STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 16, 2007

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

Attention: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **General Permit 31 Application and Neuse River Buffer Authorization Request** for the Replacement of Bridge No. 151 on SR 1722 over Little River in Johnston County. Federal Project No. BRZ- 1722[2], State Project No. 8.2312801, TIP No. B-3863, Debit $ 200.00 from WBS Element 33309.1.1

Please find enclosed the Pre-Construction Notification form (PCN), permit drawings, Categorical Exclusion (CE), Natural Resource Technical Report (NRTR), and half-size plan sheets for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 151 on SR 1722 over the Little River (DWQ Index # 27-57-(8.5) in Johnston County. The project involves replacement of the existing 106-foot structure with a 195-foot bridge at approximately the same location using top-down construction. The approach roadway will consist of two 11-foot travel lanes with one 3-foot minimum offset on the north side of the bridge and one 7-foot minimum offset on the south side of the bridge. Permanent impacts will consist of <0.01 acre of to wetlands adjacent to Little River, and 4,795 ft^2 of riparian buffer. Traffic will be detoured off-site, along surrounding roads, during construction.

Impacts To Waters of the United States

General Description: The project is located in sub-basin 03-04-06 of the Tar-Pamlico River Basin. A best usage classification of "WS-V NSW" has been assigned to Little River. Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds), listed Section 303(d) impairments, nor Outstanding Resource Waters (ORW) occur within 1.0 mile (1.6 km) of project study area.

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

Little River is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River.

Permanent Impacts: Little River and adjacent wetlands will be impacted by the proposed project. Construction of the proposed project will result in a permanent impact of < 0.01 acre from fill, excavation, and mechanized clearing in wetlands (see permit drawings).

Temporary Impacts: Two temporary work bridges will be constructed in the same location as the existing Bridge No. 151. These bridges will be required to minimize impacts to jurisdictional waters during construction. Temporary work bridge pile types and driving methods will be determined during construction by the contractor. The work bridges will be constructed at the elevation and location shown on the permit drawings. It is assumed that the contractor will begin construction of the proposed work bridges shortly after the date of availability for the project.

Utility Impacts: There will be no impacts to jurisdictional resources due to utility relocation.

Neuse Riparian Buffer Rules

This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. There will be a total of 4,795 ft^2 of impacts to riparian buffers. This includes (3,547 ft^2 in Zone 1 and 1,248 ft^2 in Zone 2) due to the bridge crossing. According to the buffer rules, bridges are allowable. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule. All practicable measures to minimize impacts within buffer zones were followed. These uses require written authorization from the N.C. Division of Water Quality (NCDWQ).

Bridge Demolition

The existing bridge consists of timber piles with steel girders and a concrete superstructure with an asphalt-wearing surface. 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

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:

- NCDOT is replacing Bridge No. 151 in place with a longer bridge and utilizing an off-site detour.
- The bridge will be built using top-down construction.
- NCDOT is utilizing longer spans with fewer bents than the existing bridge.
- NCDOT will follow stream-crossing guidelines for anadromous fish passage, including in-water work moratorium from February 15 to June 15.

- The U.S. Fish and Wildlife Service (USFWS) was consulted concerning the effect of project construction on the dwarf wedgemussel and Tar spinymussel. The USFWS concurred in the biological conclusion that project construction is "Not Likely to Adversely Affect" the dwarf wedgemussel or the Tar spinymussel and the NCDOT will implement the conservation measures below:
  1. Use a bridge that will yield the longest spans practicable to reduce impacts to aquatic live.
  2. If bridge bents are necessary, NCDOT will place the bents at the edge of the water (not in the center) to minimize permanent and temporary impacts.
  3. This project is located in an Environmentally Sensitive Area. All special procedures for clearing, grubbing, seeding, and mulching will apply.
  4. If heavy equipment is used along the stream bank, a clean rock or timber workpad will be utilized to support the equipment.
  5. Bents from the existing structure should be cut at the mudline.
  6. Special sediment control fence is not practicable, clearing and grubbing should not occur during the non-growing season (November through March, UDSA/SCS, Johnston County Soil Survey, 1983).
  7. Due to the proximity of a federally protected species, all unstabilized areas of the project within the fifty foot riparian buffer area will be temporarily stabilized during active grading utilizing erosion control blankets, fabric, plastic, or other material(s), approved by the Roadside Environmental Unit, prior to any rain event, as directed by the Engineer on site. The temporary stabilization should adequately anchored and utilized to prevent the loss of adequately designed sediment basin or until the area is stabilized with vegetation.
  8. If construction has not started before June 2006, additional mussel surveys should be completed.
  9. An off-site detour will be used.

Mitigation

Due to the low amount of proposed impacts, NCDOT is not proposing mitigation for this site. The new bridge will be 89 feet longer and therefore improving hydraulic flow. Compensatory mitigation is not proposed for riparian buffer impacts because impacts due to bridges do not require mitigation.

Federal Protected Species

As of March 23, 2007, the US Fish and Wildlife Service (USFWS) lists one federally protected species for Johnston County. The following table lists this species. A copy of the USFWS concurrence letter for the Tar spinnymussel and dwarf wedgemussel is included in the CE in this application.

Common Name	Scientific Name	Status	Habitat	Conclusion
Red-cockaded Woodpecker	*Picoides borealis*	E	No	No Effect
Bald eagle	*Haliaeetus leucocephalus*	E	No	No Effect
Tar spinymussel	*Elliptio steinstansana*	E	Yes	MANLAA
Dwarf wedgemussel	*Alasmidonta heterodon*	E	Yes	MANLAA
Michaux's sumac	*Rhus michauxii*	E	Yes	No Effect

Note: E – endangered MANLAA – May Affect Not Likely to Adversely Affect

Project Schedule

The project has a scheduled let of July 17, 2007 with a review date of May 29, 2007.

Regulatory Approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion". The NCDOT requests that these activities be authorized by a General Permit 31.

Section 401 Permit: We anticipate 401 General Certification number 3627 and 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 5 copies of this application to the NCDWQ, for their review and approval.

Neuse River Basin Buffer Authorization: NCDOT requests that the NCDWQ review this application and issue a written approval for a Neuse River Riparian Buffer Authorization.

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 John Merritt at jsmerritt@dot.state.nc.us or (919) 715-5536 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 (5 copies)
- Mr. Travis Wilson, NCWRC
- Mr. Gary Jordan, USFWS
- Mr. Ron Sechler, NMFS
- Mr. Michael Street, NCDMF
- Dr. David Chang, P.E., Hydraulics
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. Victor Barbour, P.E., Project Services Unit
- Mr. Mark Staley, Roadside Environmental
- Mr. Richard E. Greene, P.E., Division 4 Engineer
- Mr. Jamie Guerrero, Division 4 Environmental Officer

W/o attachment
- Mr. Scott McLendon, USACE, Wilmington
- Mr. Jay Bennett, P.E., Roadway Design
- Mr. Majed Alghandour, P. E., Programming and TIP
- Mr. Art McMillan, P.E., Highway Design
- Mr. John Williams , 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: GP 31

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: _____

2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3863

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

4. Location
   County: Johnston Nearest Town: Wendell
   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): 35.7717 °N -78.3120 °W

6. Property size (acres): N/A

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

8. River Basin: Neuse
   (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 195-foot bridge at approximately the same location and 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 < 0.01 acre from fill, excavation, and mechanized clearing in wetlands.

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)
Site No. 1	Mechanized Clearing	Successional wetland	Yes	50	<0.01
Site No. 1	Permanent fill	Successional wetland	Yes	50	<0.01
Site No. 1	Excavation	Successional wetland	Yes	50	<0.01
				Total Wetland Impact (acres)	<0.01

3. List the total acreage (estimated) of all existing wetlands on the property: 0.5 acre

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)
N/A						
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.

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)
N/A				
Total Open Water Impact (acres)				

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

Stream Impact (acres):	0.0
Wetland Impact (acres):	<0.01
Open Water Impact (acres):	0.0
Total Impact to Waters of the U.S. (acres)	<0.01
Total Stream Impact (linear feet):	0

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

8. Pond Creation
   If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.
   Pond to be created in (check all that apply): ☐ uplands ☐ stream ☐ wetlands
   Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): N/A
   Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.):
   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. Use of an off-site detour during construction, construction of a 89-foot longer bridge, Best Management Practices will also be utilized during demolition of the existing bridge and construction of the new bridge.

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.
   Due to the limited impacts, NCDOT is not proposing compensatory mitigation.
   Hydraulic flow will be improved by lengthening the bridge by 89 feet.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at (919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at http://h2o.enr.state.nc.us/wrp/index.htm. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:
   Amount of stream mitigation requested (linear feet): 0
   Amount of buffer mitigation requested (square feet): 0
   Amount of Riparian wetland mitigation requested (acres): 0
   Amount of Non-riparian wetland mitigation requested (acres): 0
   Amount of Coastal wetland mitigation requested (acres): 0

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	3,547	3 (2 for Catawba)	0
2	1,248	1.5	0
Total	4,795		0

* 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. Lateral base ditch with permanent soil reinforcement mat.

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).

4/16/07

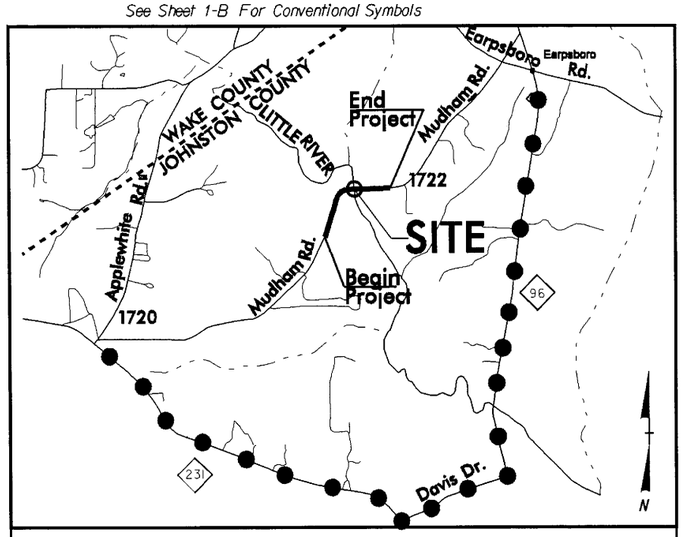
Applicant/Agent's Signature **Date**
(Agent's signature is valid only if an authorization letter from the applicant is provided.)

09/08/99

TIP PROJECT: B-3863

WBS: 33309.1.1

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



VICINITY MAP

DENOTES OFF-SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

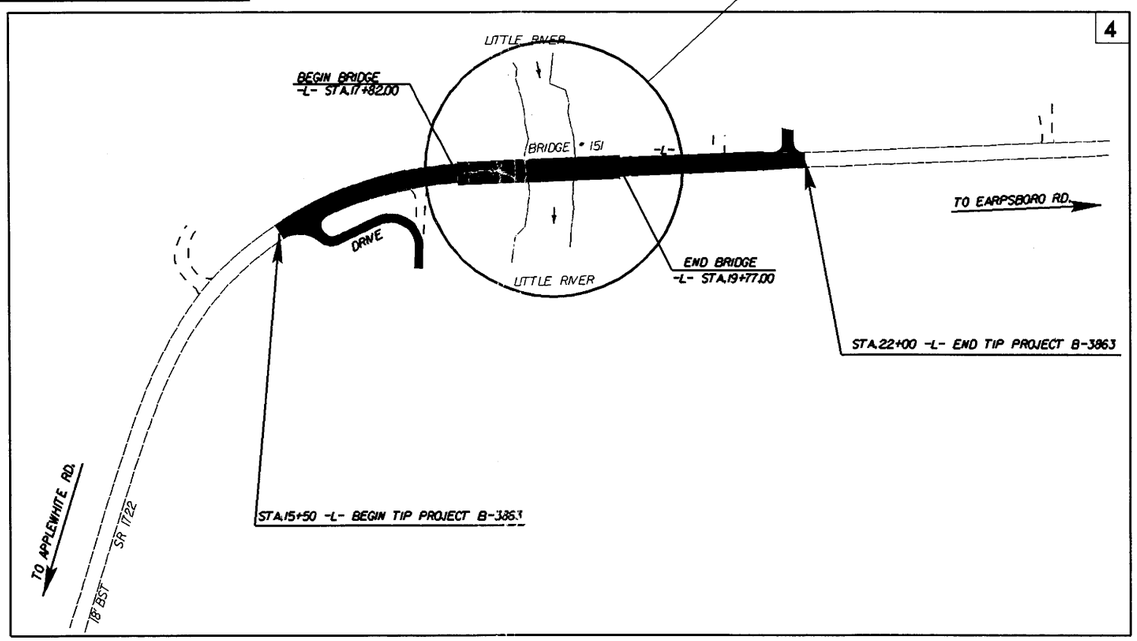
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3863	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33309.1.1	BRZ-1722 (2)	P.E.	

LOCATION: REPLACEMENT OF BRIDGE NO. 151 ON SR 1722 OVER LITTLE RIVER

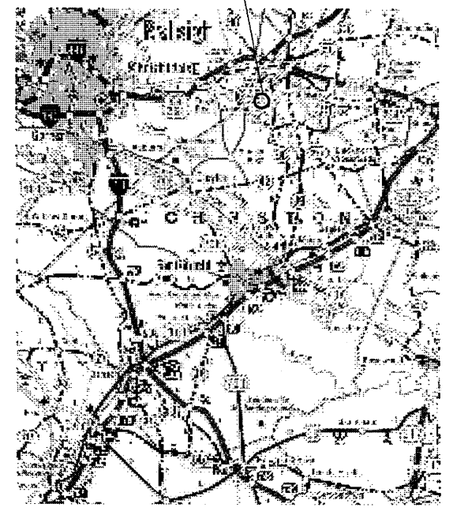
TYPE OF WORK: RESURFACING, PAVING, GRADING, DRAINAGE, STRUCTURE, AND STRUCTURE REMOVAL

WETLAND/SURFACE WATER PERMIT DRAWINGS

SITE 1



SITE



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

Permit Drawing Sheet 1 of 23

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2005 = 640
ADT 2025 = 1200
DHV = 11 %
D = 60 %
T = 3 % *
V = 35 MPH
*TTST 1% DUAL 2%
FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3863 = 0.086 MI
LENGTH STRUCTURE TIP PROJECT B-3863 = 0.037 MI
TOTAL LENGTH OF TIP PROJECT B-3863 = 0.123 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 21, 2006

LETTING DATE: JULY 17, 2007

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER PE

13-SEP-2006 09:55
r:\hydraulics\permit\b3863_hyd_prm_wet.dgn
beanderson AT H72544

PROJECT REFERENCE NO.	SHEET NO.
B-3863	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

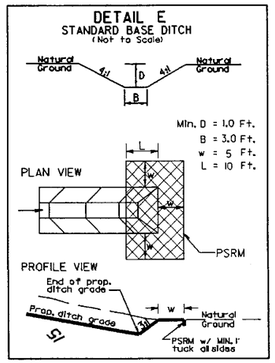
8/17/99

REVISIONS

01-26-07 extended the proposed construction easement at the beginning of the project on the right side of the alignment to tie with the outer limits of the proposed right of way at station 15+00.

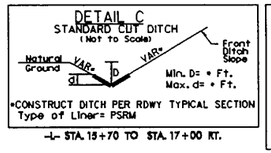
NC GRID NAD 83

DETAIL E
STANDARD BASE DITCH
(Not to Scale)



-L- STA. 17+50 (RT)

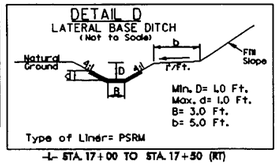
DETAIL C
STANDARD CUT DITCH
(Not to Scale)



*CONSTRUCT DITCH PER RDWY TYPICAL SECTION
Type of Liner= PSRM

-L- STA. 15+70 TO STA. 17+00 RT.

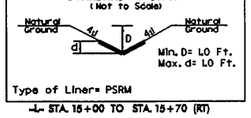
DETAIL D
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= PSRM

-L- STA. 17+00 TO STA. 17+50 (RT)

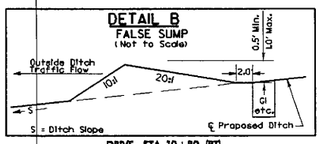
DETAIL A
STANDARD "V" DITCH
(Not to Scale)



Type of Liner= PSRM

-L- STA. 15+00 TO STA. 15+70 (RT)

DETAIL B
FALSE SUMP
(Not to Scale)



-DRIVE- STA. 10+30 (RT)

BEGIN BRIDGE
-L- STA.17+82.00
BEGIN APPROACH SLAB
-L- STA.17+67.00
-L- POT Sta. 15+92.00 =
-DRIVE- POT Sta. 10+00.00

END CONSTRUCTION
-L- STA. 22+50.00

END APPROACH SLAB
-L- STA.19+92.00

END BRIDGE
-L- STA.19+77.00

END STATE PROJECT B-3863
-L- STA. 22+00.00

BEGIN STATE PROJECT B-3863
-L- STA.15+50.00
BEGIN CONSTRUCTION
-L- STA.15+00.00

PCSta. 10+28.24
PTSta. 10+50.88
PCSta. 11+07.98
PTSta. 11+79.78
-DRIVE- POT Sta. 12+03.68
PCSta. 12+68.78
POT Sta. 10+00.00
POT Sta. 25+00.01

ROBERT E. COVINGTON
DB 1999 PG 377

COUNTY OF JOHNSTON
DB 1999 PG 383

VIVIAN RICHARDSON CREECH
DB 731 PG 25

DEBRA F. BROWN
DB 998 PG 387

DEBRA F. BROWN
DB 998 PG 384

MICHAEL T. BREWER
DB 1015 PG 686

BRUCE TRIMBLE
DB 1374 PG 989

MICHAEL J. & TWORNE PETROLLA
DB 855 PG 36

CARL B. CREECH
DB 774 PG 232

CL OF RIVER IS PROPERTY LINE

LITTLE RIVER

TEMPORARY WORK BRIDGE

3 SPAN STEEL & TREATED TIMBER CLASS B RIP RAP WITH WOOD WINGWALLS

PROP. EXCAVATION SEE DETAIL F

STANDARD BASE DITCH W/PSRM SEE DETAIL E

LATERAL BASE DITCH W/PSRM SEE DETAIL D

STANDARD CUT DITCH W/PSRM SEE DETAIL C

STANDARD "V" DITCH W/PSRM SEE DETAIL A

SPECIAL CUT DITCH SEE DETAIL G

SPECIAL CUT DITCH SEE DETAIL H

SPECIAL CUT DITCH SEE DETAIL I

CLASS B RIP RAP EST. 3.0 TONS

CLASS B RIP RAP EST. 3.5 TONS

CLASS B RIP RAP EST. 3 TONS

CLASS B RIP RAP

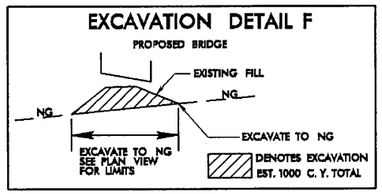
FLAT GRATE

18"CSP W/2 ELBOWS ROD & LUG W/SLEEVE GASKET

EX. R/W & 45'

SEE ENLARGEMENT

EXCAVATION DETAIL F

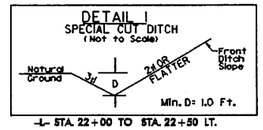


E E DENOTES EXCAVATION IN WETLAND

F F DENOTES FILL IN WETLAND

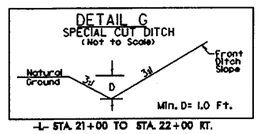
DENOTES MECHANIZED CLEARING

DETAIL I
SPECIAL CUT DITCH
(Not to Scale)



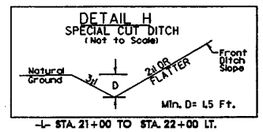
-L- STA. 22+00 TO STA. 22+50 LT.

DETAIL G
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 21+00 TO STA. 22+00 RT.

DETAIL H
SPECIAL CUT DITCH
(Not to Scale)



-L- STA. 21+00 TO STA. 22+00 LT.

Permit Drawing
Sheet 2 of 7

-DRIVE-

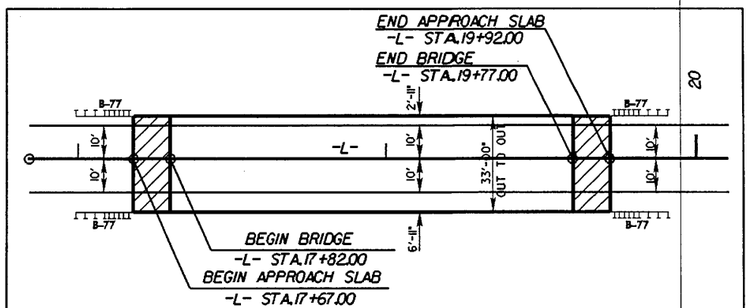
PI Sta 10+42.35
Δ = 86° 30' 26.2" (LT)
D = 381° 58' 18.7"
L = 22.65'
T = 14.11'
R = 15.00'

PI Sta 11+65.70
Δ = 117° 32' 27.5" (RT)
D = 163° 42' 08.0"
L = 71.80'
T = 57.72'
R = 35.00'

-L-

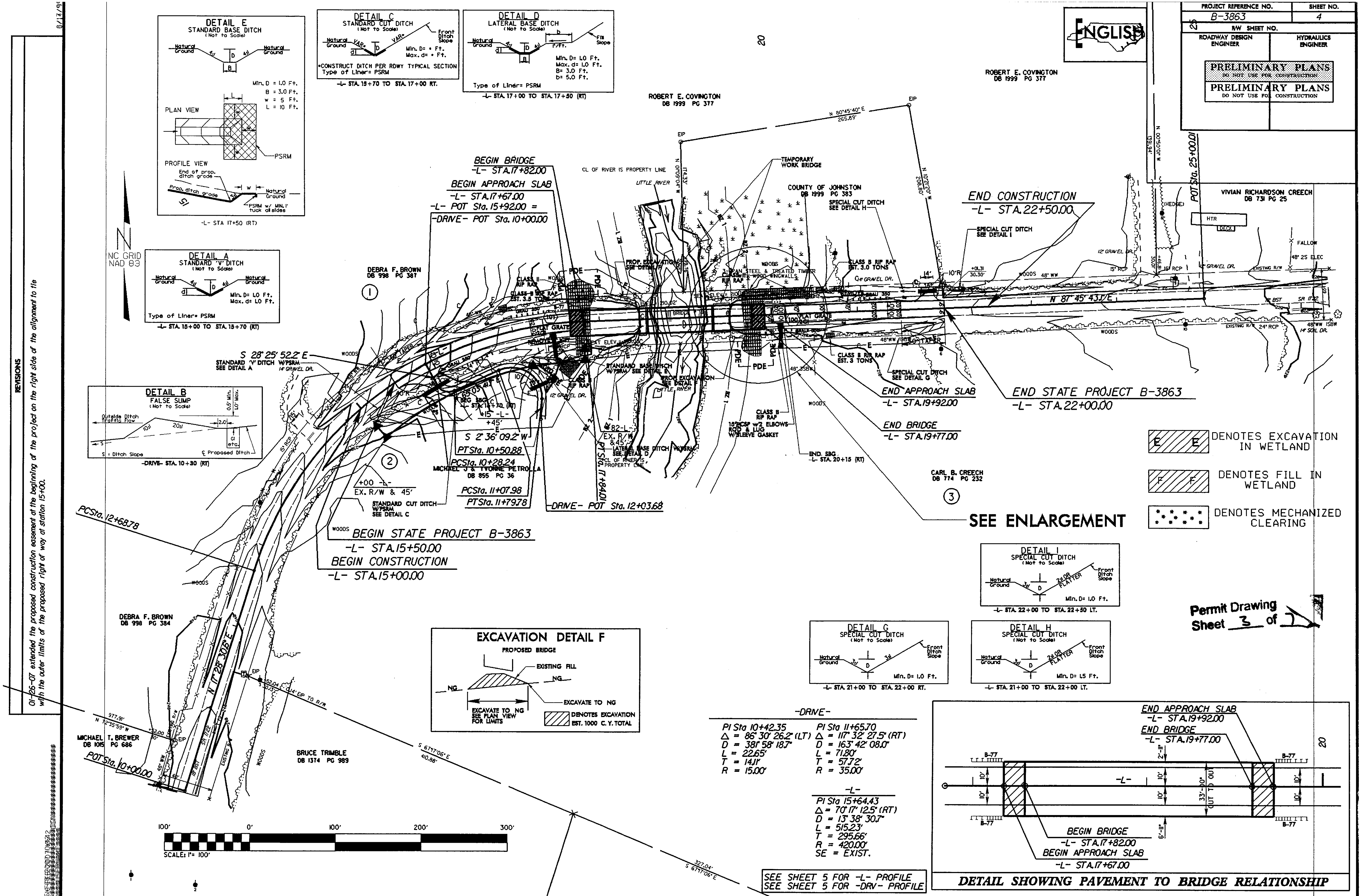
PI Sta 15+64.43
Δ = 70° 17' 12.5" (RT)
D = 13° 38' 30.7"
L = 515.23'
T = 295.66'
R = 420.00'
SE = EXIST.

SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRV- PROFILE



DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP

100' 0' 100' 200' 300'
SCALE: 1"= 100'

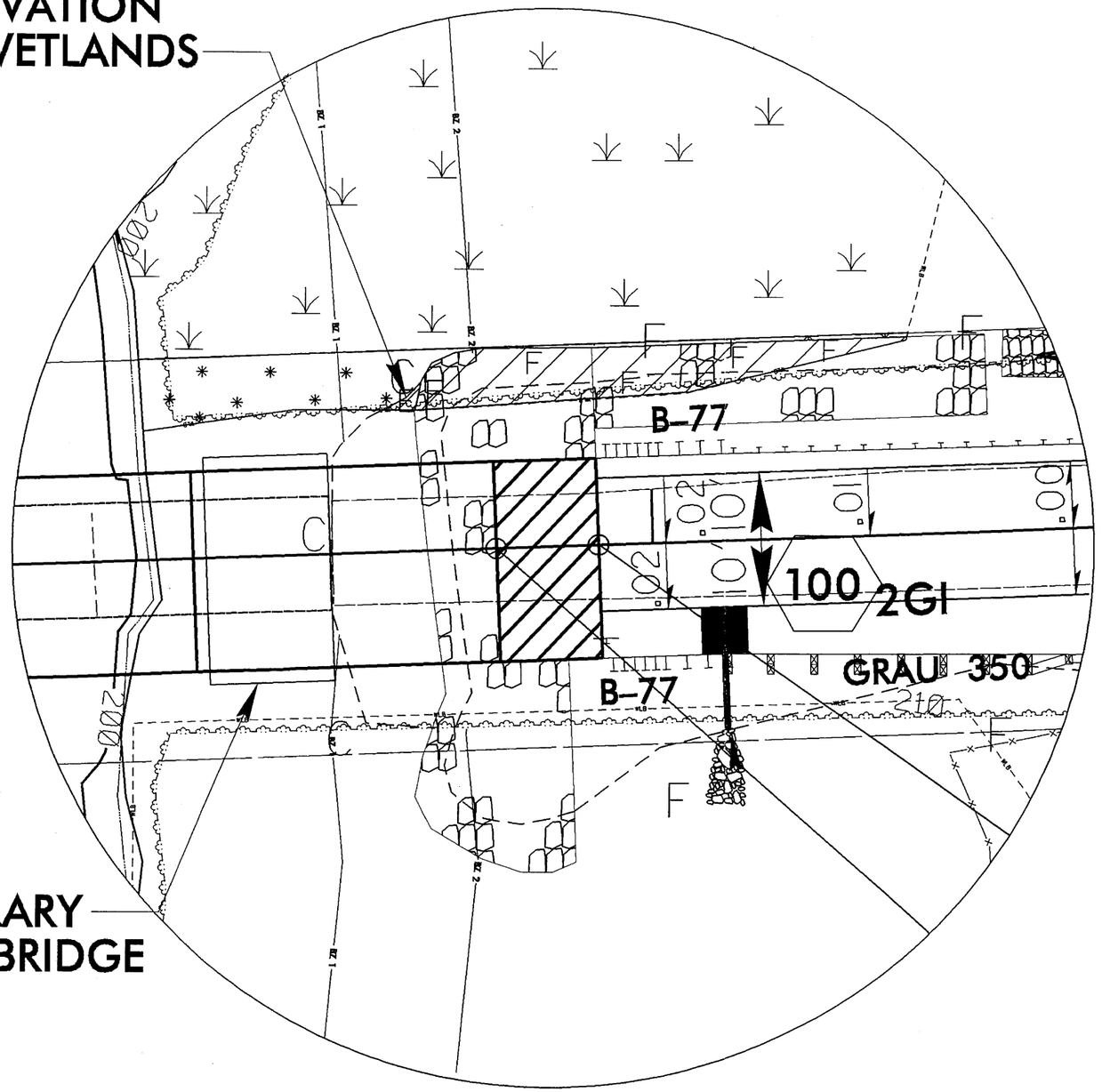

PROJECT REFERENCE NO. B-3863
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
ENGLISH
REVISIONS
01-26-07 extended the proposed construction easement at the beginning of the project on the right side of the alignment to tie with the outer limits of the proposed right of way at station 15+00.
DETAIL E
STANDARD BASE DITCH
(Not to Scale)
Min. D = 1.0 Ft.
B = 3.0 Ft.
w = 5 Ft.
L = 10 Ft.
PLAN VIEW
PROFILE VIEW
PSRM
-L- STA 17+50 (RT)
DETAIL C
STANDARD CUT DITCH
(Not to Scale)
*CONSTRUCT DITCH PER RDWY TYPICAL SECTION
Type of Liner= PSRM
-L- STA. 15+70 TO STA. 17+00 RT.
DETAIL D
LATERAL BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.
b= 5.0 Ft.
Type of Liner= PSRM
-L- STA. 17+00 TO STA. 17+50 (RT)
DETAIL A
STANDARD 'V' DITCH
(Not to Scale)
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= PSRM
-L- STA. 15+00 TO STA. 15+70 (RT)
DETAIL B
FALSE SUMP
(Not to Scale)
-DRIVE- STA. 10+30 (RT)
NC GRID NAD 83
ROBERT E. COVINGTON
DB 1999 PG 377
COUNTY OF JOHNSTON
DB 1999 PG 383
VIVIAN RICHARDSON CREECH
DB 731 PG 25
DEBRA F. BROWN
DB 998 PG 387
DEBRA F. BROWN
DB 998 PG 384
MICHAEL J & YVONNE PETROLLA
DB 855 PG 36
CARL B. CREECH
DB 774 PG 232
MICHAEL T. BREWER
DB 1015 PG 686
BRUCE TRIMBLE
DB 1374 PG 989
BEGIN BRIDGE
-L- STA.17+82.00
BEGIN APPROACH SLAB
-L- STA.17+67.00
-L- POT Sta. 15+92.00 =
-DRIVE- POT Sta. 10+00.00
END CONSTRUCTION
-L- STA.22+50.00
END STATE PROJECT B-3863
-L- STA.22+00.00
END APPROACH SLAB
-L- STA.19+92.00
END BRIDGE
-L- STA.19+77.00
BEGIN STATE PROJECT B-3863
-L- STA.15+50.00
BEGIN CONSTRUCTION
-L- STA.15+00.00
PCSta. 12+68.78
-DRIVE- POT Sta. 12+03.68
PTSta. 10+50.88
PCSta. 10+28.24
PCSta. 11+07.98
PTSta. 11+79.78
S 28° 25' 52.2" E
S 2° 36' 09.2" W
N 87° 45' 43.1" E
N 17° 28' 30.6" E
N 80°45'40" E
SEE ENLARGEMENT
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DETAIL I
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
-L- STA. 22+00 TO STA. 22+50 LT.
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
-L- STA. 21+00 TO STA. 22+00 RT.
DETAIL H
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.5 Ft.
-L- STA. 21+00 TO STA. 22+00 LT.
Permit Drawing Sheet 3 of 7
EXCAVATION DETAIL F
PROPOSED BRIDGE
EXISTING FILL
EXCAVATE TO NG
SEE PLAN VIEW FOR LIMITS
DENOTES EXCAVATION EST. 1000 C.Y. TOTAL
-DRIVE-
PI Sta 10+42.35
Δ = 86° 30' 26.2" (LT)
D = 381° 58' 18.7"
L = 22.65'
T = 14.11'
R = 15.00'
PI Sta 11+65.70
Δ = 117° 32' 27.5" (RT)
D = 163° 42' 08.0"
L = 71.80'
T = 57.72'
R = 35.00'
-L-
PI Sta 15+64.43
Δ = 70° 17' 12.5" (RT)
D = 13° 38' 30.7"
L = 515.23'
T = 295.66'
R = 420.00'
SE = EXIST.
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRV- PROFILE
SCALE: 1"= 100'
DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP
END APPROACH SLAB
-L- STA.19+92.00
END BRIDGE
-L- STA.19+77.00
BEGIN BRIDGE
-L- STA.17+82.00
BEGIN APPROACH SLAB
-L- STA.17+67.00

PROJECT REFERENCE NO.	SHEET NO.
B-3863	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

ENLARGEMENT

EXCAVATION IN WETLANDS



TEMPORARY WORK BRIDGE

20′ 0′ 20′ 40′ 60′

SCALE: 1″= 20′

▨ E E — DENOTES EXCAVATION IN WETLAND

▨ F F — DENOTES FILL IN WETLAND

* * * * — DENOTES MECHANIZED CLEARING

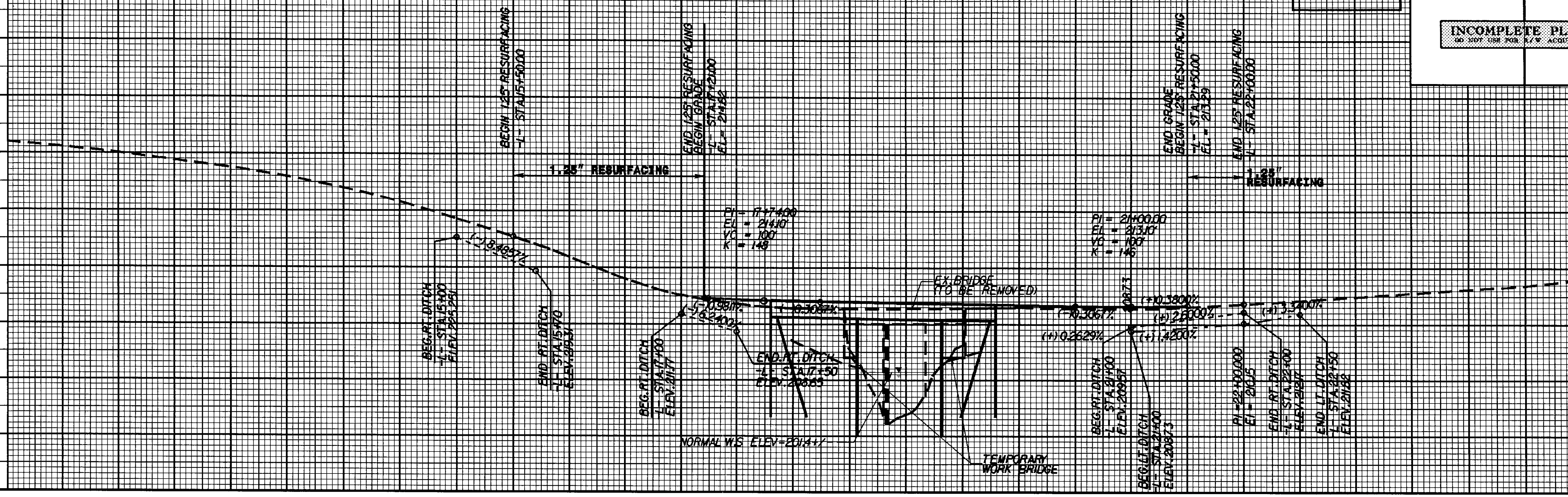
Permit Drawing
Sheet 4 of 7

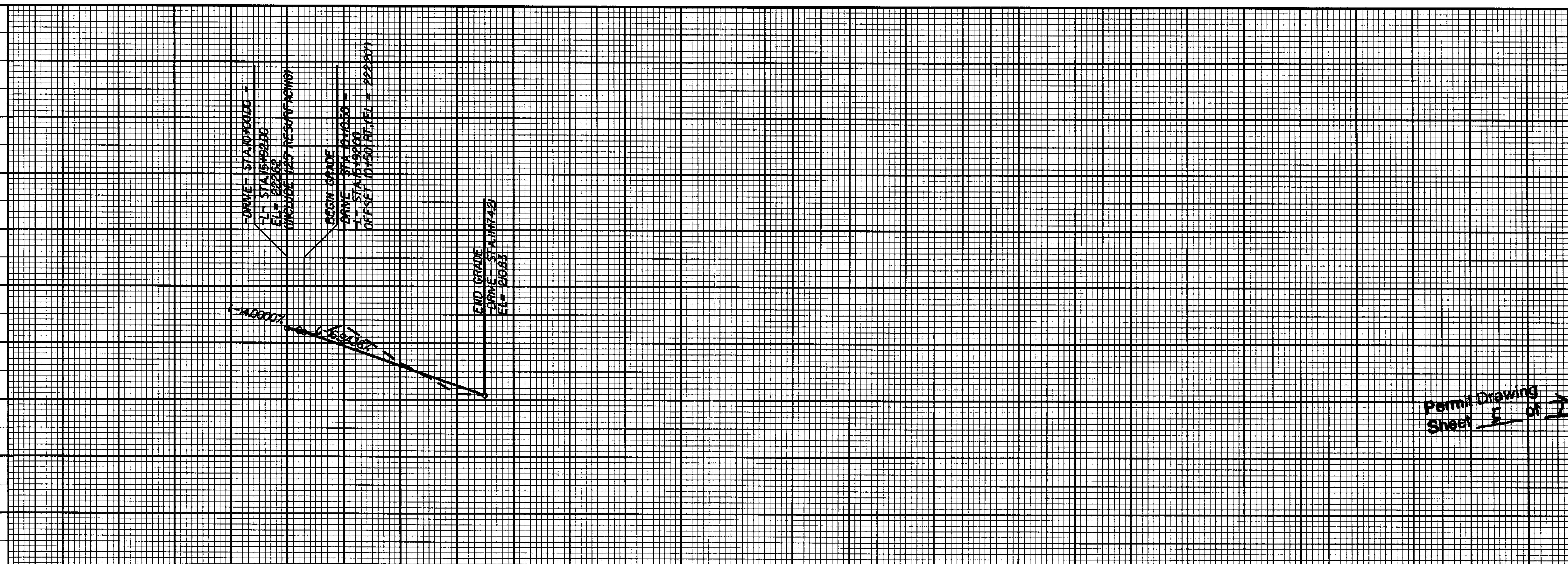
5/14/9

16-FEB-2007 10:43

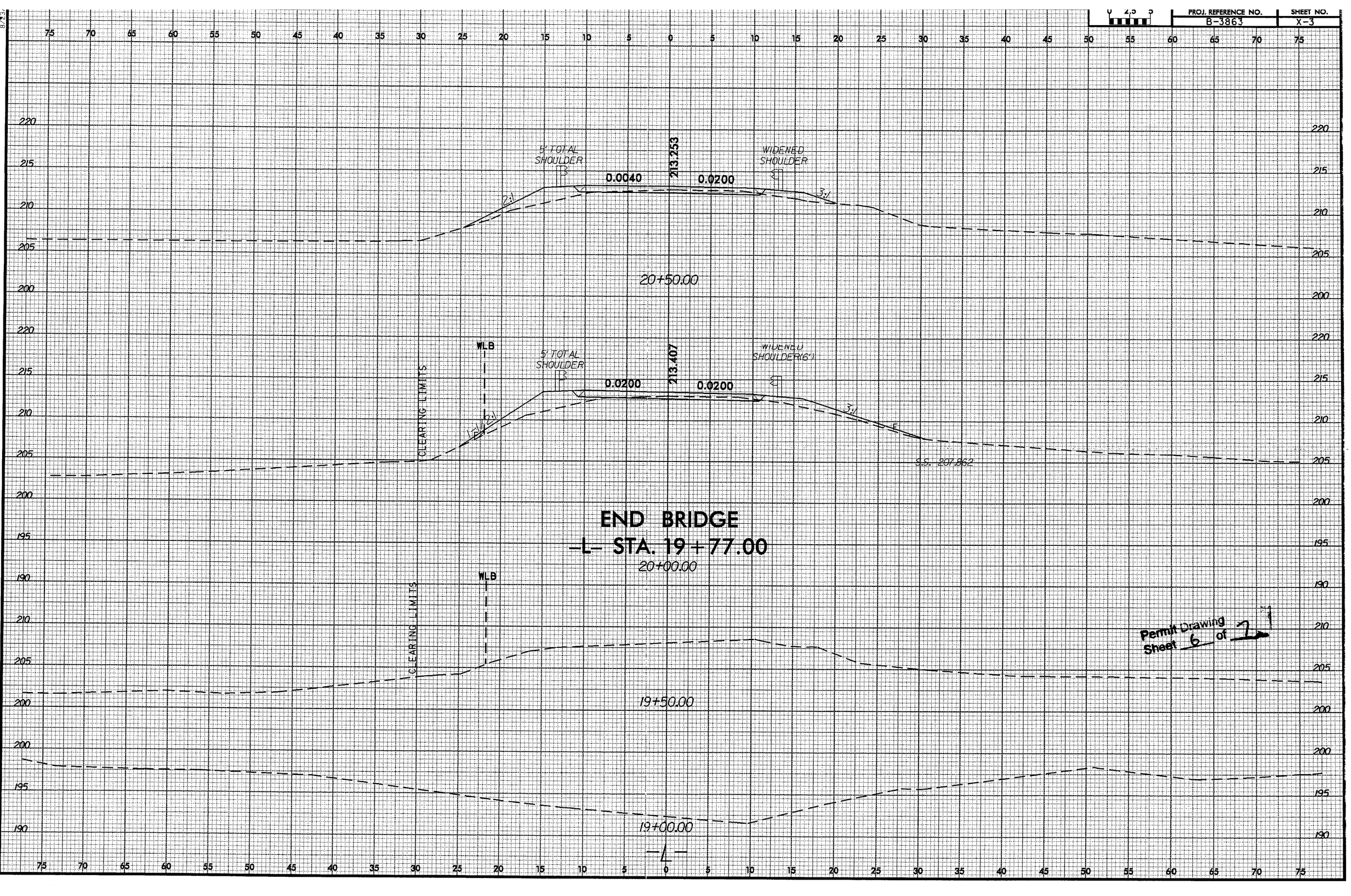
PROJECT REFERENCE NO.	SHEET NO.
B-3863	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION





Permit Drawing Sheet 5 of 7



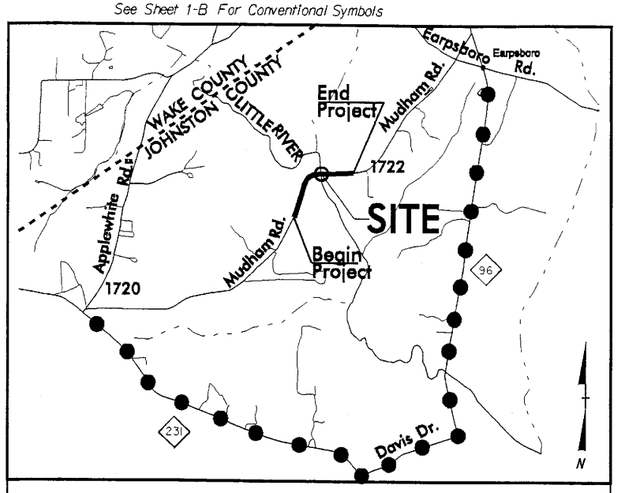
Permit Drawing Sheet 6 of 7

09/08/99

TIP PROJECT: B-3863

WBS: 33309.1.1

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



VICINITY MAP

DENOTES OFF-SITE DETOUR

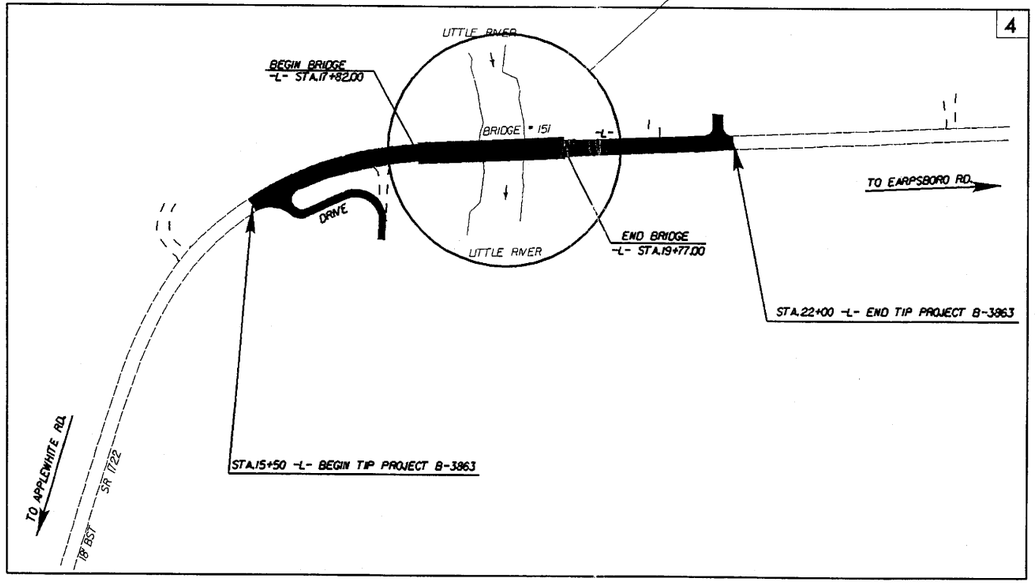
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO. 151 ON SR 1722 OVER LITTLE RIVER

TYPE OF WORK: RESURFACING, PAVING, GRADING, DRAINAGE, STRUCTURE, AND STRUCTURE REMOVAL

SITE 1

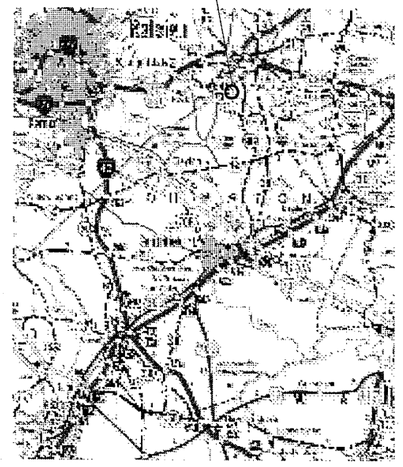


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3863	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
33309.1.1	BRZ-1722 (2)	P.E.

BUFFER DRAWINGS

SITE



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

Buffer Drawing
Sheet 1 of 5

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

PLANS 50 25 0 50 100

PROFILE (HORIZONTAL) 50 25 0 50 100

PROFILE (VERTICAL) 10 5 0 10 20

DESIGN DATA

ADT 2005 = 640
ADT 2025 = 1200
DHV = 11 %
D = 60 %
T = 3 % *
V = 35 MPH
*TTST 1% DUAL 2%
FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3863 = 0.086 MI
LENGTH STRUCTURE TIP PROJECT B-3863 = 0.037 MI
TOTAL LENGTH OF TIP PROJECT B-3863 = 0.123 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 21, 2006

LETTING DATE: JULY 17, 2007

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER PE

29-MAR-2007 15:11
r:\hydraulics\permit\b3863_hyd_prm_buf.dgn
beanderson AT H722544

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	WETLAND IMPACTS: Temp. Fill In Wetlands (ac)	WETLAND IMPACTS: Excavation in Wetlands (ac)	WETLAND IMPACTS: Mechanized Clearing in Wetlands (ac)	WETLAND IMPACTS: Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	SURFACE WATER IMPACTS: Temp. SW impacts (ac)	SURFACE WATER IMPACTS: Existing Channel Impacts Permanent (ft)	SURFACE WATER IMPACTS: Existing Channel Impacts Temp. (ft)	SURFACE WATER IMPACTS: Natural Stream Design (ft)
1	18+62 -L- TO	BRIDGE	<0.01		<0.01	<0.01						
	20+48 -L-											
TOTALS:			<0.01	0.00	<0.01	<0.01	0.00	0.00	0.00	0.00	0.00	0.00

Permit Drawing
Sheet 7 of 7

NOTES:

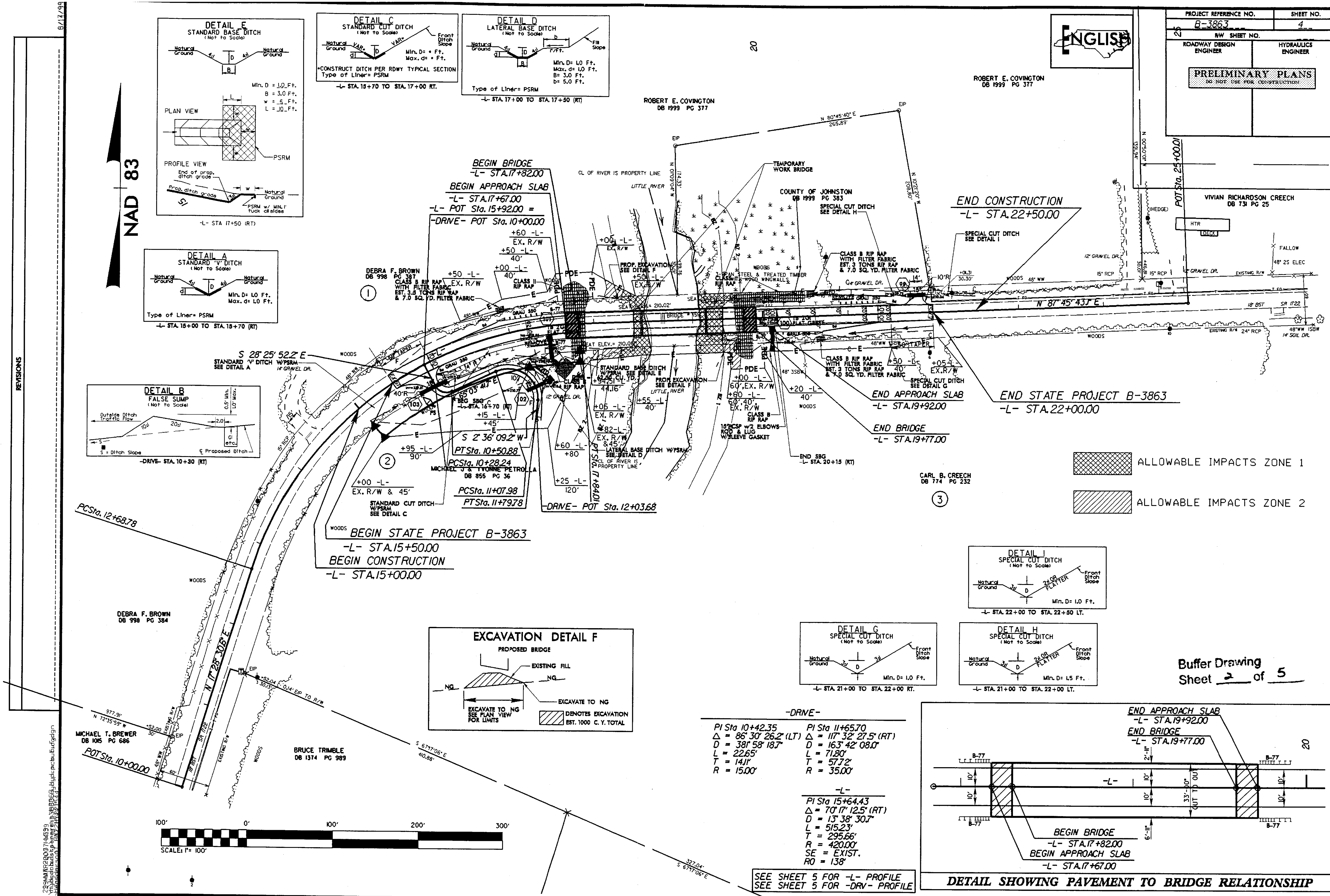
2 Interior Bents on Drilled Piers. Area Impacted = 58ft^2 (< 0.001 acres)

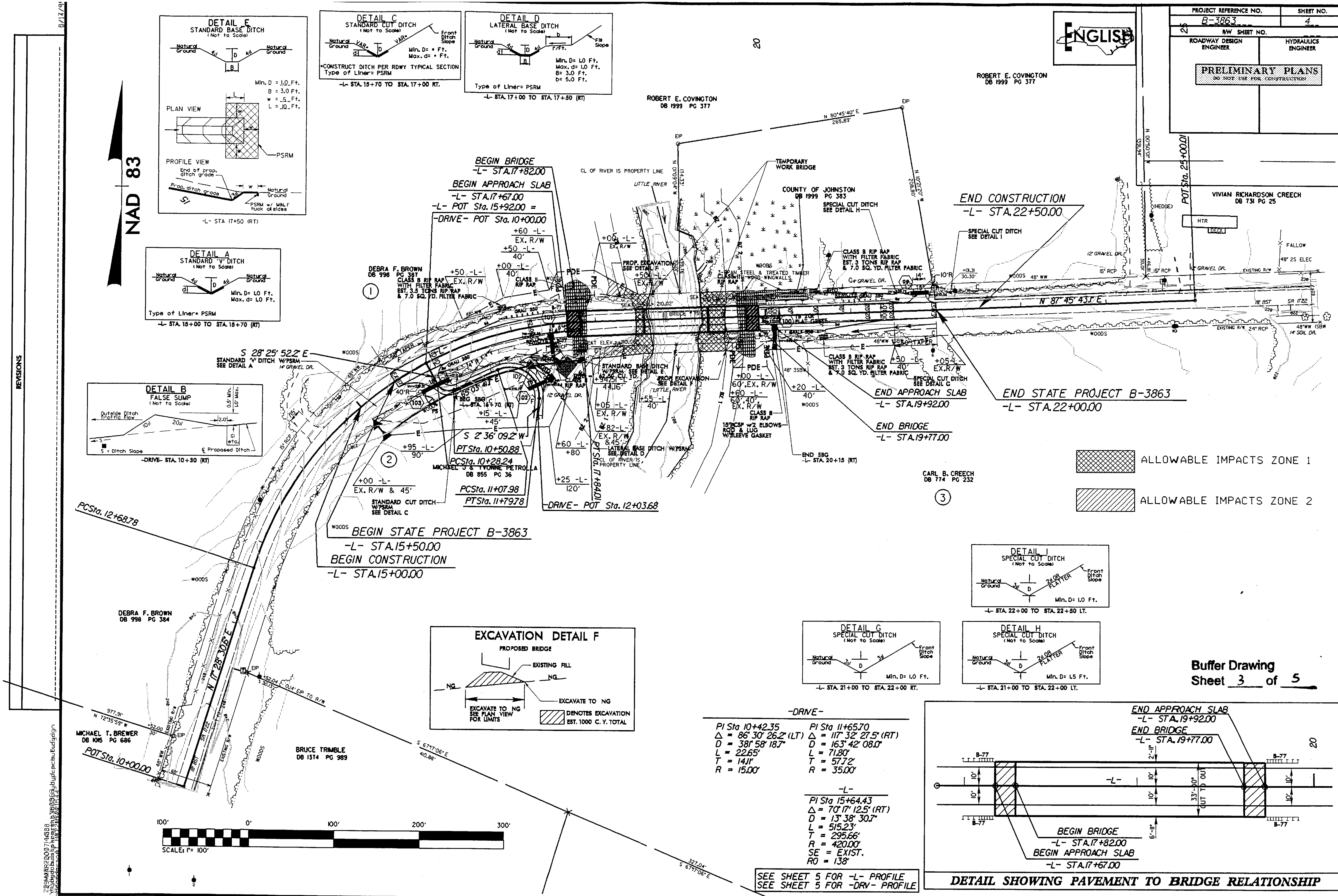
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT 33309.1.1 (B-3863)
REPLACE BRIDGE 151 ON SR1722 OVER LITTLE RIVER

2/16/07 REV

ATN Revised 3/31/05


PROJECT REFERENCE NO. B-3863
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
ENGLISH
NAD 83
REVISIONS
DETAIL E
STANDARD BASE DITCH
(Not to Scale)
Natural Ground
Min. D = 1.0 Ft.
B = 3.0 Ft.
w = 5 Ft.
L = 10 Ft.
PLAN VIEW
PROFILE VIEW
End of prop. ditch grade
Prop. ditch grade
PSRM
PSRM w/ MIN. 1' tuck all sides
-L- STA 17+50 (RT)
DETAIL C
STANDARD CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D= * Ft.
Max. d= * Ft.
*CONSTRUCT DITCH PER RDWY TYPICAL SECTION
Type of Liner= PSRM
-L- STA. 15+70 TO STA. 17+00 RT.
DETAIL D
LATERAL BASE DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 3.0 Ft.
b= 5.0 Ft.
Type of Liner= PSRM
-L- STA. 17+00 TO STA. 17+50 (RT)
DETAIL A
STANDARD 'V' DITCH
(Not to Scale)
Natural Ground
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= PSRM
-L- STA. 15+00 TO STA. 15+70 (RT)
DETAIL B
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S = Ditch Slope
℄ Proposed Ditch
-DRIVE- STA. 10+30 (RT)
ROBERT E. COVINGTON
DB 1999 PG 377
COUNTY OF JOHNSTON
DB 1999 PG 383
VIVIAN RICHARDSON CREECH
DB 731 PG 25
DEBRA F. BROWN
DB 998 PG 387
DEBRA F. BROWN
DB 998 PG 384
MICHAEL J. & YVONNE PETROLLA
DB 855 PG 36
CARL B. CREECH
DB 774 PG 232
MICHAEL T. BREWER
DB 1015 PG 686
BRUCE TRIMBLE
DB 1374 PG 989
BEGIN BRIDGE
-L- STA.17+82.00
BEGIN APPROACH SLAB
-L- STA.17+67.00
-L- POT Sta. 15+92.00 =
-DRIVE- POT Sta. 10+00.00
END CONSTRUCTION
-L- STA.22+50.00
END STATE PROJECT B-3863
-L- STA.22+00.00
END APPROACH SLAB
-L- STA.19+92.00
END BRIDGE
-L- STA.19+77.00
BEGIN STATE PROJECT B-3863
-L- STA.15+50.00
BEGIN CONSTRUCTION
-L- STA.15+00.00
CL OF RIVER IS PROPERTY LINE
LITTLE RIVER
TEMPORARY WORK BRIDGE
SPECIAL CUT DITCH SEE DETAIL H
SPECIAL CUT DITCH SEE DETAIL I
SPECIAL CUT DITCH SEE DETAIL G
CLASS B RIP RAP WITH FILTER FABRIC EST. 3 TONS RIP RAP & 7.0 SQ. YD. FILTER FABRIC
CLASS B RIP RAP WITH FILTER FABRIC EST. 3.5 TONS RIP RAP & 7.0 SQ. YD. FILTER FABRIC
STANDARD 'V' DITCH W/PSRM SEE DETAIL A
STANDARD BASE DITCH W/PSRM SEE DETAIL E
LATERAL BASE DITCH W/PSRM SEE DETAIL D
PROP. EXCAVATION SEE DETAIL F
STANDARD CUT DITCH W/PSRM SEE DETAIL C
END SBG -L- STA. 20+15 (RT)
S 28° 25' 52.2" E
N 87° 45' 43.1" E
N 80° 45' 40" E 265.89'
N 17° 28' 30.6" E
S 2° 36' 09.2" W
S 67°17'06" E
PCSta. 12+68.78
PT Sta. 10+50.88
PC Sta. 10+28.24
PC Sta. 11+07.98
PT Sta. 11+79.78
-DRIVE- POT Sta. 12+03.68
POT Sta. 25+00.01
POT Sta. 10+00.00
WOODS
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
DETAIL I
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Front Ditch Slope
Min. D= 1.0 Ft.
-L- STA. 22+00 TO STA. 22+50 LT.
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
Front Ditch Slope
Min. D= 1.0 Ft.
-L- STA. 21+00 TO STA. 22+00 RT.
DETAIL H
SPECIAL CUT DITCH
(Not to Scale)
Natural Ground
2:1 OR FLATTER
Front Ditch Slope
Min. D= 1.5 Ft.
-L- STA. 21+00 TO STA. 22+00 LT.
EXCAVATION DETAIL F
PROPOSED BRIDGE
EXISTING FILL
NG
EXCAVATE TO NG
EXCAVATE TO NG SEE PLAN VIEW FOR LIMITS
DENOTES EXCAVATION EST. 1000 C. Y. TOTAL
Buffer Drawing
Sheet 2 of 5
-DRIVE-
PI Sta 10+42.35
Δ = 86° 30' 26.2" (LT)
D = 381° 58' 18.7"
L = 22.65'
T = 14.11'
R = 15.00'
PI Sta 11+65.70
Δ = 117° 32' 27.5" (RT)
D = 163° 42' 08.0"
L = 71.80'
T = 57.72'
R = 35.00'
-L-
PI Sta 15+64.43
Δ = 70° 17' 12.5" (RT)
D = 13° 38' 30.7"
L = 515.23'
T = 295.66'
R = 420.00'
SE = EXIST.
RO = 138'
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRV- PROFILE
END APPROACH SLAB
-L- STA.19+92.00
END BRIDGE
-L- STA.19+77.00
BEGIN BRIDGE
-L- STA.17+82.00
BEGIN APPROACH SLAB
-L- STA.17+67.00
DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP
SCALE: 1" = 100'
100' 0' 100' 200' 300'



PROJECT REFERENCE NO. B-3863
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
ENGLISH
NAD 83
REVISIONS
DETAIL E
STANDARD BASE DITCH
(Not to Scale)
-L- STA 17+50 (RT)
DETAIL C
STANDARD CUT DITCH
(Not to Scale)
-L- STA. 15+70 TO STA. 17+00 RT.
DETAIL D
LATERAL BASE DITCH
(Not to Scale)
-L- STA. 17+00 TO STA. 17+50 (RT)
DETAIL A
STANDARD 'V' DITCH
(Not to Scale)
-L- STA. 15+00 TO STA. 15+70 (RT)
DETAIL B
FALSE SUMP
(Not to Scale)
-DRIVE- STA. 10+30 (RT)
ROBERT E. COVINGTON
DB 1999 PG 377
COUNTY OF JOHNSTON
DB 1999 PG 383
VIVIAN RICHARDSON CREECH
DB 731 PG 25
DEBRA F. BROWN
DB 998 PG 387
DEBRA F. BROWN
DB 998 PG 384
CARL B. CREECH
DB 774 PG 232
MICHAEL T. BREWER
DB 1015 PG 686
BRUCE TRIMBLE
DB 1374 PG 989
BEGIN BRIDGE
-L- STA.17+82.00
BEGIN APPROACH SLAB
-L- STA.17+67.00
-L- POT Sta. 15+92.00 =
-DRIVE- POT Sta. 10+00.00
END CONSTRUCTION
-L- STA. 22+50.00
END STATE PROJECT B-3863
-L- STA. 22+00.00
END APPROACH SLAB
-L- STA.19+92.00
END BRIDGE
-L- STA.19+77.00
BEGIN STATE PROJECT B-3863
-L- STA.15+50.00
BEGIN CONSTRUCTION
-L- STA.15+00.00
S 28° 25' 52.2" E
S 2° 36' 09.2" W
N 87° 45' 43.1" E
N 17° 28' 30.6" E
PCSta. 10+28.24
PTSta. 10+50.88
PCSta. 11+07.98
PTSta. 11+79.78
-DRIVE- POT Sta. 12+03.68
PCSta. 12+68.78
POT Sta. 10+00.00
POT Sta. 25+00.00
TEMPORARY WORK BRIDGE
CL OF RIVER IS PROPERTY LINE
LITTLE RIVER
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
DETAIL I
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 22+00 TO STA. 22+50 LT.
DETAIL G
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 21+00 TO STA. 22+00 RT.
DETAIL H
SPECIAL CUT DITCH
(Not to Scale)
-L- STA. 21+00 TO STA. 22+00 LT.
EXCAVATION DETAIL F
PROPOSED BRIDGE
EXISTING FILL
EXCAVATE TO NG
EXCAVATE TO NG SEE PLAN VIEW FOR LIMITS
DENOTES EXCAVATION EST. 1000 C. Y. TOTAL
Buffer Drawing
Sheet 3 of 5
-DRIVE-
PI Sta 10+42.35
Δ = 86° 30' 26.2" (LT)
D = 381° 58' 18.7"
L = 22.65'
T = 14.11'
R = 15.00'
PI Sta 11+65.70
Δ = 117° 32' 27.5" (RT)
D = 163° 42' 08.0"
L = 71.80'
T = 57.72'
R = 35.00'
-L-
PI Sta 15+64.43
Δ = 70° 17' 12.5" (RT)
D = 13° 38' 30.7"
L = 515.23'
T = 295.66'
R = 420.00'
SE = EXIST.
RO = 138'
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRV- PROFILE
SCALE: 1" = 100'
DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
B-3863	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

Buffer Drawing
Sheet 4 of 5

13-SEP-2006 11:12
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

BUFFER IMPACTS SUMMARY

			IMPACT										BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE					
SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	BRIDGE	18+62 -L- TO		X		3547	1248						
		20+48 -L-											
TOTAL:						3547	1248	0	0	0	0		

METHOD III CLEARING

138 ft^2 will be impacted due to work bridge required for construction of interior bents

Buffer Drawing Sheet 5 of 5

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 33309.1.1 (B-3863)
REPLACE BRIDGE NO. 151 ON SR 1722
OVER LITTLE RIVER

4/16/2007

Rev. May 2006

TIP PROJECT: B-3863

WBS: 33309.1.1

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

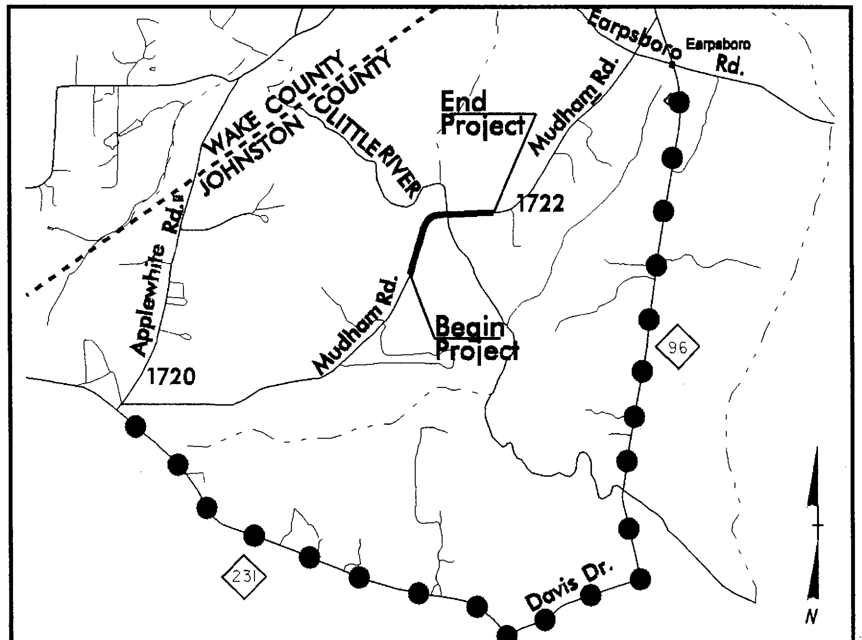
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3863	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33309.1.1	BRZ-1722 (2)	P.E.	

Roadway plans

JOHNSTON COUNTY

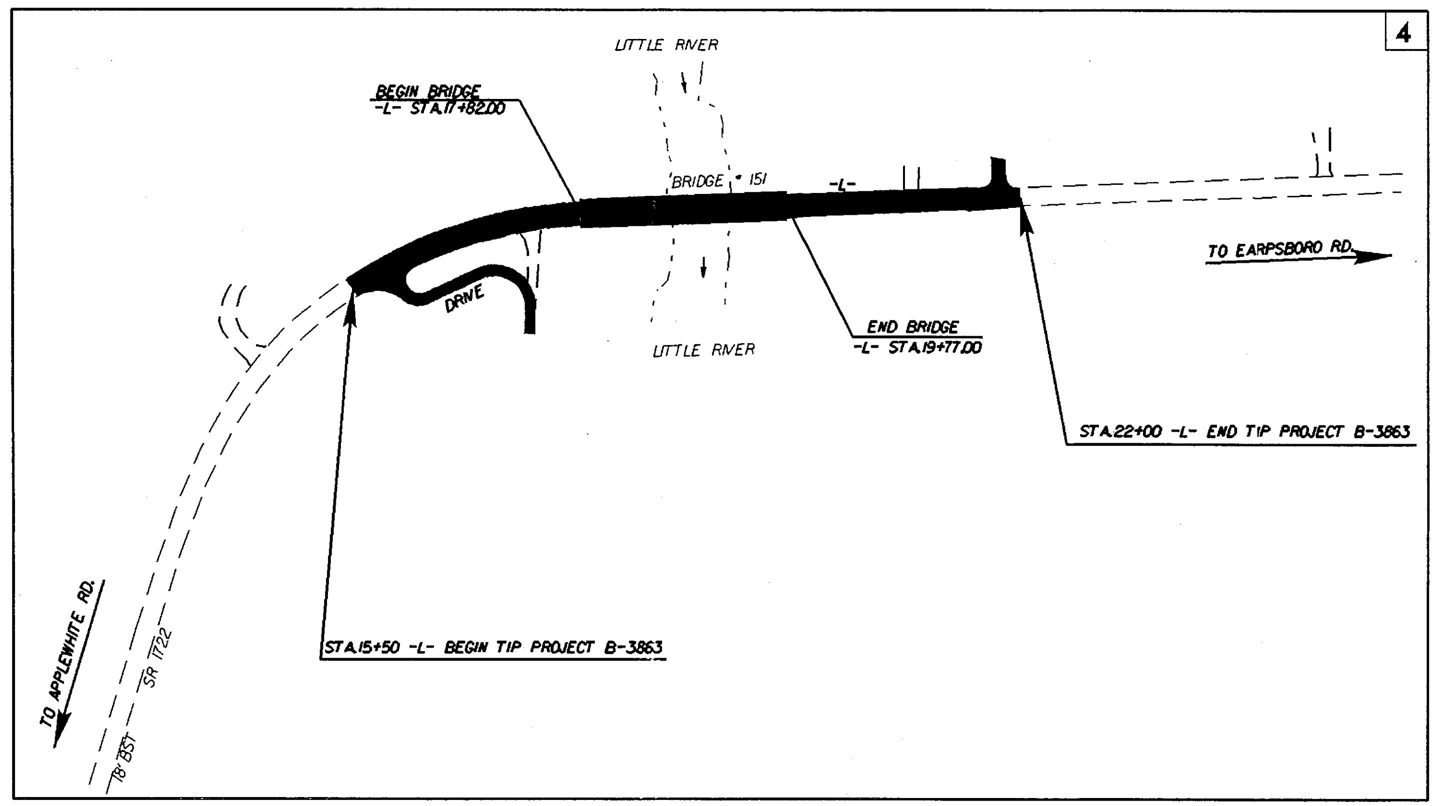
LOCATION: REPLACEMENT OF BRIDGE NO. 151 ON SR 1722 OVER LITTLE RIVER

TYPE OF WORK: RESURFACING, PAVING, GRADING, DRAINAGE, STRUCTURE, AND STRUCTURE REMOVAL



VICINITY MAP

DENOTES OFF-SITE DETOUR



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III

THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

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 2005 = 640
ADT 2025 = 1200
DHV = 11 %
D = 60 %
T = 3 % *
V = 35 MPH
*TTST 1% DUAL 2%
FUNC CLASS = LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3863 = 0.086 MI

LENGTH STRUCTURE TIP PROJECT B-3863 = 0.037 MI

TOTAL LENGTH OF TIP PROJECT B-3863 = 0.123 MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 25, 2006

LETTING DATE: JULY 17, 2007

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER PE

15-SEP-2006 11:08
r:\roadway\proj\b3863_rdy_tsh.dgn
$$$$USERNAME$$$$

09/08/99

PROJECT REFERENCE NO.	SHEET NO.
B-3863	1-B

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 (EPM)
- 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 (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
- 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
- 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
- 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
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- 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 (TV)
- 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:

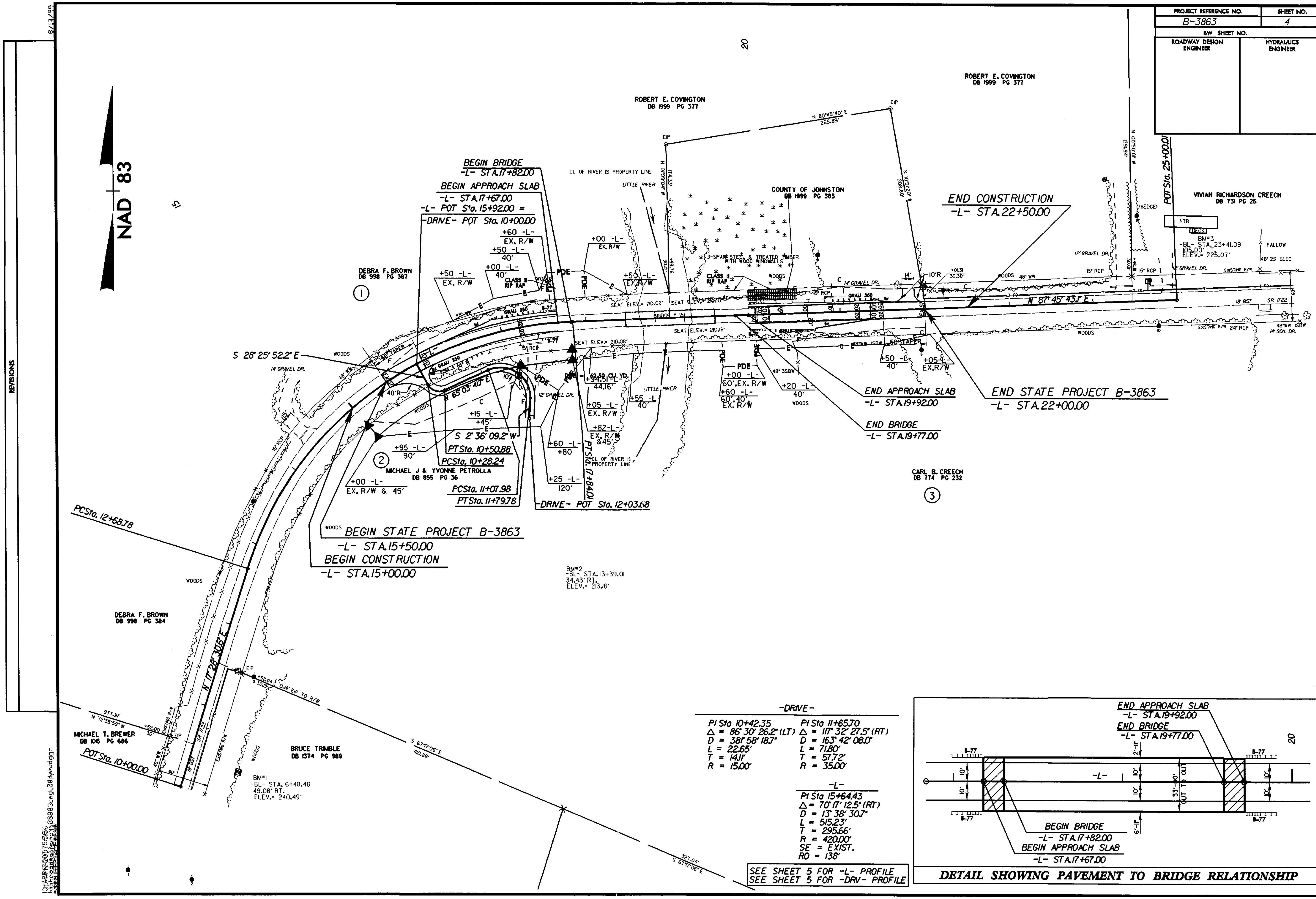
- Gas Valve
- Gas Meter
- Recorded U/G Gas Line (G)
- Designated U/G Gas Line (S.U.E.*) (G)
- Above Ground Gas Line (A/G Gas)

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)

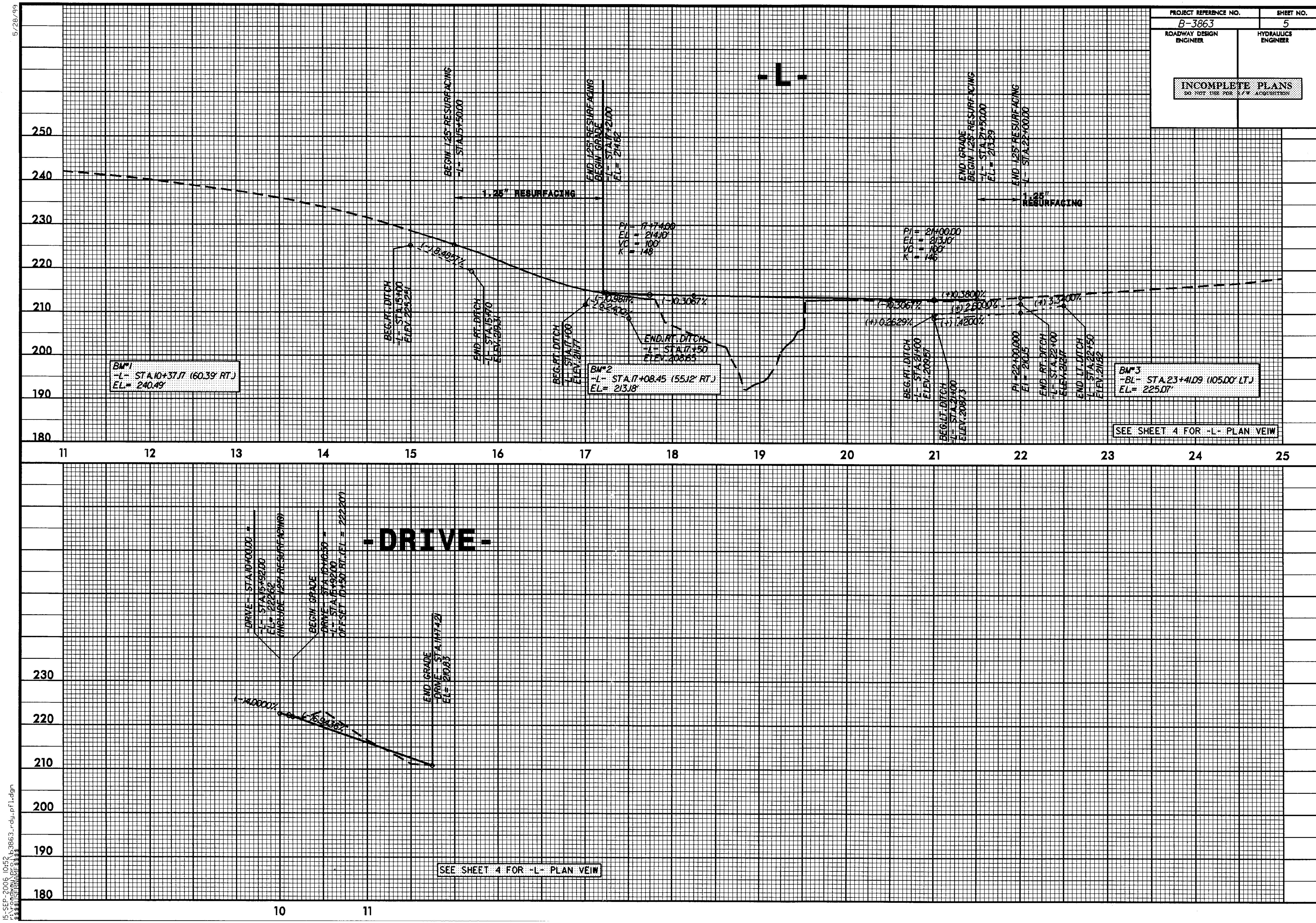
MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box (S)
- Utility Unknown U/G Line (S.U.E.*) (SUL)
- 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-3863
4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NAD 83
REVISIONS
ROBERT E. COVINGTON DB 1999 PG 377
COUNTY OF JOHNSTON DB 1999 PG 383
VIVIAN RICHARDSON CREECH DB 731 PG 25
DEBRA F. BROWN DB 998 PG 387
DEBRA F. BROWN DB 998 PG 384
MICHAEL J & YVONNE PETROLLA DB 855 PG 36
CARL B. CREECH DB 774 PG 232
MICHAEL T. BREWER DB 1015 PG 686
BRUCE TRIMBLE DB 1374 PG 989
CL OF RIVER IS PROPERTY LINE
LITTLE RIVER
BEGIN BRIDGE -L- STA.17+82.00
BEGIN APPROACH SLAB -L- STA.17+67.00
-L- POT Sta. 15+92.00 = -DRIVE- POT Sta. 10+00.00
END CONSTRUCTION -L- STA.22+50.00
END STATE PROJECT B-3863 -L- STA.22+00.00
END APPROACH SLAB -L- STA.19+92.00
END BRIDGE -L- STA.19+77.00
BEGIN STATE PROJECT B-3863 -L- STA.15+50.00
BEGIN CONSTRUCTION -L- STA.15+00.00
S 28° 25' 52.2" E
N 87° 45' 43.1" E
S 2° 36' 09.2" W
N 65° 03' 41.7" E
PT Sta. 10+50.88
PC Sta. 10+28.24
PC Sta. 11+07.98
PT Sta. 11+79.78
PT Sta. 17+84.01
-DRIVE- POT Sta. 12+03.68
PC Sta. 12+68.78
POT Sta. 10+00.00
POT Sta. 25+00.01
N 17° 28' 30.6" E
BM#1 -BL- STA. 6+48.48 49.08' RT. ELEV.= 240.49'
BM#2 -BL- STA. 13+39.01 34.43' RT. ELEV.= 213.18'
BM#3 -BL- STA. 23+41.09 105.00' LT. ELEV.= 225.07'
3-SPAN STEEL & TREATED TIMBER WITH WOOD WINGWALLS
-DRIVE-
PI Sta 10+42.35
Δ = 86° 30' 26.2" (LT)
D = 381° 58' 18.7"
L = 22.65'
T = 14.11'
R = 15.00'
PI Sta 11+65.70
Δ = 117° 32' 27.5" (RT)
D = 163° 42' 08.0"
L = 71.80'
T = 57.72'
R = 35.00'
-L-
PI Sta 15+64.43
Δ = 70° 17' 12.5" (RT)
D = 13° 38' 30.7"
L = 515.23'
T = 295.66'
R = 420.00'
SE = EXIST.
RO = 138'
SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRV- PROFILE
END APPROACH SLAB -L- STA.19+92.00
END BRIDGE -L- STA.19+77.00
BEGIN BRIDGE -L- STA.17+82.00
BEGIN APPROACH SLAB -L- STA.17+67.00
DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP

PROJECT REFERENCE NO.	SHEET NO.
B-3863	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION



5/28/99
-L-
BEGIN 1.25" RESURFACING -L- STA.15+50.00
END 1.25" RESURFACING BEGIN GRADE -L- STA.17+21.00 EL= 214.62
1.25" RESURFACING
END GRADE BEGIN 1.25" RESURFACING -L- STA.21+50.00 EL= 213.29
END 1.25" RESURFACING -L- STA.22+00.00
1.25" RESURFACING
PI= 17+74.00 EL= 214.10' VC= 100' K= 148
PI= 21+00.00 EL= 213.10' VC= 100' K= 146
(-)8.4957%
(-)0.9811%
(-)6.2400%
(-)0.3087%
(-)0.3067%
(+)0.3800%
(+)2.6000%
(+)0.2629%
(-)1.4200%
(+)3.3400%
BEG. RT. DITCH -L- STA.15+00 ELEV. 225.25
END RT. DITCH -L- STA.15+70 ELEV. 219.31
BEG. RT. DITCH -L- STA.17+00 ELEV. 211.77
END RT. DITCH -L- STA.17+50 ELEV. 208.65
BEG. RT. DITCH -L- STA.21+00 ELEV. 209.87
BEG. LT. DITCH -L- STA.21+00 ELEV. 208.73
PI= 22+00.000 EL= 210.15
END RT. DITCH -L- STA.22+00 ELEV. 212.17
END LT. DITCH -L- STA.22+50 ELEV. 211.82
BM#1 -L- STA.10+37.17 (60.39' RT.) EL= 240.49'
BM#2 -L- STA.17+08.45 (55.12' RT.) EL= 213.18'
BM#3 -BL- STA.23+41.09 (105.00' LT.) EL= 225.07'
SEE SHEET 4 FOR -L- PLAN VEIW
250
240
230
220
210
200
190
180
11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
-DRIVE-
-DRIVE- STA.10+00.00 = -L- STA.15+92.00 EL= 222.62 (INCLUDE 1.25" RESURFACING)
BEGIN GRADE -DRIVE- STA.10+16.50 = -L- STA.15+92.00 OFFSET (16.50 RT. (EL = 222.20')
END GRADE -DRIVE- STA.11+47.42 EL= 210.83
(-)4.0600%
(-)6.9436%
230
220
210
200
190
180
10 11
SEE SHEET 4 FOR -L- PLAN VEIW
15-SEP-2006 10:52
r:\roadway\pro\b3863_rdy_pfl.dgn
$$$$USERNAME$$$$

CATEGORICAL EXCLUSION ACTION CLASSIFICATION FORM

TIP Project No.	**B-3863**
State Project No.	**8.2312801**
W.B.S. No.	**33309.1.1**
Federal Project No.	**BRZ-1722(2)**

A. Project Description:

The purpose of this project is to replace Johnston County Bridge No. 151 on SR 1722 over the Little River. The replacement structure will be a bridge approximately 130 feet long with 33 feet clear deck width. The proposed bridge will be approximately at the same location and roadway grade. The cross section will include two 11-foot lanes with one 3-foot minimum offset on the north side of the bridge and one 7-foot minimum offset on the south side of the bridge.

The approach roadway, extending approximately 200 feet from either end of the bridge, will include two 11-foot lanes and 6-foot shoulders. The roadway will be designed as a Rural Local Route with a 35 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1). SR 1754, part of the off-site detour, should be resurfaced before construction begins. The current let schedule does not allow a year from letting of B-3481 to B-3863. The off-site detour for B-3481 will utilize SR 1722, NC 39, and NC 231. It may be necessary to change the let date of B-3863 to allow for completion of B-3481.

B. Purpose and Need:

Bridge No. 151 includes a three-span superstructure composed of a timber deck on steel girders. The substructure includes timber caps and timber piles.

Bridge Maintenance Unit records indicate the bridge has a sufficiency rating of 15.4 out of a possible 100 for a new structure. The bridge is considered structurally deficient and functionally obsolete due to a structural appraisal of 2 out of 9 and a deck geometry appraisal of 2 out of 9. According to the Federal Highway Administration (FHWA) standards, Bridge No. 151 is therefore eligible for FHWA's Highway Bridge Replacement and Rehabilitation Program.

Timber sub-structures typically do not last beyond 30 to 40 years of age due to the natural deterioration rates of wood. Rehabilitation of timber structure is generally practical only when a few members are damaged or prematurely deteriorated. However, past a certain degree of deterioration, timber structures become impractical to maintain and upon eligibility are programmed for replacement. Bridge No. 151 is approaching the end of its useful life.

C. Proposed Improvements:

Circle one or more of the following Type II improvements which apply to the project:

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

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

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

a. Installing ramp metering devices
b. Installing lights
c. Adding or upgrading guardrail
d. Installing safety barriers including Jersey type barriers and pier protection
e. Installing or replacing impact attenuators
f. Upgrading medians including adding or upgrading median barriers
g. Improving intersections including relocation and/or realignment
h. Making minor roadway realignment
i. Channelizing traffic
j. Performing clear zone safety improvements including removing hazards and flattening slopes
k. Implementing traffic aid systems, signals, and motorist aid
l. Installing bridge safety hardware including bridge rail retrofit

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

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

4. Transportation corridor fringe parking facilities.

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

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

7. Approvals for changes in access control.

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

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

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

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

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

13. Acquisition and construction of wetland, stream and endangered species mitigation sites.

14. Remedial activities involving the removal, treatment or monitoring of soil or groundwater contamination pursuant to state or federal remediation guidelines.

D. Special Project Information:

Estimated Costs:

Total Construction	$ 750,000
Right of Way	$ 33,000
Detour Improvements	$ 50,000
Total	$ 833,000

Estimated Traffic:

Current - 500 vpd	Year 2025 – 1200 vpd
TTST - 1%	Dual – 2%

Design Exceptions: "R-R-R Guidelines" will be used.

Division Four: Division Four will post the speed limit at 35 mph in the area of the bridge to ensure safety of the traveling public.

Bridge Demolition: Most timber and steel structures (as is Bridge No. 151) can be removed without any resulting fill in the stream.

Offsite Detour: NCDOT Guidelines for Evaluation of Offsite Detours for Bridge Replacement Projects considers multiple project variables beginning with the additional time traveled by the average road user resulting from the offsite detour.

The offsite detour for this project would include NC 231, SR 1754, NC 96, SR 1723, and back to SR 1722. The detour for the average road user would result in 3.0 minutes additional travel time (2.4 miles additional travel) which falls within the range of acceptable delay for the nine-month duration of construction expected on this project. Johnston County Emergency Services and Johnston County School Transportation have indicated that an offsite detour is acceptable and that services can be adequately re-routed during construction. The Division concurs in this recommendation.

E. Threshold Criteria

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

ECOLOGICAL		YES	NO
(1)	Will the project have a substantial impact on any unique or important natural resource?		X
(2)	Does the project involve habitat where federally listed endangered or threatened species may occur?	X	
(3)	Will the project affect anadromous fish?	X	
(4)	If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-tenth (1/10) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated?	X	
(5)	Will the project require the use of U. S. Forest Service lands?		X
(6)	Will the quality of adjacent water resources be adversely impacted by proposed construction activities?		X
(7)	Does the project involve waters classified as Outstanding Water Resources (OWR) and/or High Quality Waters (HQW)?		X
(8)	Will the project require fill in waters of the United States in any of the designated mountain trout counties?		X
(9)	Does the project involve any known underground storage tanks (UST's) or hazardous materials sites?		X
PERMITS AND COORDINATION		YES	NO
(10)	If the project is located within a CAMA county, will the project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)?		X
(11)	Does the project involve Coastal Barrier Resources Act resources?		X

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

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

F. Additional Documentation Required for Unfavorable Responses in Part E

Response to Question 2: Habitat exists for the Dwarf Wedgemussel and Tar Spinymussel. A survey taken in June 2004 indicates no species found. However, the species has been present upstream and downstream. US Fish and Wildlife Service has concurred in the biological conclusion of "Not Likely to Adversely Effect" for the Dwarf Wedgemussel and Tar Spinymussel. If construction has not started before June 2006, additional mussel surveys should be completed. The concurrence letter is located in the appendix.

Response to Question 3: The North Carolina Wildlife Resources Commission indicated in their letter dated September 15, 2003 that anadramous species are found in this portion of Little River. NCDOT should follow all stream-crossing guidelines for anadramous fish passage, including an in-water work moratorium from February 15th to June 15th.

G. CE Approval

TIP Project No.	**B-3863**
State Project No.	**8.2312801**
W.B.S. No.	**33309.1.1**
Federal Project No.	**BRZ-1722(2)**

Project Description:

The purpose of this project is to replace Johnston County Bridge No. 151 on SR 1722 over the Little River. The replacement structure will be a bridge approximately 130 feet long with 33 feet clear deck width. The proposed bridge will be approximately at the same location and roadway grade. The cross section will include two 11-foot lanes with one 3-foot minimum offset on the north side of the bridge and one 7-foot minimum offset on the south side of the bridge.

The approach roadway, extending approximately 200 feet from either end of the bridge, will include two 11-foot lanes and 6-foot shoulders. The roadway will be designed as a Rural Local Route with a 35 mile per hour design speed.

Traffic will be detoured off-site during construction (see Figure 1). SR 1754, part of the off-site detour, should be resurfaced before construction begins. The current let schedule does not allow a year from letting of B-3481 to B-3863. The off-site detour for B-3481 will utilize SR 1722, NC 39, and NC 231. It may be necessary to change the let date of B-3863 to allow for completion of B-3481.

Categorical Exclusion Action Classification: (Check one)

____ TYPE II(A)
__X__ TYPE II(B)

Approved:

8/9/05 — Date
Eastern Project Development Engineer
Project Development & Environmental Analysis Branch

8/9/05 — Date
Project Engineer
Project Development & Environmental Analysis Branch

8/9/05 — Date
Project Development Engineer
Project Development & Environmental Analysis Branch

For Type II(B) projects only:

8/9/05 — Date
for John F. Sullivan, III, Division Administrator
Federal Highway Administration

PROJECT COMMITMENTS:

Johnston County
Bridge No. 151 on SR 1722
Over Little River
Federal Aid Project No. BRZ-1722 (2)
State Project No. 8.2312801
W.B.S. No. 33309.1.1
T.I.P. No. B-3863

Division 4 Construction /Roadway Design/Program Development/ – Overlapping Detours

The detour routes for B-3481 and B-3863 share NC 231 as one leg of the detour. The detour route for B-3863 also includes NC 96, where B-3863 is located. The current let schedule does not allow a year from letting of B-3481 to B-3863. It may be necessary to change the let date of B-3863 to allow for completion of B-3481.

Office of Natural Environment/Hydraulic Design Unit – Buffer Rules

This project is subject to Riparian Buffer Rules.

Division 4 Construction – Resurfacing SR 1754

NCDOT will resurface SR 1754 before construction begins.

Division 4 Construction – Posting speed limit

Division 4 will post the speed limit at 35 mph in the area of the bridge to ensure safety of the traveling public.

Division 4 Construction – Coordination with local officials

In order to allow Emergency Management Services (EMS) time to prepare for road closure, the NCDOT Resident Engineer will notify Dewayne West with Johnston County EMS at (919) 989-5050 of the bridge removal 30 days prior to road closure.

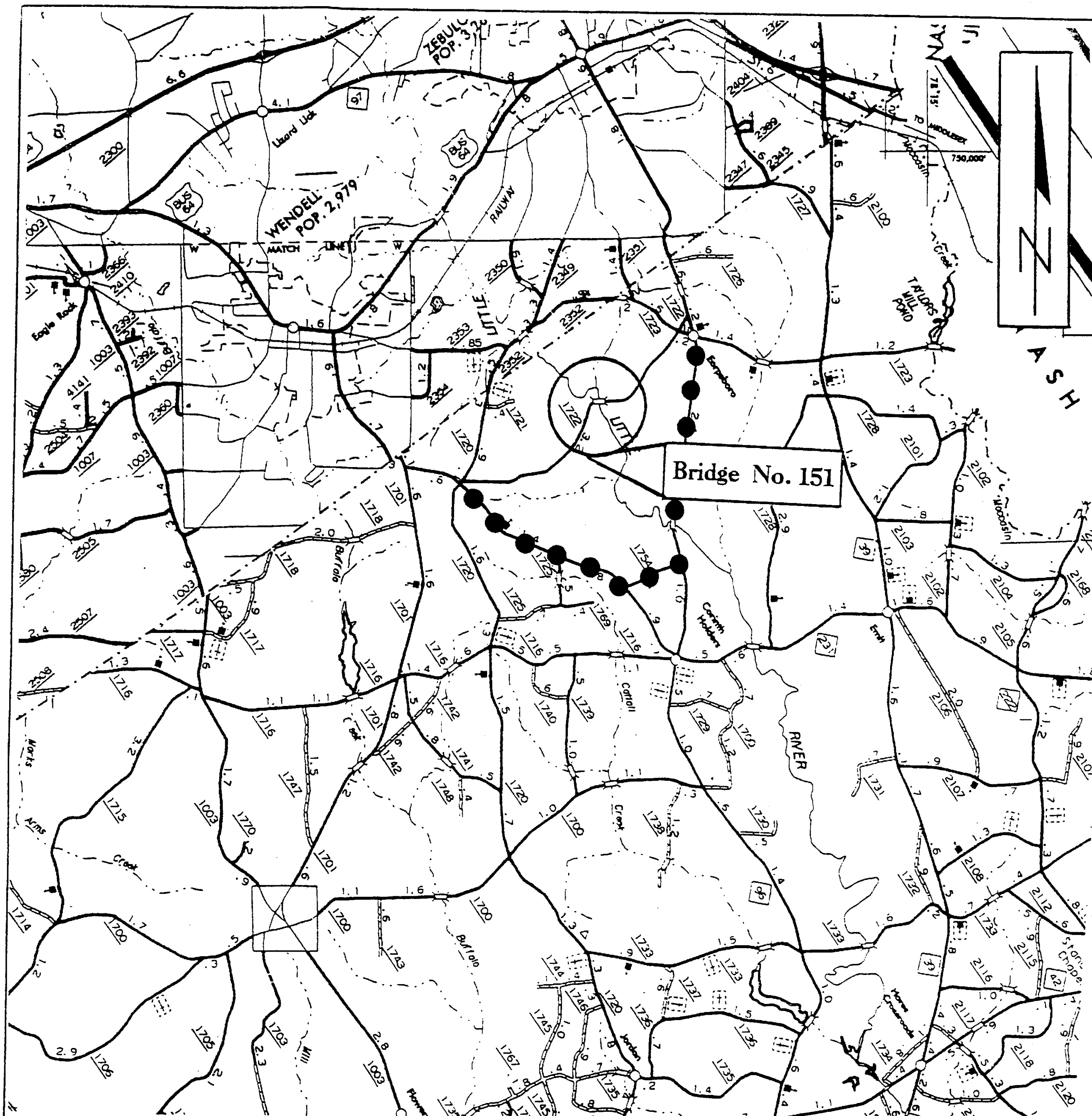
Office of Natural Environment - Moratorium

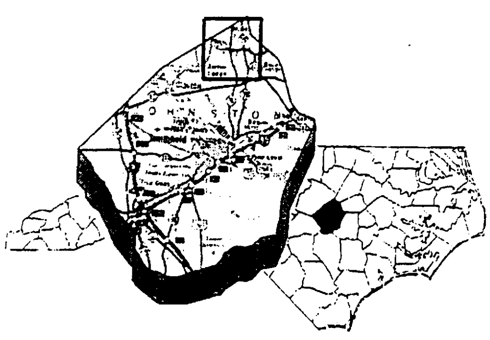
NCDOT will follow stream-crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to June 15.

Roadway Design Unit/Structure Design Unit/Roadside Environmental Unit/Hydraulic Design Unit/Division 4 Construction/Project Development and Environmental Analysis Branch – Dwarf Wedgemussel and Tar Spinymussel

The U. S. Fish and Wildlife Service (USFWS) was consulted in regard to the effect of project construction on the Dwarf Wedgemussel and Tar Spinymussel. The USFWS concurred in the biological conclusion that project construction is "Not Likely to Adversely Affect" the Dwarf Wedgemussel Tar Spinymussel and the and NCDOT will implement the conservation measures listed below:

1. Use a bridge that will yield the longest spans practicable to reduce impacts to aquatic life.
2. If bridge bents are necessary, NCDOT will place the bents at the edge of the water (not in the center) to minimize permanent and temporary impacts.
3. This project area is located in an Environmentally Sensitive Area. All special procedures for clearing, grubbing, grading, seeding, and mulching will apply.
4. If heavy equipment is used along the stream bank, a clean rock or timber workpad will be utilized to support the equipment.
5. Bents from the existing structure should be cut at the mudline.
6. Special sediment control fence is not practicable, clearing and grubbing should not occur during the non-growing season (November through March, USDA/SCS, Johnston County Soil Survey, 1983).
7. Due to the proximity of a federally protected species, all unstabilized areas of the project within the fifty foot riparian buffer area will be temporarily stabilized during active grading utilizing erosion control blankets, fabric, plastic, or other material(s), approved by the Roadside Environmental Unit, prior to any rain event, as directed by the Engineer on site. The temporary stabilization should be adequately anchored and utilized to prevent the loss of sediment into the water course unless runoff from these areas can be diverted to an adequately designed sediment basin or until the area is stabilized with vegetation.
8. If construction has not started before June 2006, additional mussel surveys should be completed.
9. An off-site detour will be used.





Detour Route

North Carolina Department of Transportation
Division of Highways
Project Development & Environmental Analysis

Johnston County
Replace Bridge No. 151 on SR 1722
Over Little River
B-3863

SCALE: 1 in = **2** mi

Figure 1

United States Department of the Interior

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

June 28, 2005

Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of June 24, 2005 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the replacement of Bridge No. 151 on SR 1722 over Little River in Johnston County (TIP No. B-3863) may affect, but is not likely to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and Tar spinymussel (*Elliptio steinstansana*). In addition, NCDOT has determined that the project will have no effect on the red-cockaded woodpecker (*Picoides borealis*) and Michaux's sumac (*Rhus michauxii*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to information provided, a mussel survey was conducted at the project site on June 25, 2004. The survey extended 100 meters upstream and 400 meters downstream of SR 1722. Neither of the federally listed mussel species was found. However, several individuals representing at least two other unlisted species were found. The dwarf wedgemussel was previously observed immediately upstream of the project area in 1997 and approximately two miles downstream in 1998.

As the result of an October 5, 2004 field meeting and several email communications over the last several months between your staff and Mr. Gary Jordan of my staff, several conservation measures have been agreed to. These conservation measures are listed below:

- Use a bridge that will yield the longest spans practicable to reduce impacts to aquatic life.
- If bridge bents are necessary, NCDOT will place the bents at the edge of the water (not in the center) to minimize permanent and temporary impacts.
- This project area is located in an Environmentally Sensitive Area. All special procedures for clearing, grubbing, grading, seeding, and mulching will apply.
- If heavy equipment is used along the stream bank, a clean rock or timber workpad will be utilized to support the equipment.

- Bents from the existing structure should be cut at the mudline.
- Special sediment control fence should be used as practicable. In areas where special sediment control fence is not practicable, clearing and grubbing should not occur during the non-growing season (November through March, USDA/ SCS, Johnston County Soil Survey, 1983).
- Due to the proximity of a federally protected species, all unstabilized areas of the project within the a fifty foot riparian buffer area will be temporarily stabilized during active grading utilizing erosion control blankets, fabric, plastic, or other material(s), approved by the Roadside Environmental Unit, prior to any rain event, as directed by the Engineer on site. The temporary stabilization should be adequately anchored and utilized to prevent the loss of sediment into the water course unless runoff from these areas can be diverted to an adequately designed sediment basin or until the area is stabilized with vegetation.
- If construction has not started before June 2006, additional mussel surveys should be completed.
- An off-site detour will be used.

Based on the mussel survey results and the commitment to the conservation measures listed above, the Service concurs with your determination that the proposed bridge replacement may affect, but is not likely to adversely affect the dwarf wedgemussel and Tar spinymussel. In addition, the Service concurs with your determination that the project will have no effect on the red-cockaded woodpecker and Michaux's sumac.

We believe that the requirements of section 7(a)(2) of the ESA have been satisfied. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

Sincerely,

John Ellis

John Ellis
Acting Ecological Services Supervisor

cc: Bill Biddlecome, USACE, Washington, NC
Christina Breen, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

North Carolina Wildlife Resources Commission

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Robin Y. Hancock
Project Development and Environmental Analysis Branch, NCDOT

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: September 15, 2003

SUBJECT: NCDOT Bridge Replacements in Warren, Nash, and Johnston counties. TIP Nos. B-3863, B-3876, B-3877, B-3921, and B-4312.

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

Our standard recommendations for bridge replacement projects of this scope are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.

2. Bridge deck drains should not discharge directly into the stream.

3. Live concrete should not be allowed to contact the water in or entering into the stream.

4. If possible, bridge supports (bents) should not be placed in the stream.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 733-3633 ext. 281 • **Fax:** (919) 715-7643

5. If temporary access roads or detours are constructed, they should be removed back to original ground elevations immediately upon the completion of the project. Disturbed areas should be seeded or mulched to stabilize the soil and native tree species should be planted with a spacing of not more than 10'x10'. If possible, when using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact, allows the area to revegetate naturally and minimizes disturbed soil.

6. A clear bank (riprap free) area of at least 10 feet should remain on each side of the steam underneath the bridge.

7. In trout waters, the N.C. Wildlife Resources Commission reviews all U.S. Army Corps of Engineers nationwide and general '404' permits. We have the option of requesting additional measures to protect trout and trout habitat and we can recommend that the project require an individual '404' permit.

8. In streams that contain threatened or endangered species, NCDOT biologist Mr. Hal Bain should be notified. Special measures to protect these sensitive species may be required. NCDOT should also contact the U.S. Fish and Wildlife Service for information on requirements of the Endangered Species Act as it relates to the project.

9. In streams that are used by anadromous fish, the NCDOT official policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997)" should be followed.

10. In areas with significant fisheries for sunfish, seasonal exclusions may also be recommended.

11. Sedimentation and erosion control measures sufficient to protect aquatic resources must be implemented prior to any ground disturbing activities. Structures should be maintained regularly, especially following rainfall events.

12. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 15 days of ground disturbing activities to provide long-term erosion control.

13. All work in or adjacent to stream waters should be conducted in a dry work area. Sandbags, rock berms, cofferdams, or other diversion structures should be used where possible to prevent excavation in flowing water.

14. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams.

15. Only clean, sediment-free rock should be used as temporary fill (causeways), and should be removed without excessive disturbance of the natural stream bottom when construction is completed.

16. During subsurface investigations, equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

If corrugated metal pipe arches, reinforced concrete pipes, or concrete box culverts are used:

1. The culvert must be designed to allow for aquatic life and fish passage. Generally, the culvert or pipe invert should be buried at least 1 foot below the natural streambed (measured from the natural thalweg depth). If multiple barrels are required, barrels other than the base flow barrel(s) should be placed on or near stream bankfull or floodplain bench elevation (similar to Lyonsfield design). These should be reconnected to floodplain benches as appropriate. This may be accomplished by utilizing sills on the upstream and downstream ends to restrict or divert flow to the base flow barrel(s). Silled barrels should be filled with sediment so as not to cause noxious or mosquito breeding conditions. Sufficient water depth should be provided in the base flow barrel(s) during low flows to accommodate fish movement. If culverts are longer than 40-50 linear feet, alternating or notched baffles should be installed in a manner that mimics existing stream pattern. This should enhance aquatic life passage: 1) by depositing sediments in the barrel, 2) by maintaining channel depth and flow regimes, and 3) by providing resting places for fish and other aquatic organisms. In essence, base flow barrel(s) should provide a continuum of water depth and channel width without substantial modifications of velocity.

2. If multiple pipes or cells are used, at least one pipe or box should be designed to remain dry during normal flows to allow for wildlife passage.

3. Culverts or pipes should be situated along the existing channel alignment whenever possible to avoid channel realignment. Widening the stream channel must be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

4. Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be professionally designed, sized, and installed.

In most cases, we prefer the replacement of the existing structure at the same location with road closure. If road closure is not feasible, a temporary detour should be designed and located to avoid wetland impacts, minimize the need for clearing and to avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be utilized as mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-3863, Johnston County, Bridge No. 151 over Little River on SR 1722. We recommend replacing this bridge with a bridge. Our records indicate a known population of Dwarf wedge mussel (*Alasmidonta heterodon*) and Atlantic Pigtoe (*Fusconaia masoni*) in close proximity to the project. NCDOT should conduct a mussel survey to determine the presence or absence of these species. Anadromous species are found in this portion of the Little River. NCDOT should follow all stream crossing guidelines for anadromous fish passage, including an in-water work moratorium from February 15 to June 15. Standard recommendations apply.

2. B-3876, Nash County, Bridge No. 34 over Pig Basket Creek on SR 1004. We recommend replacing this bridge with a bridge. Standard recommendations apply.

3. B-3877, Nash County, Bridge No. 52 over Turkey Creek on SR 1101. We recommend replacing this bridge with a bridge. Our records indicate a known population of Dwarf wedge mussel (*Alasmidonta heterodon*) and Atlantic Pigtoe (*Fusconaia masoni*) in close proximity to the project. NCDOT should conduct a mussel survey to determine the presence or absence of these species. Standard recommendations apply.

4. B-3921, Warren County, Bridge No. 45 over Fishing Creek on SR 1600. We recommend replacing this bridge with a bridge. Our records indicate a known population of Yellow Lance (*Elliptio lanceolata*) in close proximity to the project. NCDOT should conduct a mussel survey to determine the presence or absence of this species. Standard recommendations apply.

5. B-4312, Warren County, Bridge No. 42 over Shocco Creek on SR 1613. We recommend replacing this bridge with a bridge. Our records indicate a known population of Dwarf wedge mussel (*Alasmidonta heterodon*) in close proximity to the project. NCDOT should conduct a mussel survey to determine the presence or absence of this species. Standard recommendations apply.

NCDOT should routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. Restoring previously disturbed floodplain benches should narrow and deepen streams previously widened and shallowed during initial bridge installation. NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks and reduce habitat fragmentation.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 528-9886. Thank you for the opportunity to review and comment on these projects.

Cc: Gary Jordan, U.S. Fish and Wildlife Service, Raleigh

R Zering

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor

Division of Archives and History
Jeffrey J. Crow, Director

January 16, 2001

MEMORANDUM

To: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

From: David Brook BB for David Brook
Deputy State Historic Preservation Officer

Re: Replacement of Bridge No. 151 on SR 1722 over Little River, TIP No. B-3863, Johnston County, ER 01-7931

On December 5, 2000, April Montgomery of our staff met with the North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. She reported our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project area photographs and aerial photographs at the meeting.

Based upon our review of the photographs and the information discussed at the meeting, we offer our preliminary comments regarding this project.

In terms of historic architectural resources we are aware of no historic structures located within the area of potential effect. We recommend that no historic architectural survey be conducted for this project.

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

Having provided this information, we look forward to the receipt of either a Categorical Exclusion or Environmental Assessment, which indicates how NCDOT addressed our comments.

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 any questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919 733-4763.

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

NATURAL RESOURCES TECHNICAL REPORT

for the

REPLACEMENT OF BRIDGE NO. 151 ON SR 1722 OVER LITTLE RIVER JOHNSTON COUNTY, NORTH CAROLINA

TIP No. B-3863
State Project No. 8.2312801
NCDOT Consulting Project No. 00-LM-07
LandMark Design Group Number 1960024-307.00

Prepared for the

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Project Development and Environmental Analysis Branch
Natural Resources, Permits and Mitigation Unit
One South Wilmington Street, Post Office Box 25201
Raleigh, North Carolina 27611
Attn: Elizabeth Lusk

Issued: August 2001

LANDMARK DESIGN GROUP

Environmental Consultants & Planners
6512 Six Forks Road, Suite 200, Raleigh, NC 27615, (919) 676-5220 FAX (919) 676-5224 lmdg@landmarkdg.com

Table of Contents

List of Tables

1.0 INTRODUCTION

The following Natural Resources Technical Report is submitted to assist in preparation of a Categorical Exclusion (CE) for the proposed project. The project is located in northern Johnston County (Figure 1).

1.1 Project Description

The proposed project calls for the replacement of Bridge No. 151 on SR 1722, over Little River, with a new 130.00 ft (39.62 m) long bridge at approximately the same location and roadway elevation as the existing bridge. Traffic will be maintained off-site on existing roads.

The existing right-of-way is ditch line to ditch line. The proposed right-of-way width is 80.00 ft (24.38 m). Project length is approximately 550.00 ft (167.67) m. The existing bridge is 106.00 ft (32.32 m) long.

1.2 Purpose

The purpose of this technical report is to inventory, catalog, and describe the various natural resources likely to be impacted by the proposed action. This report also attempts to identify and estimate the probable consequences of the anticipated impacts to these resources. Recommendations are made for measures that will minimize resource impacts. **These descriptions and estimates are relevant only in the context of existing preliminary design concepts. If design parameters and criteria change, additional field investigations will need to be conducted.**

1.3 Methodology

Research was conducted prior to field investigations. Information sources used in this pre-field investigation of the study area include: Zebulon (1968) U.S. Geological Survey (USGS) quadrangle, Zebulon (1995) U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Map, Natural Resources Conservation Service (NRCS) soil maps, and NCDOT aerial photographs of the project area. Water resource information was obtained from publications of the Department of Environment and Natural Resources. Information concerning the occurrence of federal and state protected species in the study area was gathered from the U.S. Fish and Wildlife Service (FWS) list of protected species and species of concern, and the N.C. Natural Heritage Program (NHP) database of rare species and unique habitats.

LandMark Design Group environmental scientists Wendee Smith and Ryan Smith conducted general field surveys along the proposed alignment on 16 April 2001. Plant communities and their associated wildlife were identified and recorded. Wildlife identification involved using one or more of the following observation techniques: active search and capture, visual observations, and identification of characteristic signs of wildlife (sounds, scat, tracks and burrows). Jurisdictional wetland determinations were performed utilizing delineation criteria prescribed in the Corps of Engineers *Wetlands Delineation Manual* (Environmental Laboratory, 1987). Jurisdictional surface water

determinations were performed using guidance provided by N.C. Division of Water Quality (DWQ) *Field Location of Streams, Ditches, and Ponding* (Environmental Lab, 1997).

1.4 Qualifications of Investigators

1) Investigator: Ryan Smith, Environmental Scientist,
LandMark Design Group Inc., September 1999 to Present
Education: B.S. Natural Resources: Ecosystem Assessment,
Minor in Environmental Science, North Carolina State University, 1999
Experience: Project Coordinator, Environmental Impact, Inc. Aberdeen, NC, May 1999 to August 1999
Forestry Technician, N.C. Forest Service, Summer 1998

2) Investigator: Wendee B. Smith, Environmental Scientist,
LandMark Design Group Inc., September 1999 to Present
Education: B.S. Natural Resources: Ecosystem Assessment,
Minor in Environmental Science, North Carolina State University, 1999
Experience: Natural Systems Specialist,
N.C. Department of Transportation/Project Development and Environmental Analysis Branch, May 1999 to August 1999
Forestry Technician, N.C. Forest Service, Summer 1998

1.5 Definitions

Definitions for area descriptions used in this report are as follows: **Project Study Area** denotes the area bounded by proposed construction limits; **Project Vicinity** describes an area extending 0.50 mi (0.80 km) on all sides of the project study area; and **Project Region** is equivalent to an area represented by a 7.5 minute USGS quadrangle map with the project occupying the central position.

2.0 PHYSICAL RESOURCES

Soil and water resources that occur in the study area are discussed below. Soils and availability of water directly influence composition and distribution of flora and fauna in any biotic community.

The project study area lies within the Piedmont Physiographic Province. The topography in this section of Johnston County is gently rolling. Topography in the project area is flat because it is located within the floodplain of the Little River. Project elevation is approximately 210.00 ft (64.02 m) above mean sea level (msl).

2.1 Soils

Two soil phases occur within the project study area: Wedowee sandy loam and Wehadkee loam. They are as follows (Johnston County Soil Survey, 1994):

- Wedowee sandy loam with 8 to 15 percent slopes is a well-drained soil found on side slopes in the uplands of the Piedmont. It is commonly found in areas dissected by numerous drainageways. Permeability and available water capacity are moderate, with a rapid surface runoff. Slope and moderate permeability are the primary limitations.

- Wehadkee loam, frequently flooded with 0 to 2 percent slopes is a nearly level, poorly drained soil commonly found in floodplains along streams. Permeability is moderate, and available water capacity is high. The seasonal high water table is at the surface or within a depth of 1.00 ft (0.30 m) The soil is frequently flooded for brief periods, and has a slow surface runoff. Flooding and wetness are the primary limitations.

2.2 Water Resources

This section contains information concerning those water resources likely to be impacted by the project. Water resource information encompasses physical aspects of the resource, its relationship to major water systems, Best Usage Standards, and water quality of the resources. Probable impacts to surface water resources and minimization methods are also discussed.

2.2.1 Waters Impacted and Characteristics

The section of the Little River flowing through the project area will be the only surface water impacted. Little River is located in sub-basin 03-04-06 of the Tar-Pamlico River Basin. The average baseflow width is approximately 60.00 ft (18.29 m). The average depth is approximately 4.00 ft (1.22 m). The Little River is a brownwater creek. The substrate is sandy silt loam.

2.2.2 Best Usage Classification

Streams have been assigned a best usage classification by the NC Division of Water Quality. The classification of Little River in the project area is **WS-V NSW** (http://h2o.enr.state.nc.us/bims/Reports/reports.html, 2001). The classification **WS-V** is placed upon waters protected as water supplies which are generally upstream and draining to Class WS-IV waters or waters used by industry to supply their employees with drinking water or as waters formerly used as water supply. **WS-V** has no categorical restrictions on watershed development or wastewater discharges like other WS classifications and local governments are not required to adopt watershed protection ordinances. **Nutrient Sensitive Waters (NSW)** are waters needing additional nutrient management because they are subject to excessive growth of microscopic or macroscopic vegetation. In general, management strategies for point and nonpoint source pollution control require no increase in nutrients over background levels.

Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds or WS-II: predominately undeveloped watersheds) nor Outstanding Resource Waters (ORW) occur within 1.00 mi (1.61 km) of the project study area.

2.2.3 Water Quality

The DWQ has initiated a basin-wide approach to water quality management for each of the 17 river basins within the state. To accomplish this goal the DWQ collects biological, chemical, and physical data that can be used in basinwide assessment and planning. All basins are reassessed every five years. Prior to the implementation of the basinwide approach to water quality management, the Benthic Macroinvertebrate Ambient Network (BMAN) assessed water quality by sampling for benthic macroinvertebrate organisms at fixed monitoring sites throughout the state. **There is a BMAN station (DEM No. 27-57-(8.5)) located on the Little River at State Road 1722 in Johnston County within 1.00 mi (1.61 km) of the project study area. The station received a bioclassification rating of good-fair in August 1995.**

Many benthic macroinvertebrates have stages in their life cycle that can last from six months to a year; therefore, the adverse effects of a toxic spill will not be overcome until the next generation. Different taxa of macroinvertebrates have different tolerances to pollution, thereby, long-term changes in water quality conditions can be identified by population shifts from pollution sensitive to pollution tolerant organisms (and vice versa). Overall, the species present, the population diversity and the biomass are reflections of long-term water quality conditions.

Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) Program. Any discharger is required to register for a permit. **There is no point source discharge located on the Little River within 1.00 mi (1.61 km) upstream of the project study area.**

2.2.4 Ecological Impacts

Replacing an existing structure in the same location with a road closure during construction is almost always preferred. It poses the least risk to aquatic organisms and other natural resources. Bridge replacement on a new location usually results in more severe impacts. Usually, project construction does not require the entire right-of-way; therefore, actual impacts may be considerably less.

Project construction may result in the following impacts to surface waters:

1. Increased sedimentation and siltation from demolition debris and/or erosion resulting from vegetation and land disturbance during construction,

2. Changes in light incidence and water clarity due to increased sedimentation and vegetation removal,

3. Alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow from construction,

4. Changes in water temperature due to the increase of sun and wind exposure resulting from streamside vegetation removal,

5. Increased nutrient loading during construction via runoff from exposed areas, and/or

6. Increased input of toxic compounds from demolition, construction, toxic spills, and highway runoff.

Precautions must be taken to minimize impacts to water resources in the study area. The NCDOT's Best Management Practices (BMP) for the Protection of Surface Waters must be strictly enforced during the construction stage of the project. Guidelines for these BMPs include, but are not limited to minimizing built upon area and diverting stormwater away from surface waters as much as possible. Provisions to preclude contamination by toxic substances during the construction interval must also be strictly enforced.

3.0 BIOTIC RESOURCES

Biotic resources include aquatic and terrestrial ecosystems. This section describes those ecosystems encountered in the study area, as well as, the relationships between flora and fauna within these ecosystems. Composition and distribution of biotic communities throughout the project area are reflective of topography, hydrologic influences, and past and present land uses in the study area. Descriptions of the terrestrial systems are presented in the context of plant community classifications and follow descriptions presented by Schafale and Weakley (1990) where possible. Dominant flora and fauna observed, or likely to occur, in each community are described and discussed.

Scientific nomenclature and common names (when applicable) are provided for each plant and animal species described. Plant taxonomy generally follows Radford *et al.* (1968). Animal taxonomy follows Martof *et al.* (1980), Potter *et al.* (1980), and Webster *et al.* (1985). Subsequent references to the same organism will include the common name only. Fauna observed during the site visits are denoted with an asterisk (*). Published range distributions and habitat analysis are used in estimating fauna expected to be present within the project area.

3.1 Terrestrial Communities

Six distinct terrestrial communities are identified in the project study area: Pine Forest, Bottomland Hardwood Forest, successional, maintained/disturbed roadside, grass lot, and riparian. Community boundaries within the study area are well defined without a significant transition zone between them. Faunal species likely to occur within the study area will exploit all communities for shelter, foraging opportunities, and/or as movement corridors.

3.1.1 Pine Forest

The pine forest is present west of Little River, on the north and south sides of State Road 1722 adjacent to the maintained/disturbed roadside. The canopy is dominated by loblolly pine (*Pinus taeda*), but is also comprised of white oak (*Quercus alba*) and sweet-gum (*Liquidambar styraciflua*). The understory consists of saplings of the canopy trees.

Wildlife associated with this community includes fox (*Urocyon* sp.), rabbit (*Sylvilagus* sp.), white-tailed deer (*Odocoileus virginianus*), opossum (*Didelphis virginiana*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), and deer mice (*Peromyscus maniculatus*).

Avian species utilizing this community likely include: turkey vulture (*Cathartes aura),* blue jay (*Cyanocitta cristata*), northern cardinal (*Cardinalis cardinalis*), mockingbird (*Mimus polyglottos*), Carolina wren (*Thryothorus ludovicianus*), bobwhite quail (*Colinus virginianus*), and red tail hawk (*Buteo jamaicensis*).

3.1.2 Bottomland Hardwood Forest

The bottomland hardwood forest is present on the east and west sides of the Little River. The bottomland hardwood forest on the east side of the Little River is south of State Road 1722 adjacent to the maintained/disturbed roadside and at the boundary of the riparian community. The canopy here is dominated by river birch (*Betula nigra*) and sweet-gum. The bottomland hardwood forest on the west side of the River is present north of State Road 1722, and between the successional and pine forest communities. The canopy is dominated by red mulberry (*Morus rubra*), swamp chestnut oak (*Q. michauxii*), sweet-gum, and tree of heaven (*Ailanthus altissima*). The understory for each location of the bottomland hardwood forest is comprised of saplings of the canopy trees ironwood (*Carpinus caroliniana*), loblolly pine, winged elm (*Ulmus alata*), dogwood (*Cornus florida*), water oak (*Q. nigra*), and beech (*Fagus grandifolia*). Faunal species frequenting this community will be largely those species inhabiting the pine forest.

3.1.3 Successional

The successional community is present on the north and south sides of State Road 1722. On the north side of State Road 1722, the community is adjacent to both sides of the Little River. On the south side of the road, the community is west of the River between the riparian community and the gravel road leading to a private residence. The community is composed of blackberry (*Rubus argutus*), Japanese honeysuckle (*Lonicera japonica*), muscadine grape (*Vitis rotundifolia*), and black willow (*Salix nigra*). Faunal species frequenting this community will be largely those species inhabiting the pine forest.

3.1.4 Maintained/Disturbed Roadside

The maintained/disturbed roadside community is present through out the entire corridor bordering State Road 1722. This community is comprised of grass (*Festuca* sp.), poison ivy (*Toxicodendron radicans*), Japanese honeysuckle, and trumpet creeper (*Campsis radicans*). Faunal species frequenting this community will be largely those species inhabiting the pine forest.

3.1.5 Grass Lot

The grass lot is located west of the Little River and north of State Road 1722, adjacent to the wet successional community. Grass that is regularly maintained dominates this community. Faunal species frequenting this community will be largely those species inhabiting the pine forest.

3.1.6 Riparian

The riparian community is located south of State Road 1722 on both sides of the Little River. The canopy is comprised of American elm (*Ulmus Americana*), sweet-gum, red maple (*Acer rubrum*), river birch, and swamp chestnut oak. The under story is comprised of saplings from the canopy, ironwood, Chinese privet (*Ligustrum sinense*), black willow, winged elm, and green brier (*Smilax rotundifolia*).

3.2 Aquatic Communities

One aquatic community, the Little River will be impacted by the proposed project. Physical characteristics of a water body and the condition of the water resource influence faunal composition of aquatic communities. Terrestrial communities adjacent to a water resource also greatly influence aquatic communities. No submersed or emergent aquatic vegetation was observed within this section of the Little River. Vegetation found along the bank of the Little River includes American elm, sweet-gum, red maple, river birch, and swamp chestnut oak.

Fauna associated with these aquatic communities includes various invertebrate and vertebrate species. Fish species likely to occur in the Little River include swamp darter (*Etheostoma fusiforme*), bluegill (*Lepomis macrochirus*), striped bass (*Morone saxatilis*), and channel catfish (*Ictalurus punctatus*). Invertebrates that would be present include various species of caddisflies (Trichoptera), mayfly (Ephemeroptera), crayfish (Decapoda), dragonflies (Odonata), and damselflies (Odonata). Grass Shrimp (*Palaemonetes pugio*)* and bullfrogs (Rana catasbeiana)* were observed during field surveys.

3.3 Summary of Anticipated Impacts

Construction of the subject project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies impacts to the natural resources in terms of area impacted and ecosystems affected. Temporary and permanent impacts are considered here as well.

Calculated impacts to terrestrial resources reflect the relative abundance of each community present within the study area. Project construction will result in clearing and degradation of portions of these communities. Table 1 summarizes potential quantitative losses to these biotic communities, resulting from project construction. Estimated impacts are derived using the entire proposed right-of-way width of 80.00 ft (24.38 m). Usually, project construction does not require the entire right-of-way; therefore, actual impacts may be considerably less.

Table 1. Anticipated impacts.

Community	Wetlands	Uplands	Totals
Pine Forest	--	0.06 ac (0.02 ha)	0.06 ac (0.02 ha)
Bottomland Hardwood Forest	0.02 ac (0.01 ha)	0.04 ac (0.02 ha)	0.06 ac (0.03 ha)
Successional	0.05 ac (0.02 ha)	0.04 ac (0.02 ha)	0.09 ac (0.04 ha)
Maintained/Disturbed Roadside	--	0.36 ac (0.15 ha)	0.36 ac (0.15 ha)
Grass Lot	--	0.04 ac (0.02 ha)	0.04 ac (0.02 ha)
Riparian (Perennial)	0.004 ac (0.002 ha)	0.01ac (0.004 ha)	0.014 ac (0.006 ha)
Little River	--	--	--
Total	**0.074 ac (0.032 ha)**	**0.55 ac (0.234 ha)**	**0.624 ac (0.316 ha)**

Plant communities found within the proposed project area serve as nesting and sheltering habitat for various wildlife species. Replacing Bridge No. 151 and its associated improvements will reduce habitat for faunal species, thereby diminishing faunal numbers. However, due to the size and scope of this project, it is anticipated that impacts to fauna will be minimal.

Areas cleared by construction (but not paved) will become road shoulders and early successional habitat. Reduced habitat will displace some wildlife further from the roadway while attracting other wildlife by the creation of earlier successional habitat. Animals temporarily displaced by construction activities will repopulate areas suitable for the species.

Aquatic communities are sensitive to even small changes in their environment. Stream channelization, scouring, siltation, sedimentation, and erosion from construction- related work will affect water quality and biological constituents. Although direct impacts may be temporary, environmental impacts from these construction processes may result in long term effects.

Impacts often associated with in-stream construction include increased channelization and scouring of the streambed. In-stream construction alters the stream substrate and may remove streamside vegetation at the site. Disturbances to the substrate will produce siltation, which in excessive amounts can clog the gills and/or feeding mechanisms of benthic organisms (sessile filter-feeders and deposit-feeders), fish, and amphibian species. Benthic organisms can also be covered by excessive amounts of sediment. These organisms are slow to recover or repopulate a stream.

The removal of streamside vegetation and placement of fill material at the construction site alters the terrain. Alterations of the streambank enhance the likelihood of erosion and sedimentation. Revegetation stabilizes and holds the soil thus mitigating these processes. Erosion and sedimentation carry soils, toxic compounds, and other materials into aquatic communities at the construction site. These processes magnify turbidity and can cause the formation of sandbars at the site and downstream, thereby altering water flow and the growth of vegetation. Streamside alterations also lead to more direct sunlight penetration and to elevations of water temperatures that may impact many species. **Based on the potential for increased sedimentation, it is recommended that silt curtains be used during construction.**

4.0 JURISDICTIONAL TOPICS

This section provides descriptions, inventories, and impact analysis pertinent to two important issues—"Waters of the United States" and rare and protected species.

4.1 Waters of the United States

Surface waters and wetlands fall under the broad category of "Waters of the United States," as defined in Section 33 of the Code of Federal Register (CFR) Part 328.3. Wetlands, defined in 33 CFR 328.3, are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Any action that proposes to place fill into these areas falls under the jurisdiction of the U.S. Army Corps of Engineers (COE) under Section 404 of the Clean Water Act (33 U.S.C. 1344).

4.1.1 Characteristics of Wetlands and Surface Waters

Potential wetland communities were investigated pursuant to the 1987 Corps of Engineers *Wetlands Delineation Manual*. The three-parameter approach is used where hydric soils, hydrophytic vegetation, and prescribed hydrologic characteristics must **all** be present for an area to be considered a wetland. Wetlands were identified within the project corridor. Potential permanent impacts to wetlands are as follows:

- Permanent wetland impacts to the bottomland hardwood forest (successional species dominate due to recent clear cut) located north of State Road 1722 and east of the Little River are approximately **0.05 ac (0.02 ha)**.
- Permanent wetland impacts to the bottomland hardwood forest located south of State Road 1722 and east to the Little River are approximately **0.02 ac (0.01 ha)**.
- Permanent wetland impacts to the riparian community located south of State Road 1722 and east of the Little River are approximately **0.004 ac (0.002 ha)**.

The Little River is a jurisdictional surface water under Section 404 of the Clean Water Act (33 USC 1344). No surface water impacts to the Little River are anticipated.

Usually, project construction does not require the entire ROW; therefore, actual surface water impacts may be considerably less.

4.1.2 Permits

As described above, impacts to jurisdictional surface waters are anticipated from the proposed project. As a result, construction activities will require permits and certifications from various regulatory agencies charged with protecting the water quality of public water resources

Nationwide Permit 23 (33 CFR 330.5(a) (23)) is likely to be applicable for all impacts to "Waters of the United States" resulting from the proposed project. This permit authorizes activities undertaken, assisted, authorized, regulated, funded, or financed in whole or part by another federal agency or department where that agency or department has determined that pursuant to the Council on Environmental Quality regulation for implementing the procedural provisions of the National Environmental Policy Act,

- the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment, and
- that the office of the Chief of Engineers has been furnished notice of the agency's or department's application for the categorical exclusion and concurs with that determination.

A Nationwide Permit 33 may be required if the construction plans change such that a temporary causeway is required.

This project will also require a 401 Water Quality Certification from the DWQ prior to the issuance of the Nationwide Permit. Section 401 of the Clean Water Act requires that the state issue or deny water certification for any federally permitted or licensed activity that may result in a discharge to "Waters of the United States." Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulation. The issuance of a 401 permit from the DWQ is a prerequisite to issuance of a Section 404 permit.

Projects located within the Tar-Pamlico River Basin are subject to the Tar-Pamlico River Buffer Rules, administered by the DWQ. These rules address loss of stream channel buffers for field verified streams appearing on the USGS Topographic Quad and/or the NRCS Soil Survey. Bridge construction is allowable provided that there are "no practical alternatives." **As this bridge replacement project is currently proposed, it is allowable under the Tar-Pamlico River Buffer Rules.** However, a written authorization is required from the DWQ. A request to the DWQ for the authorization should be included in the cover letter of the permit application package.

4.1.3 Bridge Demolition

Bridge No. 151 is located on SR 1722 over the Little River in Johnston County. The bridge is composed completely of timber and steel. Bridge No. 151 will be removed without dropping any components into "Waters of the United States" during construction. **As demolition and construction activities may temporarily raise turbidity levels, a silt curtain is recommended during the associated periods of disturbance within or adjacent to the Little River.**

4.1.4 Mitigation

The COE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy which embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological, and physical integrity of "Waters of the United States," specifically wetlands. Mitigation of wetland impacts has been defined by the CEQ to include avoiding impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time, and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization, and compensatory mitigation) must be considered sequentially.

4.1.4.1 Avoidance

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States." According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the COE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology, and logistics in light of overall project purposes.

4.1.4.2 Minimization

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to "Waters of the United States." Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, ROW widths, fill slopes, and/or road shoulder widths. Other practical mechanisms to minimize impacts to "Waters of the United States" crossed by the proposed project include: strict enforcement of sedimentation control BMP's for the protection of surface waters during the entire life of the project; reduction of clearing and grubbing activity; reduction/elimination of direct discharge into streams; reduction of runoff velocity; re-establishment of vegetation on exposed areas; judicious pesticide and herbicide usage; minimization of "in-stream" activity; and litter/debris control.

4.1.4.3 Compensatory Mitigation

Compensatory mitigation is not normally considered until anticipated impacts to "Waters of the United States" have been avoided **and** minimized to the maximum extent practicable. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been performed. Compensatory actions often include restoration, creation, and enhancement of "Waters of the United States." Such actions should be undertaken in areas adjacent to or contiguous to the discharge site whenever practicable Compensatory mitigation is not usually necessary with a Nationwide Permit No. 23. Impact thresholds for mitigation are as follows:

- **0.10 ac to 1.00 ac (0.04 to 0.40 ha) of wetland impacts may require mitigation;**
- **1.00 ac (0.40 ha) or more of wetland impacts will require mitigation;**
- **150.00 linear ft (45.73 m) or more of stream impacts will require mitigation.**

Impacts from this project do not meet the minimum thresholds for mitigation; therefore no mitigation requirement is anticipated. However, final permit/mitigation decisions rest with the COE.

4.2 Rare and Protected Species

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human activities. Federal law (under the provisions of the Endangered Species Act of 1973, as amended) requires that any action, likely to adversely affect a species classified as federally protected, be subject to review by the U.S. Fish and Wildlife Service (FWS). Other species may receive additional protection under separate state laws.

4.2.1 Federally-Protected Species

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under the provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of 22 March 2001, the FWS lists four federally protected species for Johnston County. A brief description of the characteristics and habitat requirements for these species along with a conclusion regarding potential project impacts follows.

Table 2. Federally Protected Species for Johnston County.

Scientific Name	Common Name	Status
Picoides borealis	Red-cockaded woodpecker	Endangered
Alasmidonta heterodon	Dwarf wedge mussel	Endangered
Elliptio steinstansana	Tar spinymussel	Endangered
Rhus michauxii	Michaux's sumac	Endangered

Endangered is defined as a species that is threatened with extinction throughout all or a significant portion of its range.

Picoides borealis (red-cockaded woodpecker) **Endangered**
Animal Family: Picidae
Date Listed: 13 October 1970

The red-cockaded woodpecker (RCW) once occurred from New Jersey to southern Florida and west to eastern Texas. It occurred inland in Kentucky, Tennessee, Arkansas, Oklahoma, and Missouri. The RCW is now found only in coastal states of its historic range and inland in southeastern Oklahoma and southern Arkansas. In North Carolina, moderate populations occur in the sandhills and southern coastal plain. The few populations found in the Piedmont and northern coastal plain are believed to be relics of former populations.

The adult RCW has a plumage that is entirely black and white except for small red streaks on the sides of the nape in the male. The back of the RCW is black and white with horizontal stripes. The breast and underside of this woodpecker are white with streaked flanks. The RCW has a large white cheek patch surrounded by the black cap, nape, and throat.

The RCW uses open old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. A forested stand must contain at least 50% pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are greater than 60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 500.00 ac (202.34 ha). This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 12.00 to 100.00 ft (3.66 to 30.48 ha) above the ground and average 30.00 to 50.00 ft (9.14 to 15.24 ha) high. They can be identified by a large incrustation of running sap that surrounds the tree. The incrustation of sap is believed to be used as a defense by the RCW against possible predators. A colony of woodpeckers usually consists of one breeding pair and the offspring from previous years. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 38 days later. Clutch size ranges in number from three to five eggs. All members of the colony share the raising of the young. Red-cockaded woodpeckers feed mainly on insects but may feed on seasonal wild fruits.

BIOLOGICAL CONCLUSION: **NO EFFECT**

The mature, open pine stands required by the RCW are not present in the project area. The North Carolina Natural Heritage Program database was reviewed on 29 March 2001, and no records of existing RCW populations were found. No habitat for RCWs exist in the project area, therefore, no impacts to RCWs will occur form project construction.

Alasmidonta heterodon (dwarf wedge mussel) **Endangered**
Animal Family: Unionidae
Date Listed: 14 March 1990

The dwarf wedge mussel is a small mussel having a distinguishable shell noted by two lateral teeth on the right half and one on the left half. The periostracum (outer shell) is olive green to dark brown in color and the nacre (inner shell) is bluish to silvery white.

Known populations of the dwarf wedge mussel in North Carolina are found in Middle Creek and the Little River of the Neuse River Basin and in the upper Tar River and Cedar, Crooked, and Stoney Creeks of the Tar River system. This mussel is sensitive to agricultural, domestic, and industrial pollutants and requires a stable silt free streambed with well-oxygenated water to survive.

BIOLOGICAL CONCLUSION: **UNRESOLVED**

The NCDOT will conduct a biological assessment to determine any potential impacts to this species due to construction of the proposed bridge approximately one year prior to the construction let date. The NC Natural Heritage Program database of rare species and unique habitats was reviewed on 29 March 2001 and revealed no records of this species within the project vicinity.

Elliptio steinstansana (Tar River spiny mussel) **Endangered**
Animal Family: Unionidae
Date Listed: 29 July 1985

The Tar River spinymussel is endemic to the Tar River drainage basin, from Falkland in Pitt County to Spring Hope in Nash County. Populations of the Tar River spinymussel can be found in streams of the Tar River Drainage Basin and of the Swift Creek Drainage Sub-Basin.

This mussel requires a stream with fast flowing, well oxygenated, circumneutral pH water. The bottom is composed of uncompacted gravel and coarse sand. The water needs to be relatively silt-free. It is known to rely on a species of freshwater fish to act as an intermediate host for its larvae.

The Tar River spinymussel is a very small mussel. This mussel is named for its spines that project perpendicularly from the surface and curve slightly ventrally. The shell has as many as 12 spines, and is generally smooth in texture. The nacre is pinkish (anterior) and bluish-white (posterior).

BIOLOGICAL CONCLUSION: **UNRESOLVED**

The NCDOT will conduct a biological assessment to determine any potential impacts to this species due to construction of the proposed bridge approximately one year prior to construction Let. The NC Natural Heritage Program database of rare species and unique habitats was reviewed on 29 March 2001 and revealed no records of this species within the project vicinity.

Rhus michauxii (Michaux's sumac) **Endangered**
Plant Family: Anacardiaceae
Federally Listed: 28 September 1989
Flowers Present: June

Michaux's sumac was known historically from the inner Coastal Plain and lower Piedmont of North Carolina, South Carolina, and Georgia. This species is believed to be extirpated in South Carolina. It is currently known from only 21 populations in North Carolina and Georgia. In North Carolina populations of Michaux's sumac still exist in Hoke, Richmond, Scotland, Franklin, Davie, Robeson, Moore, and Wake counties.

Michaux's sumac is a densely pubescent rhizomatous shrub that grows 0.67 to 3.28 ft (0.20 to 1.00 m) in height. The narrowly winged or wingless rachis supports 9 to 13 sessile, oblong to oblong-lanceolate leaflets that are each 1.58 to 3.54 in (4.00 to 9.00 cm) long, 6.79 to 1.97 in (2.00 to 5.00 cm) wide, acute and acuminate. The bases of the leaves are rounded and their edges are simply or doubly serrate. It bears small flowers in a terminal, erect, dense cluster. The flowers are greenish to white in

color. Fruits, which develop from August to September on female plants, are a red densely short-pubescent drupe, 0.20 to 0.24 in (5.00 to 6.00 mm) across.

This plant occurs in rocky or sandy open woods. It is dependent on some sort of disturbance to maintain the openness of its habitat. It usually grows in association with basic soils and occurs on sand or sandy loams. It grows only in open habitat where it can get full sunlight and it does not compete well with other species such as Japanese honeysuckle that it is often associated

BIOLOGICAL CONCLUSION: NO EFFECT

Suitable habitat in the form of disturbed roadside was present upon inspection of the project corridor, but no specimens were identified during the field survey. The NC Natural Heritage Program database of rare species and unique habitats was reviewed on 29 March 2001 and revealed no records of this species within the project vicinity. Construction of the proposed project will have no effect on this species.

4.2.2 Federal Species of Concern and State Listed Species

There are nine Federal Species of Concern listed by the FWS for Johnston County. Federal Species of Concern are not afforded federal protection under the Endangered Species Act and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. However, the status of these species is subject to change, and so should be included for consideration. Federal Species of Concern (FSC) are defined as a species that is under consideration for listing but for which there is insufficient information to support listing. In addition, organisms, which are listed as Endangered (E), Threatened (T), or Special Concern (SC) by the North Carolina Natural Heritage Program list of Rare Plant and Animal Species, are afforded state protection under the NC State Endangered Species Act and the NC Plant Protection and Conservation Act of 1979.

Table 3 lists Federal Species of Concern, the state status of these species (if afforded state protection), and the potential for suitable habitat in the project area for each species. This species list is provided for information purposes as the protection status of these species may be upgraded in the future. Surveys for these species were not conducted during the site visit, nor were any of these species observed. A review of the NCNHP database of rare species and unique habitats on 22 March 2001 revealed no federal species of concern within 1.00 mi (1.61 km) project study area.

Table 3. Federal Species of Concern for Johnston County.

Scientific Name	Common Name	NC Status	Habitat
Elliptio lanceolata	Yellow lance	T	Yes
Fusconaia masoni	Atlantic pigtoe	T	Yes
Lampsilis cariosa	Yellow lampmussel	T	Yes
Lasmigona subviridis	Green floater	E	Yes
Solidago verna	Spring-flowering goldenrod	T	Yes
Tofieldia glabra	Carolina asphodel	C*	Yes
Trillium pusillum var. pusillum	Carolina least trillium	E	Yes
Lythrurus matutinus	Pinewooods shiner	SR	Yes
Procambarus medialis	Tar River crayfish	-	Yes

"E"--An Endangered species is one whose continued existence as a viable component of the State's flora is determined to be in jeopardy.

"T"--A Threatened species is one that is likely to become endangered species within the foreseeable future throughout all or a significant portion of its range.

"C"--A Candidate species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is also either rare throughout its range or disjunct in North Carolina from a main range in a different part of the country or the world.

"SR"--A Significantly Rare species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is generally more common elsewhere in its range, occurring peripherally in North Carolina.

* -- Historic record - the species was last observed in the county more than 20 years ago.

**--Obscure record – the date the species was last observed in the county is uncertain.

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5.0 REFERENCES

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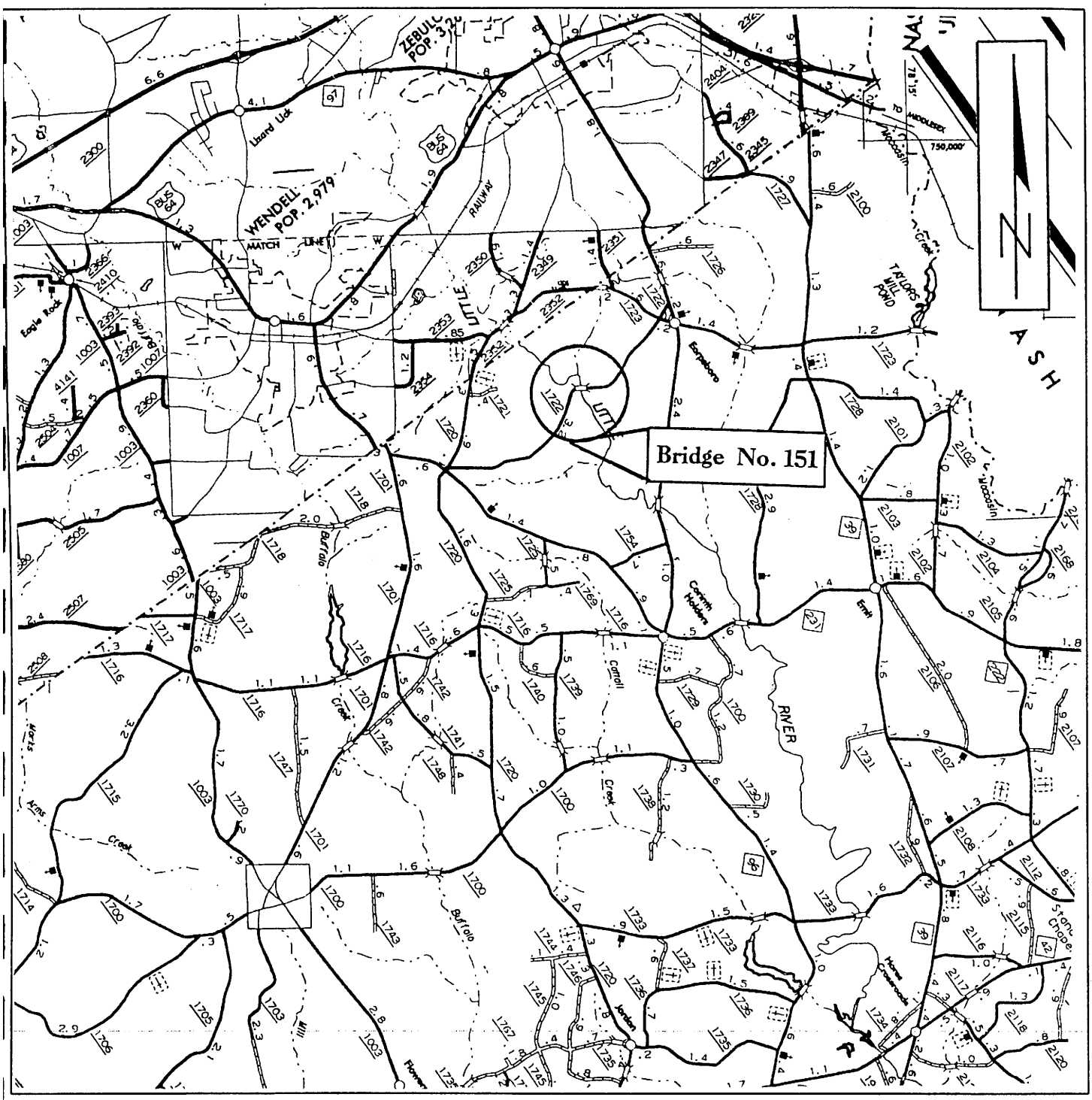
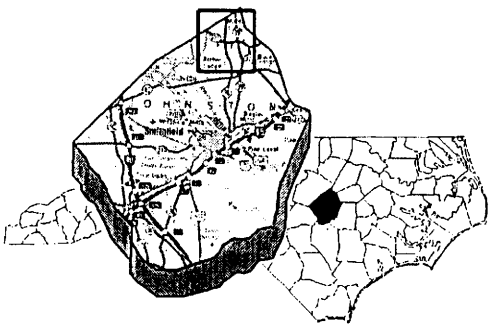




North Carolina Department of Transportation
Division of Highways
Project Development & Environmental Analysis

Johnston County
Replace Bridge No. 151 on SR 1722 Over Little River
B-3863

SCALE: 1 in = 2 mi

Figure 1

TIP B-3863
Potential Impacts
to Bridge No. 151

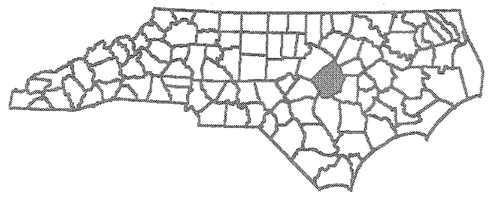
N

Little River

SR 1722

Bridge No. 151

Figure 2 TIP B-3863 Potential Impacts To Bridge No. 151



Legend

- Project Bounds
- Gravel Road
- Pine Forest
- Bottomland Hardwood Forest
- Bottomland Hardwood Wetland
- Successional
- Successional Wetland
- Maintained/Disturbed Roadside
- Grass Lot
- Riparian Wetland
- Riparian
- Little River

90 0 90 180

Scale (ft)

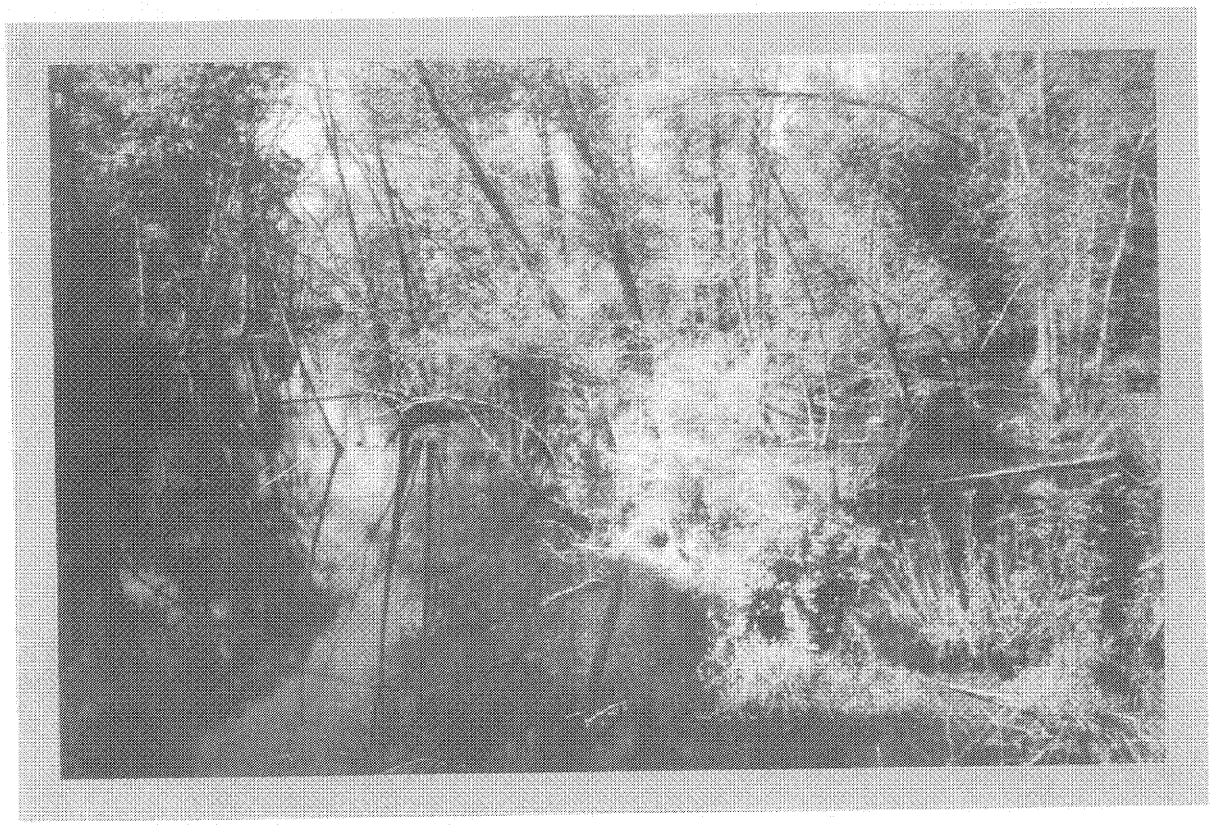
STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION *

LANDMARK DESIGN GROUP

LMDG Project #: 1960024.307.00

FIGURE 3: SITE PHOTOGRAPHS

PHOTOGRAPH #1: Bridge Number 151 on SR 1722 over the Little River.



PHOTOGRAPH #2: Little River in Johnston County.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

DAVID MCCOY
SECRETARY

January 17, 2001

MEMORANDUM TO: Project File

FROM: Robin C. Young
Project Planning Engineer

SUBJECT: **B-3863**, Johnston County, Replacement of Bridge No. 151 on SR 1722 over Little River, State Project 8.2312801, FA Project BRZ-1722 (2)

A scoping meeting for the subject bridge was held in the Roadway Design Unit Conference Room in the Century Center on December 5, 2000. The following people were in attendance:

Ben Brown	Hydraulics
Jerome Nix	Hydraulics
D. Andre Davenport	Structure Design
Mack Bailey	Structure Design
Cynthia Perry	Roadway Design
Raymond Goodman, III	Right of Way
Jessica Kuse	Traffic Control
Derek Bradner	Location & Surveys
April Montgomery	State Historic Preservation Office (SHPO)
Elizabeth Lusk	Project Development & Environmental Analysis-Natural Systems
Robin Young	Project Development & Environmental Analysis

The following comments were either given at the meeting or received:

Hydraulics recommended the existing bridge be replaced with a new 130-foot (39.6-meter) long bridge by realigning SR 1722 south (downstream) of the existing bridge. Construct the replacement bridge at approximately the same roadway elevation as the existing bridge. Traffic would be maintained using the existing alignment during construction. To facilitate deck drainage, at least a 0.3% roadway gradient should be used on the new bridge. If an on-site detour is considered, it would require a 130-foot (39.6-meter) bridge located south (downstream) of the existing bridge. The elevation of the temporary detour bridge can be approximately 2 feet (0.6 meter) lower than the existing bridge.

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

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

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET

State Historic Preservation Office, April Montgomery, commented there is no need for either an Architectural or Archaeology survey.

Location & Surveys commented there are no overhead utilities visible at the site. A driveway is located in the southwest quadrant and a vacant house is located in the northeast quadrant. The horizontal alignment and vertical alignments are fair to good. It is recommended to place a new structure on the existing location and utilize an off-site detour.

Division 4 Construction Engineer, Wendy Oglesby, recommends an off-site detour based on the low traffic volume and fairly good condition of the proposed detour route. The proposed detour route utilizes NC 96, SR 1754, and NC 231. Part of this proposed detour route is currently being used for an off-site detour on another project, however SR 1754 is in poor shape and should be resurfaced prior to closing of the road. This paving is 0.7 miles and it is recommended to be included in the project funding.

The Natural Systems Specialist of PDEA stated this project is located in the Neuse River Basin and the Buffer Rules will apply. There are known populations of the dwarf wedge mussel both upstream and downstream of the bridge. Therefore, a Section 7 Consultation is required. Minimal in-stream work and an off-site detour is recommended.

Comments from the Wildlife Resource Commission will be available in the near future.

PROJECT INFORMATION

Existing Bridge

Bridge No. 151, built in 1957 is 106 feet (32.3 meters) long with a clear deck width of 17.2 feet (5.2 meters). According to Bridge Maintenance Unit records, the sufficiency rating of the bridge is 14.9 out of a possible 100 with an estimated 4 years of useful remaining life. Presently the bridge is posted with weight restrictions of 18 tons for single vehicles and 21 tons for truck-tractor semi-trailers.

Traffic Information

SR 1722 is a Rural Local Route with a statutory speed limit of 55 mph (90 kmh) in the vicinity of the bridge. The current ADT is 500 vph (vehicles per day) and the projected 2025 ADT is 1200 vph. Approximately 2% of the traffic are dual trucks and 1% of the traffic are truck-tractor semi-trailers.

The Traffic Engineering Branch indicates that one accident has been reported during a recent 3-year period in the vicinity of the project.

This section of SR 1722 is not a designated bicycle route nor is it listed in the TIP as needing incidental bicycle accommodations.

Bus Information

According to the Johnston County Schools, this bridge has 6 school bus trips per day. Re-routing would not create a problem for them.

Emergency Management Services (EMS)

Has not responded at this time.

New Cross Section

Due to some inconsistencies between the 1994 Green Book and the Roadway Design Unit Design Manual, Roadway Design will be responsible for choosing the appropriate reference and indicating their choice in their cost estimate.

Project Information

Categorical Exclusion document is due December 2001.
Right of Way is scheduled for October 2002.
Construction Let Date is scheduled for October 2003.

***Note: This project is scheduled to let 8 months after B-3481. B-3481 is a bridge replacement project for Bridge No. 94 on NC 96 over the Little River. At this time, B-3481 will be a replace in place with off-site detour. The off-site detour will utilize SR 1723, NC 39, and NC 231. It may be necessary to change the let date of B-3863 to allow for the completion of B-3481.

DESCRIPTION OF ALTERNATES

We anticipate the completion of the preliminary design and cost estimates by May 2001.

Alternate 1: Replace Bridge No. 19 with a new 130 foot (39.6 meter) long bridge at approximately the same location and roadway elevation as the existing bridge. Traffic will be maintained off-site, along surrounding roads during construction

December 4, 2000

MEMORANDUM

TO: Robin Young
Project Development and Environmental Analysis Branch, DOT

FROM: Stephen Hall

SUBJECT: Review of Scoping Sheets – Replace Bridge No. 151 over Little River

REFERENCE: **B-3863**

The Natural Heritage Program database contains records for the following species from the reach of the Little River in the vicinity of the proposed bridge replacement:

- Dwarf wedgemussel (*Alasmidonta heterodon*), federally and state listed as Endangered
- Atlantic pigtoe (*Fusconaia masoni*), state listed as Threatened (proposed as Endangered) and a federal Species of Concern
- Triangle floater (*Alasmidonta undulata*), state listed as Threatened
- Neuse River waterdog (*Necturus lewisi*), state listed as Special Concern

During the construction phase of this project, these species may be adversely affected by both siltation and toxicity resulting from wet concrete coming into contact with the water. Following completion of the project, they will remain vulnerable to spills of hazardous materials and to pollutant laden runoff for the lifetime of the crossing.

Due to the potential for impacts to a federally listed species, the US Fish and Wildlife Service should be consulted. We also recommend that the NC Nongame and Endangered Wildlife Program be consulted about the possibilities for avoidance or minimization of impacts to the state listed species.

/sph
(DIV. of Parks + Recreation)

N Zoning

North Carolina Department of Cultural Resources

State Historic Preservation Office

David L. S. Brook, Administrator

Michael F. Easley, Governor

Division of Archives and History
Jeffrey J. Crow, Director

January 16, 2001

MEMORANDUM

To: William D. Gilmore, P.E., Manager
Project Development and Environmental Analysis Branch

From: David Brook BSB for David Brook
Deputy State Historic Preservation Officer

Re: Replacement of Bridge No. 151 on SR 1722 over Little River,
TIP No. B-3863, Johnston County, ER 01-7931

On December 5, 2000, April Montgomery of our staff met with the North Carolina Department of Transportation (NCDOT) staff for a meeting of the minds concerning the above project. She reported our available information on historic architectural and archaeological surveys and resources along with our recommendations. NCDOT provided project area photographs and aerial photographs at the meeting.

Based upon our review of the photographs and the information discussed at the meeting, we offer our preliminary comments regarding this project.

In terms of historic architectural resources we are aware of no historic structures located within the area of potential effect. We recommend that no historic architectural survey be conducted for this project.

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

Having provided this information, we look forward to the receipt of either a Categorical Exclusion or Environmental Assessment, which indicates how NCDOT addressed our comments.

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 any questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919 733-4763.

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