




STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 4, 2005

MEMORANDUM TO: Mr. Ron Watson, P.E.
Division 14 Engineer

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

SUBJECT: Cherokee County, US 64 relocation from US 19-74-129 in
Murphy to east of NC 141 in Peachtree; State Work Order
Number 8.1910203; TIP Number R-0977A

Attached are the U. S. Army Corps of Engineers Individual 401/404 Permit and the general conditions for the Division of Water Quality 401 Certification for the construction of the above referenced project. All environmental permits have been received for the construction of this project.

PSH/gyb

Attachment

cc: Mr. Art McMillan, P.E.
Mr. Omar Sultan
Mr. Jay Bennett, P.E.
Mr. David Chang, P.E.
Mr. Randy Garris, P.E.
Mr. Greg Perfetti, P.E.
Mr. Mark Staley
Mr. John Sullivan, FHWA
Mr. Mark Davis, Division 14 DEO

PROJECT COMMITMENTS

**US 64 relocation from US 19-74-129 in Murphy
to east of NC 141 in Peachtree, Cherokee County;
State Project No. 8.1910203; Federal Aid Project No. FR-14-1(1);
TIP No. R-0977A**

Compliance is required with all conditions of Individual Permit No. 200530150 issued by the U.S. Army Corps of Engineers. This includes the General Conditions listed on pages 1 and 2 of the permit, as well as all Special Conditions. Compliance is also required with all conditions of 401 Water Quality Certification No. 3487 issued by the N.C. Division of Water Quality. In addition to these conditions, the following special commitments have been agreed to by the NCDOT.

Division 14 Construction Unit

- The permittee shall schedule a preconstruction meeting between their representatives, the contractor and the Corps of Engineers, Asheville Regulatory Field Office, NCDOT Regulatory Project Manager 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 provide the Corps of Engineers, Regulatory Project Manager with a copy of the final plans at least two weeks prior to the pre-construction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the pre-construction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall notify the Corps of Engineers and NCDWQ Project Managers a minimum of thirty (30) days in advance of the meeting.
- Except as authorized by this permit or any Corps of Engineers approved modification to this permit, no excavation, fill or mechanized land clearing activities shall take place at any time in the construction or maintenance of this project within waters or wetlands nor shall any activities take place that cause the degradation of waters or wetlands. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project in such a manner as to impair normal flows and circulation patterns within, into or out of waters and wetlands or to reduce the reach of waters or wetlands.
- 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 provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as such information is available. The permittee will coordinate with the Corps of Engineers before approving any borrow

or waste sites that are within 400 feet of any stream or wetland. All jurisdictional wetland delineations on borrow and waste areas shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with the **preceding condition** 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 the **preceding condition**. 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 30 days of the completion of the reclamation work.

- 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 head-cutting of the streambed. For all box culverts and for pipes greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream unless such burial would be impractical and the Corps of Engineers has waived this requirement. 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. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in the disequilibrium of wetlands, streambeds or stream banks adjacent to, upstream of or downstream of the structures. 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 above ordinary high water elevation in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted woody plants.
- The permittee shall implement the testing and monitoring procedure and mitigation plans in the attached *Potential Acid Producing Rock Materials* methodology. The NCDOT Regulatory Project Manager, Asheville Regulatory Field Office, Corps of Engineers will be notified in the most expeditious manner possible of any recorded pH values below 6.0 within 24 hours of the discovery of such values.
- In-water work is prohibited from February 15 to June 15 in the Hiwassee River to protect the listed fish species and game fish reproduction.
- Sediment and erosion control measures shall adhere to the design standards for sensitive watersheds (15A NCAC 4B .0124 (a)-(d)) and be strictly maintained until project completion to avoid impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation should be planted on all bare soil as soon as possible and within 10 days of ground disturbing activities to provide long-term

erosion control. Tall fescue should not be used in riparian areas. We encourage NCDOT to utilize onsite vegetation and materials for streambank stabilization when practicable. Erosion control matting should be used in riparian areas, instead of straw mulch and well anchored with 12" staples or 12" wooden survey stakes.

- Prior to stream relocation activities, the final Natural Channel Design plan for the stream relocation of a tributary to Hiwassee River at Site 11 must be approved by the NC Division of Water Quality.
- Prior to commencing ground disturbing activities, an acceptable monitoring and mitigation plan for the presence of sulfidic rock must be approved by the NC Division of Water Quality.
- Low flow sills and a trout flow channel shall be installed in the double barrel box culvert at Site 9 in accordance with NC Wildlife Resources Commission recommendations.
- Compensatory mitigation for impacts to streams shall be done for 6,233 linear feet of stream impact as shown above in Table 2 at a replacement ratio of 1:1. Compensatory mitigation for impacts to jurisdictional streams shall be provided by onsite stream relocations of 801 linear feet of a tributary to Hiwassee River. The onsite stream relocation shall be constructed in accordance with a final design to be submitted to the Division of Water Quality in accordance with Project Specific Condition 1. To earn mitigation credit, the stream relocation shall have a 50-foot wooded buffers planted on both sides of the stream. As-Built 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 801 linear feet of impacts. In addition to the 801 linear feet of on-site mitigation, compensatory mitigation for an additional 5,432 linear feet of streams is required. We understand that you have chosen to perform compensatory mitigation for the remainder of impacts to streams through an in-lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP). NCEEP has indicated in a letter dated August 5, 2004 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project as detailed in the table below.
- No live or fresh concrete shall come into contact with waters of the state until the concrete has hardened.
- Excavation of the stream crossings should be conducted in the dry. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
- 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.

- 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.
- Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
- 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 11, 2004.
- The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorize

PD & EA

MITIGATION

STREAM RELOCATIONS PERFORMED BY NCDOT

- **IMPLEMENTATION:** The permittee shall mitigate for 801 linear feet of unavoidable impact to streams with important aquatic function associated with this project by completing 1150 linear feet of onsite stream relocation/restoration, as described in the permit application. The stream relocation/restoration shall be constructed in accordance with the attached natural channel design plans for Permit Site 11. The permittee shall construct the authorized channel relocation/restoration in a dry work area and stabilize the new channel before stream flows are diverted. Whenever possible, the permittee shall allow new channels to stabilize for one growing season. The Corps of Engineers, Asheville Regulatory Field Office will be notified in advance by facsimile transmission or electronic mail of the intended diversion of water into the new channel. Approval must be obtained from the Corps of Engineers prior to the diversion taking place. The banks and buffer areas of the

relocated channels will be planted with appropriate species of native, deep-rooted, woody vegetation. A final inspection of the channel relocation by a representative of the Corps of Engineers, Asheville Regulatory Field Office will be conducted prior to completion of the road project. No grubbing of the existing channel shall take place until the stream flow has been diverted into the new channel.

- **AS-BUILT SURVEY:** The permittee shall complete an as-built channel survey within 60 days of completion of the stream relocation/restoration construction. The permittee shall document changes in the dimension, pattern, profile, vegetation plantings and in-channel structures of the relocated channel from the proposed design. The As-Built Survey shall also include photo documentation of representative channel segments with a reference plan view diagram.
- **MONITORING SCHEDULE/REPORT/SUCCESS CRITERIA:** The permittee shall monitor the completed stream relocation in accordance with Monitoring Level 2 of the US Army Corps of Engineers, Wilmington District, Stream Mitigation Guidelines of April 2003. The monitoring reports, including reference photographs, plant survival data and visual inspection notes identifying specific problem areas, will be submitted to the Corps of Engineers, Asheville Regulatory Field Office within 60 days of completion of the monitoring. The monitoring report will also include a discussion of any deviations from the as-built condition and an evaluation of the significance of these deviations to channel stability. The success of the stream relocation as project mitigation will be evaluated based on those success criteria listed in the referenced Stream Mitigation Guidelines.
- NCDOT will survey all three transmission line relocation areas for small whorled pogonia in early May of 2005, before the project goes to construction and before any tree clearing occurs in the transmission line area

If no small whorled pogonia is found in Area 2, then tree clearing may commence immediately.

If no small whorled pogonia is found in Areas 1 or 3, then tree clearing may commence as soon as Indiana bat issues are resolved.

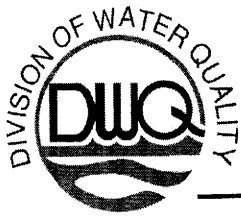
If small whorled pogonia is found in Area 1, 2 or 3, then no tree clearing or any sort of disturbance shall occur in that Area for transmission line work until impacts to pogonia habitat are avoided or consultation with USFWS is completed.

- Areas 1 and 3 will be assessed by BHE no earlier than June 25, 2005. If suitable corridors for mist-netting are available, they will conduct mist-netting according to the Indiana Bat Recovery Plan.

If BHE is unable to effectively mist-net, then they will conduct a thorough habitat assessment in all areas likely to be affected by the transmission line work.

If, as a result of the survey work, Indiana bats are unlikely to be affected by the transmission line work, then tree clearing may commence as soon as the bat survey work is completed, probably in early July 2005.

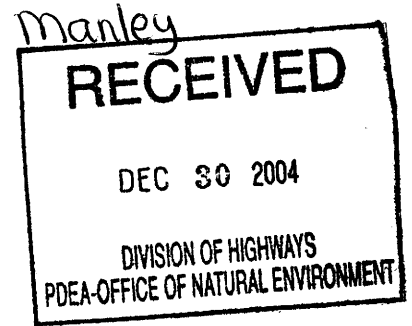
If Indiana bats are likely to be adversely affected by the transmission line work, then no tree clearing will occur in the transmission line relocation areas from April 15 to October 15 of any given year.



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

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

December 21, 2004



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

Dear Dr. Thorpe:

Re: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act for the
Proposed Relocation of US 64, TIP No. R-0977A
Individual WQC No. 3487
Cherokee County

Attached hereto is a copy of Certification No. 3487 issued to The North Carolina Department of
Transportation dated December 21, 2004.

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

Sincerely,

for Alan W. Klimek, P.E.
Director

Attachments

cc: Steve Lund, Army Corps of Engineers Asheville Regulatory Field Office
Mike Parker, DWQ Mooresville Regional Office
Marla Chambers, NC Wildlife Resources Commission
Marella Buncick, US Fish and Wildlife Services
Central Files
File Copy

APPROVAL OF 401 Water Quality Certification and Additional Conditions

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, Section .0500, and 15 NCAC 2B .0259. This certification authorizes the NCDOT to place permanent fill material in, drain, excavate, and mechanically clear 0.85 acres of jurisdictional wetlands; to place permanent fill material, culverts, and piping in 6,812 linear feet of streams; and to place temporary fill in 0.02 acres of surface waters in Cherokee County. The project shall be constructed pursuant to the application dated September 29, 2004, to relocate the section of US 64 that extends from US 19/74/129 in Murphy to NC 141 in Peachtree. The approved design is that submitted in your application dated September 29, 2004. The authorized impacts are as described below:

Table 1. Wetland Impacts in the Hiwassee River Basin

Section	Riverine (acres)	Total (acres)
Site 1 - Station No. 10+80-LC1B- Rt	0.13*	0.13
Site 3 - Station No. 14+60 - LC1B	0.17	0.17
Site 3A - Station No. 15+60 - LC1B	0.22	0.22
Site 4 - Station No. 14+80 - LC1B	0.02	0.02
Site 11 - Station No. 10+20 to 15+50 -Y3- Rt.	0.1	0.1
Site 17 - Station No. 76+40 to 76+80 Rt. -LREV-	0.12	0.12
Site 18 - Station No. 82+00 - LREV-	0.07	0.07
Site 21 - Station No. 12+75 - Y6-	<0.02*	<0.02
Total	0.85	0.85

*Impacts <0.01 ac. are calculated as 0.01 ac.

Table 2. Surface Water Impacts for the Hiwassee River Basin

Section	Stream	Stream Impacts (linear feet)	Stream Type	Mitigation Required (linear feet)
Site 1 - Station No. 10+80 -LC1B- Rt -	UT to Hiwassee River	66	Perennial	0
Site 4 - Station No. 14+80-LC1B-	UT to Hiwassee River	354	Perennial	354
Site 5 - Station No. 12+64 -Y1REV-	UT to Hiwassee River	113	Perennial	0
Site 5A - Station No. 18+30 -LC1B-	UT to Hiwassee River	518	Perennial	518

Site 7 - Station No. 28+90 -LREV- Rt	UT to Martin Creek	22	Perennial	0
Site 8 - Station No. 34+80 -LREV- Rt	UT to Hampton Creek	89	Perennial	0
Site 9 - Station No. 35+50 -LREV-	Hampton Creek	971	Perennial	971
Site 10 - Station No. 36+50 -LREV-	UT to Hampton Creek	725	Perennial	725
Site 11 - 10+20 to 15+50 -Y3- Rt	UT to Hiwassee River	1,598	Perennial	1,598
Site 12 - Station No. 54+20 -LREV- Lt	UT to Hiwassee River	220	Perennial	220
Site 14 - Station No. 58+00 -LREV-	UT to Hiwassee River	358	Perennial	358
Site 15 - Station No. 61+40 - LREV-	UT to Hiwassee River	125	Perennial	0
Site 16 - Station No. 64+40 -LREV-	UT to Hiwassee River	453	Perennial	453
Site 18 - Station No. 82+00 -LREV-	UT to McComb Branch	381	Perennial	381
Site 19 - Station No. 10+60 -Y9REV-	UT to McComb Branch	151	Perennial	151
Site 20 - Station No. 85+00 -LREV-	UT to McComb Branch	504	Perennial	504
Site 21 - Station No. 12+75 -Y6-	UT to McComb Branch	105	Perennial	0
Site 22 - Station No. 10+00 -Y10-	UT to McComb Branch	59	Perennial	0
Total		6,812		6,233

The application provides adequate assurance that the discharge of fill material into the waters of the Hiwassee 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. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, 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, 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.

Condition(s) of Certification:

Project Specific Conditions of Certification:

1. Prior to stream relocation activities, the final Natural Channel Design plan for the stream relocation of a tributary to Hiwassee River at Site 11 must be approved by the NC Division of Water Quality.
2. Prior to commencing ground disturbing activities, an acceptable monitoring and mitigation plan for the presence of sulfidic rock must be approved by the NC Division of Water Quality.
3. Low flow sills and a trout flow channel shall be installed in the double barrel box culvert at Site 9 in accordance with NC Wildlife Resources Commission recommendations.
4. The bridges across the Hiwassee River at Sites 4A and 16A shall fully span the river with no bridge bents in the channel.
5. Hazardous material spill basins shall be installed at Sites 4A and 16A along the Hiwassee River.
6. Compensatory mitigation for impacts to streams shall be done for 6,233 linear feet of stream impact as shown above in Table 2 at a replacement ratio of 1:1. Compensatory mitigation for impacts to jurisdictional streams shall be provided by onsite stream relocations of 801 linear feet of a tributary to Hiwassee River. The onsite stream relocation shall be constructed in accordance with a final design to be submitted to the Division of Water Quality in accordance with Project Specific Condition 1. To earn mitigation credit, the stream relocation shall have a 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 801 linear feet of impacts. In addition to the 801 linear feet of on-site mitigation, compensatory mitigation for an additional 5,432 linear feet of streams is required. We understand that you have chosen to perform compensatory mitigation for the remainder of impacts to streams through an in-lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP). NCEEP has indicated in a letter dated August 5, 2004 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project as detailed in the table below.

Type of Impact	Amount of Impact
Streams	6,011 lf
Wetlands	0.82 ac.

General Conditions of Certification:

7. The dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or reducing the depth of the stream. Disturbed floodplains and streams should be restored to natural geomorphic conditions. All stream relocation and restoration activities shall comply with the final natural channel design plans approved by the NC Division of Water Quality.
8. Construction will 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 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 project.
 - 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.
9. All 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.
10. 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.
11. No live or fresh concrete shall come into contact with waters of the state until the concrete has hardened.
12. 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.
13. Excavation of the stream crossings should be conducted in the dry. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.

14. 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.
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. 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 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.
17. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.
18. All temporary fills in wetlands and surface waters shall be removed upon completion of the project. In addition, the post-construction removal of any temporary bridge structures or fill will need to return the project site to its preconstruction contours and elevations. The revegetation of the impacted areas with appropriate native species will be required.
19. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
20. Any riprap used must not interfere with thalweg performance and aquatic life passage during low flow conditions.
21. Heavy equipment should be operated from the bank rather than in the stream channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the stream. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
22. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.


23. 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 11, 2004.
24. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
25. 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.
26. A copy of this Water Quality Certification shall be posted on the construction site at all times. In addition, the Water Quality Certification (and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
27. Culverts that are less than 48-inch in diameter should be buried to a depth equal to or greater than 20% of their size to allow for aquatic life passage. Culverts that are 48-inch in diameter or larger should be buried at least 12 inches below the stream bottom to allow natural stream bottom material to become established in the culvert following installation and to provide aquatic life passage during periods of low flow. These measurements must be based on natural thalweg depths.

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 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 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 21st day of December 2004

DIVISION OF WATER QUALITY


for Alan W. Klimek, P.E.
Director

WQC No. 3487

DWQ Project No.: 3487

County: Cherokee

Applicant: NC Department of Transportation

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____

Registration No. _____

Date _____



REPLY TO
ATTENTION OF:

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

February 2, 2005

Regulatory Division

Action ID: 200530150; TIP No. R-0977A

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

Dear Dr. Thorpe:

In accordance with the written request of September 29, 2004, and the ensuing administrative record, enclosed is a permit to discharge dredged or fill material into 0.82 acres of wetland and 6812 linear feet of stream channel in and adjacent to the waters of the Hiwassee River, Martin Creek, Hampton Creek, McComb Branch and unnamed tributaries to facilitate the relocation of 4.9 miles of US Highway 64 from US Highway 19/74/129 at Murphy to NC Highway 141 at Peachtree, Cherokee County, North Carolina (TIP No. R-0977 A, State Project No. 8.1910203).

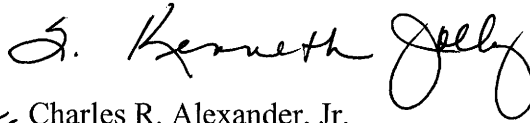
If any change in the authorized work is required because of unforeseen or altered conditions or for any other reason, the plans revised to show the change must be sent promptly to this office. Such action is necessary, as revised plans must be reviewed and the permit modified.

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, 2008.
- 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 223.

Sincerely,



for 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. Pete Benjamin, 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
NC Division of Coastal Management
Division of Coastal Management
151-B, NC Hwy 24
Morehead City, NC 28557

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

DEPARTMENT OF THE ARMY PERMIT

RECEIVED

JAN 31 2005

REGULATORY
WILM. FLD. OFF.

NC Department of Transportation
Permittee _____

200530150
Permit No. _____

USAED, Wilmington
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:

To discharge dredged or fill material into 0.82 acres of wetland and 6812 linear feet of stream channel in and adjacent to the waters of the Hiwassee River, Martin Creek, Hampton Creek, McComb Branch and unnamed tributaries to facilitate the relocation of 4.9 miles of US Highway 64 from US Highway 19/74/129 at Murphy to NC Highway 141 at Peachtree, Cherokee County, North Carolina (TIP No. R-0977 A).

Project Location:

From US Highway 19/74/129 at Murphy to NC Highway 141 at Peachtree, Cherokee County, North Carolina (TIP No. R-0977 A).

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2008. 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.

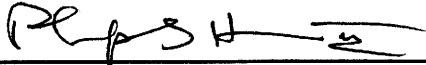
b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

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.

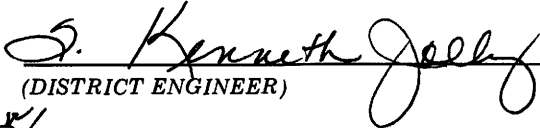
6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable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

 1/31/05
(PERMITTEE) (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.

 2/1/05
(DISTRICT ENGINEER) (DATE)
by 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.

(TRANSFeree) (DATE)

? ?

SPECIAL CONDITIONS (Action ID: 2005301150; Tip No. R-0977A)

1. All work must be performed in strict compliance with the attached plans, which are a part of this permit. Any modifications to the permit plans must be approved by the Corps of Engineers prior to implementation.
2. Failure to institute and carry out the details of the following special conditions 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 remedies and/or fines as the District Engineer or his authorized representatives may seek.
3. The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Written verification shall be provided that the final construction drawings comply with the attached permit drawings prior to any active construction in waters of the United States, including wetlands. Any deviation 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 and wetlands.
4. The permittee shall schedule a preconstruction meeting between their representatives, the contractor and the Corps of Engineers, Asheville Regulatory Field Office, NCDOT Regulatory Project Manager 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 provide the Corps of Engineers, Regulatory Project Manager with a copy of the final plans at least two weeks prior to the pre-construction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the pre-construction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall notify the Corps of Engineers and NCDWQ Project Managers a minimum of thirty (30) days in advance of the meeting.
5. The permittee shall require its 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 its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit, and any authorized modifications. A copy of this permit and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.
6. Except as authorized by this permit or any Corps of Engineers approved modification to this permit, no excavation, fill or mechanized land clearing activities shall take place at any time in the construction or maintenance of this project within waters or wetlands nor shall any activities take place that cause the degradation of waters or wetlands. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project in such a manner as to impair normal flows and circulation patterns within, into or out of waters and wetlands or to reduce the reach of waters or wetlands.

7. 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 provide the Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as such information is available. The permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any stream or wetland. All jurisdictional wetland delineations on borrow and waste areas shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with the **preceding condition** 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 the **preceding condition**. 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 30 days of the completion of the reclamation work.

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. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

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

10. 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. All temporary diversion channels and stream crossings will be constructed of nonerodable materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.

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

12. 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 head-cutting of the streambed. For all box culverts and for pipes greater than 48 inches in diameter, the bottom of the pipe will be buried at least one foot below the bed of the stream unless such burial would be impractical and the Corps of Engineers has waived this requirement. 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. Design and placement of culverts and other structures including temporary erosion control measures shall not be

conducted in a manner that may result in the disequilibrium of wetlands, streambeds or stream banks adjacent to, upstream of or downstream of the structures. 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 above ordinary high water elevation in favor of bioengineering techniques such as bank sloping, erosion control matting and revegetation with deep-rooted woody plants.

13. Unless authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities) or unsightly debris will not be used.

14. All mechanized equipment operating near surface waters shall be regularly inspected and maintained to prevent contamination of streams and wetlands from leakage of fuels, lubricants, hydraulic fluids or other toxic materials. No equipment staging or storage of construction material will occur in wetlands. Hydroseeding equipment will not be discharged or washed out into any surface waters or wetlands. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the NC Division of Water Quality at (919) 733-5083 or (800) 662-7956 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

MITIGATION

STREAM RELOCATIONS PERFORMED BY NCDOT

15. IMPLEMENTATION: The permittee shall mitigate for 801 linear feet of unavoidable impact to streams with important aquatic function associated with this project by completing 1150 linear feet of onsite stream relocation/restoration, as described in the permit application. The stream relocation/restoration shall be constructed in accordance with the attached natural channel design plans for Permit Site 11. The permittee shall construct the authorized channel relocation/restoration in a dry work area and stabilize the new channel before stream flows are diverted. Whenever possible, the permittee shall allow new channels to stabilize for one growing season. The Corps of Engineers, Asheville Regulatory Field Office will be notified in advance by facsimile transmission or electronic mail of the intended diversion of water into the new channel. Approval must be obtained from the Corps of Engineers prior to the diversion taking place. The banks and buffer areas of the relocated channels will be planted with appropriate species of native, deep-rooted, woody vegetation. A final inspection of the channel relocation by a representative of the Corps of Engineers, Asheville Regulatory Field Office will be conducted prior to completion of the road project. No grubbing of the existing channel shall take place until the stream flow has been diverted into the new channel.

AS-BUILT SURVEY: The permittee shall complete an as-built channel survey within 60 days of completion of the stream relocation/restoration construction. The permittee shall document changes in the dimension, pattern, profile, vegetation plantings and in-channel structures of the

relocated channel from the proposed design. The As-Built Survey shall also include photo documentation of representative channel segments with a reference plan view diagram.

MONITORING SCHEDULE/REPORT/SUCCESS CRITERIA: The permittee shall monitor the completed stream relocation in accordance with Monitoring Level 2 of the US Army Corps of Engineers, Wilmington District, Stream Mitigation Guidelines of April 2003. The monitoring reports, including reference photographs, plant survival data and visual inspection notes identifying specific problem areas, will be submitted to the Corps of Engineers, Asheville Regulatory Field Office within 60 days of completion of the monitoring. The monitoring report will also include a discussion of any deviations from the as-built condition and an evaluation of the significance of these deviations to channel stability. The success of the stream relocation as project mitigation will be evaluated based on those success criteria listed in the referenced Stream Mitigation Guidelines.

16. The permittee shall make payment to the North Carolina Ecosystem Enhancement Program (NCEEP) in the amount determined by the NCEEP sufficient to perform the restoration of 6011 linear feet of cool water stream channel and 0.82 acres of riparian, bottomland hardwood forested wetlands in the Hiwassee River Basin, Hydrologic Cataloging Unit 06020002. Construction within jurisdictional areas on the property shall begin only after the permittee has made full payment to the NCEEP and provided a copy of the payment documentation to the Corps of Engineers, and the NCEEP has provided written confirmation to the Corps that it agrees to accept responsibility for the mitigation work required, in compliance with the MOU between the North Carolina Department of Environment and Natural Resources and the United States Army Corps of Engineers, Wilmington District, dated November 4, 1998.

17. The permittee shall implement the recommendations (1-15) in the attached December 29, 2004 letter from the North Carolina Wildlife Resources Commission.

18. The permittee shall implement the testing and monitoring procedure and mitigation plans in the attached *Potential Acid Producing Rock Materials* methodology. The NCDOT Regulatory Project Manager, Asheville Regulatory Field Office, Corps of Engineers will be notified in the most expeditious manner possible of any recorded pH values below 6.0 within 24 hours of the discovery of such values.

19. The permittee shall implement the survey and coordination procedures (1-4) for both the Federally threatened small whorled pogonia (*Isotria medeoloides*) and the Federally endangered Indiana bat (*Myotis sodalis*) as described in the attached January 18, 2005 letter from the US Fish and Wildlife Service.

20. 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 permittee's discovery of the violation.

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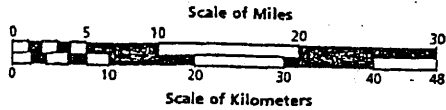
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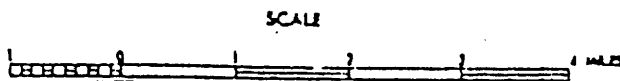
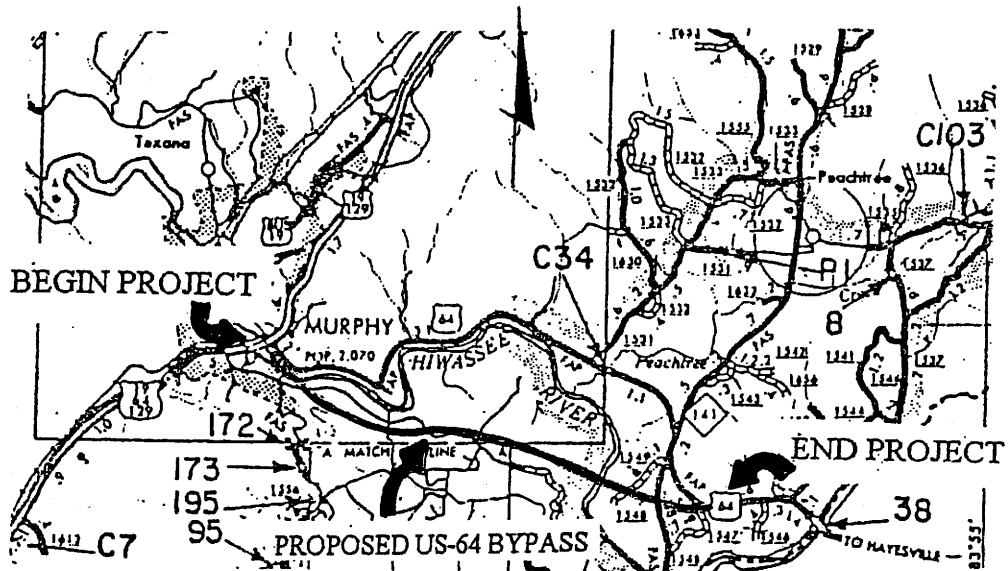
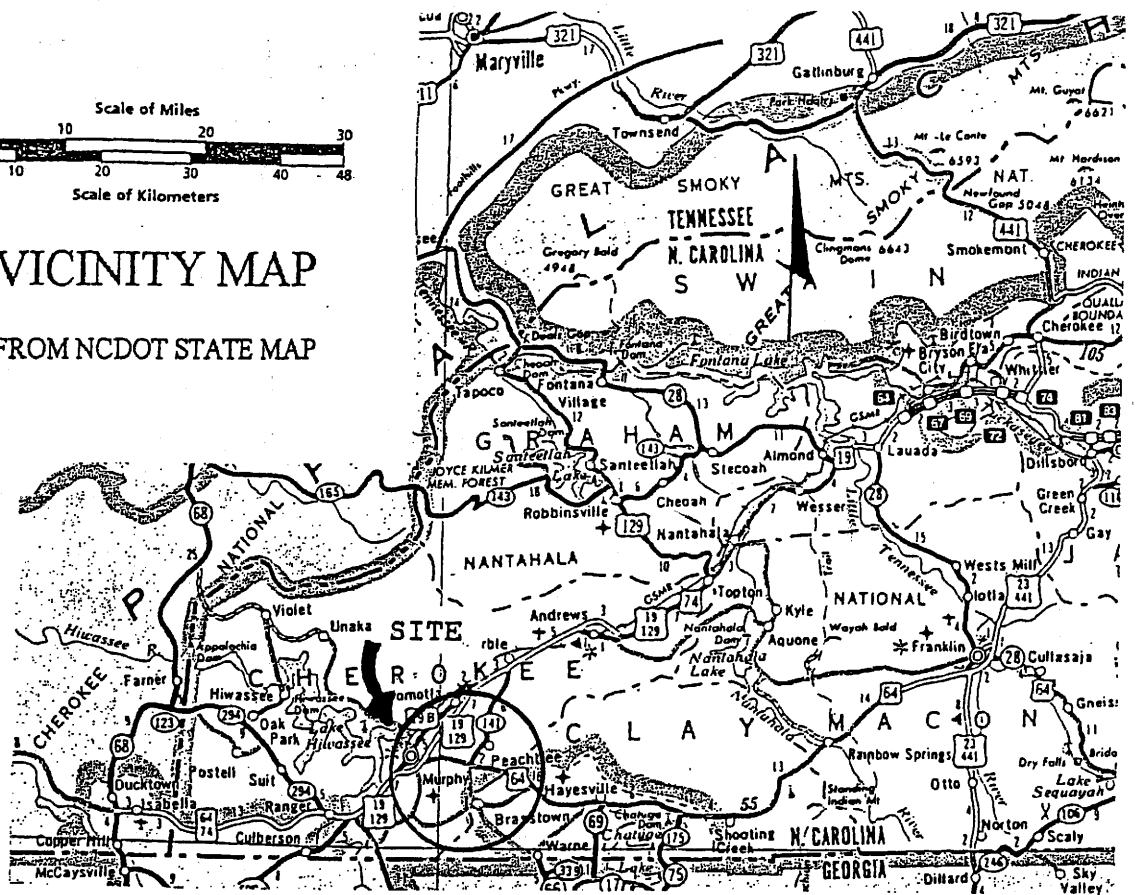
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NOTE - BE SURE TO ATTACH THE PLANS, DWQ CERTIFICATION LETTER AND ANY OTHER ATTACHMENTS THAT YOU WANT TO GO



VICINITY MAP
FROM NCDOT STATE MAP



VICINITY MAP
FROM NCDOT BRIDGE LOCATION MAP

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

SHEET 1 OF 39

JUNE 1997

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

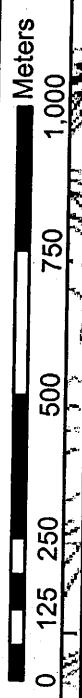
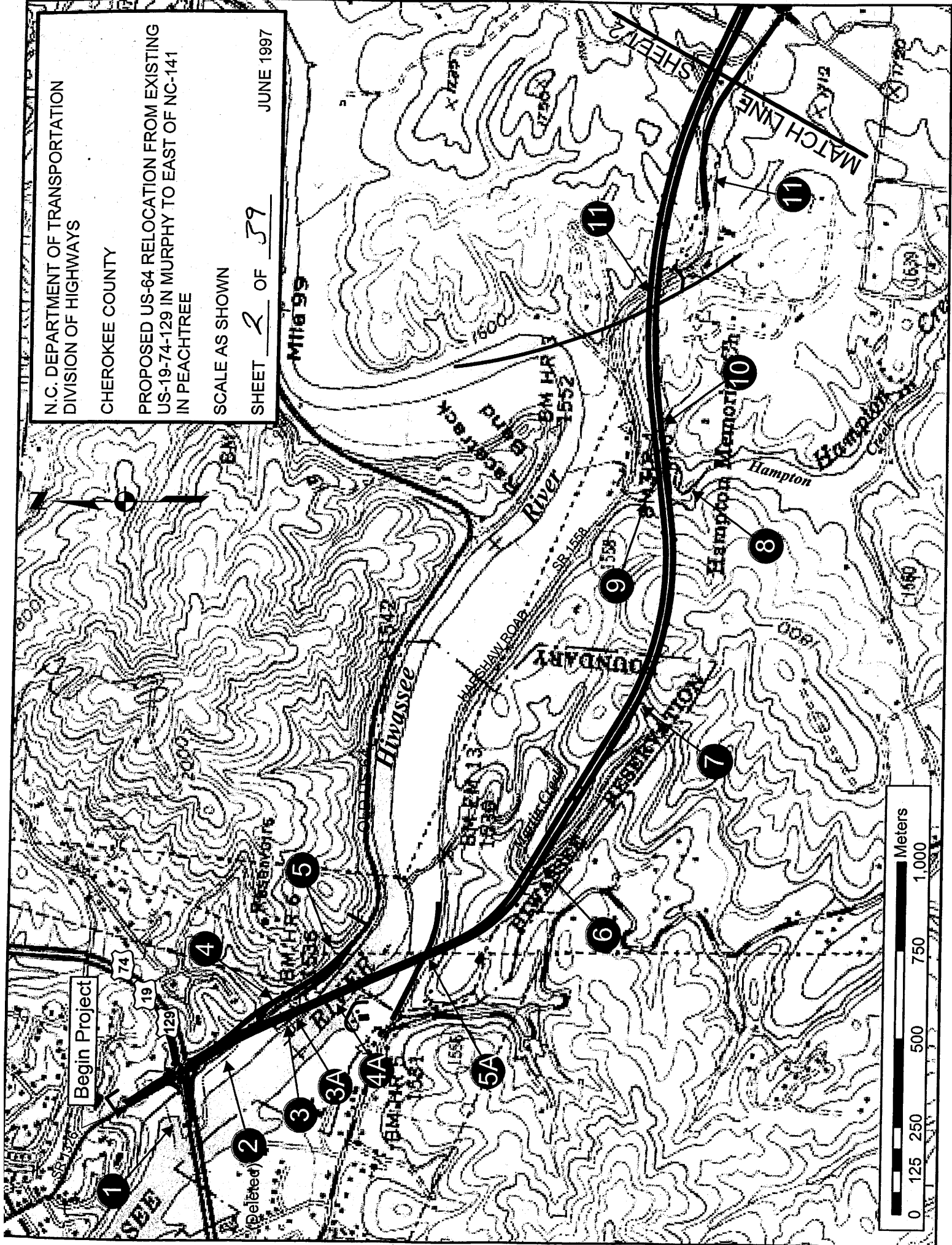
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

SHEET 2 OF 39

JUNE 1997



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

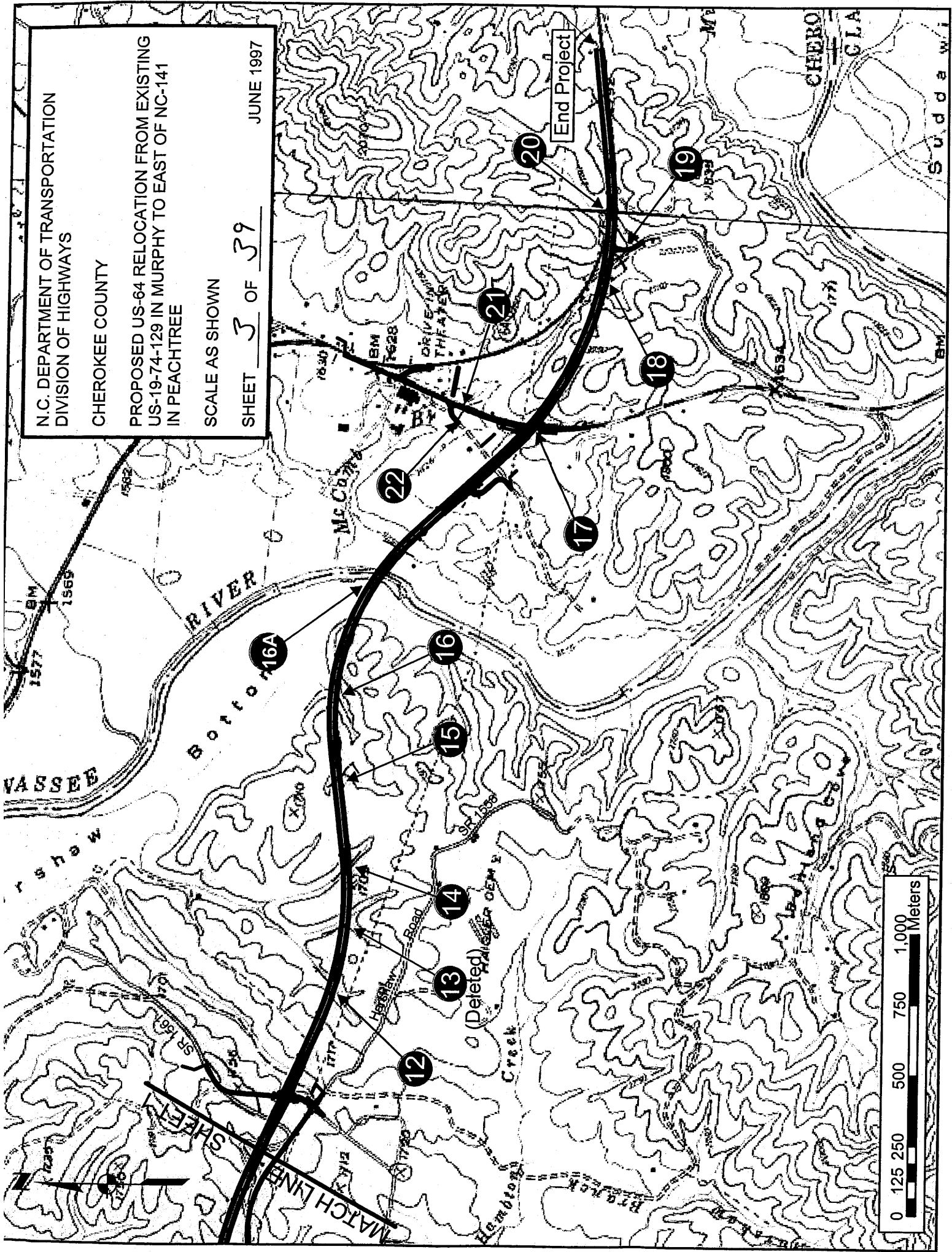
CHEROKEE COUNTY

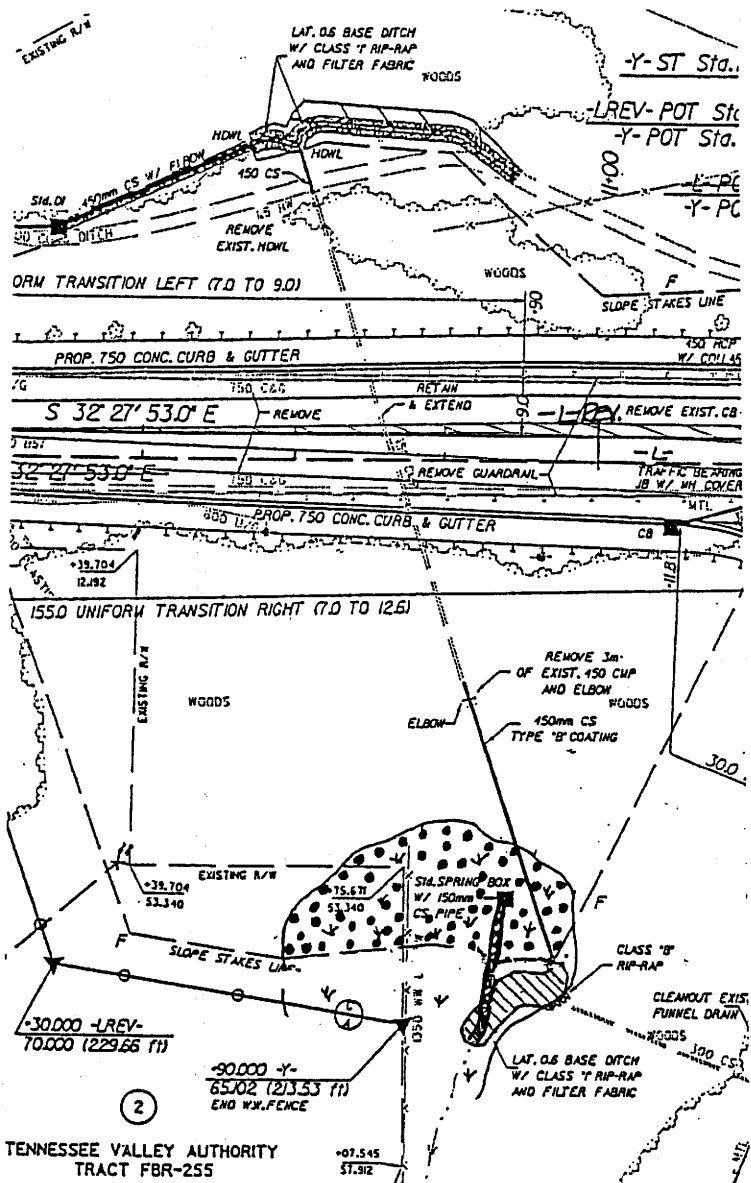
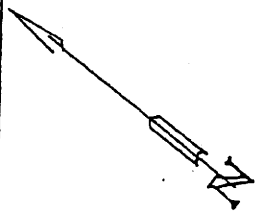
PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

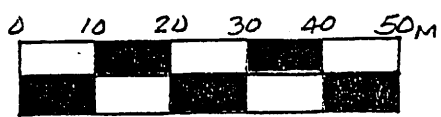
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JUNE 1997





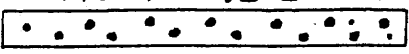
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FILL IN SURFACE WATERS

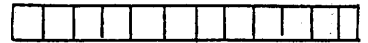


FILL IN WETLANDS



SITE No. 1

EXCAVATION IN WETLANDS



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CHEROKEE COUNTY

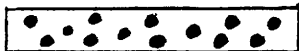
PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

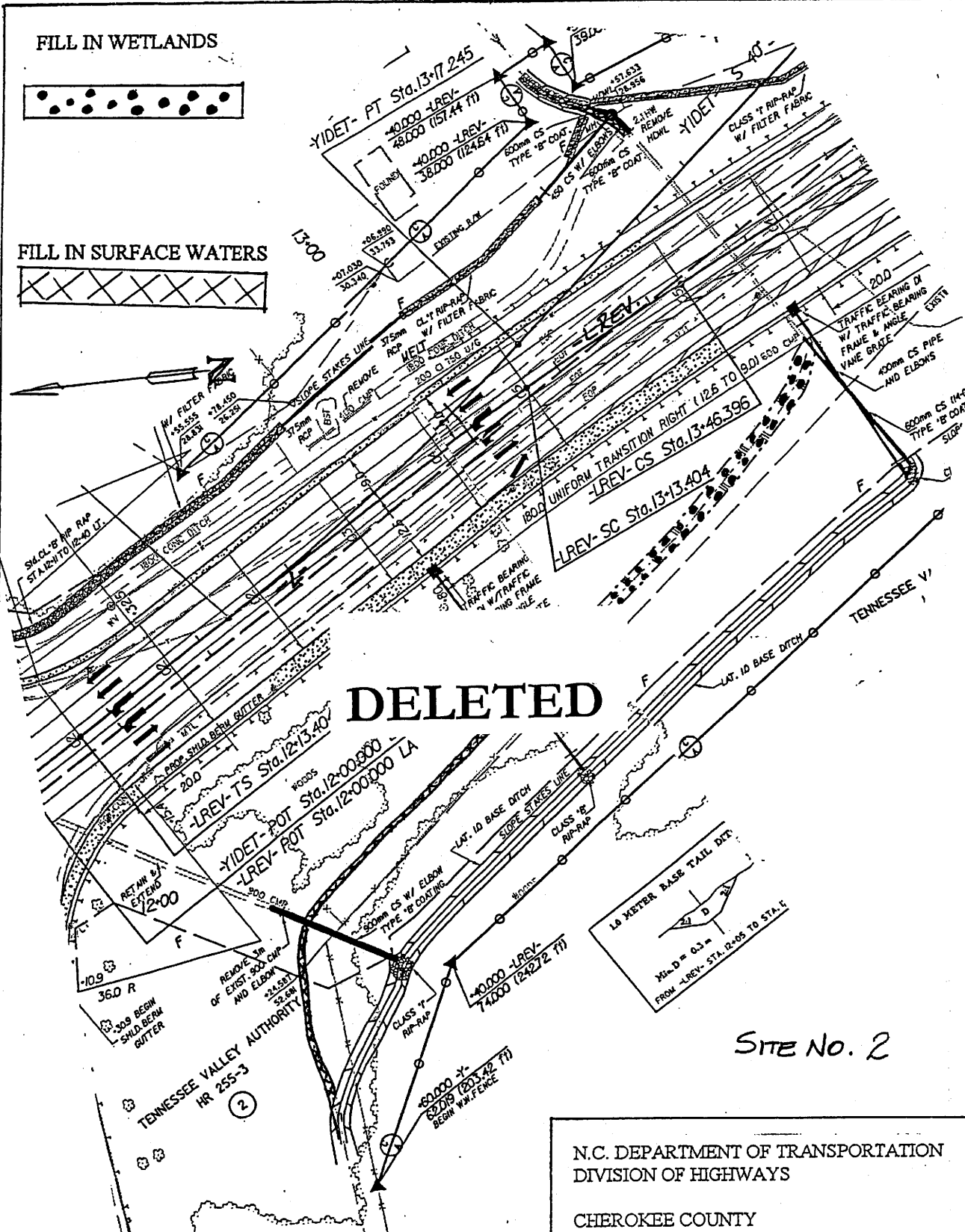
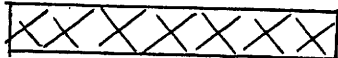
SHEET 4 OF 39

JUNE 1997

FILL IN WETLANDS



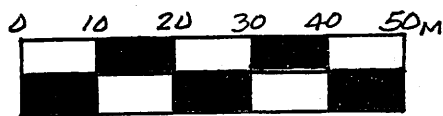
FILL IN SURFACE WATERS



DELETED

SITE No. 2

SCALE



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

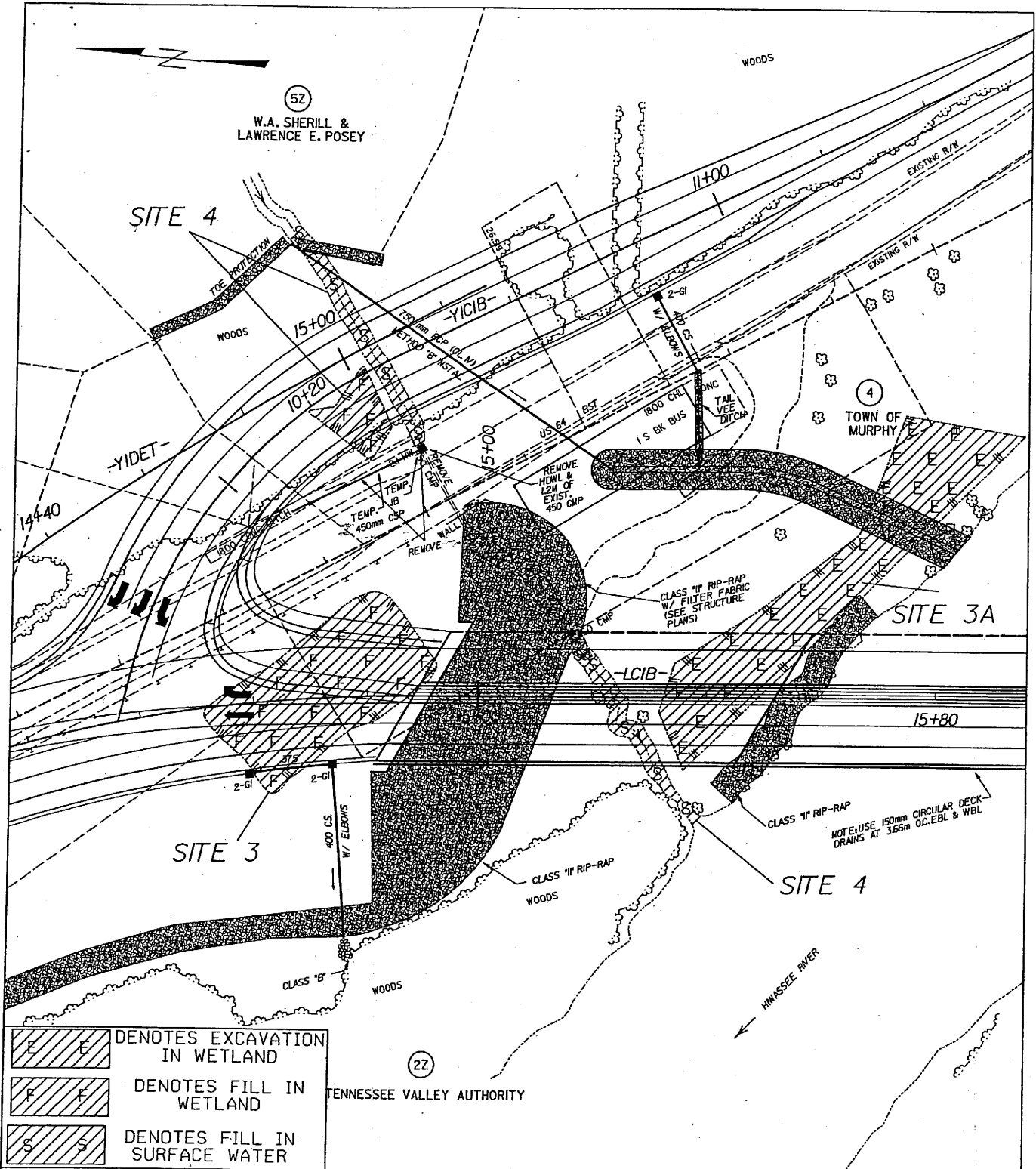
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

SHEET 5 OF 39

JUNE 1997

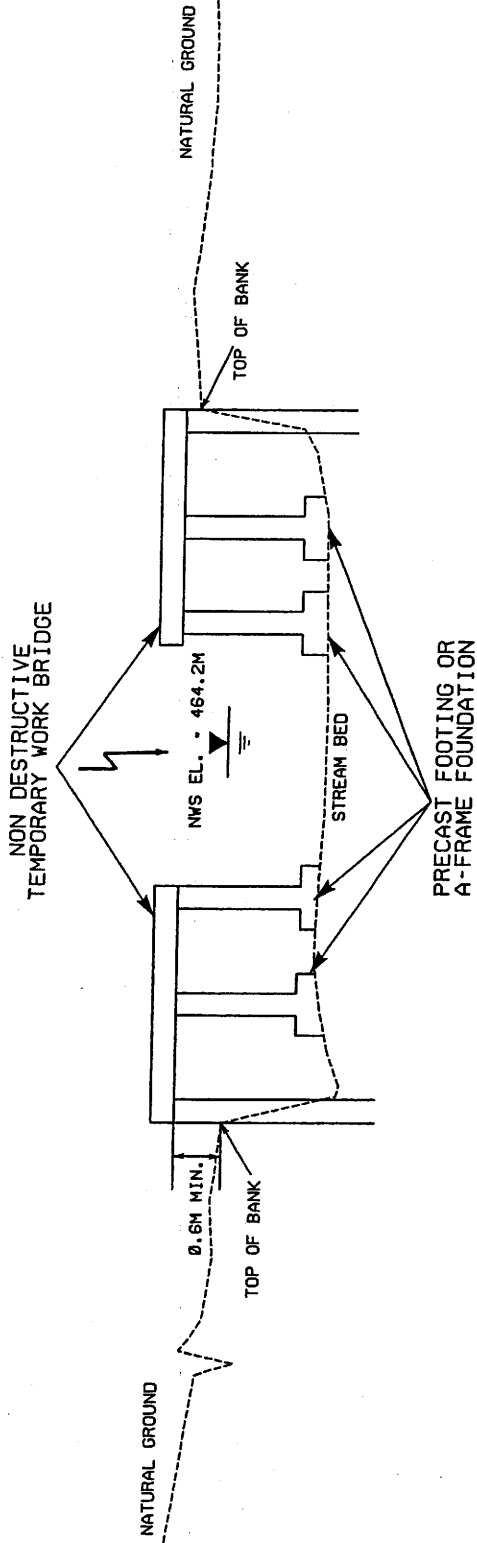


E E	DENOTES EXCAVATION IN WETLAND
F F	DENOTES FILL IN WETLAND
S S	DENOTES FILL IN SURFACE WATER

PLAN VIEW
STREAM & WETLAND
IMPACTS
SITES 3, 3A, & 4
SCALE - 1:1000

NCDOT
DIVISION OF HIGHWAYS
CHEROKEE COUNTY
PROJECT: 8.1910203 (R-977A)
PROPOSED US 64 RELOCATION FROM
EXISTING US-19-74-129 IN MURPHY
TO EAST OF NC 141 IN PEACHTREE
SHEET 6 OF 39

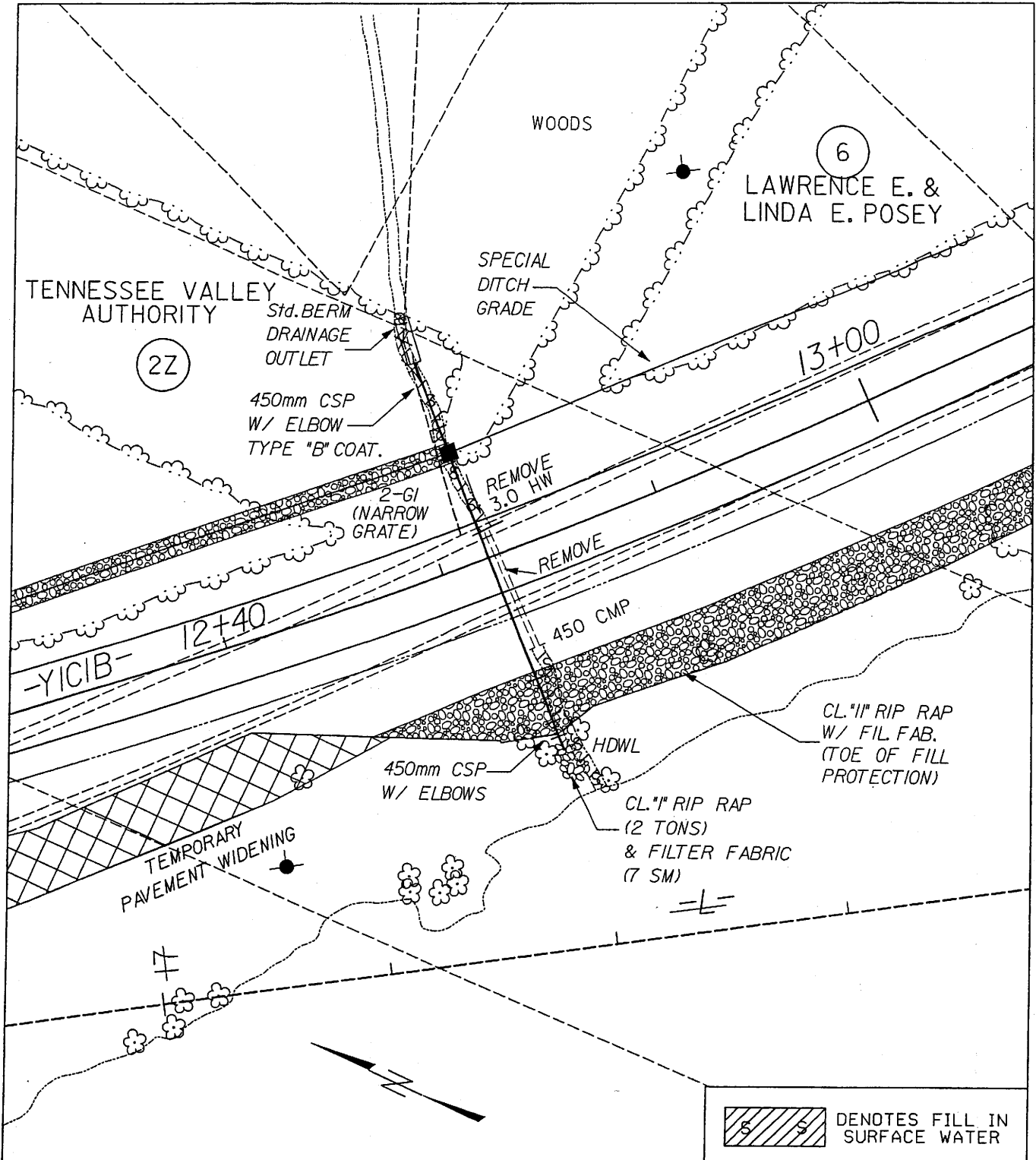
8/17/04



AREA OF TEMPORARY IMPACTS DUE TO TEMPORARY FOOTING/ FOUNDATIONS = 28M²

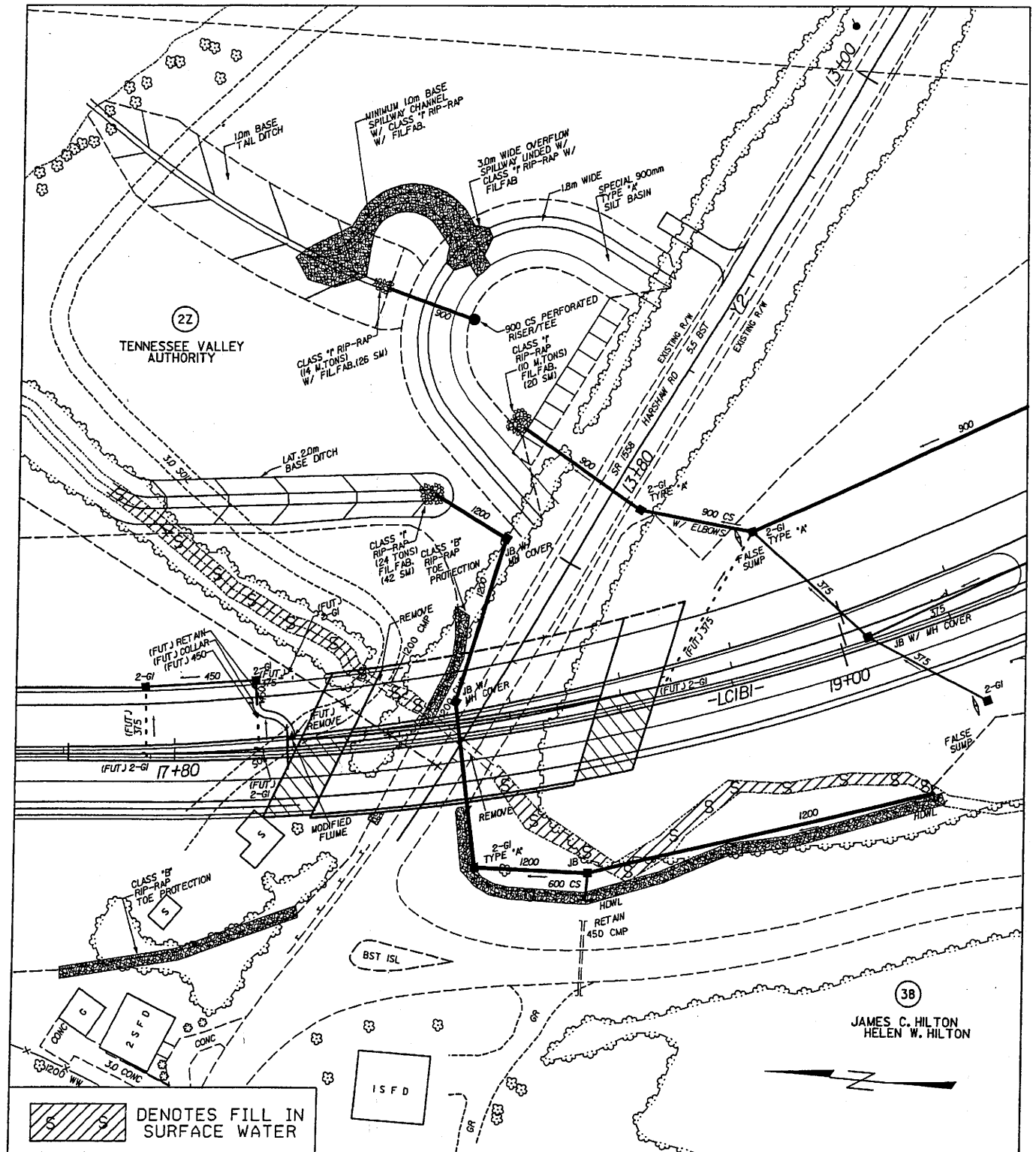
PROFILE VIEW
 TEMPORARY WORK BRIDGE
 SITE 4A
 NOT TO SCALE

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 8 OF 39 5/20/04



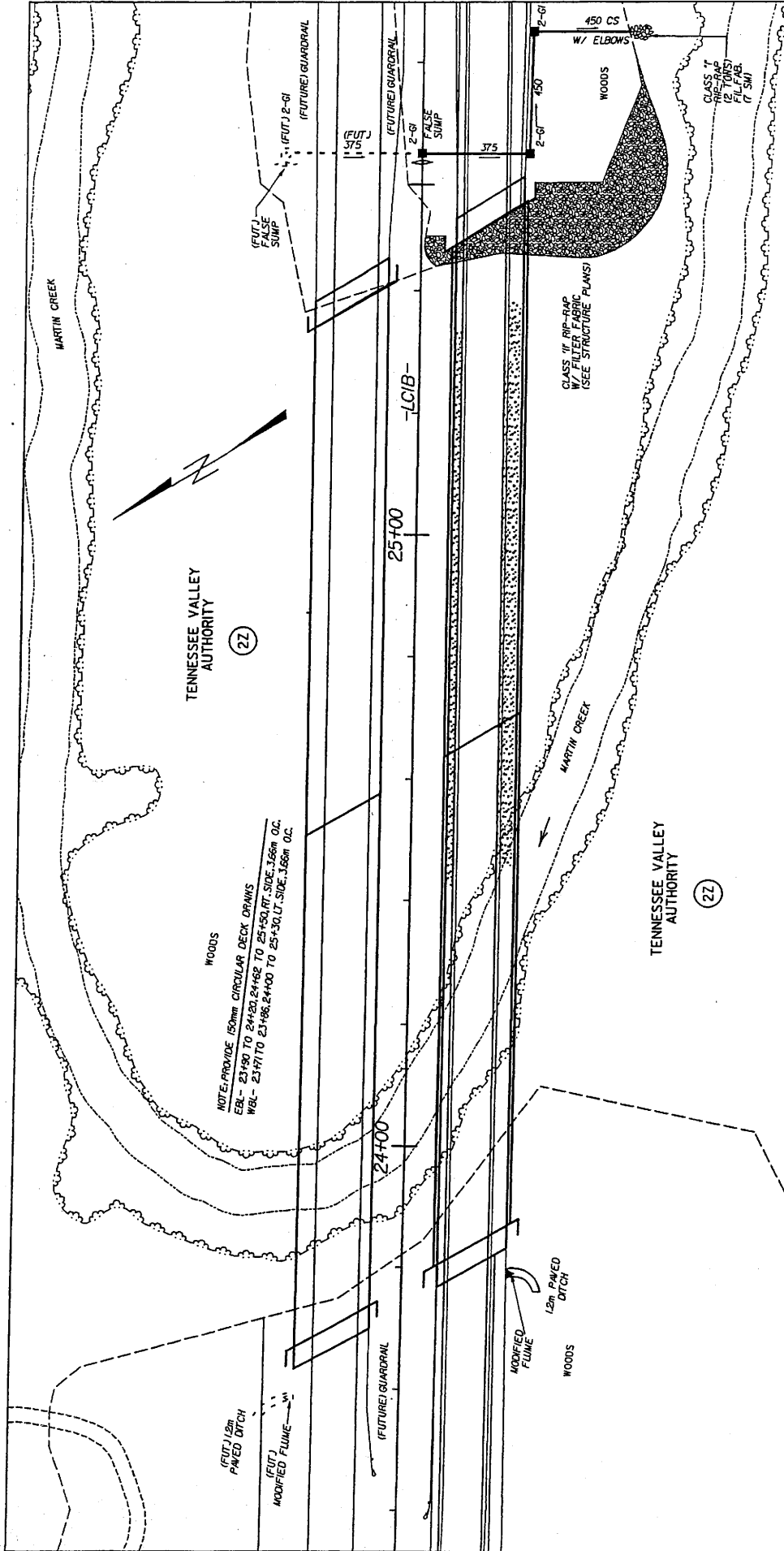
PLAN VIEW
 STREAM
 IMPACTS
 SITE 5
 SCALE - 1:500

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 9 OF 39 2/25/04



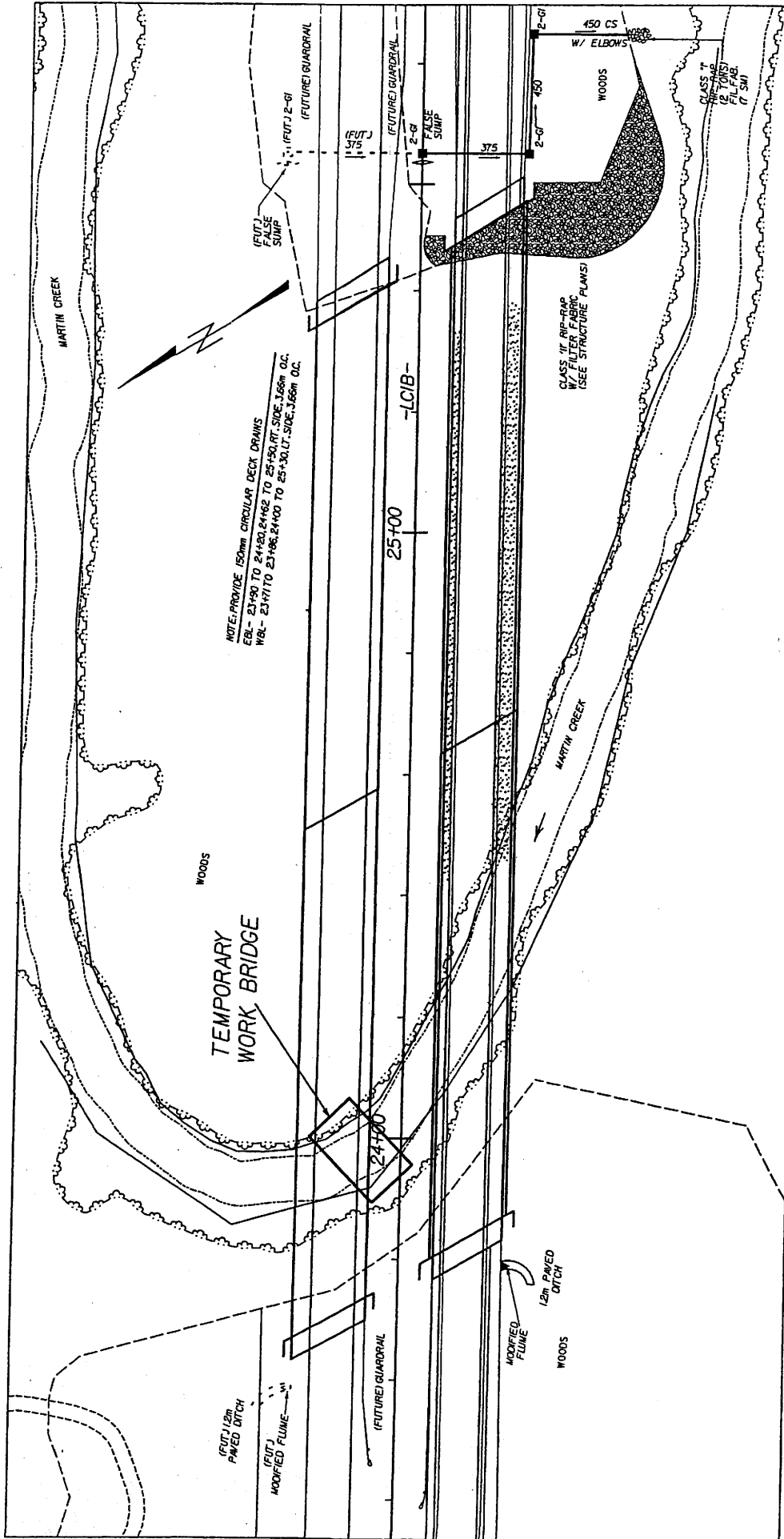
PLAN VIEW
 STREAM
 IMPACTS
 SITES 5A
 SCALE - 1:1000

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 10 OF 39 5/20/04



NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET // OF 39 2 / 25 / 04

PLAN VIEW
 NO
 IMPACTS
 SITE 6
 SCALE 1:1000



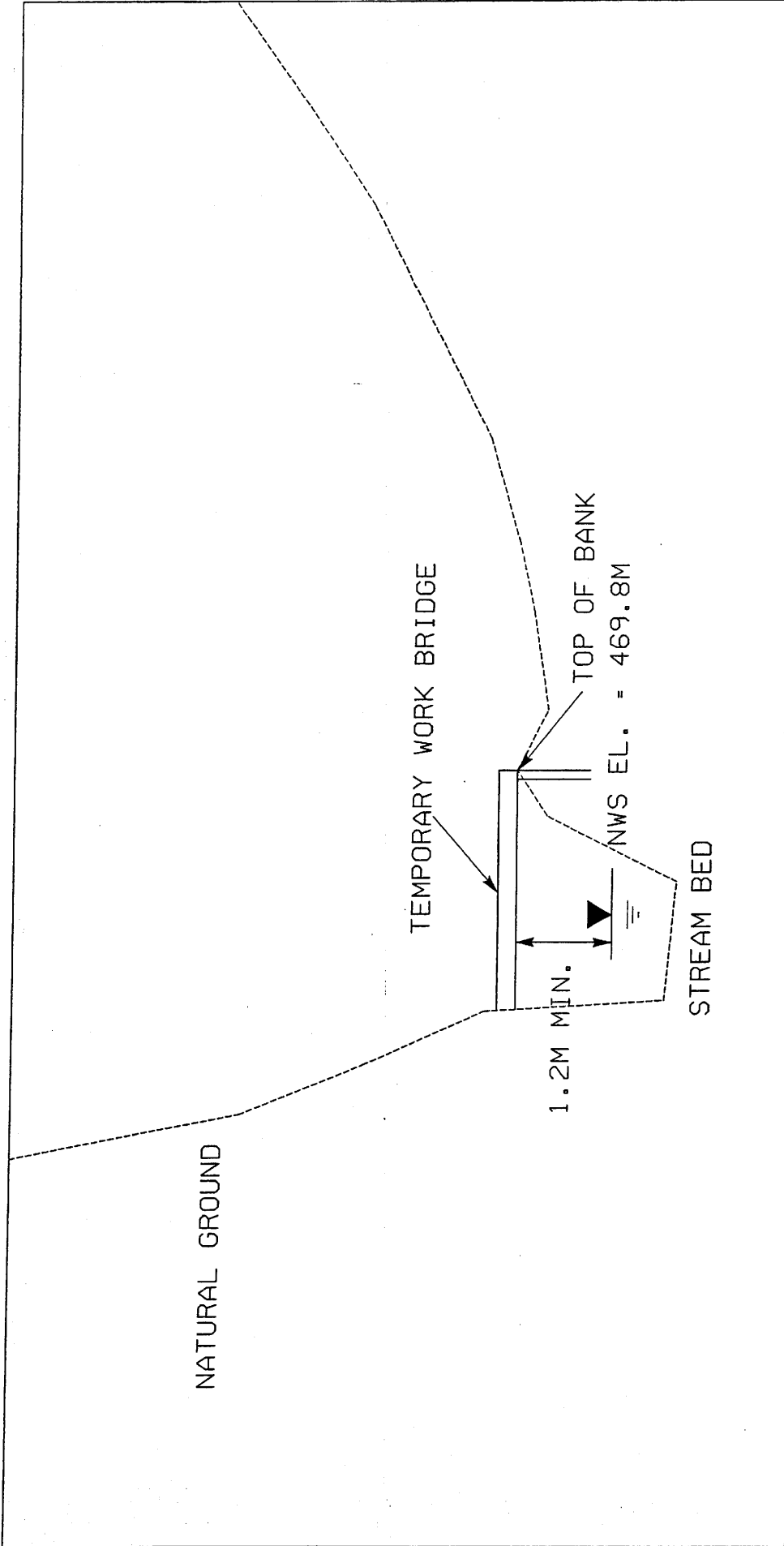
NCDOT

DIVISION OF HIGHWAYS
 CHEROKEE COUNTY

PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE

SHEET 12 OF 39 2 / 25 / 04

PLAN VIEW
 TEMPORARY WORK BRIDGE
 AT MARTINS CREEK
 NO IMPACTS
 SCALE 1:1000



PROFILE VIEW
 TEMPORARY WORK BRIDGE
 AT MARTINS CREEK
 NO IMPACTS
 NOT TO SCALE

NCDOT

DIVISION OF HIGHWAYS

CHEROKEE COUNTY

PROJECT: 8.1910203 (R-977A)

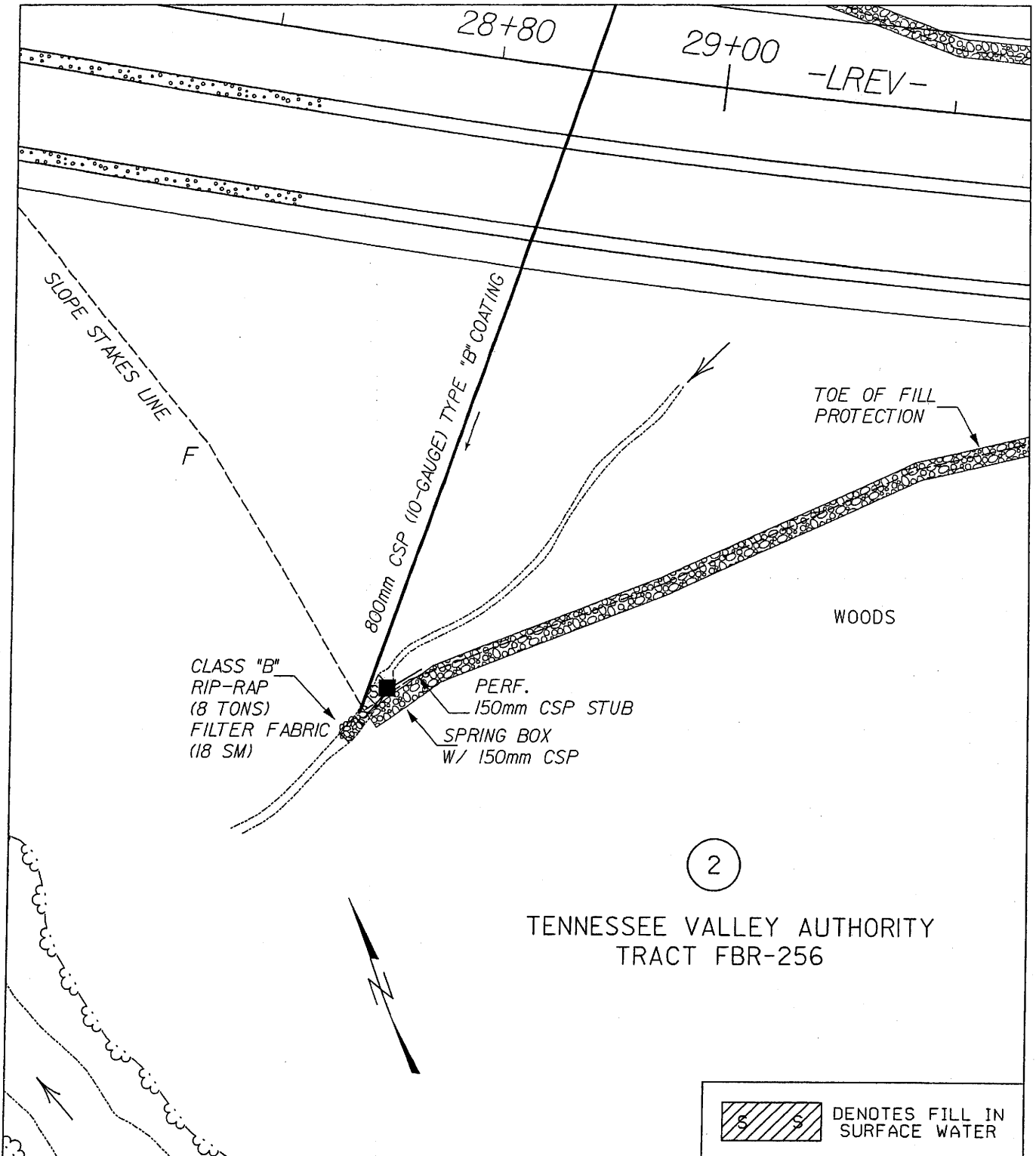
PROPOSED US 64 RELOCATION FROM

EXISTING US-19-74-129 IN MURPHY

TO EAST OF NC 141 IN PEACHTREE

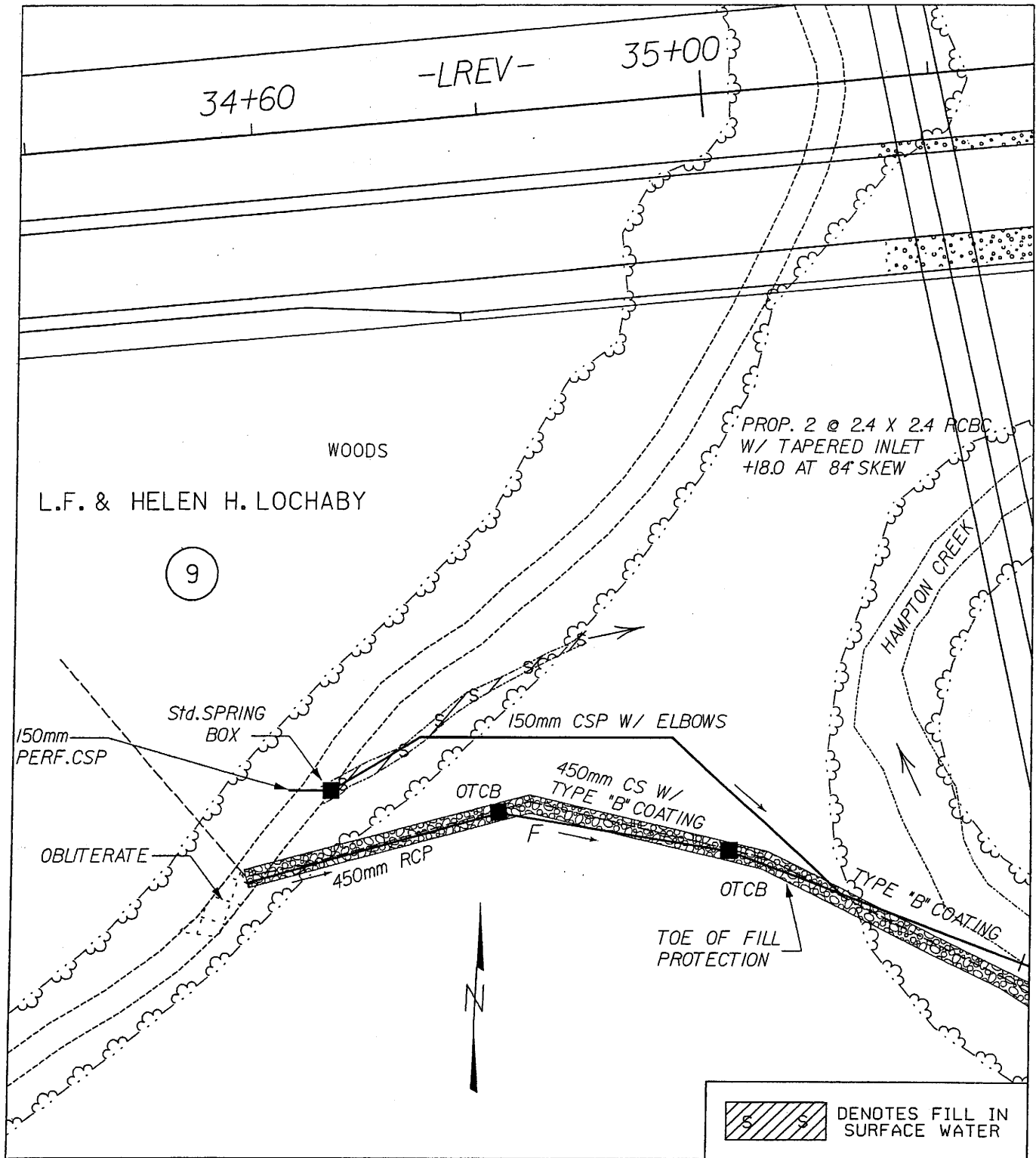
SHEET 13 OF 39

2/25/04



PLAN VIEW
STREAM
IMPACTS
SITE 7
SCALE - 1:500

NCDOT
DIVISION OF HIGHWAYS
CHEROKEE COUNTY
PROJECT: 8.1910203 (R-977A)
PROPOSED US 64 RELOCATION FROM
EXISTING US-19-74-129 IN MURPHY
TO EAST OF NC 141 IN PEACHTREE
SHEET 14 OF 39 2/25/04

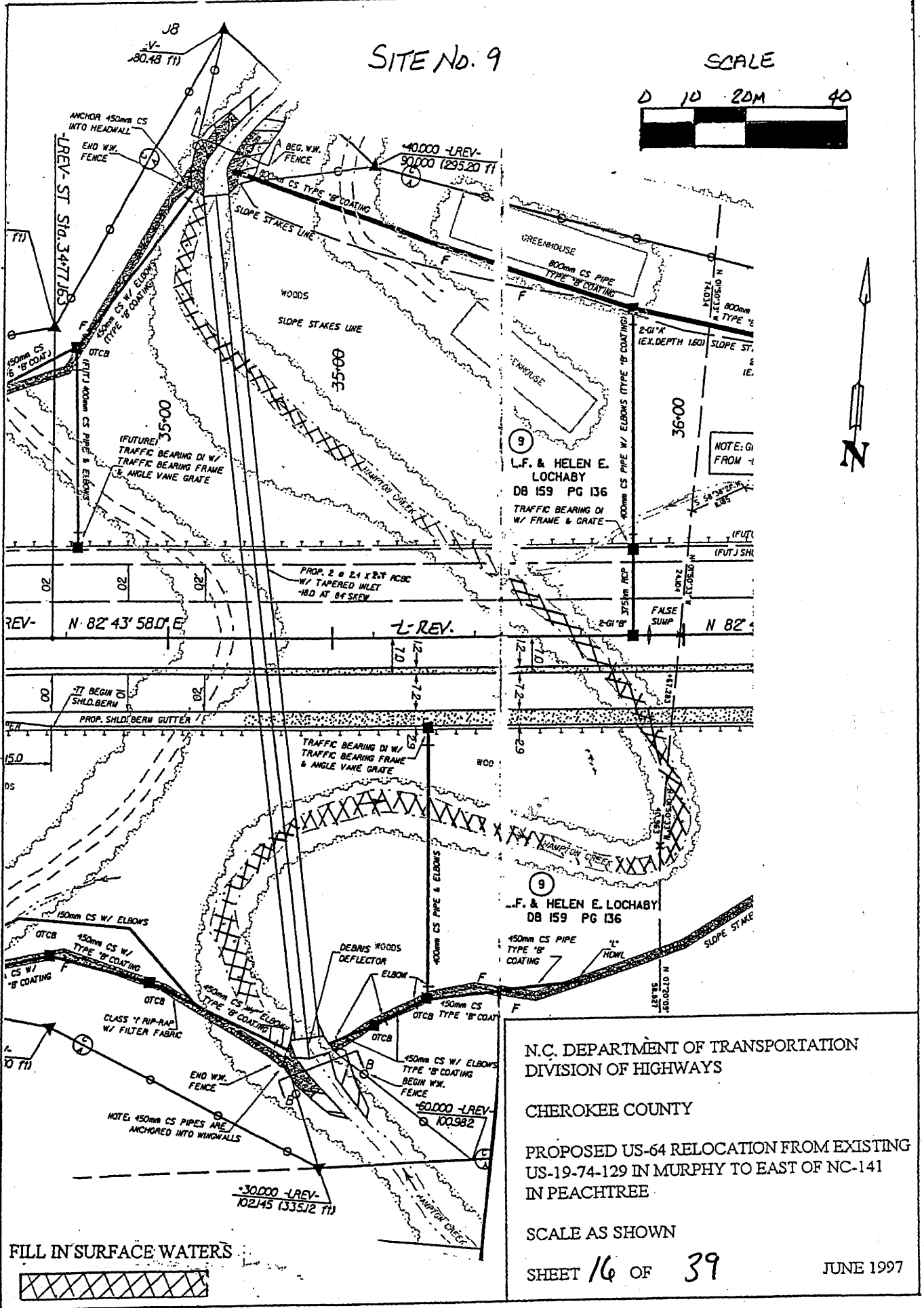
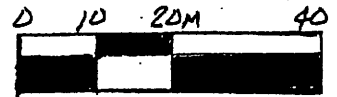


PLAN VIEW
 STREAM
 IMPACTS
 SITE 8
 SCALE - 1:500

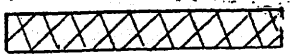
NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 15 OF 39
 2/25/04

SITE NO. 9

SCALE



FILL IN SURFACE WATERS



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

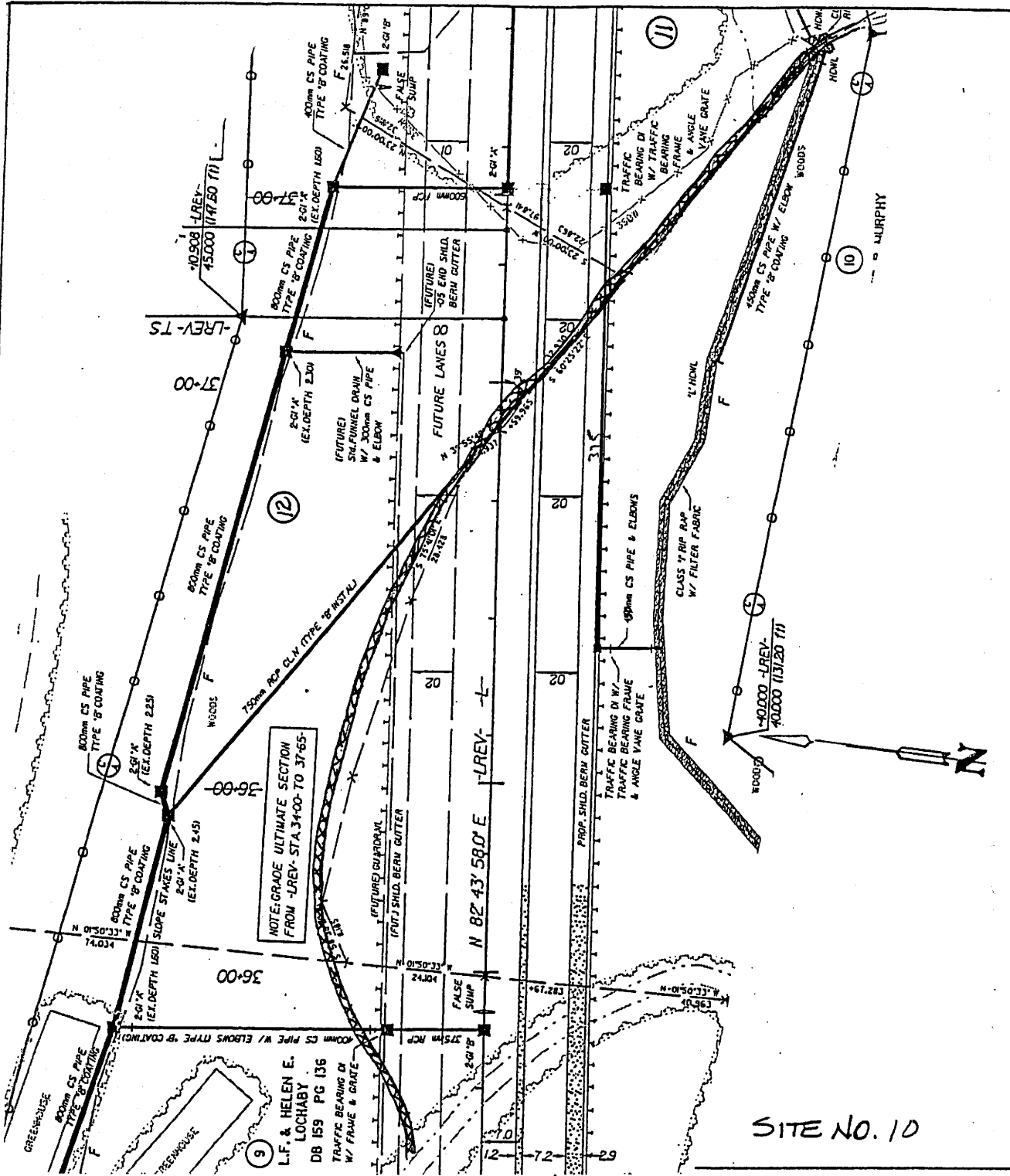
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

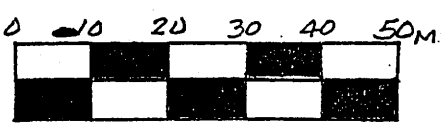
SCALE AS SHOWN

SHEET 16 OF 39

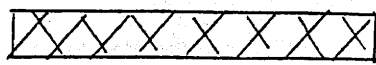
JUNE 1997



SCALE



FILL IN SURFACE WATERS



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CHEROKEE COUNTY

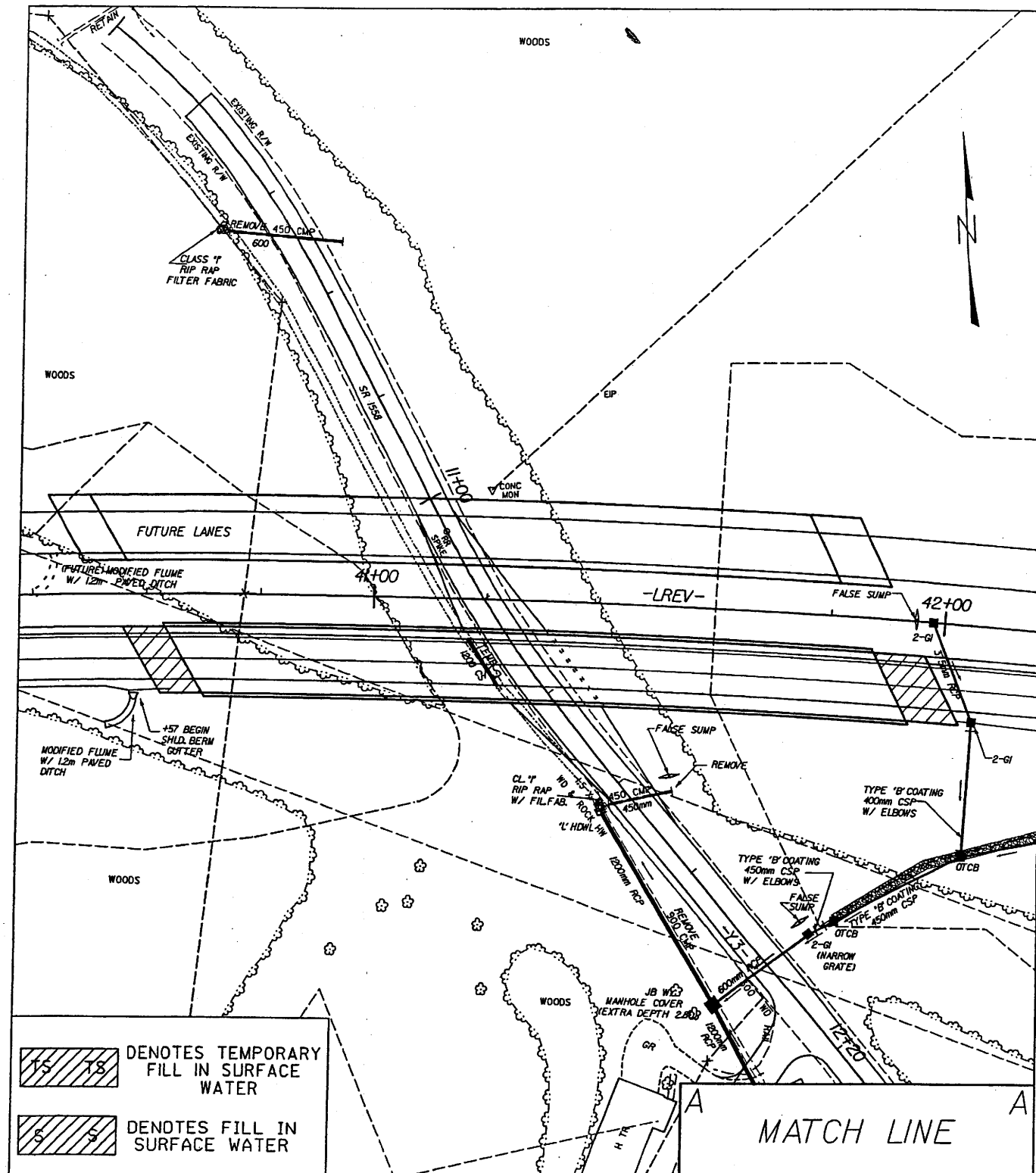
PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

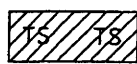

SCALE AS SHOWN

SHEET 17 OF 39

2/25/04

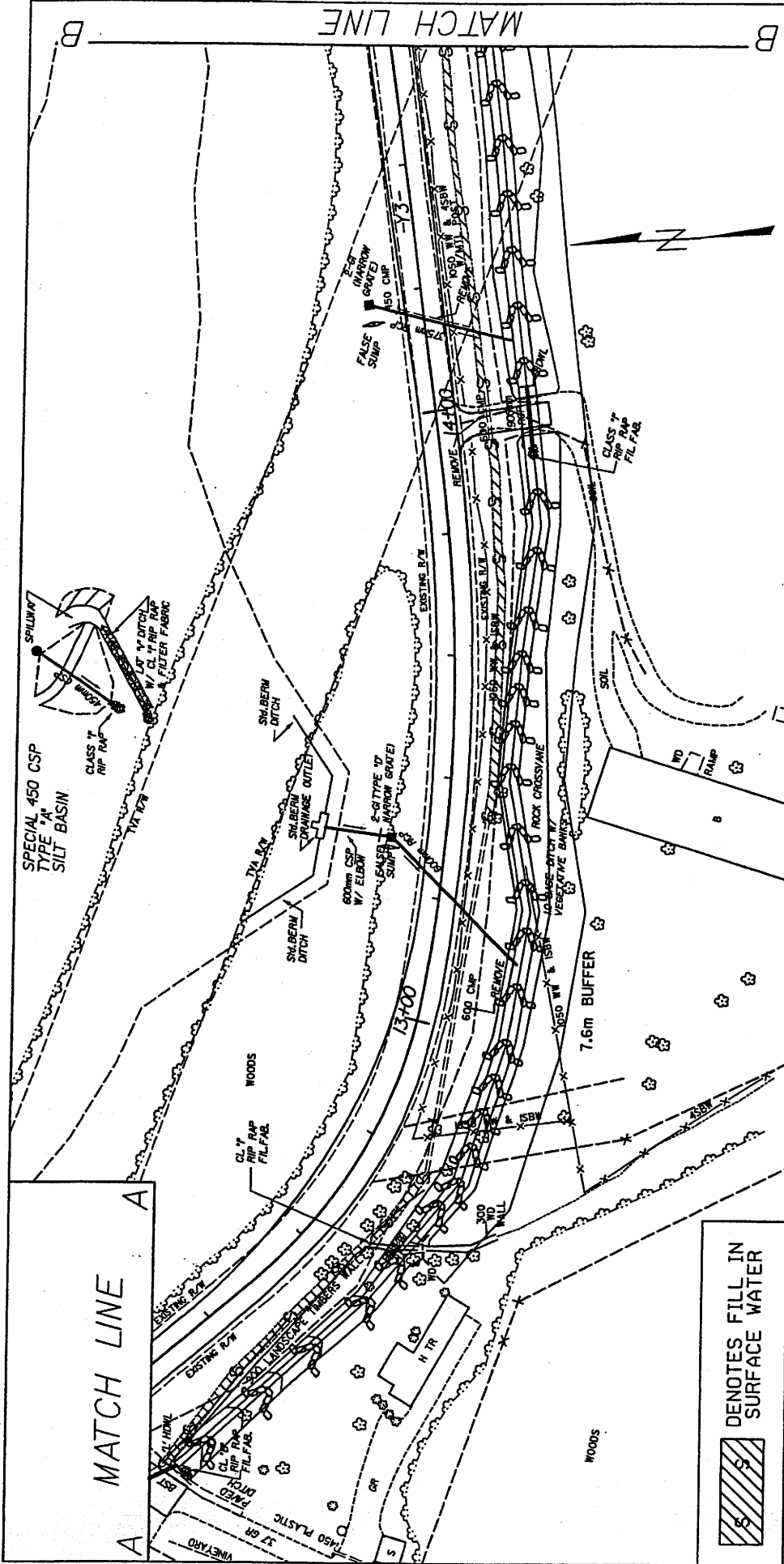
SITE NO. 10



 DENOTES TEMPORARY FILL IN SURFACE WATER
 DENOTES FILL IN SURFACE WATER

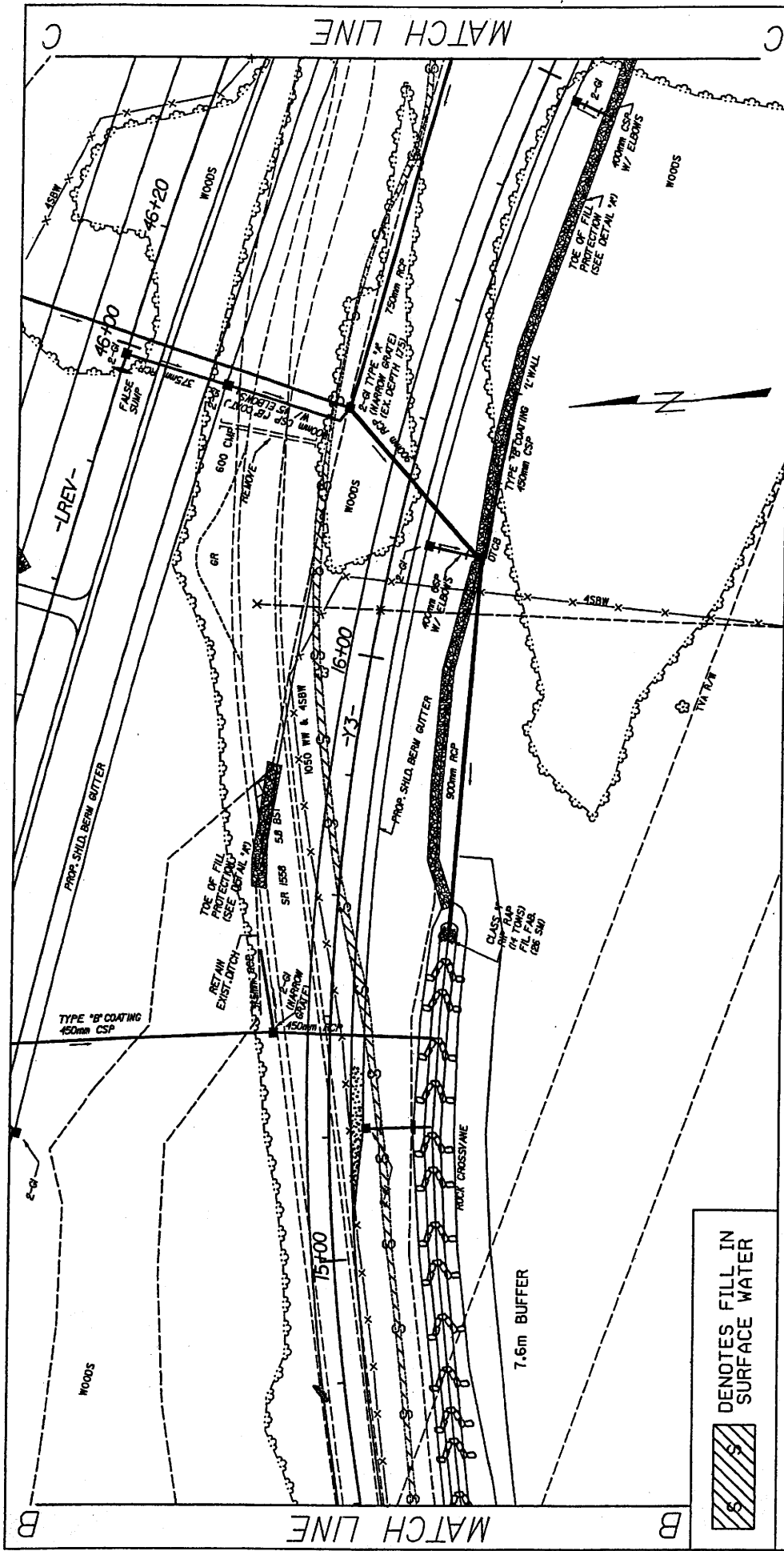
PLAN VIEW
 STREAM
 IMPACTS
 SITE 11
 SCALE - 1:1000

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 18 OF 39 5/20/04



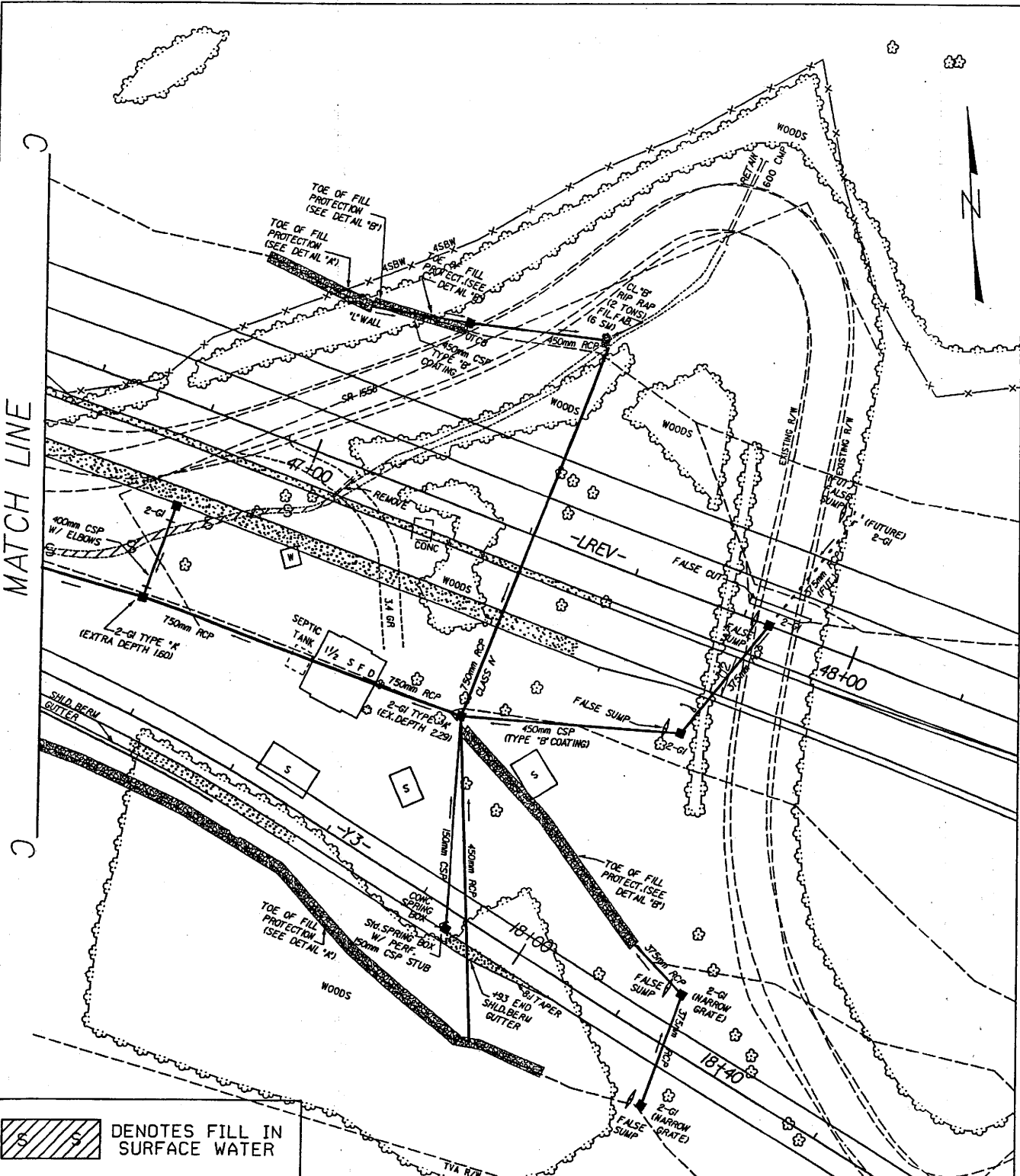
NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 81910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET / 9 OF 39 5/24/04

PLAN VIEW
STREAM
IMPACTS
SITE 11
SCALE 1:1000



NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 20 OF 39 5/24/04

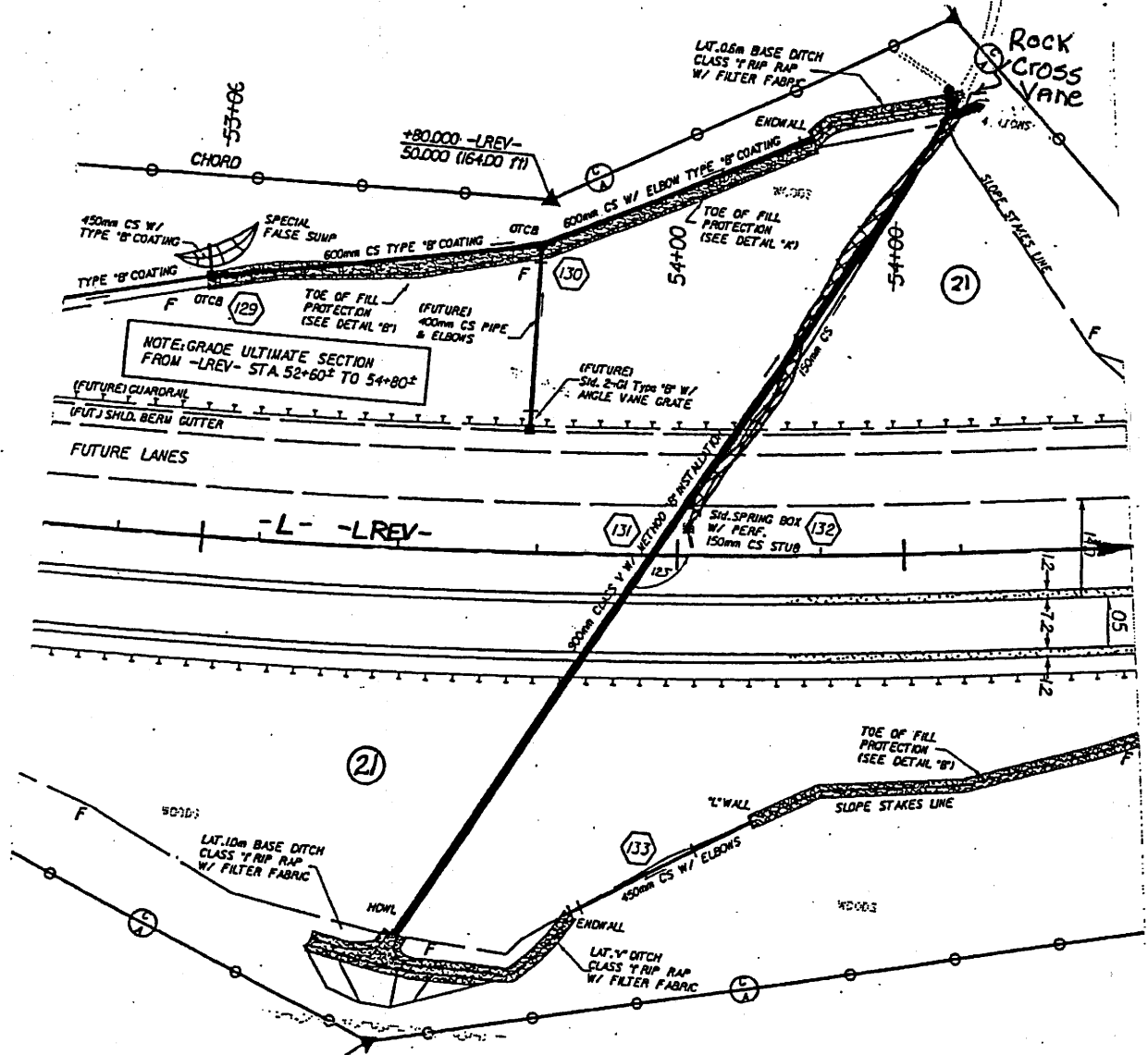
PLAN VIEW
STREAM
IMPACTS
SITE 11
SCALE 1:1000



 DENOTES FILL IN SURFACE WATER

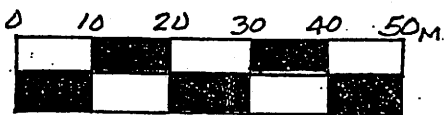
PLAN VIEW
 STREAM
 IMPACTS
 SITE 11
 SCALE - 1:1000

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 21 OF 37 5/20/04



SITE#12

SCALE



FILL IN SURFACE WATERS



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

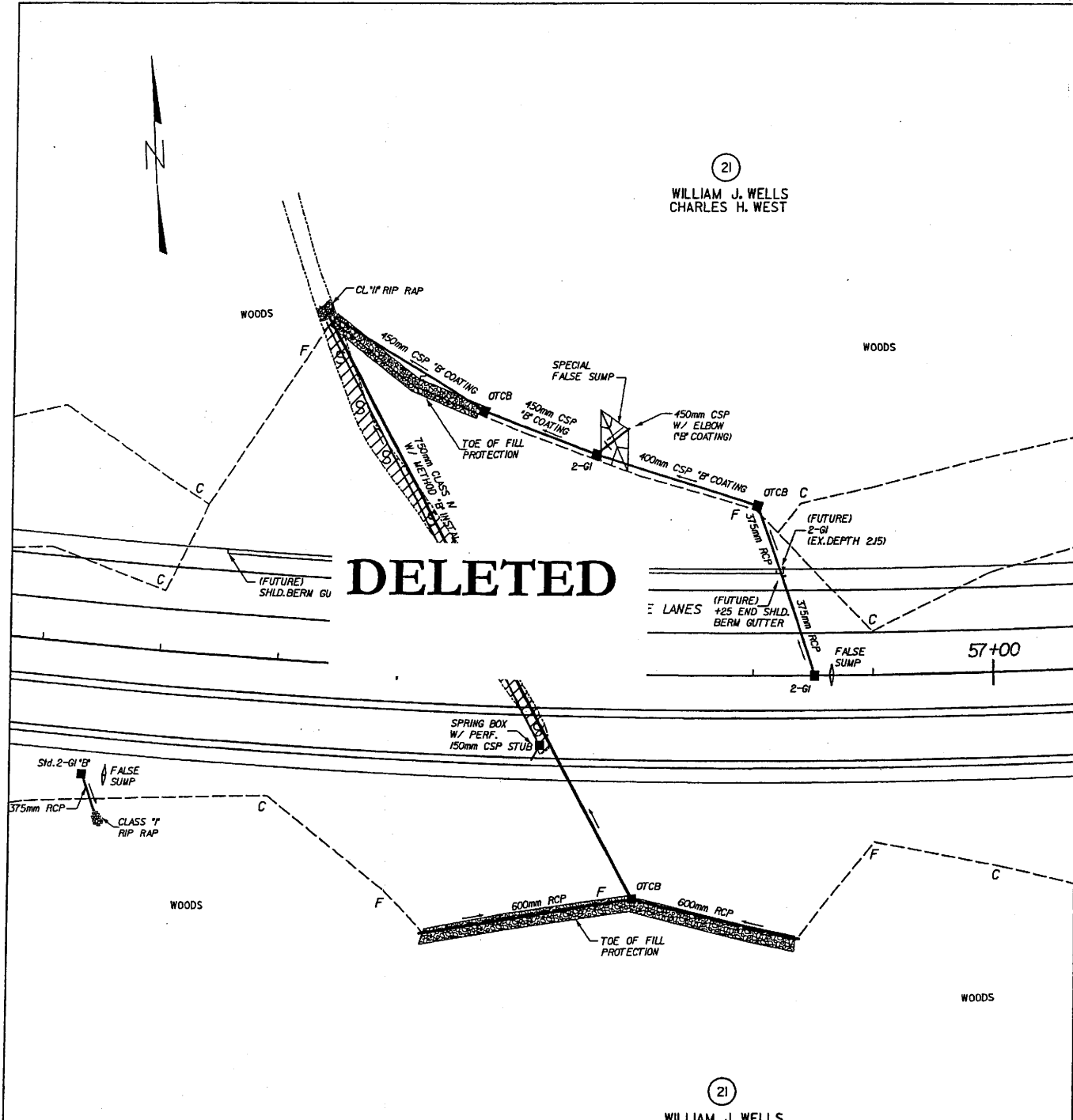
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

SHEET 22 OF 39

2/25/04



DELETED

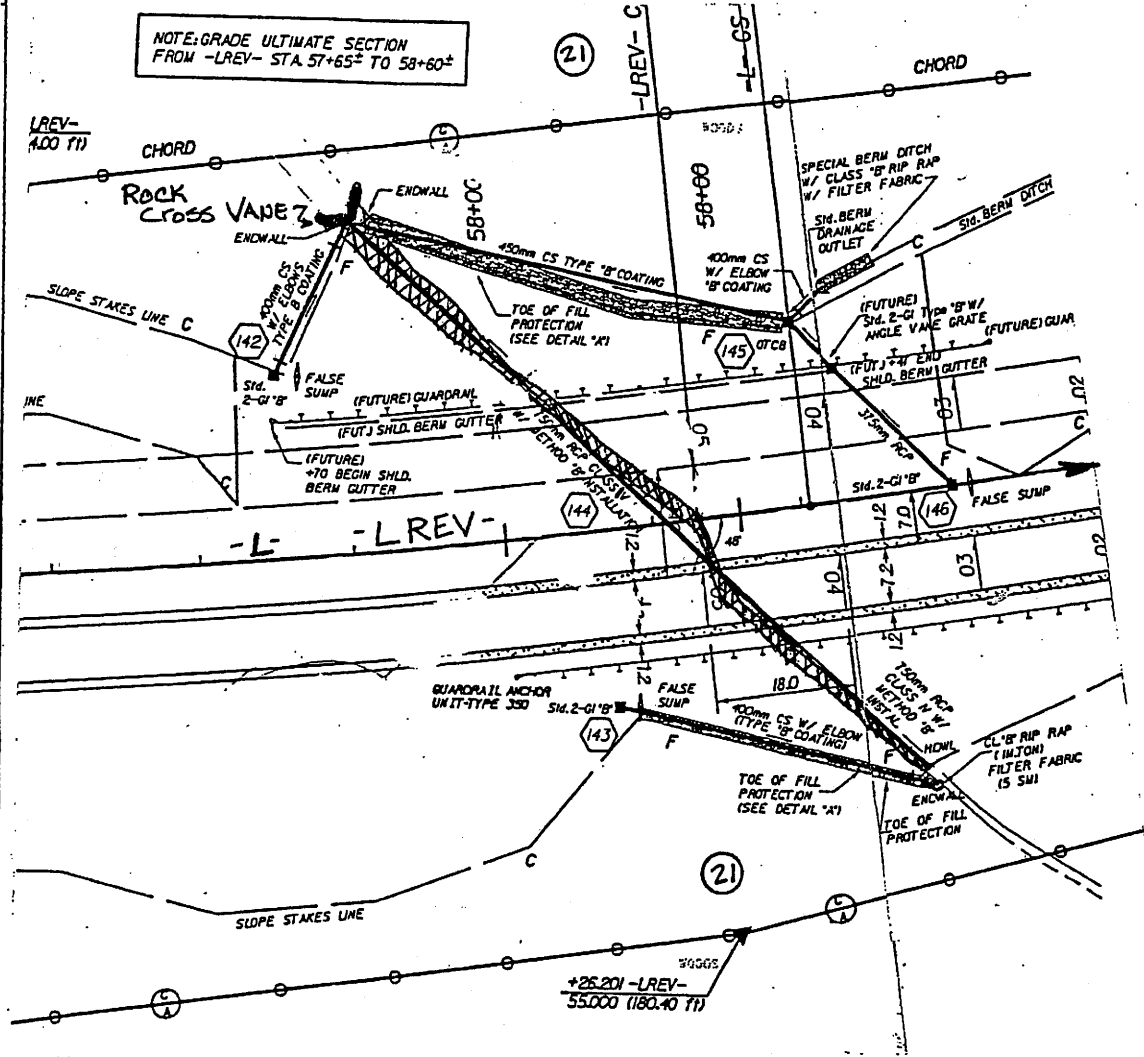
 DENOTES FILL IN SURFACE WATER

PLAN VIEW
 STREAM
 IMPACTS
 SITE 13
 SCALE - 1:1000

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 23 OF 39 2/25/04



NOTE: GRADE ULTIMATE SECTION
FROM -LREV- STA 57+65± TO 58+60±



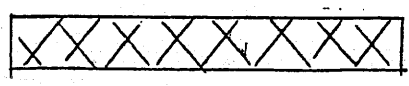
SITE #14

SCALE

0 10 20 30 40 50M



FILL IN SURFACE WATERS



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

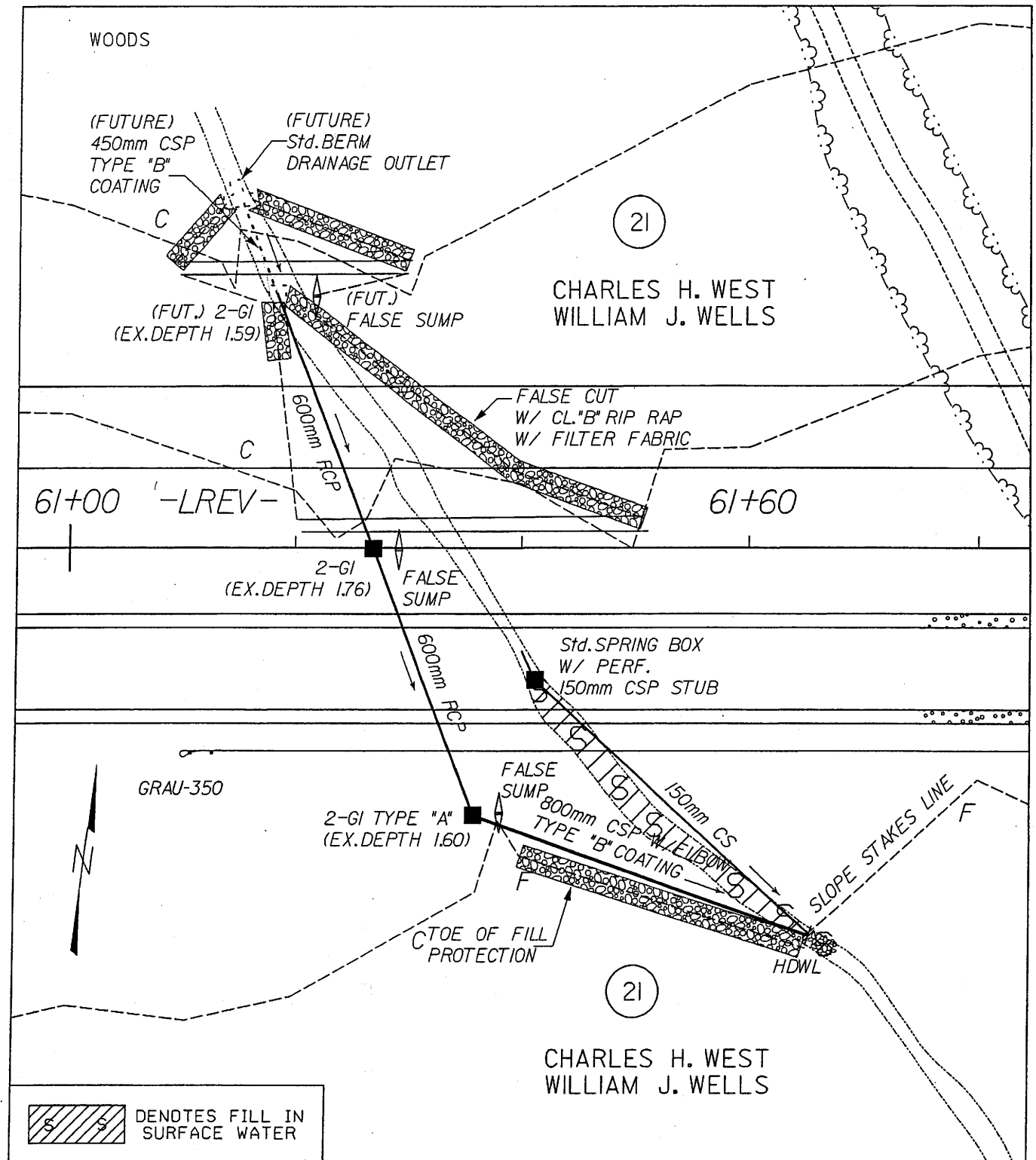
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

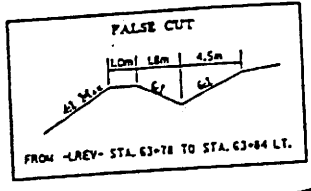
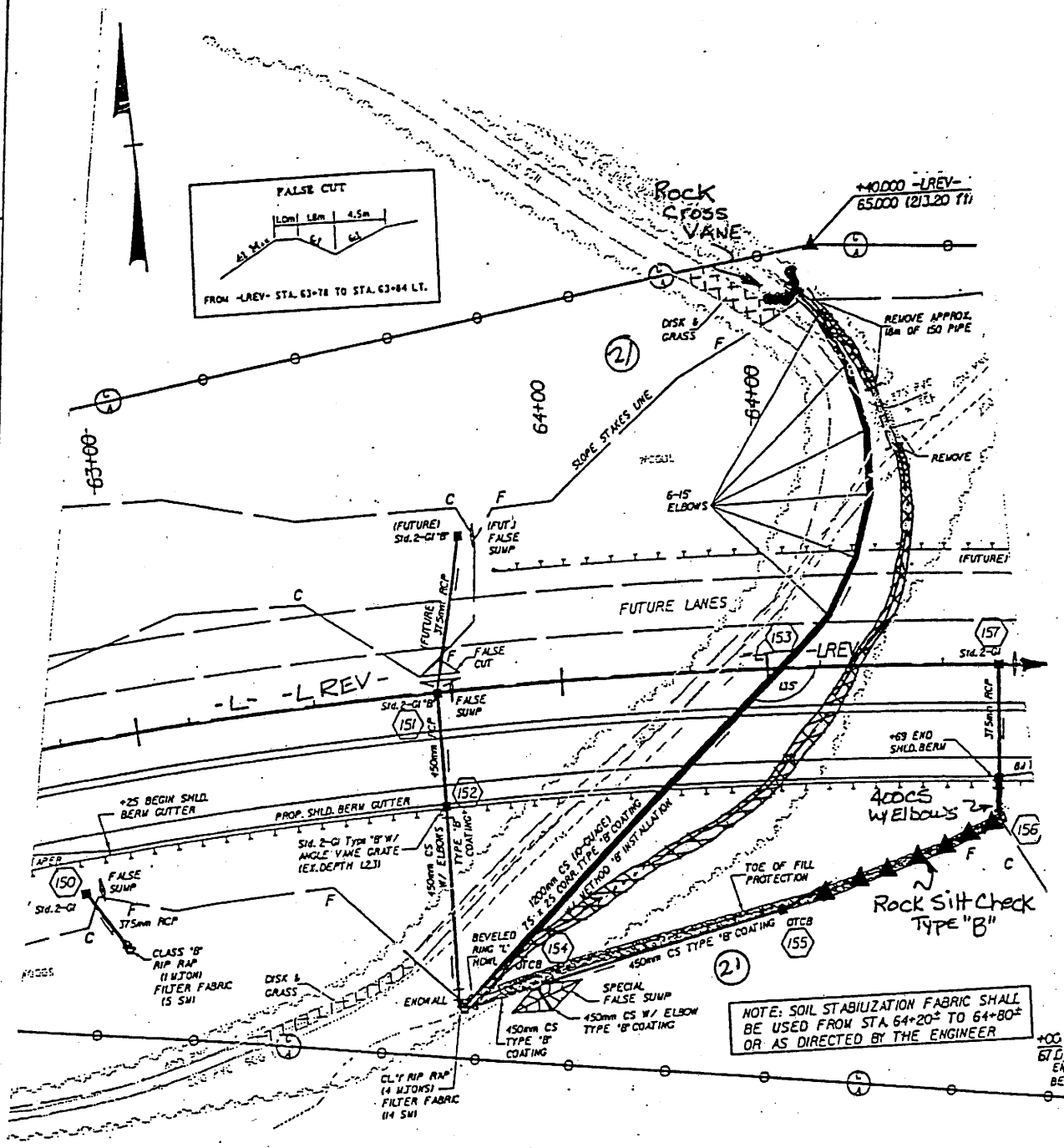
SHEET 24 OF 39

2/25/04



PLAN VIEW
 STREAM
 IMPACTS
 SITE 15
 SCALE - 1:500

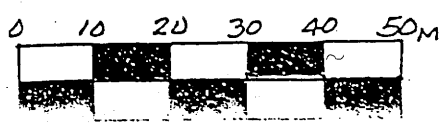
NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 25 OF 39
 4/16/04



NOTE: SOIL STABILIZATION FABRIC SHALL BE USED FROM STA. 64+20± TO 64+80± OR AS DIRECTED BY THE ENGINEER

SITE #16

SCALE



FILL IN SURFACE WATERS

N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

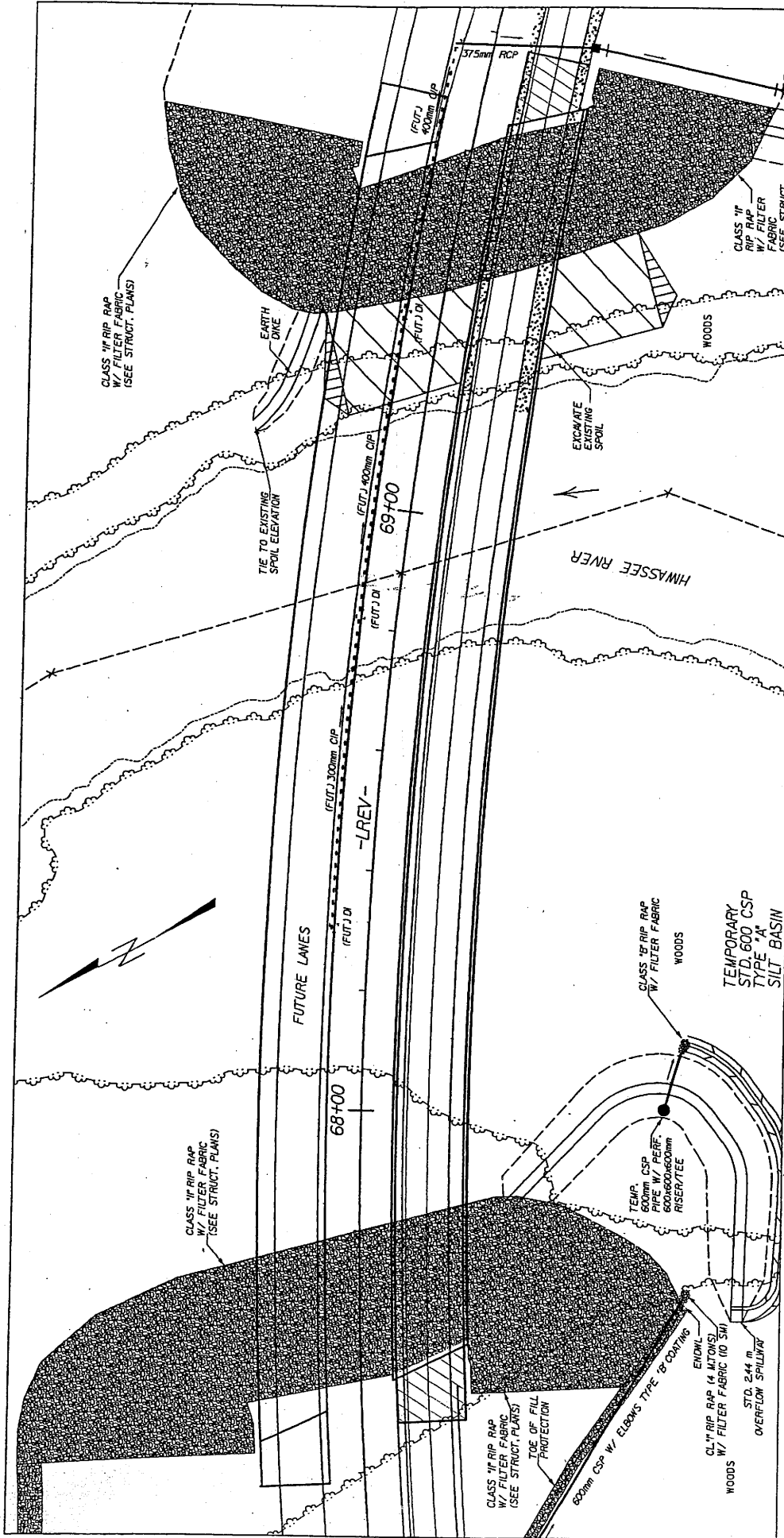
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

SHEET 26 OF 39

2 / 25 / 04



NCDOT

DIVISION OF HIGHWAYS

CHEROKEE COUNTY

PROJECT: 8.1910203 (R-977A)

PROPOSED US 64 RELOCATION FROM
EXISTING US-19-74-129 IN MURPHY
TO EAST OF NC 141 IN PEACHTREE

SHEET 27 OF 39

7/1/04

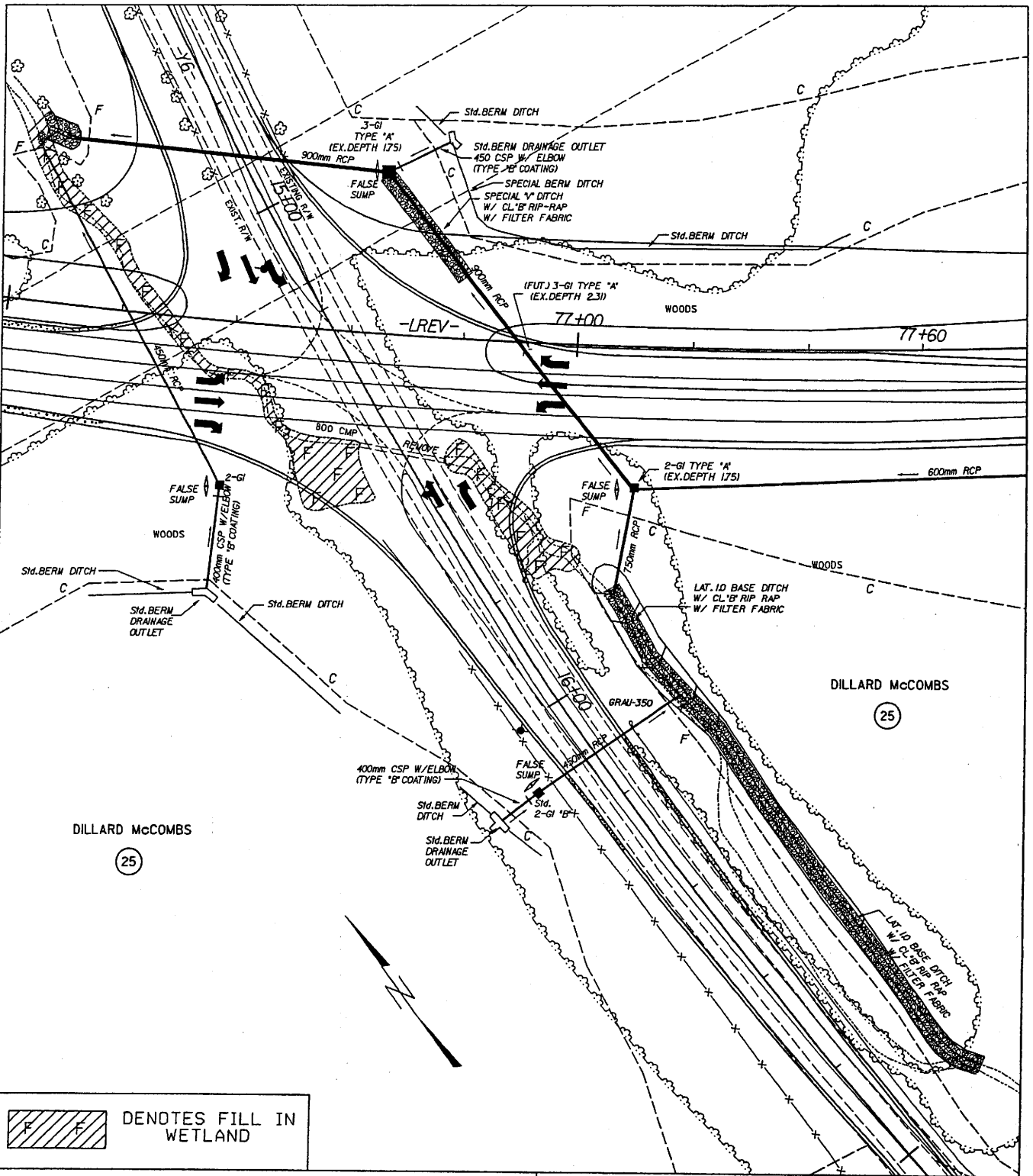
PLAN VIEW

NO

IMPACTS

SITE 16A

SCALE 1:1000

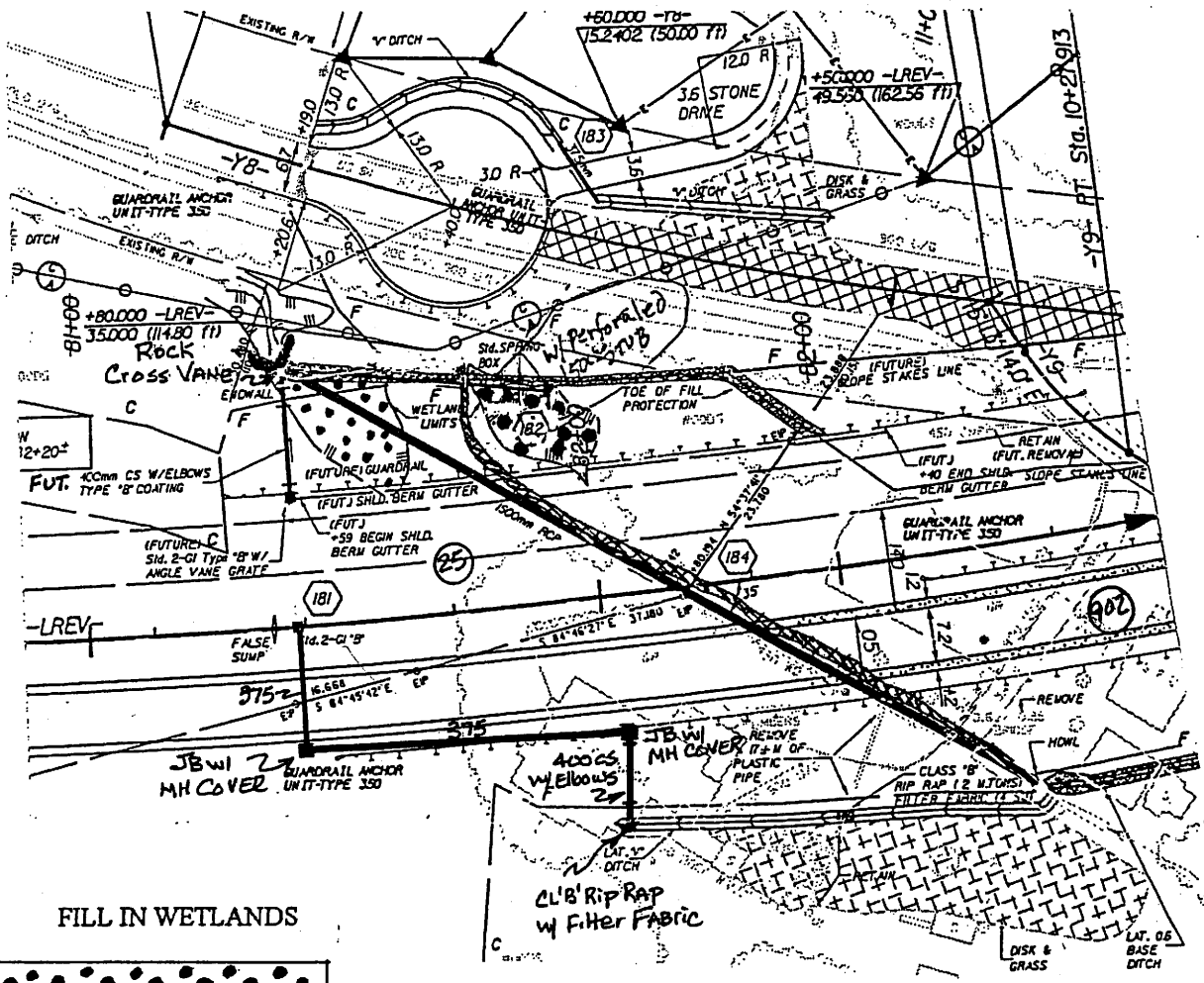


 DENOTES FILL IN WETLAND

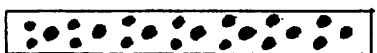
PLAN VIEW
 WETLAND
 IMPACTS
 SITE 17
 SCALE - 1:1000

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 28 OF 39

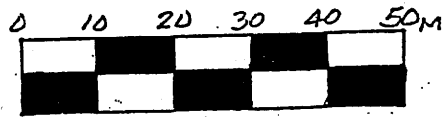
2/25/04



FILL IN WETLANDS



SITE#18
SCALE



FILL IN SURFACE WATERS



N.C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

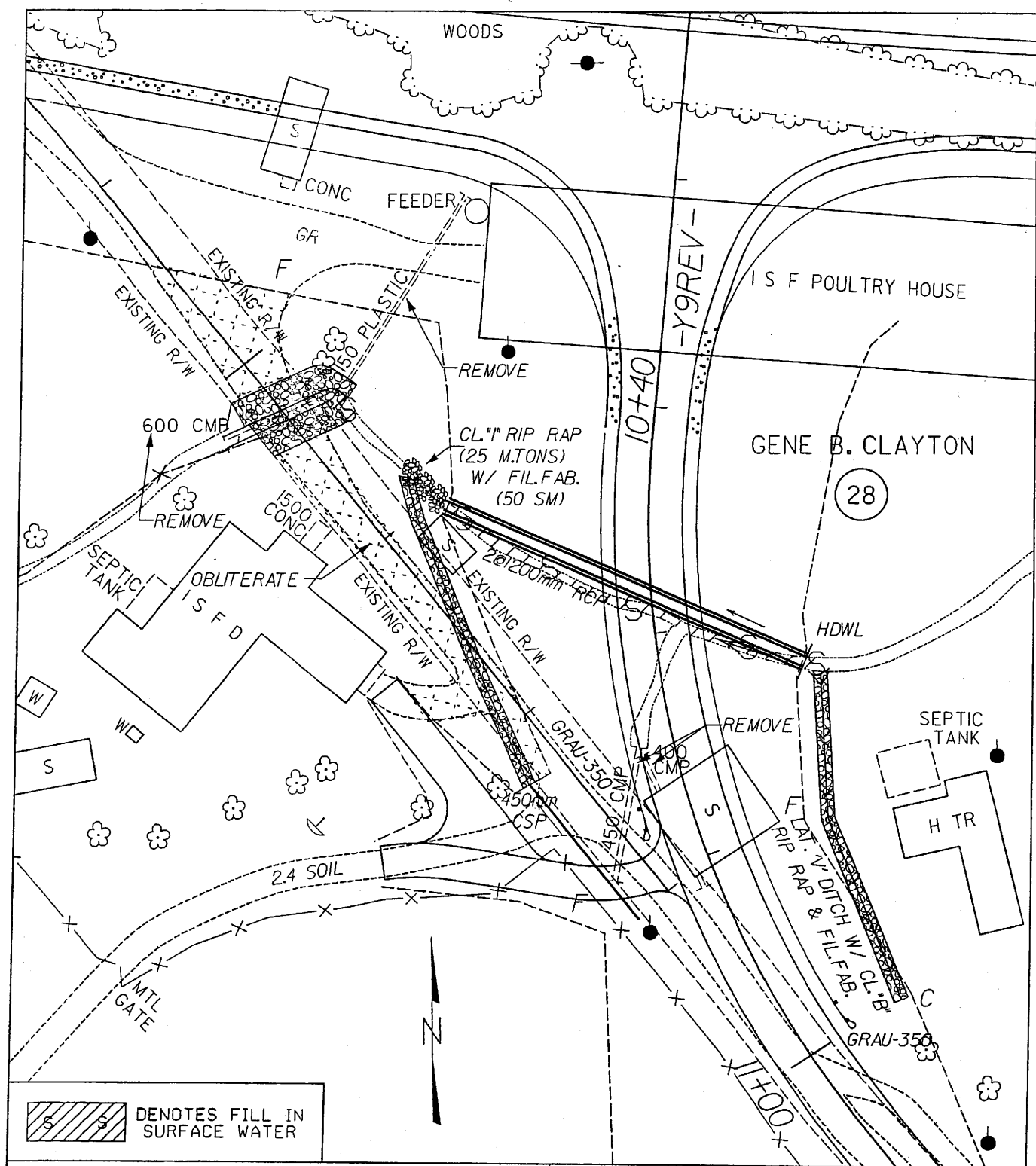
CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
US-19-74-129 IN MURPHY TO EAST OF NC-141
IN PEACHTREE

SCALE AS SHOWN

SHEET 29 OF 39

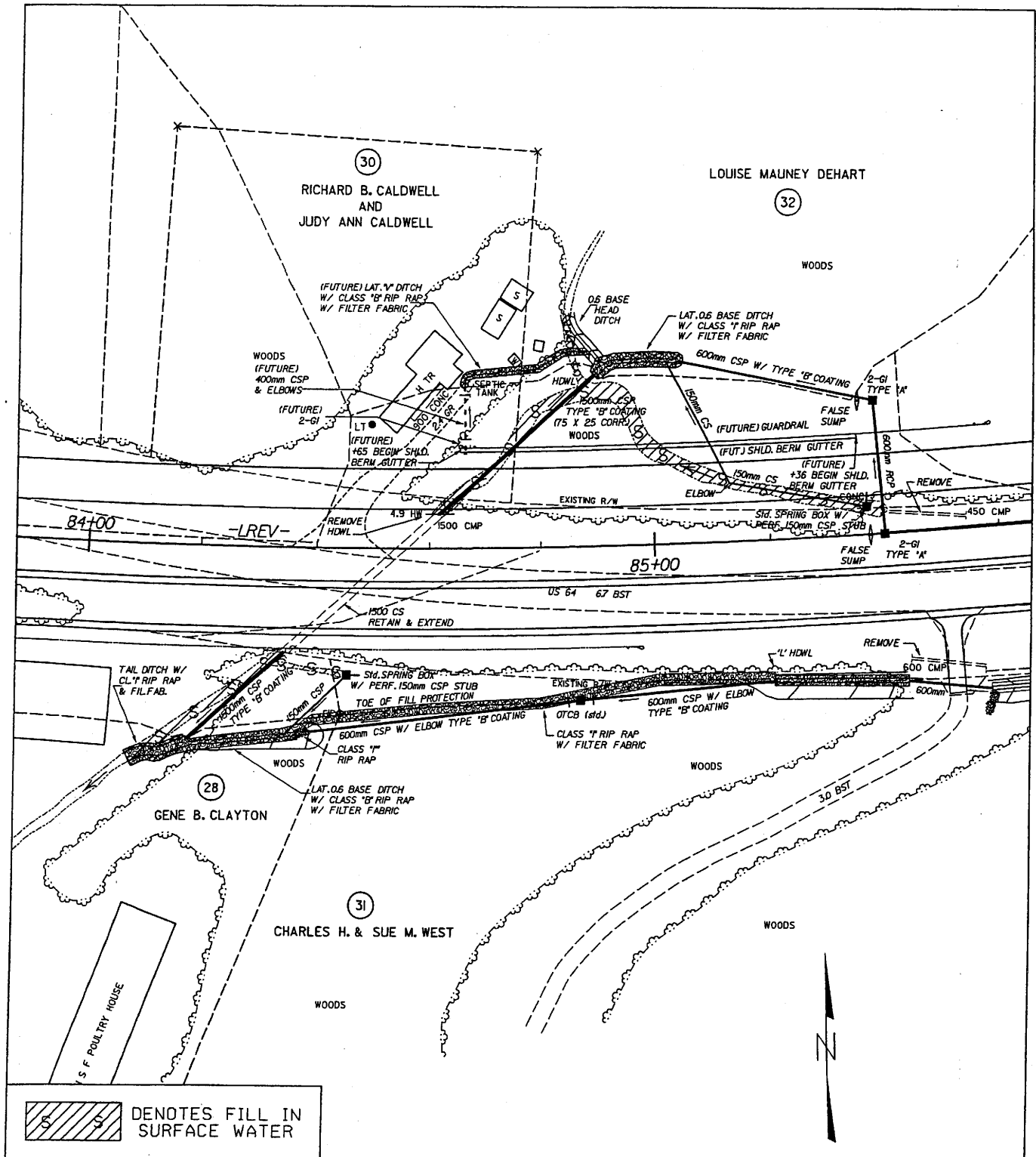
2 / 25 / 04

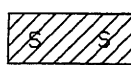



 DENOTES FILL IN SURFACE WATER

PLAN VIEW
 STREAM
 IMPACTS
 SITE 19
 SCALE - 1:500

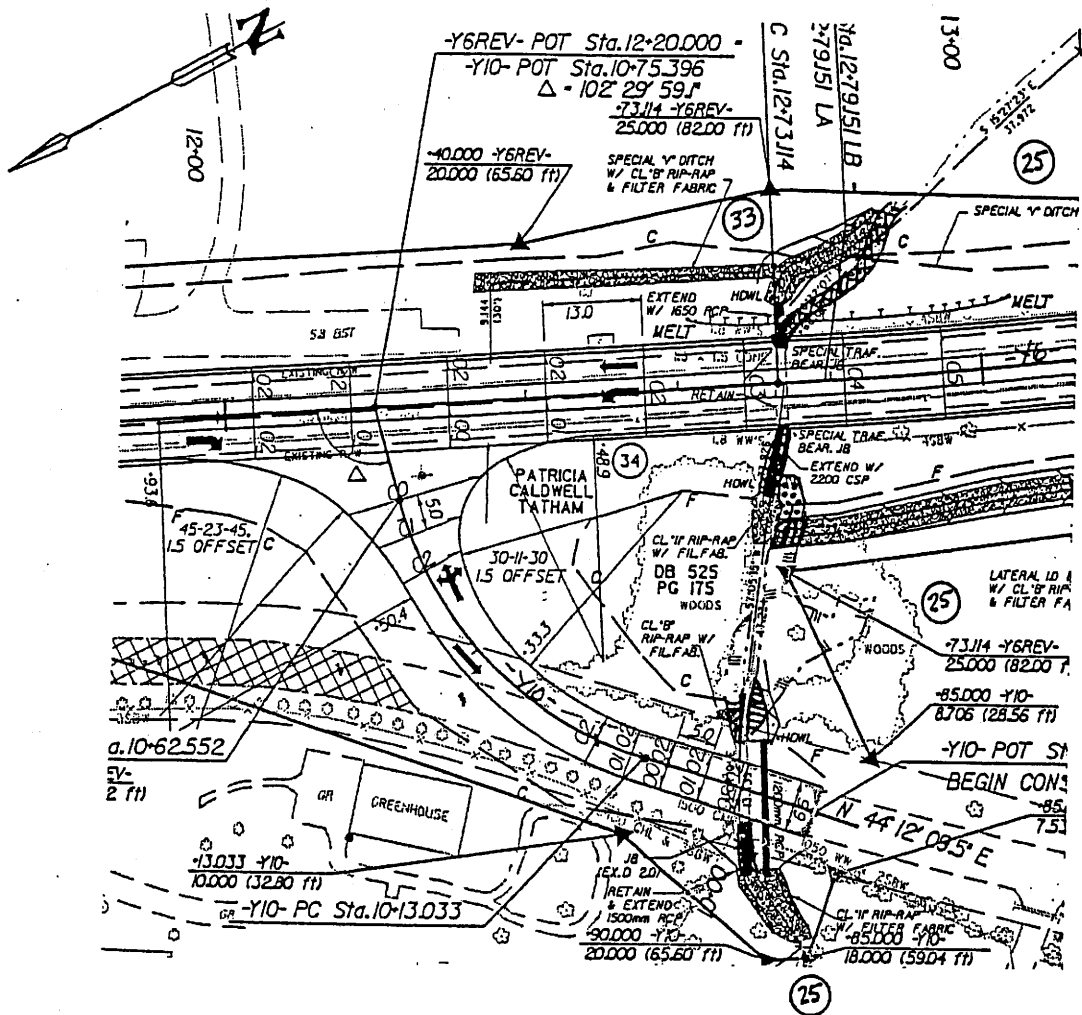
NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 30 OF 39 2/25/04



 DENOTES FILL IN SURFACE WATER

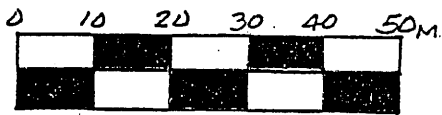
PLAN VIEW
 STREAM
 IMPACTS
 SITE 20
 SCALE - 1:1000

NCDOT
 DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT: 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US-19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE
 SHEET 31 OF 39 2/25/04

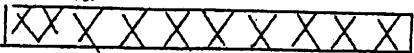


SITE NO. 21 & SITE NO. 22

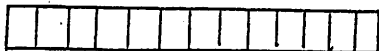
SCALE



FILL IN SURFACE WATERS



EXCAVATION IN WETLANDS



FILL IN WETLANDS



N.C. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

CHEROKEE COUNTY

PROPOSED US-64 RELOCATION FROM EXISTING
 US-19-74-129 IN MURPHY TO EAST OF NC-141
 IN PEACHTREE

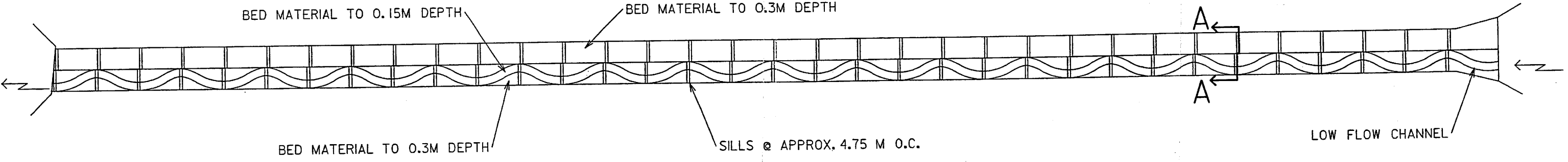
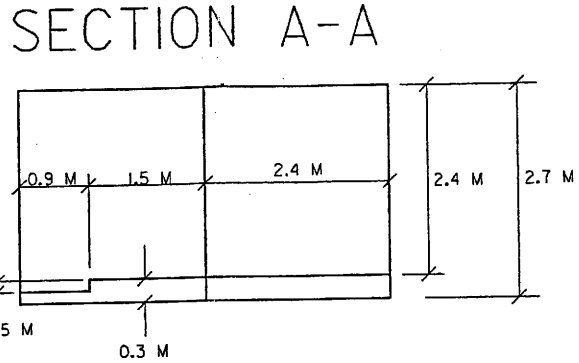
SCALE AS SHOWN

SHEET 32 OF 39

JUNE 1997

R-977A
 -L- REV. 35+ 18.0
 HAMPTON CREEK
 CHEROKEE COUNTY
 MARCH 23, 2004

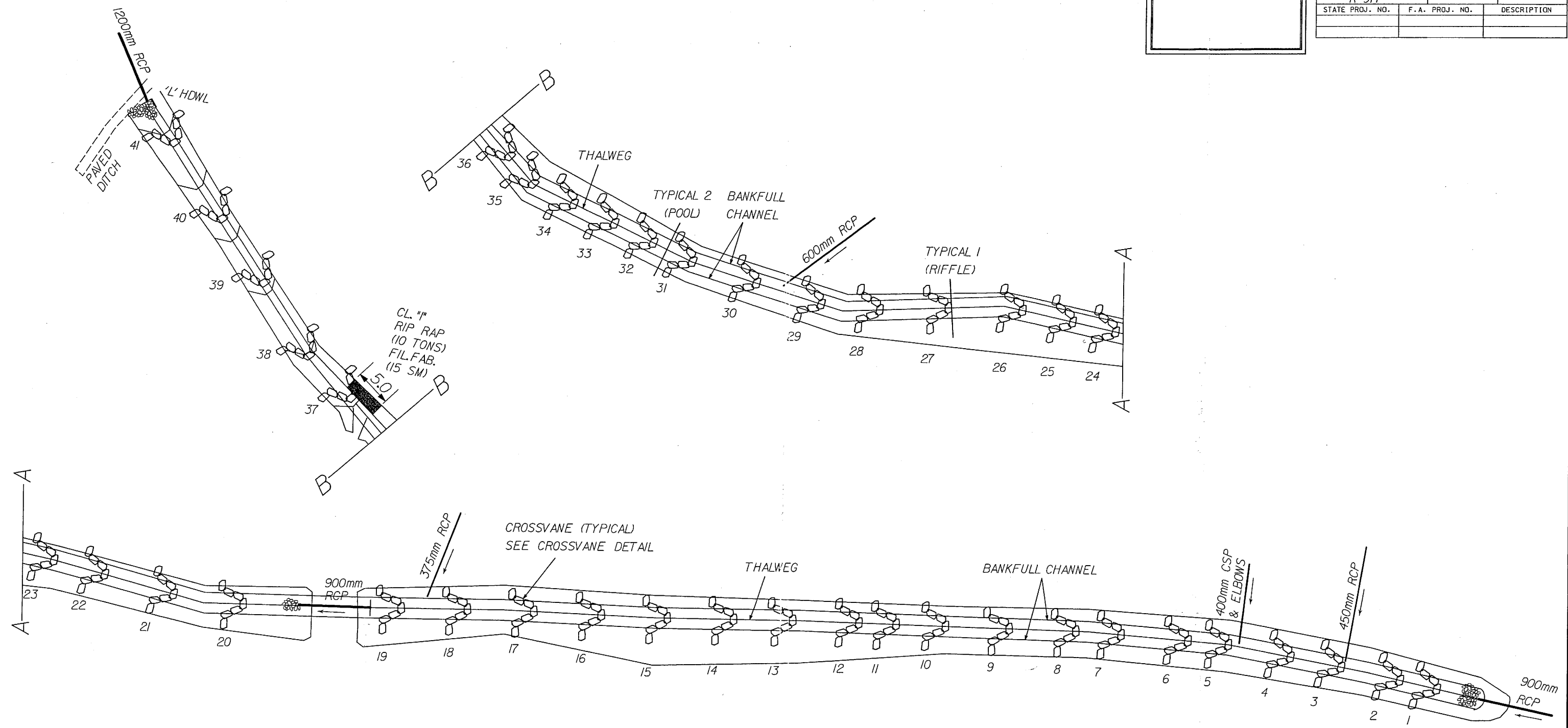
(NOT TO SCALE)



NOTES:

1. CULVERT INVERTS TO BE SET 0.3 M BELOW EXISTING BED ELEVATION.
2. SPACE SILLS APPROX. 4.75 M ON CENTERS:
 - A. TO BE CAST AND ATTACHED BY DOWELS TO FLOOR SLAB;
 - B. THE 0.3 M AND 0.15 M HIGH SILLS ARE TO BE SEPERATE UNITS.
3. BED MATERIAL EXCAVATED FROM THE SITE FOR BOX CULVERT CONSTRUCTION IS TO BE STOCKPILED AND LATER PLACED ON THE FLOOR OF THE COMPLETED CULVERT.
4. MATERIAL TO BE PLACED IN CULVERT TO TOP OF SILLS; PROVIDE CONTINUOUS LOW FLOW CHANNEL BETWEEN SILLS. (SEE SECTION A-A).

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
R-977		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



CHANNEL PLAN VIEW

SITE # II

STATIONS 12+20 TO 15+50 -Y3-

SHEET 35 OF 39

PROJECT R-977
CHEROKEE COUNTY
 STATION _____

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STREAM RELOCATION
 DETAIL

DRAWN BY JTL DATE 4/04
 CHECKED BY JSF DATE 4/04

SHEET 36 OF 39

050197

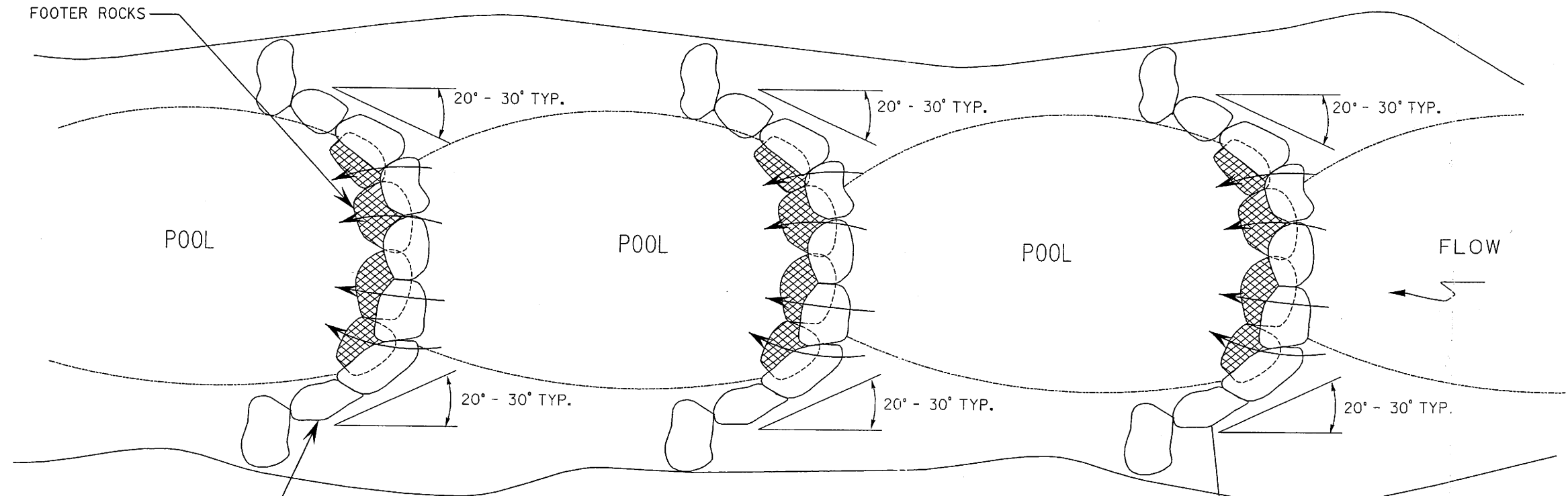
REVISIONS

R-977A

SHEET NO.

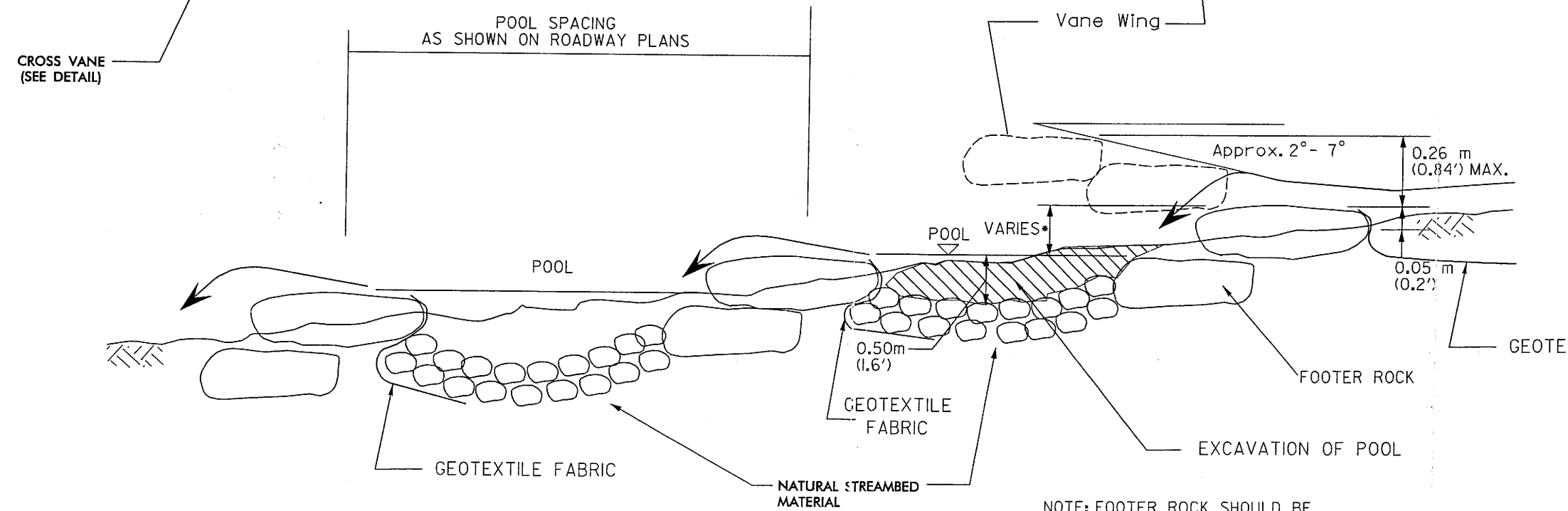
HYDRAULICS ENGINEER

STEP POOL DETAIL FOR CHANNEL RELOCATION STA. 12+20 TO 15+50 -Y3-



PLAN VIEW

NOT TO SCALE



PROFILE

NOT TO SCALE

*

CHANNEL SLOPE	DROP PER STRUCTURE
4.21%	0.325m (1.07')
2.19%	0.228m (0.75')
5.00%	0.393m (1.29')
8.00%	0.400m (1.31')
3.50%	0.233m (0.76')
1.35%	0.135m (0.44')
3.65%	0.365m (1.20')

NOTE: FOOTER ROCK SHOULD BE ANGULAR AND OBLONG WITH WIDE AXIS APPROXIMATELY 0.75m IN LENGTH. ROCK SHOULD FIT TIGHTLY TOGETHER WITH MINIMAL VOIDS. SEE CROSSVANE DETAIL

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS				SURFACE WATER IMPACTS										
			Fill In Wetlands (ac.)	Temp. Fill In Wetlands (ac.)	Excavation In Wetlands (ac.)	Mechanized Clearing (Method III) (ac.)	Fill In SW (Natural) (ac.)	Fill In SW (Pond) (ac.)	Temp. Fill In SW (ac.)	Existing Channel Impacted (ft.)	Natural Stream Design (ft.)						
1	10+80-LC1B-RT.	150 CS	0.12		<.01*		<.01*										
2		DELETED THIS SITE															
3	14+60-LC1B-	NONE															
3A	15+60-L1CB-	RIP RAP DITCH	0.17														
4	14+80-LC1B-	750	0.02		0.22												
4A	16+00-L1CB-	NON DESTRUCTIVE WORK BRIDGE															
5	12+64-Y1REV-	450 CS															
5A	18+30-LC1B-	1200															
6	24+00-LC1B-	TEMPORARY WORK BRIDGE															
7	28+90-LREV-RT.	800 CS															
8	34+80-LREV-RT.	150 CS															
9	35+50-LREV-	2 @ 2.4 X 2.4 RCBC															
10	36+50-LREV-	750															
11	10+20 TO 15+50-Y3-RT.	MULTIPLE PIPES	0.05		0.05												
12	54+20-LREV-LT.	900															
13		DELETED THIS SITE															
14	58+00-LREV-	750															
15	61+40-LREV-	150 CS															
16	64+40-LREV-	1200 CS															
16A	68+00-LREV-	BRIDGE															
17	76+40, 76+80 RT. -LREV-	900															
18	82+00-LREV-	1500	0.12														
19	10+60-Y9REV-	2 @ 1200	0.07														
20	85+00-LREV-	1500 CS															
21	12+75-Y6-	1 @ 1.5 X 1.5 CONCRETE BOX	<.01*		<.01*												
22	10+00-Y10-	1 @ 1200, 1 @ 1500															
TOTALS:			0.55	0	0.27	0	0.79	0	0	0	0	0	6812	801			

* Used 0 in place of <.01 when calculating totals.

NCDOT

DIVISION OF HIGHWAYS
 CHEROKEE COUNTY
 PROJECT 8.1910203 (R-977A)
 PROPOSED US 64 RELOCATION FROM
 EXISTING US 19-74-129 IN MURPHY
 TO EAST OF NC 141 IN PEACHTREE

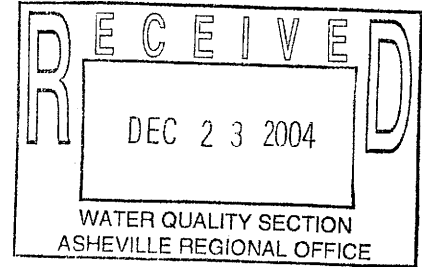


Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

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

December 21, 2004

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



Dear Dr. Thorpe:

Re: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act for the
Proposed Relocation of US 64, TIP No. R-0977A
Individual WQC No. 3487
Cherokee County

Attached hereto is a copy of Certification No. 3487 issued to The North Carolina Department of Transportation dated December 21, 2004.

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

Sincerely,

for Alan W. Klimek, P.E.
Director

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Attachments

cc: Steve Lund, Army Corps of Engineers Asheville Regulatory Field Office
Mike Parker, DWQ Mooresville Regional Office
Marla Chambers, NC Wildlife Resources Commission
Marella Buncick, US Fish and Wildlife Services
Central Files
File Copy

APPROVAL OF 401 Water Quality Certification and Additional Conditions

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, Section .0500, and 15 NCAC 2B .0259. This certification authorizes the NCDOT to place permanent fill material in, drain, excavate, and mechanically clear 0.85 acres of jurisdictional wetlands; to place permanent fill material, culverts, and piping in 6,812 linear feet of streams; and to place temporary fill in 0.02 acres of surface waters in Cherokee County. The project shall be constructed pursuant to the application dated September 29, 2004, to relocate the section of US 64 that extends from US 19/74/129 in Murphy to NC 141 in Peachtree. The approved design is that submitted in your application dated September 29, 2004. The authorized impacts are as described below:

Table 1. Wetland Impacts in the Hiwassee River Basin

Section	Riverine (acres)	Total (acres)
Site 1 - Station No. 10+80-LC1B- Rt	0.13*	0.13
Site 3 - Station No. 14+60 - LC1B	0.17	0.17
Site 3A - Station No. 15+60 - LC1B	0.22	0.22
Site 4 - Station No. 14+80 - LC1B	0.02	0.02
Site 11 - Station No. 10+20 to 15+50 -Y3- Rt.	0.1	0.1
Site 17 - Station No. 76+40 to 76+80 Rt. -LREV-	0.12	0.12
Site 18 - Station No. 82+00 - LREV-	0.07	0.07
Site 21 - Station No. 12+75 - Y6-	<0.02*	<0.02
Total	0.85	0.85

*Impacts <0.01 ac. are calculated as 0.01 ac.

Table 2. Surface Water Impacts for the Hiwassee River Basin

Section	Stream	Stream Impacts (linear feet)	Stream Type	Mitigation Required (linear feet)
Site 1 - Station No. 10+80 -LC1B- Rt -	UT to Hiwassee River	66	Perennial	0
Site 4 - Station No. 14+80-LC1B-	UT to Hiwassee River	354	Perennial	354
Site 5 - Station No. 12+64 -Y1REV-	UT to Hiwassee River	113	Perennial	0
Site 5A - Station No. 18+30 -LC1B-	UT to Hiwassee River	518	Perennial	518

Site 7 - Station No. 28+90 -LREV- Rt	UT to Martin Creek	22	Perennial	0
Site 8 - Station No. 34+80 -LREV- Rt	UT to Hampton Creek	89	Perennial	0
Site 9 - Station No. 35+50 -LREV-	Hampton Creek	971	Perennial	971
Site 10 - Station No. 36+50 -LREV-	UT to Hampton Creek	725	Perennial	725
Site 11 - 10+20 to 15+50 -Y3- Rt	UT to Hiwassee River	1,598	Perennial	1,598
Site 12 - Station No. 54+20 -LREV- Lt	UT to Hiwassee River	220	Perennial	220
Site 14 - Station No. 58+00 -LREV-	UT to Hiwassee River	358	Perennial	358
Site 15 - Station No. 61+40 - LREV-	UT to Hiwassee River	125	Perennial	0
Site 16 - Station No. 64+40 -LREV-	UT to Hiwassee River	453	Perennial	453
Site 18 - Station No. 82+00 -LREV-	UT to McComb Branch	381	Perennial	381
Site 19 - Station No. 10+60 -Y9REV-	UT to McComb Branch	151	Perennial	151
Site 20 - Station No. 85+00 -LREV-	UT to McComb Branch	504	Perennial	504
Site 21 - Station No. 12+75 -Y6-	UT to McComb Branch	105	Perennial	0
Site 22 - Station No. 10+00 -Y10-	UT to McComb Branch	59	Perennial	0
Total		6,812		6,233

The application provides adequate assurance that the discharge of fill material into the waters of the Hiwassee 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. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, 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, 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.

Condition(s) of Certification:

Project Specific Conditions of Certification:

1. Prior to stream relocation activities, the final Natural Channel Design plan for the stream relocation of a tributary to Hiwassee River at Site 11 must be approved by the NC Division of Water Quality.
2. Prior to commencing ground disturbing activities, an acceptable monitoring and mitigation plan for the presence of sulfidic rock must be approved by the NC Division of Water Quality.
3. Low flow sills and a trout flow channel shall be installed in the double barrel box culvert at Site 9 in accordance with NC Wildlife Resources Commission recommendations.
4. The bridges across the Hiwassee River at Sites 4A and 16A shall fully span the river with no bridge bents in the channel.
5. Hazardous material spill basins shall be installed at Sites 4A and 16A along the Hiwassee River.
6. Compensatory mitigation for impacts to streams shall be done for 6,233 linear feet of stream impact as shown above in Table 2 at a replacement ratio of 1:1. Compensatory mitigation for impacts to jurisdictional streams shall be provided by onsite stream relocations of 801 linear feet of a tributary to Hiwassee River. The onsite stream relocation shall be constructed in accordance with a final design to be submitted to the Division of Water Quality in accordance with Project Specific Condition 1. To earn mitigation credit, the stream relocation shall have a 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 801 linear feet of impacts. In addition to the 801 linear feet of on-site mitigation, compensatory mitigation for an additional 5,432 linear feet of streams is required. We understand that you have chosen to perform compensatory mitigation for the remainder of impacts to streams through an in-lieu payment to the North Carolina Ecosystem Enhancement Program (NCEEP). NCEEP has indicated in a letter dated August 5, 2004 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project as detailed in the table below.

Type of Impact	Amount of Impact
Streams	6,011 lf
Wetlands	0.82 ac.

General Conditions of Certification:

7. The dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or reducing the depth of the stream. Disturbed floodplains and streams should be restored to natural geomorphic conditions. All stream relocation and restoration activities shall comply with the final natural channel design plans approved by the NC Division of Water Quality.
8. Construction will 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 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 project.
 - 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.
9. All 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.
10. 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.
11. No live or fresh concrete shall come into contact with waters of the state until the concrete has hardened.
12. 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.
13. Excavation of the stream crossings should be conducted in the dry. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.

14. 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.
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. 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 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.
17. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.
18. All temporary fills in wetlands and surface waters shall be removed upon completion of the project. In addition, the post-construction removal of any temporary bridge structures or fill will need to return the project site to its preconstruction contours and elevations. The revegetation of the impacted areas with appropriate native species will be required.
19. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.
20. Any riprap used must not interfere with thalweg performance and aquatic life passage during low flow conditions.
21. Heavy equipment should be operated from the bank rather than in the stream channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the stream. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
22. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.


23. 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 11, 2004.
24. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
25. 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.
26. A copy of this Water Quality Certification shall be posted on the construction site at all times. In addition, the Water Quality Certification (and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
27. Culverts that are less than 48-inch in diameter should be buried to a depth equal to or greater than 20% of their size to allow for aquatic life passage. Culverts that are 48-inch in diameter or larger should be buried at least 12 inches below the stream bottom to allow natural stream bottom material to become established in the culvert following installation and to provide aquatic life passage during periods of low flow. These measurements must be based on natural thalweg depths.

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 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 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 21st day of December 2004

DIVISION OF WATER QUALITY


for Alan W. Klimek, P.E.
Director

WQC No. 3487

DWQ Project No.: 3487

County: Cherokee

Applicant: NC Department of Transportation

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification and Buffer Rules, the approved plans and specifications, and other supporting materials.

Signature _____

Registration No. _____

Date _____

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JAN 18 2005

CESAW-CO-RA



☒ North Carolina Wildlife Resources Commission ☒

Richard B. Hamilton, Executive Director

TO: Steve Lund, NCDOT Coordinator
Asheville Regulatory Field Office, USACE

FROM: Marla Chambers, Western NCDOT Permit Coordinator
Habitat Conservation Program, NCWRC

Marla Chambers

DATE: December 29, 2004

SUBJECT: Individual Section 404 and 401 Permit Application by NCDOT for the proposed US 64 Relocation from US 19-74-129 in Murphy to east of NC 141 in Peachtree, Cherokee County. TIP No. R-0977A.

North Carolina Department of Transportation (NCDOT) has submitted an application to obtain a Section 404 Individual Permit from the U.S. Army Corps of Engineers (USACE) and a 401 Water Quality Certification from the Division of Water Quality (NCDWQ). Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided and have participated in field, concurrence and hydraulics meetings for the subject project. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT proposes to relocate a segment of US 64 south of the existing alignment from US 19-74-129 in Murphy to east of NC 141 in Peachtree for a project length of 4.9 miles. A two-lane facility constructed on a four-lane right-of-way (ROW), with the entire ROW graded and filled, is proposed. Anticipated impacts include 6,812 linear feet (lf) of permanent stream impacts and 0.82 acres of permanent wetland impacts. NCDOT proposes to restore 1,150 lf of stream using natural channel design and are seeking 1:1 on-site mitigation credit for 801 lf of restored channel. Mitigation for the remaining impacts will be handled through the Ecosystem Enhancement Program.

Bridges are to be constructed over the two crossings of the Hiwassee River and a crossing of Martin Creek. Hiwassee River, classified as WS-IV CA, WS-V and Class C within the project vicinity, supports walleye, smallmouth bass and white bass game fish fisheries, as well as

the sicklefin redhorse (*Moxostoma sp.*), Federal Species of Concern (FSC) (Federal Candidate for listing as a Threatened or Endangered species) and state Significantly Rare (SR) (Proposed Threatened). This rare fish species was observed at a number of locations in the river and in Martin Creek, Class WS-IV waters, during project surveys. An in-water work moratorium from February 15 to June 15 should be applied to the Hiwassee River to minimize impacts during the spawning seasons of the sicklefin redhorse, walleye, and white bass and most of the spawning season of the smallmouth bass. In-water work is not proposed for the Martin Creek crossing. Mussel species found in the Hiwassee River during recent project surveys include Tennessee clubshell (*Pleurobema oviforme*), FSC and state Endangered; mountain creekshell (*Villosa vanuxemensis*), state Threatened; spike (*Elliptio dilatata*), state Special Concern (SC); wavy-rayed lampmussel (*Lampsilis fasciola*), state SC; rainbow (*Villosa iris*), state SC; and long-solid (*Fusconaia subrotunda*), which was considered extirpated from North Carolina previously. We appreciate NCDOT's willingness to treat the sicklefin redhorse and Tennessee clubshell as if they were listed as Threatened or Endangered, as they may be officially listed prior to project completion.

NCWRC also applauds efforts made by NCDOT to avoid and minimize impacts on this project, which include bridge design and alignment that resulted in no permanent impacts to Hiwassee River and Martin Creek, widening the Harshaw Road bridge to avoid impacts to an unnamed tributary (UT) to Hiwassee River, on-site stream restoration, and project commitments such as hazardous spill basins at the Hiwassee crossings and adherence to "Design Standards for Sensitive Watersheds", among other measures. Some concerns still remain, however, and additional efforts need to be made to minimize impacts, protect sensitive resources and provide appropriate public facilities.

One issue that was investigated and debated during project development was whether to bridge Hampton Creek, classified WS-IV, a short distance upstream of the Hiwassee River, or to place it in a 535 foot long double-barrel culvert under a large amount of waste material. NCDOT biologists surveyed a portion of Hampton Creek, from the Hiwassee River to the bridge on SR 1558, on February 4, 2004 to determine the quality of the aquatic community. Thirteen fish species were collected, including two rainbow trout. The high diversity of the sample was assumed to be due to the proximity of the river. Rainbow trout generally spawn in February and March in headwater streams. Brook and brown trout spawn in the fall. Many of the warm-water species in the area spawn in the spring. To determine the extent Hampton Creek is currently being used by inhabitants of the Hiwassee River for spawning, nursery grounds or refuge would require much more extensive surveying. We are also concerned that fill of this magnitude would likely fragment terrestrial habitats and interfere with existing wildlife travel corridors.

While we would prefer a bridge at this location, we understand the decision to use a culvert. We are concerned that a culvert of this length may restrict fish passage and/or cause stream instability. We appreciate the efforts NCDOT has made to enhance the potential for fish passage by incorporating a notched baffle design and creating a "trout flow channel" using bed material from the existing stream. At the March 17, 2004 permit review meeting, it was requested to monitor the stream during construction and post construction for at least three bankfull events. We have not found where this commitment has been made, but support that request. Also, as mentioned in our previous comments (dated March 5, 2004), the use of

floodplain drains should be investigated, due to the amount of fill at this crossing and the constriction of floodwaters to the double-barrel opening. Every effort should be made to spread out floodwaters and reduce future flood damage. These drains may allow some terrestrial wildlife passage, as well.

Another issue is the presence of sulfidic rock, or "hot rock", which has been known to cause fish kills and is a serious concern for listed fish and mussel species, some of which are extremely vulnerable to extirpation from a single catastrophic event or activity. Sulfidic rock was found in two samples along the project corridor in the vicinity of the Martin Creek crossing. NCDOT has developed special provisions to address this issue, which includes weekly testing and monitoring of runoff from erosion control basins in the active construction areas in order to evaluate pH and sulfate values. The pH values are to be reported within 24 hours and other tests within 7 days. If pH is found to be below 6.0, a pre-approved mitigation plan is to be chosen within 72 hours. Since Martin Creek is inhabited by the sicklefin redhorse and drains into some of the best mussel habitat in the Hiwassee River, we believe timely testing and rapid response to a low pH value is essential to preventing a catastrophic event. We understand that "hot rock is most toxic with the first rain after a dry period, after oxidation has built up on the exposed rock, which can kill everything for some distance downstream. We propose pH testing, which can be simple and instantaneous, should be conducted daily in the areas of concern during active earth moving and during and after each rain event. Immediate action should be taken as soon as pH below 6.0 is detected. Limestone rock, or other materials to be used, should be on-site or nearby and able to be quickly obtained and used to prevent negative impacts to the aquatic resources. The plan of action should be chosen prior to construction activities, so that it can be immediately implemented when needed. Perhaps limestone rock should be used in the basins and check dams initially as a possible preventative.

The Hiwassee River provides valuable recreational opportunities, such as fishing and canoeing. As more properties become posted, access to our State's water-related recreational resources is often limited to the public right-of-ways maintained by NCDOT. Much of the community surrounding the project, which is located within the Nantahala National Forest, relies on the travel and tourism industry, particularly as it relates to outdoors activities, in order to remain healthy and viable and would benefit from access to this important recreational resource. As we had indicated to NCDOT in an email on October 10, 2003, we are recommending that a public access area be incorporated into the construction plans for the two Hiwassee River crossings to provide the public permanent and safe access to this valuable resource. A parking area for 5-10 vehicles and access to the river for small boat/canoe launching and retrieval would be adequate. NCWRC is concerned by the lack of response received to the majority of our requests for public access to be incorporated in bridge crossing projects, particularly in the mountains. NCWRC biologists make these recommendations where it is determined that appropriate resources are available and it would be beneficial to the public. Often times, the public uses the road shoulders beside bridge crossings for parking to access these resources, which can be a safety hazard for motorists and pedestrians. Providing access to the State's public resources would improve safety along the roadways, enhance tourism, and benefit the State's economy. We strongly recommend safe public access be provided to the Hiwassee River for this project.

Secondary and cumulative impacts are also a concern for this project. Although the population within the demographic area is sparse, the growth rate (32.1%) is significantly higher than the county's (20.7%) and the state's (21.4%). Cherokee County does not have a land use plan and only a small portion of the project, within the town limits of Murphy, is zoned. Another portion of the area, within the WS-IV Hiwassee River Watershed, has some limits on development. The Mini Indirect and Cumulative Effects Report indicated the project is likely to stimulate highway related land development, such as gas stations, convenience stores and restaurants, and could influence intraregional land development decisions. We recommend NCDOT provide at least partial control of access for the project and protect the right-of-way from development to prevent additional impacts during future widening. We also recommend that Cherokee County develop a land use plan and implement measures to protect the area from uncontrolled growth and protect the natural resources which are very important to the continued survival of listed species, as well as to tourism and the area's economy. Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality (NCWRC 2002).

We can concur with the permit issuance if the following conditions are implemented:

1. In-water work is prohibited from February 15 to June 15 in the Hiwassee River to protect the listed fish species and game fish reproduction.
2. Investigate the use of floodplain drains for the Hampton Creek crossing to reduce stream and flooding impacts and incorporate into the design, if appropriate. Monitor stream stability in Hampton Creek during culvert construction and following construction for at least three bankfull events.
3. Revise procedures regarding sulfidic rock to ensure timely testing and rapid response to low pH values to protect sensitive resources.
4. Sediment and erosion control measures shall adhere to the design standards for sensitive watersheds (15A NCAC 4B .0124 (a)-(d)) and be strictly maintained until project completion to avoid impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation should be planted on all bare soil as soon as possible and within 10 days of ground disturbing activities to provide long-term erosion control. Tall fescue should not be used in riparian areas. We encourage NCDOT to utilize onsite vegetation and materials for streambank stabilization when practicable. Erosion control matting should be used in riparian areas, instead of straw mulch and well anchored with 12" staples or 12" wooden survey stakes.
5. Culverts that are less than 48-inch diameter should have the floor of the barrel installed 20% of the diameter of the culvert below the level of the stream bottom. Culverts that are 48-inch diameter or larger should be placed with the floor of the barrel approximately 12 inches below the stream bottom to allow natural stream bottom materials to become established in the culvert following installation and to provide aquatic life passage during periods of low flow. This may require increasing the size of the culvert to meet flow

- conveyance requirements. These measurements must be based on natural thalweg depths. Any perched outlets should be corrected during construction.
6. The natural dimension, pattern, and profile of the stream above and below the crossings should not be modified by widening the stream channel or changing the depth of the stream.
 7. Removal of vegetation in riparian areas should be minimized. Native trees and shrubs should be planted along the stream banks to reestablish the riparian zone and to provide long-term erosion control.
 8. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for fish and wildlife. Backfill materials should be obtained from upland sites.
 9. Riprap should be minimized and installed in a manner so as not to interfere with aquatic life passage during low flow conditions. Riprap placed for bank stabilization should be limited to the stream bank below the high water mark, and vegetation should be used for stabilization above the high water elevation.
 10. Excavation of the stream crossings should be conducted in the dry, if possible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
 11. Rock check dams at culvert outlets should be removed at project completion. These structures could impede movement of aquatic life.
 12. Stormwater should be directed to buffer areas or retention basins and should not be routed directly into streams.
 13. If concrete will be used during construction, work must be accomplished so that wet (uncured) concrete does not contact surface waters. This will lessen the chance of altering the water chemistry and causing a fish kill.
 14. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
 15. Heavy equipment should be operated from the bank rather than in the stream channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the stream. 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 materials.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding these comments, please contact me at (704) 485-2384.

Literature Cited:

NCWRC (North Carolina Wildlife Resources Commission). 2002. Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality. NCWRC, Raleigh. Available: http://www.ncwildlife.org/pg07_WildlifeSpeciesCon/pg7c3_impacts.pdf. (February 2003).

cc: Marella Buncick, USFWS
Brian Wrenn, NCDWQ
Sarah McRae, NCNHP

POTENTIAL ACID PRODUCING ROCK MATERIALS

Description

Work under this section consists of testing for and disposing of potential acid producing rock materials as directed by the Engineer. Acid producing rock contains sufficient amounts of certain minerals that may produce damaging acid levels in leachate when exposed to the atmosphere and weathering processes.

All fresh rock on this project has low potential for producing acid drainage. Acid potential in rock is measured as Net Neutralization Potential (NNP). Acidity levels in runoff is reflected in pH and sulfate content.

Testing and Monitoring Procedure

Testing and monitoring consists of weekly water sampling by Contractor's independent agent, to be approved by the Engineer. Monitoring consists of testing runoff from approved temporary and permanent erosion control basins as shown in the Plans. Testing must be conducted by an accredited lab facility and must consist of reported values of pH, acidity, alkalinity and sulfate content. Measure values for pH at the sampling sites and record immediately. Report pH results to the Engineer within 24 hours of measuring. Report lab results to the Engineer within 7 days of sampling.

NCDOT Geotechnical Engineering Unit will concurrently test existing streams for the same values on a monthly basis with results available through the Engineer.

Testing Values and Results

If reported pH values are below 6.0, the Engineer will select a Mitigation Plan within 72 hours from receiving results. Mitigation Plans will consist of any of the courses of action listed under "Mitigation Plans" with payment according to the line item under "Basis of Payment".

Mitigation Plan

Possible mitigation methods for acid producing rock consists of:

- 1) Select placement and treatment of excavated material in a location to be approved by the Engineer.
- 2) Treatment of excavated material in embankment or waste area.
- 3) Cover treated material with soil backfill meeting AASHTO requirements A-2-4, A-4, A-6 or A-7.

At the direction of the Engineer, temporarily mitigate by treatment with lime and covering with high-density polyethylene (HDPE) sheeting at the excavation site while awaiting transport to the disposal site.

Treatment consists of layering excavated material lifts with crushed limestone aggregate and/or agricultural grade ground limestone at a spread rate recommended by the Geotechnical Engineering Unit based on NNP values of the rock material. The Geotechnical Engineering Unit and Materials and Tests Unit of NCDOT will conduct sampling and testing for NNP.

Basis of Payment

Payment will be made under:

Crushed Limestone Aggregate	Metric Ton
Agricultural Grade Ground Limestone	Metric Ton
High Density Polyethylene Sheeting	Square Meter
Soil backfill	Cubic Meter

Excavation and placement of rock is considered incidental to work performed for the treatment process and is considered "Unclassified Excavation."



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street
Asheville, North Carolina 28801

January 18, 2005

Mr. Phil S. Harris, III, P.E., Manager
PDEA- Office of Natural Environment,
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

Dear Mr. Harris:

Subject: Endangered Species Concurrence for the Murphy Bypass; US 64 Relocation from US 19-74-129 in Murphy to East of NC 141 in Peachtree, Cherokee County, North Carolina, State Project No. 8.1910203, Federal Aid Project No. FR-14-1(1), TIP No. (R-0977A).

As requested by the North Carolina Department of Transportation (NCDOT), we have reviewed the natural resources reports and biological conclusions for federally protected species for the subject project. Our comments are provided in accordance with the provisions of Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543) (Act).

We received your December 9, 2004, request for endangered species concurrence for the subject project. Since that letter was submitted, new information regarding impacts has come to our attention. In addition to the road project and predicted impacts, a high voltage transmission line will be relocated to accommodate construction. The relocation of this transmission line will require clearing in areas not previously surveyed for federally listed species. The following addresses each action individually.

Improvements to US 64

According to the information provided, five federally protected species were considered for this project including the federally endangered Indiana bat (*Myotis sodalis*), Cumberland bean (*Villosa trabalis*), littlewing pearl mussel (*Pegias fabula*), the federally threatened small whorled pogonia (*Isotria medeoloides*) and the threatened (due to similarity of appearance) bog turtle (*Clemmys muhlenbergii*).

Indiana bat - A combination of mist net surveys and habitat assessments conducted for Indiana bat found no individuals in the project area. Given the survey and habitat data we can concur with your conclusion of "not likely to adversely affect" for Indiana bat for the subject project. If suitable habitat remains, surveys will need to be conducted again in 2007.

Cumberland bean, littlewing pearl mussel, and small whorled pogonia - Surveys conducted for these species located no individuals in the impact area of the subject project. Given the negative survey data we can concur with your conclusion of "not likely to adversely affect" for the subject project.

Bog turtle - no assessment is provided for bog turtle. We encourage NCDOT to assess habitat for the bog turtle and to survey any suitable habitat for this species. While the bog turtle technically does not require Section 7 consultation, it is a species known to be in decline. NCDOT is actively managing mitigation sites or parts of sites for this species and the North Carolina Wildlife Resources Commission (Commission) considers this animal rare in North Carolina and participates actively in surveys and conservation efforts on its behalf. If individuals are located within the impact area of the project, we recommend further consultation with the Service and the Commission to determine ways to avoid and minimize impacts to this rare species.

We believe the requirements under Section 7(c) of the Act are fulfilled regarding listed species for the subject project. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner that was not considered in this review, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

In addition, we would like to commend NCDOT for taking measures to protect two federal species of concern, a mussel, the Tennessee clubshell (*Pleurobema oviforme*), and a fish, the sicklefin redhorse (*Moxostoma* sp.). Bridge designs which span the Hiwassee River, a bridge over the Martin's Creek crossing, and relocation of native freshwater mussels from the area of impact of the project are significant steps to protect individuals and their habitat in the project area.

Transmission Lines

The relocation of high voltage transmission lines will impact several wooded upland areas not previously assessed for federally listed species (see attached map). Of particular concern for potential impacts from these activities are the Indiana bat and small whorled pogonia. The project corridor, exclusive of these areas, has been surveyed for these species and no individuals were located.

NCDOT has committed to the following for these two species:

Small whorled pogonia (*Isotria medeoloides*)

Since small whorled pogonia may occur in young as well as maturing forests, there is potential habitat in the transmission line relocation areas that will have to be surveyed. Areas where the transmission line will run through old fields in the vicinity of the river do not contain suitable habitat. Previous surveys for R-0977 in 2000 and 2004 were conducted in areas of potentially suitable habitat, but no plants were found. The nearest known occurrence of small whorled pogonia, according to the Natural Heritage Program database, is in Cherokee County 16 miles away. To minimize potential effects of the transmission line relocation on small whorled pogonia, NCDOT is proposing the following:

1. NCDOT will survey all three transmission line relocation areas where suitable habitat exists for small whorled pogonia in early May of 2005.
2. If no small whorled pogonia is found in Area 2, then tree clearing may commence immediately.
3. If no small whorled pogonia is found in Areas 1 or 3, then tree clearing may commence as soon as Indiana bat issues are resolved (see below).
4. If small whorled pogonia is found in Area 1, 2 or 3, then no tree clearing or any sort of disturbance shall occur in that Area for transmission line work until impacts to pogonia habitat are avoided or consultation with USFWS is completed.

Indiana bat (*Myotis sodalis*)

Mist-net surveys for the project were conducted by BHE Environmental in 2002 and 2004. Approximately the same two mist-net locations were used both years (see attached map for closest mist-net location). No bats of any species were captured in 2002 or 2004. In a letter dated August 8, 2002, Michael Dammarell of BHE wrote, "most of the right-of-way did not contain suitable habitat for Indiana bats. Much of the right-of-way had been cut within the past few years..." Two sites were found that contained marginal Indiana bat habitat; these were selected for the mist-netting locations. The 2004 survey report from BHE (dated September 23) stated, "much of the habitat immediately surrounding the survey area appeared to be marginal quality habitat for roosting and foraging Indiana bats."

The previous mist-netting has covered the transmission line relocation in Area 2; however Areas 1 and 3 will require more survey work. To minimize potential effects of the transmission line relocation on Indiana bats, NCDOT is proposing the following:

1. Areas 1 and 3 will be assessed by BHE no earlier than June 25, 2005. If suitable corridors for mist-netting are available, they will conduct mist-netting according to the Indiana Bat Recovery Plan.
2. If BHE is unable to effectively mist-net, then they will conduct a thorough habitat assessment in all areas likely to be affected by the transmission line work.

3. If, as a result of the survey work, Indiana bats are unlikely to be affected by the transmission line work, then tree clearing may commence as soon as the bat survey work is completed, probably in early July 2005.
4. If Indiana bats are likely to be adversely affected by the transmission line work, then no tree clearing will occur in the transmission line relocation areas from April 15 to October 15 of any given year.

Given the record of negative survey and the commitment to future surveys, we agree that the highway project can proceed. Concurrence on the transmission line clearing can be obtained after the above conditions are met. If you have questions about these comments, please contact Ms. Marella Buncick of our staff at 828/258-3939, Ext. 237. In any future correspondence concerning this project, please reference our Log No. 4-2-91-015.

Sincerely,



Brian P. Cole
Field Supervisor

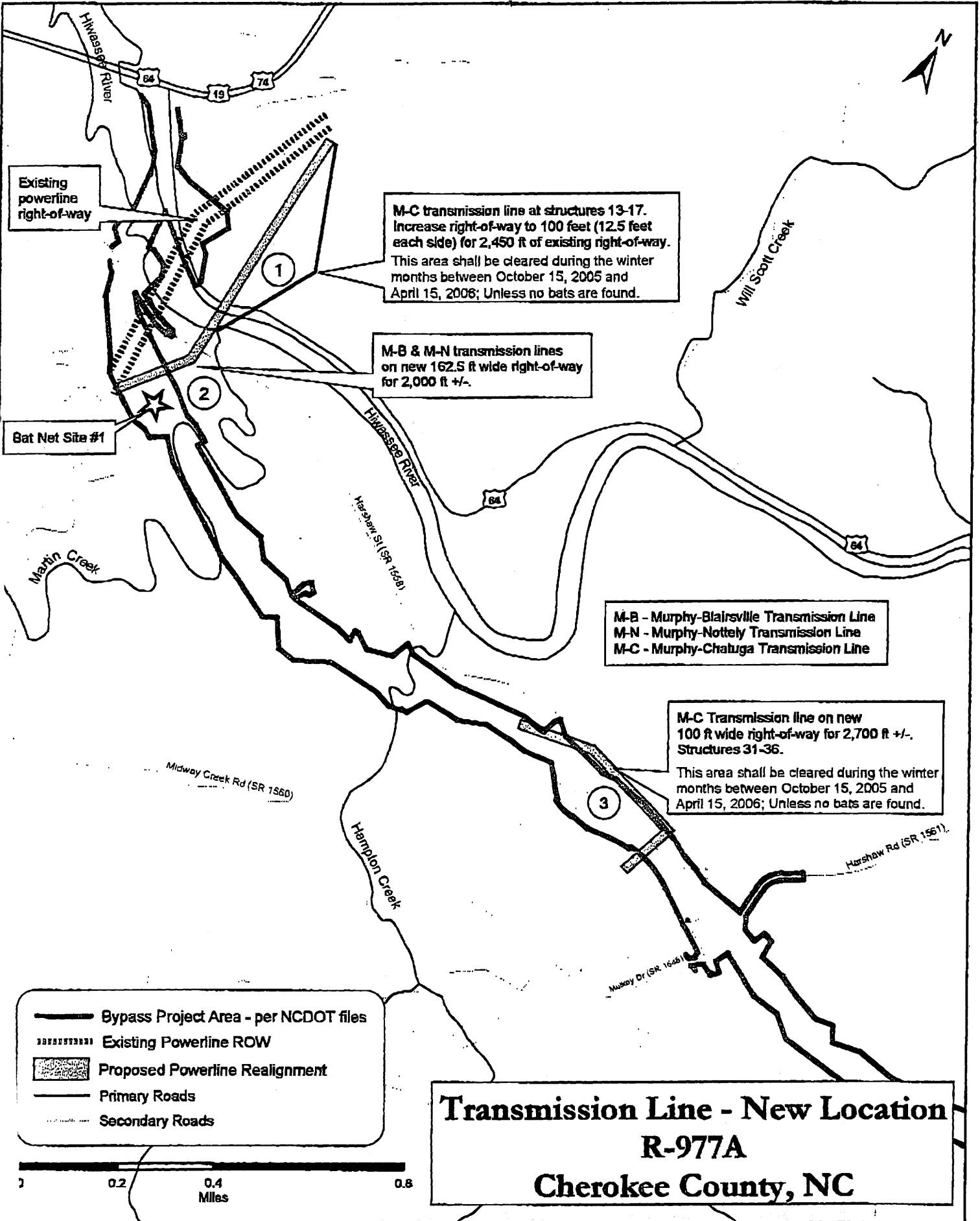
Cc:

Marla Chambers

Brian Wrenn

Steve Lund, USACE

Harold Draper, TVA



Existing powerline right-of-way

M-C transmission line at structures 13-17. Increase right-of-way to 100 feet (12.5 feet each side) for 2,450 ft of existing right-of-way. This area shall be cleared during the winter months between October 15, 2005 and April 15, 2006; Unless no bats are found.

M-B & M-N transmission lines on new 162.5 ft wide right-of-way for 2,000 ft +/-.

Bat Net Site #1

M-B - Murphy-Blairsville Transmission Line
M-N - Murphy-Nottely Transmission Line
M-C - Murphy-Chaluga Transmission Line

M-C Transmission line on new 100 ft wide right-of-way for 2,700 ft +/-, Structures 31-36. This area shall be cleared during the winter months between October 15, 2005 and April 15, 2006; Unless no bats are found.

Bypass Project Area - per NCDOT files
 Existing Powerline ROW
 Proposed Powerline Realignment
 Primary Roads
 Secondary Roads

**Transmission Line - New Location
R-977A
Cherokee County, NC**

