



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

May 9, 2002

**Addendum No. 2**

RE: State Project: 8.1402210  
F. A. Project: NHF-STP-64 (68)  
Wake County (R-2547 BA)  
US-64 From I-440 (Raleigh Beltline)  
To New Hope Road.

**MAY 21, 2002 Letting**

To Whom It May Concern:

Reference is made to the plans and proposal form recently furnished to you on the above project.

The following Revisions have been made to the proposal form:

Page no. 249 has been revised and new page nos. 250-295 are being added. Please void page no. 249 in your proposal and staple the revised page no. 249 thereto. Please staple new page nos. 250-295 after revised page no. 249 in your proposal.

The Table of Contents has been revised to reflect the above revisions. Please void the second page of the Table of Contents and staple the revised page thereto.

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
CONTRACTS & PROPOSALS  
1591 MAIL SERVICE CENTER  
RALEIGH NC 27699-1591

TELEPHONE: 919-250-4124  
FAX: 919-250-4127

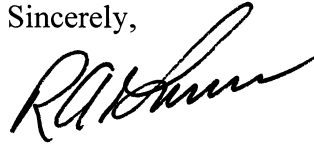
WEBSITE: [WWW.DOH.DOT.STATE.NC.US](http://WWW.DOH.DOT.STATE.NC.US)

**LOCATION:**  
CENTURY CENTER COMPLEX  
BUILDING B - ENTRANCE B15  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC

The following revisions have been made to the Roadway plans:

On plan sheet no. 2, the pavement schedule has been revised to remove the words "continuously reinforced." Please void sheet no. 2 in your plans and staple the revised sheet no. 2 thereto.

Sincerely,

A handwritten signature in black ink, appearing to read "R. A. Garris". The signature is fluid and cursive, with a large initial "R" and "A".

R. A. Garris, P.E.  
Contract Officer

RAG/jag/pa  
(Attachments)

cc: Mr. J. D. Goins, P.E.  
Ms. Emily Lawton  
Mr. S. D. DeWitt, P.E.  
Mr. J. G. Nance, PE (2)  
Ms. D. M. Barbour, P.E.  
Mr. J. V. Barbour, P.E.  
Mr. G. R. Perfetti, P.E.  
Mr. Jay Bennett, P.E.  
Mr. R. E. Davenport, Jr., P.E.  
Ms. Kim Canady  
Ms. Yang-Ju-Lin  
Project File (2)

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- Item Sheets
- Award Limits
- Signature

**PROJECT SPECIAL PROVISIONS**  
**PERMITS**

The Contractor's attention is directed to the following permits which have been issued to the Department of Transportation by the authority granting the permit.

**PERMIT**

**AUTHORITY GRANTING THE PERMIT**

Dredge and Fill and/or  
Work in Navigable Waters

U. S. Army Corps of Engineers

Water Quality

Division of Environmental Management, DEHNR  
State of North Carolina

The Contractor shall comply with all applicable permit conditions during construction of this project. Those conditions marked by \* are the responsibility of the department and the Contractor has no responsibility in accomplishing those conditions.

Agents of the permitting authority will periodically inspect the project for adherence to the permits.

The Contractor's attention is also directed to Articles 107-10 and 107-14 of the Standard Specifications and the following:

Should the Contractor propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Contractor's responsibility to coordinate with the appropriate permit agency to determine what, if any, additional permit action is required. The Contractor shall also be responsible for initiating the request for the authorization of such construction method by the permitting agency. The request shall be submitted through the Engineer. The Contractor shall not utilize the construction method until it is approved by the permitting agency. The request normally takes approximately 60 days to process; however, no extensions of time or additional compensation will be granted for delays resulting from the Contractor's request for approval of construction methods not specifically identified in the permit.

**Where construction moratoriums are contained in a permit condition which restricts the Contractor's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the waters or wetlands provided that activities outside those areas is done in such a manner as to not affect the waters or wetlands.**

## DEPARTMENT OF THE ARMY PERMIT

NC Department of Transportation

Permittee \_\_\_\_\_

200220819

Permit No. \_\_\_\_\_

CESAW-RG-R

Issuing Office \_\_\_\_\_

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:

Place fill material impacting a total of 27.43 acres of waters of the United States, including 12.97 acre of wetlands (including 0.02 acre of temporary impact), 13.76 acres of ponds, and 9,560 linear feet of stream, for construction the US 64 Knightdale Bypass, extending from the I-440 Beltline in Raleigh to existing US 64 east of Knightdale (T.I.P. No. R-2547), and the connector to the future I-540 Northern Wake Expressway (T.I.P. No. R-2641).

## Project Location:

Crossing the Neuse River, Crabtree Creek, Mango Creek, Poplar Creek, Marks Creek, unnamed tributaries, and adjacent wetlands, generally south of Knightdale, in Wake County, North Carolina.

## Permit Conditions:

## General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2005. 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.

William D. Moore  
 (PERMITTEE)  
 NC DEPARTMENT OF TRANSPORTATION

22 APR 02  
 (DATE)

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

\_\_\_\_\_  
 (DISTRICT ENGINEER)  
 JAMES W. DELONY, COLONEL

\_\_\_\_\_  
 (DATE)

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.

\_\_\_\_\_  
 (TRANSFeree)

\_\_\_\_\_  
 (DATE)

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



Michael F. Easley, Governor  
William G. Ross, Jr., Secretary  
Gregory J. Thorpe, Ph.D., Acting Director

April 10, 2002

Mr. William D. Gilmore, P.E., Manager  
Planning and Environmental Branch  
North Carolina Department of Transportation  
1548 Mail Service Center  
Raleigh, North Carolina. 27699-1548

Dear Mr. Gilmore:

Re: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act,  
Proposed US 64v Bypass of Knightdale from I-440 (Raleigh Beltline) to existing US 64 near SR  
1003, I-440 from 0.83 miles south of US 64 to Poole Road and a portion of the East Wake  
Expressway from existing US 64 to the proposed US 64 Bypass in Wake County (TIP R-2547).  
WQC Project No. 011689

Attached hereto is a copy of Certification No. 3377 issued to The North Carolina Department of  
Transportation dated April 4, 2002. You have our approval, in accordance with the attached conditions and  
those listed below, to place fill material in 12.95 acres of jurisdictional wetlands, 9560 linear feet of  
streams, and 40.56 acres of protected Neuse River Riparian Buffers. In addition, you are authorized to  
perform mechanized clearing in 0.2 acres of jurisdictional wetlands. The project shall be constructed in  
accordance with your application dated October 19, 2001, and the subsequent addendums dated November  
9, 2001, and April 2, 2002. Any proposed site plans submitted in the October 19, 2001 application that  
have a subsequent revised site plan submitted in the November 9, 2001, or April 2, 2002 addendums are not  
authorized by this certification. Instead, for all impacts where a proposed site design as provided in the  
original October 19, 2001 application was revised and submitted in the November 19, 2001 and April 2,  
2002 addendums, the drawings with the latest date of revision are authorized. The purpose of the  
authorized impacts is the construction of the US 64 bypass of Knightdale and a portion of the East Wake  
Expressway (Future I-540 Outer Loop) from existing US 64 to the proposed US 64 bypass in Wake County.  
This certification supercedes the 401 Water Quality Certification approved on April 5, 2002.

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

Sincerely,

Gregory J. Thorpe, Ph.D.  
Acting Director



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



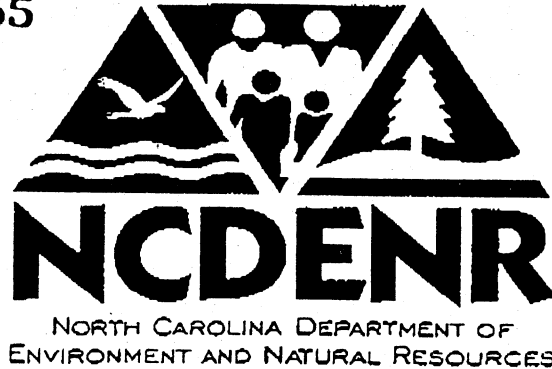
Michael F. Easley, Governor  
William G. Ross, Jr., Secretary  
Gregory J. Thorpe, Ph.D., Acting Director

Attachments

cc: Wilmington District Corps of Engineers  
Corps of Engineers Raleigh Field Office  
DWQ Raleigh Regional Office  
Ron Ferrell, Wetlands Restoration Program  
Central Files  
File Copy

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

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Michael F. Easley, Governor  
 William G. Ross, Jr., Secretary  
 Gregory J. Thorpe, Ph.D., Acting Director

NORTH CAROLINA DEPARTMENT OF  
 ENVIRONMENT AND NATURAL RESOURCES

**APPROVAL OF 401 Water Quality Certification and ADDITIONAL CONDITIONS  
 and Neuse River Buffer Rules**

**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 15A NCAC 2H. Section .0500, and 15A NCAC 2B .0233. This certification authorizes, in accordance with the attached conditions and those listed below, the placement of fill material in 12.95 acres of jurisdictional wetlands, 9560 linear feet of streams, and 40.56 acres of protected Neuse River Riparian Buffers. In addition, you are authorized to perform mechanized clearing in 0.2 acres of jurisdictional wetlands. The project shall be constructed in accordance with your application dated October 19, 2001, and the subsequent addendums dated November 9, 2001, and April 2, 2002. Any proposed site plans submitted in the October 19, 2001 application that have a subsequent revised site plan submitted in the November 9, 2001, or April 2, 2002 addendums are not authorized by this certification. Instead, for all impacts where a proposed site design as provided in the original October 19, 2001 application was revised and submitted in the November 19, 2001 and April 2, 2002 addendums, the drawings with the latest date of revision are authorized. The purpose of the authorized impacts is the construction of the US 64 bypass of Knightdale and a portion of the East Wake Expressway (Future I-540 Outer Loop) from existing US 64 to the proposed US 64 bypass in wake County. This certification supercedes the 401 Water Quality Certification approved on April 5, 2002.

The application provides adequate assurance that the discharges of fill material into the waters of the Neuse River Basin 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. Any additional impacts to wetlands, streams, or buffers, for this project (now or in the future) will require additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7), and 15A NCAC 2B .0233. 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. This Certification shall expire three years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Corps of Engineers Permit, whichever is sooner.

Wetlands/401 Unit

1650 Mail Service Center

Raleigh, North Carolina 27699-1621

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FAX 733-6893

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Division of Water Quality



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Condition(s) of Certification:

1. Appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" or the "North Carolina Surface Mining Manual" whichever is more appropriate (available from the Division of Land Resources (DLR) in the DENR Regional or Central Offices) shall 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 (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. 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, they shall be removed and the natural grade restored after the Division of Land Resources has released the project;
3. If an environmental document is required, this Certification is not valid until a FONSI or ROD is issued by the State Clearinghouse. All water quality-related conditions of the FONSI or ROD shall become conditions of this Certification;
4. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the state until the concrete has hardened;
5. 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.
6. All channel relocations will be constructed in a dry work area and stabilized before stream flows are diverted. Channel relocations will be completed and stabilized prior to diverting water into the new channel. Whenever possible, channel relocations shall be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30 foot wide wooded and an adjacent 20 foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating coir fiber and seedling establishment is allowable. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested.
7. Compensatory mitigation for impacts to streams shall be done for 7122 linear feet of stream impact at a replacement ratio of 1:1. Compensatory mitigation for impacts to jurisdictional streams shall be provided by onsite stream relocations of 1321 linear feet of streams on site as described (i.e. a stable stream pattern, dimension, and profile) in the March 24, 2000 revised permit application. Of the 1321 linear feet of total proposed onsite mitigation, 787 linear feet is located at Site 4 in Segment CC (between stations 155+00 and 157+00) of the project. No

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impacts to Site 4 in Segment CC of the projects are authorized until a final design that provides a stable stream pattern, dimension, and profile is submitted to and approved in writing by the NC Division of Water Quality 401 Wetlands Unit. 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 401 Wetlands 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 787 linear feet of impacts. In addition to the 1321 linear feet of on-site mitigation, compensatory mitigation for an additional 5801 linear feet of streams is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through an in lieu payment to the North Carolina Wetland Restoration Program (NCWRP), and that the WRP has agreed to implement the mitigation for the project. Mitigation for unavoidable impacts to streams shall be provided through an in-lieu payment to the North Carolina Wetlands Restoration Program (NCWRP) at a rate of \$125 per linear foot. Therefore, a total payment of \$725,125 shall be submitted to the NCWRP to offset the impacts. No construction activities in jurisdictional streams shall begin until payment for stream mitigation is made and the Wetland Restoration Program receives and clears your check (made payable to DENR - Wetland Restoration Program). The payment to NCWRP shall be sent within two months of issuance of the 404 permit. If you have any questions concerning the Wetland Restoration Program please contact them at 919-733-5208.

\*8. Compensatory mitigation for impacts to wetlands shall be done for 12.95 acres of impacts. Applying a replacement ration of 2:1 total mitigation for 25.90 acres of riparian wetlands shall be provided as described below.

Mitigation Site	Acres of WL Debited from Site	Type of Mitigation	Replacement Ratio	Acres of Mitigation Credited
Benson Grove Mitigation Site	8.55	Restoration	1:1	8.55
Mingo Creek Mitigation Site	28.6	Preservation	1.9:1	14.95
Marks Creek Mitigation Site	4.40	Restoration	1:1	4.40
<b>Total</b>				<b>25.90</b>

9. All stormwater runoff shall be directed to sheetflow through stream buffers at nonerosive velocities, unless approved otherwise by this certification.

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



Michael F. Easley, Governor  
 William G. Ross, Jr., Secretary  
 Gregory J. Thorpe, Ph.D., Acting Director

- \*10. Of the total 40.56 acres of impacts to protected riparian buffers, compensatory mitigation for impacts to 34.69 acres of Neuse Riparian Buffers shall be provided for as described below.

Zone of Impact	Impacts (Acres)	Replacement Ratio	Total Acres of Mitigation Required
Zone 1	21.14	3:1	63.42
Zone 2	13.55	1.5:1	20.33
Total			83.75

We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through an in lieu payment to the North Carolina Wetland Restoration Program (NCWRP), and that the WRP 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 Wetlands Restoration Program (NCWRP) at a rate of \$41,625 per acre for 83.75 acres of buffer impact. Therefore, a total payment of \$3,486,094 shall be submitted to the NCWRP to offset the impacts. No construction activities in Neuse River Riparian buffers shall begin until payment for buffer mitigation is made and the Wetland Restoration Program receives and clears your check (made payable to DENR – Wetland Restoration Program). The payment to NCWRP shall be sent within two months of issuance of the 404 permit. If you have any questions concerning the Wetland Restoration Program please contact them at 919-733-5208.

- \*11. 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.
- 12. Placement of culverts and other structures in waters, streams, and wetlands must 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 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.
- 13. No changes to the horizontal or vertical placement of the stormwater outfall locations, the horizontal or vertical placement of the culverts, the horizontal or vertical placement of bridges, the horizontal or vertical placement of grassed swales, or the horizontal or vertical placement of open ditches is permitted without written approval from the NC Division of Water Quality 401 Wetlands Unit. In addition, no changes to the flow spreader locations or designs, preformed scour hole locations or designs are permitted without written approval from the NC Division of Water Quality 401 Wetlands Unit. Any request for changes to the referenced items above will require submittal of a modification request, with seven copies, and corresponding fees will need to be submitted to the North Carolina Division of Water Quality.

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



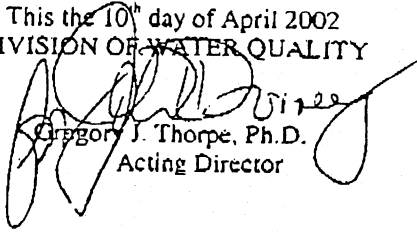
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 Gregory J. Thorpe, Ph.D., Acting Director

- \*14. When final design plans are completed for the section of the East Wake Expressway (R-2641, Future I-540 Outer Loop) from existing US 64 to the proposed US 64 bypass located in Wake County, a modification to the 401 Water Quality Certification shall be submitted with seven copies and fees to the NC Division of Water Quality. Final designs shall reflect all appropriate avoidance, minimization, and mitigation for impacts to wetlands, streams, and other surface waters, and buffers. Construction activities that impact any wetlands, streams, and other surface waters, or buffers located in the referenced section shall begin only after NCDOT applies for and receives a modified 401 Water Quality Certification from the NC Division of Water Quality. This condition does not apply to the proposed interchange of project R-2641 and R-2547, it is approved as described previously in this certification.
15. No construction activities are authorized for the project until NCDOT provides and gets written approval from the NC Division of Water Quality for appropriate engineering construction details for all proposed level spreaders and pre-formed scour holes in Segment CC of the project.
16. No construction activities are authorized in segment CC of the project until a final design that provides a stable stream pattern, dimension, and profile for the proposed stream relocation from station 155+00 to 157+00 is submitted by NCDOT, and approved by the NC Division of Water Quality 401 Wetlands Unit.
- \*17. Given the multiple set of addendums to the original application, NCDOT shall provide to the NCDWQ a final of site drawings within 2 months of the date of issuance of the 401 Water Quality Certification that reflects the authorized impacts in this certification.

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 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, P.O. Box 27447, Raleigh, N.C. 27611-7447. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 10<sup>th</sup> day of April 2002  
 DIVISION OF WATER QUALITY

  
 Gregory J. Thorpe, Ph.D.  
 Acting Director

WQC No. 3377

Wetlands/401 Unit

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Gregory J. Thorpe, Ph.D., Acting Director

NORTH CAROLINA DEPARTMENT OF  
ENVIRONMENT AND NATURAL RESOURCES

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

In accordance with 15A NCAC 2H.0500, the North Carolina Department of Transportation is authorized to impact the waters of the State of North Carolina as indicated below for the purpose of constructing the US 64 bypass of Knightdale from I-440 (Raleigh Beltline) to existing US 64 near SR 1003, I-440 from 0.83 miles south of US 64 to Poole Road and a portion of the East Wake Expressway from existing US 64 to the proposed US 64 Bypass in Wake County (TIP R-2547), WQC Project No. 011689. 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.**

**COMPENSATORY MITIGATION REQUIREMENTS FOR WETLAND RESTORATION:**

**LOCATION:** US 64 bypass of Knightdale in Wake County  
**COUNTY:** Wake  
**BASIN/SUBBASIN:** Cape Fear, Cataloging Unit 03020201  
**DWQ No.:** 011689

As required by 15A NCAC 2H.0506, and the conditions of this certification, you are required to compensate for the above impacts through the restoration, creation, enhancement or preservation of wetlands and surface waters as outlined below prior to conducting any activities that impact or degrade waters of the state. Note: Acreage requirements proposed to be mitigated through the Wetland Restoration Program must be rounded to one-quarter increments according to 15A 2R.0503(b).

5801 linear feet of stream channel

83.75 acres of Neuse River Riparian Buffers

- \* One of the options you have available to satisfy the compensatory mitigation requirements is through payment of a fee to the Wetland Restoration Fund per 15A NCAC 2R.0503. If you choose this option, please sign this form and mail it to the Wetlands Restoration Fund at 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 WETLANDS RESTORATION PROGRAM.**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

WETLANDS RESTORATION PROGRAM  
DIVISION OF WATER QUALITY  
P.O. BOX 29535  
RALEIGH, NC. 27626-0535  
(919) 733-5208

Wetlands/401 Unit

1650 Mail Service Center

Raleigh, North Carolina 27699-1621

Telephone 919-733-1786

FAX 733-6893

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**MEMORANDUM OF AGREEMENT  
FOR RECOVERY OF SIGNIFICANT INFORMATION FROM  
ARCHAEOLOGICAL SITES 31WA1338, 31WA1352, 31WA1360, 31WA1391  
US 64 BYPASS From I-440 to US 64 west of Wendell and Eastern Wake  
Expressway from Existing US 64 to SR 1007 (Poole Road)  
TIP No. R-2547/R-2641  
State Project No. 8.1402202, Federal Project No. MAF-36-1 (33)  
Wake County, North Carolina**

Whereas, in accordance with 36 CFR Part 800, the Federal Highway Administration (FHWA) acknowledges and accepts the advice and conditions outlined in the Advisory Council on Historic Preservation's (Council) "Recommended Approach for Consultation on the Recovery of Significant Information from Archaeological Sites," published in the Federal Register (FR Doc. 99-12055) on May 17, 1999; and

Whereas, the consulting parties agree that recovery of significant information from the archaeological sites listed above may be done in accordance with the published guidance; and

Whereas, the consulting parties agree that it is in the public interest to expend funds for the recovery of significant information from these archaeological sites to mitigate the adverse effects of the project; and

Whereas, the consulting parties concur that no Indian Tribes or Native Hawaiian organizations attach religious or cultural importance to the affected property and no objections from such groups have been raised to the work proposed; and

Whereas, no human remains, associated or unassociated funerary objects or sacred objects, or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001), are expected to be encountered in the archaeological work;

Now, therefore, the FHWA shall ensure that the following terms and conditions will be implemented in a timely manner and with adequate resources in compliance with the National Historic Preservation Act of 1966 (16 U.S.C. 470).

#### **Stipulations**

1. FHWA will develop Data Recovery Plans for each site affected by the subject project in consultation with the North Carolina State Historic Preservation Officer (NCSHPO).
2. FHWA will ensure that the sequence of the four Data Recovery investigations will be established in consultation with the NCSHPO.
3. FHWA will ensure that the Data Recovery investigations will be completed after right of way acquisition and prior to construction activities within each sites location as shown in Appendix A.



4. Upon completion of the data recovery efforts for each site, FHWA will prepare and forward a management summary to the North Carolina State Historic Preservation Officer (NCSHPO) detailing the results of the data recovery field investigations. The management summary will contain sufficient information to demonstrate that the field investigation portion of the data recovery plan has been implemented.
5. Upon receipt of the management summary the NCSHPO will respond within 10 days to the recommendations contained within the document.
6. Upon acceptance of the recommendations contained in the Management summary, the NCSHPO will issue FHWA documentation that the data recovery field investigations have been completed.
7. The analysis and individual report preparation detailing sites 31WA1338, 31WA1352, 31WA1360 and 31WA1391 will be completed by FHWA within 12 months after completion of the field work.

#### OTHER TERMS AND CONDITIONS:

Modification, amendment, or termination of this agreement as necessary shall be accomplished by the signatories in the same manner as the original agreement. Disputes regarding the completion of the terms of this agreement shall be resolved by the signatories. If the signatories cannot agree regarding a dispute, any one of the signatories may request the participation of the Council to assist in resolving the dispute.

This agreement shall be null and void if its terms are not carried out within 5 (five) years from the date of its execution, unless the signatories agree in writing to an extension for carrying out its terms.

Federal Highway Administration Official

for Michael C. Dawson Date 7/17/01  
Nicholas L. Graf, Division Administrator

North Carolina State Historic Preservation Officer

Jeffrey J. Crow Date 10/8/01  
Jeffrey J. Crow, State Historic Preservation Officer

North Carolina Department of Transportation

William D. Gilmore Date: \_\_\_\_\_  
William D. Gilmore, PE, Manager  
Project Development and Environmental Analysis Branch

SPECIAL CONDITIONS (Action ID. 2002-2-0819; NCDOT/TIP R-2547/R-2641)

a. All work authorized by this permit must be prepared in strict compliance with the attached plans, which are a part of this permit.

b. The permittee shall mitigate for 12.95 acres of unavoidable impacts to wetlands, and 7,815 linear feet of impact to important streams, for the project, as described below (4.4 acres of wetland restoration at the Marks Creek, Phase II, mitigation site, 8.6 acres of wetland restoration at the Benson Grove Church Mitigation Site, 28.6 acres of wetlands preservation, along with upland buffer, preservation, at the Mingo Creek mitigation site, 1,321 linear feet of onsite stream relocation, and 6,254 linear feet of stream mitigation and 83.75 acres of stream buffer mitigation through the North Carolina Wetlands Restoration Program (NCWRP), in the upper Neuse River basin (Cataloging Unit 03020201)).

MARKS CREEK WETLANDS RESTORATION

\*c. The permittee shall implement the compensatory wetland mitigation plan entitled "Stream and Wetland Mitigation Plan, Marks Creek, Phase II" dated September, 2001, to provide the restoration described in condition d. below.

\*d. The permittee shall mitigate for 2.2 acres of unavoidable impacts to wetlands associated with this project with 4.4 acres of wetland restoration, at the Marks Creek, Phase II Mitigation Site.

\*e. NCDOT will do a boundary survey of the 4.4 acres of wetland restoration at the Marks Creek, Phase II Mitigation Site, and submit a copy of the survey to the District Engineer within 90 days after construction of the site is completed.

\*f. The permittee will monitor the site vegetation between June 1 and November 30, inclusively, of each year, and document plant mortality and stress. A minimum of two 0.05 acre sample plots will be established within each planting zone, and will be placed randomly within representative positions in the restoration area. The permittee will continue monitoring of the planting areas annually until the respective performance criteria are met, as described below.

BENSON GROVE CHURCH WETLANDS RESTORATION

\*g. The permittee shall implement the compensatory wetland mitigation plan entitled "Benson Grove Church Wetland Mitigation Plan" dated October 4, 2001, to provide the restoration described in condition h. below.

\*h. The permittee shall mitigate for 4.3 acres of unavoidable impacts to wetlands associated with this project with 8.6 acres of wetland restoration, at the Benson Grove Church Mitigation Site.

\*i. NCDOT will do a boundary survey of the 8.6 acres of wetland restoration at the Benson Grove Church Mitigation Site, and submit a copy of the survey to the District Engineer within 90 days after construction of the site is completed.

\*j. The permittee will monitor the site vegetation between June 1 and November 30, inclusively, of each year, and document plant mortality and stress. A minimum of one 0.05 acre sample plot will be used, and will be placed randomly within a representative position in the 8.6 acre restoration area. The permittee will continue monitoring of the planting areas annually until the respective performance criteria are met, as described below.

#### MARKS CREEK AND BENSON GROVE CHURCH MITIGATION MONITORING

\*k. Performance criteria for tree planting areas will be met if sample plots demonstrate that for each of the first three complete years of monitoring, 320 target-species trees per acre have survived, such that at the end of three years, 320 three-year old target-species trees per acre have survived on the site, and, in years four and five, 288 and 260 trees per acre, respectively, have survived on the site, such that at the end of year five, 260 five-year old target-species trees per acre have survived on the site.

\*l. If for any monitoring year, vegetation survival is not favorable, as determined by the Corps of Engineers, any remedial action required by the Corps of Engineers will be performed, the required restoration areas will be replanted, and the five-year monitoring period will begin again with year one.

\*m. Hydrology in the restoration areas will be monitored through the use of monitoring gauges during each growing season for the first five years of the vegetative monitoring, or until performance criteria have been met, whichever occurs later. A minimum of 11 groundwater gauges, and 3 surface water gauges, will be used within the total wetland restoration/creation area at Marks Creek, Phase II, and a minimum of fourteen gauges will be used within the wetland restoration area at Benson Grove Church.

\*n. To meet the hydrology success criteria, the monitoring data must show that for each normal precipitation year within the monitoring period, the site has been inundated or saturated within the upper 12 inches of the soil for a minimum of 12.5% of the growing season (28 consecutive days for Wake County; 29 consecutive days for Johnston County). WETS tables for Wake County and Johnston County will be utilized as appropriate to determine normal precipitation years.

\* o. If there are no normal precipitation years during the first five years of monitoring, to meet performance criteria, the permittee will continue to monitor hydrology on the site until it shows that the site has been inundated or saturated as described above during a normal precipitation year.

\* p. In the alternative, and at the Corps' discretion, a site may be found to meet the hydrology performance criteria on the basis of comparison of monitoring data taken from the site with monitoring data taken from an established jurisdictional mitigation reference site approved by the Corps. The Corps retains the discretion to find that the hydrology criteria are met if such monitoring data from the mitigation site and the reference site are substantially the same. This finding by the Corps may be made during years with or without normal rainfall.

\* q. In the event there are years of normal precipitation during the monitoring period, and the data for those years do not show that the site has been inundated or saturated within the upper 12 inches of the soil for a minimum of 12.5 % of the growing season (28 or 29 consecutive days) during a normal precipitation year, the Corps may require remedial action. The permittee shall perform such required remedial action, and continue to monitor hydrology on the site until it displays that the site has been inundated or saturated as described above, during a normal precipitation year. If the Corps determines that further remediation is not appropriate, other options will be considered, including use of a different site to mitigate for project impacts.

\* r. The permittee will submit yearly mitigation monitoring reports by the first day of February after each assessment period, for five years following final site manipulation. These reports will include, at a minimum, sample plot, well and rainfall data; number of individuals of each tree species within each sample plot; photographs, including a location key; and problems/resolution, and will be provided to both the Corps and the North Carolina Division of Water Quality.

#### MINGO CREEK WETLANDS PRESERVATION

\* s. The permittee shall implement the compensatory wetland mitigation plan entitled "Restoration and Conservation Management Plan for the Mingo Creek Mitigation Site" dated September, 2001, to provide the preservation described in condition d. below.

\* t. The permittee shall mitigate for 6.5 acres of unavoidable impacts to wetlands associated with this project with 28.6 acres of wetland preservation, and additional upland buffer preservation, at the Mingo Creek Mitigation Site.

\* u. NCDOT will do a boundary survey of the 205 acres of wetland preservation and upland buffer preservation at the Mingo Creek Mitigation Site, and submit a copy of the survey to the District Engineer within 90 days after this permit is issued.

GENERAL WETLANDS MITIGATION

\*v. All site preparation activities at the Marks Creek and Benson Grove Church Mitigation Sites shall be completed by March 15, 2003. An "as built" plan, which describes the completed mitigation project, including variations from the original plan, location of sample plots, location of monitoring gauges, final project elevations, and photographs, including a location key, shall be submitted to the District Engineer within 60 days of wetland mitigation planting.

\*w. The permittee and subsequent property owners shall maintain the Marks Creek, Benson Grove Church and Mingo Creek Mitigation Sites in their natural condition, as altered by work in the mitigation plans, in perpetuity. Prohibited activities within the mitigation sites specifically include, but are not limited to: the construction or placement of roads, walkways, buildings, signs, or structures of any kind (i.e., billboards, interior fences, etc.); filling, grading, excavation, leveling, or any other earth moving activity or activity that may alter the drainage patterns on the property; the cutting, mowing, destruction, removal, or other damage of any vegetation; disposal or storage of any debris, trash, garbage, or other waste material; except as may be authorized by the mitigation plans, or subsequent modifications that are approved by the Corps of Engineers. In addition, the permittee shall take no action, whether on or off the mitigation properties, which will adversely impact the wetlands on the mitigation properties, except as specifically authorized by this permit, or subsequent modifications that are approved by the Corps of Engineers.

\*x. The permittee shall make every effort to convey the Marks Creek, Benson Grove Church and Mingo Creek Mitigation Site properties to a nonprofit conservation organization or a natural resource agency, which is willing to hold the areas in perpetuity for conservation purposes, and which is acceptable to the Corps of Engineers. The annual monitoring reports, as required, will include the status of the conveyance efforts.

\*y. The permittee shall not sell or otherwise convey any interest in the properties used to satisfy mitigation requirements for this permit, to any third party, without 10 days prior notification to Wilmington District Corps of Engineers in writing, which writing shall reference this permit Action ID number.

\*z. Any sale, lease, or other conveyance of the mitigation site properties shall include restrictions on the use of the properties as described in condition y. above, which conditions shall be enforced by the North Carolina Department of Transportation. Such restrictions shall include language providing for third party enforcement rights in favor of the Corps of Engineers. Such restrictions must be approved prior to conveyance by the Corps of Engineers.

## ONSITE STREAM RELOCATION

aa. The permittee shall mitigate for 1,321 linear feet of unavoidable impacts to important stream channel associated with this project by completing 1,321 linear feet of onsite stream relocation, as described in the permit application. The stream relocation shall be constructed in accordance with the North Carolina Wildlife Resources Commission's (NCWRC) "Stream Relocation Guidelines", and with the attached permit drawings. NCDOT shall consult with NCWRC on all stream relocations 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 relocations will be constructed in a dry work area, and NCDOT shall ensure that the stream channel is sufficiently stabilized prior to the diversion of water into the new channel.

\*bb. The permittee shall visually monitor the vegetative plantings on all mitigation stream banks to assess and insure complete stabilization of the mitigation stream segments. This monitoring shall include adequate visual monitoring of planted vegetation quarterly for a minimum of two years after final planting, and appropriate remedial actions (e.g., replanting, streambank grading, etc.). If within any monitoring year, bank stabilization is not acceptable as determined by the Corps of Engineers, and remedial action required by the Corps of Engineers is performed, the two year monitoring of the affected portions of the stream will begin again. The permittee will coordinate stream mitigation activities with the Corps of Engineers, Raleigh Regulatory Field Office Project Manager, and will report verbally on the status of the stream mitigation within thirty days of the quarterly monitoring. The permittee will submit a brief written report with representative photographs within 90 days after the monitoring year is completed.

## NCWRP STREAM MITIGATION

\*cc. The permittee shall mitigate for 6,254 linear feet of unavoidable impacts to important stream channel associated with this project by payment to the North Carolina Wetlands Restoration Program (NCWRP) in an amount determined by the NCWRP sufficient to perform 6,254 linear feet of warm water stream mitigation, or the equivalent water quality improvement projects, as approved by the Corps of Engineers, and 83.75 acres of stream buffer mitigation, in the upper Neuse River basin (Cataloging Unit 03020201). Construction within streams on the permitted highway project shall begin only after the permittee has made full payment to the NCWRP, and the NCWRP has made written confirmation to the District Engineer, that it agrees to accept responsibility for the mitigation work required, pursuant to Paragraph IV.D. of the Memorandum of Understanding between the North Carolina Department of Environment and Natural Resources and the U.S. Army Corps of Engineers, Wilmington District, dated November 4, 1998.

GENERAL MITIGATION

\* dd. The permittee shall contact the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager for this project, to provide that individual with the opportunity to attend the yearly mitigation monitoring efforts.

\* ee. Failure to institute and carry out the details of special conditions a. - dd., above, will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project, or such other remedy as the District Engineer or his authorized representatives may seek.

**OTHER CONDITIONS**

\* ff. When final design plans are completed for TIP R-2641 (Eastern Wake Expressway from existing US 64 to US 64 Bypass), any necessary permit modifications shall be submitted to the District Engineer and the North Carolina Division of Water Quality (NCDWQ). If necessary, a public notice will be circulated for review. Final designs shall reflect all appropriate avoidance, minimization, and a compensatory mitigation plan for impacts within streams and wetlands. Construction within streams and wetlands on TIP R-2641 shall begin only after approval by the District Engineer of the modified impacts.

gg. NCDOT shall use "High Quality Waters" sedimentation and erosion control measures throughout the entire project.

hh. Prior to commencing construction within jurisdictional waters of the United States, the permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings are acceptable.

\* ii. The permittee shall schedule a meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands, to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meeting in order to provide that individual with ample opportunity to schedule and participate in the required meeting.

jj. The permittee and its contractors and/or agents shall not excavate, fill, or perform mechanized landclearing 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, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project.

kk. To ensure that all borrow and waste activities occur on high ground, 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 the preceding condition (jj.) 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 information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the preceding condition (jj.). All information will be available to the Corps of Engineers upon request.

ll. The permittee shall comply with the conditions specified in the water quality certification, No. 3377, issued by the North Carolina Division of Water Quality on April 10, 2002.

mm. The permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate turbidity water quality standard (50 NTU's in all streams and rivers, and 25 NTU's in all lakes).

nn. The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

oo. The permittee shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened.

7  
pp. The permittee shall ensure compliance with the stipulations (excepting stipulations 5 and 6) set forth in the Memorandum of Agreement (MOA) between the Federal Highway Administration, the North Carolina State Historic Preservation Officer, and the North Carolina Department of Transportation. The permittee shall complete the requirements of the stipulations of the MOA prior to completion of construction of that section of the highway project which affects the particular archaeological sites; A copy of the Memorandum of Agreement is attached.

qq. If the permittee discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he will immediately notify the Wilmington District Engineer who will initiate the required State/Federal coordination.



rr. No excavated or fill material will be placed at any time in waters or wetlands outside the permitted construction areas, nor will it be placed in any location or in any manner so as to impair surface water flow into or out of any wetland area.

ss. The permittee will maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without transferring it to a third party.

tt. All fill material will be clean and free of any pollutants except in trace quantities. Metal products, organic materials, or unsightly debris will not be used.

uu. This Department of the Army permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

vv. This permit does not grant any property rights or exclusive privileges.

ww. In issuing this permit, the Federal Government does not assume any liability for:

1. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

2. Damages to the permitted project or uses thereof as a result of current or future Federal activities initiated on behalf of the general public.

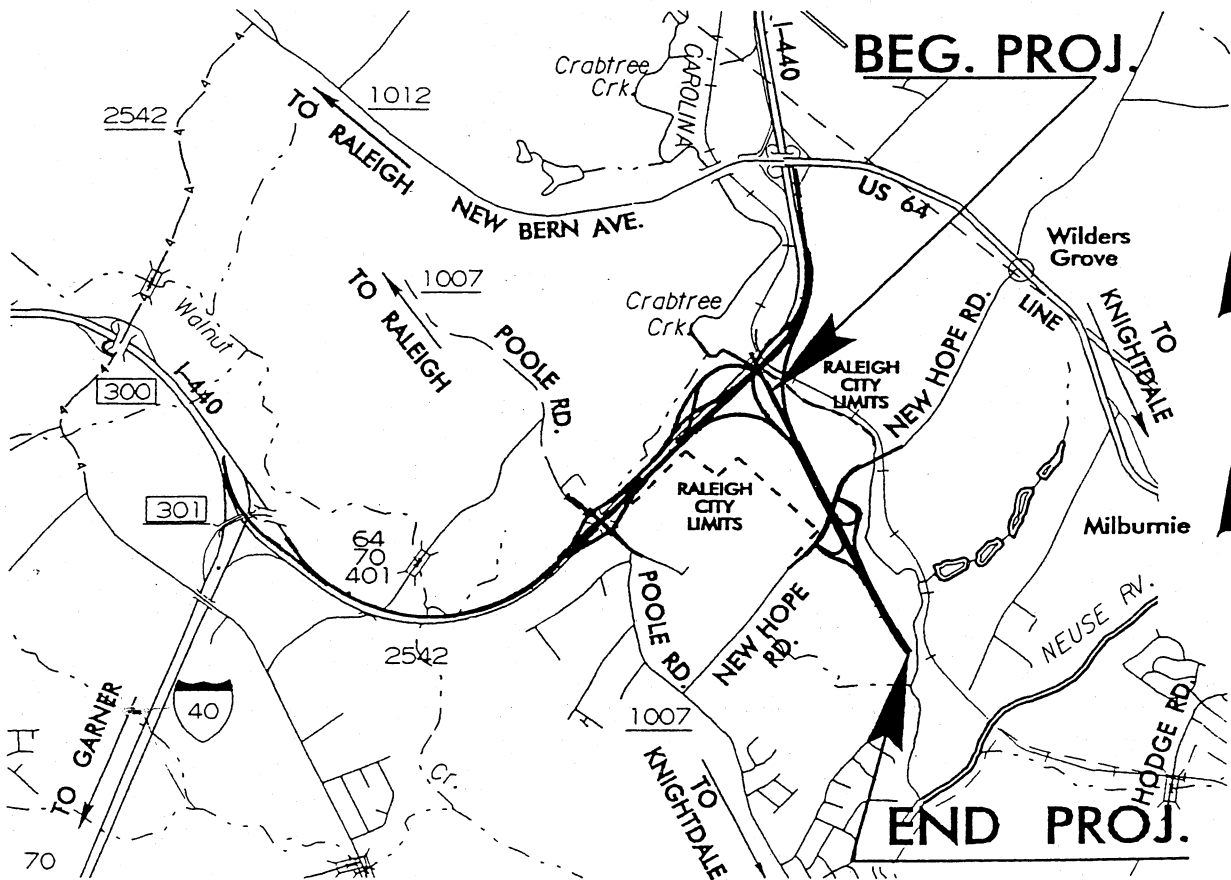
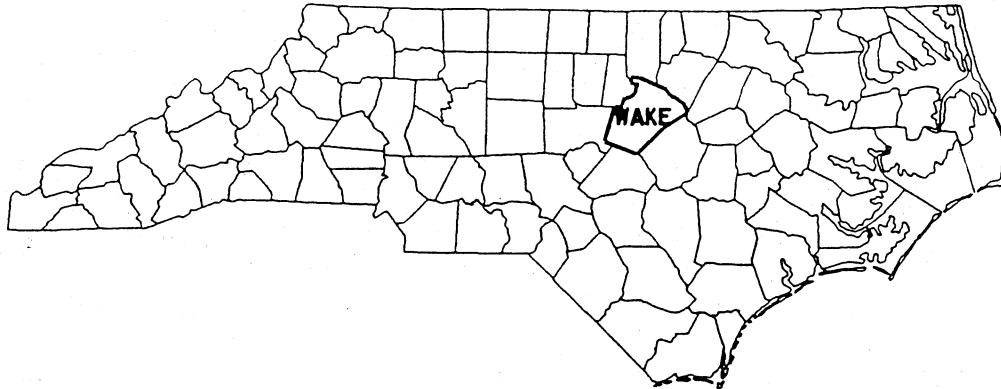
3. Damages to other permitted or unpermitted activities or structures caused by the authorized activity.

4. Design and construction deficiencies associated with the permitted work.

5. Damage claims associated with any future modification, suspension, or revocation of this permit.



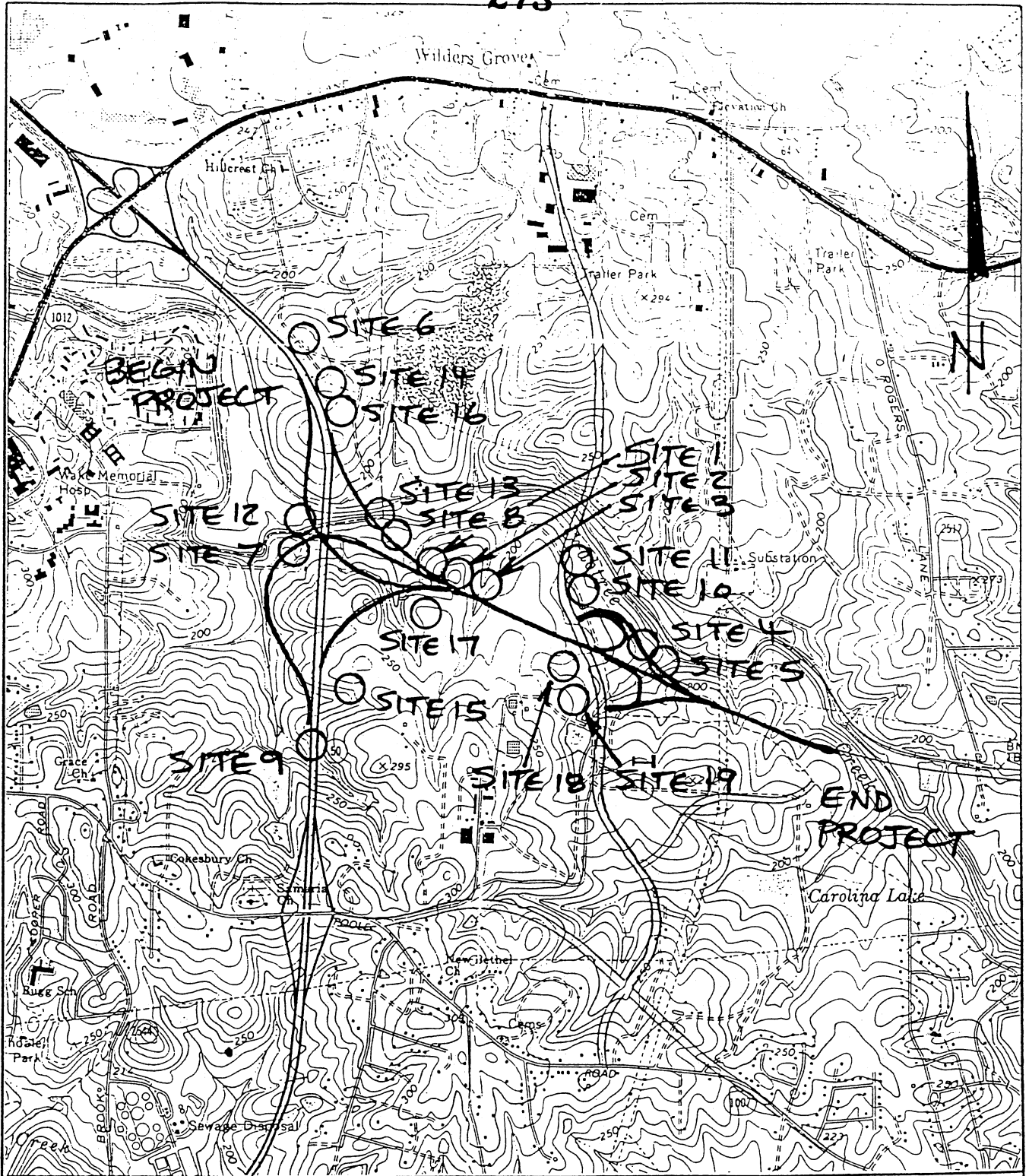
# NORTH CAROLINA



# VICINITY MAP

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

PROJECT: 8.1402202 (R-2547BA)  
US 64 BYPASS FROM I-440 TO  
NEW HOPE ROAD



# SITE MAP


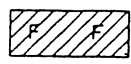
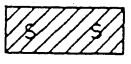
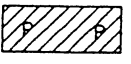
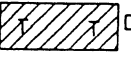


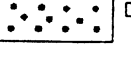

N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY

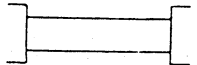
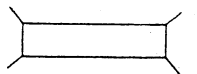
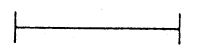
PROJECT: 8.1402202 (R-2547BA)

US 64 BYPASS FROM I-440 TO  
 NEW HOPE ROAD




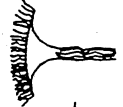


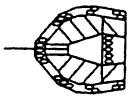
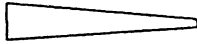
SHEET 3 OF 25 6/22/2001

# LEGEND

- WLB — WETLAND BOUNDARY
-  WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY FILL IN SURFACE WATERS
-  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
- X X X LIVE STAKES
-  BOULDER
- — CORE FIBER ROLLS
- 5 ADJACENT PROPERTY OWNER OR PARCEL NUMBER

-  PROPOSED BRIDGE
-  PROPOSED BOX CULVERT
-  PROPOSED PIPE CULVERT

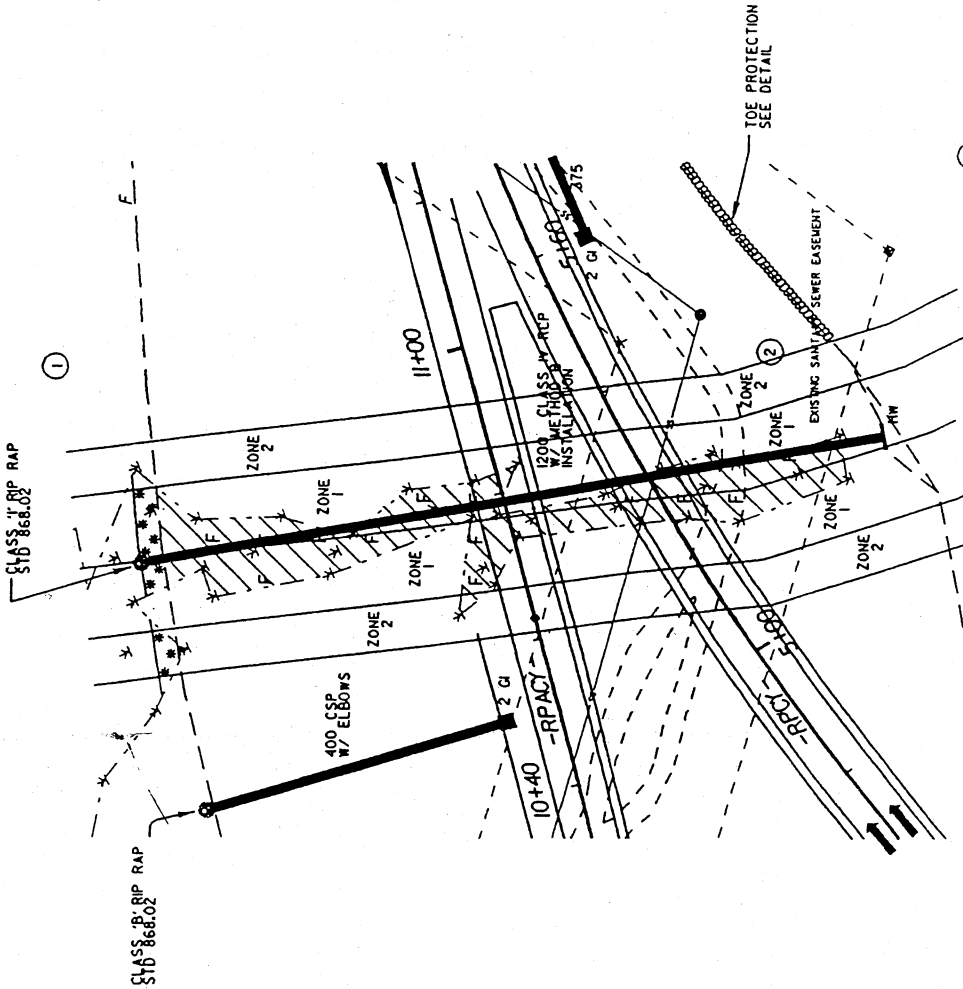
(DASHED LINES DENOTE EXISTING STRUCTURES)

-  SINGLE TREE
-  WOODS LINE
-  DRAINAGE INLET
-  ROOTWAD
-  VORTEX ROCK WEIR
-  RIP RAP
-  RIP RAP ENERGY DISSIPATOR BASIN
-  VANE

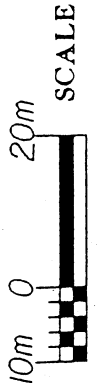
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 NEW HOPE ROAD

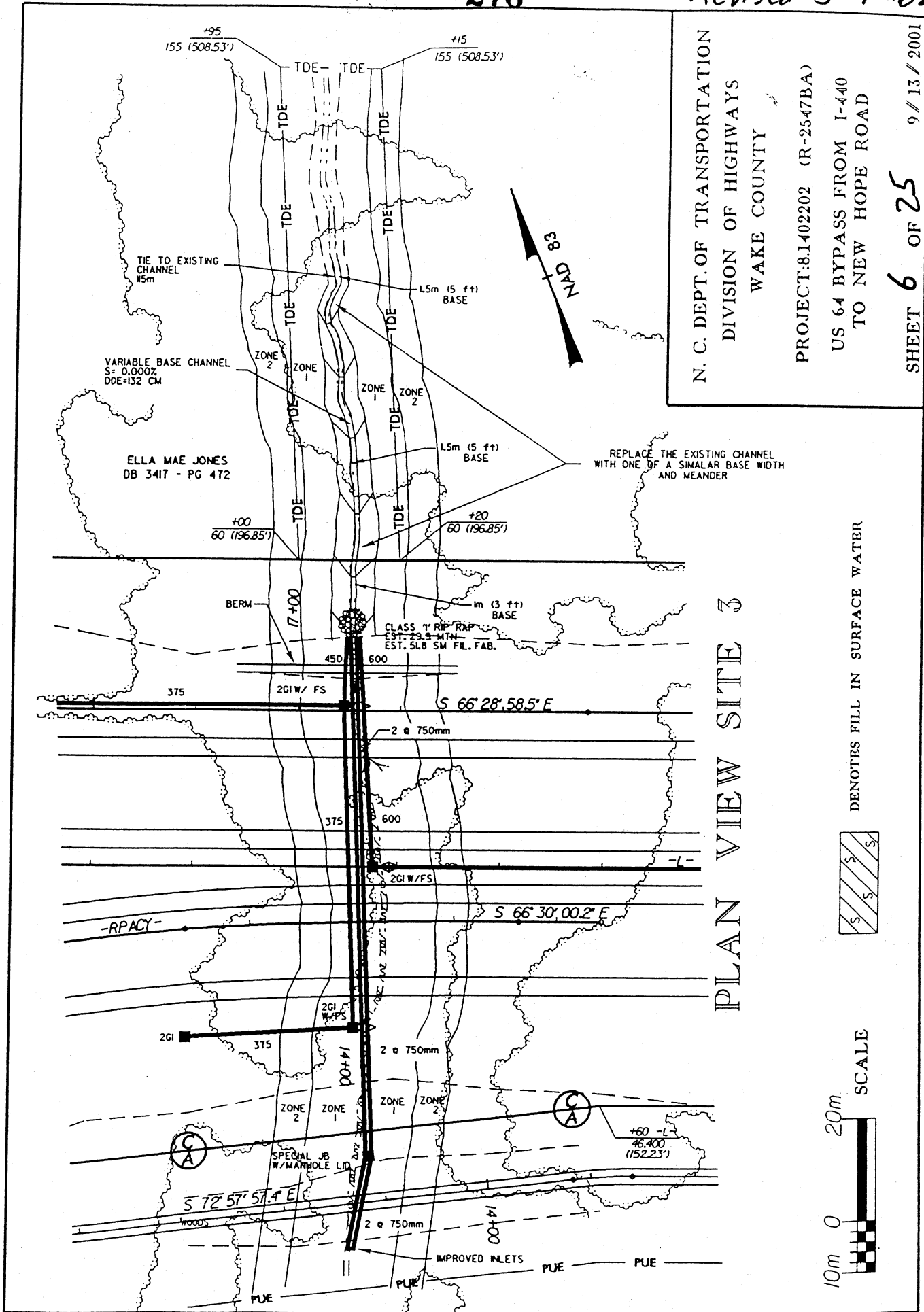
N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 81402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

SHEET 5 OF 25 6/22/2001



PLAN VIEW  
 SITE 1

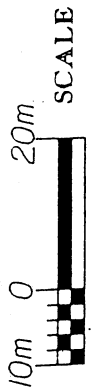
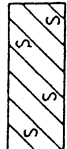


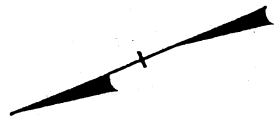
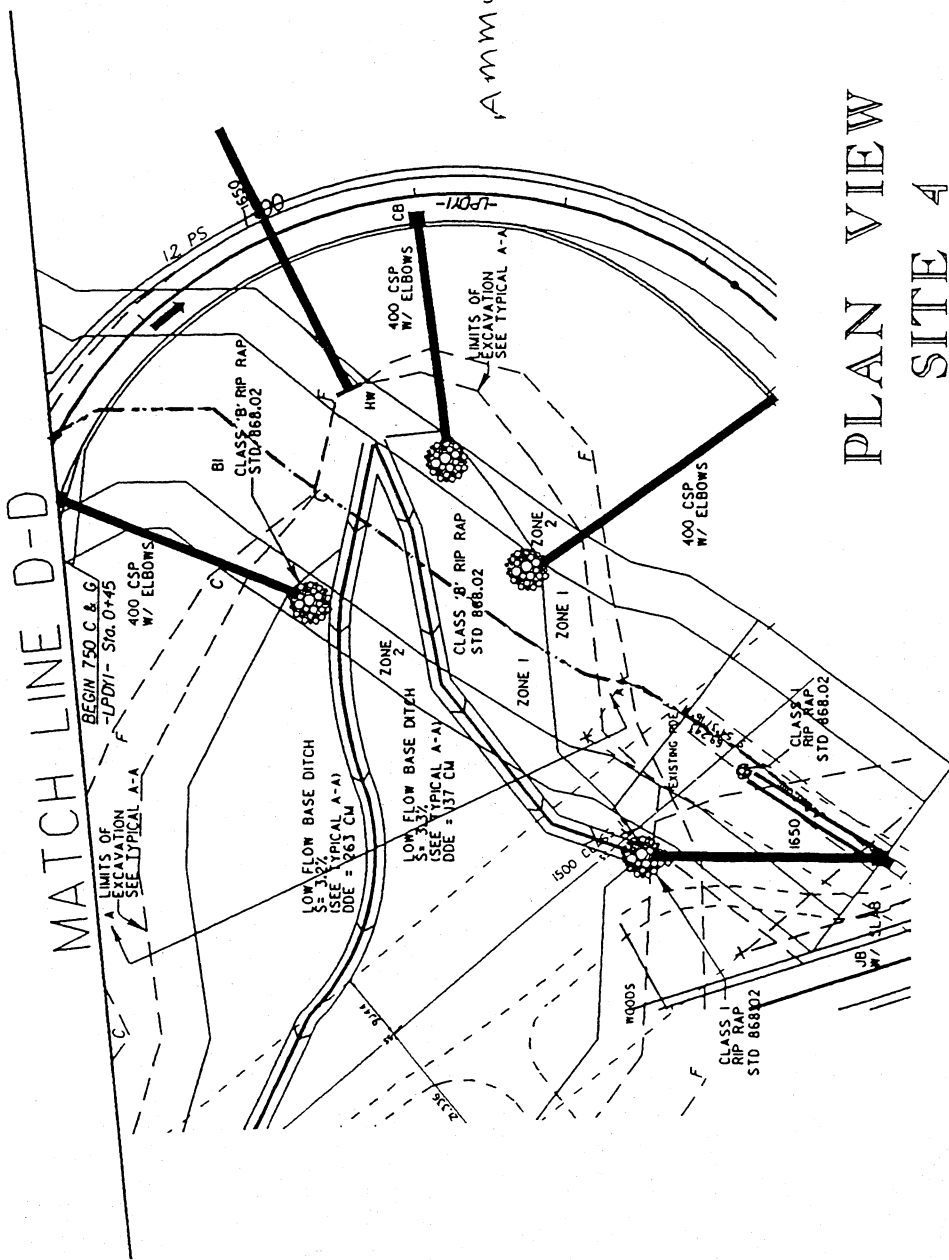


N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD  
 SHEET 6 OF 25 9/13/2001

PLAN VIEW SITE 3

DENOTES FILL IN SURFACE WATER



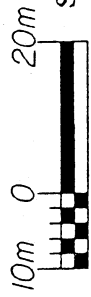


AMMON EAST CORP.

N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

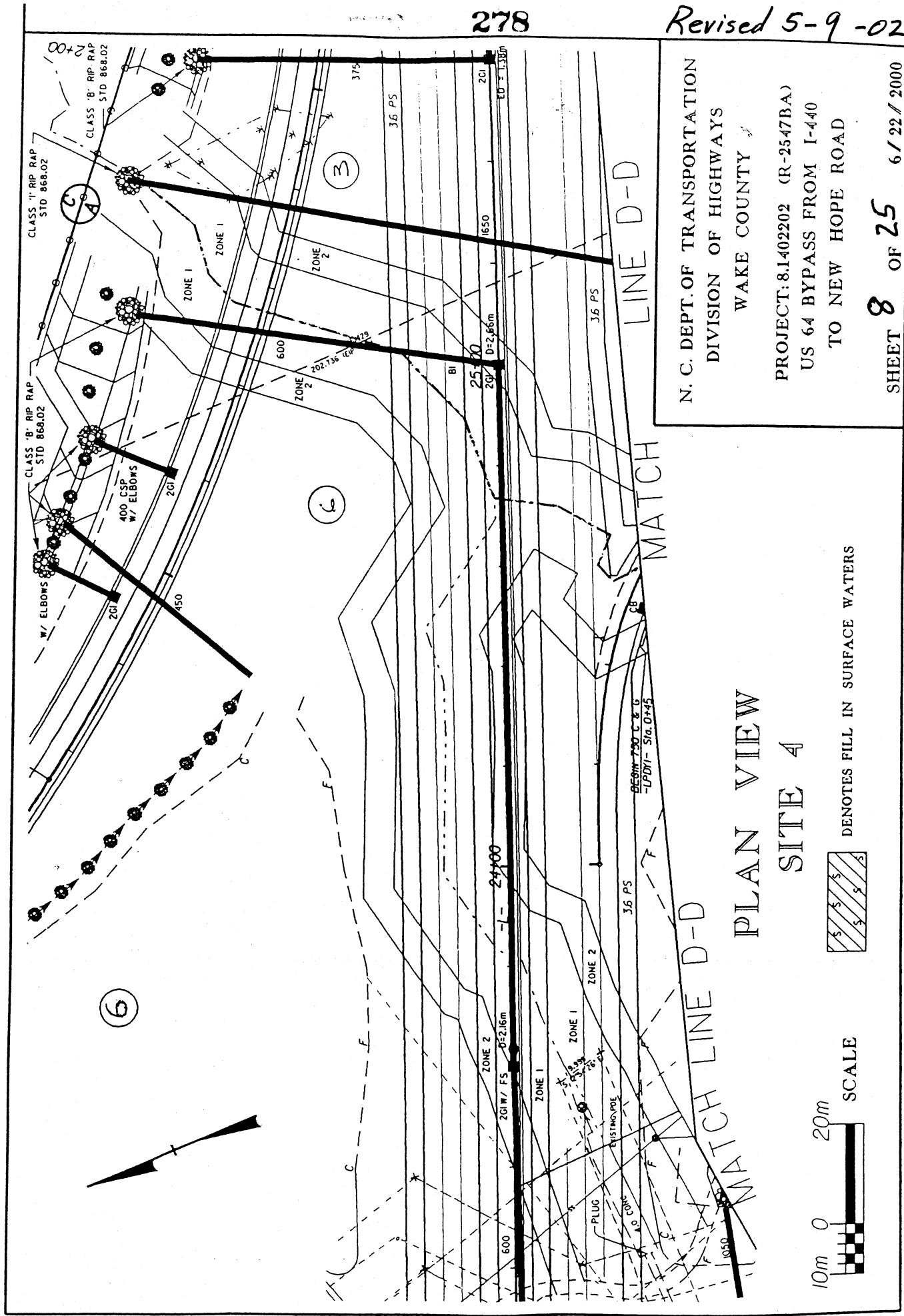
SHEET 7 OF 25 6/22/2001

PLAN VIEW  
 SITE 4



DENOTES FILL IN SURFACE WATERS





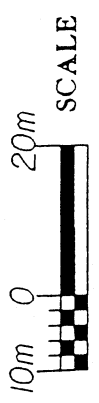
N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY

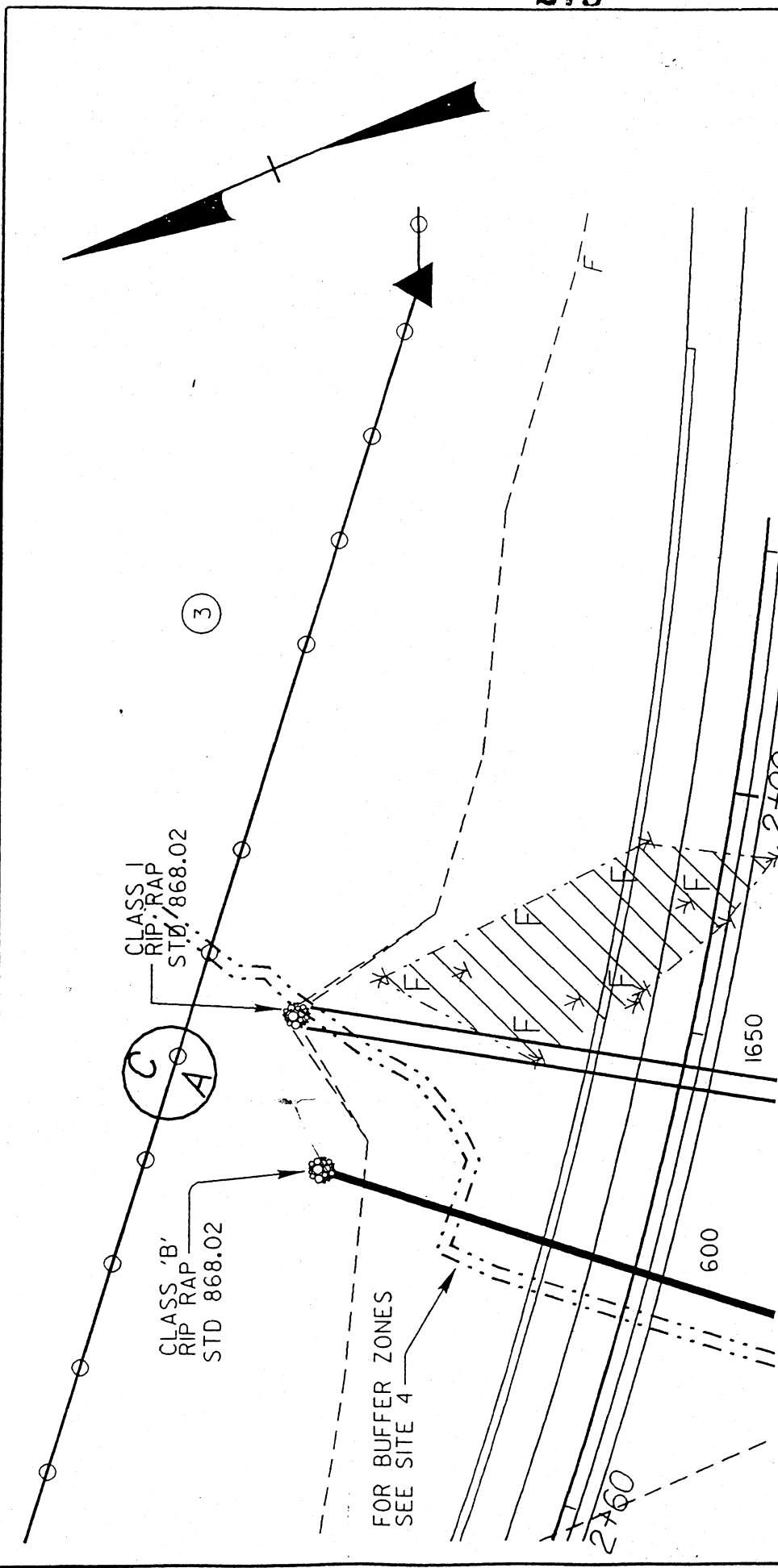
PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

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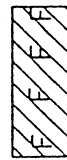
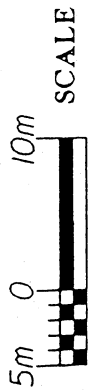
PLAN VIEW  
 SITE 4

□ DENOTES FILL IN SURFACE WATERS





### PLAN VIEW SITE 5

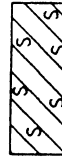


DENOTES FILL IN WETLANDS

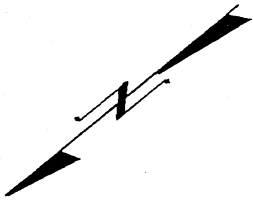
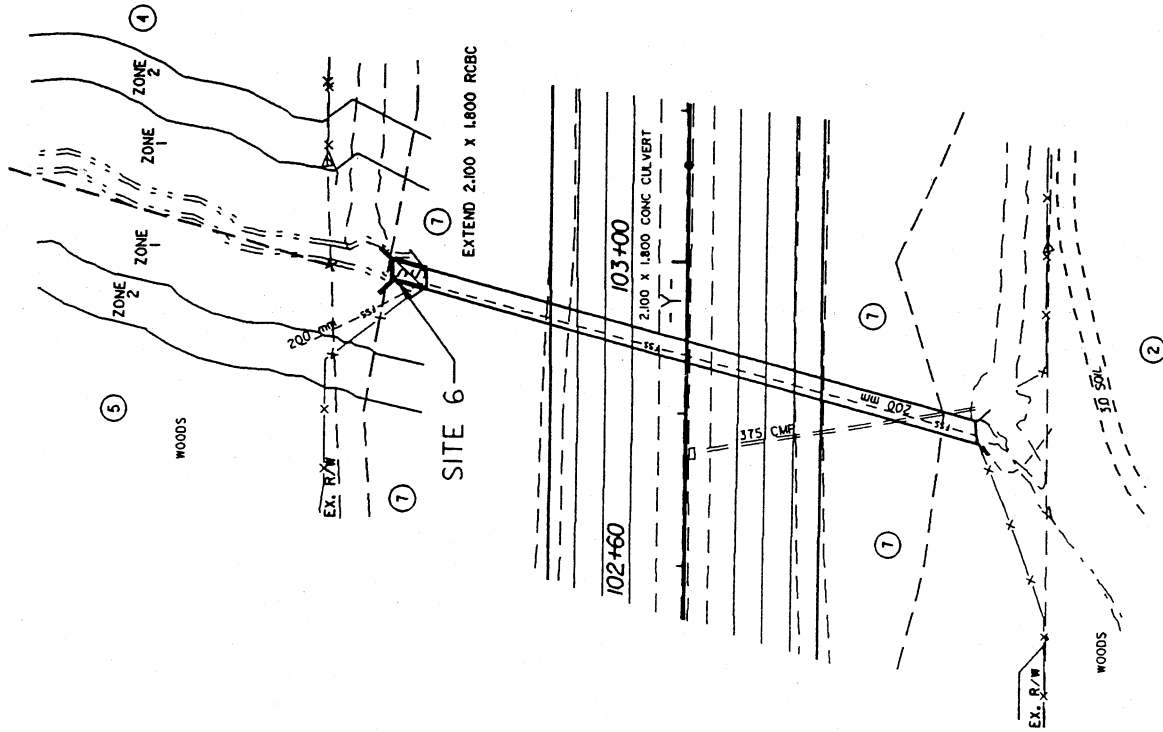
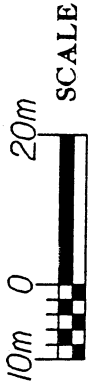
N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD  
 SHEET 9 OF 25 6/22/2001

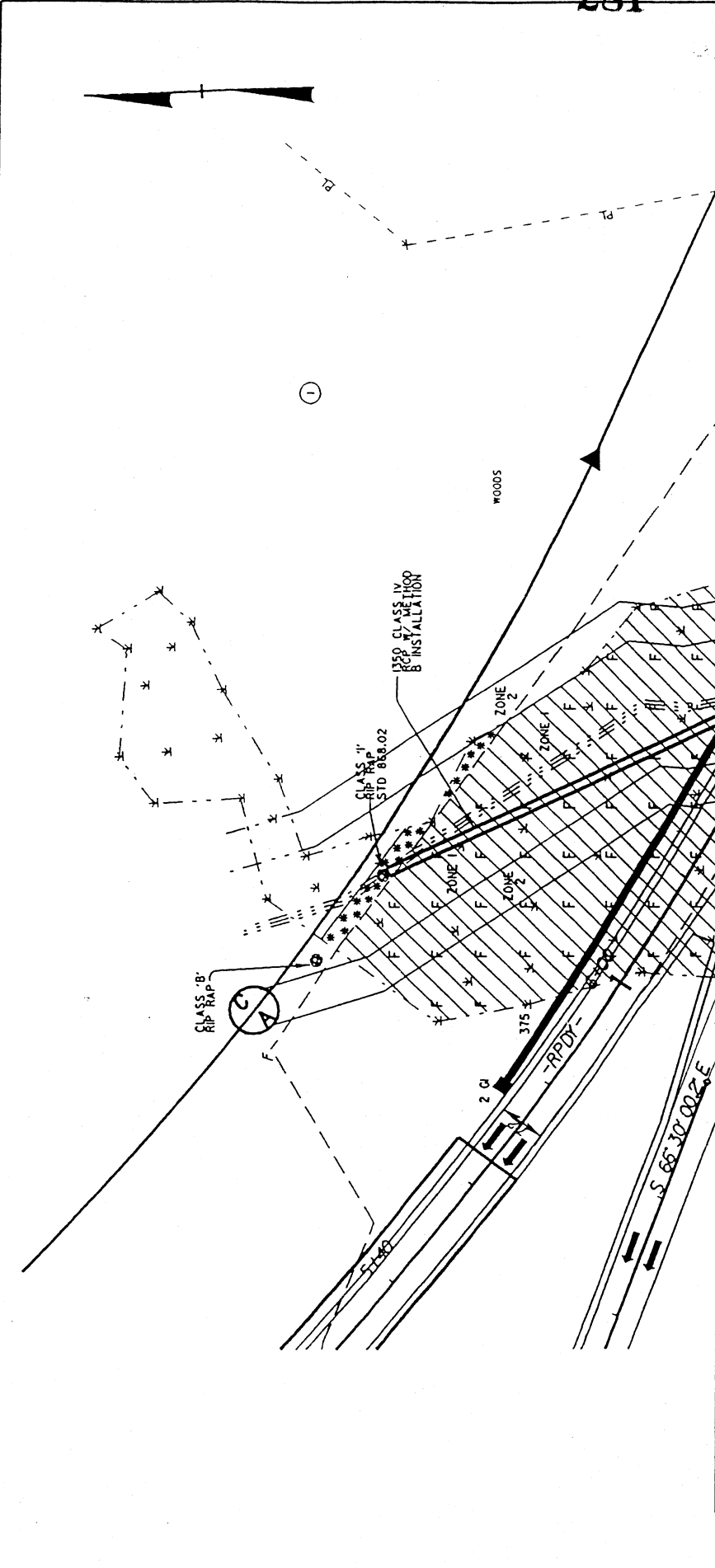
# PLAN VIEW SITE 6

DENOTES FILL IN SURFACE WATER



N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
WAKE COUNTY  
PROJECT: 8.1402202 (R-2547BA)  
US 64 BYPASS FROM I-440  
TO NEW HOPE ROAD  
SHEET 10 OF 25 10/09/01

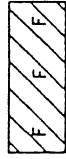
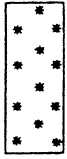


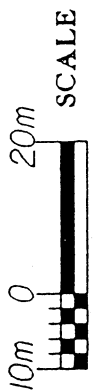


MATCH LINE C-C

# PLAN VIEW

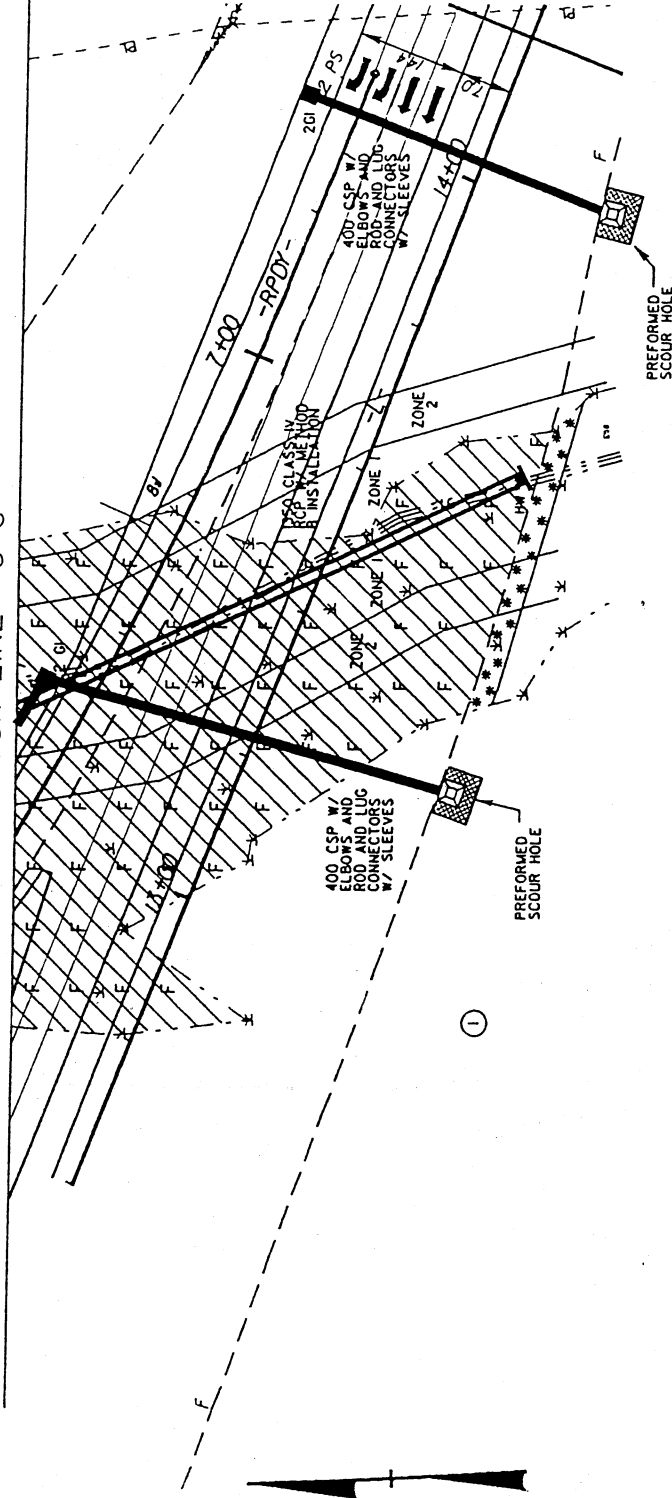
## SITE 8

 DENOTES FILL IN WETLANDS  
 DENOTES MECHANIZED CLEARING

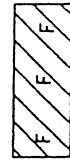


N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD  
 SHEET 11 OF 25 6 / 22 / 2001

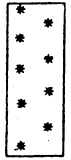
MATCH LINE C-C



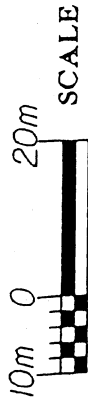
# PLAN VIEW SITE 8



DENOTES FILL IN WETLANDS



DENOTES MECHANIZED CLEARING



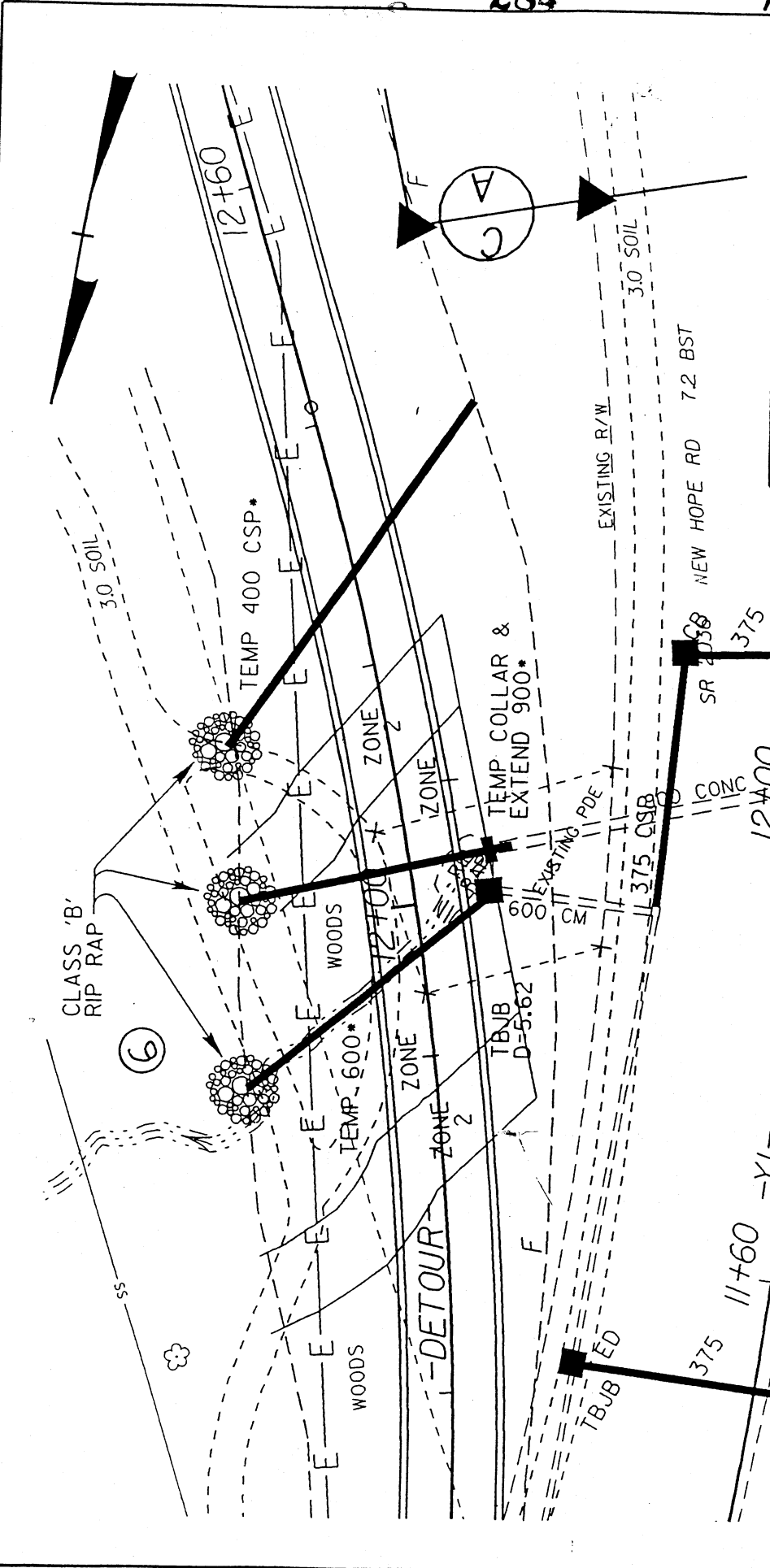
N. C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
WAKE COUNTY

PROJECT: 8.14402202 (R-2547BA)

US 64 BYPASS FROM I-440  
TO NEW HOPE ROAD

SHEET 12 OF 25 3/18/2002



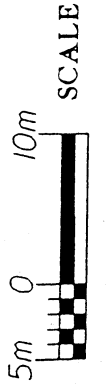


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 DIVISION OF HIGHWAYS  
 WAKE COUNTY

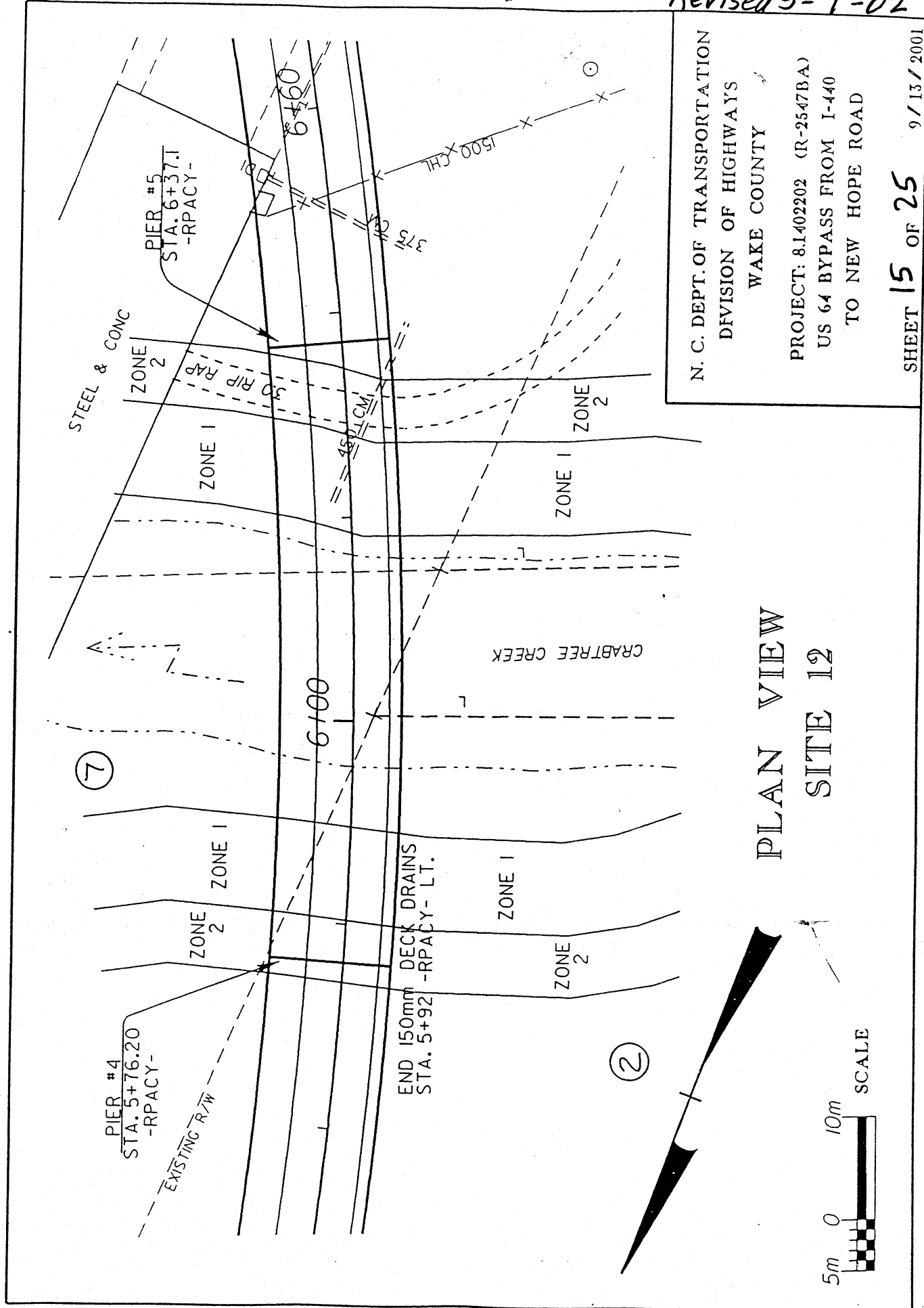
PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

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PLAN VIEW  
 SITE II



SCALE \* TEMPORARY DRAINAGE STRUCTURES WILL BE REMOVED AFTER THE DETOUR IS REMOVED



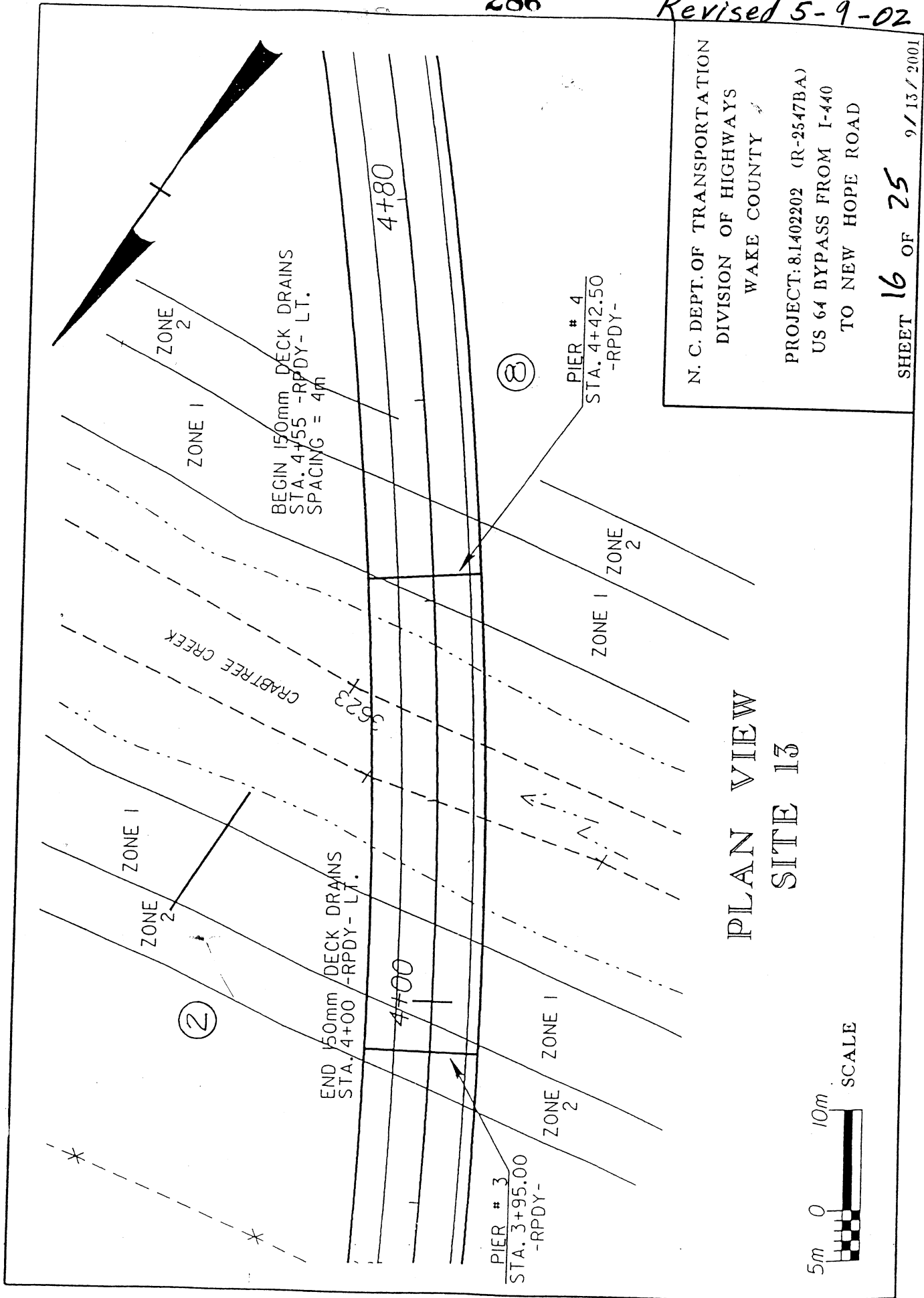
N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY

PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

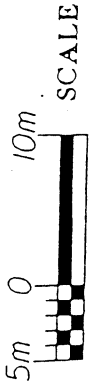
SHEET 15 OF 25 9/13/2001

PLAN VIEW  
 SITE 12





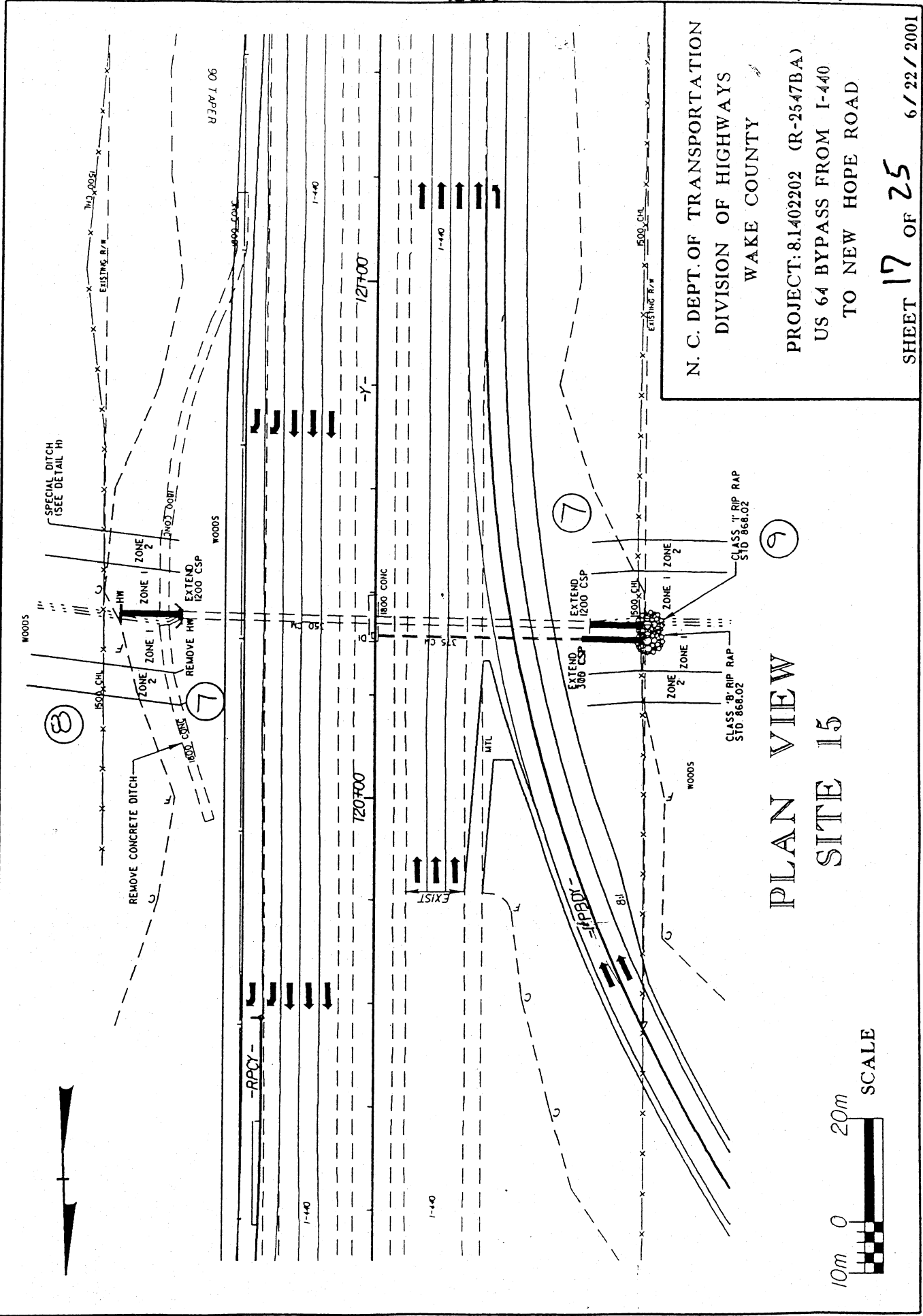
PLAN VIEW  
SITE 13



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

PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

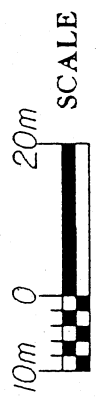
SHEET 16 OF 25 9/13/2001

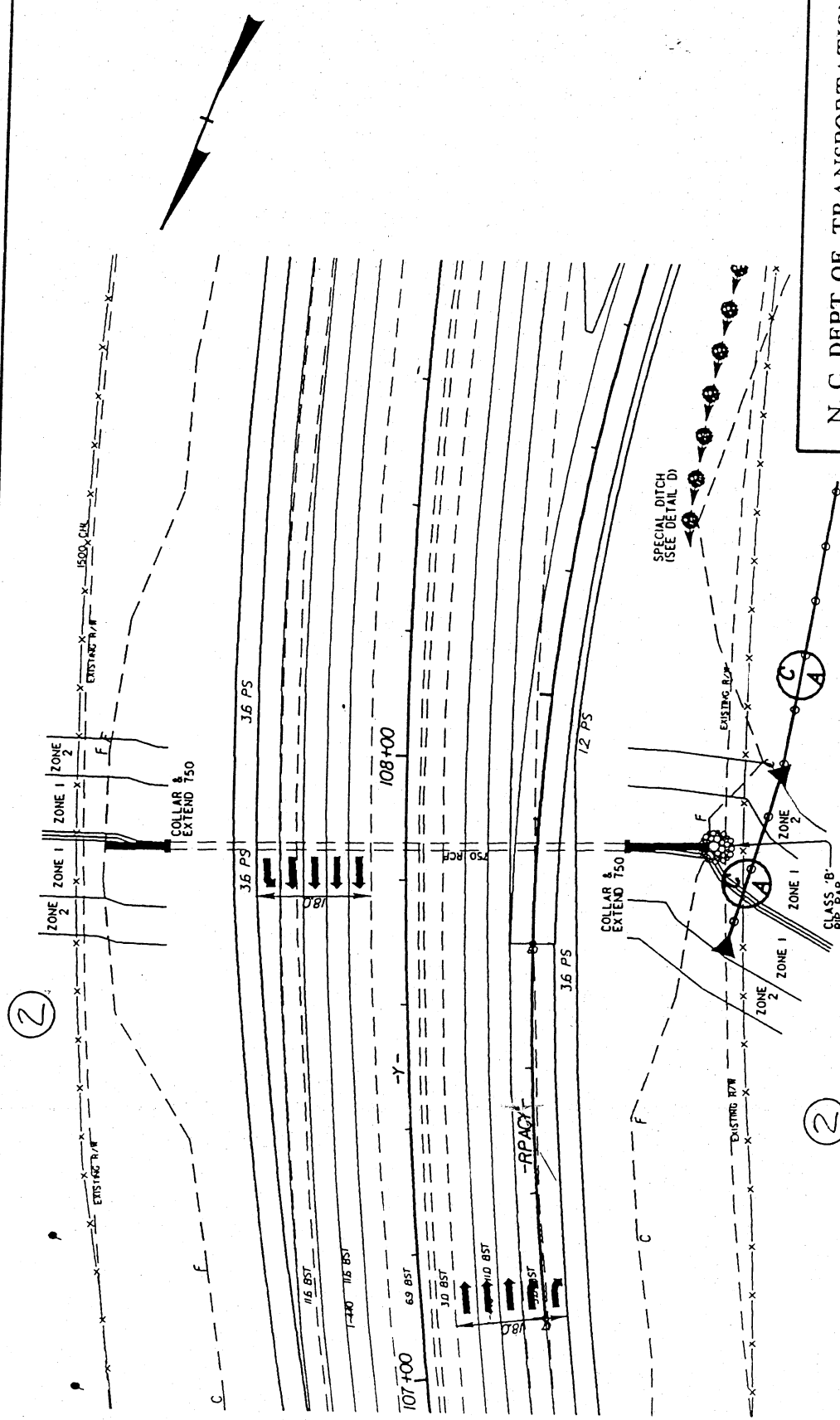


N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 81402302 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

SHEET 17 OF 25 6/22/2001

PLAN VIEW  
 SITE 15

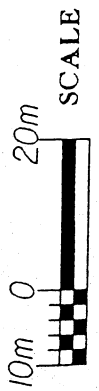




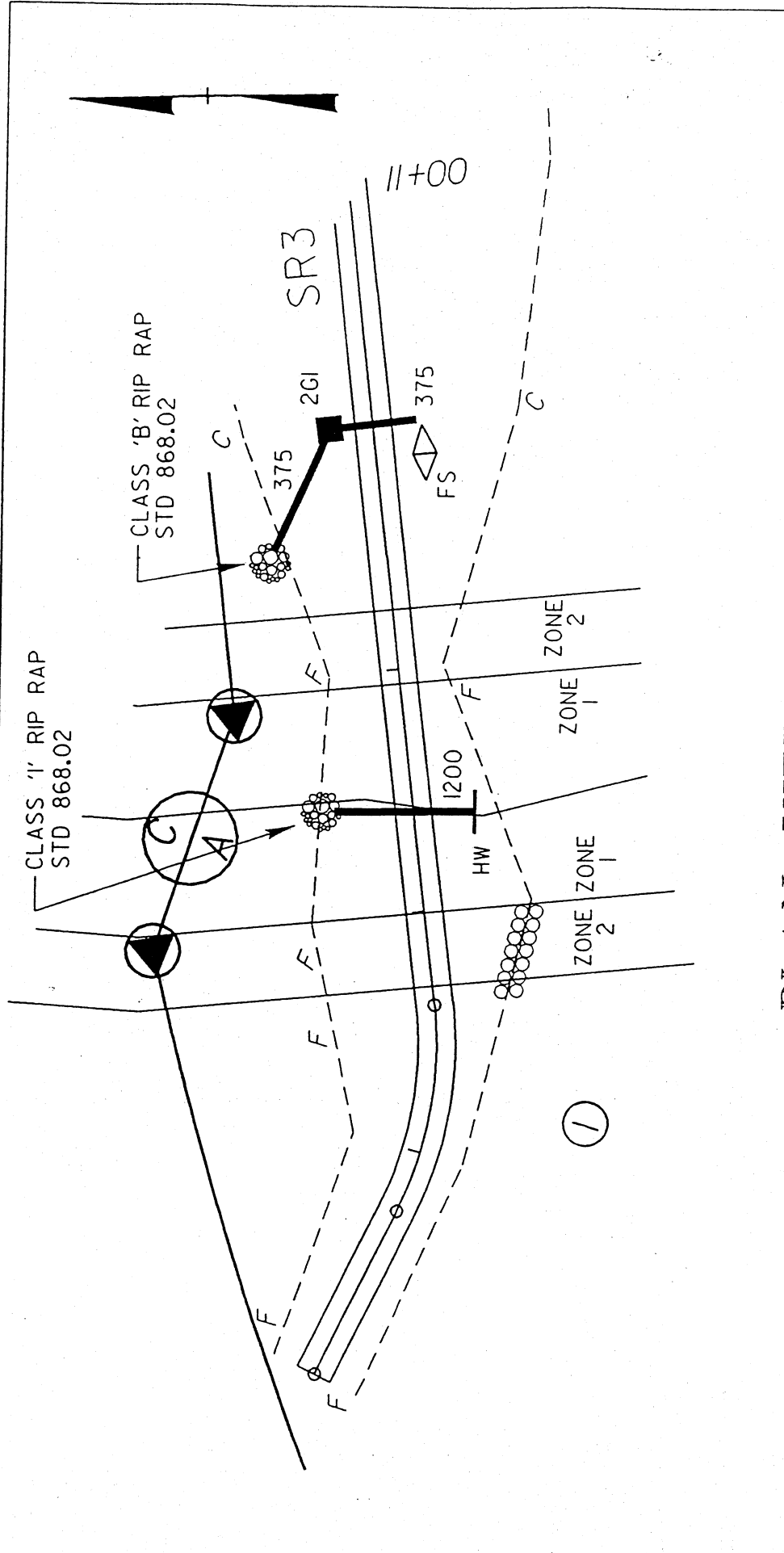
N. C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 WAKE COUNTY  
 PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

SHEET 18 OF 25 6/22/2001

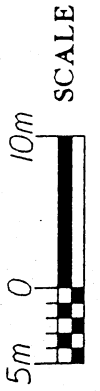
PLAN VIEW  
 SITE 16



SCALE

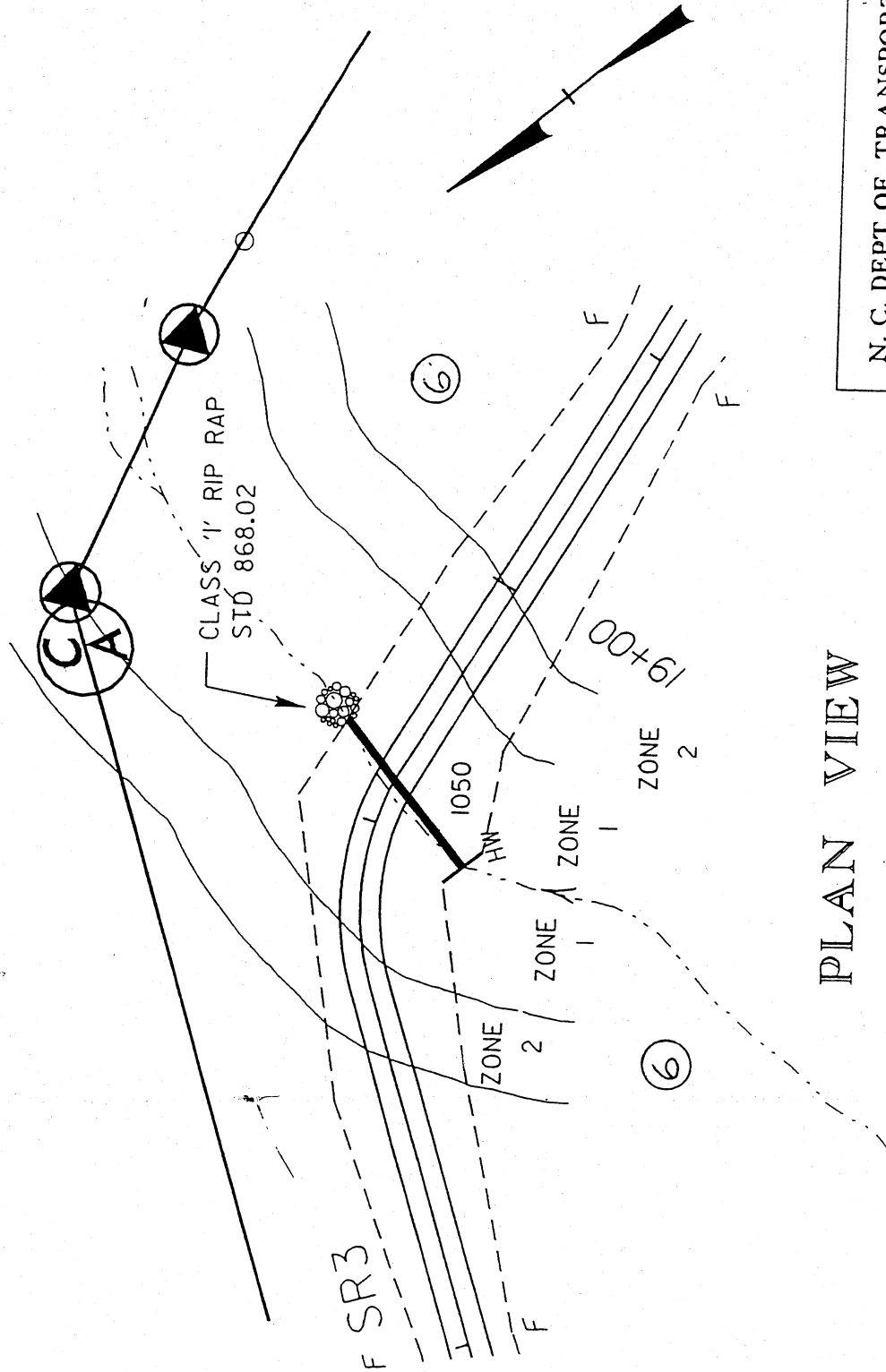


PLAN VIEW  
SITE 17



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

PROJECT: 8.1402202 (R-2547BA)  
US 64 BYPASS FROM I-440  
TO NEW HOPE ROAD

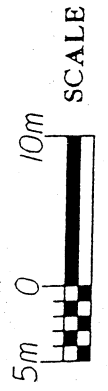


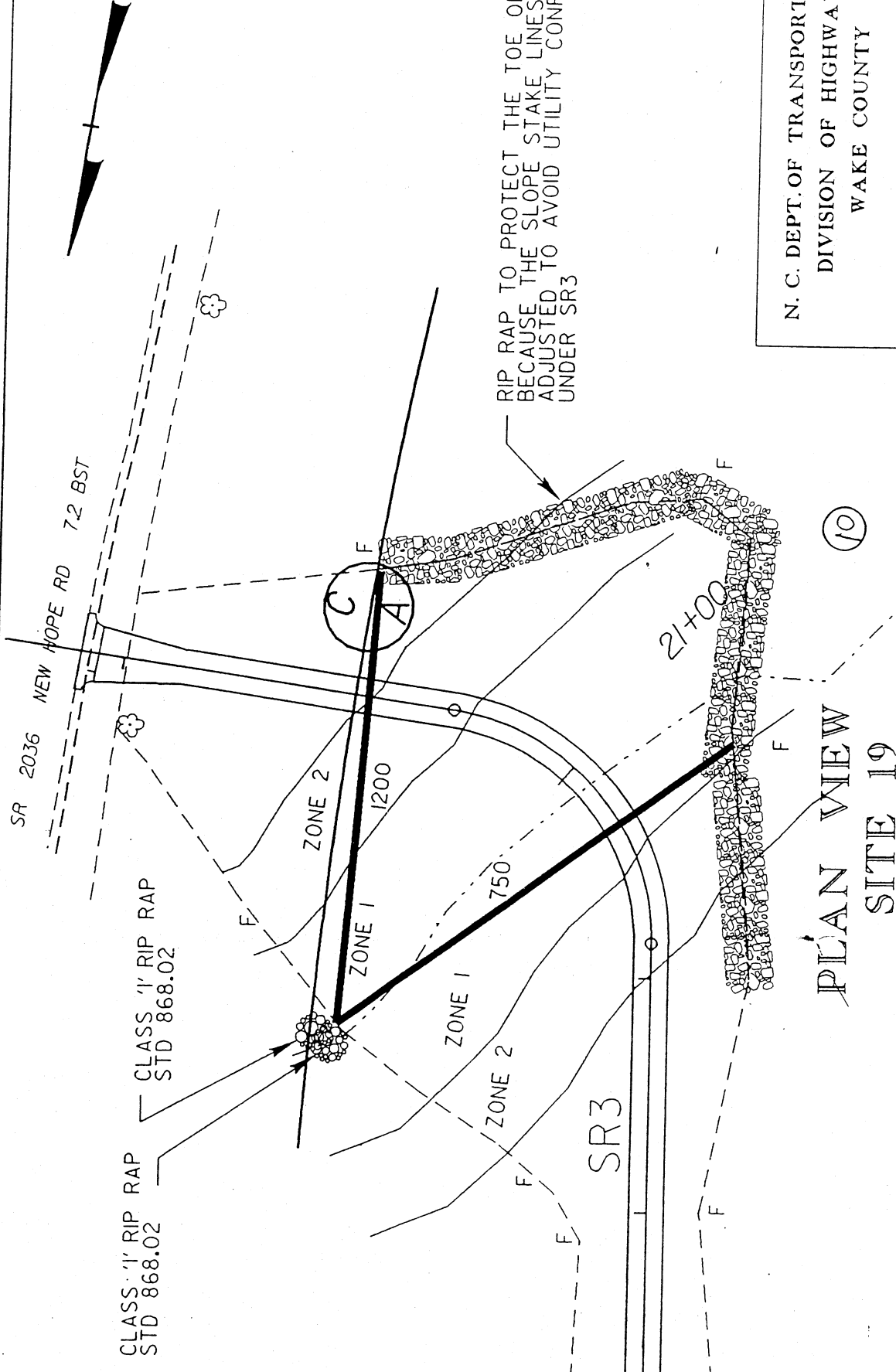
PLAN VIEW  
SITE 18

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

PROJECT: 8.1402202 (R-2547BA)  
US 64 BYPASS FROM I-440  
TO NEW HOPE ROAD

SHEET 20 OF 25 6/22/2001





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

PROJECT: 8.1402202 (R-2547BA)  
 US 64 BYPASS FROM I-440  
 TO NEW HOPE ROAD

PLAN VIEW  
 SITE 19

# PROPERTY OWNERS

NAMES AND ADDRESSES

NO.	NAMES	ADDRESSES
1	ELLA MAE JONES	2413 COLEY FOREST PLACE RALEIGH, N.C. 27612
2	CITY OF RALEIGH	P.O. BOX 590 RALEIGH, N.C. 27602
3	BESSIE K. KEITH HEIRS C/O MRS. J.T. MASSEY JR.	P.O. BOX 97 KNIGHTDALE, N.C. 27545
4	ACCU FAB, INC.	801 BEACON LAKE DRIVE RALEIGH, N.C. 27610
5	CARROLL H. MATTHEWS NEELY F. J. MATTHEWS	5901 CASTLEBROOK DRIVE RALEIGH, N.C. 27604
6	Ammons East Corp	140 Ammons Dr. RALEIGH, NC 27615
7	NCDOT	P.O. BOX 25201 RALEIGH, N.C. 27612
8	Coggins Construction Co J. J. Coggins	P.O. BOX 1508 RALEIGH, N.C. 27602
9	HERBERT PARKS AL c/o Chester A Michael III	2104 Peters Creek PW Winston Salem, NC 27127
10	AJINOMOTO USA	P.O. Box 11737 Charlotte, NC 28220

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

PROJECT: 8.1402202 (R-2547BA)

US 64 BYPASS FROM I-440 TO  
NEW HOPE ROAD

SHEET 22 OF 25 10/3/2001

IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS				SURFACE WATER IMPACTS						FILL IN BUFFER			
			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)	Relocated Channel (m)	Enclosed Channel (m)	Zone 1 (ha)	Zone 2 (ha)		
1	10+60-11+00 RPACY	1200 RCP	0.065			0.006									0.118	0.118
2	11+60-12+00 RPACY		0.034 *			0.006										
3	17+00-17+20 13+78 SR3	1350 RCP 1400 RCP					0.0124			191					0.18	0.11
4	15+80-17+20 Y1	1650 RCP					0.032			226					0.03	0.02
	24+40-25+20 L	1650 RCP													0.792	0.488
5	ELIMINATED	added to site 4	0.027													
6	103+00 Y	1.8m X 2.0m RCBC					0.001			12.5					0.009	0.006
7	6+60-6+80 RPBDY	ELIMINATED "BRIDGED"														
TOTALS																

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

WAKE COUNTY

PROJEC 8 1402202 R-25478A

SHEET **23** of **25**

9/13/01  
10/1/01

REVISED

\* --TOTAL TAKE



IMPACT SUMMARY															
Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS				SURFACE WATER IMPACTS					FILL IN BUFFER			
			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)	Relocated Channel (m)	Enclosed Channel (m)	Zone 1 (ha)	Zone 2 (ha)	
8	5+80-7+00 RPDY	1350 RCP	0.555			0.022								0.239	0.155
9	ELIMINATED	NO IMPACTS													
10	13+50 -Y1-	750 RCP													
11	12+00 DETOUR	900 RCP										0.004		0.016 **	0.018 **
12	6+00 -RPAC-	BRIDGE												0.065	0.043
13	4+00 -RPDY-	BRIDGE												0.069	0.046
14	ELIMINATED	NO IMPACTS													
15	120+40 -Y-	1200 CSP												0.042	0.025
16	107+85 -Y-	750 RCP												0.04	0.03
17	10+45 -SR3-	1200 RCP												0.02	0.02
TOTALS:															

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

WAKE COUNTY

PROJEC 8.1402202

R-2547BA

SHEET of 24 of 25

3/14/01  
10/1/01

REVISED

\*\* ... TEMPORARY FILL IN BUFFER ZONES

IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size	WETLAND IMPACTS				SURFACE WATER IMPACTS						FILL IN BUFFER				
			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)	Relocated Channel (m)	Enclosed Channel (m)	Zone 1 (ha)	Zone 2 (ha)			
18	18+84 -SR3-	1050 RCP														0.024	0.015
19	21+00 -SR3-	1650 RCP														0.04	0.03
TOTALS			0.681	0	0	0.034	0.045	0	0.004	429.5						1.711	1.151

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

WAKE COUNTY

PROJEC 8.1402202 R-2547BA

SHEET OF 25 of 25

9/13/01  
10/1/01

REVISED