



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

June 16, 2004

U. S. Army Corps of Engineers  
Regulatory Field Office  
151 Patton Avenue  
Room 208  
Asheville, NC 28801-5006

ATTN: Mr. Steve Lund  
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 33 Permit Application and Request for Modification of Nationwide Permit 23** for the Replacement of Bridge No. 46 over Catawba River on SR 1223, Burke County, Federal Aid Project No. BRZ-1223(8), State Project No. 8.2852001, TIP B-3419, Division 13.

Please reference the original request for a Nationwide 23 Permit dated March 5, 2004. Since the date of the original application, two previously unidentified streams were found within the proposed project right-of-way. The Nationwide Permit 23 application previously submitted for the project did not account for Waters of the United States other than the mainstem of the Catawba River. The two streams are both unnamed tributaries of the Catawba River, one flowing in from the east, labeled as UT-East, and one flowing in from the west, labeled as UT-West.

#### **Additional Stream Impacts**

There will be 44 feet of permanent linear stream channel impacts in UT-East from the proposed installation of a 30-inch Reinforced Concrete Pipe and 81 feet of permanent linear stream channel impacts in UT-West from the installation of a 48-inch Reinforced Concrete Pipe. These values reflect the length of additional stream channel impacts from the installation of each new structure.

All measures will be taken to avoid any temporary fill from entering Waters of the U.S.; Best Management Practices for Bridge Demolition and Removal will be implemented. Temporary dewatering will be accomplished through methods described in the document *Best Management Practices for Construction and Maintenance Activities*.

#### **Regulatory Approvals**

Section 404 Permit: It is anticipated and requested that the temporary dewatering of both unnamed tributaries will be authorized under Section 404 Nationwide Permit 33 (Temporary Construction Access and Dewatering). All other aspects of this project are being processed

by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR § 771.115(b).

Section 401 Permit: We anticipate 401 General Certification numbers 3403 will apply to this project. In accordance with 15A NCAC 2H, Section .0500(a) we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review.

Division of Water Quality Buffer Certification No. 040373 was issued on the original Nationwide 23 Permit Application dated March 5, 2004. We expect no additional impacts to the Catawba River Buffer and, therefore, no modifications to the original Buffer Certification will be necessary.

We anticipate that comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT requests that NCWRC forward their comments to the U. S. Army Corps of Engineers Regulatory Field Office in Asheville, North Carolina.

A copy of this permit application will be posted on the DOT website at: <http://www.ncdot.org/planning/pe/naturalunit/Permit.html>.

If you have any questions or need additional information, please contact Mr. Michael Turchy at (919) 715-1468.

Sincerely,



Gregory J. Thorpe, PhD., Environmental Management Director  
Project Development and Environmental Analysis Branch

cc:

W/attachment

Mr. John Hennessy, Division of Water Quality (7 copies)  
Ms. Marella Buncick, USFWS  
Ms. Marla Chambers, NCWRC  
Mr. David Chang, P.E., Hydraulics  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. J.J. Swain, P.E., Division Engineer  
Mr. Roger Bryan, DEO

W/o attachment

Mr. Jay Bennett, P.E., Roadway Design  
Mr. Omar Sultan, Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Mr. Mark Staley, Roadside Environmental  
Mr. David Franklin, USACE, Wilmington (Cover Letter Only)  
Mr. John Wadsworth, P.E., PDEA Project Planning Engineer

USACE Action ID No. \_\_\_\_\_

DWQ No. \_\_\_\_\_

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

**I. Processing**

1. Check all of the approval(s) requested for this project:

Section 404 Permit

Riparian or Watershed Buffer Rules

Section 10 Permit

Isolated Wetland Permit from DWQ

401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NW 33

3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here:

4. If payment into the North Carolina Wetlands Restoration Program (NCWRP) is proposed for mitigation of impacts (verify availability with NCWRP prior to submittal of PCN), complete section VIII and check here:

5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here:

**II. Applicant Information**

1. Owner/Applicant Information

Name: Gregory J. Thorpe, Ph.D., Environmental Management Director

Mailing Address: 1598 Mail Service Center

Raleigh, North Carolina 27699-1598

Telephone Number: (919) 733-3141

Fax Number: (919) 733-9794

E-mail Address: maturchy@dot.state.nc.us

2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)

Name: \_\_\_\_\_

Company Affiliation: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

### III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: B-3419 Replacement of bridge No. 46 over SR 1223
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3419
3. Property Identification Number (Tax PIN): \_\_\_\_\_
4. Location  
County: Burke Nearest Town: Glen Alpine  
Subdivision name (include phase/lot number): N/A  
Directions to site (include road numbers, landmarks, etc.): Bridge No. 46 on Power House Road (SR 1223)  
\_\_\_\_\_  
\_\_\_\_\_
5. Site coordinates, if available (UTM or Lat/Long): 34° 44'26" N 81°50' 06"W  
(Note – If project is linear, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
6. Property size (acres): \_\_\_\_\_
7. Nearest body of water (stream/river/sound/ocean/lake): Lake James/ Catawba River
8. River Basin: Catawba  
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)
9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: Lake/ Recreation, Agricultural  
\_\_\_\_\_  
\_\_\_\_\_

10. Describe the overall project in detail, including the type of equipment to be used: Replacement of bridge No. 46 over Catawba River with a new, single span bridge north of the current structure. Earth moving equipment, cranes, etc will be used during construction.

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11. Explain the purpose of the proposed work: To replace the functionally and structurally obselete structure.

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**IV. Prior Project History**

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules.

This PCN is a modification to the pending USACE NW 23, and the current NC DWQ Buffer Certification No. 040373.

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**V. Future Project Plans**

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application.

N/A

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**VI. Proposed Impacts to Waters of the United States/Waters of the State**

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. The applicant must also provide justification for these impacts in Section VII below. All proposed impacts, permanent and temporary, must be listed herein, and must be clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) must be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream

evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

1. Provide a written description of the proposed impacts:

Two unnamed tributaries to Catawba River will be impacted

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2. Individually list wetland impacts below:

Wetland Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Located within 100-year Floodplain** (yes/no)	Distance to Nearest Stream (linear feet)	Type of Wetland***
No Wetlands					

\* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

\*\* 100-Year floodplains are identified through the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRM), or FEMA-approved local floodplain maps. Maps are available through the FEMA Map Service Center at 1-800-358-9616, or online at <http://www.fema.gov>.

\*\*\* List a wetland type that best describes wetland to be impacted (e.g., freshwater/saltwater marsh, forested wetland, beaver pond, Carolina Bay, bog, etc.) Indicate if wetland is isolated (determination of isolation to be made by USACE only).

List the total acreage (estimated) of all existing wetlands on the property: None

Total area of wetland impact proposed: \_\_\_\_\_

3. Individually list all intermittent and perennial stream impacts below:

Stream Impact Site Number (indicate on map)	Type of Impact*	Length of Impact (linear feet)	Stream Name**	Average Width of Stream Before Impact	Perennial or Intermittent? (please specify)
UT West	Reinforced Concrete Pipe	81'	UT to Catawba	2'	Perennial
UT East	Reinforced Concrete Pipe	44'	UT to Catawba	4'	Perennial

- \* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: culverts and associated rip-rap, dams (separately list impacts due to both structure and flooding), relocation (include linear feet before and after, and net loss/gain), stabilization activities (cement wall, rip-rap, crib wall, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included.
- \*\* Stream names can be found on USGS topographic maps. If a stream has no name, list as UT (unnamed tributary) to the nearest downstream named stream into which it flows. USGS maps are available through the USGS at 1-800-358-9616, or online at [www.usgs.gov](http://www.usgs.gov). Several internet sites also allow direct download and printing of USGS maps (e.g., [www.topozone.com](http://www.topozone.com), [www.mapquest.com](http://www.mapquest.com), etc.).

Cumulative impacts (linear distance in feet) to all streams on site: 125

4. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.) below:

Open Water Impact Site Number (indicate on map)	Type of Impact*	Area of Impact (acres)	Name of Waterbody (if applicable)	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)
N/A				

\* List each impact separately and identify temporary impacts. Impacts include, but are not limited to: fill, excavation, dredging, flooding, drainage, bulkheads, etc.

5. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply):  uplands  stream  wetlands  
 Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): \_\_\_\_\_

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): \_\_\_\_\_

Size of watershed draining to pond: \_\_\_\_\_ Expected pond surface area: \_\_\_\_\_

**VII. Impact Justification (Avoidance and Minimization)**

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts.

The selected design was chosen as it completely spans the Catawba River and removes the fill area from the old structure from the river. The western unnamed tributary impact is

necessary to provide adequate access to the WRC public fishing/ access area. The eastern unnamed tributary impact is necessary to replace an obsolete, perched culvert.

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**VIII. Mitigation**

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on March 9, 2000, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCWRP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ’s Draft Technical Guide for Stream Work in North Carolina, available at <http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

No Mitigation Required

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2. Mitigation may also be made by payment into the North Carolina Wetlands Restoration Program (NCWRP). Please note it is the applicant’s responsibility to contact the NCWRP at



(919) 733-5208 to determine availability and to request written approval of mitigation prior to submittal of a PCN. For additional information regarding the application process for the NCWRP, check the NCWRP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCWRP is proposed, please check the appropriate box on page three and provide the following information:

Amount of stream mitigation requested (linear feet): \_\_\_\_\_  
Amount of buffer mitigation requested (square feet): \_\_\_\_\_  
Amount of Riparian wetland mitigation requested (acres): \_\_\_\_\_  
Amount of Non-riparian wetland mitigation requested (acres): \_\_\_\_\_  
Amount of Coastal wetland mitigation requested (acres): \_\_\_\_\_

**IX. Environmental Documentation (required by DWQ)**

Does the project involve an expenditure of public (federal/state) funds or the use of public (federal/state) land?

Yes  No

If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?

Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.

Yes  No

If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter.

Yes  No

**X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)**

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify \_\_\_\_\_)?

Yes  No  If you answered "yes", provide the following information:

Identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

Zone*	Impact (square feet)	Multiplier	Required Mitigation
1		3	
2		1.5	
Total			

\* Zone 1 extends out 30 feet perpendicular from near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Conservation Easement, Riparian Buffer Restoration / Enhancement, Preservation or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0260.

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**XI. Stormwater (required by DWQ)**

Describe impervious acreage (both existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property.

N/A

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**XII. Sewage Disposal (required by DWQ)**

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.

N/A

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**XIII. Violations (required by DWQ)**

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?

Yes  No

Is this an after-the-fact permit application?

Yes  No

**XIV. Other Circumstances (Optional):**

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

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*Repsit*

6/15/04

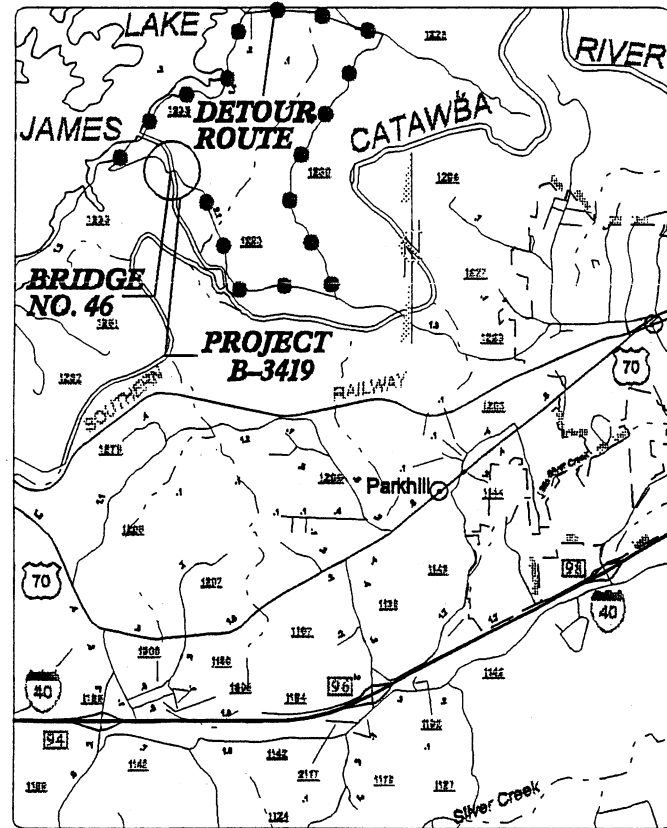
**Applicant/Agent's Signature**

**Date**

(Agent's signature is valid only if an authorization letter from the applicant is provided.)

**CONTRACT: C200826**  
**TIP PROJECT: B-3419**

See Sheet 1-A For Index of Sheets  
 See Sheet 1-B For Conventional Symbols



VICINITY MAP OF B-3419

●-●-●-●-● DETOUR

**THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.**  
**CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II**  
 NCDOT CONTACT : CATHY S. HOUSER, P.E.,  
 PROJECT ENGINEER, DESIGN SERVICES

STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS

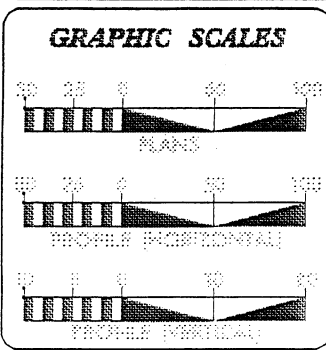
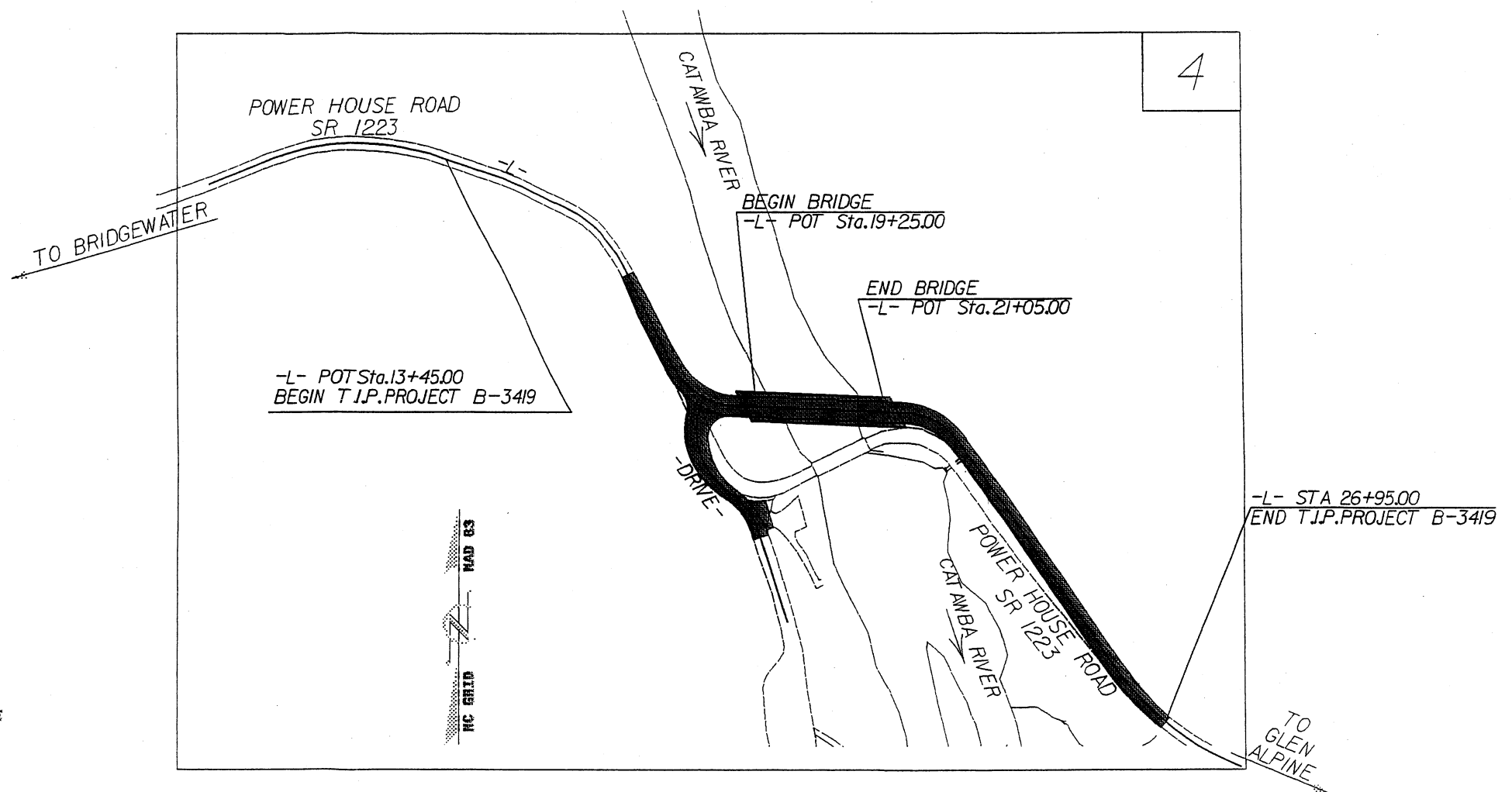
BURKE COUNTY

LOCATION: BRIDGE NO. 46 ON SR 1223 OVER CATAWBA RIVER

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3419	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
200826	SR-1223	BRIDGE	
200826	SR-1223	BRIDGE	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
**INCOMPLETE PLANS**  
 DO NOT USE FOR R/W ACQUISITION



**DESIGN DATA**  
 ADT 2004 = 411  
 ADT 2011 = 581  
 DRY = 196  
 W = 209  
 T = 58

\* DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT, STOPPING SIGHT DISTANCE, AND SUPERELEVATION IS REQUIRED

**PROJECT LENGTH**

LENGTH ROADWAY T.I.P. PROJECT B-3419	= 0.222 MILES
LENGTH STRUCTURES T.I.P. PROJECT B-3419	= 0.034 MILES
TOTAL LENGTH OF T.I.P. PROJECT B-3419	= 0.256 MILES

2002 STANDARD SPECIFICATIONS

R/W :	MARCH 31, 2003
LETTING DATE :	MARCH 16, 2004

NEIL J. DEAN, P.E.  
 EARTH TECH PROJECT MANAGER

Prepared in the Office of:

**EARTH TECH**

A **tyco** INTERNATIONAL LTD. COMPANY

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

701 Corporate Center Drive  
 Suite 475  
 Raleigh, N.C. 27607  
 (919) 854-6200  
 FAX (919) 854-6259

**HYDRAULICS ENGINEER**

SIGNATURE: JOHN D.E. NICHTOLS, P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: NEIL J. DEAN, P.E.

**DIVISION OF HIGHWAYS**  
**STATE OF NORTH CAROLINA**

STATE DESIGN ENGINEER: P.E.

DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED: DIVISION ADMINISTRATOR DATE:

REVISIONS

B-3419 2

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

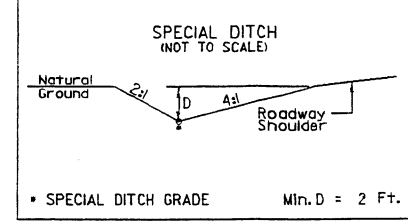
EARTH SYSTEM  
70 Corporate Center Drive, Suite 475  
Raleigh, NC 27607  
(919) 854-6200 - (919) 854-6259(FAX)

GRAPHIC SCALE  
PLAN

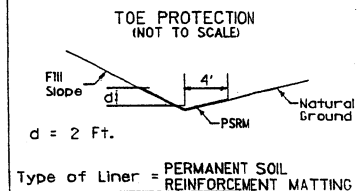
SEE SHEET 5 FOR -L- PROFILE  
SEE SHEET 5 FOR -DRIVE- PROFILE

NOTE: DESIGN EXCEPTION FOR HORIZONTAL ALIGNMENT, STOPPING SIGHT DISTANCE AND SUPERELEVATION IS REQUIRED

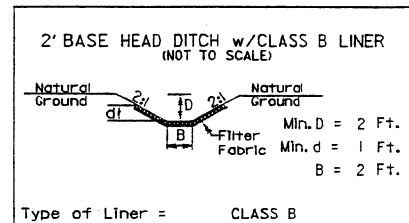
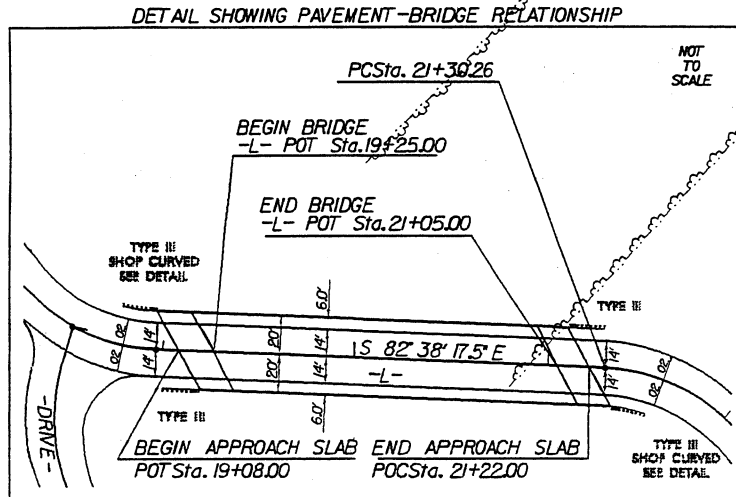
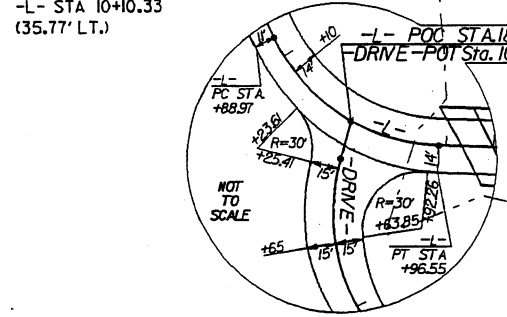
DENOTES PAVEMENT REMOVAL



- L- 18+01 - 18+31 R
- L- 24+00 - 24+67 R
- L- 24+67 - 27+00 R
- L- 20+95 - 21+85 L
- L- 22+65 - 24+00 L
- L- 24+00 - 24+67 L
- L- 24+67 - 27+14 L
- DRIVE- 10+20 - 11+13 R
- DRIVE- 11+13 - 11+83 R
- DRIVE- 10+84 - 11+47 L
- DRIVE- 11+47 - 11+70 L



- L- 21+60 - 22+35 L
- L- 22+35 - 22+60 L



**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "POWER" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 7373749450(1) EASTING: 11575821690(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99809508 THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "POWER" TO -L- STATION 16+50.00 IS 1274.82' S 57° 53' 44.45" E ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29

-L-			-DRIVE-
PI Sta 12+07.10 Δ = 37° 19' 37.3" (RT) D = 16' 08" 22.8" L = 231.28' T = 119.91' R = 355.00'	PI Sta 14+13.03 Δ = 9° 12' 09.6" (RT) D = 4' 52" 34.5" L = 188.72' T = 94.57' R = 175.00'	PI Sta 15+80.81 Δ = 38° 38' 07.9" (RT) D = 27' 17" 01.3" L = 141.61' T = 73.61' R = 210.00'	PI Sta 10+94.50 Δ = 73° 22' 09.4" (LT) D = 57' 17" 44.8" L = 128.05' T = 74.50' R = 100.00' Se = NC R.O. = SEE PLANS
PI Sta 18+48.63 Δ = 61° 38' 11.5" (LT) D = 57' 17" 44.8" L = 107.58' T = 59.66' R = 100.00' Se = NC R.O. = SEE PLANS	PI Sta 21+80.09 Δ = 52° 58' 40.6" (RT) D = 57' 17" 44.8" L = 92.46' T = 49.83' R = 100.00' Se = NC R.O. = SEE PLANS	PI Sta 27+10.49 Δ = 33° 11' 50.9" (LT) D = 15' 41" 50.9" L = 211.48' T = 108.80' R = 365.00' Se = SEE PLANS R.O. = SEE PLANS	PI Sta 11+83.56 Δ = 39° 05' 46.0" (RT) D = 57' 17" 44.8" L = 68.24' T = 35.51' R = 100.00' Se = NC R.O. = SEE PLANS

DATE: 03/11/2015

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION  
INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION

EARTH SYSTEM  
70 Corporate Center Drive, Suite 415  
Raleigh, NC 27607  
(919) 854-5000 - (919) 854-5255 FAX

**BRIDGE HYDRAULIC DATA**

DESIGN DISCHARGE	= 2500 CFS
DESIGN FREQUENCY	= N/A YRS
DESIGN HW ELEVATION	= 1063.5FT
BASE DISCHARGE	= N/A CFS
BASE FREQUENCY	= N/A YRS
BASE HW ELEVATION	= N/A FT
OVERTOPPING DISCHARGE	= 11,080 CFS
OVERTOPPING FREQUENCY	= N/A YRS
OVERTOPPING ELEVATION	= 1076.2FT

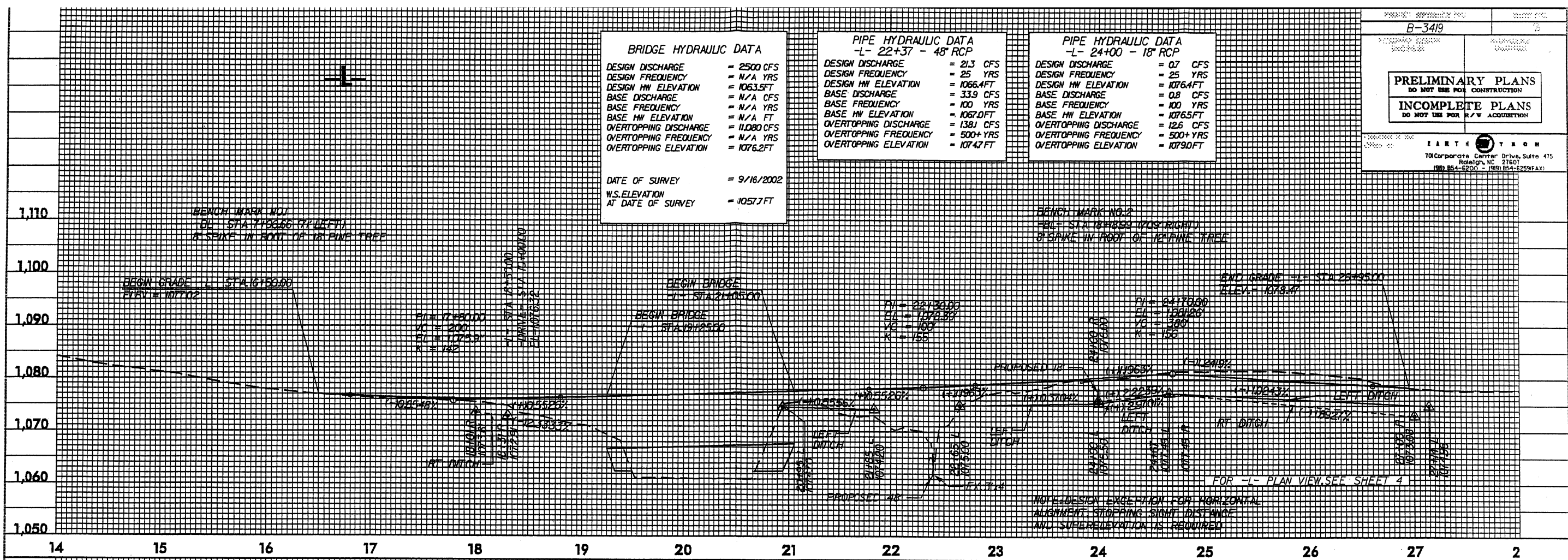
DATE OF SURVEY = 9/16/2002  
W.S. ELEVATION AT DATE OF SURVEY = 1057.7FT

**PIPE HYDRAULIC DATA  
-L- 22+37 - 48" RCP**

DESIGN DISCHARGE	= 21.3 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1066.4FT
BASE DISCHARGE	= 33.9 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1067.0FT
OVERTOPPING DISCHARGE	= 138.1 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1074.7FT

**PIPE HYDRAULIC DATA  
-L- 24+00 - 18" RCP**

DESIGN DISCHARGE	= 0.7 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1076.4FT
BASE DISCHARGE	= 0.8 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1076.5FT
OVERTOPPING DISCHARGE	= 12.6 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 1079.0FT



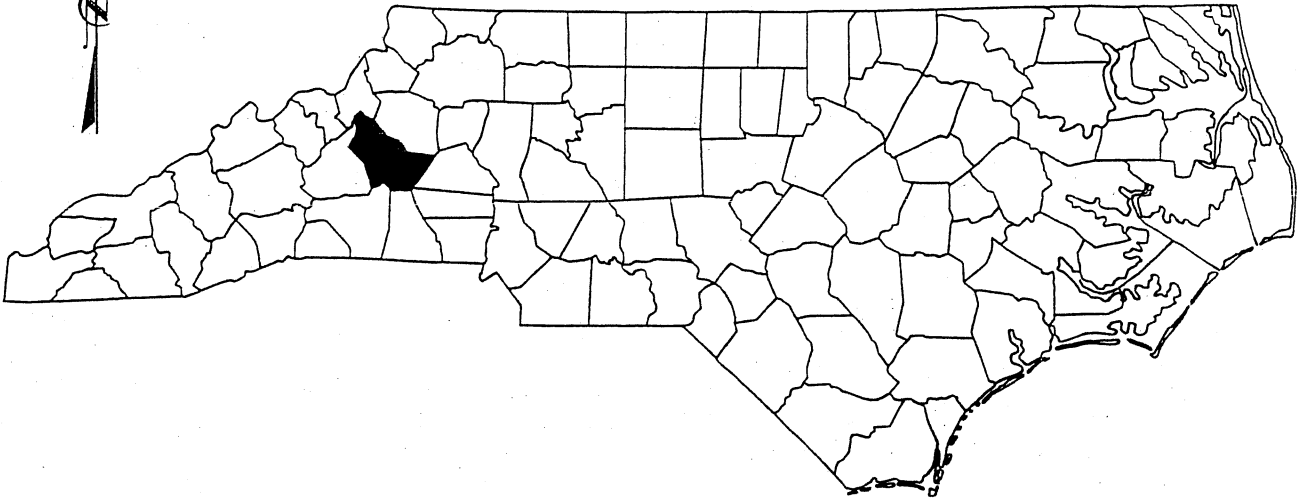
**-DRIVE-**

**PIPE HYDRAULIC DATA  
-DRIVE- 11+24 - 30" RCP**

DESIGN DISCHARGE	= 17.5 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 1071.8 FT
BASE DISCHARGE	= 27.8 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 1072.5FT
OVERTOPPING DISCHARGE	= 35.3 CFS
OVERTOPPING FREQUENCY	= 100+ YRS
OVERTOPPING ELEVATION	= 1073.1 FT

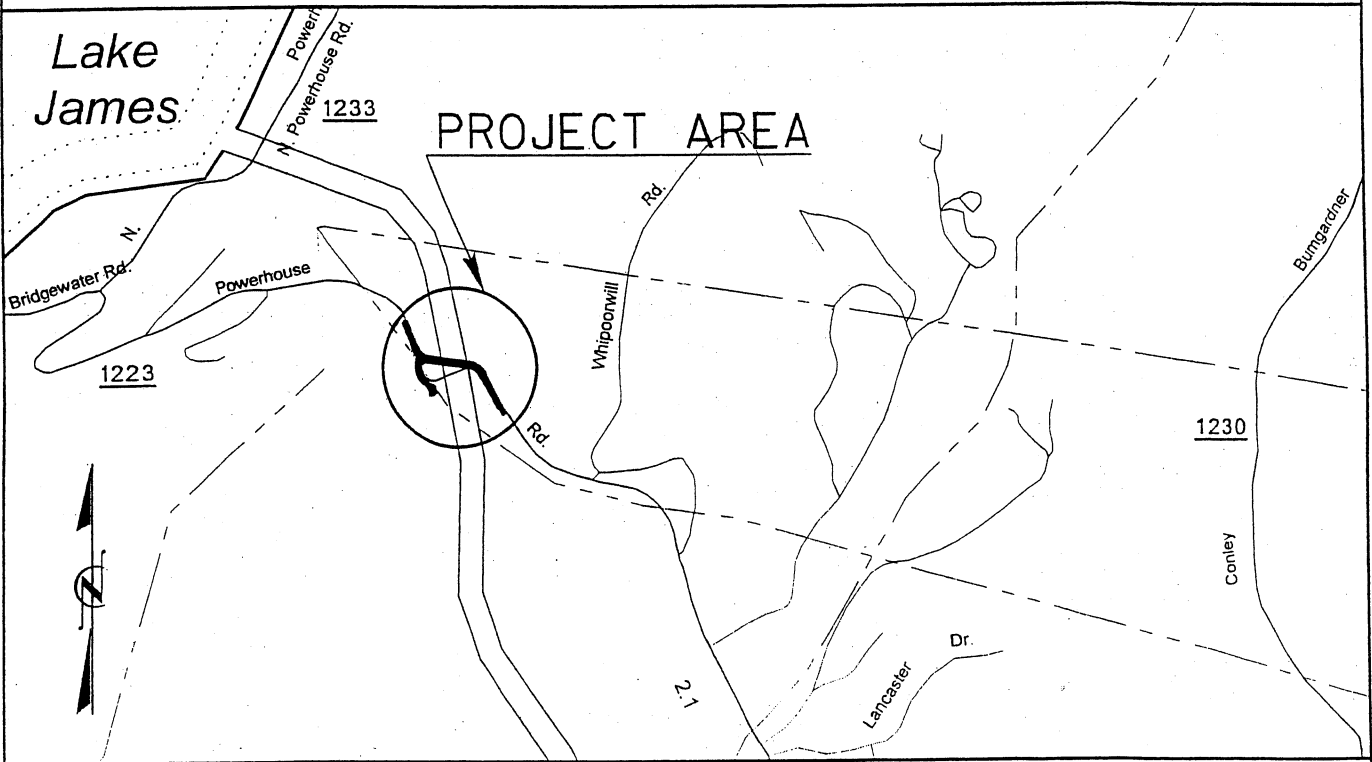


# NORTH CAROLINA



Lake James

## PROJECT AREA



VICINITY  
MAPS

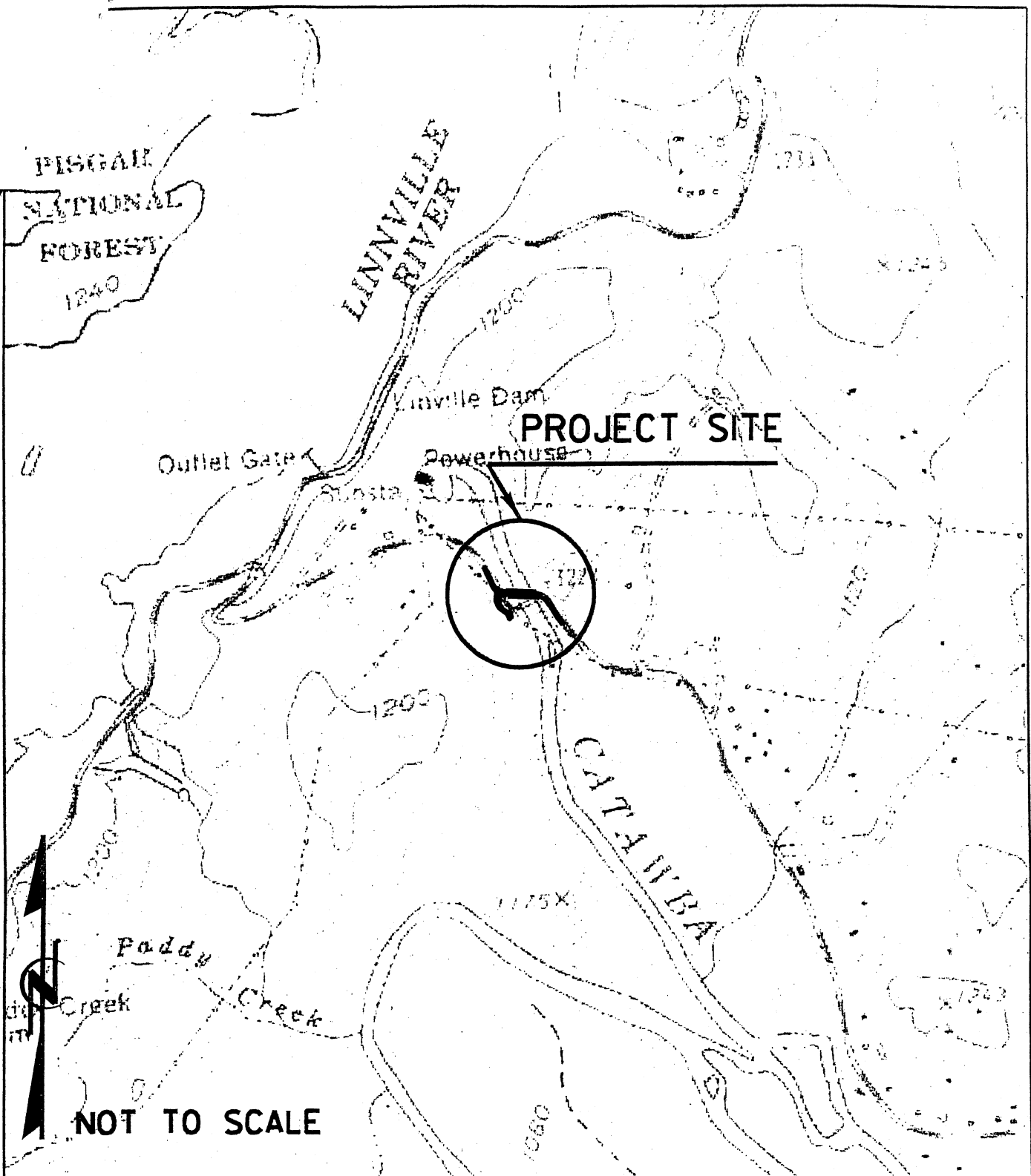
**NCDOT**

**DIVISION OF HIGHWAYS**

**BURKE COUNTY**

**PROJECT: 8.2852001 (B-3419)**

**BURKE COUNTY BRIDGE #46 ON  
SR 1233 (POWERHOUSE ROAD)  
OVER THE CATAWBA RIVER**




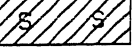



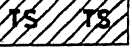


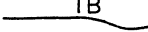
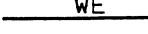
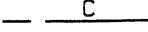
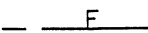

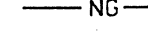
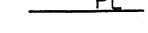
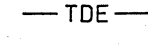

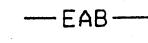
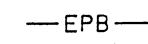

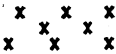


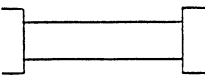
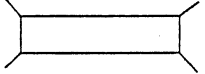
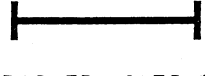


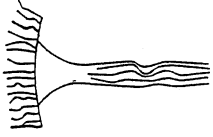
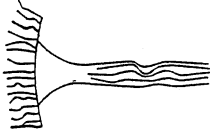



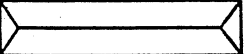
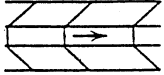


CATAWBA RIVER  
 WATER SUPPLY  
 BUFFER  
**LOCATION  
 MAP**

**NCDOT**  
 DIVISION OF HIGHWAYS  
 BURKE COUNTY  
 PROJECT: 8.2852001 (B-3419)  
 BURKE COUNTY BRIDGE #46 ON  
 SR 1223 (POWERHOUSE ROAD)  
 OVER THE CATAWBA RIVER



# WETLAND LEGEND

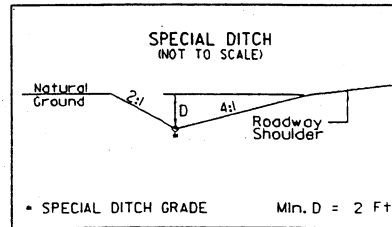
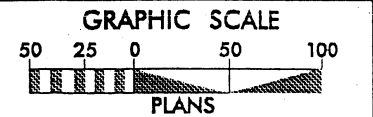
-  WLB — WETLAND BOUNDARY
-  WLB — WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING
-  —> FLOW DIRECTION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

**NCDOT**  
 DIVISION OF HIGHWAYS  
 BURKE COUNTY  
 PROJECT: 8.2852001 (B-3419)

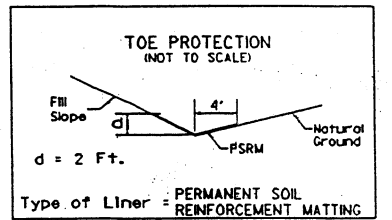
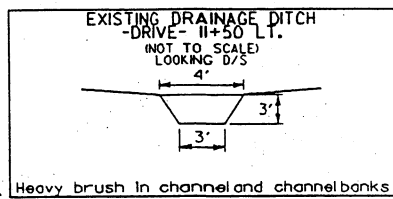
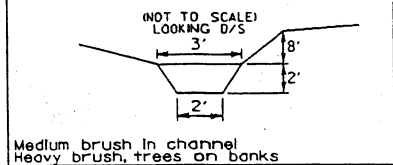
**BURKE COUNTY BRIDGE #46 ON  
 SR 1223 (POWERHOUSE ROAD)  
 OVER THE CATAWBA RIVER**

SHEET 3 OF 6

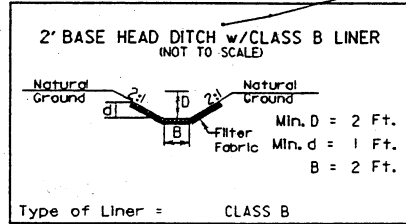
3/17/03



- L- 18+01 - 18+31 R
- L- 24+00 - 24+67 R
- L- 20+95 - 21+85 L
- L- 22+65 - 24+00 L
- L- 24+00 - 24+67 L
- L- 24+67 - 27+14 L
- DRIVE- 10+20 - 11+13 R
- DRIVE- 11+13 - 11+83 R
- DRIVE- 10+84 - 11+47 L
- DRIVE- 11+47 - 11+70 L



- L- 21+60 - 22+35 L
- L- 22+35 - 22+60 L

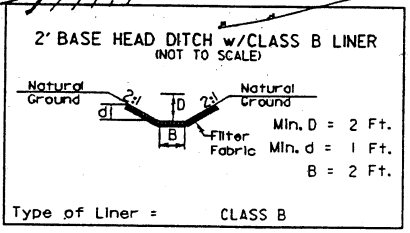
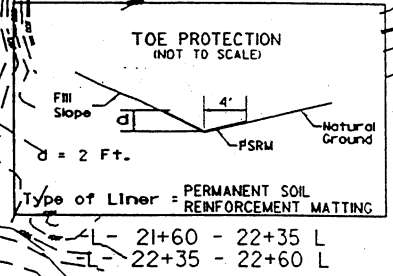
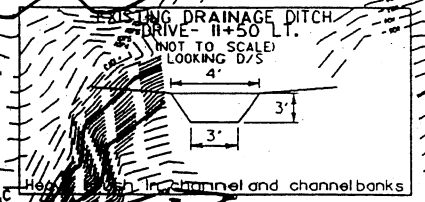
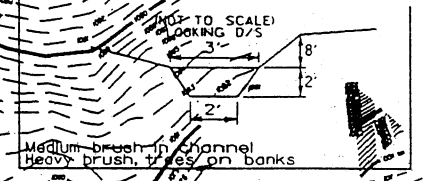
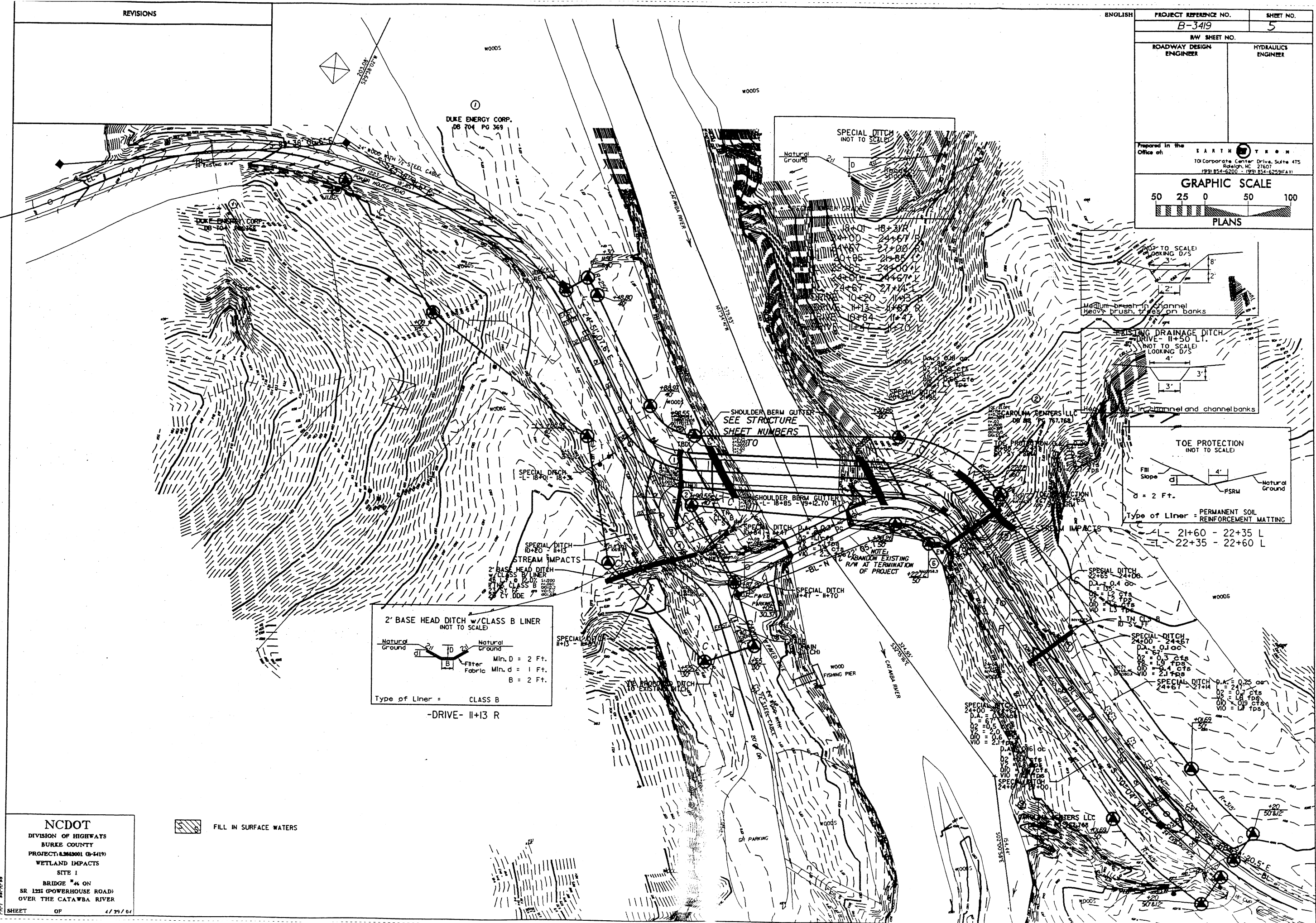


-DRIVE- 11+13 R

FILL IN SURFACE WATERS

**NCDOT**  
 DIVISION OF HIGHWAYS  
 BURKE COUNTY  
 PROJECT: 13062001 G-14(19)  
 WETLAND IMPACTS  
 SITE 1  
 BRIDGE #44 ON  
 SR 1221 (POWERHOUSE ROAD)  
 OVER THE CATAWBA RIVER

PROJECT REFERENCE NO. B-3419		SHEET NO. 5	
RW SHEET NO.		HYDRAULICS	
ROADWAY DESIGN ENGINEER		ENGINEER	
Prepared in the Office of: <b>EARTH SYSTEMS</b>			
10 Corporate Center Drive, Suite 415 Raleigh, NC 27607 (919) 854-6200 • (919) 854-6250 FAX			
<b>GRAPHIC SCALE</b>			
50 25 0 50 100			
PLANS			



-DRIVE- 11+13 R

FILL IN SURFACE WATERS

**NCDOT**  
DIVISION OF HIGHWAYS  
BURKE COUNTY  
PROJECT: 3863001 (B-3419)  
WETLAND IMPACTS  
SITE 1  
BRIDGE #46 ON  
SR 1231 (POWERHOUSE ROAD)  
OVER THE CATAWBA RIVER

SHEET OF 479/04

DATE: 08/11/04 TIME: 09:11 AM

USER: BASSER, P. PART: 001

**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	-L- Sta 19+25 TO 21+05	180' Single Span Bridge					0			0	
2	-Drive- 11+24 UT West (~2' wide)	30" RCP					0.004			81	
3	-L- 22+37 UT East (~4' wide)	48" RCP					0.004			44	
<b>TOTALS:</b>			0	0	0	0	0.008	0	0	125	0

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 BURKE COUNTY  
 PROJECT 8.2852001 B-3419  
 SHEET 6 OF 6  
 4/29/04

