STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 31, 2005

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

Attention: Mr. William J. Biddlecome
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 and 12 Permit Application** for the Replacement of Bridge No. 11 on SR 1219 (Francis Mill Road) over the Cashie River in Bertie County. Federal Project No. BRZ-1219[1], State Project No. 8.2010501, TIP No. B-4027.

Please find enclosed the Pre-Construction Notification form (PCN), permit drawings, Categorical Exclusion (CE), and half-size plan sheets for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 11 on SR 1219 over the Cashie River (DWQ Index # 03-02-10) in Bertie County. The project involves replacement of the existing structure with a 160-foot cored slab bridge at approximately the same location and a slightly higher roadway elevation, using top-down construction. The approach roadway will consist of two 11-foot travel lanes with shoulder widths of at least 6 feet. Shoulder widths will be increased by at least 3 feet where guardrail is warranted. Traffic will be detoured off-site, along surrounding roads, during construction. SR 1219 is classified as a Rural Local Route in the Statewide Functional Classification system. The project schedule calls for an April 18, 2006 Let date with a review date of February 28, 2006.

Impacts To Waters of the United States

General Description: The project is located in the Roanoke River Basin (HU 03010107). A best usage classification of "C Sw" has been assigned to the Cashie River. Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), nor Outstanding Resource Waters (ORW) occur within 1.0 mile (1.6 km) of project study area. The Cashie River is not designated as a North Carolina Natural or Scenic River, or as a national Wild and Scenic River. Water depth at the project site is approximately six feet.

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

Permanent Impacts: The Cashie River and adjacent wetlands will be impacted by the proposed project. Construction of the proposed project will result in a permanent impact of 0.236 acre from roadway fill in wetlands (see permit drawings). In addition, a total less than 0.001 acre of surface water will be impacted from placement of bents in the channel.

Temporary Impacts: In addition to permanent impacts, 0.194 acre of temporary impacts to wetlands will occur, as a result of hand clearing (see permit drawings). This consists of 25 feet of hand clearing in wetlands beyond the South side of the bridge and 5 feet of hand clearing in wetlands beyond the toe of slope to allow the installation of erosion control devices (i.e. silt fence).

Utility Impacts: Temporary impacts to 0.114 acre will occur to wetlands from the relocation of power lines, telephone lines, and a water line. The work will primarily occur in areas also affected by the road fill and hand clearing (see attached Utility Drawings). Installation will involve utilization of the directional bore method. Hand clearing and temporary work mats will be used when applicable. Two existing utility poles located to the south of the bridge will be removed.

Bridge Demolition

The existing bridge consists of reinforced concrete channels with an asphalt-wearing surface. The end bents and interior bents consist of precast prestressed caps and timber piles. Additional interior bents (crutch bents) consisting of HP piles and recycled I-beams have been added to support the structure. The contractor will likely remove the original piles with a vibratory hammer; the crutch bents can be removed by cutting the caps free from the piles and removing with crane. An old bulkhead is located at the north end of the bridge. This bulkhead will not likely be disturbed unless it conflicts with construction of the new bents. The bridge can be removed without dropping components into Waters of the United States during construction. Best Management Practices for Bridge Demolition and Removal will be followed to avoid any temporary fill from entering Waters of the United States. The bridge demolition is classified as a Case 2 due to the in-stream moratorium for anadromous fish (February 15 to June 15).

Avoidance, Minimization, and Mitigation

Avoidance and Minimization: Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States". Due to the presence of surface waters and wetlands within the project study area, avoidance of all impacts is not possible. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts. Minimization measures were incorporated as part of the project design these included:

- Use of an off-site detour during construction.
- Construction of a 40-foot longer bridge
- Best Management Practices for the Protection of Surface Water and Guidelines for Anadromous Fish Passage will also be utilized during demolition of the existing bridge and construction of the new bridge.
- Use of 3:1 Fill slopes in jurisdictional areas.
- Hand clearing in wetlands.

Mitigation: The U.S. Army Corps of Engineers' interpretation of Nationwide Permits is that all impacts to perennial streams or intermittent streams or wetlands that exhibit important aquatic

function require mitigation. Therefore, the remaining unavoidable impacts to 0.236 acre of wetlands will be offset by compensatory mitigation.

Based upon the agreements stipulated in the "Memorandum of Agreement Among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U.S. Army Corps of Engineers, Wilmington District" (MOA), it is understood that the North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP), will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for NCDOT projects. The offsetting mitigation will derive from an inventory of assets already in existence within the same 8-digit cataloguing unit. The Department has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. A copy of the EEP's acceptance letter, dated September 20, 2005, is attached.

Federal Protected Species

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003 the US Fish and Wildlife Service (USFWS) lists one federally protected species for Bertie County (see Table 1). No species have been added to or deleted from the list since the completion of the CE (February 27, 2004).

Table 1. Federally protected species of Bertie County.

Scientific Name	Common Name	Federal Status	Biological Conclusion
Picoides borealis	Red-cockaded woodpecker	E	No Effect

Endangered (E) – is defined as a taxon "in danger of extinction throughout all or a significant portion of its range."

Regulatory Approvals

Section 404 Permit: NCDOT requests that relocation of power lines, telephone lines, and water line is authorized by a Nationwide Permit 12. All other aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095, January 15, 2002).

Section 401 Permit: We anticipate 401 General Certification numbers 3403 and 3374 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200 we are providing two copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality, for their review. A copy of this permit will be posted on the NCDOT web site http://www.doh.dot.state.nc.us/preconstruct/pe/neu/permit.html

Thank you for your time and assistance with this project. Please contact Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439 if you have any questions or need any additional information.

Sincerely,

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

Cc W/attachment:
Mr. John Hennessy, NCDWQ (2 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
Mr. Anthony Roper, P.E., Division 1 Engineer
Mr. Clay Willis, Division 1 Environmental Officer

Cc W/o attachment:
Ms. Wanda Gooden, NCDCM
Ms. Cathy Brittingham, NCDCM
Mr. Scott McLendon, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, 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., PDEA

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: 23 & 12

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: Gregory J. Thorpe, Ph.D., Environmental Management Director
   Mailing Address: 1598 Mail Service Center
   Raleigh, NC

   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: _____
   Company Affiliation: _____
   Mailing Address: _____

   Telephone Number: _____ Fax Number: _____
   E-mail Address: _____

III. Project Information

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

1. Name of project: B-4027

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-4027

3. Property Identification Number (Tax PIN): N/A

4. Location
   County: Bertie Nearest Town: Lewiston-Woodville
   Subdivision name (include phase/lot number): N/A
   Directions to site (include road numbers/names, landmarks, etc.):

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): 77.1210 °N 36.1240 °W

6. Property size (acres): N/A

7. Name of nearest receiving body of water: Cashie River

8. River Basin: Roanoke
   (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: Rural with forested areas and scattered residential and farms.

10. Describe the overall project in detail, including the type of equipment to be used: Replacement of the existing bridge structure with a 160-foot cored slab bridge at approximately the same location and a slightly higher roadway elevation of the existing structure using top-down construction.

11. Explain the purpose of the proposed work: The bridge is considered to be structurally deficient and functionally obsolete and the replacement will result in safer traffic operations.

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: Construction of the proposed project will result in a permanent impact of 0.236 acre from fill in wetlands. Also, a total less than 0.001 acre of surface water will be impacted from placement of bents in the channel. Temporary impacts will occur to 0.308 acre of wetlands from hand clearing and the relocation of power lines, telephone lines, and a water line from hand clearing in directional bore activies.

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)
Sta14+00 - 23+00	Bridge approach fill	palustrine	yes	adjacent	0.236
Sta14+00 - 23+00	Hand Clearing	palustrine	yes	adjacent	0.194
Sta14+00 - 23+00	Temporary Utility	palustrine	yes	adjacent	0.114
Total Wetland Impact (acres)					0.544

3. List the total acreage (estimated) of all existing wetlands on the property: 26.6

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)					0	0

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.

6.

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)
Sta18+00-19+00	Cashie River	Bents	River	>0.001
Total Open Water Impact (acres)				>0.001

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

Stream Impact (acres):	0
Wetland Impact (acres):	0.554
Open Water Impact (acres):	>0.001
Total Impact to Waters of the U.S. (acres)	0.554
Total Stream Impact (linear feet):	0

8. 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.

9. Pond Creation
If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.):
Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):
Current land use in the vicinity of the pond:
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. Off-site detour; Hand Clearing in wetlands; 3:1 Fill Slopes; Construction of a 40-foot longer bridge; Best Management Practices for Bridge Construction.

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.

   The North Carolina Department of Environment and Natural Resources Ecosystem Enhancement Program (EEP), will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements.

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): N/A
Amount of buffer mitigation requested (square feet): N/A
Amount of Riparian wetland mitigation requested (acres): 0.236
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		3 (2 for Catawba)	
2		1.5	
Total			

* 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. Roadway improvements will result in an additional 0.156-acre of impervious surface. Proposed stormwater controls include: an off-site detour; approach roadway drainage will be by sheet flow across 3:1 grassed shoulders; no deck drains on bridge; deck drainage will be directed away from either ends of the bridge by gutter and drainage system, and then dispersed on rip rapped pads before entering the wetlands.

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:
N/A

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).

_____

_____

_____ 10/31/05

Applicant/Agent's Signature **Date**

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

Bertie County
Bridge No. 11 on SR 1219
Over Cashie River
Federal Aid Project No. BRZ-1219(1)
State Project No. 8.2010501
WBS No. 33394.1.1
T.I.P. No. B-4027

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

Approved:

3/27/04
DATE

for Gregory J. Thorpe, PhD, Environmental Management Director
Project Develoment and Environmental Analysis Branch (PDEA)

2/27/04
DATE

for John F. Sullivan, III, Division Administrator
Federal Highway Administration (FHWA)

Bertie County
Bridge No. 11 on SR 1219
Over Cashie River
Federal Aid Project No. BRZ-1219(1)
State Project No. 8.2010501
WBS No. 33394.1.1
T.I.P. No. B-4027

CATEGORICAL EXCLUSION

Documentation Prepared in
Project Development and Environmental Analysis Branch By:

February 2004

Karen B. Capps, PE

Karen B. Capps, PE
Project Planning Engineer

William T. Goodwin Jr.

William T. Goodwin Jr., PE, Unit Head
Bridge Replacement Planning Unit

PROJECT COMMITMENTS

Bertie County
Bridge No. 11 on SR 1219 Over Cashie River
Federal Aid Project No. BRZ-1219(1)
State Project No. 8.2010501
WBS No. 33394.1.1
T.I.P. No. B-4027

Division 1 Construction Engineer, Structure Design Unit

The proposed structure should be designed to facilitate top-down construction. If it is determined that top-down construction cannot be used, then additional coordination with the United States Army Corps of Engineers and Bertie County Emergency Management Services will be required.

No deck drains will be allowed to discharge directly into the Cashie River.

Division 1 Construction Engineer, Structure Design Unit, Roadway Design Unit

The total time of **road closure** for this project should be held to to a minimum due to the length of delay on the proposed detour route for the local citizens. The contractor should be given incentives to minimize the road closure for the project. The **total project construction time** can be longer, as long as work can be done under traffic. Bertie County Emergency Management Services will be notified a minimum of thirty (30) days in advance of the beginning of the road closure.

This reach of The Cashie River has potential as a travel corridor for anadromous fish. Therefore, an in-stream moratorium will be in effect from February 15 to June 15. The Stream Crossing Guidelines for Anadromous Fish Passage will be implemented, as applicable.

Bertie County
Bridge No. 11 on SR 1219
Over Cashie River
Federal Aid Project No. BRZ-1219(1)
State Project No. 8.2010501
T.I.P. No. B-4027

INTRODUCTION: Bridge No. 11 is included in the latest approved North Carolina Department of Transportation (NCDOT) Transportation Improvement Program and is eligible for the Federal-Aid Bridge Replacement and Rehabilitation Program. The location is shown in Figure 1. No substantial environmental impacts are anticipated. The project is classified as a Federal "Categorical Exclusion".

I. PURPOSE AND NEED STATEMENT

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 24.8 out of a possible 100 for a new structure. The bridge is considered to be structurally deficient and functionally obsolete. The replacement of this inadequate structure will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located in the northwest section of Bertie County about 4.6 miles east of Lewiston, NC (See Figure 1). The project vicinity is rural in nature with forest stands, scattered residential development and farms.

SR 1219 is classified as a rural local route in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists use this roadway.

In the vicinity of the bridge, SR 1219 has an 18-foot pavement width with approximately 4-foot grass shoulders. The roadway grade is fairly flat and tangent through the project area. The horizontal bridge alignment is tangent with curves on both approaches. The roadway is situated approximately 11 feet above the creek bed.

Bridge No. 11 is a four-span structure that consists of reinforced concrete channels (Bridge Maintenance Design -13) with an asphalt wearing surface. The rails consist of metal guardrail bolted to the exterior channel members. The exterior channel members have a concrete curb cast with the member. The end bents and interior bents consist of precast prestresssed caps and timber piles. Additional interior bents consisting of HP piles and recycled I-beams have been added to the structure. The existing bridge was constructed in 1966. The overall length of the structure is 120 feet. The clear roadway width is 24.1 feet. The posted weight limit on this bridge is 21 tons for single vehicles (SV) and 27 tons for truck-tractor semi-trailer's (TTST).

The utility impact on this project is low. An aerial power line runs along the west side of the road. There is underground telephone marked on both sides of the road that becomes aerial at the bridge along the west side of the structure. There is the potential for impacting these telephone lines during construction due to their proximity to the existing road.

The current traffic volume of 600 vehicles per day (VPD) is expected to increase to 1,100 VPD by the year 2025. The projected volume includes one percent truck-tractor semi-trailer (TTST) and two percent dual-tired vehicles (DT). The speed limit is not posted in this area and is assumed statutory 55 mph. No accidents were reported in the vicinity of Bridge No. 11 during a recent three-year period.

Six (6) school buses cross the bridge daily on their morning and afternoon routes.

III. ALTERNATIVES

A. Project Description

The replacement structure will be of sufficient width to provide for two 11-foot lanes with four-foot offsets on each side.

The proposed structure will have a crest vertical curve in the center in order to facilitate drainage. The existing approach grades are flat.

The existing roadway approaches will be widened to accommodate two 11-foot lanes. Six-foot unpaved shoulders will be provided on each side and increased to nine-foot shoulders where guardrail is required. This roadway will continue to be designated as a rural local route.

B. Reasonable and Feasible Alternatives

The two alternatives that were studied for replacing Bridge No. 11 are described below.

Alternate 1: (Preferred) involves replacing the existing bridge in the same location with a 135-foot long cored slab bridge. Please reference Figure 2. Traffic would be detoured onto surrounding secondary roads during construction.

Alternate 2: would replace the existing bridge in the same location with a 135-foot long cored slab bridge. Traffic would be maintained with a temporary, onsite detour located just downstream (southeast) of the existing structure. The temporary detour structure would need to be 100 feet in length with a roadway elevation that is two feet lower than that of the existing bridge.

C. Alternatives Eliminated From Further Consideration

The "do-nothing" alternative will eventually necessitate closure of the bridge. This is not acceptable due to the traffic service provided by SR 1219.

"Rehabilitation" of the old bridge is not practical due to its age and the type of existing superstructure members in place. The additional bents placed on this bridge are evidence that these members cannot handle the current traffic load. Since the traffic is expected to increase, rehabilitation is not practical.

D. Preferred Alternative

Alternate 1 is preferred for the replacement of Bridge No. 11. This alternate is the most economically feasible because it minimizes environmental impacts to a high quality resource and eliminates the cost of a temporary onsite detour. Traffic will be detoured around on other secondary roads during construction. The proposed detour route utilizes SR 1221, SR 1210, SR 1200, NC 11/42, and NC 308 (See Fig. 1). The expected delay is approximately nine minutes. Division One concurs with the proposed alternate. Due to the expected delay on the detour route, every effort should be made to keep the length of road closure to a minimum. The total project construction time may be longer, as long as work can proceed under traffic. Bertie County EMS will be contacted a minimum of thirty (30) days in advance of the beginning of any road closure in order to facilitate coordination of services.

IV. ESTIMATED COSTS

The estimated costs for the two alternates are as follows:

	Alternate 1 (Preferred)	**Alternate 2**
Structure	$ 303,750	$ 303,750
Roadway Approaches	$ 152,237	$ 152,237
Temporary Detour	$0	$ 575,000
Structure Removal	$ 26,136	$ 26,136
Misc. & Mobilization	$ 117,990	$ 117,990
Eng. & Contingencies	$ 99,887	$ 99,887
Total Construction Costs	$ 700,000	$ 1,275,000
Right-Of-Way Costs	$ 45,600	$ 66,000
Total Project Cost	$ 745,600	$ 1,341,000

V. NATURAL RESOURCES

PHYSICAL RESOURCES

The project area is located within a level, wide floodplain valley surrounded by gently sloping valley walls. Elevations in the project area range from a high of approximately 60 feet National Geodetic Vertical Datum (NGVD), on the southwestern end of the project area, to a low of approximately 40 feet NGVD within the stream channel. Land use within and near the project area consists of woodlands, swamps, pine plantations, agricultural fields, and rural residential lots.

Soils

Information about soils in the project area was taken from the *Soil Survey of Bertie County, North Carolina* (SCS 1990). The project area is underlain by four soil series: Bibb and Johnston loams, Pantego loam, Rains sandy loam, and Norfolk sandy loam. Bibb and Johnston soils occur along the river channel, Pantego and Rains are found on slopes and river terraces, and Norfolk sandy loam is found on uplands. The Bibb and Johnston, Pantego, and Rains series are considered hydric soils by the NRCS (NRCS 1997).

WATER RESOURCES

Physical Characteristics of Surface Waters

The project area is located within sub-basin 03-02-10 (Cashie River drainage) of the Roanoke River Basin (DWQ 2001). This area is part of USGS Hydrologic Unit 03010107 of the South Atlantic/Gulf Region. The structure targeted for replacement spans the Cashie River and the Cashie River floodplain. This section of the Cashie River has been assigned Stream Index Number 24-2-(1) by the N.C. Division of Water Quality (DWQ 2002). At the project area, the Cashie River is a poorly-defined, third-order, perennial stream with low flow over a silt substrate. The floodplain of the Cashie River slopes gently upwards from the water surface. Water clarity was poor due to tannin staining, with visibility to 8 inches and flow velocity was low.

Best Usage Classification

The Best Usage Classification for the Cashie River is C Sw (DWQ 2002). No Watershed Critical Areas or water resources classified as High Quality Waters, Water Supplies (WS-I or WS-II), or Outstanding Resource Waters are located within 1.0 mile of the project area.

Point Source Discharge Permits

Sub-basin 03-02-10 of the Roanoke River Basin supports four National Pollutant Discharge Elimination System permitted point source dischargers. Total discharge is 1.3

million gallons per day, although one discharger is not limited as to flow amount. One major discharger (Windsor Wastewater Treatment Plant) accounts for a total of 1.15 million gallons per day. Three minor dischargers account for 0.15 million gallons per day. The dischargers in the sub-basin are located in Windsor, approximately 16 stream miles to the southeast and downstream from the project area, and in Lewiston-Woodville, approximately 3.5 stream miles west and upstream of the project area.

BIOTIC RESOURCES

Terrestrial Communities

Three terrestrial communities were identified in the project area: Cypress-Gum Swamp (Blackwater Subtype), Coastal Plain Bottomland Hardwoods (Blackwater Subtype), and disturbed/maintained land. A summary of plant community areas is presented in the following table.

Plant community coverage within the project area.

Plant Community	Area
Cypress-Gum Swamp (Blackwater Subtype)	16.9 acres
Coastal Plain Bottomland Hardwoods (Blackwater Subtype)	6.9 acres
Disturbed/maintained land	11.3 acres

Aquatic Communities

WRC has developed a Significant Aquatic Endangered Species Habitat database to enhance planning, siting, and impact analysis in areas proposed by WRC as being critical due to the presence of Endangered or Threatened aquatic species. No Significant Aquatic Endangered Species Habitat occurs within the project area. The nearest Significant Aquatic Endangered Species Habitat occurs approximately 12.0 miles north, in the Chowan River Basin. However, this reach of the Cashie River has potential as a travel corridor for anadromous fish. Therefore, in-water work during project construction may need to be avoided during moratorium periods associated with fish migration, spawning, and nursery areas.

To minimize fishing and non-fishing activities that adversely affect marine fisheries, areas of Essential Fish Habitat (EFH) afford limited protection under the Magnuson-Stevens Act of 1996 (16 U.S.C. 1801 *et seq.*). No EFH occurs within the project area.

Summary of Anticipated Impacts to Biotic Resources

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). Long-term impacts resulting from construction are expected to be negligible. Due to the composition of the Cashie River streambed,

sediment curtains should be utilized to minimize potential water quality degradation as a result of bridge replacement.

JURISDICTIONAL TOPICS

Waters of the United States

Surface waters within the embankments of the Cashie River are subject to jurisdictional consideration under Section 404 of the Clean Water Act as waters of the United States (33 CFR Section 328.3). During the field visit, the channel of the Cashie River was not distinguishable from the adjacent Cypress-Gum Swamp.

Jurisdictional wetlands are present as defined by Cowardin *et a* (1979). Vegetated wetlands 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). Approximately 69 percent (26.6 acres) of the project area consists of vegetated wetlands represented by Cypress-Gum Swamp and Coastal Plain Bottomland Hardwoods. Table 1 lists these wetland types and their areas within the project area. On the whole, wetlands within the project area would be considered riverine by the DWQ based on their location within the Cashie River floodplain.

Table 1: Wetland types within the project area. Areas are expressed in acres.

Cowardin Classification	Plant Community	Area	DWQ Rating
PFO1A	Coastal Plain Bottomland Hardwoods	8.7	55
PFO1C	Cypress-Gum Swamp	10.7	55
PFO1/2F	Cypress-Gum Swamp	7.2	70
Total		26.6	

Bridge Demolition

Demolition and removal of a highway bridge over Waters of the United States must be addressed when applying to the U.S. Corps of Engineers (COE) for a permit. Bridge No. 11 is composed of prestressed concrete channels with concrete parapet and W-beam guardrail and a substructure of precast, prestressed concrete caps on timber piles. The superstructure can be removed without dropping any components into jurisdictional waters. The bridge demolition is classified as a Case 2 due to the in-stream moratorium for anadromous fish.

Summary of Anticipated Impacts To Jurisdictional Waters and Wetlands

The preferred alternative (Alternative 1) has a total wetland impact of 0.6 Ac, which will require mitigation. Project construction cannot be accomplished without infringing on the

surface waters. Anticipated surface water impacts fall under the jurisdiction of the USACE and the DWQ. There are no anticipated stream impacts at this time.

Permits

The project area may contain Public Trust Waters Areas of Environmental Concerns (AEC's). If replacement of the bridge avoids impacts to AECs, the Division of Coastal Management (DCM) will review the permit application for CAMA consistency. If an AEC is proposed to be impacted, a CAMA Major Permit or General Permit for bridge replacement (15A NCAC 07H.2300) may be applicable.

This project may be processed as a Categorical Exclusion (CE) under Federal Highway Administration (FHWA) guidelines. The USACE has made available Nationwide Permit (NWP) No. 23 (67 FR 2020, 2082; January 15, 2002) 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 (GC 3361). If temporary construction is required that is not described in the CE, a NWP No. 33 (67 FR 2020, 2084, January 15, 2002) and associated DWQ General Water Quality Certification (GC 3366) may apply. 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 USACE District. DWQ has made available a General 401 Water Quality Certification for GP 031 (GC 3375). Notification to the USACE Wilmington district office is required if this general permit is utilized.

Avoidance, Minimization, Mitigation

Because this project will likely be authorized under a Nationwide Permit, mitigation for impacts to surface waters may or may not be required by the USACE. In accordance with the Division of Water Quality Wetland Rules [15A NCAC 2H .0506 (h)] "Fill or alteration of more than one-tenth of an acre of wetlands will require compensatory mitigation; and fill or alteration of more than 150 linear feet of streams may require compensatory mitigation." The proposed project has avoided and minimized impacts to the wetlands by replacing the bridge in the same location and slightly higher elevation. The shoulder widths for the approach roadway work have been minimized and widened only where guardrail is required.

Rare and Protected Species

Some populations of plants and animals are declining either as a result of natural forces or their difficulty competing with humans for resources. Rare and protected species listed for Bertie County, and any likely impacts to these species as a result of the proposed project construction, are discussed in the following sections.

Federally Protected Species

Species with the federal classification of Endangered, Threatened, or officially Proposed for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). One federally protected species is listed for Bertie County (February 25, 2003 FWS list), and is presented in the following table.

Common Name	Scientific Name	Status	Biological Conclusion
Red-cockaded woodpecker	*Picoides borealis*	E[1]	No Effect

[1]Endangered. The term "Endangered Species" is defined as any species which is in danger of extinction throughout all or a significant portion of its range.

Red-cockaded woodpecker

A few mature loblolly pine trees exist within the project area and adjacent areas. Some of these trees may be old enough to provide suitable nesting and foraging habitat for red-cockaded woodpeckers. However, the trees are widely spaced and occur in scattered locations. The clustered arrangement of pine trees preferred by the birds for nesting colonies is not provided in the vicinity of the project area. In addition, the use of these scattered pines for foraging sites would depend on the birds' crossing large, inhospitable tracts of roadways and agricultural fields. Therefore, although suitable individual trees exist within the project area, the project area as a whole does not offer suitable habitat for the red-cockaded woodpecker. No systematic surveys were conducted for the red-cockaded woodpecker during the field visit. The nearest occurrence of red-cockaded woodpecker documented by the NHP is approximately 4.2 miles to the northeast.

BIOLOGICAL CONCLUSION: NO EFFECT

CONCLUSIONS

It is anticipated that the preferred alternate will only impact 0.6 acres of jurisdictional areas. Permits likely to be required for this project area a Section 404 NWP No. 23 and No. 33 along with their corresponding Section 401 Water Quality Certifications. Cypress-Gum Swamp, a High Quality Resource, occurs within the project area. Essential Fish Habitat and breeding or migration areas for anadromous fish also may occur within the project area. The National Marine Fisheries will be consulted as to the timing of construction activities to minimize impacts to fisheries resources. The N.C. Department of Coastal Management (DCM) will review the project application for consistency with the coastal management program.

Construction of a replacement bridge within the footprint of the existing Bridge No. 11 is recommended to minimize impacts to wetlands, plant communities, and fisheries resources.

VI. CULTURAL RESOURCES

A. Compliance Guidelines

This project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966, as amended, implemented by the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at Title 36 CFR Part 800. Section 106 requires Federal agencies to take into account the effect of their undertakings (federally funded, licensed, or permitted) on properties included in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council a reasonable opportunity to comment on such undertakings.

B. Historic Architecture

The State Historic Preservation Office (SHPO) reviewed the subject project. There are no known architectural or historic sites within the proposed project area. The SHPO concurs that the project is not likely to affect any resources of historical significance (see letter dated January 11, 2001).

C. Archaeology

The State Historic Preservation Office (SHPO) reviewed the subject project. There are no known archaeological sites within the proposed project area, and no archaeological investigation need be conducted (see letter dated January 11, 2001).

VII. GENERAL ENVIRONMENTAL EFFECTS

The project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

The project is considered to be a Federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

The bridge replacement will not have an adverse effect on the quality of the human or natural environment with the use of the current North Carolina Department of Transportation standards and specifications.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from the construction of the project.

No adverse impact on families or communities is anticipated. Right-of-Way acquisition will be limited. No relocatees are expected with implementation of the proposed alternative.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

The proposed project will not require right-of-way acquisition or easement from any land protected under Section 4(f) of the Department of Transportation Act of 1966.

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impact to prime farmland of all land acquisition and construction projects. There are no soils classified as prime, unique, or having state or local importance in the vicinity of the project. Therefore, the project will not involve the direct conversion of farmland acreage within these classifications.

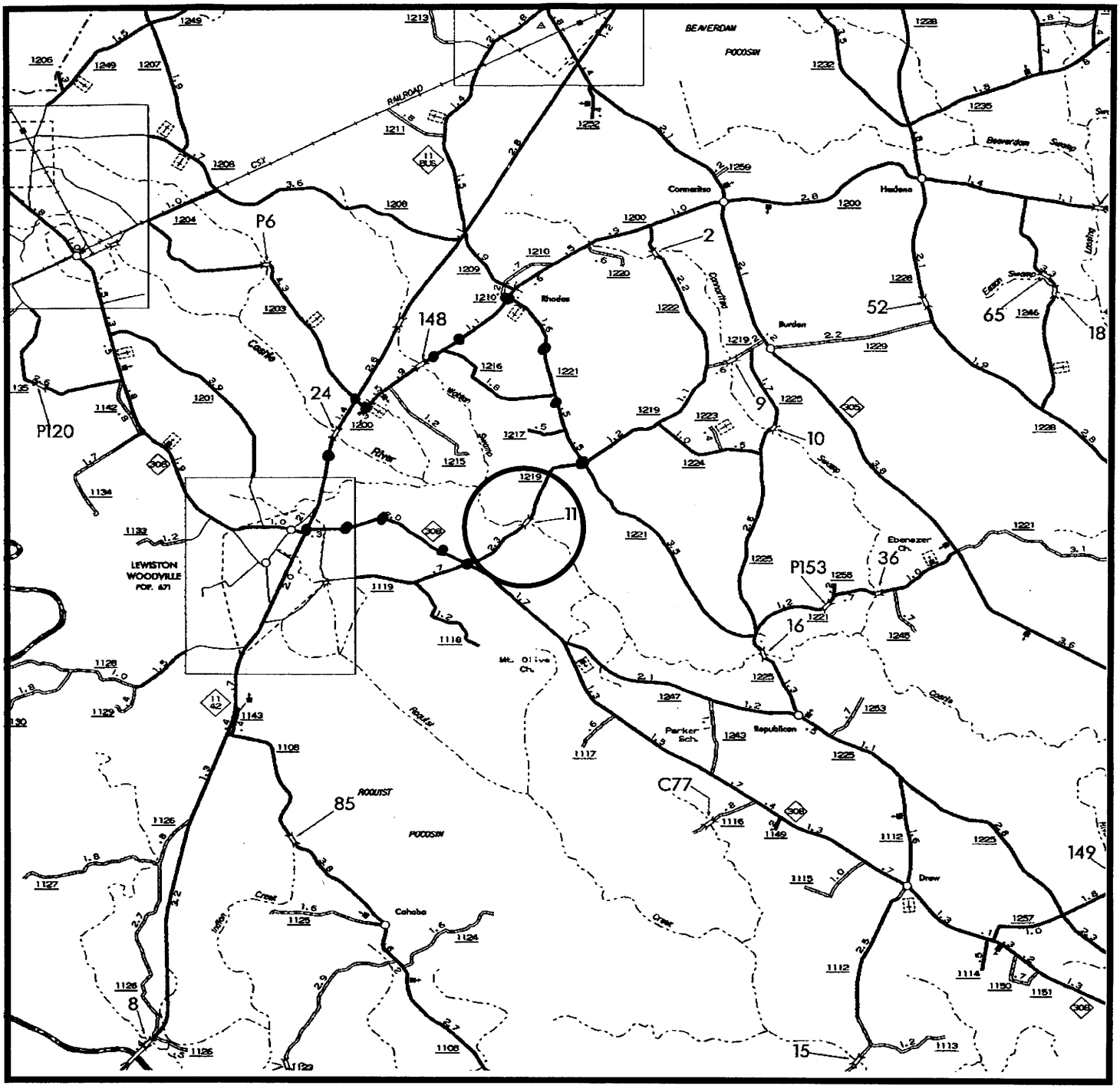
This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required. If vegetation is disposed of by burning, all burning shall be done in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality in compliance with 15 NCAC 2D.0520.

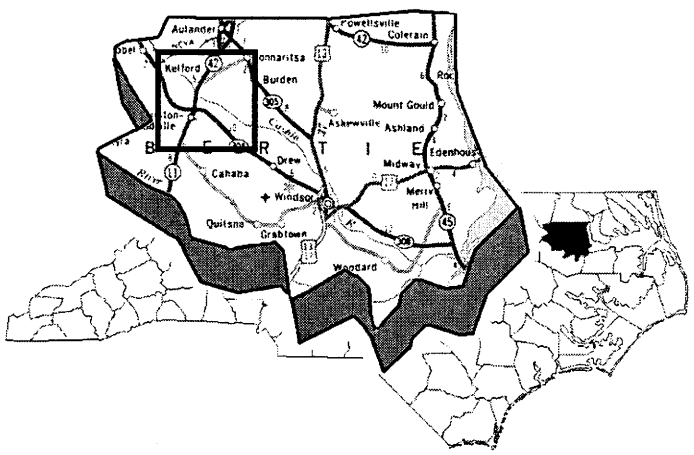
Noise levels could increase during construction but will be temporary. However, the proposed project is not expected to result in permanent noise impacts or substantial noise increases as defined by Title 23, Code of Federal Regulation (CFR), Part 772 or damage air quality as defined by the 1990 Clean Air Act Amendments and the National Environmental Policy Act. No additional reports are required.

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Environmental Management, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no underground storage tanks or hazardous waste sites in the project area.

This crossing of the Cashie River is located in a designated flood hazard zone. However, no detailed flood study has been performed. The approximate 100-year floodplain in the project area is shown in Figure 6. There are no practical alternatives to crossing the floodplain area. Any shift in alignment will result in an impact area of about the same magnitude. The proposed project is not anticipated to increase the level or extent of upstream flood potential.

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project.

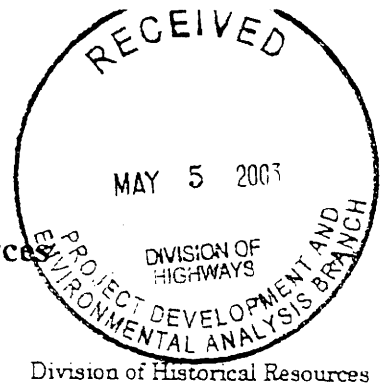




NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH

BERTIE COUNTY
REPLACE BRIDGE NO. 11 ON SR 1219
OVER THE CASHIE RIVER
B-4027

Figure 1



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

Division of Historical Resources
David J. Olson, Director

April 29, 2003

MEMORANDUM

TO: Greg Thorpe, Manager
Project Development and Environmental Analysis Branch
NCDOT Division of Highways

FROM: David Brook

SUBJECT: Replacement of Bridge No. 11 on SR 1219 over Cashie River, B-4027, Bertie County, ER03-0921

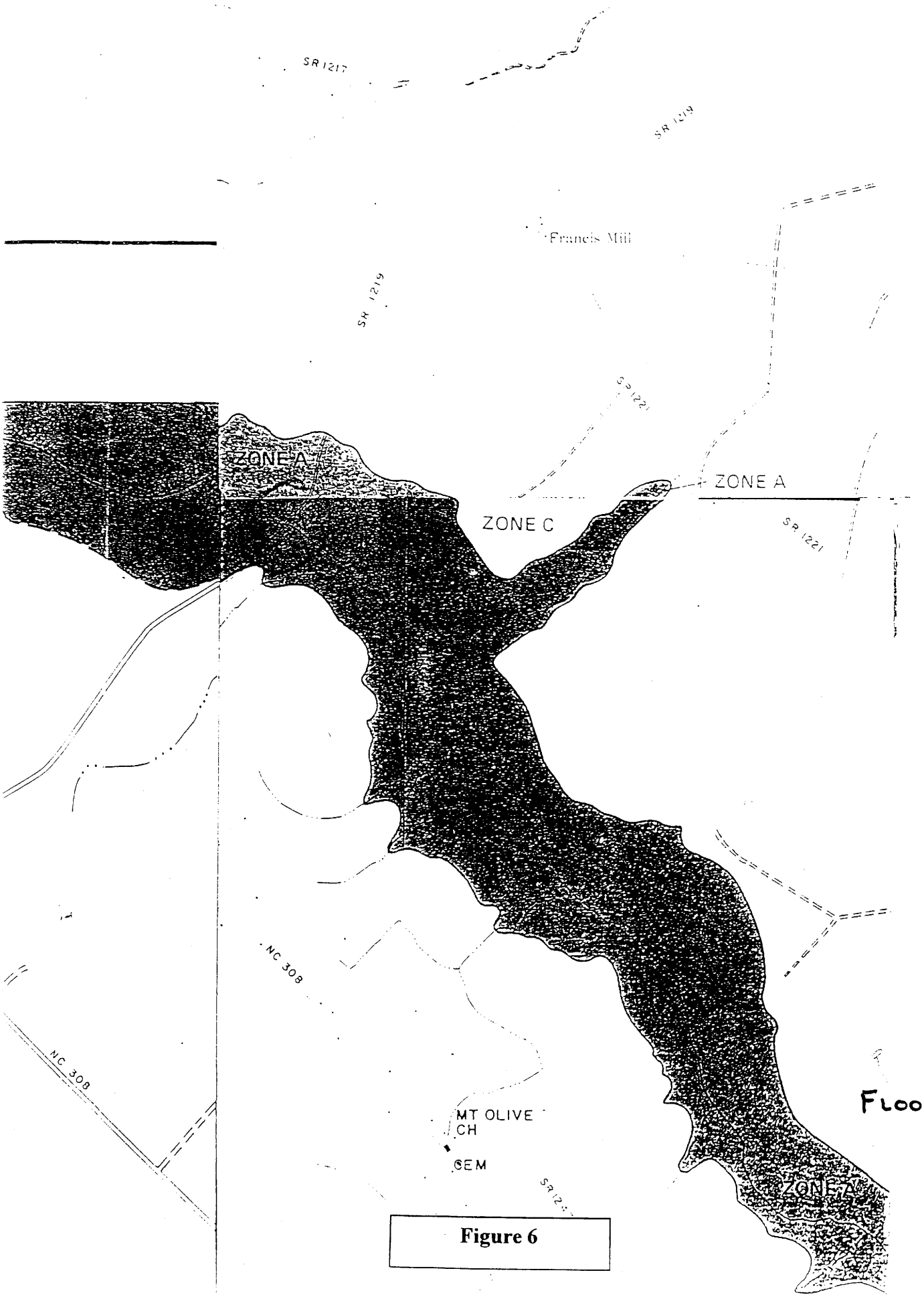
Thank you for your memorandum of April 7, 2003, concerning the above project.

We have conducted a review of the proposed undertaking and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the undertaking as proposed.

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 36 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 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Mary Pope Furr



FLOODPLAIN MAP

Figure 6

Begin Project

Begin Bridge

End Bridge

End Project

SR 1219

Cashie River

N

North Carolina Department of Transportation

Division of Highways

Planning & Environmental Branch

Bertie County
Replace Bridge No. 11 on SR 1219
Over Cashie River
B-4027

Scale 1"=100'

Figure 2

Begin Project

Begin Bridge

End Bridge

End Project

SR 1219

Temporary Detour

Cashie River

N

North Carolina Department of Transportation

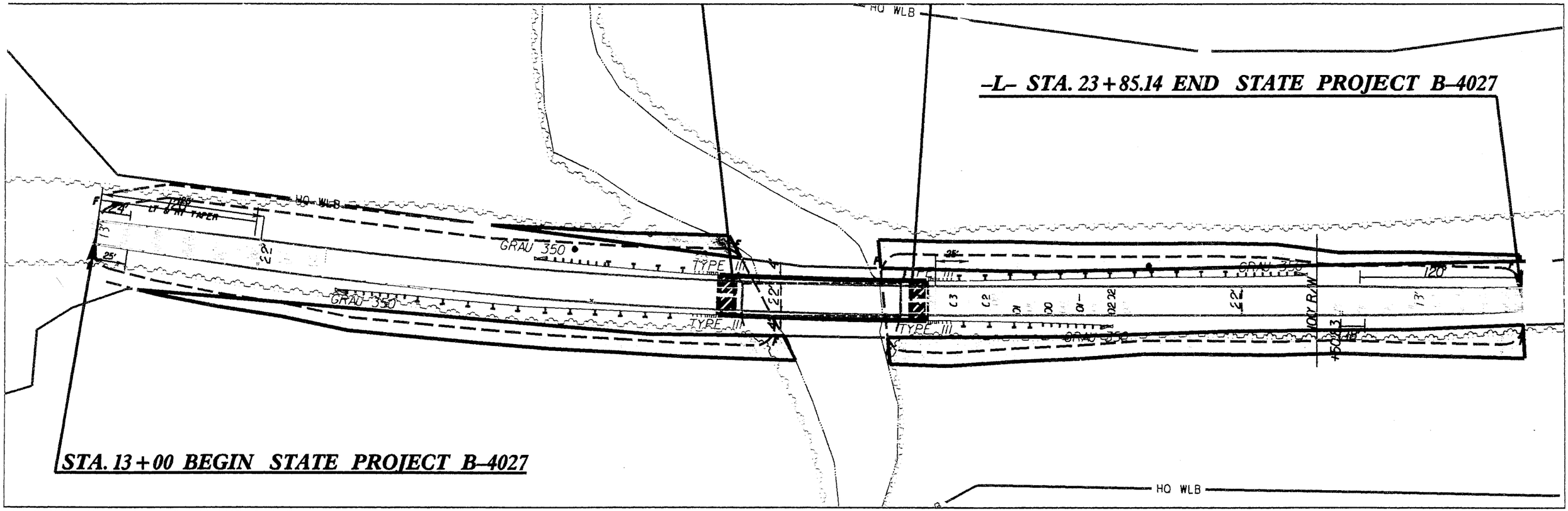
Division of Highways

Planning & Environmental Branch

Bertie County
Replace Bridge No. 11 on SR 1219
Over Cashie River
B-4027

Scale 1"=100'

Figure 3



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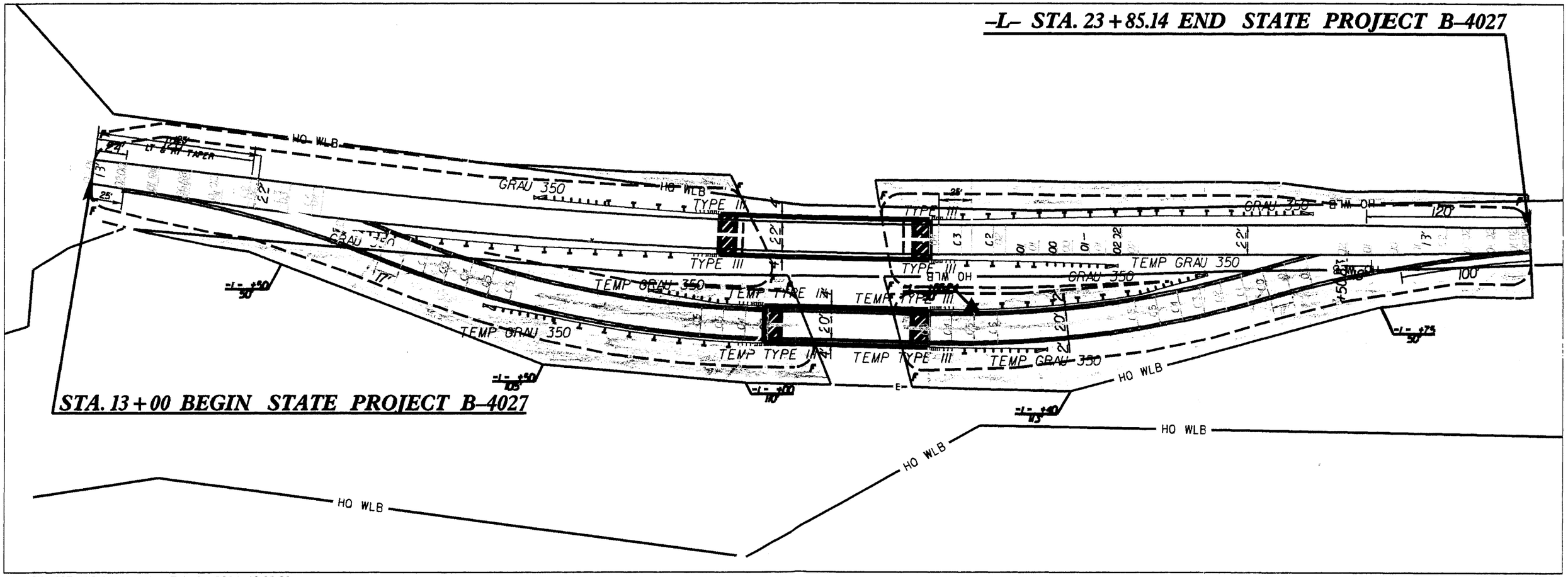
WETLAND IMPACTS

Total = 0.6 acres

North Carolina Department of Transportation
Division of Highways
Planning & Environmental Branch

Bertie County
Replace Bridge No. 11 on SR 1219
Over Cashie River
B-4027

Figure 4



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WETLAND IMPACTS

Total = 1.4 acres

North Carolina Department of Transportation
Division of Highways
Planning & Environmental Branch

Bertie County
Replace Bridge No. 11 on SR 1219
Over Cashie River
B-4027

Figure 5

Ecosystem Enhancement PROGRAM

September 20, 2005

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-4027, Bridge 11 over the Cashie River on SR 1219 (Francis Mill Road), Bertie 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 July 8, 2005, the revised impacts are located in CU 03010205 of the Pasquotank River Basin in the Northern Outer Coastal Plain (NOCP) Eco-Region, and are as follows:

Riverine Wetland Impacts: 0.236 acre

This mitigation acceptance letter replaces the mitigation acceptance letter issued on August 3, 2005. The subject project is not listed in Exhibit 2 of the Memorandum of Agreement among the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, Wilmington District dated July 22, 2003. Mitigation for this project will be provided in accordance with the above referenced agreement. EEP will commit to implementing sufficient compensatory wetland mitigation to offset the impacts associated with this project by the end of the MOA year in which this project is permitted, in accordance with Section X of the Tri-Party MOA.

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

Sincerely,

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-4027 Revised

Ecosystem Enhancement PROGRAM

September 20, 2005

Mr. Bill Biddlecome
U. S. Army Corps of Engineers
Washington Regulatory Field Office
Post Office Box 1000
Washington, North Carolina 27889-1000

Dear Mr. Biddlecome:

Subject: EEP Mitigation Acceptance Letter:

B-4027, Bridge 11 over the Cashie River on SR 1219 (Francis Mill Road), Bertie County; Pasquotank River Basin (CU 03010205); Northern Outer Coastal Plain (NOCP) Eco-Region

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide compensatory riverine wetland mitigation for the unavoidable impacts associated with the above referenced project. The impacts as reported by the NCDOT are 0.236 acre of riverine wetlands. **This mitigation strategy letter replaces the mitigation strategy letter issued on August 12, 2005.**

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, in accordance with Section X of the Tri-Party MOA signed on July 22, 2003. EEP intends to provide compensatory riverine wetland mitigation up to a 2:1 ratio in Cataloging Unit 03010205 of the Pasquotank River Basin. Mitigation sites currently containing surplus mitigation assets consists of, but not inclusive of, the Balance Farm Mitigation Site and the Dismal Swamp Mitigation Site.

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

Sincerely,

James B. Stanfield for

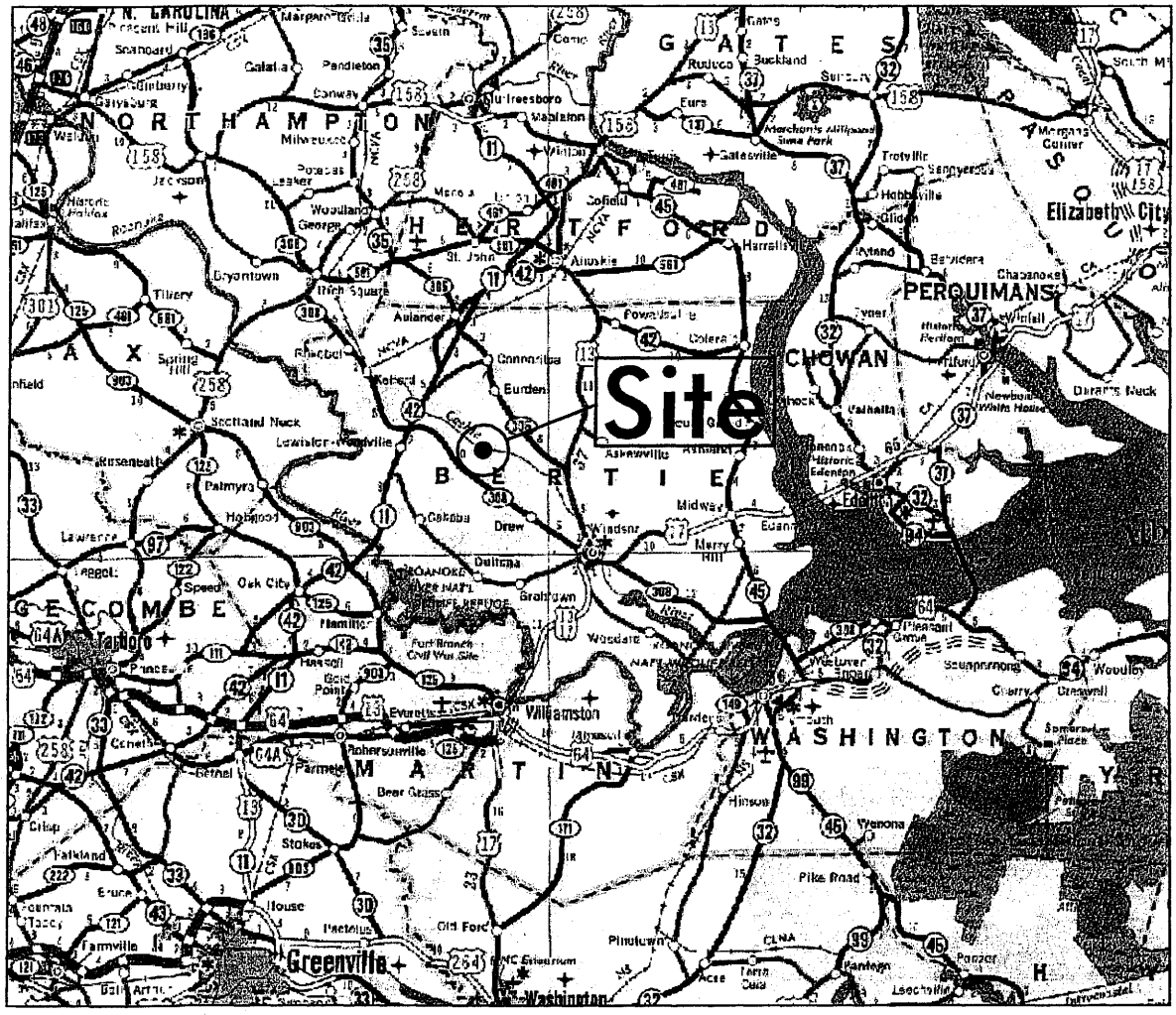
William D. Gilmore, P.E.
EEP Director

cc: Mr. Gregory J. Thorpe, Ph.D., NCDOT-PDEA
Mr. John Hennessy, Division of Water Quality, Wetlands/401 Unit
File: B-4027

Permit Drawings

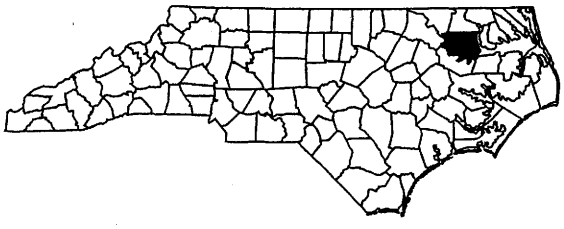
B-4027

Bertie County



VICINITY MAP

NORTH CAROLINA



NCDOT

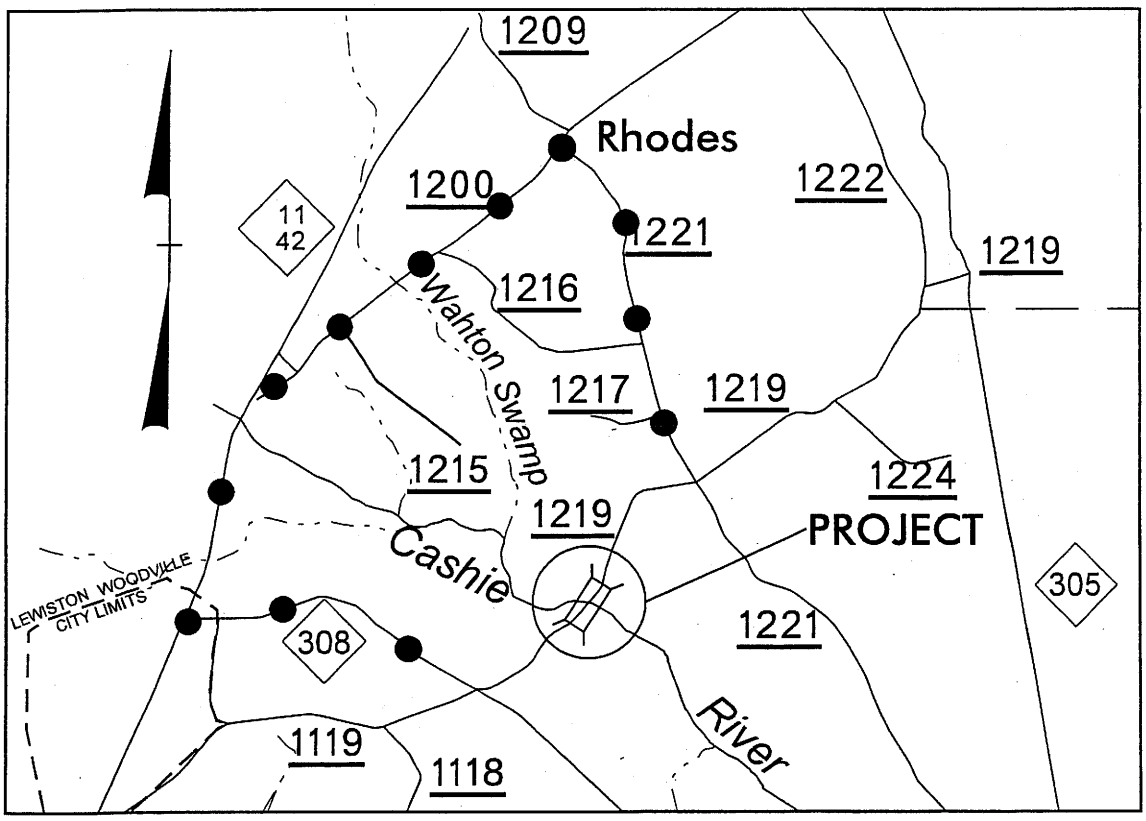
DIVISION OF HIGHWAYS

BERTIE COUNTY

PROJECT: 33594.1.1 (B-4027)

BRIDGE REPLACEMENT
BRIDGE #11 ON SR1219
OVER CASHIE RIVER

SHEET 1 **OF** 10 **3/21/05**



Detour

VICINITY MAP

NCDOT

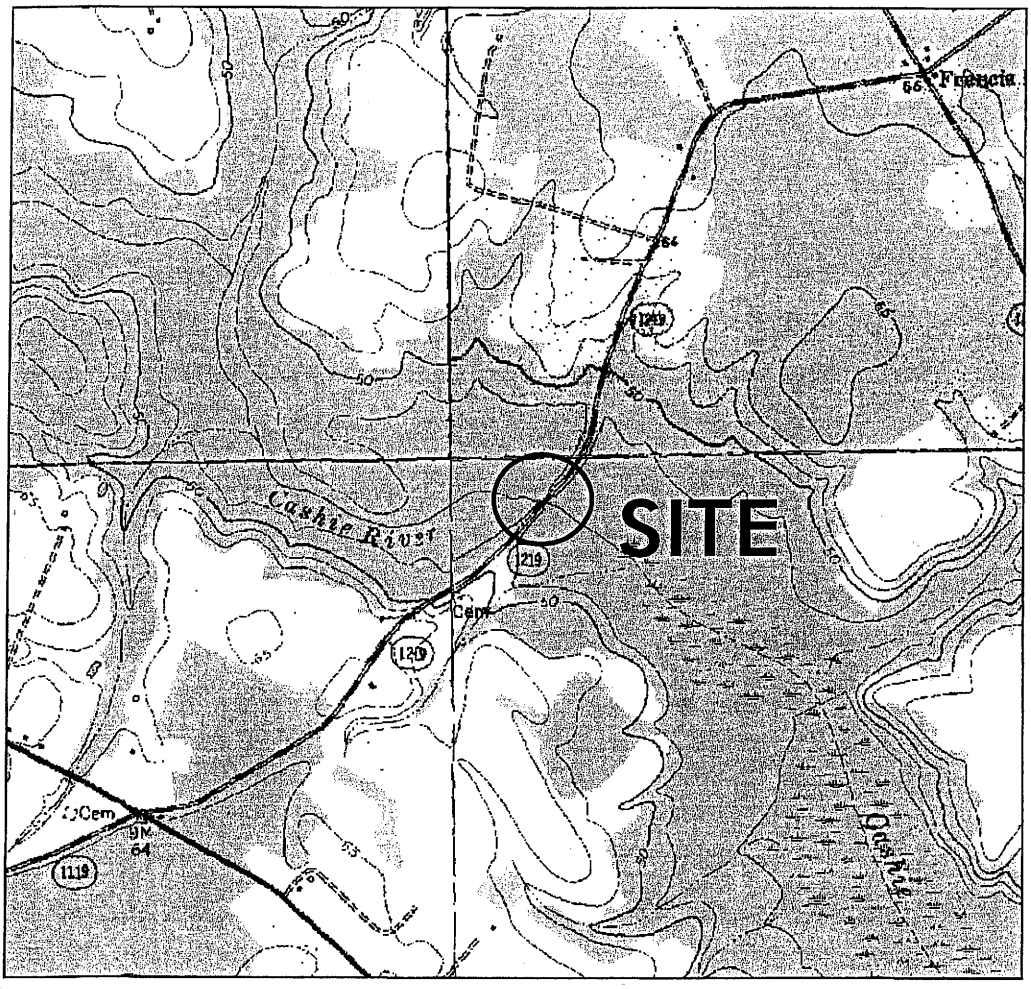
DIVISION OF HIGHWAYS

BERTIE COUNTY

PROJECT: 33394.1.1 (B-4027)

BRIDGE REPLACEMENT
BRIDGE #11 ON SR1219
OVER CASHIE RIVER

SHEET 2 **OF** 16 **3/21/05**



Kelford	Aulander
Woodville	* Republican

Quad Map Layout

*Site

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4027-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 868538.765(ft) EASTING: 2554185.997(ft) VERTICAL DATUM USED IS NAVD 88

1000 0 2000 ft.

SITE MAP

NCDOT

DIVISION OF HIGHWAYS

BERTIE COUNTY

PROJECT: 33394.1.1 (B-4027)

BRIDGE REPLACEMENT
BRIDGE #11 ON SR1219
OVER CASHIE RIVER

SHEET 3 **OF** 10 **3/21/05**

PROJECT REFERENCE NO.	SHEET NO.
B-4027	1-B

7 of 10

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 — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary — HQ WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- 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 — FDW
- False Sump

RAILROADS:

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

RIGHT OF WAY:

- Baseline Control Point
- 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 — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE

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

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 — PH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

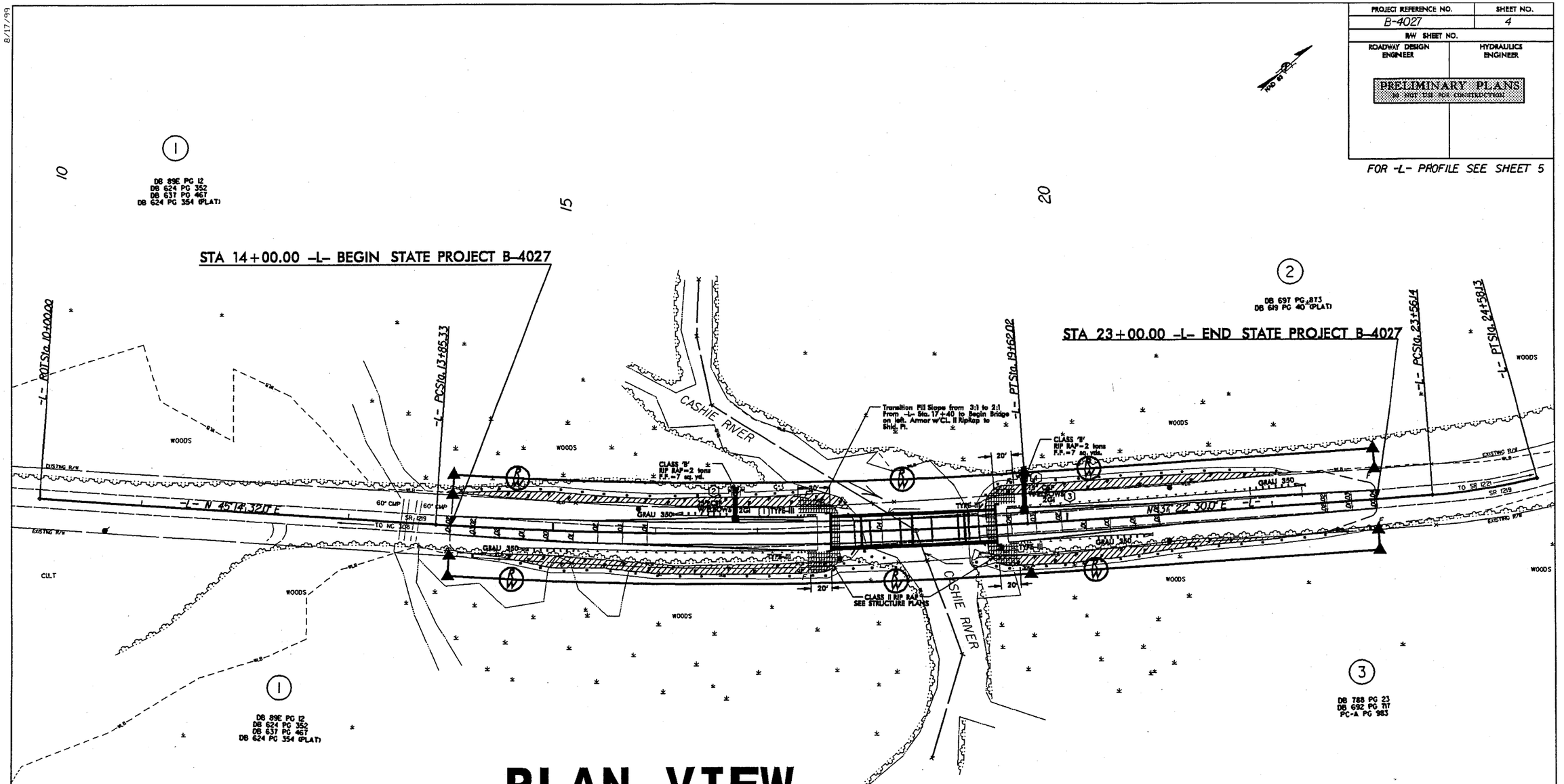
- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4027	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

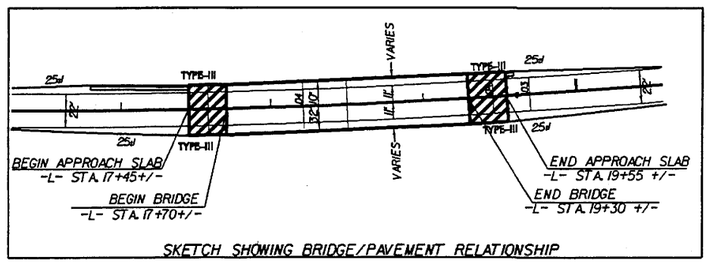
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 5



PLAN VIEW

-L-
PI Sta 16+74.13
Δ = 7° 52' 02.0" (LT)
D = 1° 21' 51.1"
L = 576.70'
T = 288.80'
R = 4,200.00'
SE = .04
RUNOFF = SEE PLANS



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

DENOTES FILL IN WETLANDS

DENOTES HAND CLEARING IN WETLANDS

SHEET 5 OF 10 9/12/05

BRIDGE APPROACH SLAB

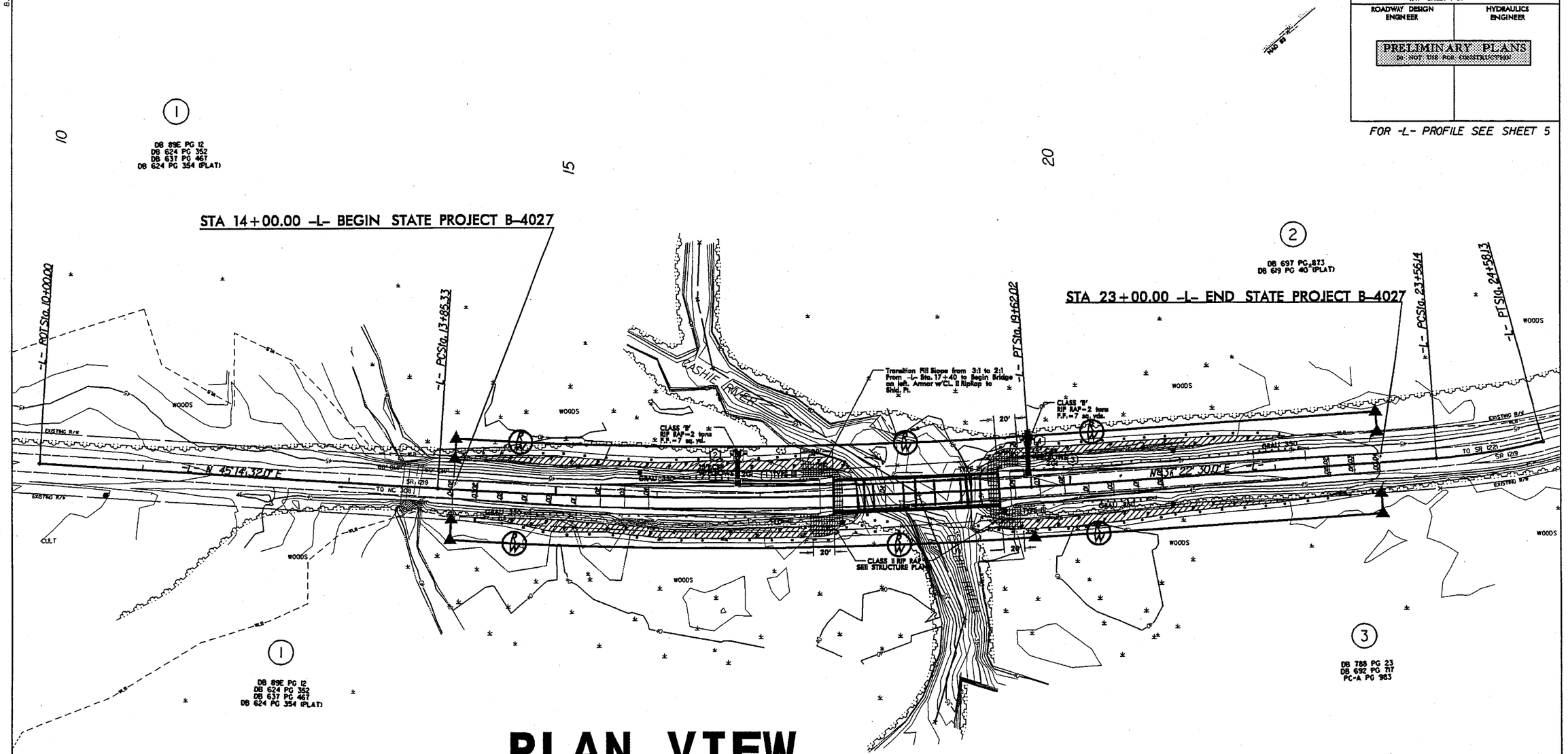
12-SEP-2005 11:16
r:\hydraulics\b4027_hyd_pmt_psh04.dgn
smorgan At H122528

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
B-4027	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

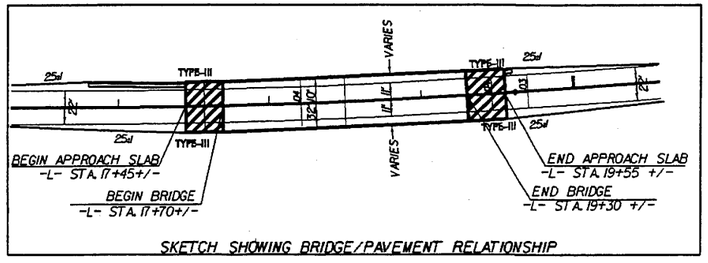
PRELIMINARY PLANS
NOT FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 5



PLAN VIEW

-L-
PI Sta 16+74.13
Δ = 7° 52' 02.0" (LT)
D = 1° 21' 51.1"
L = 576.70'
T = 288.80'
R = 4,200.00'
SE = .04
RUNOFF = SEE PLANS



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

DENOTES FILL IN WETLANDS

DENOTES HAND CLEARING IN WETLANDS

SHEET 6 OF 10 9/12/05

BRIDGE APPROACH SLAB

12-SEP-2005 10:46
r:\hydraulics\b4027_bud_pmt_psh01.dgn
smorgan
AT HY221528

5/14/9

BM6 ELEVATION = 47.51
N 868618 E 2554182
L STATION 10+00
S 57° 06' 14.3" W DIST 137.40
R/R SPIKE IN BASE OF 16" GUM

BM7 ELEVATION = 44.31
N 869866 E 2555206
L STATION 24+58
N 29° 14' 13.7" W Dist 133.69
R/R SPIKE IN BASE OF 16" OAK

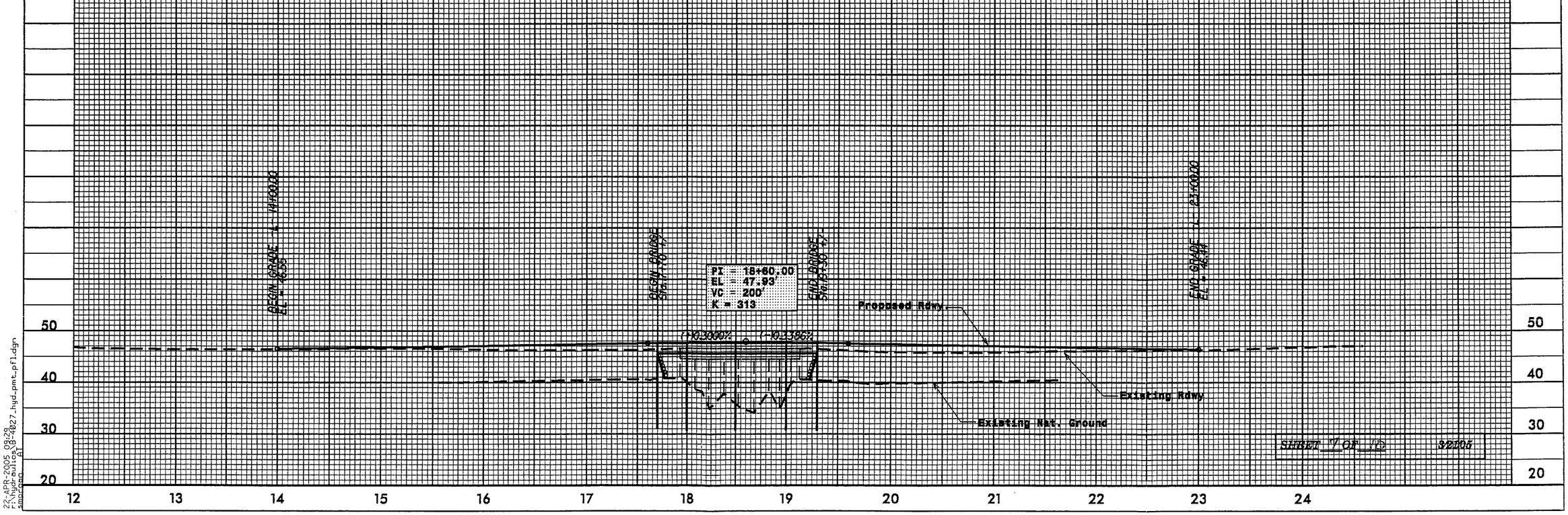
B-4027	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STRUCTURE HYDRAULIC DATA	
DESIGN DISCHARGE	= 2400 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 45.0 FT
BASE DISCHARGE	= 3600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 46.6 FT
OVERTOPPING DISCHARGE	= 5300 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 47.7 FT

—L—

PROFILE VIEW

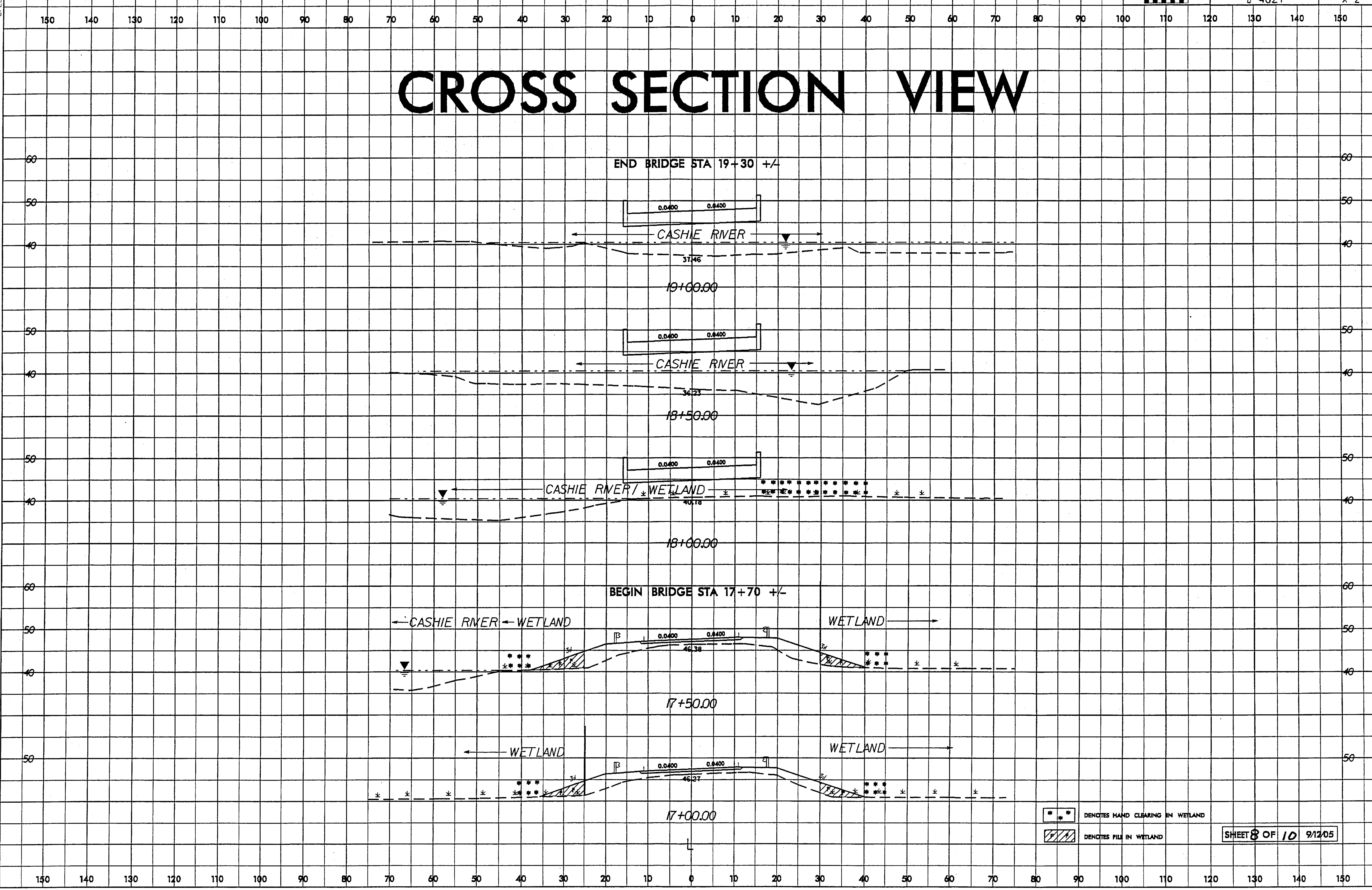


SHEET 7 OF 15 32105

22-APR-2005 09:29
r:\hydraulics\b-4027_hyd_pmt_pf1.dgn
smullen

PROJ. REFERENCE NO.	SHEET NO.
B-4027	X-2

CROSS SECTION VIEW



SHEET 8 OF 10 9/12/05

8/23/99

12-SEP-2005 11:24
r:\hydraulics\B4027_rdy_L_xpl_permit.dgn
smorgan AT HY221528

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAME	ADDRESS
1	Katherine O. Jernigan	414 N. Curtis Street Ahoskie NC 27910
2	James C. Doughtie, Jr	329 Francis Mill Road Aulander NC 27805
3	Plum Creek Timberlands, L.P.	987 Griswoldville Road Macon GA

NCDOT

DIVISION OF HIGHWAYS

BERTIE COUNTY

PROJECT: 33394.1.1 (B-4027)

BRIDGE REPLACEMENT
BRIDGE #11 ON SR1219
OVER CASHIE RIVER

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS			
			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)	Natural Stream Design (ft)
	13+93/23+00	160' BRIDGE	0.236				0.194				
TOTALS:			0.236				0.194				

JMD Revised 2/03/05

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BERTIE COUNTY
WBS - 33394.1.1 (B-4027)

SHEET 10 of 10 9/12/2005

Roadway Plans

B-4027

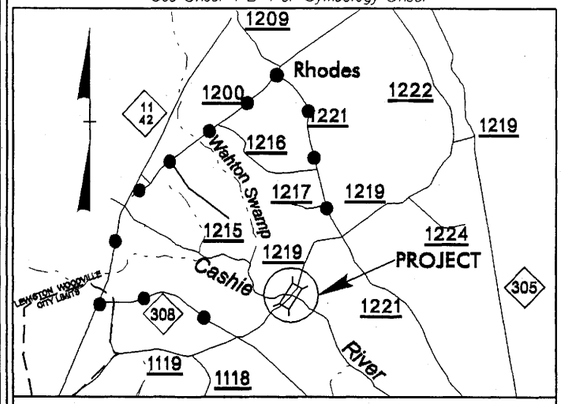
Bertie County

09/08/95

TIP PROJECT: B-4027

CONTRACT: C201441

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology Sheet



VICINITY MAP

Detour

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4027	1	

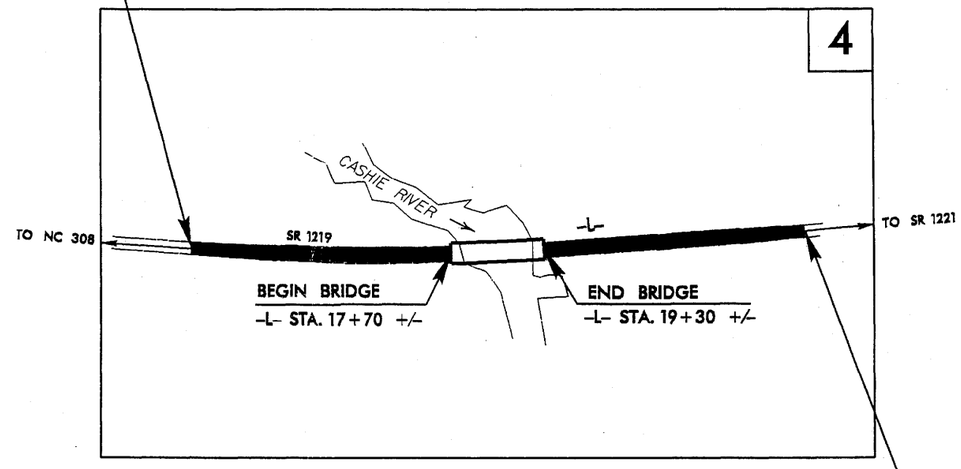
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33394.1.1	BRZ-1219(1)	PE
33394.2.1	BRZ-1219(1)	R/W, UTILI
33394.3.1	BRZ-1219(1)	CONST.

LOCATION: BRIDGE NO. 11 OVER CASHIE RIVER ON SR 1219

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

NAD 83

STA 14+00.00 -L- BEGIN TIP PROJECT B-4027



STA 23+00.00 -L- END TIP PROJECT B-4027

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2006 = 687
ADT 2026 = 1122
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% DUAL 2%
FUNC CLASS = Rural Local

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4027	=	0.140
LENGTH STRUCTURE TIP PROJECT B-4027	=	0.030
TOTAL LENGTH TIP PROJECT B-4027	=	0.170

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 24, 2005

LETTING DATE: FEBRUARY 21, 2006

BRENDA MOORE, PE
PROJECT ENGINEER

REKHA PATEL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR *DATE*

25-MAY-2005 11:34
R:\Roadway\Proj\B-4027_rdy_tsh.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
B-4027	1-B

Note: Not to Scale

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

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- Proposed Wetland Boundary — WLB
- Existing High Quality Wetland Boundary — HQ WLB
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- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

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- Foundation
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- Building
- School
- Church
- Dam

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- 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
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- 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
- Proposed Control of Access
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE

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 — S

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 — P
- Designated U/G Power Line (S.U.E.*) — P

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 — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

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

TV:

- TV Satellite Dish
- TV Pedestal — T
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
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GAS:

- Gas Valve
- Gas Meter — G
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- Designated U/G Gas Line (S.U.E.*) — G
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SANITARY SEWER:

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

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — P/U/L
- 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.

PROJECT REFERENCE NO.	SHEET NO.
B-4027	1C
LOCATION AND SURVEYS	

SURVEY CONTROL SHEET B-4027

CONTROL DATA

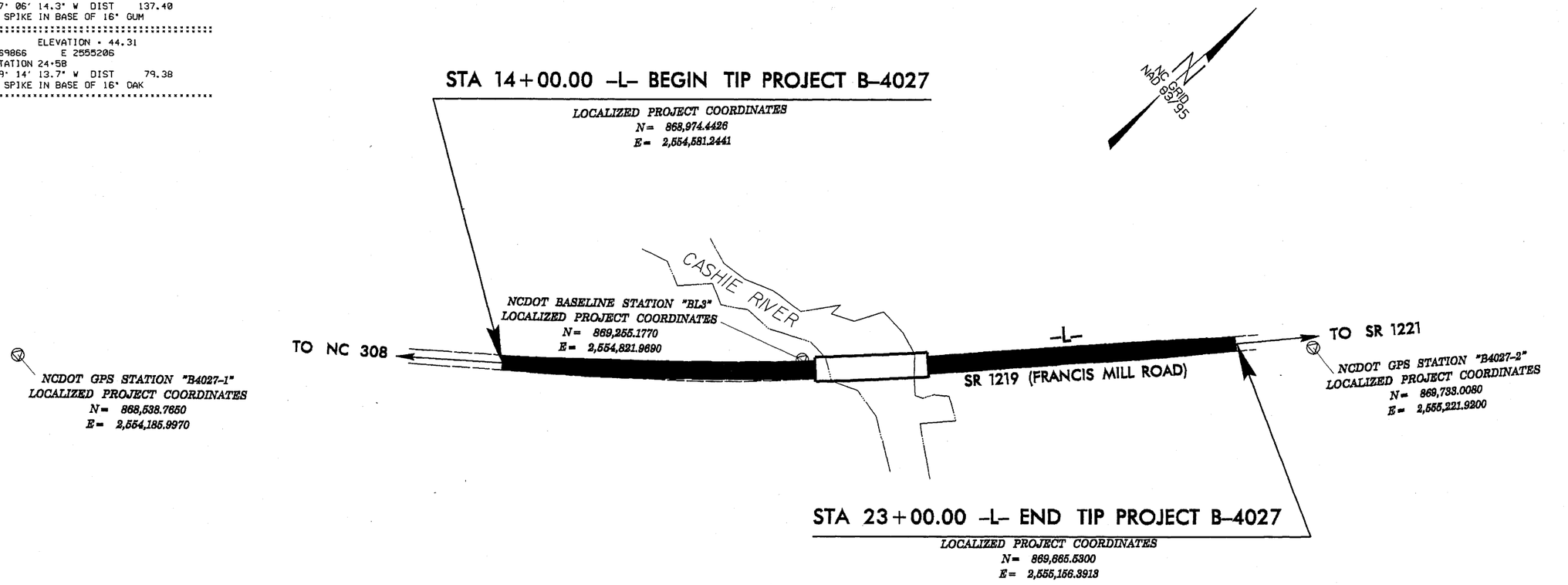
BL

POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
BL1	GPS B4027-1	868538.7650	2554185.9970	48.60	OUTSIDE PROJECT LIMITS	
BL3	BL-3	869255.1770	2554821.9690	45.28	17+70.27	12.30 LT
BL2	GPS B4027-2	869733.0080	2555221.9200	46.07	23+92.61	12.35 RT

BENCHMARK DATA

BM6 ELEVATION = 47.51
N 868618 E 2554182
L STATION 10+00
S 57° 06' 14.3" W DIST 137.40
R/R SPIKE IN BASE OF 16" GUM

BM7 ELEVATION = 44.31
N 869866 E 2555206
L STATION 24+58
N 29° 14' 13.7" W DIST 79.38
R/R SPIKE IN BASE OF 16" OAK



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4027-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 868538.765(ft) EASTING: 2554185.997(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99999200
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4027-1" TO -L- STATION 14+00.00 IS
N 42° 12' 51.6" E 588.2476 ft
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING HTTP:\WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT

FILE: b4027_ls_control_040922.txt

SITE CALIBRATION PARAMETERS HAVE NOT BEEN DETERMINED FOR THIS PROJECT.
IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

△ 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 FOR GPS "B4027-1" ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

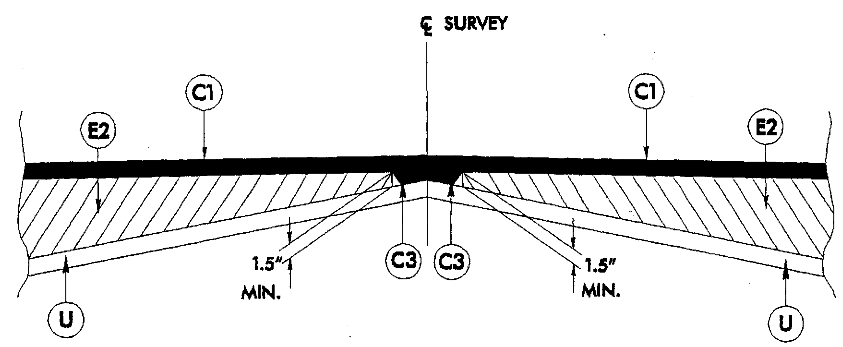
NOTE: DRAWING NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4027	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

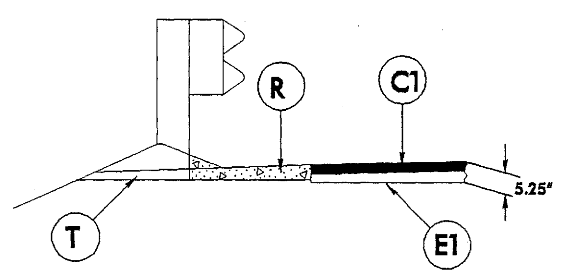
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1¼" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2½" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. 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 LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R	SHOULDER BERM GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL).

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



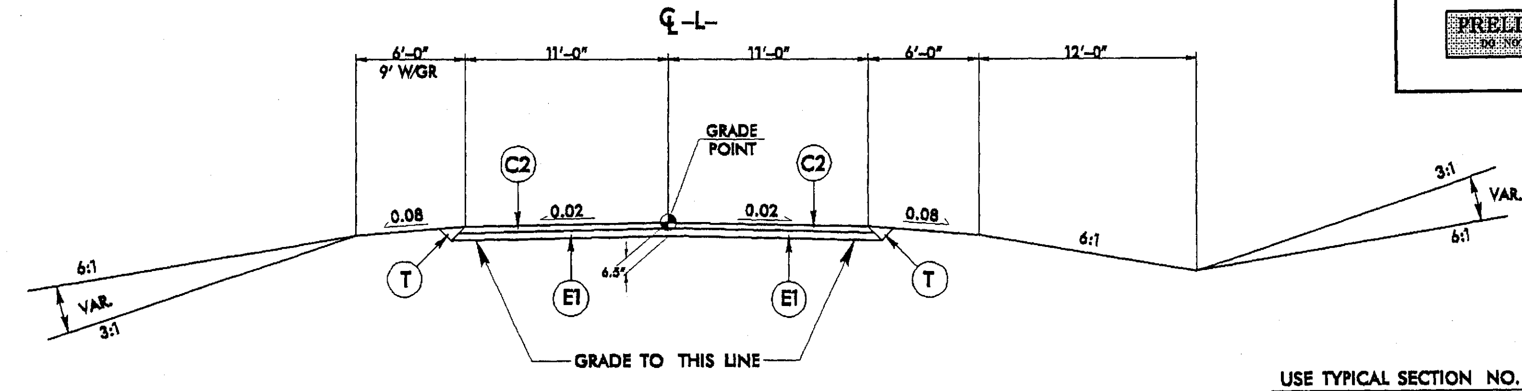
Wedging Detail



SHOULDER BERM GUTTER DETAIL

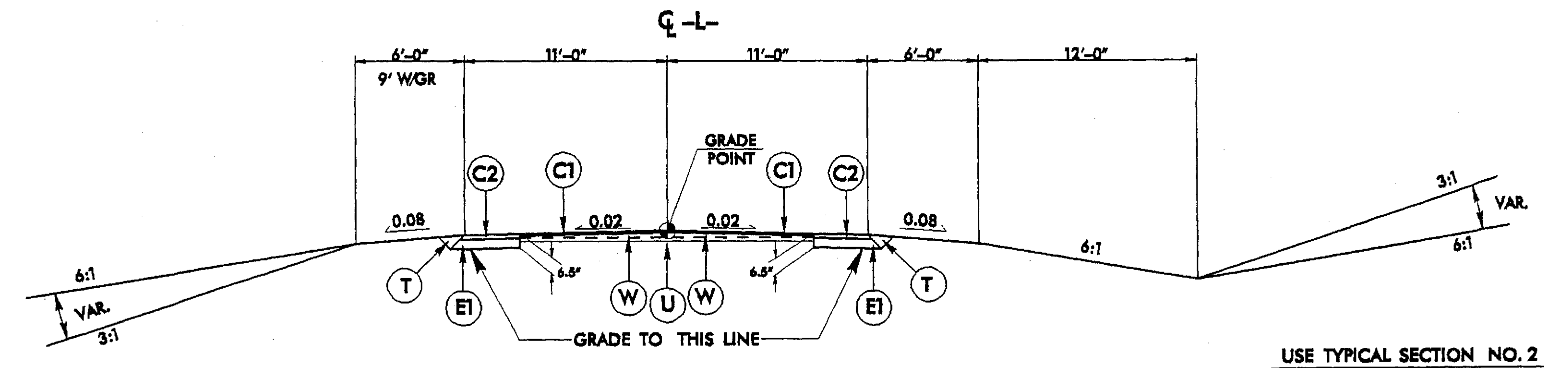
USE SHOULDER BERM GUTTER

-L- STA. 16+80.00 TO -L- STA. 17+45.00 (LT.)
-L- STA. 19+55.00 TO -L- STA. 19+60.67 (LT.)



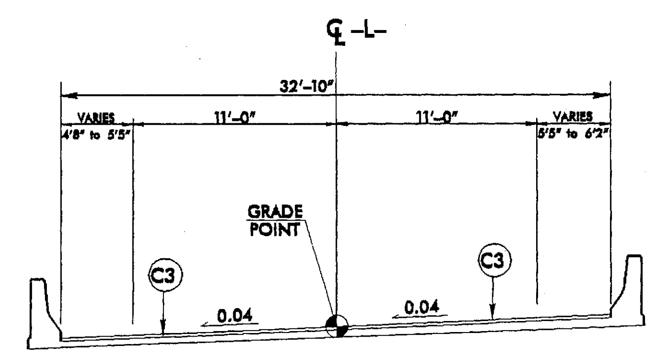
TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1
-L- STA 16+50.00 TO 17+70 +/- (BEGIN BRIDGE)
-L- STA 19+30 +/- (END BRIDGE) TO 21+00.00



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-L- STA 14+00.00 TO 16+50.00
-L- STA 21+00.00 TO 23+00.00



TYPICAL SECTION NO. 3

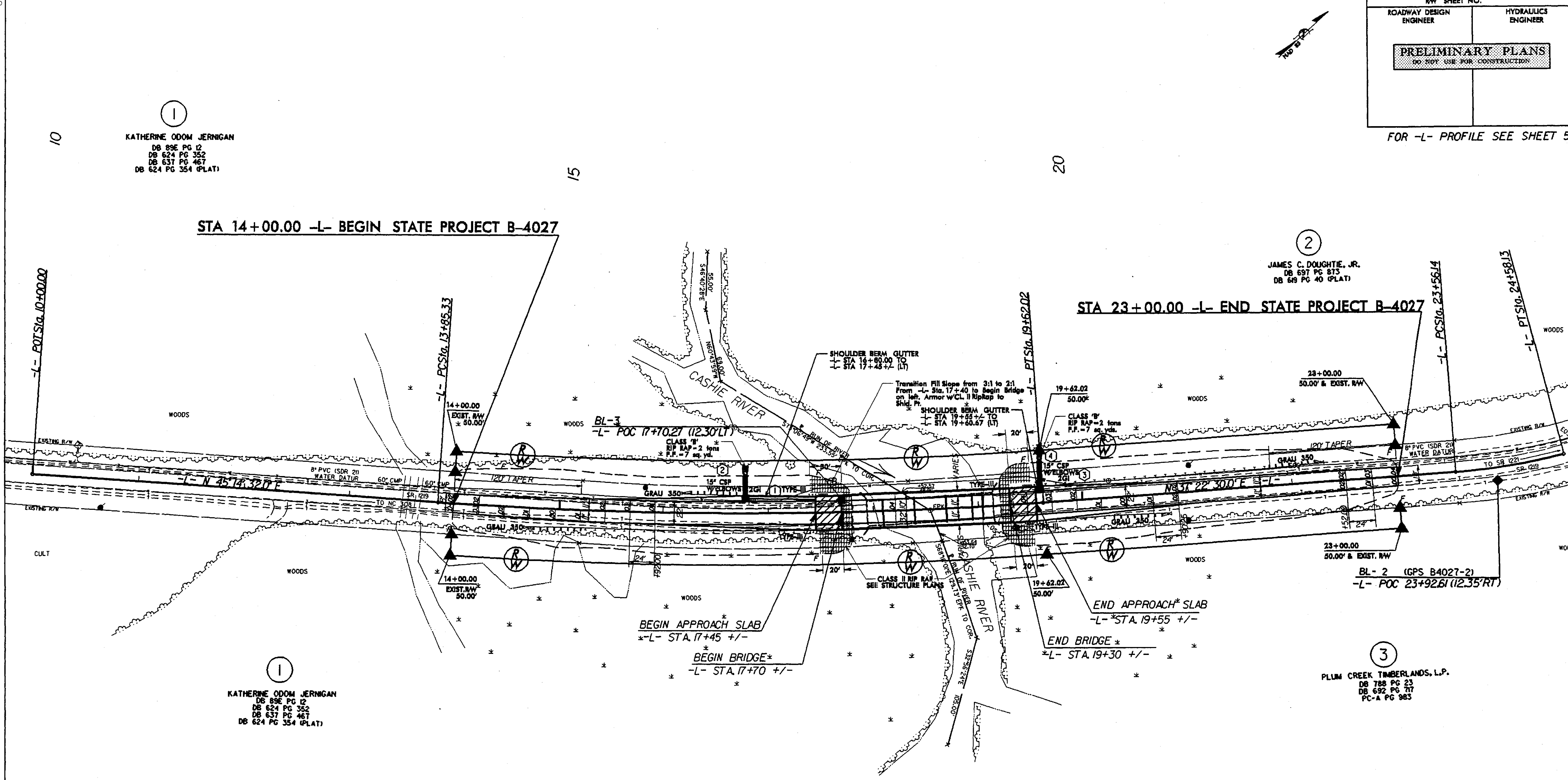
USE TYPICAL SECTION NO. 3
-L- STA 17+70 +/- TO 19+30 +/-

25-MAY-2005 11:34
b-4027_rdy_typ.dgn

PROJECT REFERENCE NO.	SHEET NO.
B-4027	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

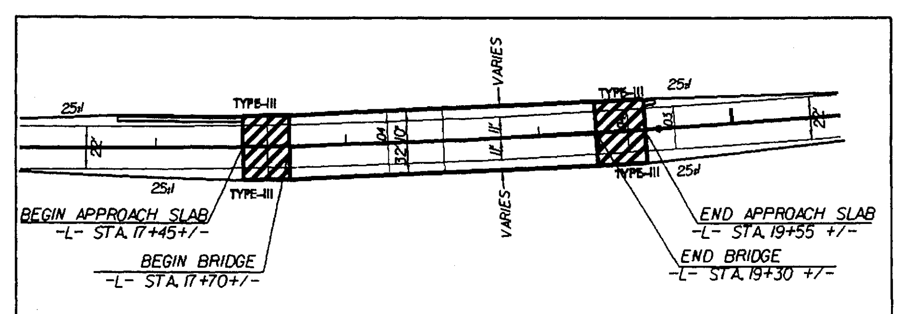
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

FOR -L- PROFILE SEE SHEET 5



STA 14+00.00 -L- BEGIN STATE PROJECT B-4027
STA 23+00.00 -L- END STATE PROJECT B-4027
KATHERINE ODOM JERNIGAN
DB 89E PG 12
DB 624 PG 352
DB 637 PG 467
DB 624 PG 354 (PLAT)
JAMES C. DOUGHTIE, JR.
DB 697 PG 873
DB 619 PG 40 (PLAT)
PLUM CREEK TIMBERLANDS, L.P.
DB 788 PG 23
DB 692 PG 717
PC-A PG 983
-L- POT Sta. 10+00.00
-L- PC Sta. 13+85.33
-L- PT Sta. 19+62.02
-L- PC Sta. 23+56.14
-L- PT Sta. 24+58.13
CASHIE RIVER
BL-3
-L- POC 17+70.27 (12.30' LT)
BL- 2 (GPS B4027-2)
-L- POC 23+92.61 (12.35' RT)
-L- N 45°14' 32.0" E
N 53° 22' 30.0" E -L-
120' TAPER
WOODS
CULT
14+00.00
EXIST. R/W
50.00'
19+62.02
50.00'
23+00.00
50.00' & EXIST. R/W
SHOULDER BERM GUTTER
CLASS II RIP RAP SEE STRUCTURE PLANS
BEGIN APPROACH SLAB
-L- STA. 17+45 +/-
BEGIN BRIDGE
-L- STA. 17+70 +/-
END BRIDGE
-L- STA. 19+30 +/-
END APPROACH SLAB
-L- STA. 19+55 +/-

-L-
PI Sta 16+74.13
Δ = 7° 52' 02.0" (LT)
D = 1° 21' 51.1"
L = 576.70'
T = 288.80'
R = 4,200.00'
SE = .04
RUNOFF = SEE PLANS



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP

BRIDGE APPROACH SLAB

8/17/99

25-MAY-2005 11:34
b4027_rdy_psh04.dgn

BM6 ELEVATION = 47.51
N 868618 E 2554182
L STATION 10+00
S 57° 06' 14.3" W DIST 137.40
R/R SPIKE IN BASE OF 16" GUM

BM7 ELEVATION = 44.31
N 869866 E 2555206
L STATION 24+58
N 29° 14' 13.7" W Dist 133.69
R/R SPIKE IN BASE OF 16" OAK

PROJECT REFERENCE NO.	SHEET NO.
B-4027	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 2400 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 45.0 FT
BASE DISCHARGE	= 3600 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 46.6 FT
OVERTOPPING DISCHARGE	= 5300 CFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 47.7 FT

— L —

DESIGN GRADE
EL = 46.55
L = 1400.00

BEGIN BRIDGE
Sta 17+10.17

PI = 18+60.00
EL = 47.93'
VC = 200'
K = 313

END BRIDGE
Sta 19+99.17

END GRADE
EL = 46.44
23+00.00

(+)0.3000% (-)0.3386%

50
40
30
20

12 13 14 15 16 17 18 19 20 21 22 23 24

5.14.9

25-MAY-2006 11:34
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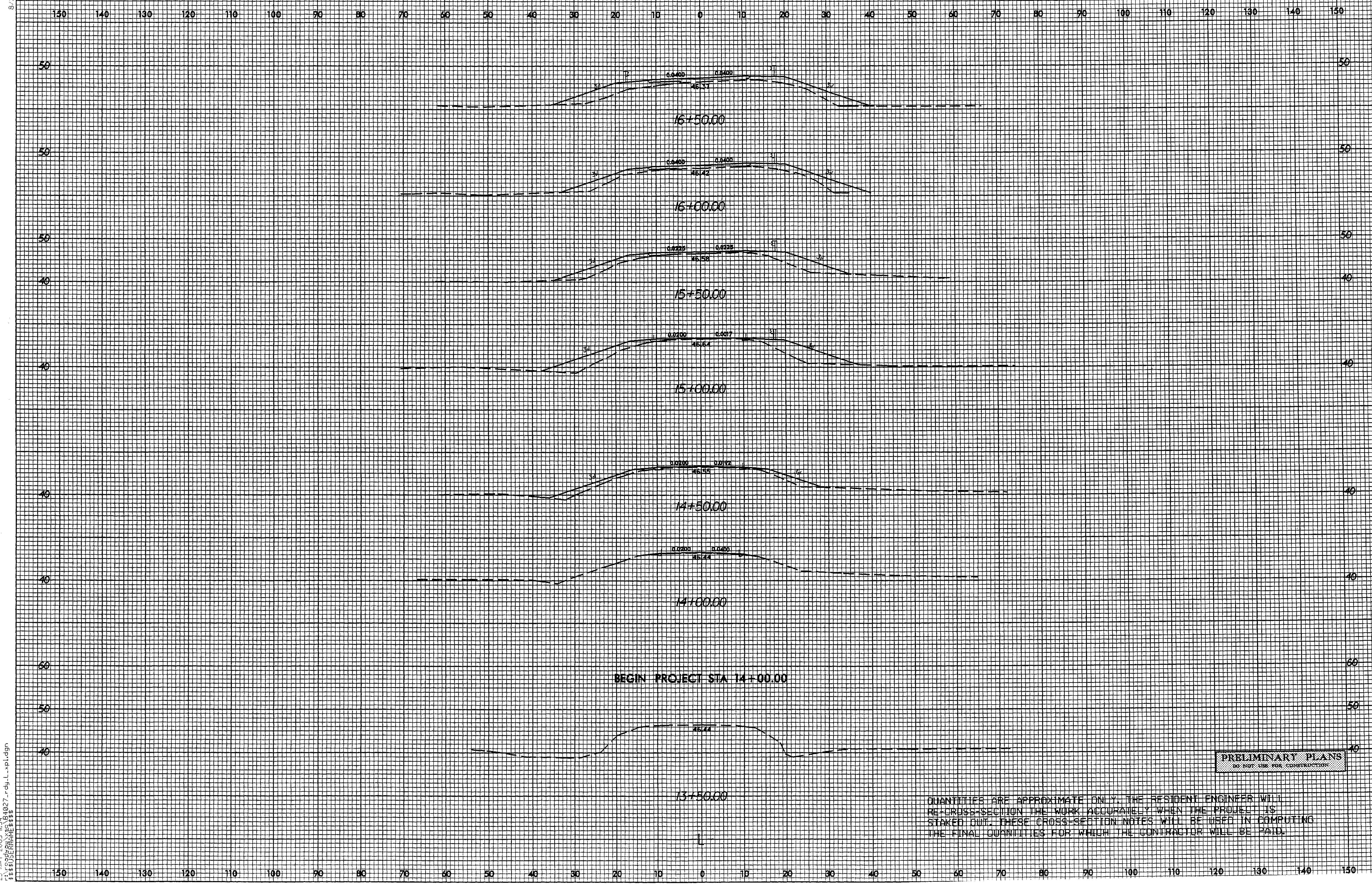
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
B-4027	X-1



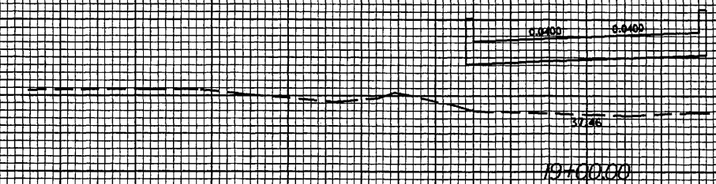
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

QUANTITIES ARE APPROXIMATE ONLY. THE RESIDENT ENGINEER WILL RE-CROSS-SECTION THE WORK ACCURATELY WHEN THE PROJECT IS STAKED OUT. THESE CROSS-SECTION NOTES WILL BE USED IN COMPUTING THE FINAL QUANTITIES FOR WHICH THE CONTRACTOR WILL BE PAID.

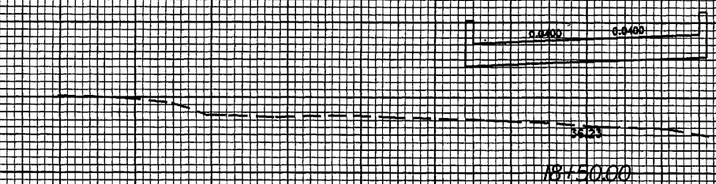
8/23/99

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4027	X-2

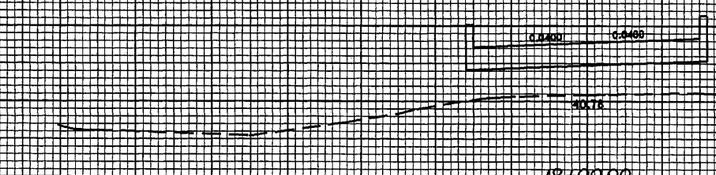
END BRIDGE STA 19+30 +/-



19+00.00

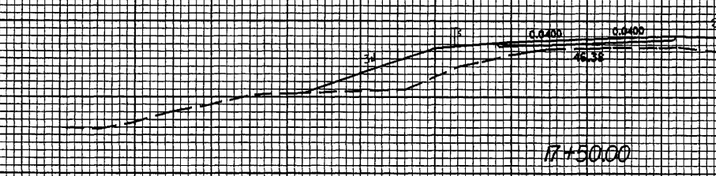


18+50.00

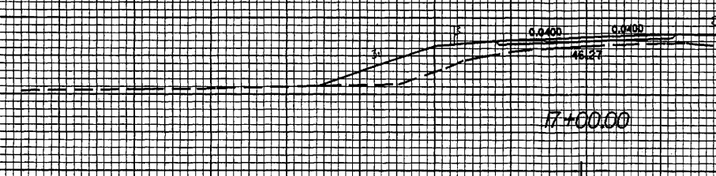


18+00.00

BEGIN BRIDGE STA 17+70 +/-



17+50.00

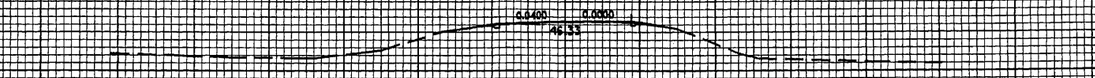


17+00.00

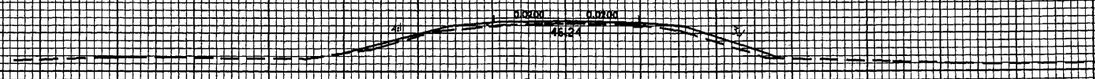
25-MAY-2005 11:34
$$$$USERNAME$$$$
d:\roadway\xsgs\B4027_rdy_L_xpl.dgn

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4027	X-3

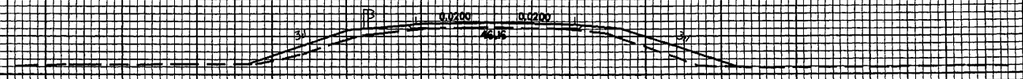
END PROJECT STA 23+00.00



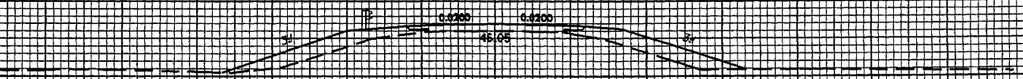
23+00.00



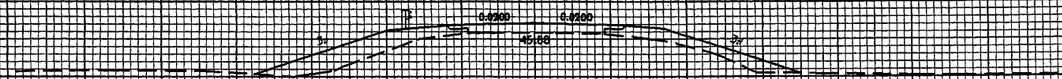
22+50.00



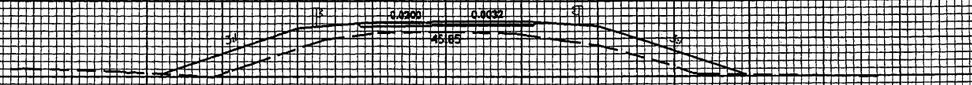
22+00.00



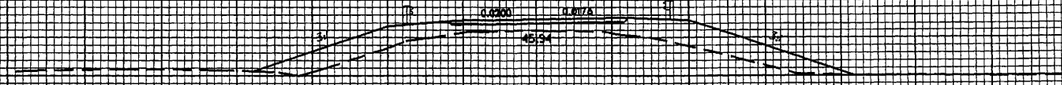
21+50.00



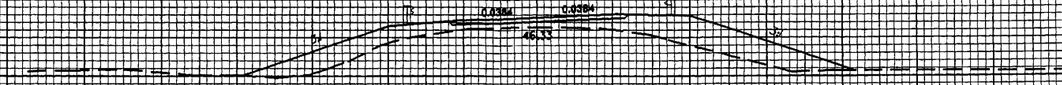
21+00.00



20+50.00



20+00.00



19+50.00

L

8/23/9

PROJ. REFERENCE NO. B-4027

SHEET NO. X-4

45.54

23+50.00

Utility Plans

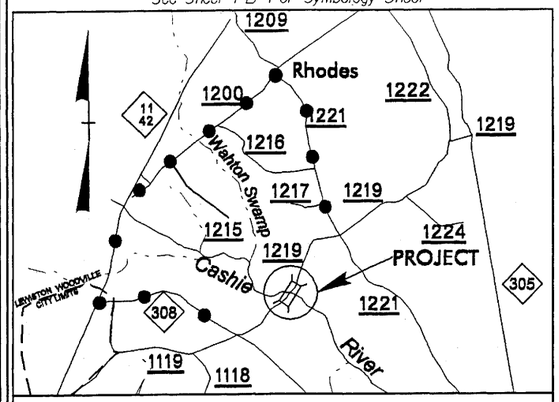
B-4027

Bertie County

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOT.AL SHEETS
N.C.	B-4027	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
33394.1.1	BRZ-1219(1)	PE
33394.2.1	BRZ-1219(1)	R/W, UTILI
33394.3.1	BRZ-1219(1)	CONST.

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology Sheet



VICINITY MAP

Detour

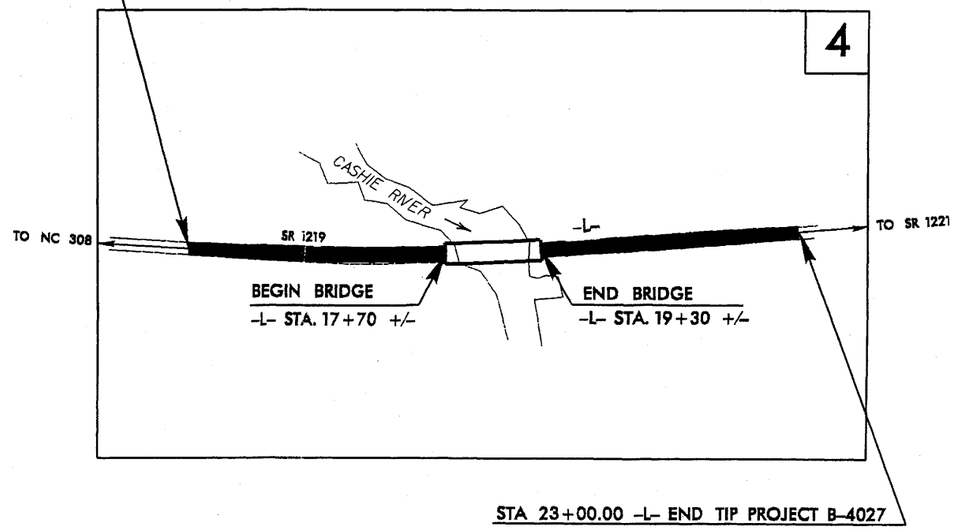
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BERTIE COUNTY

LOCATION: BRIDGE NO. 11 OVER CASHIE RIVER ON SR 1219

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

STA 14+00.00 -L- BEGIN TIP PROJECT B-4027



STA 23+00.00 -L- END TIP PROJECT B-4027

TIP PROJECT: B-4027

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

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2006 = 687
ADT 2026 = 1122
DHV = 10 %
D = 60 %
T = 3 % *
V = 60 MPH
* TTST 1% DUAL 2%
FUNC CLASS = Rural Local

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4027	=	0.140
LENGTH STRUCTURE TIP PROJECT B-4027	=	0.030
TOTAL LENGTH TIP PROJECT B-4027	=	0.170

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 24, 2005

LETTING DATE: FEBRUARY 21, 2006

BRENDA MOORE, PE
PROJECT ENGINEER

REKHA PATEL, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

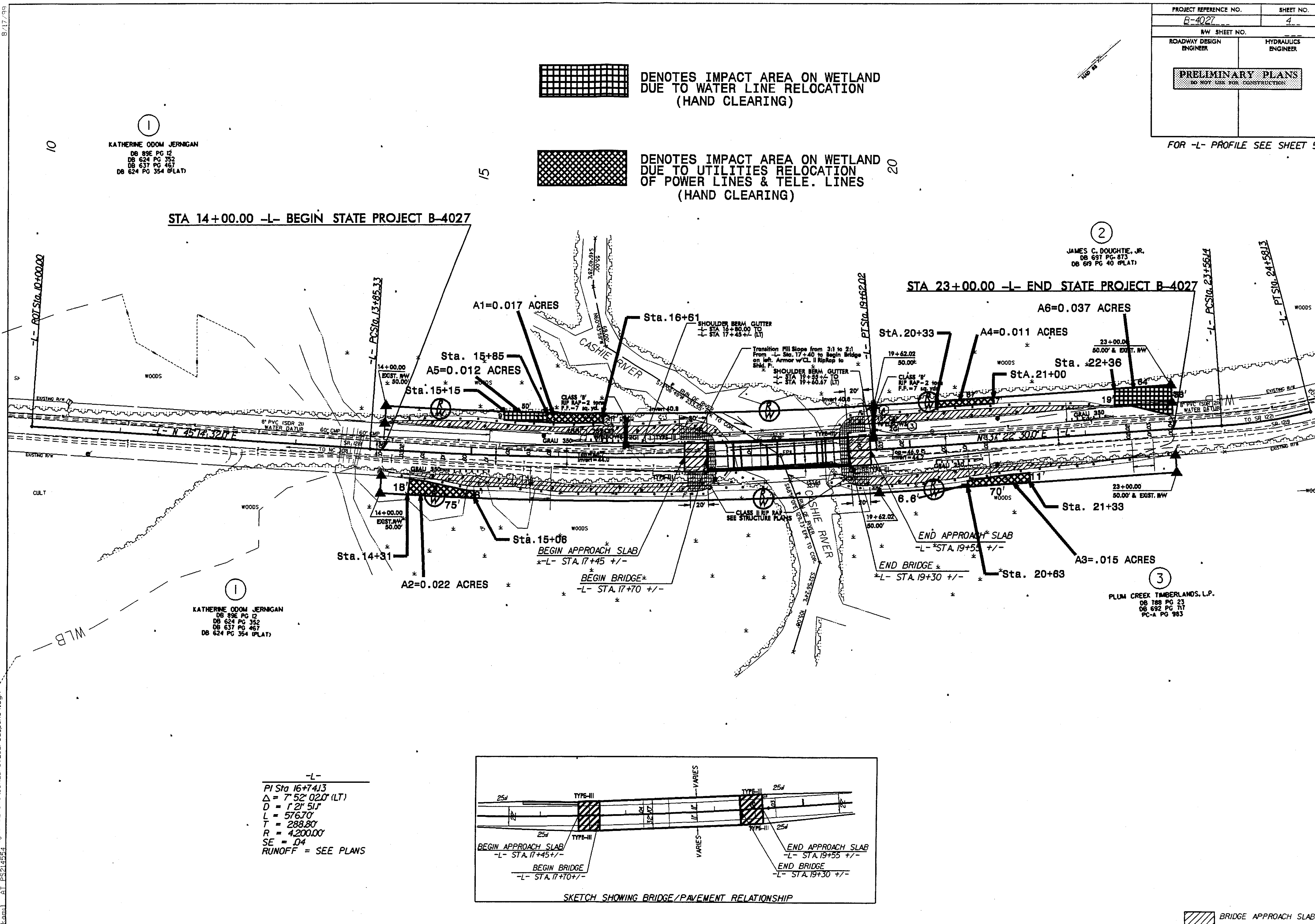
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

16-SEP-2005 11:10
r:\utilities\roadway\proj\b-4027_rdy_tsh.dgn
kkamill AI PS24554



PROJECT REFERENCE NO.
SHEET NO.
B-4027
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
FOR -L- PROFILE SEE SHEET 5
DENOTES IMPACT AREA ON WETLAND DUE TO WATER LINE RELOCATION (HAND CLEARING)
DENOTES IMPACT AREA ON WETLAND DUE TO UTILITIES RELOCATION OF POWER LINES & TELE. LINES (HAND CLEARING)
KATHERINE ODOM JERNIGAN
DB 89E PG 12
DB 624 PG 352
DB 637 PG 467
DB 624 PG 354 (PLAT)
STA 14+00.00 -L- BEGIN STATE PROJECT B-4027
STA 23+00.00 -L- END STATE PROJECT B-4027
JAMES C. DOUGHTIE, JR.
DB 697 PG 873
DB 619 PG 40 (PLAT)
PLUM CREEK TIMBERLANDS, L.P.
DB 788 PG 23
DB 692 PG 717
PC-A PG 983
A1=0.017 ACRES
A2=0.022 ACRES
A3=.015 ACRES
A4=0.011 ACRES
A5=0.012 ACRES
A6=0.037 ACRES
Sta.16+61
Sta. 15+85
Sta.15+15
Sta.14+31
Sta.15+06
StA.20+33
StA.21+00
Sta. 22+36
Sta. 21+33
Sta. 20+63
CASHIE RIVER
WOODS
CULT
-L- N 45°14'32.0" E
N 53° 22' 30.0" E
-L- POT Sta. 10+00.00
-L- PC Sta. 13+85.33
-L- PT Sta. 19+62.02
-L- PC Sta. 23+56.14
-L- PT Sta. 24+58.13
BEGIN APPROACH SLAB -L- STA. 17+45 +/-
BEGIN BRIDGE -L- STA. 17+70 +/-
END BRIDGE -L- STA. 19+30 +/-
END APPROACH SLAB -L- STA. 19+55 +/-
SHOULDER BERM GUTTER -L- STA 16+80.00 TO -L- STA 17+45 +/- (LT)
SHOULDER BERM GUTTER -L- STA 19+55 +/- TO -L- STA 19+80.67 (LT)
Transition Fill Slope from 3:1 to 2:1 From -L- Sta. 17+40 to Begin Bridge on left. Armor w/CL. II RipRap to Shld. P.
CLASS II RIP RAP SEE STRUCTURE PLANS
14+00.00 EXIST. R/W 50.00'
23+00.00 50.00' & EXIST. R/W
-L-
PI Sta 16+74.13
Δ = 7° 52' 02.0" (LT)
D = 1° 21' 51.5"
L = 576.70'
T = 288.80'
R = 4,200.00'
SE = .04
RUNOFF = SEE PLANS
TYPE-III
VARIES
BEGIN APPROACH SLAB -L- STA. 17+45+/-
BEGIN BRIDGE -L- STA. 17+70+/-
END APPROACH SLAB -L- STA. 19+55 +/-
END BRIDGE -L- STA. 19+30 +/-
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP
BRIDGE APPROACH SLAB
16-SEP-2005 10:30
r:\utilities\proj\b4027_wetland_rev2_area_psh04.dgn

TOTAL TEMPORARY IMPACTS ON WETLAND
DUE TO WATER LINE RELOCATION

Area=0.049 Acres

TOTAL TEMPORARY IMPACTS ON WETLAND
DUE TO UTILITIES RELOCATION OF POWER
LINES AND TELE. LINES

Area=0.065 Acres

TOTAL WETLANDS IMPACT

Area=0.114 Acres

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

PROJECT: 8.2010501, (B-4027)
BRIDGE 11 OVER CASHIE RIVER
ON SR 1219