STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 3, 2006

U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1000
Washington, NC 27889-1000

ATTENTION: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit Application and Riparian Buffer Authorization** for the Replacement of Bridge No. 19 over Cokey Swamp on SR 1135, Edgecombe County. Federal Aid Project No. BRZ-1135(6), State Project No. 8.2291301, TIP Project No. B-4111, WBS Element 33466.1.1.

Please find enclosed the Preconstruction Notification (PCN), permit drawings, half-size plans, Categorical Exclusion Action Classification (CE), Natural Resources Technical Report (NRTR), and the Ecosystem Enhancement Program (EEP) acceptance letter for the above-mentioned project. The North Carolina Department of Transportation proposes to replace existing Bridge No. 19 over Cokey Swamp on SR 1135 in Edgecombe County. The project involves replacement of the existing structure with a 135-foot long bridge in the same location using top-down construction. The proposed structure for Bridge No. 19 will provide a 24-foot travel-way with a 3-foot offset on the north side and a 6-foot offset on the south side. An offsite detour will be utilized. The project schedule calls for a December 19, 2006 let with a review date of October 31, 2006. Proposed permanent impacts include 0.30 acre to jurisdictional wetlands.

Impacts to Water of the United States

General Description: Cokey Swamp is located in the 03020103 CU of the Tar-Pamlico River Basin. The Division of Water Quality (DWQ) has assigned Cokey Swamp a Stream Index Number of 28-83-3. DWQ has assigned a best usage classification of **C NSW**.

Permanent Impacts: Cokey Swamp and adjacent riverine wetlands will be impacted by the proposed project. Construction of the proposed project will result in permanent impacts of 0.03 acre of fill and 0.27 acre of mechanized clearing in wetlands (see permit drawings).

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Tar-Pamlico Riparian Buffer Rules

As stated above, this project is located in the Tar-Pamlico River Basin and therefore buffer rules apply. NCDOT proposes 0.17 acre of allowable impacts to Zone 1 and 0.14 acre of allowable impacts to Zone 2. Therefore no mitigation is required.

Utility Impacts: There is an existing 10" water line located on the west side of the project that will be relocated by directional bore from high ground to high ground on the east side of the project. The cut will originate outside the buffer area and end outside the buffer area.

There is also an existing aerial power line that will be dismantled, removed and laid inside conduit on top of the ground west of the project and outside the project limits.

Bridge Demolition

The superstructure and substructure for Bridge No. 19 will allow removal without dropping components into the water. Best Management Practices for Bridge Demolition and Removal will be implemented.

Avoidance and Minimization

Due to the location of this project and the juxtaposition of adjacent wetlands and surface waters, total avoidance of the surrounding marsh and wetland is impossible during the construction of this project. NCDOT has taken steps to minimize the impacts to this resource.

To minimize impacts to the wetland adjacent to Bridge No. 19, NCDOT is replacing the bridge in place and utilizing an off-site detour.

Minimum width for the approaches and structure has been utilized. Fill slopes in wetlands on this project will be 3:1 due to the loose alluvial sandy soils lacking clay or cohesion in order to avoid major erosion and slope failure.

Mitigation

NCDOT proposes to use the North Carolina Ecosystem Enhancement Program (EEP) to mitigate for permanent impacts associated with this project. The EEP acceptance letter was received on March 15, 2006. A copy of this letter is included with this application.

Federally Protected Species

As of March 3, 2006, the US Fish and Wildlife Service (USFWS) lists the red-cockaded woodpecker (*Picoides borealis*) and the Tar spinymussel (*Elliptio steinstansana*) as endangered for Edgecombe County. The bald eagle (*Haliaeetus leucocephalus*) is listed as threatened. The biological conclusion of each species is "No Effect".

Scientific Name	Common Name	Status	Biological Conclusion	Habitat
Elliptio steinstansana	Tar River spinymussel	Endangered	No Effect	No
Haliaeetus leucocephalus	Bald eagle	Threatened	No Effect	No
Picoides borealis	Red-cockaded woodpecker	Endangered	No Effect	No

Regulatory Approvals

Section 404 Permit: This project is being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). Therefore, we do not anticipate requesting an individual permit but propose to proceed under a Nationwide 23 as authorized by a Nationwide Permit 23 (67 FR 2020; January 15, 2002).

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

Tar-Pamlico River Basin Buffer Authorization: NCDOT requests that the NC Division of Water Quality review this application and issue a written approval for a Tar-Pamlico River Riparian Buffer Authorization.

A copy of this permit application will be posted on the NCDOT website at: http://www.ncdot.org/doh/preconstruct/pe/neu/Permit.html.

If you have any questions or need additional information, please contact Chris Underwood at (919) 715-1451.

Sincerely,

Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis

W/attachment:

Mr. John Hennessy, NCDWQ (5 copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Ron Sechler, NMFS
Mr. Michael Street, NCDMF
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Ms. Wendy O. Johnson, P.E., Division 4 Engineer
Mr. Jamie Guerrero, Division 4 Environmental Specialist

W/o attachment

Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Bill Goodwin, P.E., Planning Engineer

Office Use Only: Form Version March 05

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
   - ☐ Section 10 Permit
   - ☒ 401 Water Quality Certification
   - ☒ Riparian or Watershed Buffer Rules
   - ☐ Isolated Wetland Permit from DWQ
   - ☐ Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: **NWP 23**

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 Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, 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: **NCDOT/ Project Development & Environmental Analysis Branch/ Greg Thorpe**
   Mailing Address: **1548 Mail Service Center, Raleigh, NC 27699-1548**
   _____
   _____
   _____
   Telephone Number: **919-733-3141** Fax Number: **919-733-9794**
   E-mail Address: _____

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: **N/A**
   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: Replacment of Bridge 19 over Cokey Swamp on SR 1135

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4111

3. Property Identification Number (Tax PIN): _____

4. Location
   County: Edgecombe Nearest Town: Rocky Mount
   Subdivision name (include phase/lot number): _____
   Directions to site (include road numbers/names, landmarks, etc.): Take US 64 E from Rocky Mount to NC 43 to SR 1135 and Bridge 19.

5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
   Decimal Degrees (6 digits minimum): 35° 53' 25" °N 77° 45' 28" °W

6. Property size (acres): **N/A**

7. Name of nearest receiving body of water: Cokey Swamp (Class C, NSW)

8. River Basin: Tar-Pamlico
   (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: Substandard bridge on SR 1135

10. Describe the overall project in detail, including the type of equipment to be used:
Replace Bridge 19 with a ne structure. Typical roadway construction equipment (excavators, bull dozers, dump trucks, graders, etc.) will be utilized.

Explain the purpose of the proposed work: To provide a safer structure.

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. N/A

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

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. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial) should 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: 0.03 acre of fill and 0.27 acre of mechanized clearing injurisdictional wetland.

2. Individually list wetland impacts. Types of 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.

Wetland Impact Site Number (indicate on map)	Type of Impact	Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.)	Located within 100-year Floodplain (yes/no)	Distance to Nearest Stream (linear feet)	Area of Impact (acres)
1	Fill	Cypress-gum	yes		0.03
1	Mechanized clearing	Cypress-gum	yes		0.27
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: N/A

4. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, 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. To calculate acreage, multiply length X width, then divide by 43,560.

Stream Impact Number (indicate on map)	Stream Name	Type of Impact	Perennial or Intermittent?	Average Stream Width Before Impact	Impact Length (linear feet)	Area of Impact (acres)
Total Stream Impact (by length and acreage)						

5. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

Open Water Impact Site Number (indicate on map)	Name of Waterbody (if applicable)	Type of Impact	Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.)	Area of Impact (acres)
No Impacts				
Total Open Water Impact (acres)				

6. List the cumulative impact to all Waters of the U.S. resulting from the project:

Stream Impact (acres):	0
Wetland Impact (acres):	0.30
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	0
Total Stream Impact (linear feet):	0.30 acre permanent impact

7. Isolated Waters
   Do any isolated waters exist on the property? ☐ Yes ☒ No
   Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.
   N/A

8. 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.): N/A
   Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): N/A
   Current land use in the vicinity of the pond: N/A
   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 bridge will be replaced in place utilizing an off-site detour. 3:1 slopes will be utilized due to soil conditions.

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 January 15, 2002, 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 NCEEP 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.
   Proposed permanent wetland impacts equal 0.30 acre. The NC Ecosystem Enhancement Program (EEP) will provide the compensatory mitigation required for this project.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

   Amount of stream mitigation requested (linear feet): 0.30 acre
   Amount of buffer mitigation requested (square feet): 0
   Amount of Riparian wetland mitigation requested (acres): N/A

Amount of Non-riparian wetland mitigation requested (acres): N/A
Amount of Coastal wetland mitigation requested (acres): N/A

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes ☒ No ☐

2. 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 ☐

3. 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.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify_____)? Yes ☒ No ☐

2. If "yes", 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	7,405.2		none
2	6,098.4		none
Total	13,503.6		none

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

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. N/A

XI. Stormwater (required by DWQ)

Describe impervious acreage (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. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level.
N/A

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

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. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes ☐ No ☒
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at http://h2o.enr.state.nc.us/ncwetlands. If no, please provide a short narrative description: _____

XV. 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).
N/A

4/4/06

Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

Ecosystem Enhancement PROGRAM

March 13, 2006

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4111, Bridge Number 19 over Cokey Swamp on SR 1135, Edgecombe County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory riverine wetland mitigation for the subject project. Based on the information supplied by you in a letter dated March 8, 2006, the impacts are located in CU 03020103 of the Tar-Pamlico River Basin in the Northern Inner Coastal Plain (NICP) Eco-Regions, and are as follows:

Riverine Wetlands: 0.30 acre

This mitigation acceptance letter replaces the mitigation acceptance letter issued on February 21, 2006. Mitigation for this project will be provided in accordance with the Memorandum of Agreement between the N. C. Department of Environment and Natural Resources, the N. C. Department of Transportation, and the U. S. Army Corps of Engineers. EEP will commit to implementing sufficient compensatory riverine wetland mitigation to offset the impacts associated with this project by the end of the MOA year in which this project is permitted. If the above referenced impacts amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

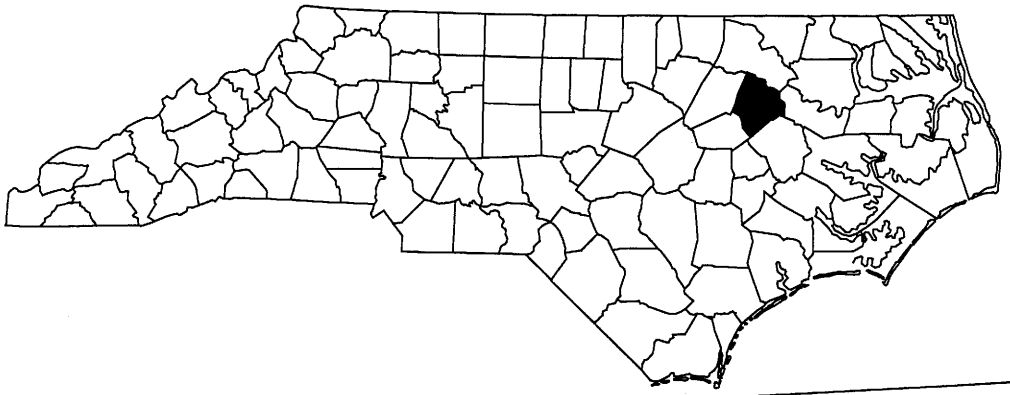
If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

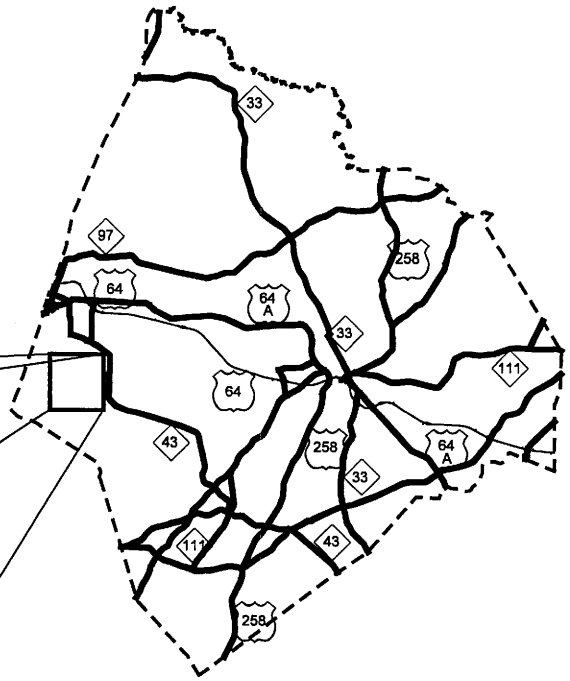
Sincerely,

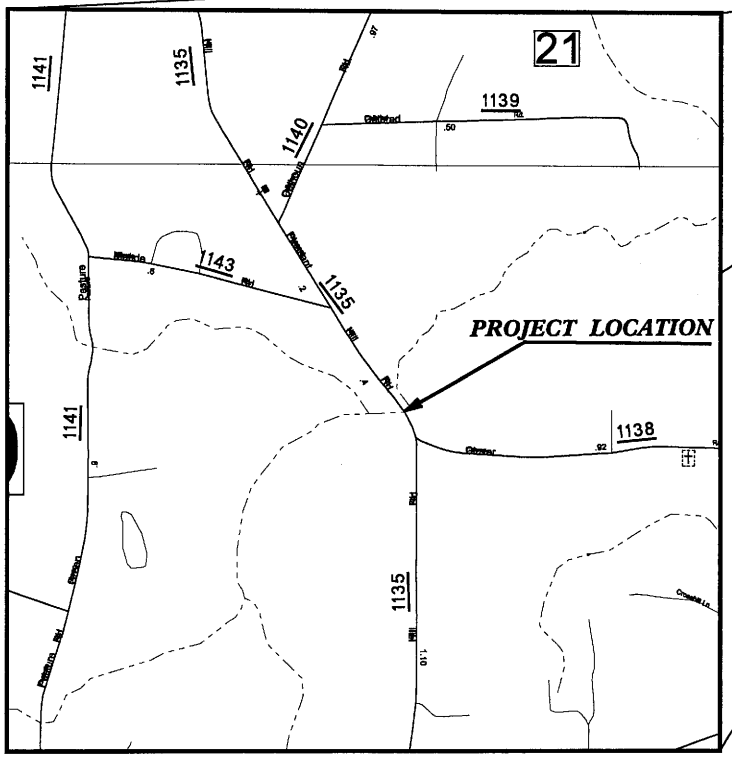
James B. Stanfill for

William D. Gilmore, P.E.
EEP Director

cc: Mr. Bill Biddlecome, USACE-Washington
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-4111 Additional







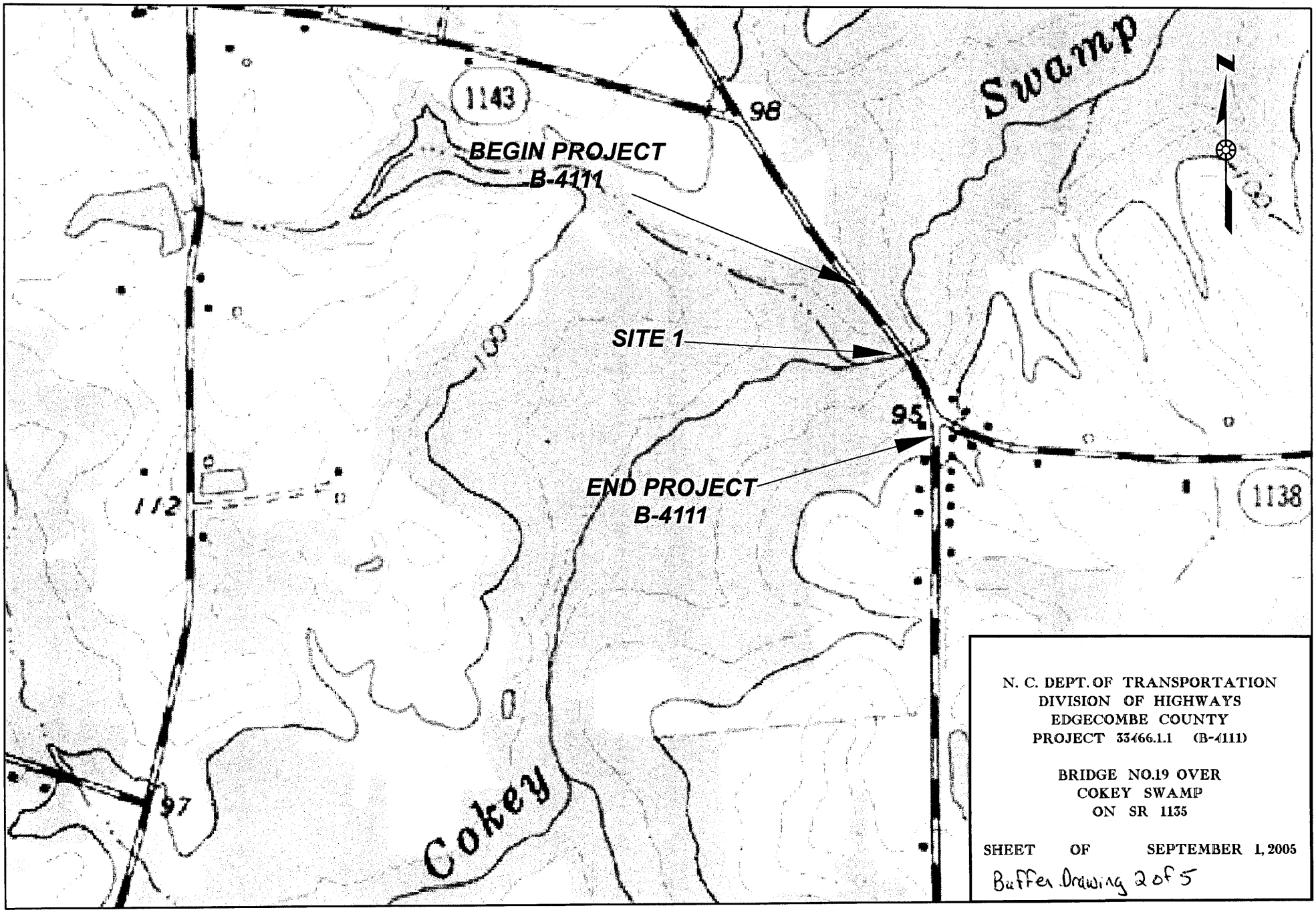
Buffer Permit

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT 33466.1.1 (B-4111)

BRIDGE NO.19 OVER
COKEY SWAMP
ON SR 1135

SHEET OF SEPTEMBER 1, 2005

Buffer Drawing 1 of 5


1143
98
BEGIN PROJECT
B-4111
Swamp
N
SITE 1
95
END PROJECT
B-4111
112
1138
97
Cokey
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT 33466.1.1 (B-4111)
BRIDGE NO.19 OVER
COKEY SWAMP
ON SR 1135
SHEET OF SEPTEMBER 1, 2005
Buffer Drawing 2 of 5

BUFFER IMPACTS SUMMARY

SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	IMPACT								BUFFER REPLACEMENT	
			TYPE		ALLOWABLE			MITIGABLE				
			ROAD CROSSING	PARALLEL IMPACT	ZONE 1 (ac)	ZONE 2 (ac)	TOTAL (ac)	ZONE 1 (ac)	ZONE 2 (ac)	TOTAL (ac)	ZONE 1 (ac)	ZONE 2 (ac)
1	BRIDGE, 3 SPAN (3@ 45 FT.) 21" PRESTRESSED CONCRETE CORED SLAB	-L- Sta 15+40 TO 17+10	X		0.17	0.14	0.31					
TOTAL:					0.17	0.14	0.31			0.00	0.00	0.00

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY
PROJECT: 33466.1.1 (B-4111)
ON SR 1135

9/1/2005
Buffer SHEET 3 OF 5

PROJECT REFERENCE NO.	SHEET NO.
B-4111	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

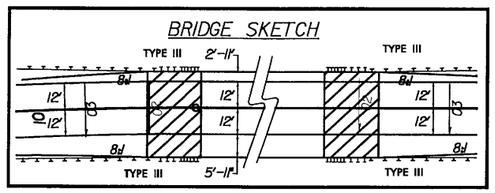
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Buffer Drawing 4 of 5

8/17/99

REVISIONS

BRIDGE SKETCH



Buffer Permit

PI Sta 14+17.48
Δ = 8° 51' 58.5" (RT)
D = 3° 16' 26.6"
L = 270.80'
T = 135.67'
R = 1750.00'
V = 60 mph
e = See Plans
RUNOFF = See Plans

BEGIN TIP PROJECT B-4111
-L- POT STA 12+06.26

BEGIN BRIDGE
-L- STA 15+54.00

END BRIDGE
-L- STA 16+89.00

END APPROACH SLAB
-L- STA 17+14.00

END CONSTRUCTION
-Y- POT STA 10+72.26

-L- POC STA 20+00.99=
-Y- POT STA 10+00.00

NAD 83

POT Sta. 10+00.00

POT Sta. 12+81.81

PT Sta. 15+52.62

POT Sta. 17+65.01

POT Sta. 22+75.82

PI Sta 19+58.37
Δ = 30° 03' 55.7" (RT)
D = 7° 57' 27.9"
L = 377.81'
T = 193.36'
R = 720.00'
V = 45 mph
e = See Plans
RUNOFF = See Plans

PT Sta. 21+42.82

END TIP PROJECT B-4111
-L- POC STA 21+04.00

CL. 'B' RIP RAP
EST. 2 TONS
EST. 7 S.Y. FILTER FABRIC

SHOULDER BERM GUTTER
-L- STA. 14+48 TO 15+29 RT

SPECIAL CUT DITCH SEE DETAIL A

BEGIN APPROACH SLAB
-L- STA 15+29.00

ALLOWABLE IMPACTS ZONE 1

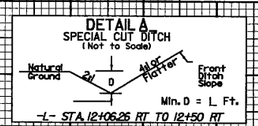
ALLOWABLE IMPACTS ZONE 2

BM #1
-BL- STA =(out of chain)
From -BL-103 S 59°49'34" W - 69.42' =
-L- STA 10+90.33 - 81.71' RIGHT
ELEV. 84.10'

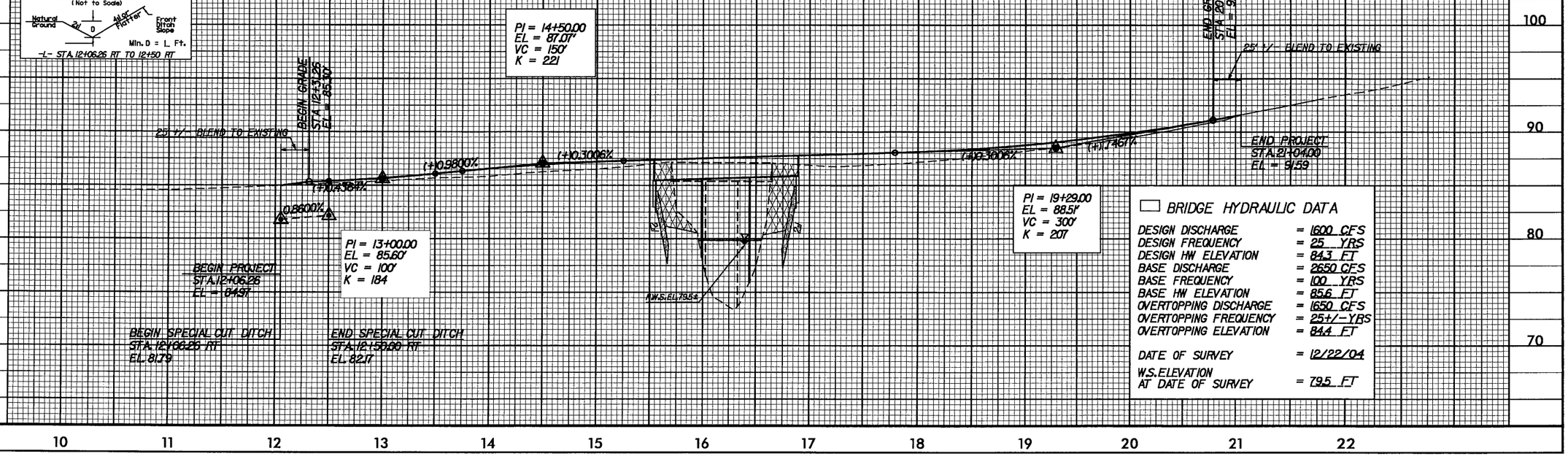
BM #2
-BL- STA 10+85.20 - 23.86' RIGHT =
-L- STA 16+87.75 - 30.43' RIGHT
ELEV. 82.58'

BM #3
-BL- STA 14+64.26 - 74.55' LEFT =
-L- STA 20+39.42 - 105.00' LEFT
ELEV. 92.36'

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



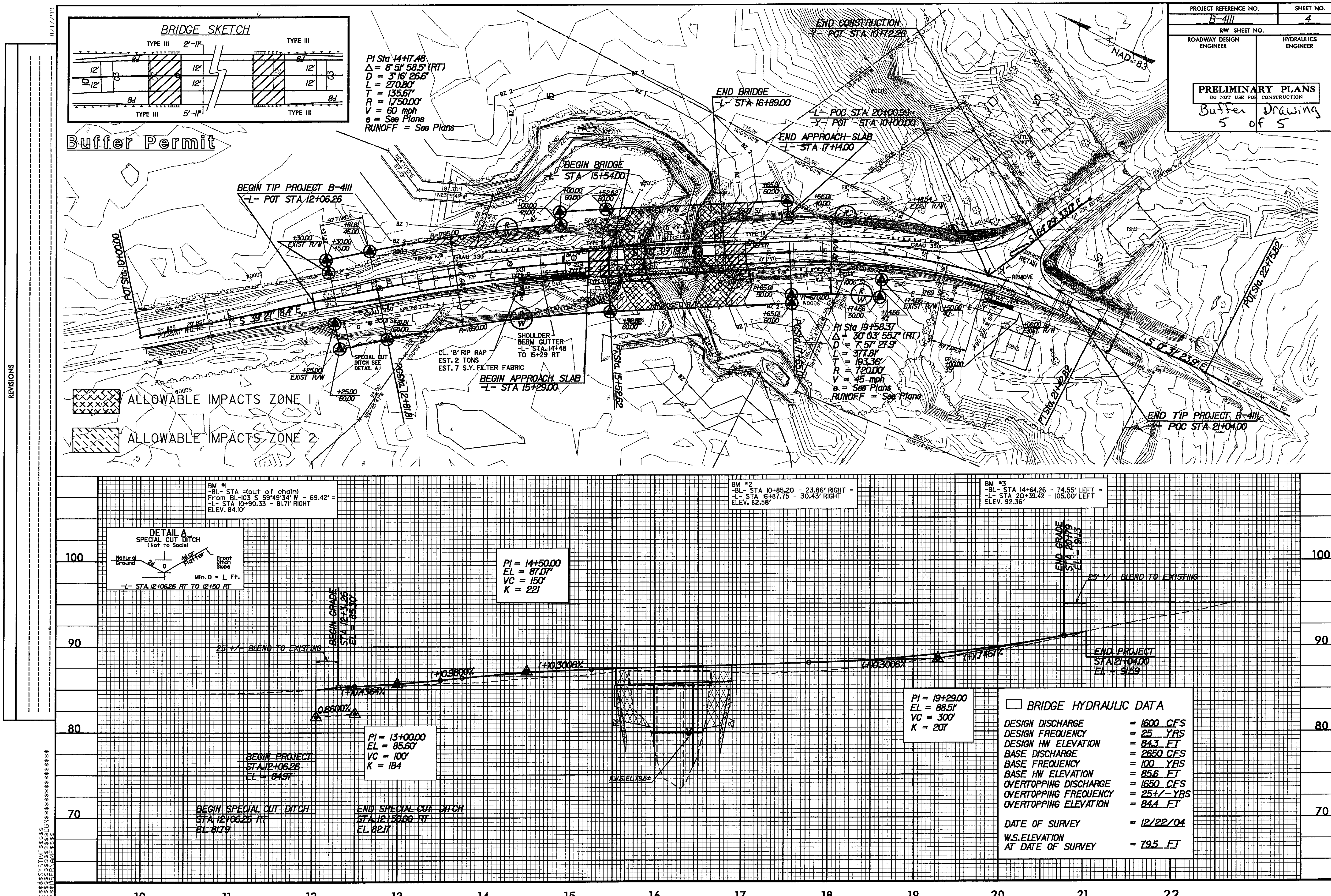
-L- STA 12+06.26 RT TO 12+50 RT

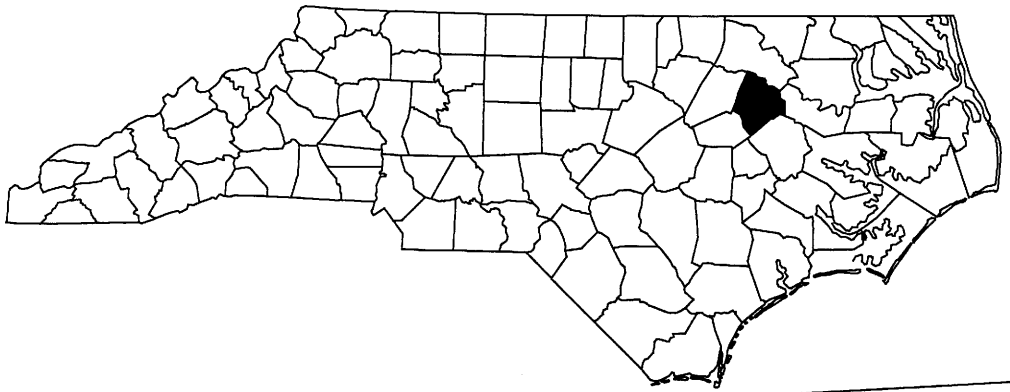


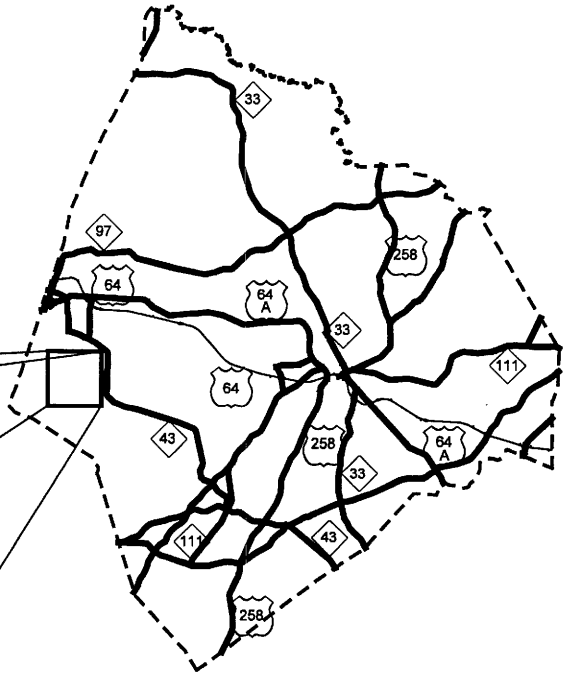
BRIDGE HYDRAULIC DATA

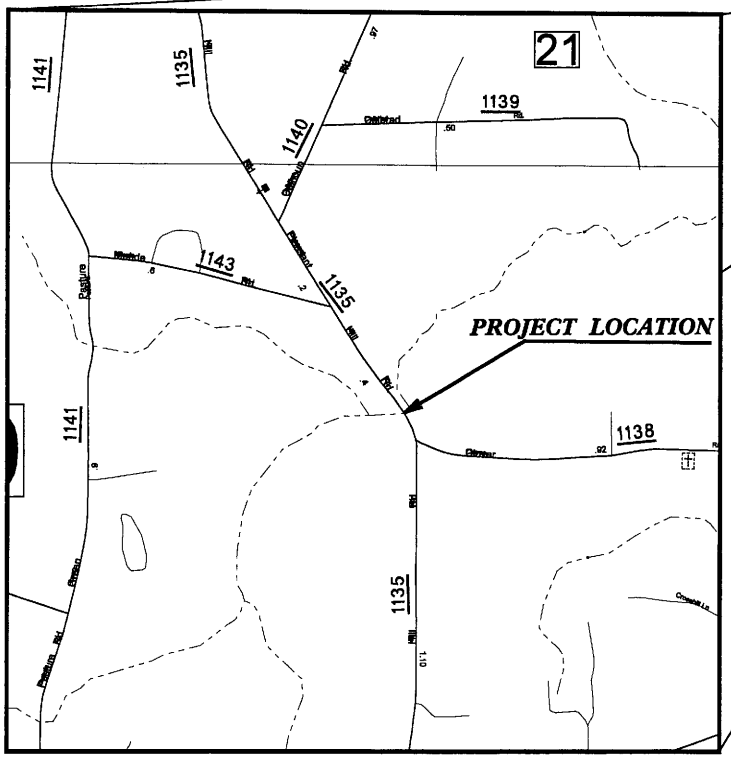
DESIGN DISCHARGE	= 1600 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 84.3 FT
BASE DISCHARGE	= 2650 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 85.6 FT
OVERTOPPING DISCHARGE	= 1650 CFS
OVERTOPPING FREQUENCY	= 25+/-YRS
OVERTOPPING ELEVATION	= 84.4 FT
DATE OF SURVEY	= 12/22/04
W.S. ELEVATION AT DATE OF SURVEY	= 79.5 FT

$$$$SYSTIMES$$$$
$$$$USERNAME$$$$


PROJECT REFERENCE NO. B-4111
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Buffer Drawing 5 of 5
BRIDGE SKETCH
Buffer Permit
PI Sta 14+17.48
Δ = 8° 51' 58.5" (RT)
D = 3° 16' 26.6"
L = 270.80'
T = 135.67'
R = 1,750.00'
V = 60 mph
e = See Plans
RUNOFF = See Plans
END CONSTRUCTION
-Y- POT STA 10+72.26
END BRIDGE
-L- STA 16+89.00
-L- POC STA 20+00.99
-Y- POT STA 10+00.00
END APPROACH SLAB
-L- STA 17+14.00
BEGIN BRIDGE
-L- STA 15+54.00
BEGIN TIP PROJECT B-4111
-L- POT STA 12+06.26
S 39° 27' 18.4" E
SHOULDER BERM GUTTER
-L- STA. 14+48 TO 15+29 RT
CL. 'B' RIP RAP
EST. 2 TONS
EST. 7 S.Y. FILTER FABRIC
BEGIN APPROACH SLAB
-L- STA 15+29.00
PI Sta 19+58.37
Δ = 30° 03' 55.7" (RT)
D = 7° 57' 27.9"
L = 377.81'
T = 193.36'
R = 720.00'
V = 45 mph
e = See Plans
RUNOFF = See Plans
END TIP PROJECT B-4111
-L- POC STA 21+04.00
S 0° 31' 23.9" E
SR 1135 PLEASANT HILL RD
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
BM #1
-BL- STA =(out of chain)
From BL-103 S 59°49'34" W - 69.42' =
-L- STA 10+90.33 - 81.71' RIGHT
ELEV. 84.10'
BM #2
-BL- STA 10+85.20 - 23.86' RIGHT =
-L- STA 16+87.75 - 30.43' RIGHT
ELEV. 82.58'
BM #3
-BL- STA 14+64.26 - 74.55' LEFT =
-L- STA 20+39.42 - 105.00' LEFT
ELEV. 92.36'
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 12+06.26 RT TO 12+50 RT
PI = 14+50.00
EL = 87.07'
VC = 150'
K = 221
PI = 13+00.00
EL = 85.60'
VC = 100'
K = 184
PI = 19+29.00
EL = 88.51'
VC = 300'
K = 207
BEGIN GRADE
STA 12+31.25
EL = 85.30'
END GRADE
STA 20+79
EL = 91.13
25' +/- BLEND TO EXISTING
BEGIN PROJECT
STA. 12+06.26
EL = 84.97
END PROJECT
STA. 21+04.00
EL = 91.59
BEGIN SPECIAL CUT DITCH
STA. 12+06.26 RT
EL 81.79
END SPECIAL CUT DITCH
STA. 12+50.00 RT
EL 82.17
W.S. EL 79.5±
BRIDGE HYDRAULIC DATA
DESIGN DISCHARGE = 1600 CFS
DESIGN FREQUENCY = 25 YRS
DESIGN HW ELEVATION = 84.3 FT
BASE DISCHARGE = 2650 CFS
BASE FREQUENCY = 100 YRS
BASE HW ELEVATION = 85.6 FT
OVERTOPPING DISCHARGE = 1650 CFS
OVERTOPPING FREQUENCY = 25+/-YRS
OVERTOPPING ELEVATION = 84.4 FT
DATE OF SURVEY = 12/22/04
W.S. ELEVATION AT DATE OF SURVEY = 79.5 FT
REVISIONS
8/17/99







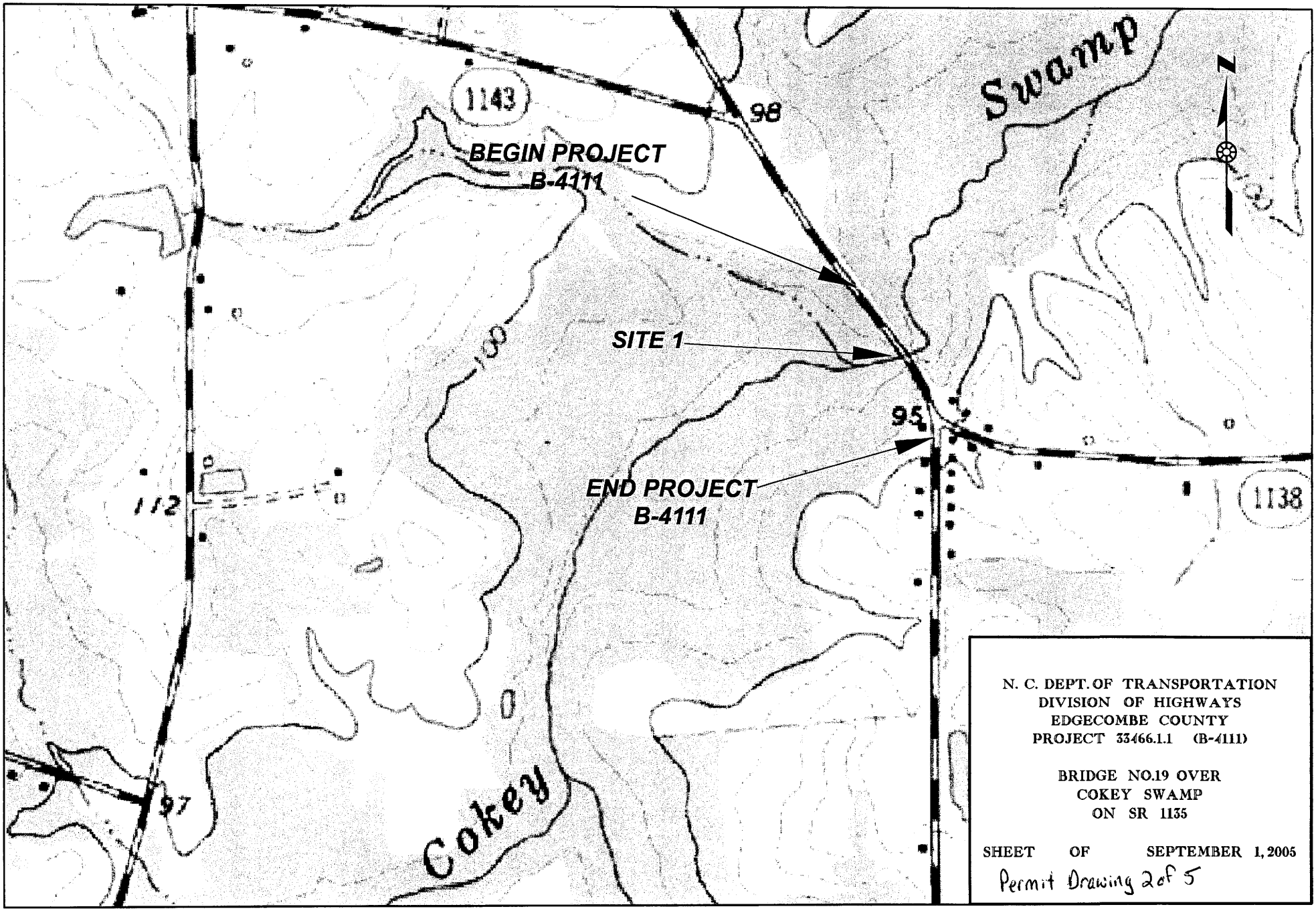
Wetland Permit

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT 33466.1.1 (B-4111)

BRIDGE NO.19 OVER
COKEY SWAMP
ON SR 1135

SHEET OF SEPTEMBER 1, 2005

Permit Drawing 1 of 5


1143
98
BEGIN PROJECT
B-4111
Swamp
N
SITE 1
100
95
END PROJECT
B-4111
112
1138
97
Cokey
N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
EDGECOMBE COUNTY
PROJECT 33466.1.1 (B-4111)
BRIDGE NO.19 OVER
COKEY SWAMP
ON SR 1135
SHEET OF SEPTEMBER 1, 2005
Permit Drawing 2 of 5

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 15+40 TO 17+10	BRIDGE, 3SPAN, 3@45'	0.025			0.267						
		21" PRESTRESSED										
		CONCRETE CORED SLAB										
TOTALS:			0.02			0.27						

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

EDGECOMBE COUNTY
WBS - 33466.1.1 (B-4111)

SHEET Permit Drawing 3 of 5 2/7/2006

ATN Revised 3/31/05

PROJECT REFERENCE NO.	SHEET NO.
B-4111	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

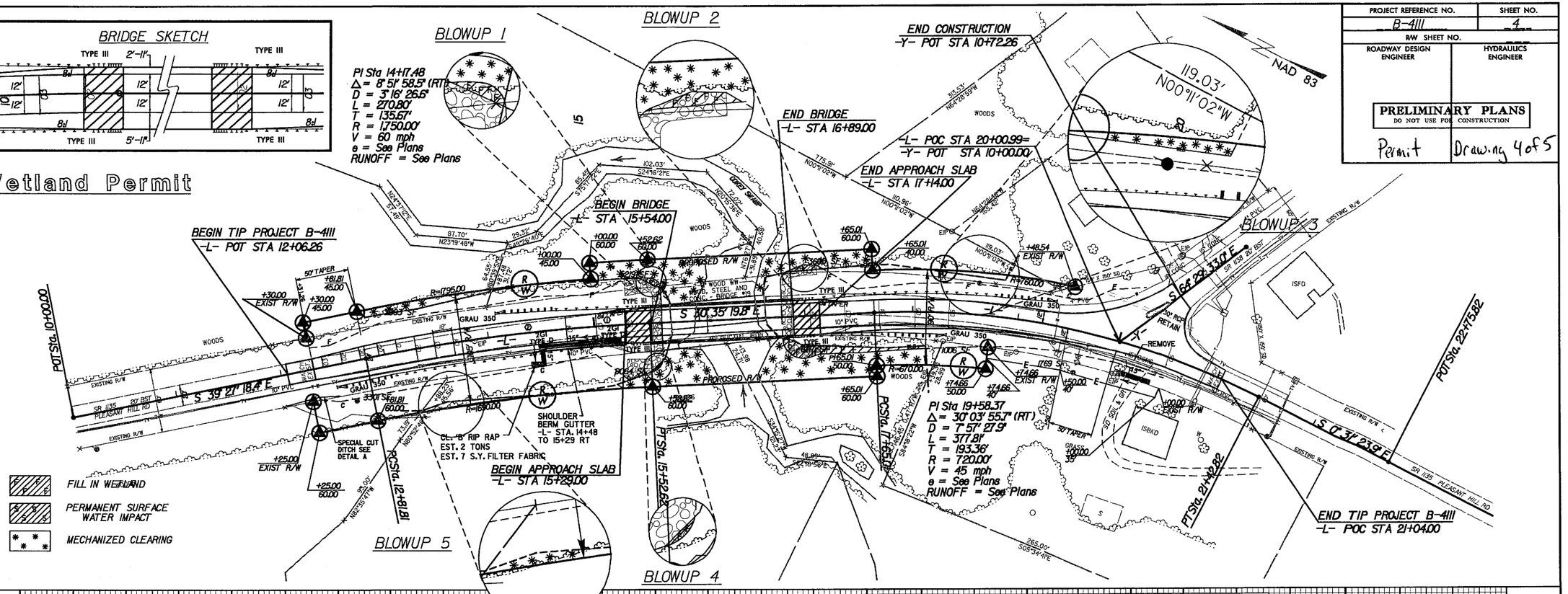
Permit | Drawing 4 of 5

8/17/99

REVISIONS

BRIDGE SKETCH

Wetland Permit



BM #1
-BL- STA =(out of chain)
From BL-103 S 59°49'34" W - 69.42' =
-L- STA 10+90.33 - 81.71' RIGHT
ELEV. 84.10'

BM #2
-BL- STA 10+85.20 - 23.86' RIGHT =
-L- STA 16+87.75 - 30.43' RIGHT
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BM #3
-BL- STA 14+64.26 - 74.55' LEFT =
-L- STA 20+39.42 - 105.00' LEFT
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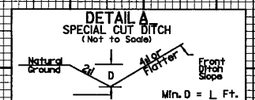
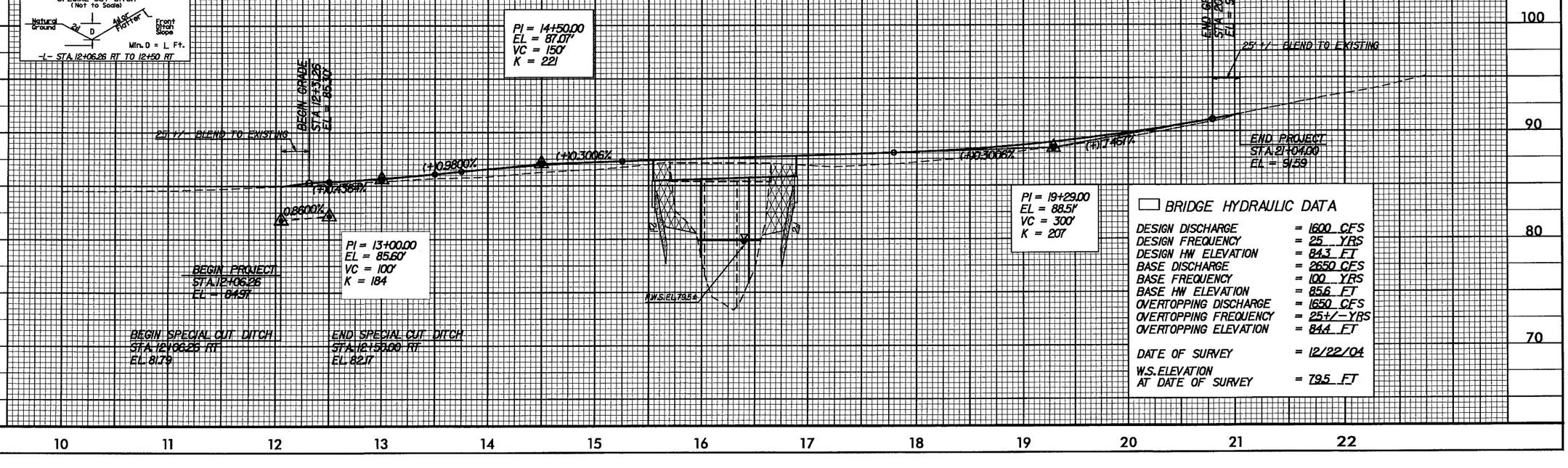
DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 12+06.26 RT TO 12+50 RT



BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1600 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 84.3 FT
BASE DISCHARGE	= 2650 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 85.6 FT
OVERTOPPING DISCHARGE	= 1650 CFS
OVERTOPPING FREQUENCY	= 25+/- YRS
OVERTOPPING ELEVATION	= 84.4 FT
DATE OF SURVEY	= 12/22/04
W.S. ELEVATION AT DATE OF SURVEY	= 79.5 FT

$$$$SYSTIMES$$$$
$$$$USERNAME$$$$ON$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4111	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

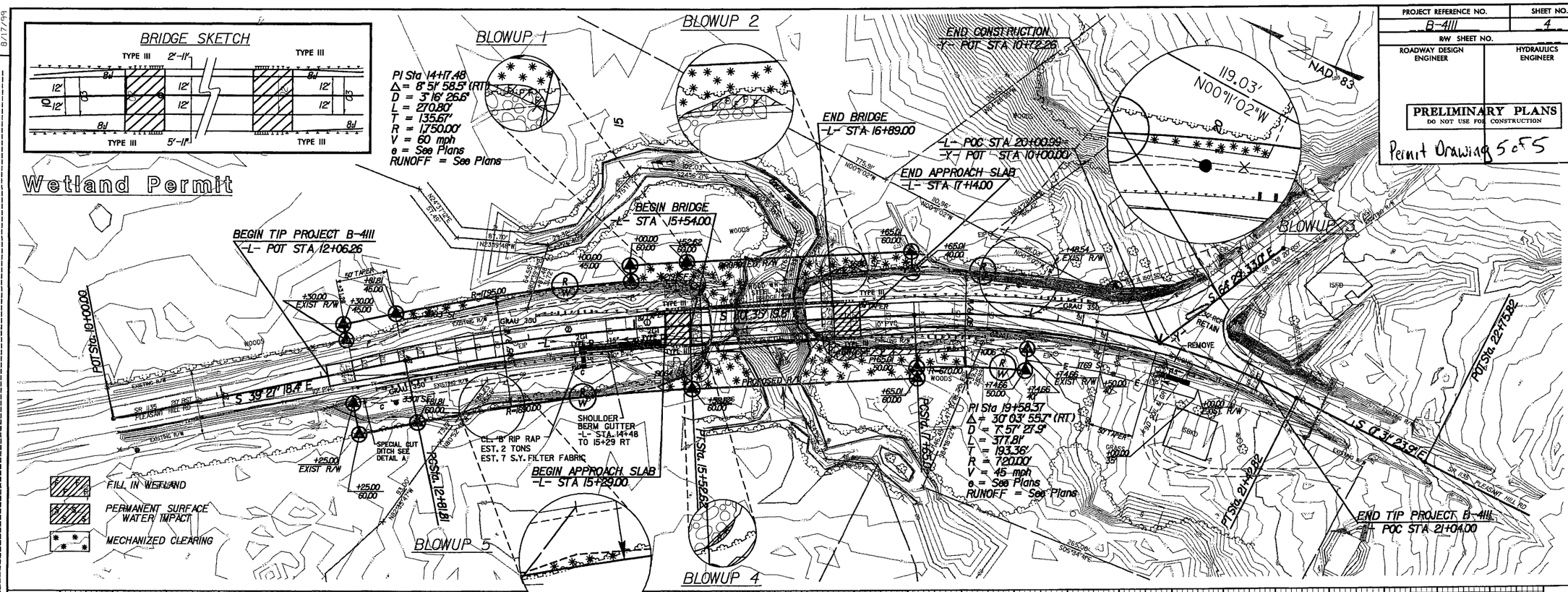
Permit Drawing 5 of 5

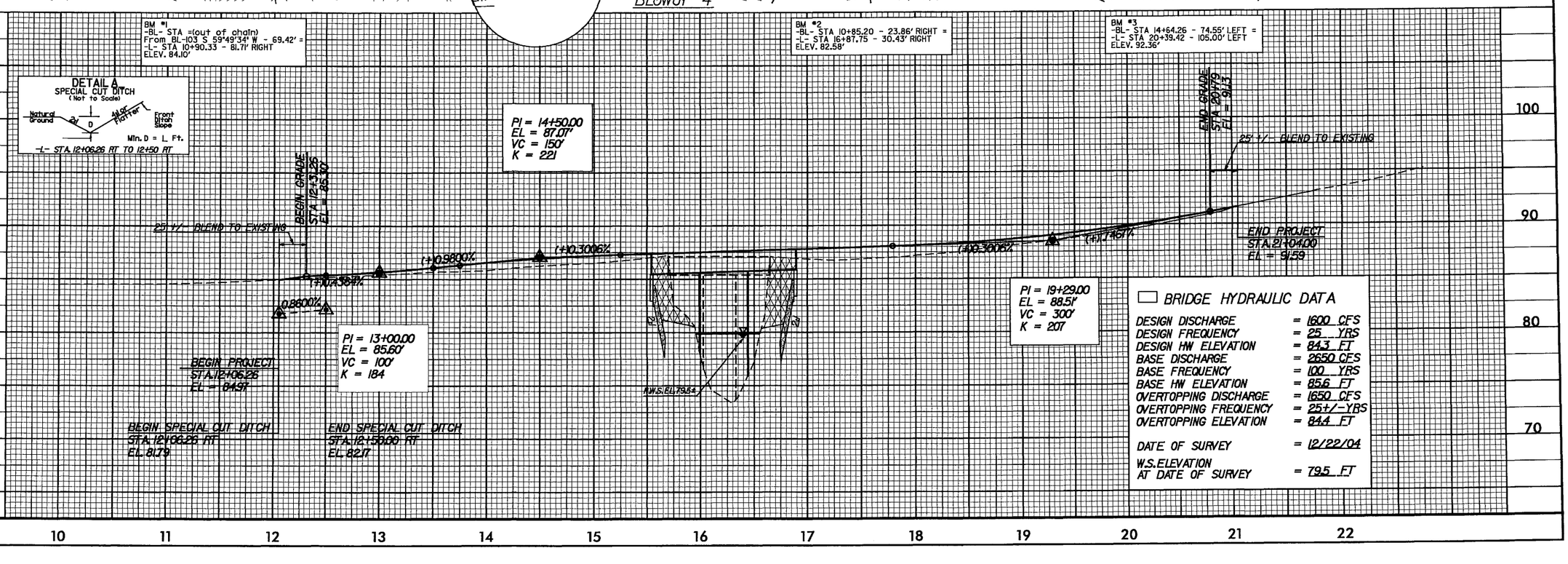
8/17/99

REVISIONS

BRIDGE SKETCH

Wetland Permit





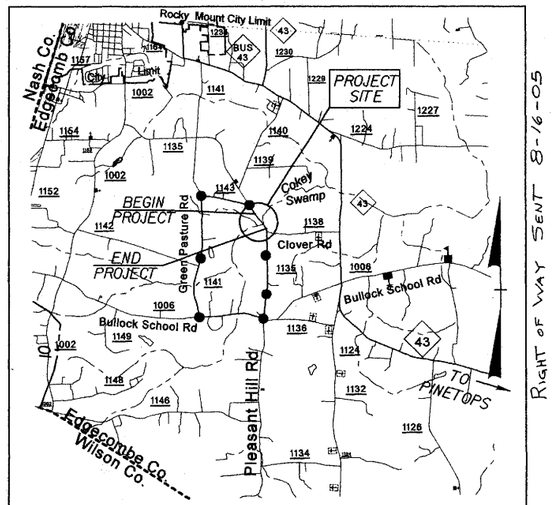
$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

09/08/99

TIP NO.: B-4111

CONTRACT: C 201547

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



VICINITY MAP
OFF-SITE DETOUR

RIGHT OF WAY SENT 8-16-05

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

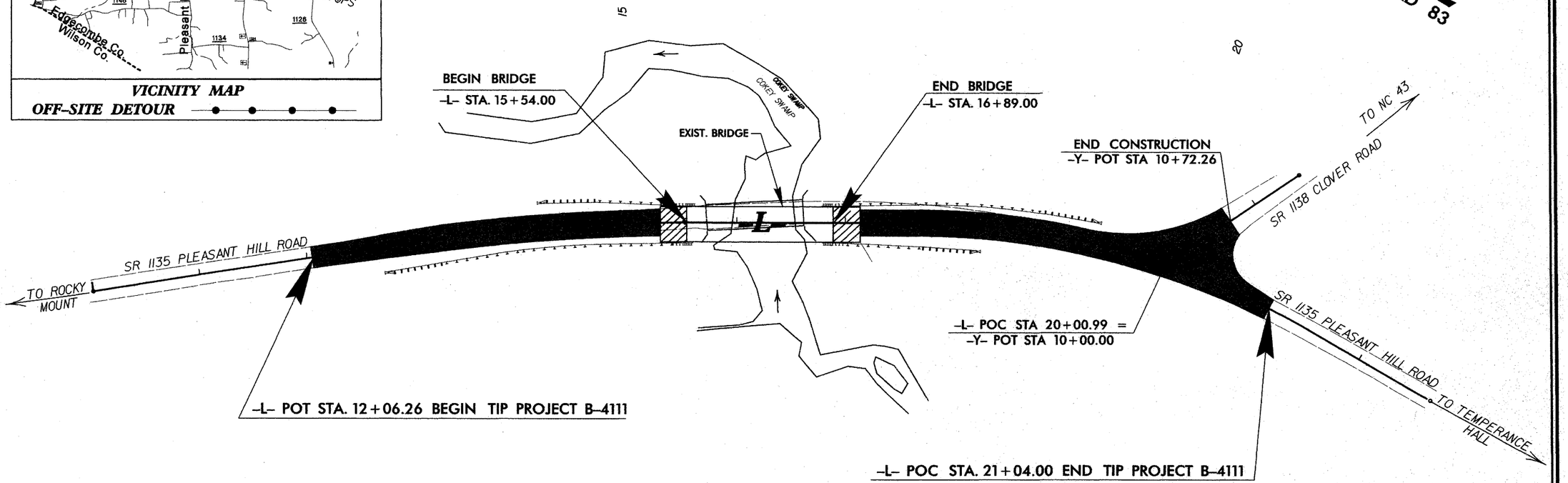
EDGECOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4111	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
33466.1.1	BRZ-1135(6)	PE	

LOCATION: BRIDGE NO. 19 OVER COKEY SWAMP AND APPROACHES ON SR 1135 (PLEASANT HILL ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83



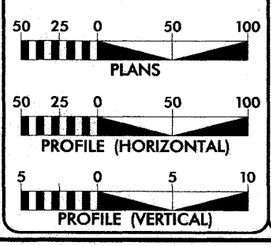
** DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND STOPPING SIGHT DISTANCE

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

NCDOT CONTACT: C. S. HOUSER, PE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2006	=	1280
ADT 2026	=	2040
DHV	=	11 %
D	=	60 %
* T	=	3 %
** V	=	60 MPH

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4111	=	0.144 MI
LENGTH STRUCTURE TIP PROJECT B-4111	=	0.026 MI
TOTAL LENGTH OF TIP PROJECT B-4111	=	0.170 MI

Prepared in the Office of:
W.K. DICKSON
ENGINEERS PLANNERS SURVEYORS
3101 JOHN HUMPHRIES WYND
RALEIGH, NC 27612
PHONE: (919) 782-0495
FAX: (919) 782-9672
ATLANTA, GA
CHARLOTTE, NC
COLUMBIA, SC
HICKORY, NC
WILMINGTON, NC

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 19, 2005

LETTING DATE:
AUGUST 15, 2006

Tommy Register, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER
P.E.
SIGNATURE:

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA
P.E.
STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR — DATE

8/15/2005
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5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-4111	1-A

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

INDEX OF SHEETS

INDEX OF SHEETS

SHEET NUMBER	SHEET
	INDEX OF SHEETS
1	TITLE SHEET
1-A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1-B	CONVENTIONAL SYMBOLS
1-C	SURVEY CONTROL
2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND WEDGING DETAILS
3	SUMMARY OF QUANTITIES
4	PLAN AND PROFILE
X-1 THRU X-6	CROSS-SECTIONS

GENERAL NOTES

GENERAL NOTES: 2002 SPECIFICATIONS
EFFECTIVE: 01-15-02
REVISED: 05-14-03

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD . (SPECIFY METHOD II OR III.)

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE AREAS IN THE PLANS DESIGNATED SAFETY CLEARING. THE LIMITS ARE AS SHOWN AND THE CLEARING AND GRUBBING IS CONSIDERED A PART OF THE LUMP SUM ITEM FOR "CLEARING AND GRUBBING".

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 OR 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT AND EARTH SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 OR 560.02.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

SHOULDER DRAINS:

SHOULDER DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 816.02 OR 816.03 AND DETAILS IN PLANS AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS IN PLANS AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING" OR "TEMPORARY SHORING-BARRIER SUPPORTED" DEPENDING UPON THE LOCATION OF THE SHORING.

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE

RIGHT-OF-WAY MARKERS:

ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.

ROADWAY ENGLISH STANDARDS

EFF. 01-15-02
REV.11-23-04

ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch - N. C. Department of Transportation - Raleigh, N. C., Dated January 15, 2002 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
DIVISION 3 - PIPE CULVERTS	
310.10	Driveway Pipe Construction
DIVISION 4 - MAJOR STRUCTURES	
422.10	Reinforced Bridge Approach Fills (Beg. March 2003 Let Use Detail in Lieu of Standard)
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 6 - ASPHALT BASES AND PAVEMENTS	
654.01	Pavement Repairs
DIVISION 8 - INCIDENTALS	
820.01	Funnel and Funnel Drain - 12" Metal Funnel

8/15/2005
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PROJECT REFERENCE NO.	SHEET NO.
B-4111	1-B

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Property Corner
- Property Monument — EDM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- River Basin Buffer — RBB
- Flow Arrow
- Disappearing Stream
- Spring
- Swamp Marsh
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Guage — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point — BL
- Existing Right of Way Marker
- Existing Right of Way Line
- Proposed Right of Way Line
- Proposed Right of Way Line with Iron Pin and Cap Marker
- Proposed Right of Way Line with Concrete or Granite Marker
- Existing Control of Access — (CA)
- Proposed Control of Access
- Existing Easement Line — E
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Curb Cut for Future Wheel Chair Ramp — CCFR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equaility Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- Recorded U/G Power Line
- Designated U/G Power Line (S.U.E.*)

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable
- Designated U/G Telephone Cable (S.U.E.*)
- Recorded U/G Telephone Conduit
- Designated U/G Telephone Conduit (S.U.E.*)
- Recorded U/G Fiber Optics Cable
- Designated U/G Fiber Optics Cable (S.U.E.*)

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line
- Designated U/G Water Line (S.U.E.*)
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable
- Designated U/G TV Cable (S.U.E.*)
- Recorded U/G Fiber Optic Cable
- Designated U/G Fiber Optic Cable (S.U.E.*)

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line
- Designated U/G Gas Line (S.U.E.*)
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line
- Designated SS Forced Main Line (S.U.E.*)

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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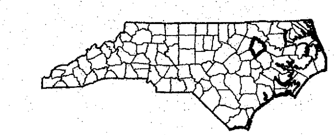
PROJECT REFERENCE NO.	SHEET NO.
B-4111	1 C

Location and Surveys

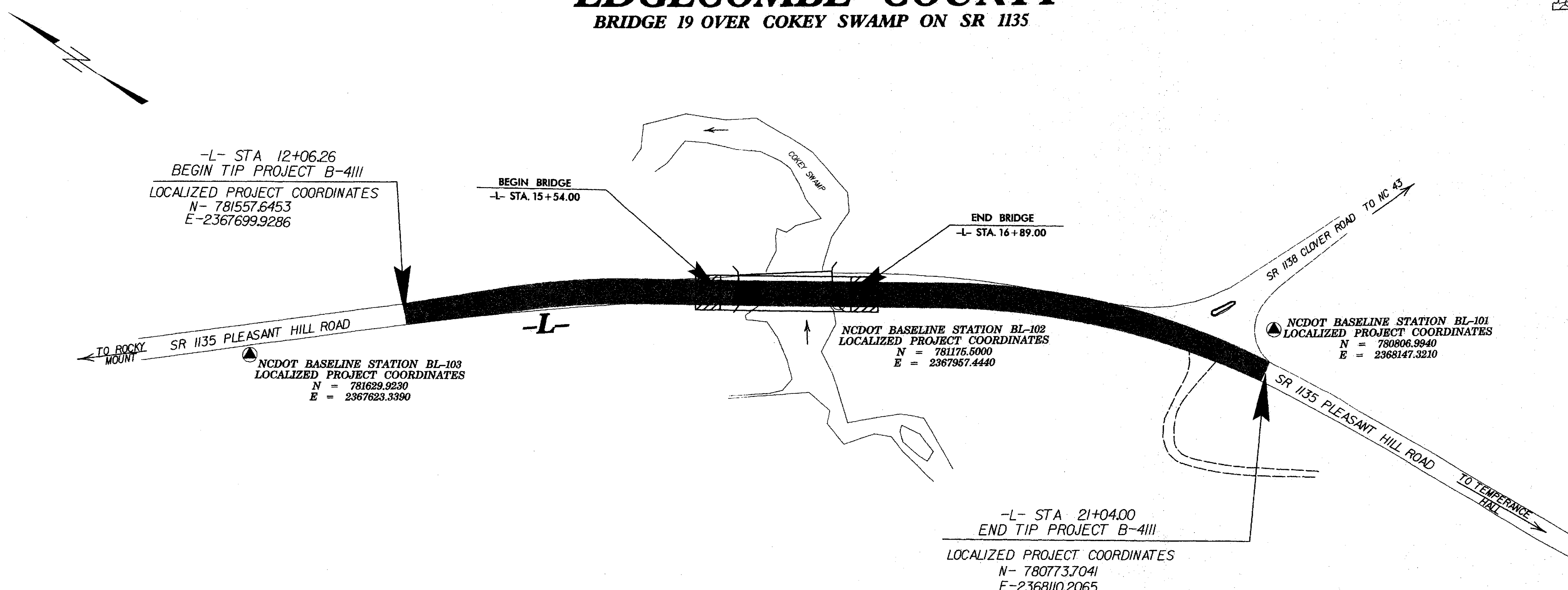
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



SURVEY CONTROL SHEET B-4111

EDGECOMBE COUNTY

BRIDGE 19 OVER COKEY SWAMP ON SR 1135



CONTROL DATA

BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
103	BL-103	781629.9230	2367623.3390	84.30′	11+01.52	13.21′ RT
102	BL-102	781175.5000	2367957.4440	86.68′	16+67.99	5.38′ RT
101	BL-101	780806.9940	2368147.3210	92.26′	20+74.72	39.77′ LT

BENCHMARK INFO

TBM #1 (1113)
ELEVATION = 84.11′
N 781595 E 2367563
L STATION 10+90 82′ RIGHT
R/R SPIKE IN BASE OF BASE OF 18" PINE

TBM #2 (1114)
ELEVATION = 92.37′
N 780854 E 2368207
L STATION 20+39 105′ LEFT
R/R SPIKE IN BASE OF 24" GUM

TBM # 3 (1115)
ELEVATION = 82.58′
N 781146 E 2367946
L STATION 16+88 30′ RIGHT
R/R SPIKE IN BASE OF 32" MAPLE

NOTES

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/
   THE FILES TO BE FOUND ARE AS FOLLOWS:
   B4111_LS_CONTROL_050310.TXT

SITE CALIBRATION DATA HAS NOT BEEN PROVIDED FOR THIS PROJECT.
IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B-4111-2"
WITH HARN-NAD 83/95 GRID COORDINATES OF
NORTHING: 780672.4250(ft) EASTING: 2368591.9000(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993498
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B-4111-2" TO -L- STATION 10+00.00 IS
N 44°24′24.88″ W 1461.78′
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
PROJECT CONTROL ESTABLISHED UTILIZING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION.

NOTE: DRAWING NOT TO SCALE

8/15/2005

6/2/99

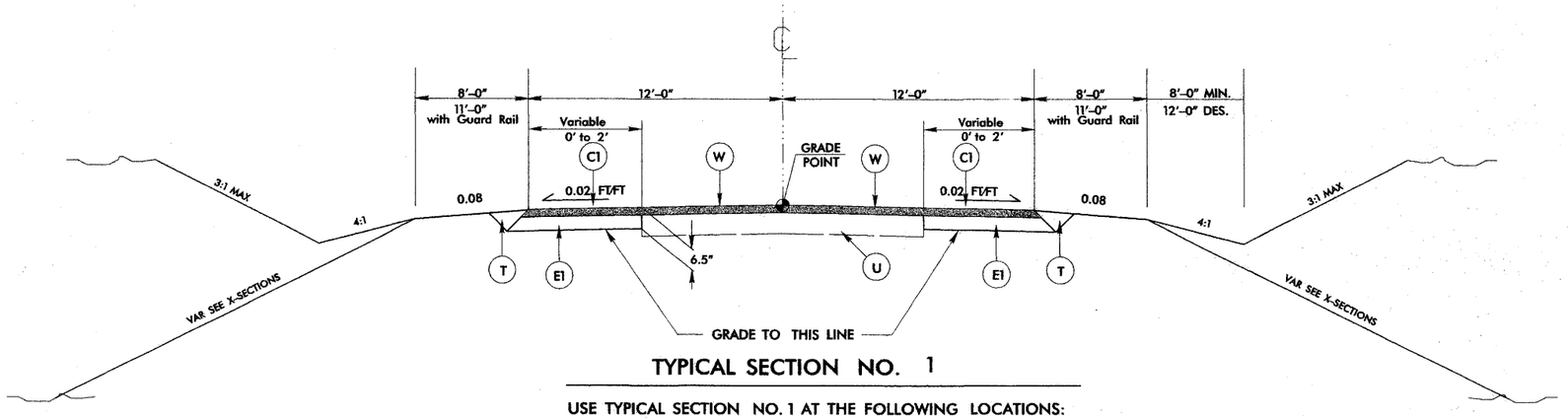
PROJECT REFERENCE NO.	SHEET NO.
B-4111	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	PROPOSED APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YARD.
C2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROPOSED APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD.
E2	PROPOSED VARIABLE DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT GREATER THAN 5½" IN DEPTH OR LESS THAN 3" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAILS)

NOTE: ALL PAVEMENT EDGE SLOPES ARE 1:1 UNLESS OTHERWISE SHOWN.

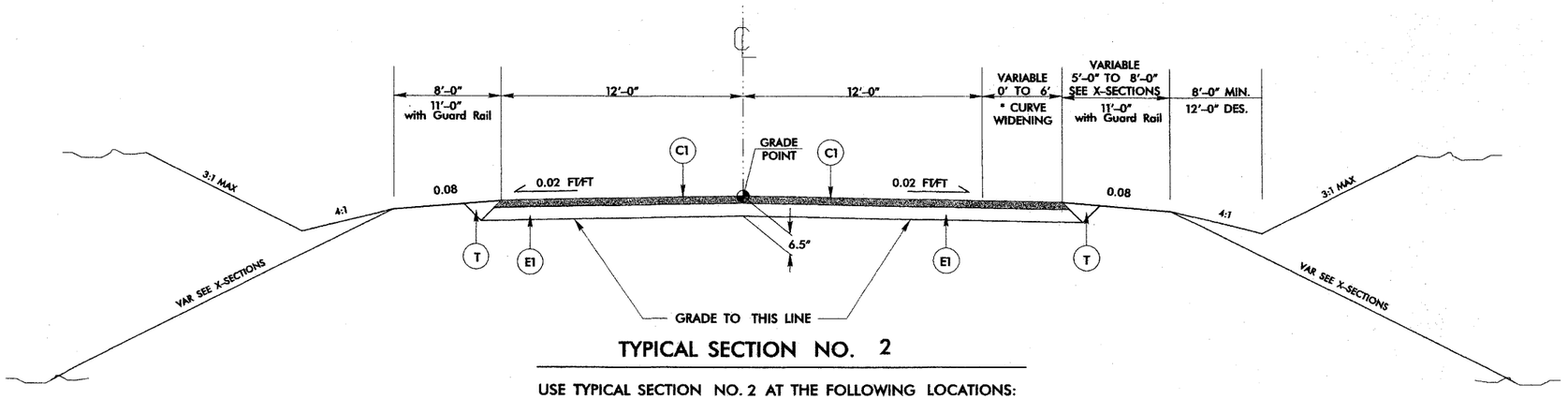


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:

–L– STA. 12+31.26 TO STA. 13+50.00

–L– STA. 19+00.00 TO STA. 20+79.00

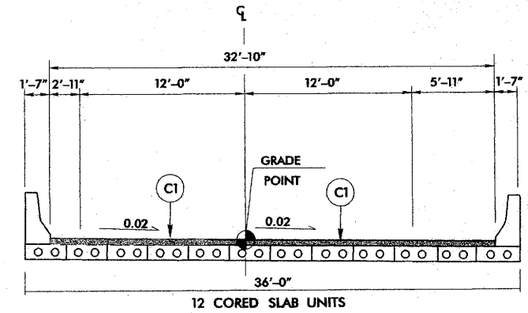


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:

–L– STA. 13+50.00 TO STA. 15+54.00

–L– STA. 16+89.00 TO STA. 19+00.00 *



12 CORED SLAB UNITS

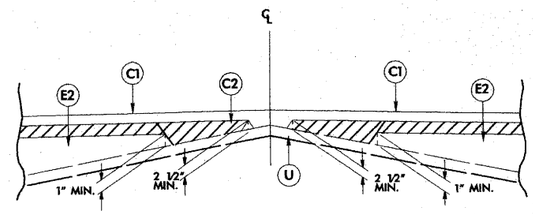
BRIDGE TYPICAL SECTION

* THE PROPOSED BRIDGE WILL BE OVER 100' IN LENGTH

USE BRIDGE TYPICAL SECTION AT THE FOLLOWING LOCATIONS:

–L– STA. 15+54.00 TO STA. 16+89.00

NOTE: ADDITIONAL WIDTH OF THE BRIDGE ON THE RIGHT SIDE DUE TO HYDRAULIC SPREAD REQUIREMENTS.



Detail Showing Method of Wedging

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
B-4111	3

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

RIGHT OF WAY AREA DATA

PARCEL NO.	PROPERTY OWNERS NAMES	TOTAL ACREAGE (ACRES)	AREA TAKEN (ACRES)	AREA REMAINING RT. (ACRES)	AREA REMAINING LT. (ACRES)	CONST. EASE. (ACRES)	PERM. DRAIN. EASE. (ACRES)	TEMP. DRAIN. EASE. (ACRES)	COMMENTS
1	FREDERICK F. AYERS, ET AL	14.53	2903 SF		14.46				Total acreage per deed
2	ALLEN R. WINSTEAD, ET UX	12.03	3301 SF	11.95					Total acreage per deed
3	PEGGY W. HOLLOMAN, ETAL	xxx	0.33 Ac.	xxx	xxx				Insufficient data
4	COOL SPRINGS FARM, INC.	74.00	0.15 Ac.	73.85					Total acreage per deed
5	JOSEPH WARREN CALHOUN, ET UX	xxx	3600 SF		xxx				Insufficient data
6	JAMES RICHARD HILL, ET US	0.41	94 SF		0.41				Acreage calculated to r/w line
7	CARROLL Y. LEWIS	1.53	1006 SF	1.51		1769 SF			Acreage calculated to r/w line

SUMMARY OF QUANTITIES

SUMMARY					SUMMARY				
DESC.NO.	SECT.NO.	QUANTITY	UNIT	ITEM DESCRIPTION	DESC.NO.	SECT.NO.	QUANTITY	UNIT	ITEM DESCRIPTION

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

STATION	LOCATION (LT,RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	CLASS III R.C. PIPE (UNLESS NOTED OTHERWISE)								BITUMINOUS COATED C.S. PIPE TYPE B (UNLESS NOTED OTHRWISE)								15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE
SIZE								12"	15"	18"	24"	30"	36"	42"	48"	12"	15"	18"	24"	30"	36"	42"	48"			
THICKNESS OR GAUGE		FROM	TO													.064	.064	.064	.064	.079	.079	.109	.109			
15+21	RT	1	2	86.91	84.99				68																	
14+50	RT	2	OUT	86.29	84.37	84.37			12																	
OUT					83.78																					
20+23	RT								28																	
						TOTAL			108																	

STATION	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CU. YDS. C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL 'A' + (1.3 X COL 'B') LIN. *FT. A 5.0' THRU 10.0'	LIN. *FT. B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	C.B. STD. 840.04 OR 840.05	ELONG THROAT C.B. STD. 840.06	FRAME & COVER STD. 840.07	N.D.I. STD. 840.11 OR 840.12	N.D.I. FRAME & GRATE STD. 840.13	M.D.I. FRAME & GRATE STD. 840.19	M.D.I. FRAME WITH TWO GRATES STD. 840.20	M.D.I. (N.S.) FRAME WITH GRATE STD. 840.29	M.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	J.B. STD. 840.31 OR 840.32	T.B.D.I. FRAME WITH GRATE STD. 840.33	T.B.D.I. FRAME WITH TWO GRATES STD. 840.33	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	T.B.D.I. FRAME WITH GRATE STD. 840.36	T.B.D.I. FRAME WITH TWO GRATES STD. 840.36	SPRING BOX STD. 840.41	M.H. STD. 840.51 OR 840.53	M.H. FRAME & COVER STD. 840.54	12" FUNNEL DRAIN PIPE	12" FUNNEL DRAIN ELBOWS	x x THICK PERF C.S.P. TEE RISER NO. & SIZE	PIPE REMOVAL	REMARKS
15+21			1												1																		
14+50			1												1																		
OUT																																	
20+23																																29	
TOTAL			2												2																	29	

ABBREVIATIONS

C.B.	CATCH BASIN
N.D.I.	NARROW DROP INLET
D.I.	DROP INLET
M.D.I.	MEDIAN DROP INLET
M.D.I. (N.S.)	MEDIAN DROP INLET (NARROW SLOT)
J.B.	JUNCTION BOX
M.H.	MANHOLE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUCTION BOX

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.

G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS									IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	TYPE III	GRAU 350	M-350	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG				
-L-	12+49.49	15+54.00	RT	304.51			BRIDGE		8	11	50		1			1	1													
-L-	14+09.13	15+54.00	LT	144.87				BRIDGE	8	11		50		1		1	1													
-L-	16+89.00	19+33.92	LT	244.92			BRIDGE		8	11	6.25		1			1	1													
-L-	16+89.00	18+32.30	RT	143.30				BRIDGE	8	11		50		1		1	1													
			SUBTOTAL	837.60												4	4													
			ANCHOR DEDUCTS GRAU350 4 @ 50'	200																										
			TYPE III 4 @ 18.75'	75																										
			TOTAL	562.60																										
			SAY	575.00																										

SUMMARY OF EARTHWORK
IN CUBIC YARDS

SURVEY LINE	STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBANKMENT + %	BORROW	WASTE
-L-	12+06.26	15+54.00	95		437	342	
-L-	16+89.00	21+04.00	8		638	630	
		SUBTOTAL	103		1075	972	
		PROJECT TOTALS	103		1075	972	
		EST. 5% FOR REPLACING TOPSOIL ON BORROW PITS					
		GRAND TOTAL	103		1075	972	
		SAY	105		1100	1000	

SUMMARY OF PAVEMENT REMOVAL
IN SQUARE YARDS

LOCATION	ASPHALT REMOVAL	ASPHALT BREAK UP	CONCRETE REMOVAL	CONCRETE BREAK UP
-L- STA 13+50 TO STA 15+72	493			
-L- STA 16+62 TO STA 19+00	613			
GRAND TOTAL	1106			
SAY	1110			

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PROJECT REFERENCE NO.	SHEET NO.
B-4111	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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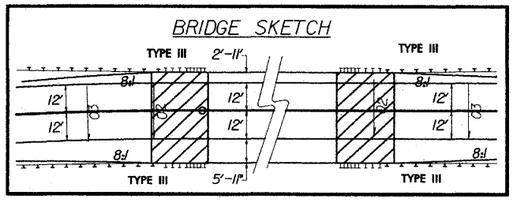
REVISIONS

BRIDGE SKETCH



PI Sta 14+17.48
Δ = 8° 51' 58.5" (RT)
D = 3° 16' 26.6"
L = 270.80'
T = 135.67'
R = 1,750.00'
V = 60 mph
e = See Plans
RUNOFF = See Plans

END CONSTRUCTION
-Y- POT STA 10+72.26

-L- POC STA 20+00.99 =
-Y- POT STA 10+00.00

END BRIDGE
-L- STA 16+89.00

END APPROACH SLAB
-L- STA 17+14.00

BEGIN BRIDGE
-L- STA 15+54.00

BEGIN TIP PROJECT B-4111
-L- POT STA 12+06.26

-BL-103 POT 5+00.00 = 13.21' RT
-L- POT 11+01.52

POT Sta. 10+00.00

-BL-101 POT 14+78.57 = 39.77' LT
-L- POC 20+74.72

POT Sta. 22+75.82

PI Sta 19+58.37
Δ = 30° 03' 55.7" (RT)
D = 1° 57' 27.9"
L = 377.81'
T = 193.36'
R = 720.00'
V = 45 mph
e = See Plans
RUNOFF = See Plans

-BL-102 PINC 10+64.03 =
-L- POT 16++67.99 5.38' RT

PT Sta. 15+52.62

RC Sta. 12+81.81

PT Sta. 21+42.82

END TIP PROJECT B-4111
-L- POC STA 21+04.00

S 39° 27' 18.4" E

S 30° 35' 19.8" E

S 6° 29' 33.0" E

S 0° 31' 23.9" E

NAD 83

1 FREDERICK F. AYERS, ET AL
DB 927, PG 598

2 ALLEN R. WINSTEAD, ET UX
DB 997, PG 870

3 PEGGY W. HOLLOMAN, ET AL
DB 1304, PG 303

5 JOSEPH WARREN CALHOUN, ET UX
NO DEED REFERENCE

JOSEPH WARREN CALHOUN, ET UX
DB 734, PG 185

4 COOL SPRINGS FARM, INC
DB 1275, PG 651

6 JAMES RICHARD HILL ET UX
DB 701, PG 562

7 CARROLL Y. LEWIS
DB 1265, PG 503

RANDALL EARL MINES
DB 1286, PG 293

BENJAMIN VALENTINE, ET UX
DB 592, PG 239

SHOULDER BERM GUTTER
-L- STA. 14+48
TO 15+29 RT

CL. 'B' RIP RAP
EST. 2 TONS
EST. 7 S.Y. FILTER FABRIC

SPECIAL CUT DITCH SEE DETAIL A

BEGIN APPROACH SLAB
-L- STA 15+29.00

PROPOSED R/W

EXISTING R/W

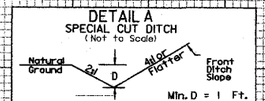
SR 1135 PLEASANT HILL RD

BM #1
-BL- STA =(out of chain)
From BL-103 S 59°49'34" W - 69.42' =
-L- STA 10+90.33 - 81.71' RIGHT
ELEV. 84.10'

BM #2
-BL- STA 10+85.20 - 23.86' RIGHT =
-L- STA 16+87.75 - 30.43' RIGHT
ELEV. 82.58'

BM #3
-BL- STA 14+64.26 - 74.55' LEFT =
-L- STA 20+39.42 - 105.00' LEFT
ELEV. 92.36'

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)



-L- STA 12+06.26 RT TO 12+50 RT

PI = 14+50.00
EL = 87.07'
VC = 150'
K = 221

PI = 13+00.00
EL = 85.60'
VC = 100'
K = 184

PI = 19+29.00
EL = 88.51'
VC = 300'
K = 207

BEGIN GRADE
STA 12+31.26
EL = 85.10'

END GRADE
STA 20+79
EL = 91.13

25' +/- BLEND TO EXISTING

(+)0.4364%
(+)0.8600%
(+)0.9800%
(+)0.3006%
(+)0.3666%
(+)1.1467%

BEGIN PROJECT
STA 12+06.26
EL = 84.97

BEGIN SPECIAL CUT DITCH
STA 12+06.26 RT
EL 81.79

END SPECIAL CUT DITCH
STA 12+50.00 RT
EL 82.17

END PROJECT
STA 21+04.00
EL = 91.59

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 1600 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 84.3 FT
BASE DISCHARGE	= 2650 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 85.6 FT
OVERTOPPING DISCHARGE	= 1650 CFS
OVERTOPPING FREQUENCY	= 25+/-YRS
OVERTOPPING ELEVATION	= 84.4 FT
DATE OF SURVEY	= 12/22/04
W.S. ELEVATION AT DATE OF SURVEY	= 79.5 FT

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90
80

85.87

0.0029 0.0200

4:1 4:1 3:1

13+00.00
85.40

90
80

0.0248 0.0200

4:1 4:1 3:1

12+50.00
85.18

90
80

84.97

MATCH EXIST

12+06.26
84.97

90
80

12+00.00
84.94

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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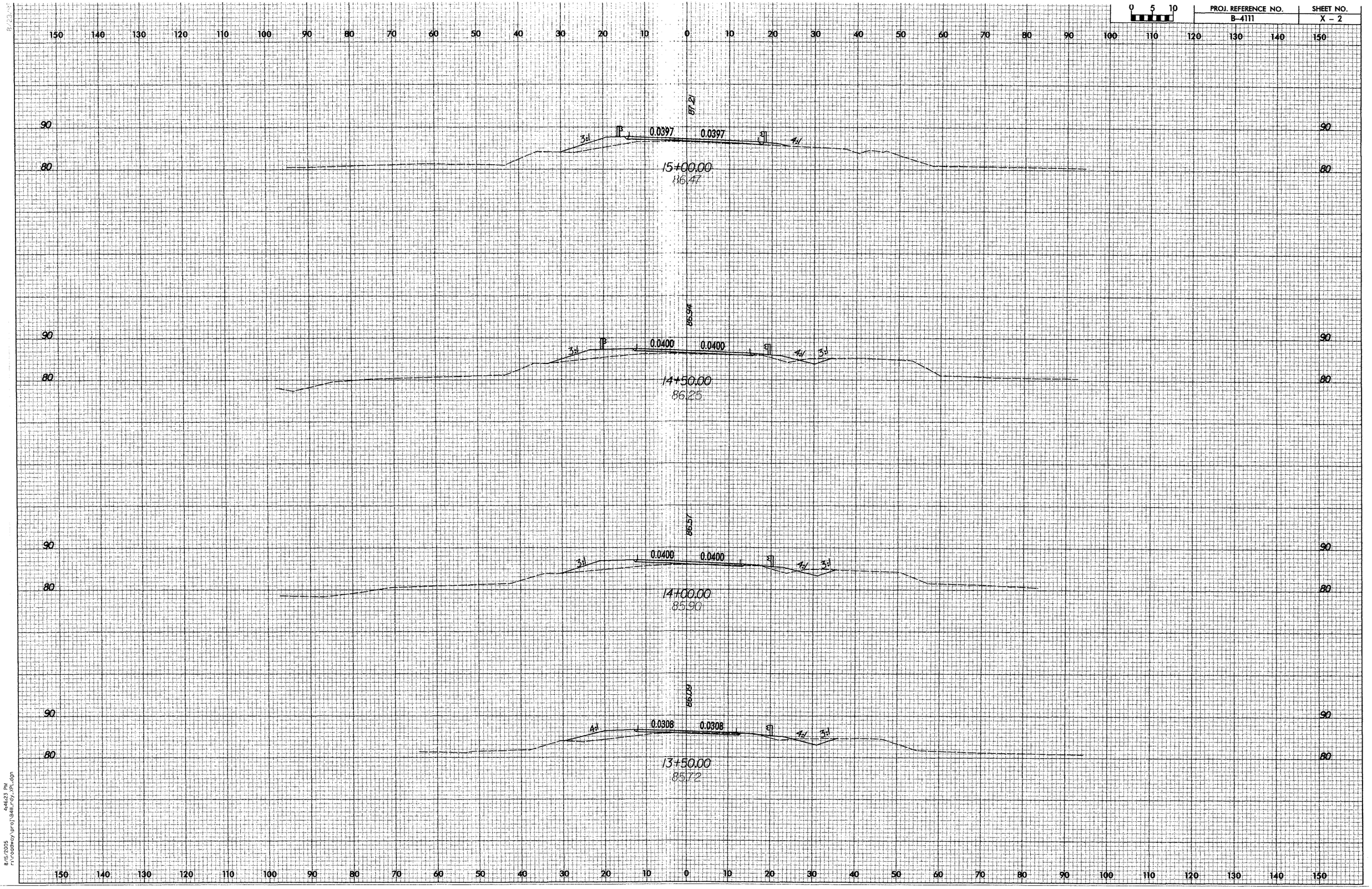

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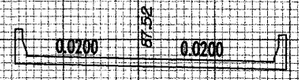

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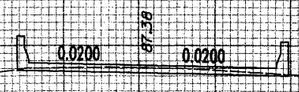

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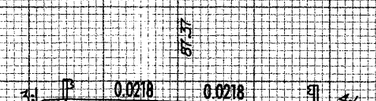

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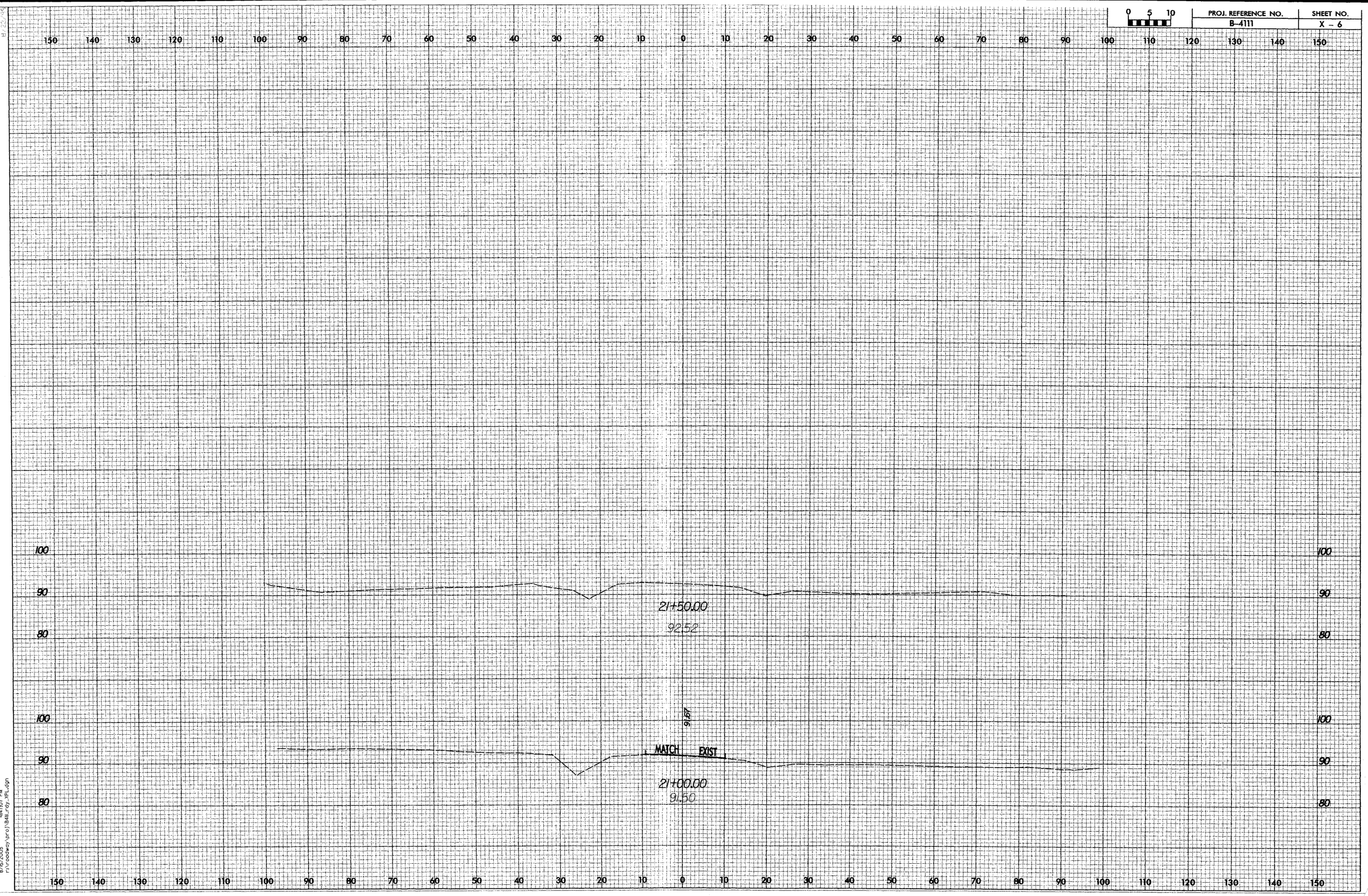


CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-4111**
State Project No.	**8.2291301**
Federal Project No.	**BRZ-1135(6)**

A. Project Description:

This project proposes to replace Bridge No. 19 on SR 1135 over Cokey Swamp in Edgecombe County. The bridge will be replaced with a 125-foot (38.1-m) long bridge in approximately the same location and roadway elevation as the existing bridge. The cross section of the new bridge will include two 12-foot (3.6-m) lanes with 3-foot (1.0-m) offsets. Approach work will consist of resurfacing and tying into the existing alignment for approximately 360 feet (109.7 m) to the north and approximately 235 feet (71.6 m) to the south of the existing bridge. Guardrail will be installed where warranted. Traffic will be detoured along surrounding roads during construction. Please reference Figure 1.

B. Purpose and Need:

Bridge No. 19 has a sufficiency rating of 23.0 out of a possible 100. The deck and substructure of the existing bridge are in poor condition. Therefore, the bridge needs to be replaced.

C. Proposed Improvements:

The following Type II improvements which apply to the project are circled:

1. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing).

    a. Restoring, Resurfacing, Rehabilitating, and Reconstructing pavement (3R and 4R improvements)
    b. Widening roadway and shoulders without adding through lanes
    c. Modernizing gore treatments
    d. Constructing lane improvements (merge, auxiliary, and turn lanes)
    e. Adding shoulder drains
    f. Replacing and rehabilitating culverts, inlets, and drainage pipes, including safety treatments
    g. Providing driveway pipes
    h. Performing minor bridge widening (less than one through lane)

2. Highway safety or traffic operations improvement projects including the installation of ramp metering control devices and lighting.

    a. Installing ramp metering devices
    b. Installing lights
    c. Adding or upgrading guardrail
    d. Installing safety barriers including Jersey type barriers and pier protection
    e. Installing or replacing impact attenuators
    f. Upgrading medians including adding or upgrading median barriers

g. Improving intersections including relocation and/or realignment
h. Making minor roadway realignment
i. Channelizing traffic
j. Performing clear zone safety improvements including removing hazards and flattening slopes
k. Implementing traffic aid systems, signals, and motorist aid
l. Installing bridge safety hardware including bridge rail retrofit

3. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

a. Rehabilitating, reconstructing, or replacing bridge approach slabs
b. Rehabilitating or replacing bridge decks
c. Rehabilitating bridges including painting (no red lead paint), scour repair, fender systems, and minor structural improvements
d. Replacing a bridge (structure and/or fill)

4. Transportation corridor fringe parking facilities.

5. Construction of new truck weigh stations or rest areas.

6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.

7. Approvals for changes in access control.

8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.

9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.

10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.

11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.

12. Acquisition of land for hardship or protective purposes, advance land acquisition loans under section 3(b) of the UMT Act. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.

D. Special Project Information:

Estimated Costs:

Total Construction	$ 625,000
Right of Way	$ 36,500
Total	$ 661,500

Estimated Traffic:

Current	- 1200 vpd
Year 2025	- 2000 vpd
TTST	- 1%
Dual	- 2%

Proposed Typical Cross Section:

The proposed typical cross section consists of two 12-foot (3.6-m) lanes with six-foot (1.8-m) grass shoulders. The shoulders will be widened out to nine feet (2.7 m) where guardrail is required.

Design Speed:

60 mph (95 kmh) A design exception will be required for this project in order to minimize environmental impacts. The horizontal curvature meets a 45 mph (70 kph) design speed.

Functional Classification:

Rural Local Route

Division Office Comments:

The Division Four Construction Office concurs with the recommendation to replace the existing structure with a new bridge in the existing location and elevation and to detour traffic offsite.

Bridge Demolition:

Bridge No. 19 has a superstructure composed of Precast Prestressed Concrete Channels with an asphalt-wearing surface. The substructure is composed of Precast Prestressed Concrete caps on timber piles with timber bulkheads. The maximum potential resulting temporary fill associated with Bridge No. 19 is 100.3 yd^3.

E. Threshold Criteria

The following evaluation of threshold criteria must be completed for Type II actions

ECOLOGICAL		YES	NO
(1)	Will the project have a substantial impact on any unique or important natural resource?		X
(2)	Does the project involve habitat where federally listed endangered or threatened species may occur?	X	
(3)	Will the project affect anadromous fish?	X	
(4)	If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-third (1/3) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated? (See Note)	X	
(5)	Will the project require the use of U. S. Forest Service lands?		X
(6)	Will the quality of adjacent water resources be adversely impacted by proposed construction activities?		X
(7)	Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?		X
(8)	Will the project require fill in waters of the United States in any of the designated mountain trout counties?		X
(9)	Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?		X

PERMITS AND COORDINATION		YES	NO
(10)	If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?		X
(11)	Does the project involve Coastal Barrier Resources Act resources?		X
(12)	Will a U. S. Coast Guard permit be required?		X

		YES	NO
(13)	Will the project result in the modification of any existing regulatory floodway?		X
(14)	Will the project require any stream relocations or channel changes?		X

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

		YES	NO
(15)	Will the project induce substantial impacts to planned growth or land use for the area?		X
(16)	Will the project require the relocation of any family or business?		X
(17)	Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population?		X
(18)	If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor?	X	
(19)	Will the project involve any changes in access control?		X
(20)	Will the project substantially alter the usefulness and/or land use of adjacent property?		X
(21)	Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness?		X
(22)	Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is, therefore, in conformance with the Clean Air Act of 1990)?	X	
(23)	Is the project anticipated to cause an increase in traffic volumes?		X
(24)	Will traffic be maintained during construction using existing roads, staged construction, or on-site detours?	X	
(25)	If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility?	X	
(26)	Is there substantial controversy on social, economic, or environmental grounds concerning the project?		X

(27)	Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project?	X	
(28)	Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places?		X
(29)	Will the project affect any archaeological remains, which are important to history or pre-history?		X
(30)	Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. Department of Transportation Act of 1966)?		X
(31)	Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended?		X
(32)	Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed for inclusion in the Natural System of Wild and Scenic Rivers?		X

F. Additional Documentation Required for Unfavorable Responses in Part E
(Discussion regarding all unfavorable responses in Part E should be provided below. Additional supporting documentation may be attached, as necessary.)

2. Based on mussel surveys conducted on June 6, 2002 and the apparent lack of suitable habitat, NCDOT has reached a biological conclusion of "no effect" for the Tar spinymussel. NCWRC and USFWS concur with the findings and conclusion. Please see attached documentation. The biological conclusion for the Red-cockaded Woodpecker is "no effect." The project area does not contain suitable foraging or nesting habitat.

3. This reach has potential as a travel corridor for migratory fish. Therefore, it is classified as case 2 and will require an in-stream moratorium from February 1 to June 1.

Note on 4. The minimum acrage of wetland impacts allowed without requiring mitigation has been reduced from 1/3 acre to 0.1 acre. The proposed project impacts approximately 0.10 acre of wetlands. All efforts to avoid and minimize impacts to the wetlands have been made. The existing bridge will be replaced in the existing location and at the existing elevation. The proposed bridge will be longer than the existing bridge to accommodate the spillthrough end bents.

Top-down construction methods will be used to both remove the existing bridge and build the proposed bridge. Therefore, work pads will not be required for construction. Traffic will be maintained with an offsite detour.

G. CE Approval

TIP Project No.	**B-4111**
State Project No.	**8.2291301**
Federal-Aid Project No.	**BRZ-1135(6)**

Project Description:

This project proposes to replace Bridge No. 19 on SR 1135 over Cokey Swamp in Edgecombe County. The bridge will be replaced with a 125-foot (38.1-m) long bridge in approximately the same location and roadway elevation as the existing bridge. The cross section of the new bridge will include two 12-foot (3.6-m) lanes with 3-foot (1.0-m) offsets. Approach work will consist of resurfacing and tying into the existing alignment for approximately 360 feet (109.7 m) to the north and approximately 235 feet to the south of the existing bridge. Guardrail will be installed where warranted. Traffic will be detoured along surrounding roads during construction.

Categorical Exclusion Action Classification:

____ TYPE II(A)
_X_ TYPE II(B)

Approved:

1/29/03 — Date
William T. Goodwin, Jr., P.E., Unit Head
Bridge Replacement Unit
Project Development & Environmental Analysis Branch

1/29/03 — Date
Karen B. Capps, P. E., Project Development Engineer
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

3/7/03 — Date
for Division Administrator
Federal Highway Administration

Project Commitments

Replacement of Bridge No. 19 on SR 1135 Over Cokey Swamp
Edgecombe County
F. A. Project No. BRZ-1135(6)
State Project No. 8.2291301
T.I.P. No. B-4111

Division 4, Roadside Environmental Unit, Structure Design Unit

Due to the composition of the Cokey Swamp substrate, sediment curtains should be utilized to minimize potential water quality degradation as a result of disturbing the streambed during bridge construction.

Division 4, Roadside Environmental Unit, Structure Design Unit

NCDOT's *Stream Crossings Guidelines for Anadromous Fish* will be adhered to during the life of the project. There will be an in-stream moratorium from February 1 to June 1. No in-stream work will be allowed during this period.

Roadway Design Unit, Structure Design Unit, Roadside Environmental Unit, Division 4

Top-down construction will be used in the removal of the existing bridge and the construction of the proposed bridge. The Structure Design Unit will place all appropriate notes on the final design plans to this effect.

Woodwin Capps

North Carolina Department of Cultural Resources
State Historic Preservation Office
David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

Division of Historical Resources
David J. Olson, Director

March 22, 2002

MAR 28 2002

MEMORANDUM

TO: William D. Gilmore, Manager
Project Development and Environmental Analysis Branch
Division of Highways
Department of Transportation

FROM: David Brook RSR for David Brook

SUBJECT: Replace Bridge No. 19 and SR 1135 over Cokey Swamp, B-4111, Edgecombe County, ER 02-8595

Thank you for your memorandum of September 25, 2001, concerning the above project.

There are no known archaeological sites within the project area. Based on our knowledge of the area, it is unlikely that any archaeological resources that may be eligible for conclusion in the National Register of Historic Places will be affected by the project. We, therefore, recommend that no archaeological investigation be conducted in connection with this project.

Because the Department of Transportation is in the process of surveying and evaluating the National Register eligibility of all of its concrete bridges, we are unable to comment on the National Register eligibility of the subject bridge. Please contact Mary Pope Furr, in the Architectural History Section, to determine if further study of the bridge is needed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 296 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/72929-47629. In all future communication concerning this project, please cite the above-referenced tracking number.

DB:kgc

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 •733-8653
Restoration	515 N. Blount St, Raleigh , NC	4613 Mail Service Center, Raleigh 27699-4613	(919) 733-6547 •715-4801
Survey & Planning	515 N. Blount St, Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 •715-4801

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

December 30, 2002

Ms. Karen Capps
North Carolina Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Ms. Capps:

This letter is in response to your letter of December 19, 2002, which provided the U.S. Fish and Wildlife Service (Service) with the biological conclusion of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 19 on SR 1135 over Cokey Swamp in Edgecombe County (TIP No. B-4111) will have "no effect" on the federally-endangered Tar spinymussel (*Elliptio steinstansana*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information you submitted, a mussel survey was conducted at the project site on June 6, 2002. The survey extended 200 feet upstream and 200 feet downstream of the existing bridge. Most of the stream channel was dry. No mussels of any species were found within the surveyed area.

Based on the mussel survey results and the apparent lack of habitat, the Service concurs with the conclusion of "no effect" on the Tar spinymussel. We believe that the requirements of section 7 (a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation 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 in this review; (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 determined that may be affected by this identified action.

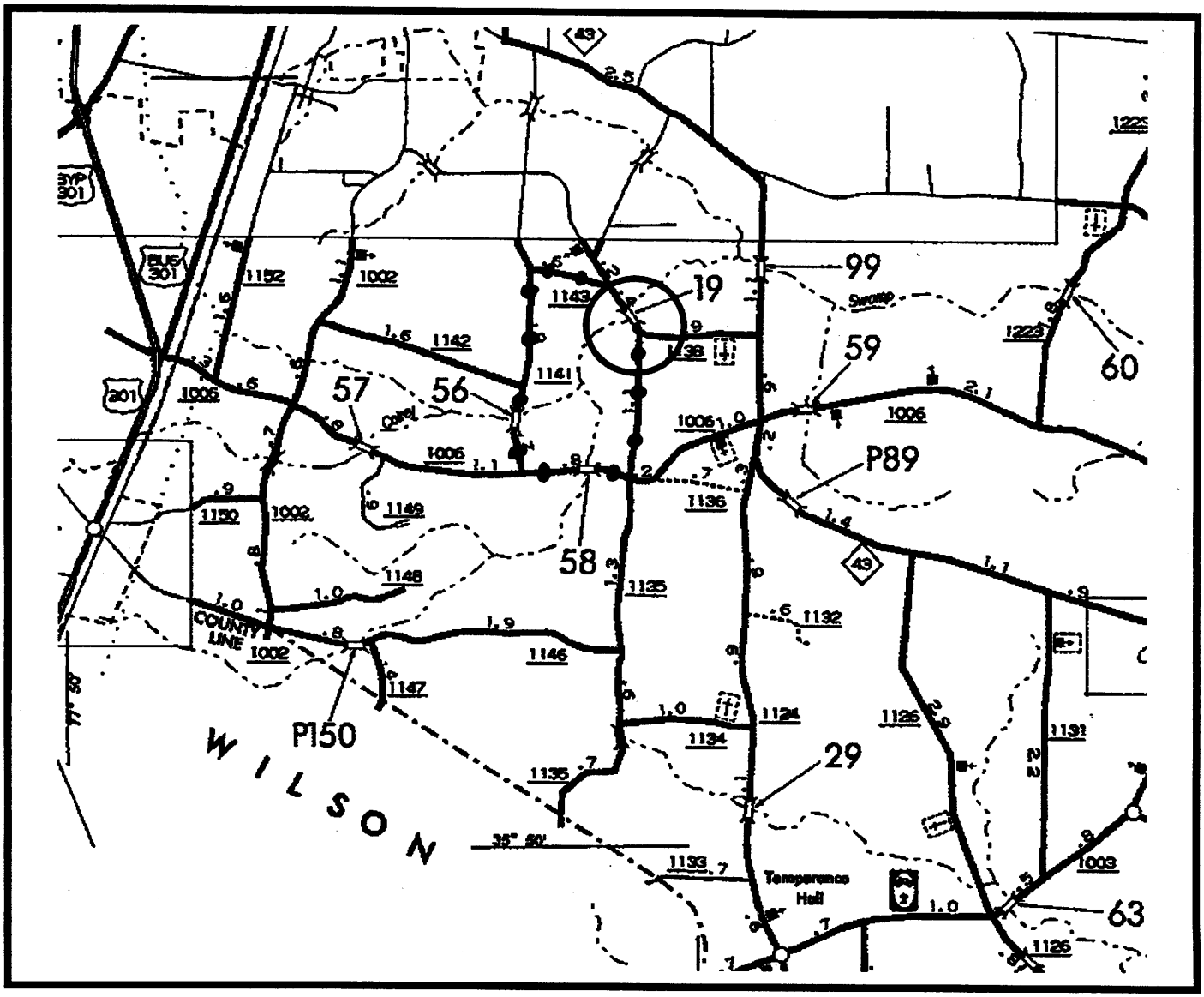
For future aquatic surveys, the Service asks that each survey extend a minimum of 400 meters downstream and 100 meters upstream of the project's work limits, with the exception of areas with the obvious lack of habitat. The Service appreciates the opportunity to review this project.

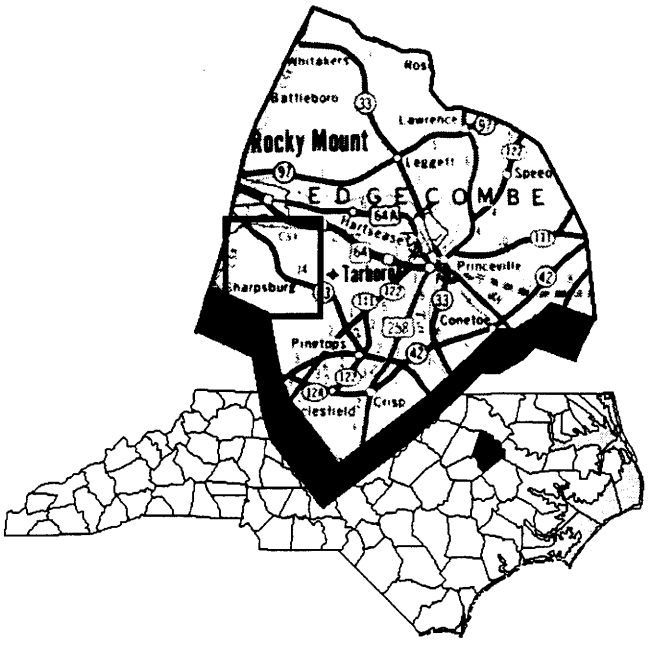
If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

for Garland B. Pardue, Ph.D.
Ecological Services Supervisor

cc: Mike Bell, USACE, Washington, NC
John Hennessy, NCDWQ, Raleigh, NC
David Cox, NCWRC, Northside, NC
Chris Militscher, USEPA, Raleigh, NC





	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
EDGECOMBE COUNTY REPLACE BRIDGE NO. 19 ON SR 1135 OVER COKEY SWAMP B-4111	
Figure 1	

NATURAL SYSTEMS REPORT

Replacement of Bridge No.19
SR 1135 (Pleasant Hill Road) over Cokey Swamp

Edgecombe County, North Carolina
(B-4111)
(State Project No. 8.2291301)
(Federal Aid No. BRZ-1135(6))

Prepared for:

The North Carolina Department of Transportation
Raleigh, North Carolina

Prepared by:

EcoScience

ECOSCIENCE CORPORATION
1101 Haynes Street, Suite 101
Raleigh, NC 27604
Tel (919) 828-3433 Fax (919) 828-3518

August 2001

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Replacement of Bridge No. 19
SR 1135 (Pleasant Hill Road) over Cokey Swamp
Edgecombe County, North Carolina
(B-4111)

1.0 INTRODUCTION

1.1 Project Description

The North Carolina Department of Transportation (NCDOT) proposes replacement of Bridge No. 19 on SR 1135 (Pleasant Hill Road) over Cokey Swamp and the associated floodplain (Figure 1). Bridge No. 19 spans Cokey Swamp for a distance of approximately 85 feet (25.9 meters). The existing roadway is approximately 23 feet (7.0 meters) wide with a right-of-way width of 60 feet (18.3 meters).

[Alternatives]

[Demolition Information]

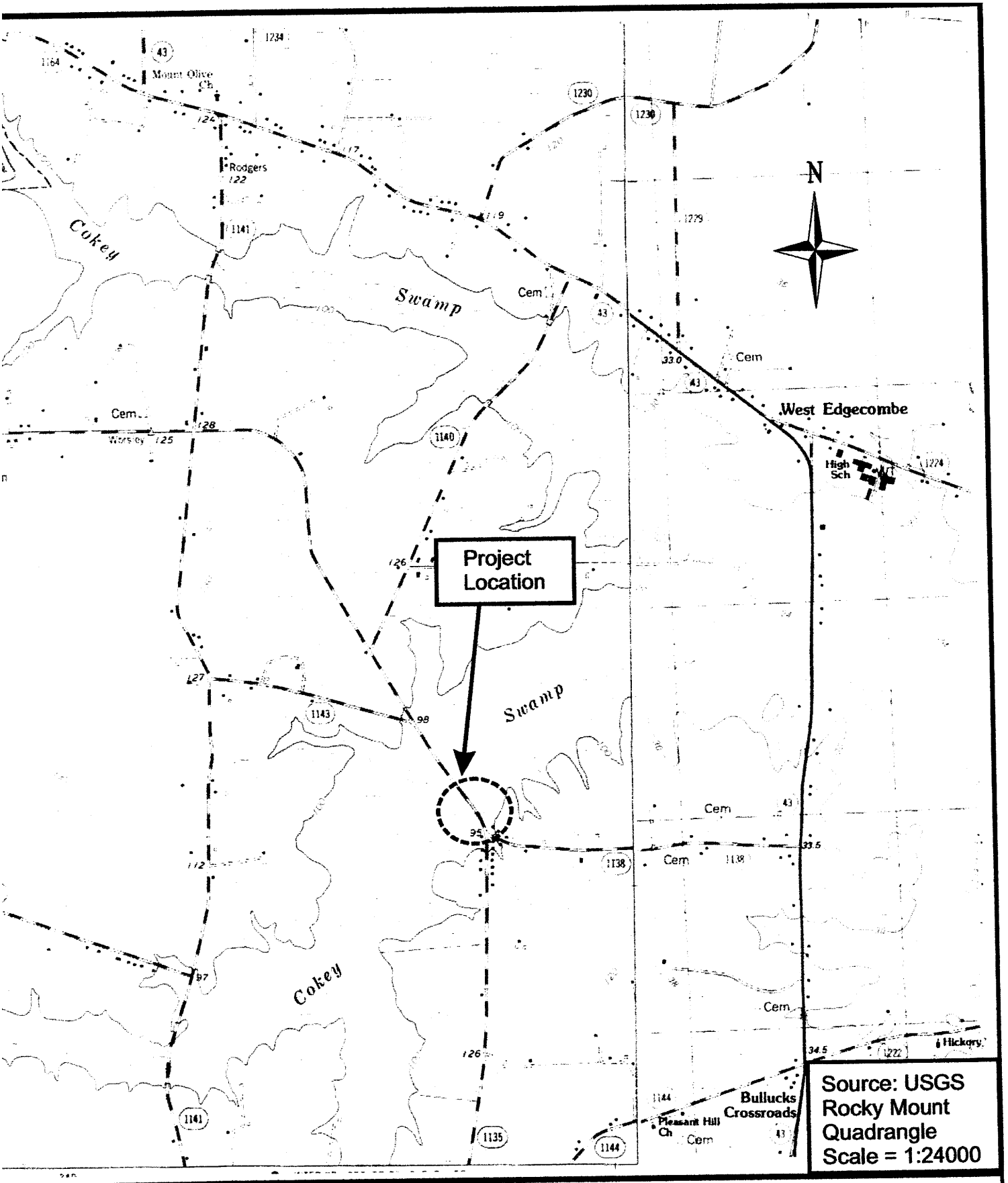
1.2 Purpose

The purpose of this study is to provide an evaluation of biological resources within the project area as defined by NCDOT staff (Figure 2). Specific tasks performed for this study include 1) an assessment of biological features within the project area including descriptions of vegetation, wildlife, protected species, jurisdictional wetlands, and water quality, 2) a delineation of Section 404 jurisdictional areas and subsequent survey of jurisdictional boundaries (utilizing Trimble XRS Differential Global Positioning System technology), 3) an evaluation of plant communities and their areas within the project area, and 4) a preliminary determination of permit needs.

1.3 Methods

Materials and literature supporting this investigation have been derived from a number of sources including U.S. Geological Survey (USGS) topographic mapping (Rocky Mount, NC 7.5 minute quadrangle), U.S. Fish and Wildlife Service (FWS) National Wetlands Inventory mapping (NWI) (Rocky Mount, NC 7.5 minute quadrangle), Natural Resources Conservation Service (NRCS; formerly the Soils Conservation Service) soils mapping (NRCS 1979), and recent aerial photography (scale 1:1200) furnished by NCDOT.

The site was visited on August 14 and August 16, 2001. The project area was walked and visually surveyed for significant features. Special concerns evaluated in the field include 1)

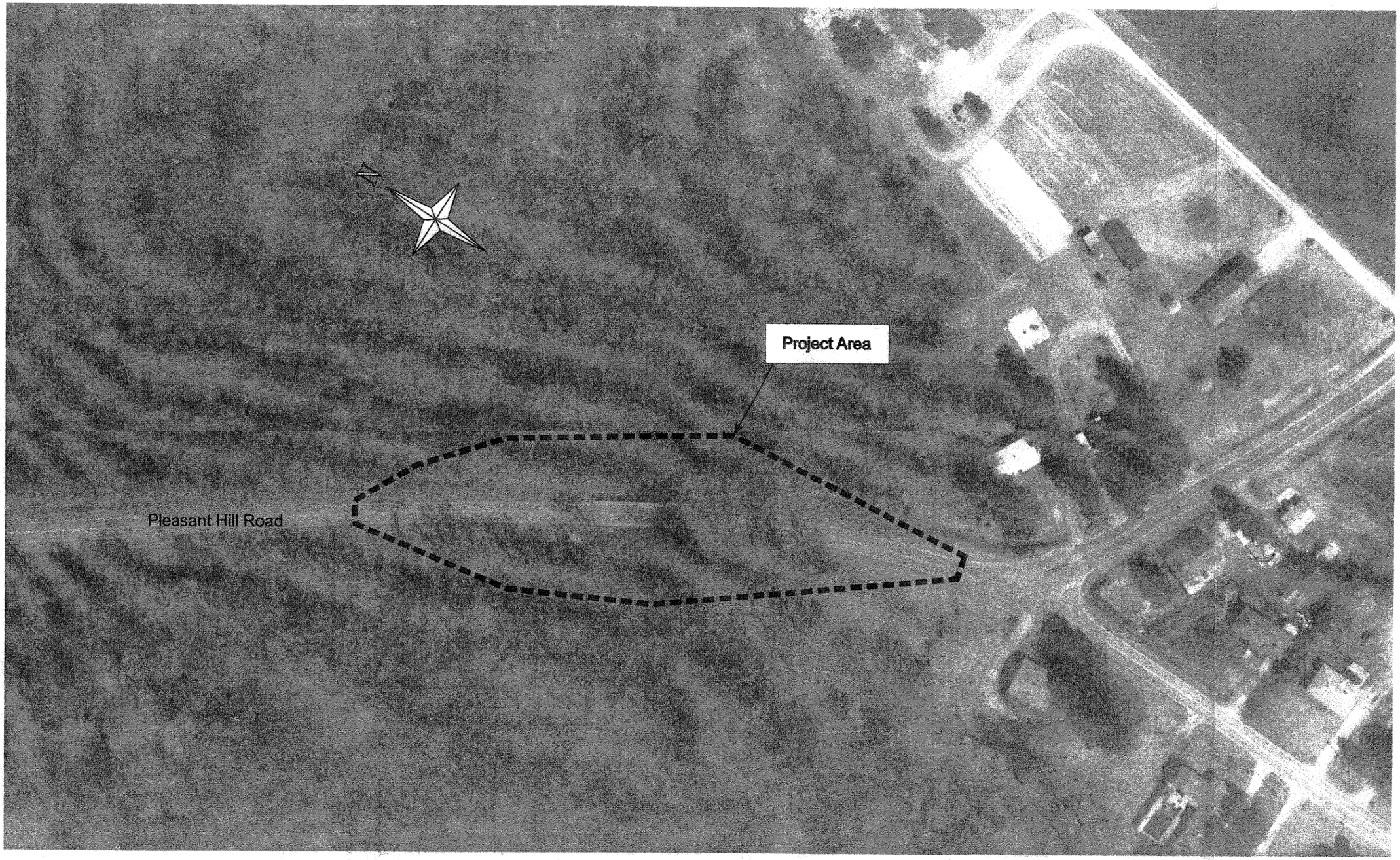


EcoScience Corporation
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
919 828 3433 Fax: 919 828 3518

TIP B-4111
Bridge No. 3 over Cokey Swamp
Edgecombe County, North Carolina

Dwn. by:	KW
Ckd by:	SS
Date:	AUG 2001
Project:	00-046.09

FIGURE 1



EcoScience Corporation
1101 Haynes Street, Suite 101
Raleigh, North Carolina 27604
Ph: 919 828-3433
Fax: 919 828-3518

Client:
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Project:
B-4111

Replacement of Bridge No. 19 over Cokey Swamp Edgecombe County, North Carolina

Title:
LAND USE
BRIDGE NO. 19

EDGECOMBE COUNTY, NORTH CAROLINA

Dwn By:	Date:
KW	AUG 2001
Ckd By:	Scale:
SS	1:1200

ESC Project No.: 00-046.09

FIGURE
2

potential protected species habitat and 2) wetlands and water quality protection in Cokey Swamp.

The field work for this investigation was conducted by EcoScience Corporation biologists Mr. Matt Cusack and Mr. Kendrick Weeks. Mr. Weeks is a project scientist with 4 years of experience in the field of natural sciences. Mr. Weeks earned a B.S. in biology from Appalachian State University and a M.S. in zoology from North Carolina State University. His graduate research focused on breeding productivity of neotropical migrant landbirds in the southern Appalachians. Professional expertise includes plant and wildlife identification, protected species surveys, environmental document preparation, and stream and wetland delineations.

Mr. Cusack is a Project Scientist with 4 years of experience in the environmental field. He has received a bachelor's degree in marine biology with honors in biology from the University of North Carolina at Wilmington. He has conducted fieldwork involving estuarine and freshwater invertebrate ecology and sea turtle nesting biology. He has conducted aquatic toxicity research in estuarine fauna. His professional expertise includes jurisdictional area delineations, stream determinations, plant and wildlife identification and community mapping, protected species surveys, and environmental planning.

Plant community descriptions are based on a classification system utilized by N.C. Natural Heritage Program (NHP) (Schafale and Weakley 1990). When appropriate, community classifications were modified to better reflect field observations. Vascular plant names follow nomenclature found in Radford *et al.* (1968) with adjustments for updated nomenclature (Kartesz 1998). Jurisdictional areas were evaluated using the three-parameter approach following U.S. Army Corps of Engineers (COE) delineation guidelines (DOA 1987). Jurisdictional areas were characterized according to a classification scheme established by Cowardin *et al.* (1979). Aquatic and terrestrial wildlife habitat requirements and distributions were determined by supportive literature (Martof *et al.* 1980, Potter *et al.* 1980, Webster *et al.* 1985, Menhinick 1991, Hamel 1992, Palmer and Braswell 1995, and Rohde *et al.* 1994). Water quality information for area streams and tributaries was derived from available sources (DWQ 1997, DWQ 1999). Quantitative sampling was not undertaken to support existing data.

The most current FWS listing of federally protected species with ranges extending into Edgecombe County (April 12, 2001 FWS list) was reviewed prior to initiation of the field investigation. In addition, NHP records documenting presence of federally or state listed species were consulted before commencing field investigations.

1.4 Project Area

The project area is located at the crossing of SR 1135 (Pleasant Hill Road) and Cokey Swamp approximately 2.0 miles (3.2 kilometers) south of Rocky Mount, NC (Figure 1). U.S. Highway SR 1135 (Pleasant Hill Road) intersects SR 1141 (Green Pasture Road) approximately 1.2

miles (1.7 kilometers) north of the project area. The project area spans Cokey Swamp, the associated floodplain, and adjacent uplands along a northwest to southeast orientation for a distance of 300 feet (91.4 meters) in both directions. The floodplain extends farther to the northwest of Bridge No. 19 than southeast due to topography (Figure 1). This section of Cokey Swamp is a second-order perennial stream system whose headwaters are mostly rural residential and agriculture between Rocky Mount and Sharpsburg to the west. Approximately 60 percent of the land within the project vicinity (0.5 mile [0.8 kilometer] radius) is forested. The remaining area is made up of equal amounts residential and agriculture. Almost all land in the project area is forested swamp.

1.5 Physiography and Soils

Bridge No. 19 on Pleasant Hill Road is underlain by Flood Plain System soils in the Coastal Plain physiographic province of North Carolina. Large river valleys with wide floodplains characterize the region. Sediments in the river valleys range from gravel to silt. The project area is located within a relatively level, narrow floodplain valley surrounded by gentle slopes to uplands. Elevations in the project area range from a high of approximately 100 feet (30.5 meters) National Geodetic Vertical Datum (NGVD), on the southeast and northwest slopes of Cokey Swamp floodplain to a low of approximately 80 feet (24.4 meters) NGVD near the deepest portion of Cokey Swamp.

Based on soil mapping for Edgecombe County (SCS 1979), the project area is underlain by three soil series: Bibb soils (*thermic Typic Fluvaquents*), Lumbee fine sandy loam (*thermic Typic Ochraquults*), and Norfolk loamy sand (*thermic Typic Paleudults*). The majority of the project area, if not its entirety, is composed of the Cokey Swamp floodplain and mapped as the Bibb series. The narrow road approaches to the bridge are mapped as Lumbee (to the northwest) and Norfolk series (southeast). Bibb and Lumbee soils are listed as hydric for Wilson County (NRCS 1997).

The Bibb series is a nearly level, poorly drained soil on floodplains along major streams. Bibb soils formed in recent alluvium. Typically, the surface layer is dark, grayish, brown loam seven inches thick. The subsoil is dark gray fine sandy loam that has grayish brown and strong brown mottles and becomes more brown and coarser in texture with depth. Organic matter content is medium and permeability is moderate. The seasonal high water table is at a depth of 6 to 18 inches (15.2 to 45.7 centimeters).

The Lumbee fine sandy loam is nearly level, poorly drained and occupies broad, smooth flats and shallow depressions in stream terraces. Lumbee soils formed in fluvial sediments. The surface layer is typically dark grayish brown fine sandy loam 4 inches (10.2 centimeters) thick. The 21-inch (53.3-centimeter), strongly acid subsoil is gray sandy clay loam in the upper part becoming lighter and sandier with depth. Organic matter content is medium and permeability is moderate. The seasonal high water table is at or near the surface. These soils are rarely flooded.

Norfolk loamy sand is well drained and located in broad, smooth areas on uplands. Norfolk soils formed in Coastal Plain sediments. The surface layer is brown loamy sand 7 inches (17.8 centimeters) thick. The subsurface layer is light yellowish brown loamy sand 5 inches (12.7 centimeters) thick. The subsoil is yellowish brown sandy clay becoming more yellow with depth. Organic matter content is low, and permeability is moderate. The seasonal high water table is 4 to 6 feet (1.2 to 1.8 meters) below the surface.

2.0 WATER RESOURCES

2.1 Waters Impacted

The project area is located within sub-basin 030303 of the Tar-Pamlico Basin (DWQ 1999). This area is part of USGS Cataloging Unit 03020103 of the South Atlantic/Gulf Region. The structure targeted for replacement spans Cokey Swamp. This section of Cokey Swamp has been assigned Stream Index Number 28-83-3 by the N.C. Division of Water Quality (DWQ 1997). The project area is approximately 1.0 mile (1.6 kilometers) upstream of the confluence of Cokey Swamp and Little Cokey Swamp.

2.1.1 Surface Water Characteristics

Cokey Swamp is designated as a perennial stream by USGS quadrangle. However, NWI mapping and field visits verify that it is black water swamp system characterized by extended surface flooding with low flow velocities over an unconsolidated bottom. The area supports an emergent bottomland swamp forest and patches of rooted aquatic vegetation. This system lacks a primary channel and is problematic for classification because swamp flow is concentrated to pass under the bridge, appearing channel-like, but spreads back out to a black water swamp system downstream of the bridge. The submerged banks near the bridge slope steeply from the streambed to the water's surface. This system does not have discernable channels.

During field investigations, Cokey Swamp was approximately 80 feet (24.4 meters) wide and standing water was approximately 7 to 8 feet (2.1 to 2.4 meters) deep. Water level appeared moderate, clarity was good, and flow velocity was slow. Submerged aquatic vegetation was present in small patches in sunny, shallow areas. The entire floodplain within the project area exhibits wetland conditions including hydrophytic vegetation, presence of hydric soils, and evidence of regular, prolonged inundation.

2.1.2 Best Usage Classifications and Water Quality

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A Best Usage Classification of **C NSW** has been assigned to this reach of Cokey Swamp. The

designation **C** denotes waters protected for secondary recreation, fishing, wildlife, fish and aquatic life propagation and survival, agriculture and other uses. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner. The supplementary classification of Nutrient Sensitive Waters (**NSW**) is intended for waters needing additional nutrient management due to their being subject to excessive growth of microscopic and macroscopic vegetation. NSW are subject to nutrient input restrictions. All waters within the Tar-Pamlico Basin are classified NSW. No restrictions on watershed development activities are required. No designated Outstanding Resource Waters (**ORW**), High Quality Waters (**HQW**), Water Supply I (**WS-I**), or Water Supply II (**WS-II**) waters occur within 1.0 mile (1.6 kilometers) of the project area. No watershed Critical Area (**CA**) occurs within 1.0 mile (1.6 kilometers) of the project area.

The Division of Water Quality (DWQ) (previously known as the Division of Environmental Management, Water Quality Section [DEM]) has initiated a whole-basin approach to water quality management for the 17 river basins within the state. Water quality for the proposed project area is summarized in the Tar-Pamlico River Basinwide Water Quality plan (DWQ 1999). Based on DWQ data, Cokey Swamp is currently designated as **Fully Supporting**. Cokey Swamp at SR 1135, has been assigned a bioclassification of **Fair** based on benthic macroinvertebrate monitoring in 1997 at SR 1141.

Sub-basin 030303 of the Tar-Pamlico River Basin supports five permitted, point source discharges. The total permitted discharge is 6.325 MGD (23.9 MLD) and includes one major discharge (5.0 MGD [18.9 MLD]) and four minor discharges (1.325 MGD [5.016 MLD]). No permitted discharges are located on Cokey Swamp. Major non-point sources of pollution for Cokey Swamp include runoff from cropping and grazing pastures. Cokey Swamp is one of two stream systems in sub-basin 030303 identified as having the greatest potential for non-point source pollution. Sedimentation and nutrient inputs are major problems associated with non-point source discharges and often result in fecal coliform (DWQ 1999). Low flow of Coastal Plain streams and their associated hypoxic conditions make water quality assessment difficult.

2.2 Anticipated Impacts to Water Resources

Project alternatives will include complete bridging of Cokey Swamp to maintain the current water quality, aquatic habitat, and flow regime. Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of a stringent erosion control schedule and the use of Best Management Practices (BMPs). The contractor will follow contract specifications pertaining to erosion control measures as outlined in 23 CFR 650 Subpart B and Article 107-13 entitled "Control of Erosion, Siltation, and Pollution" (NCDOT, Specifications for Roads and Structures). These measures include the use of dikes, berms, silt basins, and other containment measures to control runoff; elimination of construction staging areas in floodplains and adjacent to waterways; re-seeding of herbaceous cover on disturbed sites; management of chemicals (herbicides, pesticides, de-icing compounds) with potential

negative impacts on water quality; and avoidance of direct discharges into streams by catch basins and roadside vegetation.

The proposed bridge replacement will allow for continuation of pre-project flow in Great Swamp, thereby protecting the integrity of this waterway. Long-term impacts resulting from construction are expected to be negligible. In order to minimize impacts to water resources, NCDOT BMPs for the Protection of Surface Waters will be strictly enforced during the entire life of the project. The proposed bridge replacement will allow for continuation of pre-project stream flows in Great Swamp, thereby protecting the integrity of this waterway. Long-term impacts resulting from construction are expected to be negligible. In order to minimize impacts to water resources, NCDOT BMPs for the Protection of Surface Waters will be strictly enforced during the entire life of the project.

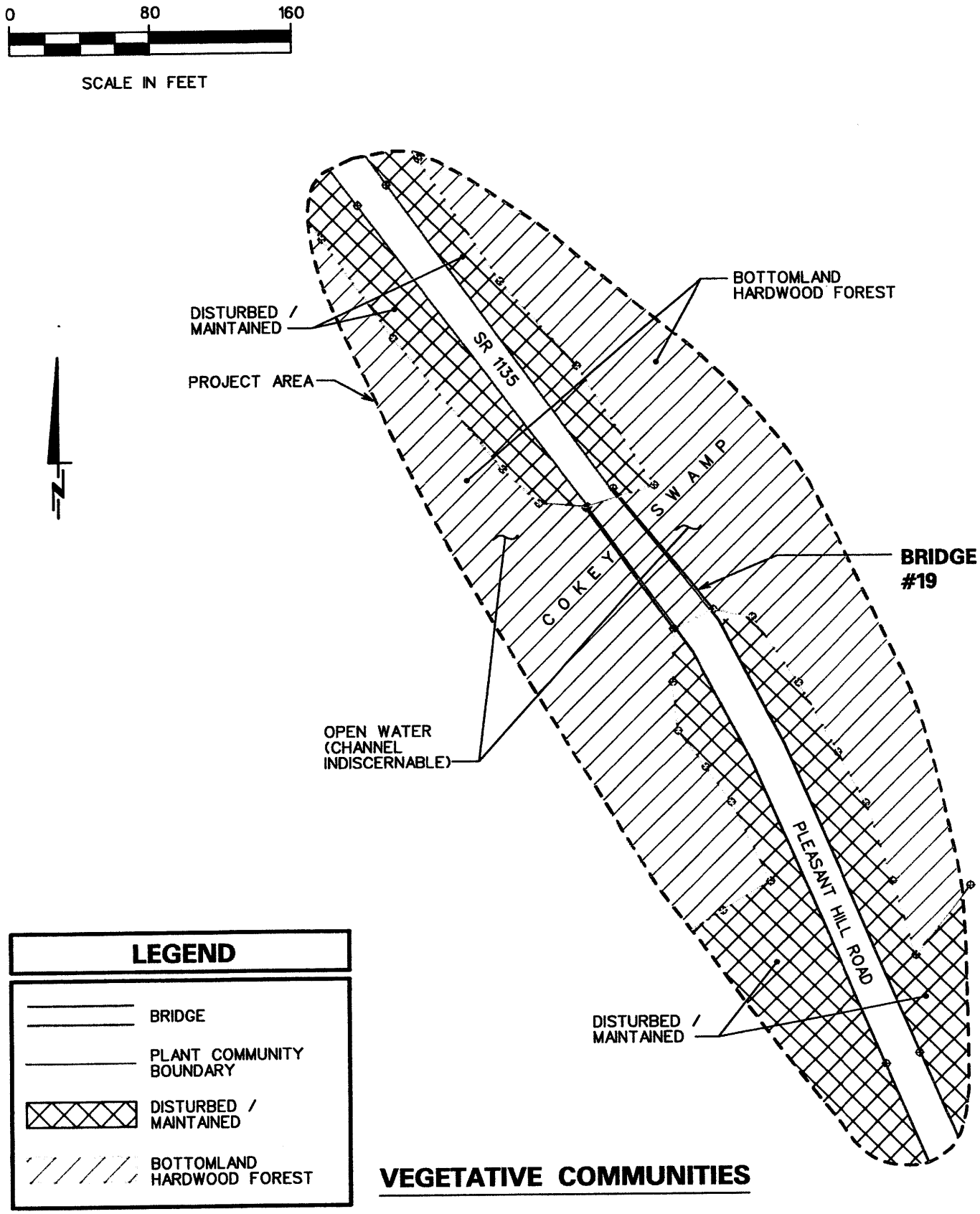
Due to the composition of the Cokey Swamp substrate, sediment curtains should be utilized to minimize potential water quality degradation as a result of disturbing the streambed during bridge replacement.

3.0 BIOTIC RESOURCES

3.1 Plant Communities

Two distinct plant communities were identified within the project area: Coastal Plain Bottomland Hardwood Forest and disturbed/maintained land (Figure 3). Plant community descriptions are based on a classification system utilized by N.C. Natural Heritage Program (NHP) (Schafale and Weakley 1990). These communities are described below.

Coastal Plain Bottomland Hardwood Forest – This plant community occurs on the floodplains in all four quadrants of the project area. This community is in a late successional stage (> 100 years old) and exhibits well-developed strata. The canopy is closed and consists of water tupelo (*Nyssa biflora*), swamp chestnut oak (*Q. michauxii),* sweetgum (*Liquidambar styraciflua*), slippery elm (*Ulmus alata*), American elm (*U. americana*), river birch (*Betula nigra*), red maple (*Acer rubrum*), overcup oak (*Quercus lyrata*), water oak (*Q. nigra*), and green ash (*Fraxinus pennsylvanica*). Many of the canopy species are regenerating in the subcanopy but other species such as Carolina ash (*Fraxinus caroliniana*) and ironwood (*Carpinus caroliniana*) also occur. Shrubs and vines include Virginia willow (*Itea virginica*), viburnums (*Viburnum nudum* and *V. prunifolium*), American holly (*Ilex opaca*), privet (*Ligustrum sinense*), sweet pepperbush (*Clethra alnifolia*), greenbrier (*Smilax rotundifolia*), cross vine (*Berchemia scandens*), trumpet creeper (*Campsis radicans*), Virginia creeper (*Parthenocissus quinquefolia*), and muscadine grape (*Vitis rotundifolia*). The herbs vary in diversity and abundance depending upon water depth but include mosses, violets (*Viola* spp.), wing stem (*Bohmeria cylindrica*), rushes (*Juncus* spp.), cardinal flower (*Lobelia cardinalis*), sedge (*Carex intumescens*), giant cane (*Arundinaria gigantea*), Japanese grass, Asiatic dayflower (*Murdania kiesak*), netted chain-fern (*Woodwardia capreolata*), knotweed (*Polygonum densiflorum*), and pickerel weed (*Pontederia cordata*).



VEGETATIVE COMMUNITIES

EcoScience Corporation
Raleigh, North Carolina

Client: NCDOT

Project:

BRIDGE #19 (B4111)
SR 1135 (Pleasant Hill Road)
over COKEY SWAMP

Edgecombe County, North Carolina

Dwn By:	Ckd By:
MAF	KW

Date: AUG 2001

Scale: 1"=80'

ESC Project No.: 00-046.09

FIGURE 3

No terrestrial reptile or amphibian species were observed during the site visit. Some terrestrial reptiles and amphibians which may occur within the project area include eastern box turtle (*Terrapene carolina)*, five-lined skink (*Eumeces Fasciatus)*, rat snake *(Elaphe obsoleta)*, eastern garter snake (*Thamnophis sirtalis)*, copperhead (*Agkistrodon contortix)*, gray treefrog (*Hyla versicolor)*, Fowler's toad (*Bufo americanus*), southern toad *(Bufo terrestris)*, and slimy salamander (*Plethodon glutinosis).*

3.3.2 Aquatic

Limited surveys within the project area resulted in observations of green frogs (*Rana clamitans*) and southern leopard frogs (*Rana utricularia*) Additional aquatic or semi-aquatic reptiles and amphibians which are expected to occur within the project area include snapping turtle (*Chelydra serpentina*), eastern mud turtle (*Kinosternon subrubrum)*, river cooter (*Pseudemys concinna*), southern and northern cricket frogs (*Acris gryllus* and *A. crepitans*), two-toed amphiuma (*Amphiuma means*), and dwarf waterdog (*Necturus punctatus*).

Limited sampling was undertaken in Cokey Swamp to determine fishery potential. Fish species that may be present in Cokey Swamp include American eel (*Anguilla rostrata*), eastern mudminnow (*Umbra pygmaea*), margined madtom (*Noturus insignis*), spottail shiner (*Notropis hudsonius*), creek chubsucker (Erimyzon oblongus), sawcheek darter (*Etheostoma serriferum*), tessellated darter (*Etheostoma olmstedi*), and yellow bullhead (*Ameiurus natalis*). Potential game fish that may be present within the project area include black crappie (*Pomoxis nigromaculatus*), warmouth (*Lepomis auritus*) and largemouth bass (*Micropterus salmoides*). Dip-net samples revealed numerous mosquitofish (*Gambusia holbrooki*). Signs of crayfish were observed within the project area.

3.4 Anticipated Impacts to Wildlife

No significant habitat fragmentation is expected since potential improvements will be restricted to adjoining roadside margins, construction noise and associated disturbances will have short-term impacts on avifauna and migratory wildlife movement patterns.

Impacts associated with turbidity and suspended sediments resulting from bridge replacement will be minimized through the use of silt curtains and the implementation of stringent erosion control measures. Bridge replacement will be scheduled to avoid potential impacts to migratory fish as requested by the N.C. Wildlife Resources Commission (construction will occur outside of the period from February 15 through June 15).

B-4111

No terrestrial reptile or amphibian species were observed during the site visit. Some terrestrial reptiles and amphibians which may occur within the project area include eastern box turtle (*Terrapene carolina*), five-lined skink (*Eumeces fasciatus*), rat snake (*Elaphe obsoleta*), eastern garter snake (*Thamnophis sirtalis*), copperhead (*Agkistrodon contortrix*), gray treefrog (*Hyla versicolor*), Fowler's toad (*Bufo woodhousei*), American toad (*Bufo americanus*), southern toad (*Bufo terrestris*), and slimy salamander (*Plethodon glutinosis*).

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Impacts associated with turbidity and suspended sediments resulting from bridge replacement will be minimized through the use of silt curtains and the implementation of stringent erosion control measures. Bridge replacement will be scheduled to avoid potential impacts to migratory fish (construction will occur outside of the period from February through May).

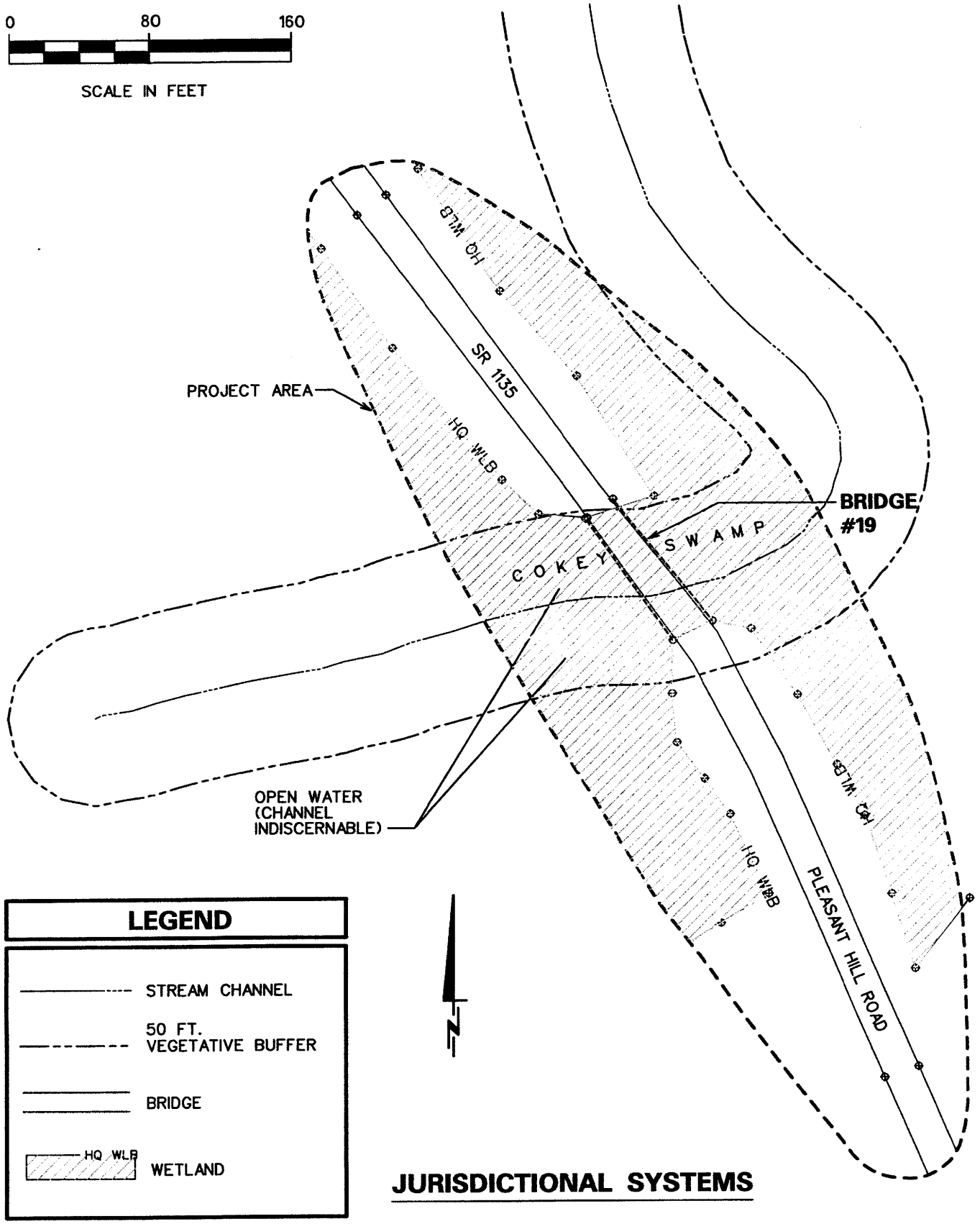
4.0 SPECIAL TOPICS

4.1 Waters of the United States

Surface waters are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR section 328.3). NWI mapping indicates that Cokey Swamp exhibits characteristics of a palustrine, forested, broad-leaved, and seasonally flooded (PF01C; Cowardin *et al.* 1979). Field investigations verified this characterization and no channel was discernable except near the bridge. Therefore, there are no jurisdictional surface waters in Cokey Swamp.

Wetlands of Cokey Swamp are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR section 328.3). These areas are defined by the presence of three primary criteria: hydric soils, hydrophytic vegetation, and evidence of hydrology at or near the surface for a portion (12.5 percent) of the growing season (DOA 1987). Jurisdictional wetlands were delineated during the site visit (Figure 4). These wetlands are dominated by hydrophytic vegetation such as tupelo, overcup oak, and Carolina ash. These species are growing in soils that exhibit values, chromas, and mottles characteristic of hydric conditions. Evidence of wetland hydrology includes inundated areas, saturation in upper 12 inches (centimeters), and tree buttresses.

The Nutrient Sensitive Waters Management Strategy for the Protection and Maintenance of Riparian Buffers for the Tar-Pamlico River Basin (15A NCAC 02B .0259) provides a designation for uses that cause impacts to riparian buffers within the Tar-Pamlico Basin. The Tar-Pamlico Basin Rule applies to 50-foot wide riparian buffers (measured parallel to the stream) directly adjacent to surface waters in the Tar-Pamlico River Basin. Changes in land use within the buffer area are considered to be buffer impacts. Land use changes within the riparian are defined as being **Exempt**, **Allowable**, **Allowable with Mitigation**, or **Prohibited**. The **Exempt** designation refers to uses allowed within the buffer. The **Allowable** designation refers to uses that may proceed within the riparian buffer provided there are no practical alternatives, and that written authorization from the DWQ is obtained prior to project development. The **Allowable with Mitigation** designation refers to uses that are allowed, given there are no practical alternatives and appropriate mitigation plans have been approved. The **Prohibited** designation refers to uses that are prohibited without a variance. Exemptions to the riparian buffer rule include the footprint of existing uses that are present and ongoing. Although the project area is not considered to contain an open-water channel, a stream channel is depicted in the project area by both USGS topographic mapping (Rocky Mount, NC) and county soils mapping (SCS 1979). The Tar-Pamlico Riparian Buffer Rule will be considered in effect until an on-site determination by a DWQ representative determines the validity of an exemption to this rule. A completed DWQ stream classification form is attached to this report. Cokey Swamp has received a total score of 36.5 on this form. Figure 4 indicates the location of the stream as determined by USGS and soils mapping and the buffer area based on this stream.



LEGEND

- STREAM CHANNEL
- 50 FT. VEGETATIVE BUFFER
- BRIDGE
- HQ WLB — WETLAND

JURISDICTIONAL SYSTEMS

EcoScience Corporation
Raleigh, North Carolina

Client: NCDOT

Project:

BRIDGE #19 (B4111)
SR 1135 (Pleasant Hill Road) over COKEY SWAMP

Edgecombe County, North Carolina

Dwn By:	Ckd By:
MAF	KW

Date: AUG 2001

Scale: 1"=80'

ESC Project No.: 00-046.09

FIGURE 4

Table 2. Jurisdictional streams and riparian buffers located within the project area. Linear distance and area are expressed in feet (meters) and acres (hectares), respectively.

Jurisdictional Type	Linear Distance	Area
Surface Waters	N/A	N/A
Riparian Buffer	190.0 (57.9)	0.4 (0.2)
Vegetated Wetland	N/A	1.3 (0.5)

[Alternatives]

Bridge demolition information.

As this reach of Great Swamp has potential as a travel corridor for migratory fish, this project can be classified as case 2, where in-water work will be avoided during moratorium periods associated with fish migration, spawning, and nursery areas.

4.1.1 Permits

This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The COE has made available Nationwide Permit (NWP) No. 23 (61 FR 65874, 65916; December 13, 1996) for CEs due to minimal impacts to waters of the U.S. expected with bridge construction. DWQ has made available a General 401 Water Quality Certification for NWP No. 23. However, authorization for jurisdictional area impacts through use of this permit will require written notice to DWQ. In the event that NWP No. 23 will not suffice, impacts attributed to bridge replacement and associated approach improvements may qualify under General Bridge Permit (GP) 031 issued by the Wilmington COE District. DWQ has made available a General 401 Water Quality Certification for GP 031. Notification to the Wilmington COE office is required if this general permit is utilized. The COE may exert discretionary authority and require an Individual Permit if avoidance and minimization have not been adequately addressed, or if mitigation is inadequate (assuming mitigation may be required).

4.1.2 Mitigation

Mitigation for Section 404 impacts may need to be proposed for this project due to the amount of jurisdictional area in the project area. However, utilization of BMPs is recommended in an effort to minimize impacts. Temporary impacts to floodplains associated with construction activities could be mitigated by replanting disturbed areas with native riparian species and removal of temporary fill material upon project completion. Fill or alteration of more than 150 linear feet (45.8 meters) of stream may require compensatory mitigation in accordance with 15

NCAC 2H .0506(h). A final determination regarding mitigation rests with the COE and DWQ. On-site mitigation opportunities are limited.

The requirement for riparian buffer mitigation will depend on the amount of potential impacts resulting from proposed bridge replacement and the availability of practical alternatives. A final determination regarding practical alternatives rests with DWQ.

4.2 Protected Species

4.2.1 Federally Protected Species

Species with the federal classification of Endangered (E), Threatened (T), or officially Proposed (P) for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term "Endangered Species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range," and the term "Threatened Species" is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532). Federally protected species listed for Edgecombe County (April 12, 2001 FWS list) is presented in Table 3.

Table 3. Federally Protected Species listed for Edgecombe County (April 12, 2001 FWS list).

Common Name	Scientific Name	Status
Tar spinymussel	*Elliptio steinstansana*	E
Red-cockaded woodpecker	*Picoides borealis*	E

Tar Spinymussel - The Tar River spinymussel is a small, subrhomboidal mussel that grows to approximately 2.5 inches (6.4 centimeters) in length. The external shell of the adult is smooth, orange-brown to dark brown, and ornamented by one or two rows of short spines (to 0.2 inches [5.1 millimeters] long). The shell is thicker on the anterior end and thinner on the posterior end. Preferred habitat of the spiny mussel includes relatively fast-flowing, well-oxygenated, circumneutral water over a silt-free, non-compacted, gravel/coarse sand substrate (FWS 1992). The mussel's range is believed to be limited to a 1.0-mile (1.6 kilometer) section of the Tar River in Edgecombe County and Swift Creek in Vance and Edgecombe Counties (TSCFTM 1990).

> **BIOLOGICAL CONCLUSION**: The Tar spinymussel typically occurs in rivers with moderate flow rates and gravel to sand substrate. Cokey Swamp shoreline and river bottom within the project area provide suitable habitat for the Tar spinymussel but, the water is probably too acidic. A review of NHP records indicates that no known population of this species occurs within 1.0 mile (1.6 kilometer) of the project area.

NCDOT biologists will provide further determinations of mussel populations within the project area. Based on available information, this project may result in an adverse impact to the Tar spinyussel. **UNRESOLVED**

Red-cockaded Woodpecker - This small woodpecker (7 to 8.5 inches [18 to 22 cm] long) has a black head, prominent white cheek patches, and a black-and-white barred back. Males often have red markings (cockades) behind the eye, but the cockades may be absent or difficult to see (Potter *et al.* 1980). Primary habitat consists of mature to over-mature southern pine forests dominated by loblolly (*Pinus taeda*), long-leaf (*P. palustris*), slash (*P. elliottii*), and pond (*P. serotina*) pines (Thompson and Baker 1971). Nest cavities are constructed in the heartwood of living pines, generally older than 70 years, which have been infected with red-heart disease. Nest cavity trees tend to occur in clusters, which are referred to as colonies (FWS 1985). The woodpecker drills holes into the bark around the cavity entrance, resulting in a shiny, resinous buildup around the entrance that allows for easy detection of active nest trees. Pine flatwoods or pine-dominated savannas that have been maintained by frequent fires serve as ideal nesting and foraging sites for this woodpecker. Development of a thick understory may result in abandonment of cavity trees.

BIOLOGICAL CONCLUSION: The project area contains no suitable foraging or nesting habitat for red-cockaded woodpeckers. NHP records document no occurrences of red-cockaded woodpeckers within 5.0 miles (8.0 kilometers) of the project area. Based on NHP records, field observations, and professional judgement, the proposed project will not affect the red-cockaded woodpecker. **NO EFFECT**

Federal Species of Concern - The April 12, 2001 FWS list also includes a category of species designated as "Federal species of concern" (FSC). A species with this designation is one that may or may not be listed in the future (formerly C2 candidate species or species under consideration for listing for which there is insufficient information to support listing). The FSC designation provides no federal protection under the ESA for the species listed. FSC species listed for Edgecombe County is presented in Table 4.

Table 4. Federal Species of Concern listed for Edgecombe County (FWS list, April 12, 2001).

Common Name	Scientific Name	Potential Habitat	State Status*
Henslow's Sparrow	*Ammodramus henslowii*	NO	SR
Southern Hognose Snake	*Heterodon simus*	NO	SR
Pinewoods Shiner	*Lythrurus matutinus*	NO	SR
Yellow lampmussel	*Lampsilis cariosa*	NO	T
Yellow lance	*Elliptio lanceolata*	YES	T
Atlantic Pigtoe	*Fusconaia masoni*	NO	T

*E = Endangered; T = threatened; SR = Significantly Rare; C = Candidate; P = Species has been formally proposed for listing as Endangered, Threatened, or Special Concern; W1 = NC Plant Watch List: rare because of severe decline; W3 = NC Watch List: poorly known in North Carolina (Amoroso 1999; LeGrand and Hall1999).

4.2.2 State Protected Species

Plant and animal species which are on the North Carolina state list as Endangered (E), Threatened (T), Special Concern (SC), Candidate, Significantly Rare (SR), or Proposed (Amoroso 1999, LeGrand and Hall 1999) receive limited protection under the North Carolina Endangered Species Act (G.S. 113-331 *et seq.*) and the North Carolina Plant Protection Act of 1979 (G.S. 106-202 *et seq.*). NHP records indicate no State protected species have been documented within 2.0 miles (3.2 kilometers) of the project area.

NHP also documents Significant Natural Heritage Areas, sites selected on the basis of the occurrence of rare plant and animal species, rare or high quality natural communities and special animal habitats. There are no Significant Natural Heritage Areas within 2.0 miles (3.2 kilometers) of the project area. NHP Priority Areas (IPA) receive no formal protection but are recognized as unique areas and may come under protection in the future. NHP documents a Priority Area, Cokey Swamp Aquatic Habitat, downstream 1.7 miles (2.8 kilometers) (NHP 1999). The presence of downstream high quality aquatic habitat indicates that extra care should be taken to preserve the hydrological and biological integrity of the project area.

5.0 REFERENCES

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DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4111	Date: 8/15/2001
Applicant/Owner: NCDOT	County: Edgecombe
Investigator: EcoScience, Kendrick Weeks RW 12-7-2001	State: NC
Do Normal Circumstances exist on the site? Yes No	Community ID: UP/Fill
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: SE corner
Is the area a potential Problem Area? Yes No	Plot ID:
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Festuca	H	N/A
2. Plantago rugelii	H	N/A
3. Commelina communis	H	FAC
4. Solanum carolinense	H	FACU
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 25%

Remarks: Maintained right of way

HYDROLOGY

___Recorded Data (Describe in Remarks):
- ___Stream, Lake or Tide Gauge
- ___Aerial Photographs
- ___Other

V No Recorded Data Available

Field Observations:

Depth of Surface Water:	>12	(in.)
Depth to Free Water in Pit:	>12	(in.)
Depth to Saturated Soil:	>12	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___Inundated
- ___Saturated in Upper 12 Inches
- ___Water Marks
- ___Drift Lines
- ___Sediment Deposits
- ___Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___Oxidized Root Channels in Upper 12 Inches
- ___Water-Stained Leaves
- ___Local Soil Survey Data
- ___FAC-Neutral Test
- ___Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): Norfolk loamy Sand Drainage Class: Slow

Taxonomy (Subgroup): Typic Ochraquults Field Observations Confirm Mapped Type: Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A-B	10YR 5/6	/	/	loamy Clay

Hydric Soil Indicators:

- ___Histosol
- ___Histic Epipedon
- ___Sulfidic Odor
- ___Aquic Moisture Regime
- ___Reducing Conditions
- ___Gleyed or Low-Chroma Colors
- ___Concretions
- ___High Organic Content in Surface layer in Sandy Soils
- ___Organic Streaking in Sandy Soils
- ___Listed on Local Hydric Soils List
- ___Listed on National Hydric Soils List
- ___Other (Explain in Remarks)

Remarks: Area is fill from road — no natural uplands in vicinity

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes (No) (Circle)	(Circle)	
Wetland Hydrology Present?	Yes (No)	Is this Sampling Point Within a Wetland?	Yes (No)
Hydric Soils Present?	Yes (No)		

Remarks:

Approved by HQUSACE 2/92

HJL
8/93

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: B-4111	Date: 8/15/2001
Applicant/Owner: E NCDOT	County: Edgecombe
Investigator: EcoScience Kendrick Wilks	State: NC
Do Normal Circumstances exist on the site? Yes No	Community ID: Wet Gum/Cypress
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: SE corner
Is the area a potential Problem Area? Yes No	Plot ID:
(If needed, explain on reverse)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Nyssa biflora	C	OBL	9.		
2. Liquidambar styraciflua	C	FAC+	10.		
3. Itea virginiana	S	FACW+	11.		
4. Carpinus caroliniana	S	FAC	12.		
5. Quercus nigra	C	FAC	13.		
6. Quercus lyrata	C	OBL	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 100%

Remarks:

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake or Tide Gauge
- __Aerial Photographs
- __Other
- ✓ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0-6 (in.)
Depth to Free Water in Pit: 2-6 (in.)
Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- ✓ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 Inches
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks:

SOILS

Map Unit Name (Series and Phase): B66 — Drainage Class: slow

Taxonomy (Subgroup): Typic Fluvaquents — Field Observations Confirm Mapped Type: (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-12	A-B	10YR 4/2	10YR 5/6	red	loam

Hydric Soil Indicators:

- ___ Histosol
- ✓ Histic Epipedon
- ✓ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ✓ High Organic Content in Surface layer in Sandy Soils
- ✓ Organic Streaking in Sandy Soils
- ✓ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks:

Approved by HQUSACE 2/92

HJL
8/93