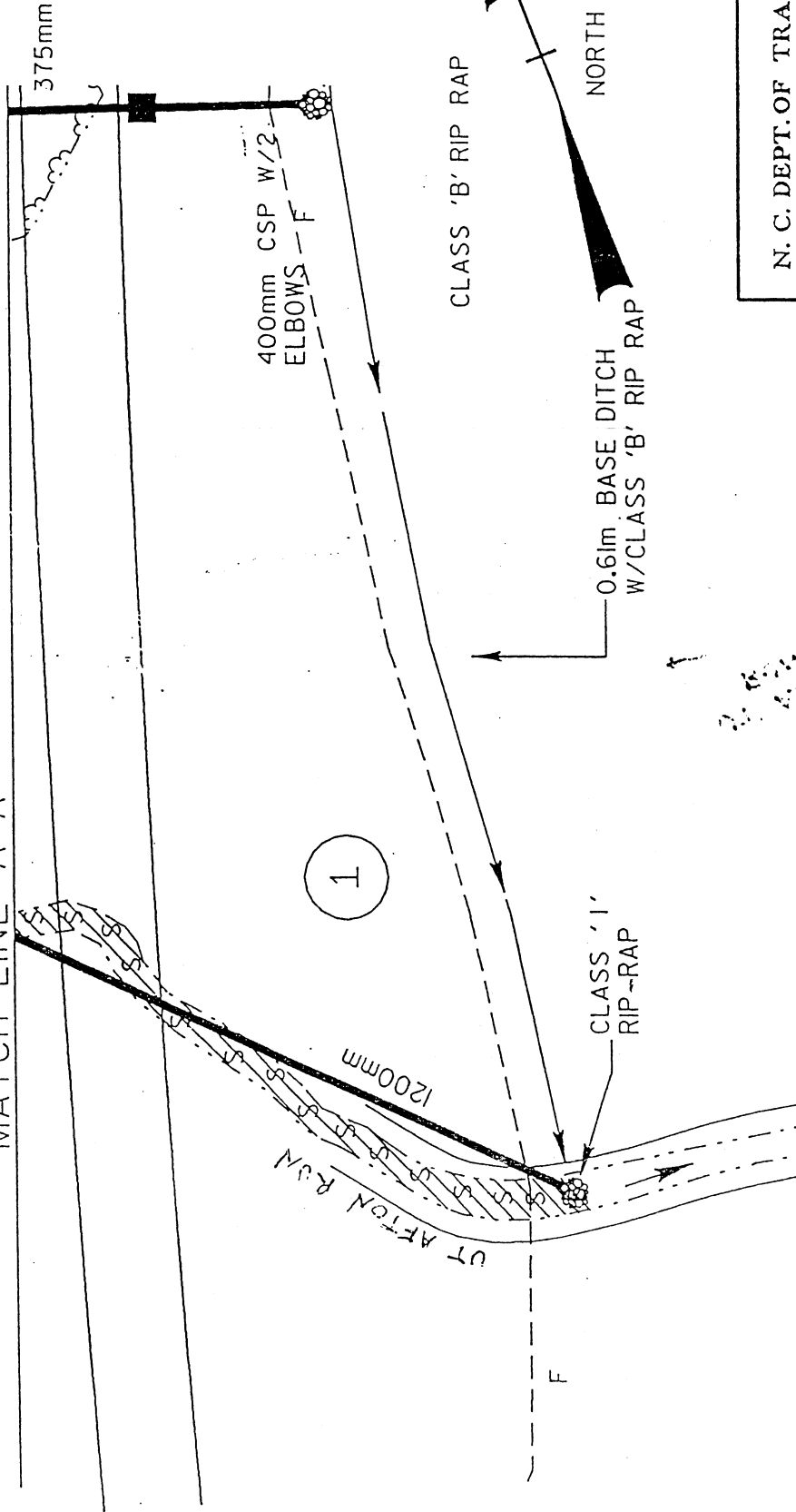
PLAN VIEW
 MATCH LINE A-A
 SITE 1



DENOTES FILL IN SURFACE WATERS

SCALE

MATCH LINE A--A

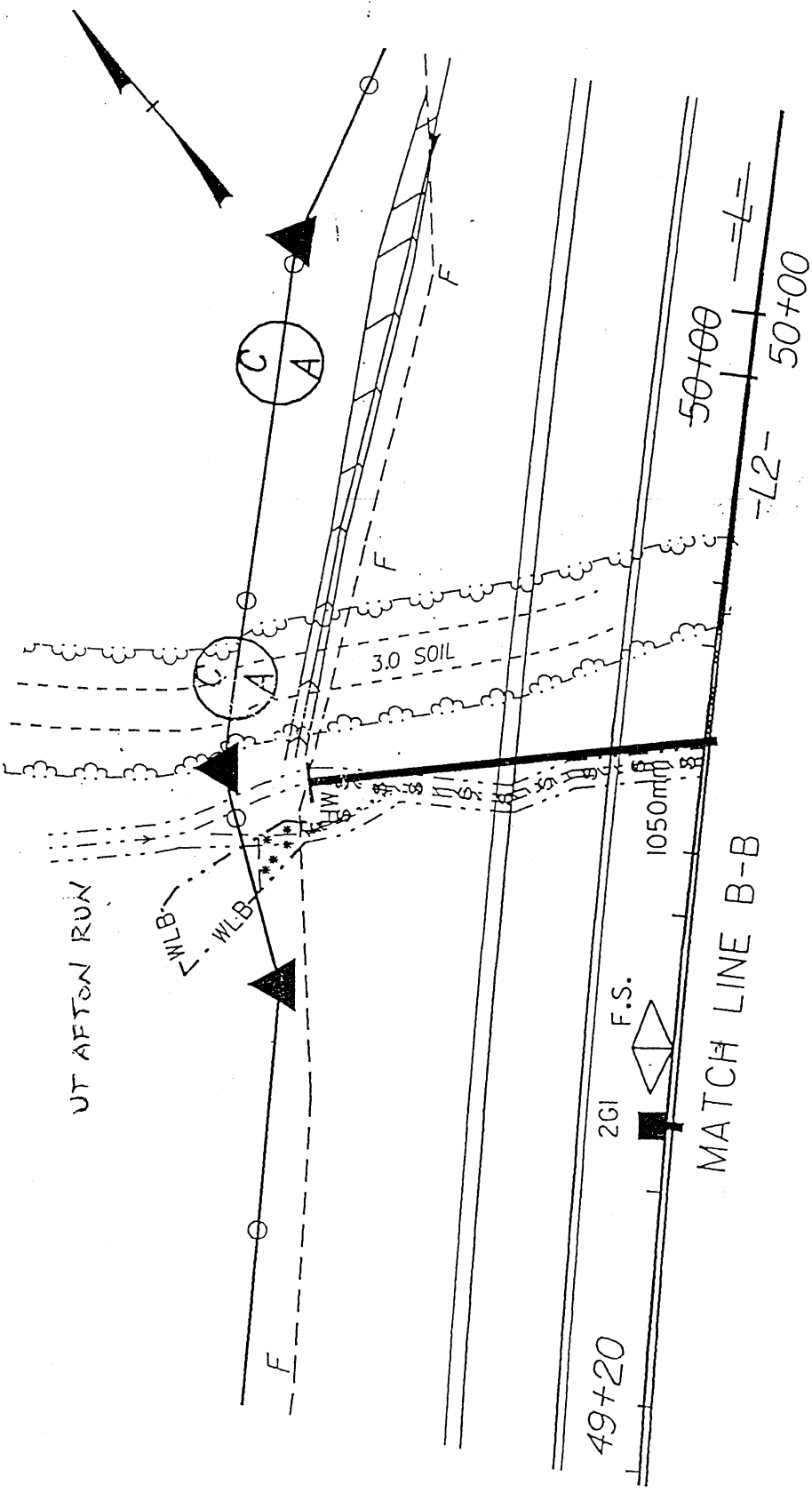


PLAN VIEW SITE 1



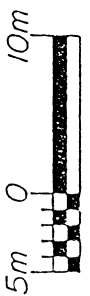
DENOTES FILL IN SURFACE WATERS

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009B)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 73 TO NC 136
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 SHEET 6 OF 20



N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009B)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 73 TO NC 136
 DATE: 5/26/98
 REV. DATE: OCT., 2001
 SHEET 7 OF 20

PLAN VIEW

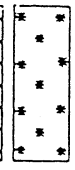


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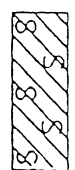
SITE 2

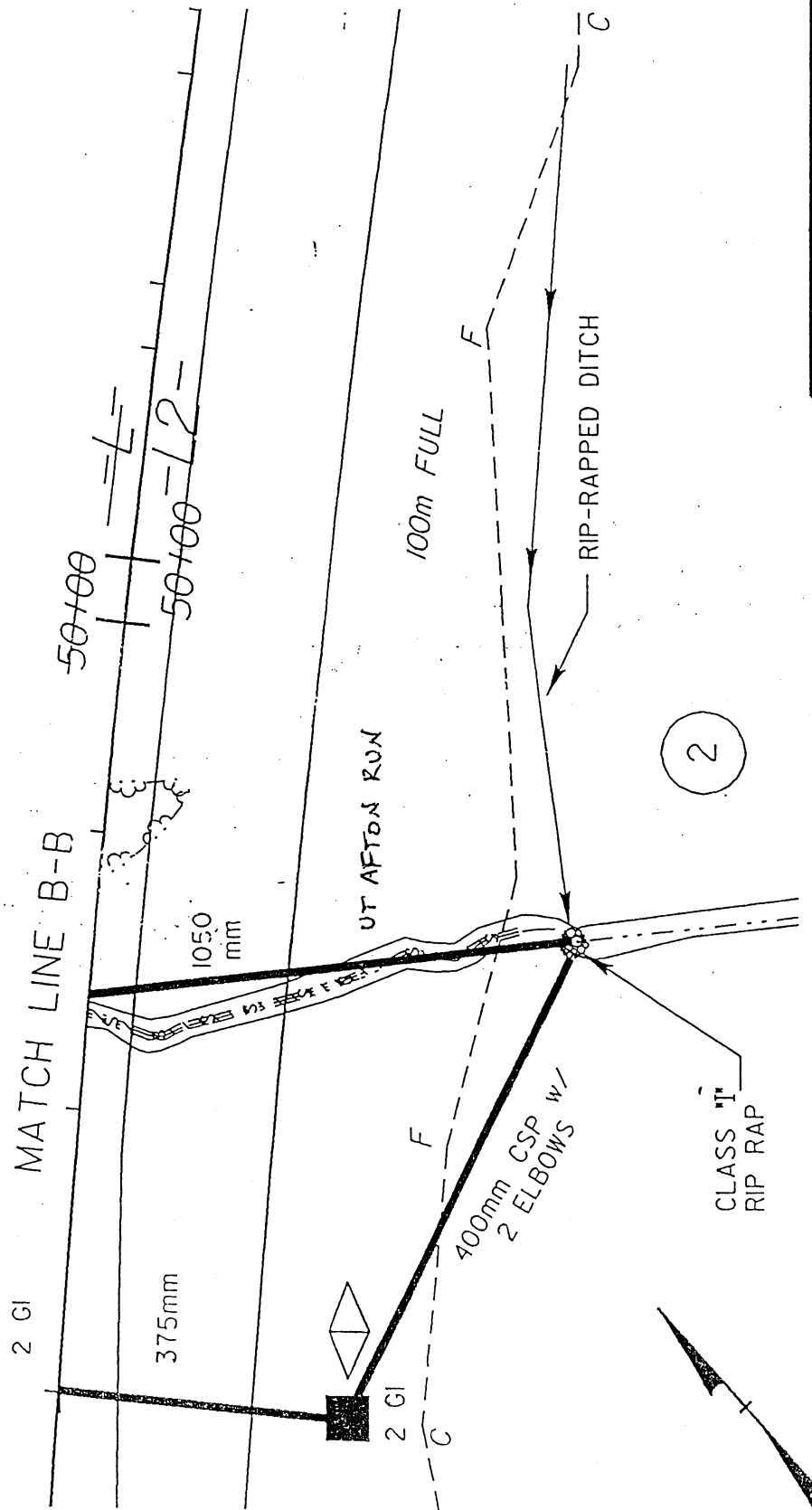
DENOTES FILL IN SURFACE WATERS

DENOTES FILL IN WETLANDS



DENOTES MECHANIZED CLEARING

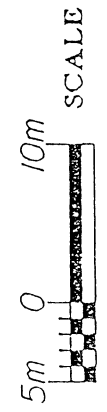
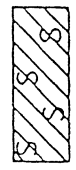


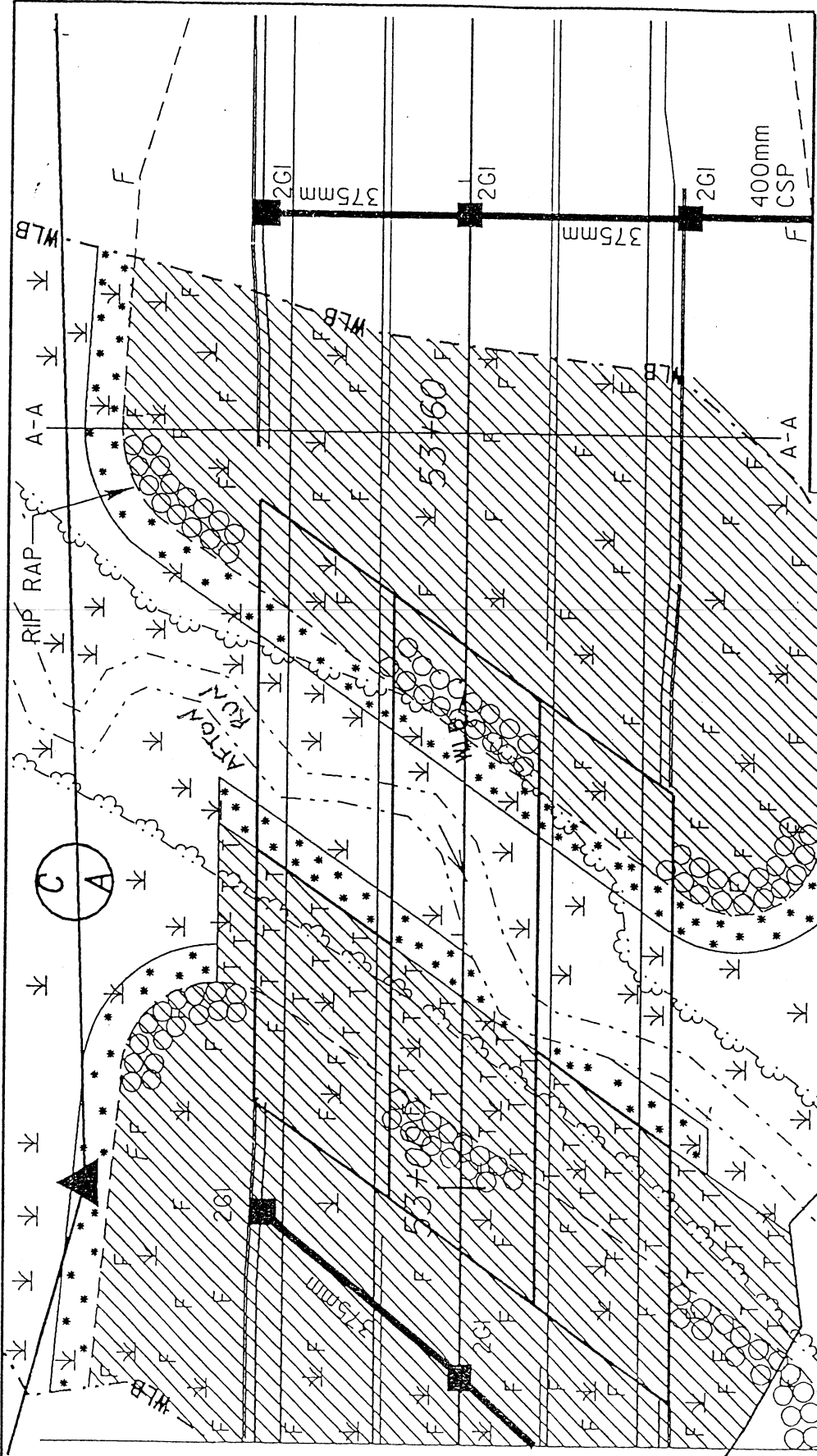


PLAN VIEW
SITE 2

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009B)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 73 TO NC 136
 DATE: 6/26/98
 REV. DATE: OCT., 2001
 SHEET 8 OF 20

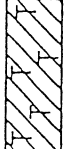
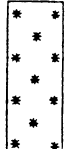

DENOTES FILL IN SURFACE WATERS

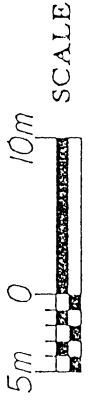




N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
 PROJECT: 9.8103406 (U-2009B)
 KANNAPOLIS WEST SIDE BYPASS
 FROM NC 73 TO NC 136
 DATE: 5/26/98
 REV. DATE: OCT., 2001
 SHEET 9 OF 20

PLAN SITE 3

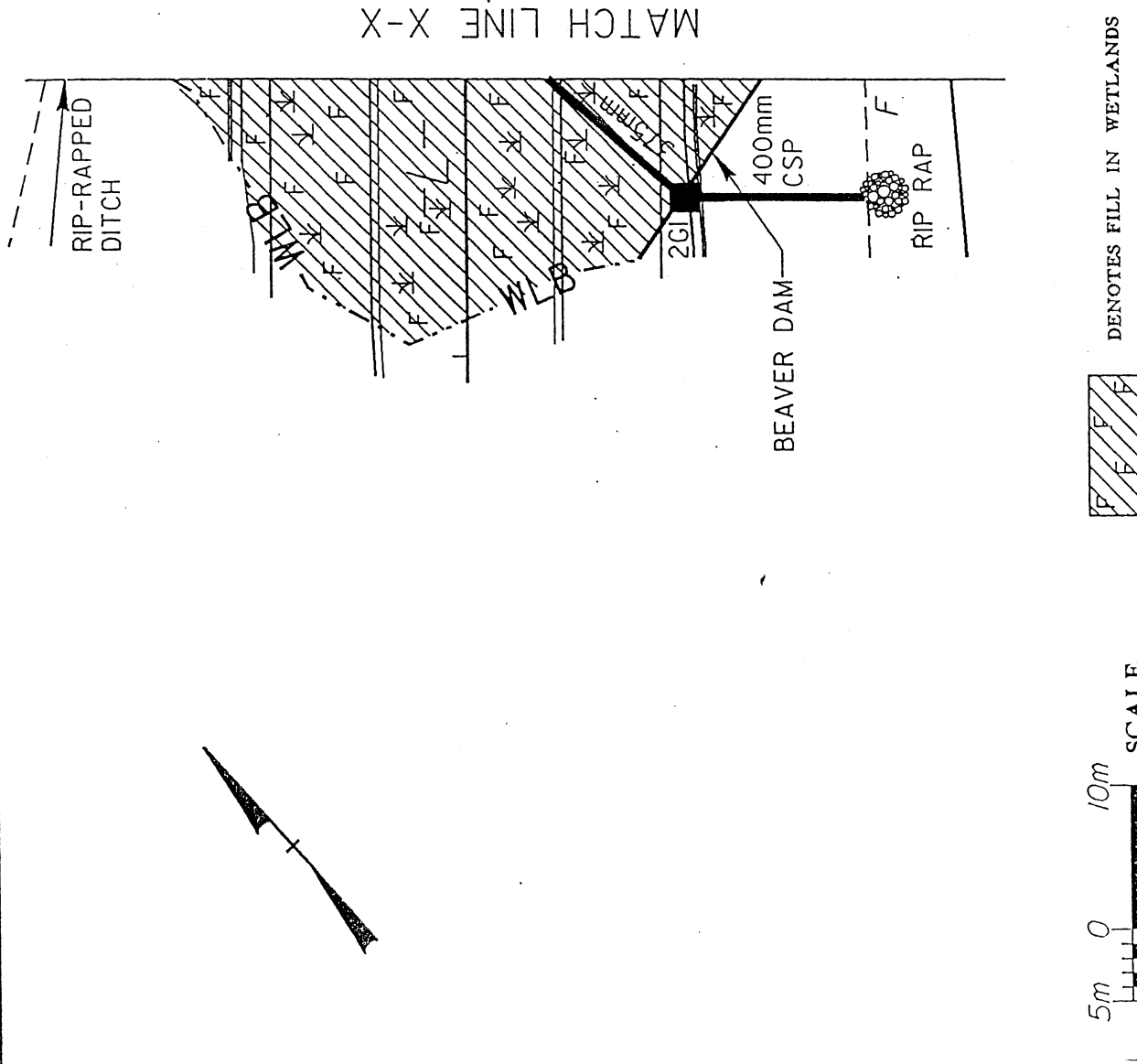
-  DENOTES TEMPORARY FILL IN WETLANDS (TIMBER MATS)
-  DENOTES MECHANIZED CLEARING
-  DENOTES FILL IN WETLANDS



MATCH LINE X-X

PLAN VIEW SITE 3

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CABARRUS COUNTY
PROJECT: 9.8103406 (U-2009B)
KANNAPOLIS WEST SIDE BYPASS
FROM NC 73 TO NC 136
DATE: 5/26/98
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SHEET 10 OF 20



MATCH LINE X-X

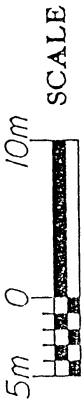
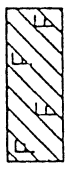
RIP-RAPPED
DITCH

BEAVER DAM

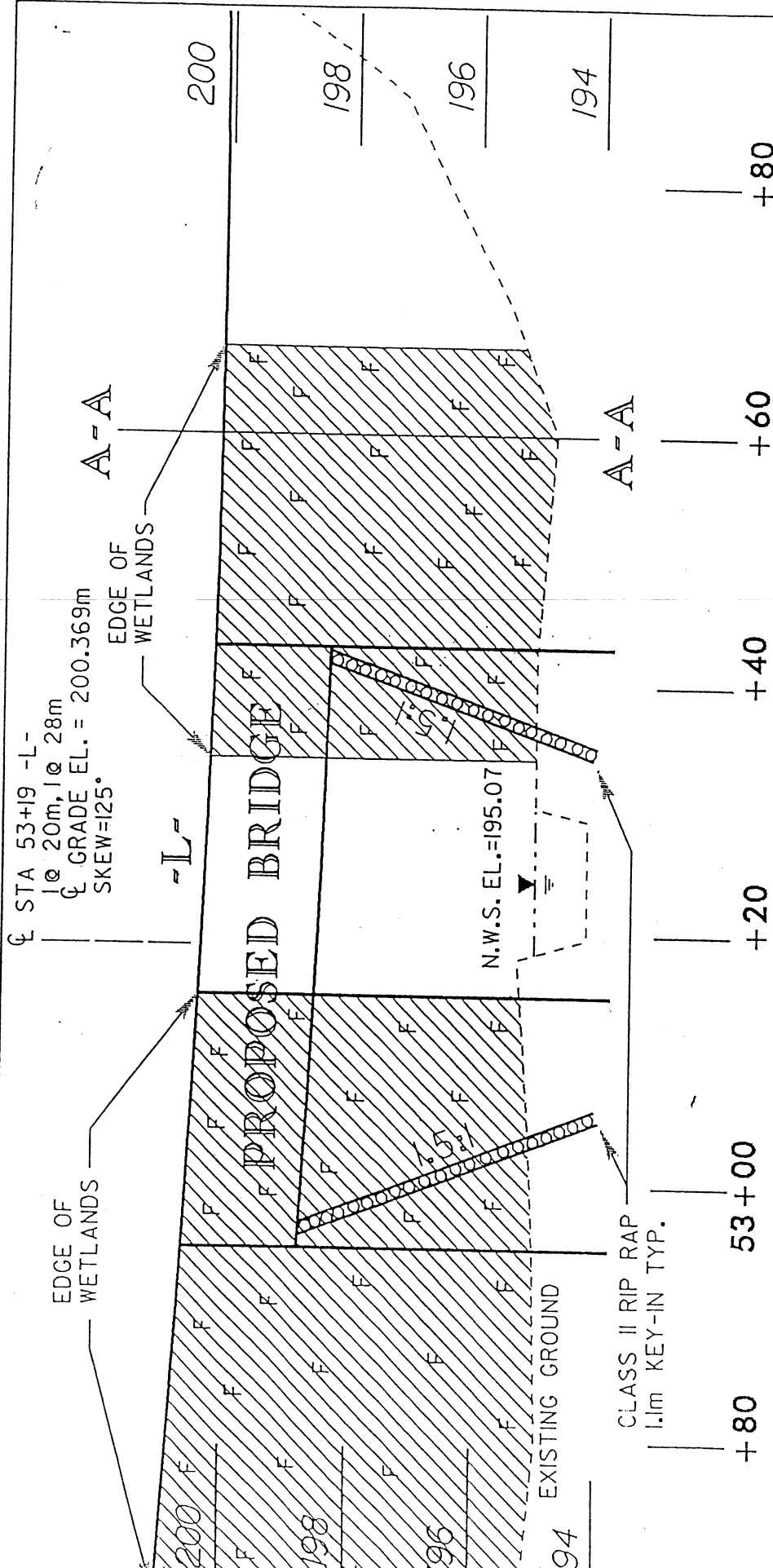
400mm
CSP

RIP RAP

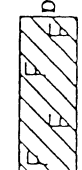
DENOTES FILL IN WETLANDS



SCALE

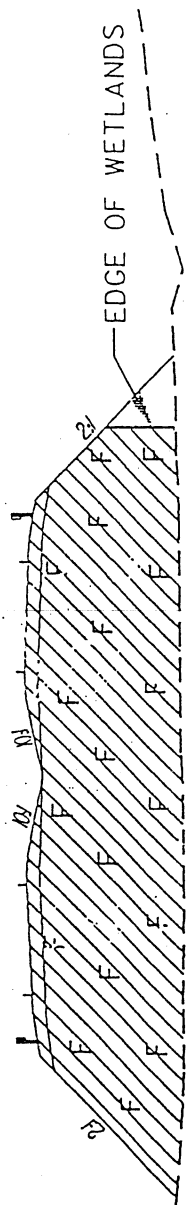


SITE 3
 PROFILE VIEW
 A-A STA 53 + 60

 DENOTES FILL IN WETLANDS

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200
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EXISTING GROUND

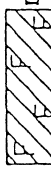
50 40 30 20 10 0 10 20 30 40 50

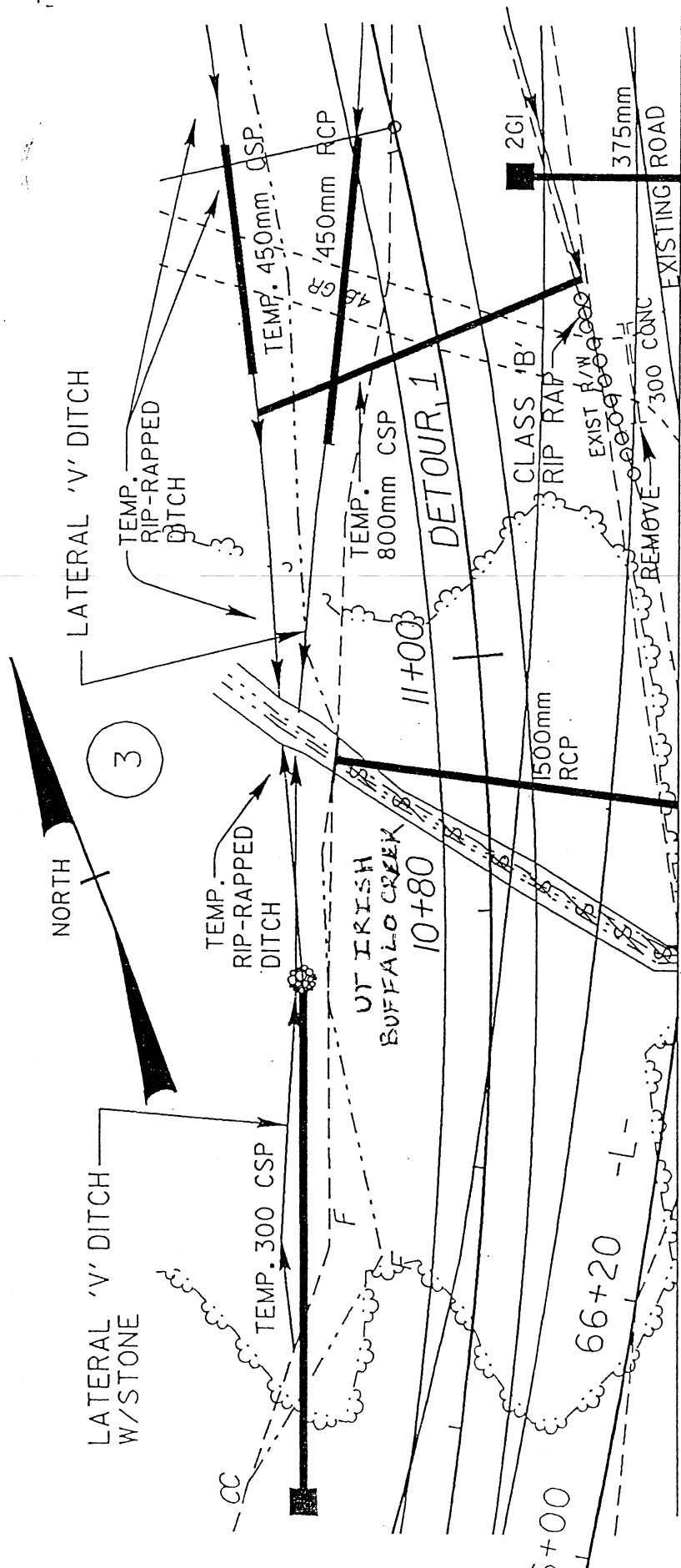
53+60

200
195

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SITE 3
 X-SECTION VIEW
 A-A

 DENOTES FILL IN WETLANDS

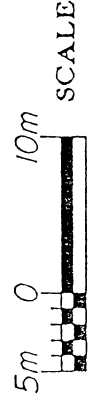


MATCH LINE D-D

PLAN VIEW SITE 4



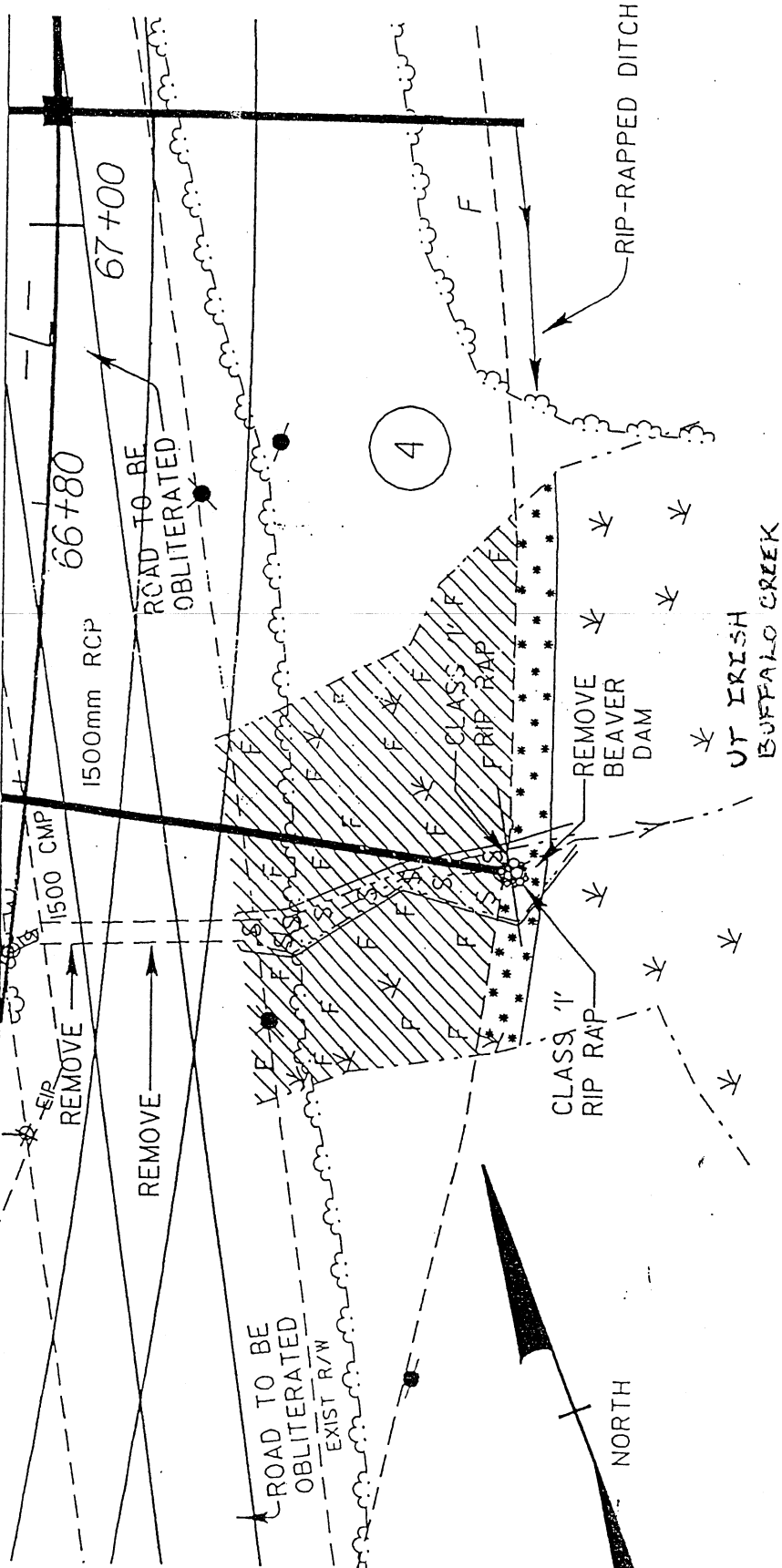
DENOTES FILL IN SURFACE WATERS



SCALE

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MATCH LINE D-D

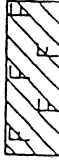


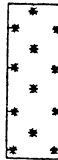
PLAN VIEW

SITE 4



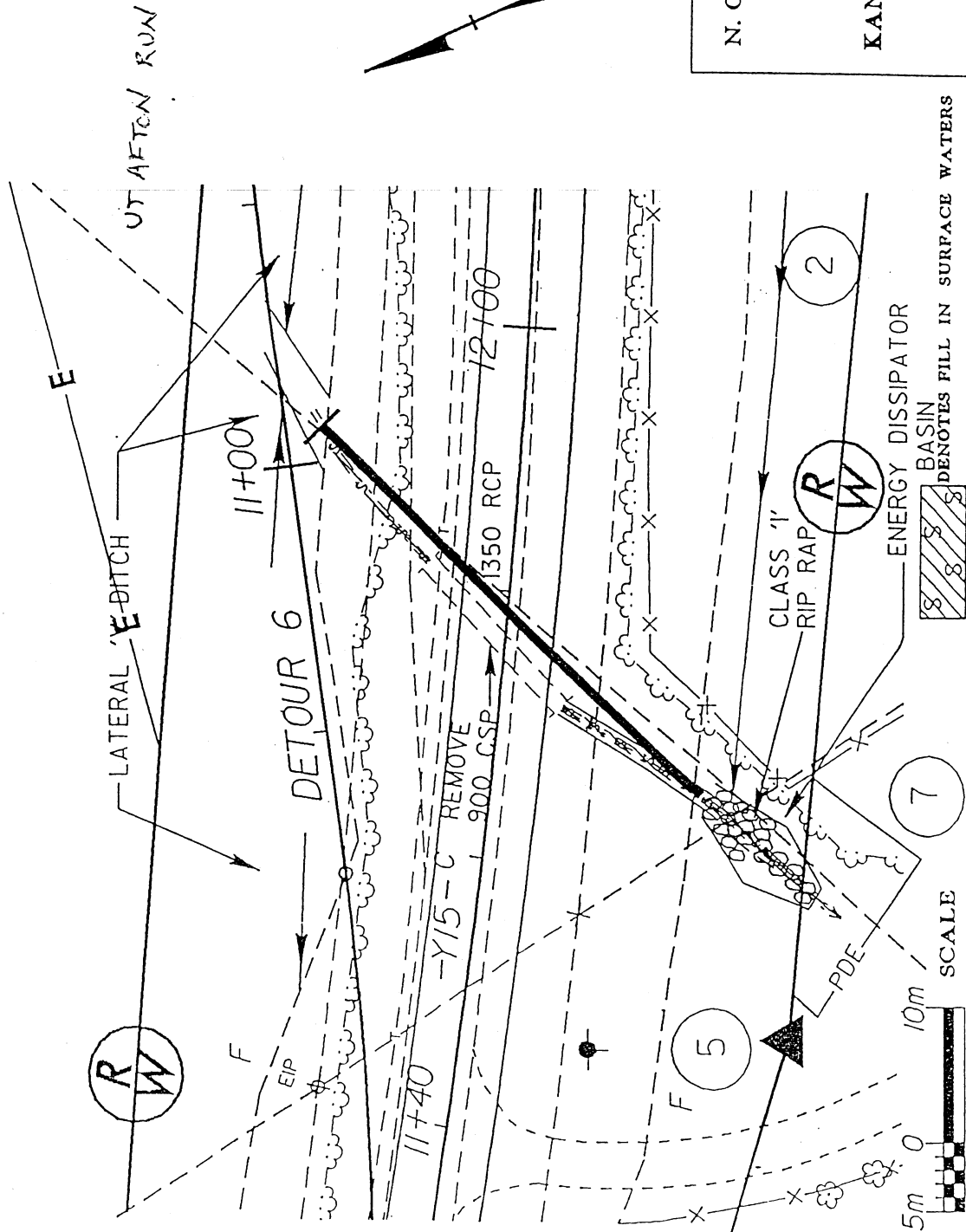
 DENOTES FILL IN SURFACE WATERS

 DENOTES FILL IN WETLANDS

 DENOTES MECHANIZED CLEARING

N. C. DEPT. OF TRANSPORTATION
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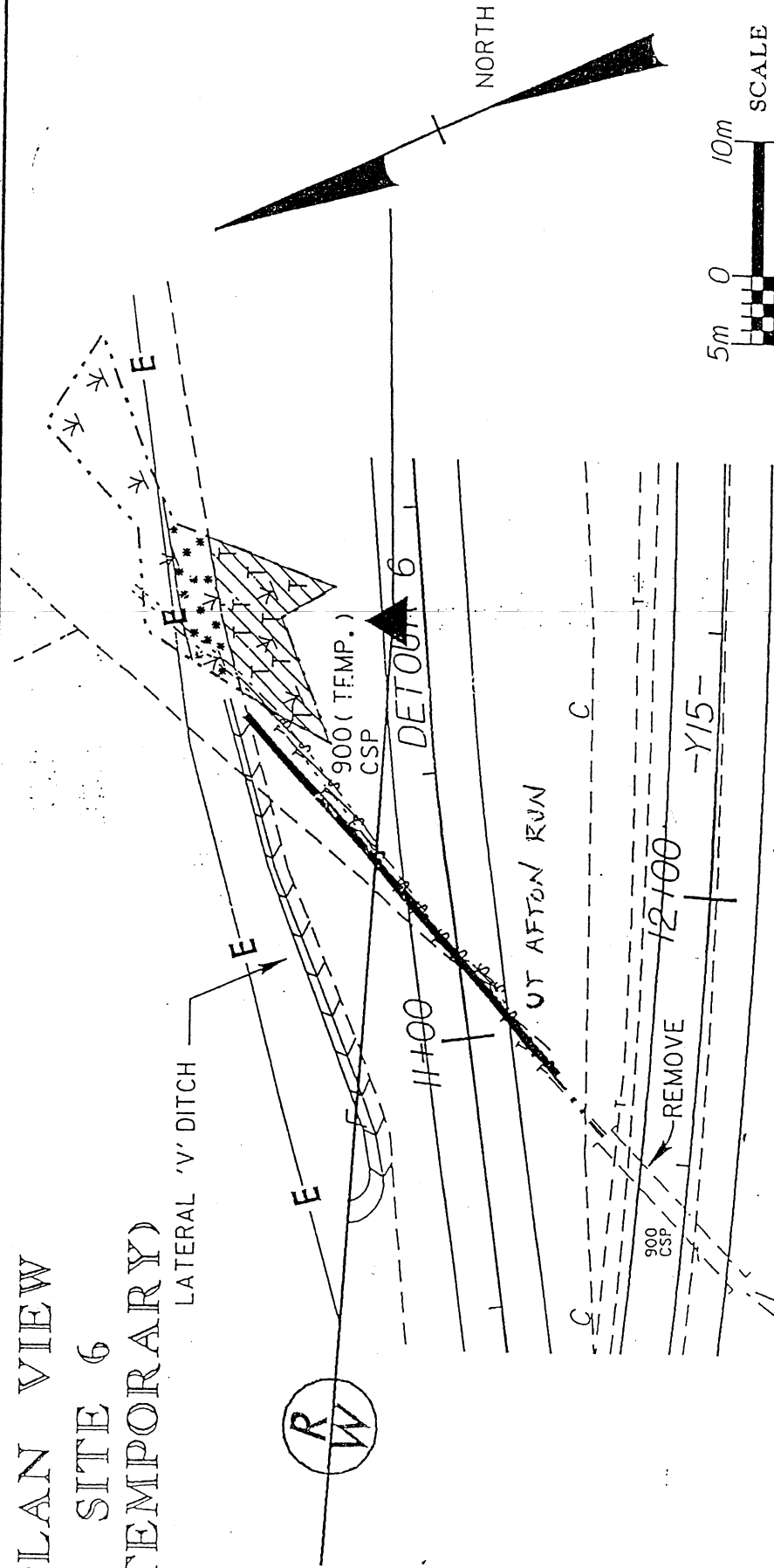
PLAN VIEW SITE 5



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PLAN VIEW
SITE 6
(TEMPORARY)

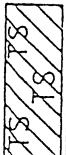
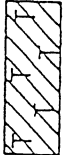
LATERAL 'V' DITCH



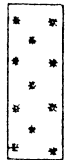
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DIVISION OF HIGHWAYS
CABARRUS COUNTY
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DENOTES TEMPORARY FILL IN WETLANDS

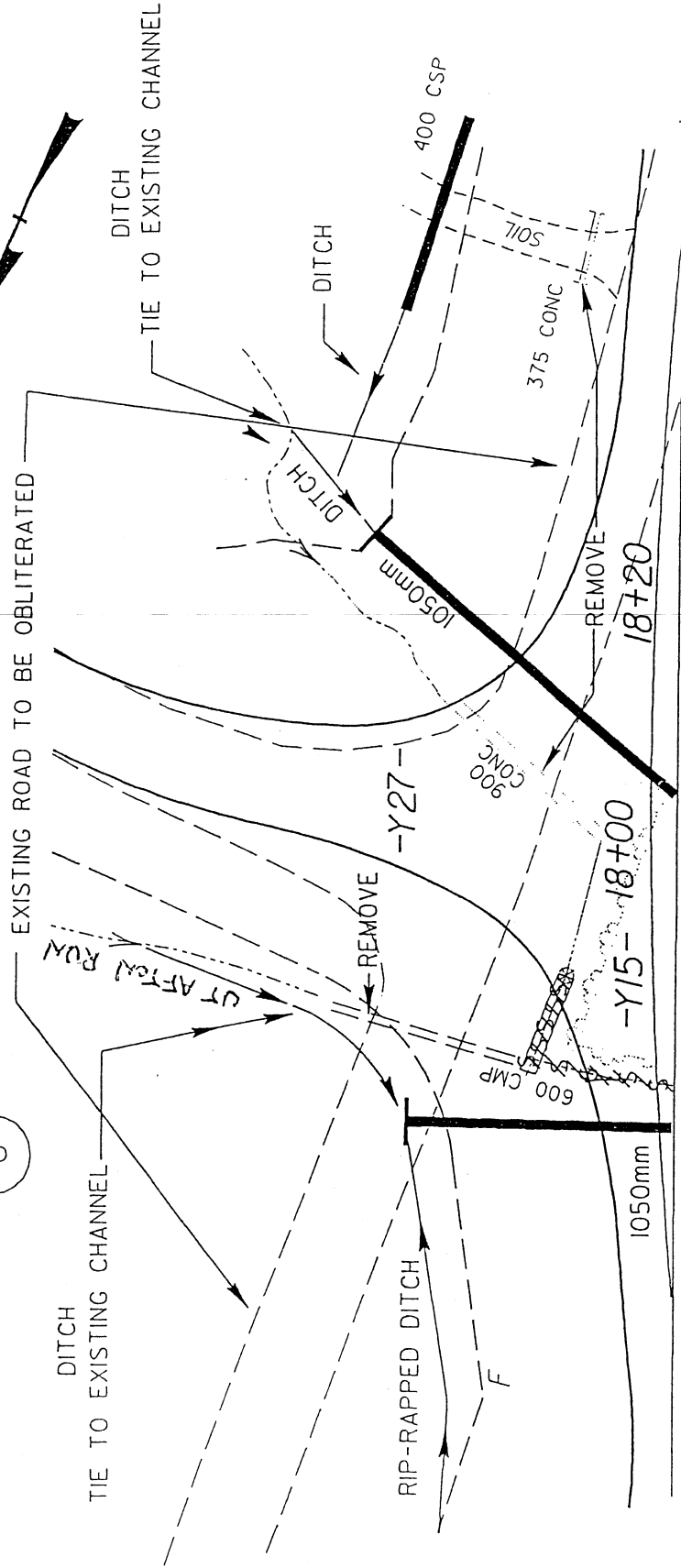
DENOTES TEMPORARY FILL IN SURFACE WATERS



DENOTES MECHANIZED CLEARING



6



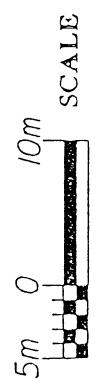
MATCH LINE E-E

SITE 7

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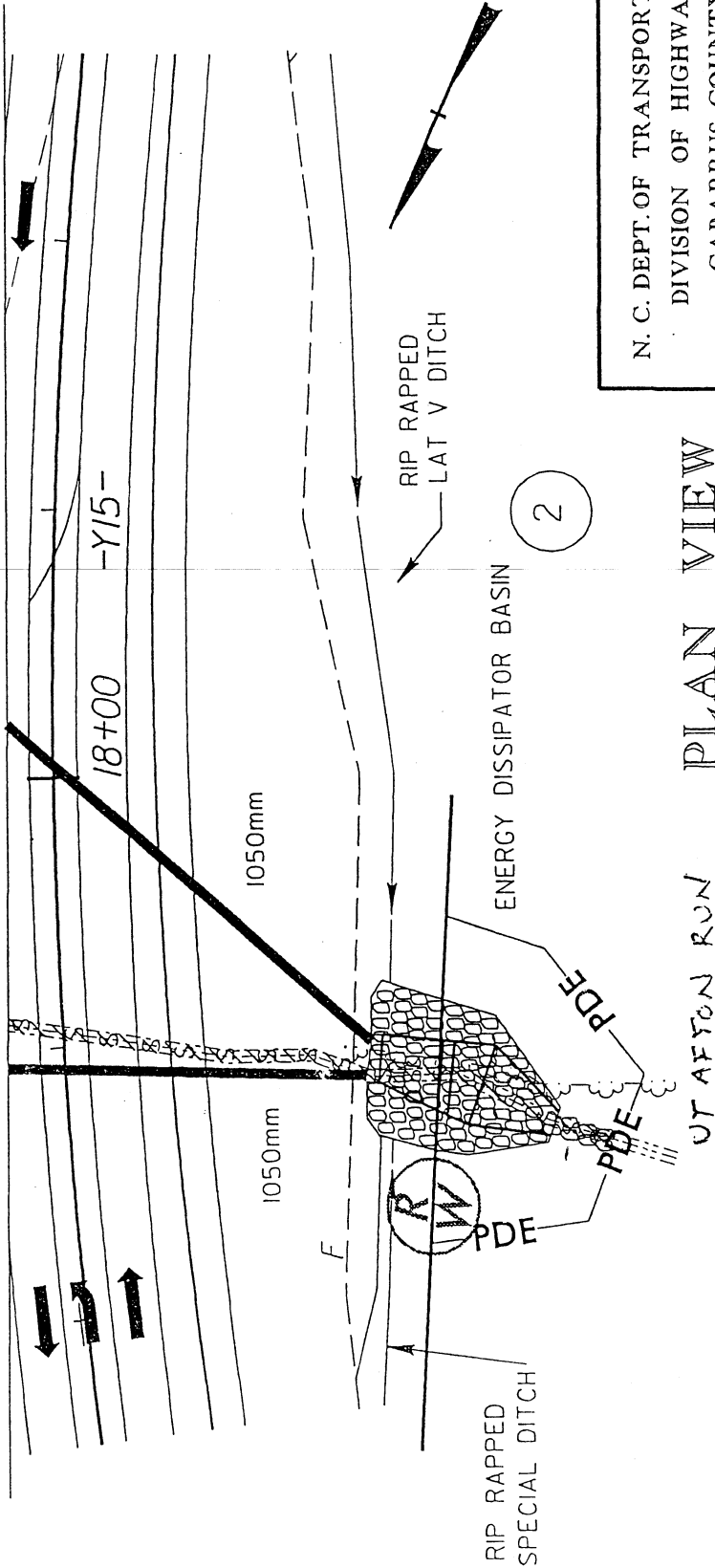


DENOTES FILL IN SURFACE WATERS



SCALE

MATCH LINE E-E



UT AFTON RUN PLAN VIEW SITE 7

N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 CABARRUS COUNTY
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DENOTES FILL IN SURFACE WATERS



PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO. NAMES ADDRESSES

1	BARBEE FAMILY LAND C/O BERNARD BARBEE 5913 MACEDONIA CHURCH RD. CONCORD, N.C. 28027
2	DAVID B. & WILLIAM S. & SARAH AUSTIN, LLC P.O. BOX 3067 CONCORD, N.C. 28025
3	TIMOTHY W. & REGINA C. GORDON 3041 BOY SCOUT CAMP ROAD KANNAPOLIS, N.C. 28081
4	CENTRAL NORTH CAROLINA COUNCIL of the BOY SCOUTS OF AMERICA P.O. BOX 250 ALBEMARLE, N.C. 28001
5	JAMES SORROW 2907 TRINITY CHURCH RD. CONCORD, N.C. 28027
6	CABARRUS COUNTY BOARD OF EDUCATION P.O. BOX 388 CONCORD, N.C. 28025
7	ORA H. SPEARS, WIDOW 2901 TRINITY CHURCH RD. CONCORD, N.C. 28027

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WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS				Natural Stream Design (m)	
			Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation In Wetlands (ha)	Mechanized Clearing (Method III) (ha)	Fill In SW (Natural) (ha)	Fill In SW (Pond) (ha)	Temp. Fill In SW (ha)	Existing Channel Impacted (m)		
1	43+27.6 L2	1200mm RCP	0	0	0	0	0.019	0	0	0	94	0
2	49+68.5 L2	1050mm RCP	<0.0001	0	0	0.003	0.004	0	0	0	60	0
3	53+20 L	1 @ 20m, 1 @ 28m BRIDGE	0.34	0.051*	0	0.049	0	0	0	0	0	0
4	66+59 L	1500mm RCP	0.057	0	0	0.012	0.007	0	0	0	54	0
5	11+78 Y15	1350mm RCP	0	0	0	0	0.002	0	0	0	37	0
6	11+06 DET6	900mm CSP (TEMP)	0	0.007	0	0.003	0.002	0	0	0	44	0
7	17+78 Y15	1050mm RCP	0	0	0	0	0.005	0	0	0	59	0
TOTALS:			0.397	0.007	0	0.067	0.039	0	0	0	348	0

* DENOTES TEMPORARY FILL DUE TO USE OF TIMBER MATS FOR CONSTRUCTION OF PROPOSED INTERIOR BENT.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

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