



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE  
GOVERNOR

EUGENE A. CONTI, JR.  
SECRETARY

August 27, 2009

USACE Wilmington Regulatory Field Office  
69 Darlington Avenue  
Wilmington, NC 28402-1890

ATTN: Ms. Kim Garvey  
NCDOT Coordinator

Dear Madam:

**Subject: Application for Section 404 Nationwide Permit 23 and Section 401 Water Quality Certification** for the replacement of Bridge No. 11 on SR 1864 (Long Point Rd.) over the Little River, Randolph County, Federal Aid Project Number BRZ-1864(1), Division 8, T.I.P No. B-4584.

Debit \$270.00 from WBS No. 33785.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 11 on SR 1864 (Long Point Rd) over the Little River. There will be less than 0.01 acre of permanent surface water impact resulting from the construction of two bents which will be located partially in the Little River. There will also be 0.11 acre of riparian wetland impact resulting from construction of the approaches.

Please see the enclosed copies of the Pre-Construction Notification (PCN), Little River Bridge Mitigation Site debit ledger information, stormwater management plan, stormwater management permit, request for Jurisdictional Determination (dated July 26, 2006), permit drawings, and design plans for the above-referenced project. The Categorical Exclusion (CE) was completed for this project in September 2007 and distributed shortly thereafter. The Right of Way Consultation was completed in March 2009. Additional copies are available upon request.

This project calls for a letting date of June 15, 2010 and a review date of April 27, 2010. However, the let date may advance as additional funds become available.

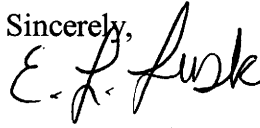
MAILING ADDRESS:  
NC DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS  
NATURAL ENVIRONMENT UNIT  
1598 MAIL SERVICE CENTER  
RALEIGH NC 27699-1598

TELEPHONE: 919-431-2000  
FAX: 919-431-2001  
WEBSITE: [WWW.NCDOT.ORG](http://WWW.NCDOT.ORG)

LOCATION:  
4701 Atlantic Ave.,  
Suite 116  
Raleigh, NC 27604

A copy of this permit application will be posted on the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please call Erica McLamb at (919) 431-1595.

Sincerely,



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

w/attachment

Mr. Brian Wrenn, NCDWQ (5 Copies)

w/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics  
Mr. Mark Staley, Roadside Environmental  
Mr. Greg Perfetti, P.E., Structure Design  
Mr. Victor Barbour, P.E., Project Services Unit  
Mr. Tim Johnson, P.E., Division 8 Engineer  
Mr. Art King, Division 8 Environmental Officer  
Mr. Jay Bennett, P.E., Roadway Design  
Mr. Majed Alghandour, P. E., Programming and TIP  
Mr. Art McMillan, P.E., Highway Design  
Mr. Scott McLendon, USACE, Wilmington  
Mr. Travis Wilson, NCWRC  
Mr. Gary Jordan, USFWS  
Mr. Tracy Walter, PDEA  
Ms. LeiLani Paugh, NEU



Office Use Only:  
 Corps action ID no. \_\_\_\_\_  
 DWQ project no. \_\_\_\_\_  
 Form Version 1.3 Dec 10 2008

## Pre-Construction Notification (PCN) Form

### A. Applicant Information

#### 1. Processing

1a. Type(s) of approval sought from the Corps:	<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23	or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular <span style="margin-left: 100px;"><input type="checkbox"/> Non-404 Jurisdictional General Permit</span> <input type="checkbox"/> 401 Water Quality Certification – Express <span style="margin-left: 100px;"><input type="checkbox"/> Riparian Buffer Authorization</span>		
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	For the record only for Corps Permit: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

#### 2. Project Information

2a. Name of project:	Replacment of Bridge 11 over the Little River on SR 1864 (Long Point Rd.)
2b. County:	Moore
2c. Nearest municipality / town:	Vass
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4584

#### 3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	<i>not applicable</i>
3c. Responsible Party (for LLC if applicable):	<i>not applicable</i>
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 431-1595
3g. Fax no.:	(919) 431-2002
3h. Email address:	emclamb@ncdot.gov

<b>4. Applicant Information (if different from owner)</b>	
4a. Applicant is:	<input type="checkbox"/> Agent <input type="checkbox"/> Other, specify:
4b. Name:	<i>not applicable</i>
4c. Business name (if applicable):	
4d. Street address:	
4e. City, state, zip:	
4f. Telephone no.:	
4g. Fax no.:	
4h. Email address:	
<b>5. Agent/Consultant Information (if applicable)</b>	
5a. Name:	<i>not applicable</i>
5b. Business name (if applicable):	
5c. Street address:	
5d. City, state, zip:	
5e. Telephone no.:	
5f. Fax no.:	
5g. Email address:	

<b>B. Project Information and Prior Project History</b>	
<b>1. Property Identification</b>	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 35.2349      Longitude: - 79.2787 (DD.DDDDDD)      (-DD.DDDDDD)
1c. Property size:	1.4 acres
<b>2. Surface Waters</b>	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Little River
2b. Water Quality Classification of nearest receiving water:	WSIII, HQW
2c. River basin:	Cape Fear



<b>3. Project Description</b>	
3a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: Existing land use in the project area consists of forested land (Coastal Plain Bottomland Hardwood Forest) and some maintained roadsides. Land use in the project vicinity is comprised of forested land, disturbed areas, and residential development.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.11	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 100 linear feet.	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 108-foot bridge with a 135-foot, 3-span bridge on the existing alignment with an off-site detour. The existing bridge has two bents located in the water. Standard road building equipment, such as trucks, dozers, and cranes will be used. The proposed bridge consists of a three span, cored slab bridge with spans at 50 feet, 50 feet, and 35 feet. The bridge has a 28-foot clear roadway width. The proposed bridge will have portions of 2 bents located in the water (resulting in <0.01 acre of surface water impacts).	
<b>4. Jurisdictional Determinations</b>	
4a. Have jurisdictional wetland or stream determinations by the Corps or State been requested or obtained for this property / project (including all prior phases) in the past? Comments: Wetland and stream delineations were completed in May 2006 by Ecoscience Corp. biologists. 1 wetland system and 1 stream was identified in the project study area. Delineations were verified by USACE representative Richard Spencer on February 15, 2007. No written JD was provided. However during the meeting Richard Spencer stated that the jurisdictional area boundaries "looked reasonable". The N.C. Department of Transportation does not request the Corps to evaluate our site for TIP No. B-4584, Wake County, using the Rapanos guidance. Instead, we are satisfied with the delineation as reviewed and approved in the field prior to June 5, 2007, and ask that you evaluate this permit verification based on that field review.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Craig Terwilliger, Justin Wright	Agency/Consultant Company: Ecoscience Corp. Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. While a Jurisdictional Determination was requested, no formal documentation was issued by USACE representative, Richard Spencer.	
<b>5. Project History</b>	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions.	
<b>6. Future Project Plans</b>	
6a. Is this a phased project?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. If yes, explain.	

**C. Proposed Impacts Inventory**

**1. Impacts Summary**

1a. Which sections were completed below for your project (check all that apply):

- Wetlands                       Streams - tributaries                       Buffers  
 Open Waters                       Pond Construction

**2. Wetland Impacts**

If there are wetland impacts proposed on the site, then complete this question for each wetland area impacted.

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Fill	Riparian	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.038
Site 2 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Mechanized clearing	Riparian	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.073
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ	
<b>2g. Total wetland impacts</b>					0.11 acres

2h. Comments: The proposed permanent fill is required for construction of the approaches. Mitigation for the wetland impacts associated with this project will provided using the NCDOT mitigation debit ledger.

**3. Stream Impacts**

If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.

3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Surface Water	Little River	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	65	NA
Site 2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
<b>3h. Total stream and tributary impacts</b>						NA Perm 0 Temp

3i. Comments: The proposed stream impacts are due to the construction of 2 bents, portions of these bents will be in the stream channel (<0.01 acre of impact). Mitigation is not proposed for impacts to the stream as the impacts are minimal and will not result loss of stream quality or function.

**4. Open Water Impacts**

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Open water impact number – Permanent (P) or Temporary (T)	4b. Name of waterbody (if applicable)	4c. Type of impact	4d. Waterbody type	4e. Area of impact (acres)
O1 <input type="checkbox"/> P <input type="checkbox"/> T				
O2 <input type="checkbox"/> P <input type="checkbox"/> T				
O3 <input type="checkbox"/> P <input type="checkbox"/> T				
O4 <input type="checkbox"/> P <input type="checkbox"/> T				
<b>4f. Total open water impacts</b>				0 Permanent 0 Temporary

4g. Comments:

**5. Pond or Lake Construction**

If pond or lake construction proposed, then complete the chart below.

5a. Pond ID number	5b. Proposed use or purpose of pond	5c. Wetland Impacts (acres)			5d. Stream Impacts (feet)			5e. Upland (acres)
		Flooded	Filled	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
<b>5f. Total</b>								

5g. Comments:

5h. Is a dam high hazard permit required?	<input type="checkbox"/> Yes <input type="checkbox"/> No      If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

**6. Buffer Impacts (for DWQ)**

If project will impact a protected riparian buffer, then complete the chart below. If yes, then individually list all buffer impacts below. If any impacts require mitigation, then you **MUST** fill out Section D of this form.

6a. Project is in which protected basin?		<input type="checkbox"/> Neuse <input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman			
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>6h. Total buffer impacts</b>					

6i. Comments:

<b>D. Impact Justification and Mitigation</b>		
<b>1. Avoidance and Minimization</b>		
<p>1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project.</p> <p>During construction of the proposed bridge a portion of the existing roadway will be removed and the new bridge will be 54 feet longer, thereby increasing floodplain access.</p> <p>An offsite detour will be utilized during construction.</p> <p>Bridge end drains are located outside of wetland areas.</p> <p>The proposed bridges bents, which will be located partially in the stream, are located toward the banks of the stream and way from the thalweg.</p> <p>The proposed bridge will use the existing alignment and will be approximately the same grade as the existing bridge.</p>		
<p>1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.</p> <p>NCDOT will implement Best Management Practices for Bridge Demolition and Removal. NCDOT BMP's for the Protection of Surface Waters will be strictly enforced during construction of this project.</p> <p>At all the sites, stormwater will be treated and non-erosive velocities will be achieved where practicable.</p> <p>The proposed bridge will be 54 feet longer, therefore increasing floodplain access.</p> <p>Design Standards in Sensitive Watersheds will be implemented</p>		
<b>2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State</b>		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2b. If yes, mitigation is required by (check all that apply):	<input type="checkbox"/> DWQ <input checked="" type="checkbox"/> Corps	
2c. If yes, which mitigation option will be used for this project?	<input type="checkbox"/> Mitigation bank <input type="checkbox"/> Payment to in-lieu fee program <input checked="" type="checkbox"/> Permittee Responsible Mitigation	
<b>3. Complete if Using a Mitigation Bank</b>		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
<b>4. Complete if Making a Payment to In-lieu Fee Program</b>		
4a. Approval letter from in-lieu fee program is attached.	<input type="checkbox"/> Yes	
4b. Stream mitigation requested:	linear feet	
4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	square feet	
4e. Riparian wetland mitigation requested:	acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	acres	
4h. Comments:		
<b>5. Complete if Using a Permittee Responsible Mitigation Plan</b>		

5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.

See attached Compensatory Mitigation description. 1:1 mitigation (for a total of 0.11 acres) is proposed for this project because the mitigation site is located within the same HUC (03030004) as the impacted wetlands. The mitigation site is also located along the Little River, therefore, the proposed project will not result in wetland loss along the Little River. The proposed mitigation site has undergone four years of successful vegetative and hydrological monitoring.

**6. Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ**

6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?  Yes  No

6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.

Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
<b>6f. Total buffer mitigation required:</b>				

6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).

6h. Comments:

**E. Stormwater Management and Diffuse Flow Plan (required by DWQ)**

**1. Diffuse Flow Plan**

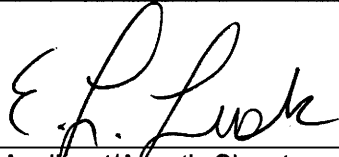
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?  Yes  No

1b. If yes, then is a diffuse flow plan included? If no, explain why.  Yes  No

Comments:

<b>2. Stormwater Management Plan</b>	
2a. What is the overall percent imperviousness of this project?	N/A %
2b. Does this project require a Stormwater Management Plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See the attached permit drawings and stormwater management plan.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	<input type="checkbox"/> Certified Local Government <input type="checkbox"/> DWQ Stormwater Program <input type="checkbox"/> DWQ 401 Unit
<b>3. Certified Local Government Stormwater Review</b>	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Phase II <input type="checkbox"/> NSW <input type="checkbox"/> USMP <input type="checkbox"/> Water Supply Watershed <input type="checkbox"/> Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4. DWQ Stormwater Program Review</b>	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input checked="" type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>5. DWQ 401 Unit Stormwater Review</b>	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>F. Supplementary Information</b>	
<b>1. Environmental Documentation (DWQ Requirement)</b>	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.)  Comments:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<b>2. Violations (DWQ Requirement)</b>	
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2b. Is this an after-the-fact permit application?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
<b>3. Cumulative Impacts (DWQ Requirement)</b>	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description.  Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.	
<b>4. Sewage Disposal (DWQ Requirement)</b>	
4a. 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.  not applicable	
<b>5. Endangered Species and Designated Critical Habitat (Corps Requirement)</b>	
5a. Will this project occur in or near an area with federally protected species or habitat?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input checked="" type="checkbox"/> Raleigh <input type="checkbox"/> Asheville
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat?  Based on NCDOT field surveys, NHP database, and USFWS Website for Moore County, it has been determined that the proposed project will have no effect on Endangered Species or Designated Critical Habitat.  No habitat for the red cockaded woodpecker or the Cape Fear Shiner is within the project area. No surveys are required. A biological conclusion of "No Effect" has been issued for the red cockaded woodpecker and Cape Fear shiner.  Potential habitat is present in the project area for American chaffseed and Michaux's sumac. Surveys were conducted on May 25, 2006 and May 13, 2009. No specimens were observed in the project study area. Therefore, a biological conclusion of "No Effect" has been issued for American chaffseed and Michaux's sumac.	

<b>6. Essential Fish Habitat (Corps Requirement)</b>		
6a. Will this project occur in or near an area designated as essential fish habitat?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
<b>7. Historic or Prehistoric Cultural Resources (Corps Requirement)</b>		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
<b>8. Flood Zone Designation (Corps Requirement)</b>		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		
Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	 Applicant/Agent's Signature <small>(Agent's signature is valid only if an authorization letter from the applicant is provided.)</small>	8.28.09 Date



## Compensatory Mitigation

The Little River Bridge Mitigation Site was originally constructed as mitigation for the US 1 Bypass in Moore County (T.I.P. R-0210). The 14.8-acre mitigation site is located in Moore County approximately 0.75 mile southeast of the town of Vass. The site is situated on both sides of the Little River and can be accessed via US 1 Business South on the northeastern boundary. The site includes 6.4 acres of bottomland hardwood restoration and 8.4 acres of bottomland hardwood preservation. This mitigation site has undergone four years of successful vegetative and hydrological monitoring as of 2009.

As shown below, NCDOT has debited 0.11 acres of riverine wetland restoration from the Little River Bridge Mitigation Site to offset the 0.11 acres of unavoidable impacts associated with the replacement of Bridge 11 over the Little River on SR 1864 (T.I.P. B-4584).

<b>NCDOT Onsite Mitigation Debit Ledger</b>							
<b>Site name</b>	<b>HUC</b>	<b>River Basin</b>	<b>Division</b>	<b>County</b>	<b>Mitigation Type</b>	<b>Available</b>	<b>Debit</b>
<b>Little River Bridge</b>	<b>03030004</b>	<b>Cape Fear</b>	<b>8</b>	<b>Moore</b>			<b>B-4584</b>
					Riverine Wetland Restoration	1.07	0.11

# **STORMWATER MANAGEMENT PLAN**

Project: 33785.1.1  
TIP: B-4584  
County: Moore

Hydraulics Project Engineers: Henry Wells, P.E. (Sungate Design Group);  
Galen Cail, P.E. (NCDOT Hydraulics Unit)

## **ROADWAY DESCRIPTION**

The project involves the replacement of Bridge No. 11 on SR 1864 over Little River. The overall length of the project with approach work is approximately 782 feet. The proposed bridge will consist of 2 @ 65' and 1 @ 45' box beam. The project drainage systems consist of the bridge and associated bridge end drains. There are no proposed side or lateral ditches proposed.

## **ENVIRONMENTAL DESCRIPTION**

The project is located in the Cape Fear River Basin. Currently, there are no buffer rules for this river basin. The project will have one (1) crossing of a jurisdictional stream that will impact Little River. Little River is classified as Class WS-III and High Quality Waters (HQW). The HQW designation applied to Little River necessitates the use of NCDOT's Design Standards in Sensitive Watersheds throughout the design and construction of the project. The Little River in the project area is on NCDWQ's 303d list. There are several wetland areas impacted by the proposed project.

## **BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES**

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters as a result of the location, construction and operation of the highway system. BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. There are no BMPs used on this project.

At all the sites, stormwater will be treated and non-erosive velocities will be achieved where practicable.

## **MINIMIZATION OF IMPACTS**

Several design elements provided for minimization of wetland impacts. Bridge end drains are located outside wetland areas.



*MWC*

North Carolina Department of Environment and Natural Resources

Division of Water Quality

Coleen H. Sullins  
Director

Dee Freeman  
Secretary

Beverly Eaves Perdue  
Governor

March 6, 2009

**RECEIVED**  
MAR 10 2009

**DIVISION OF HIGHWAYS  
HYDRAULICS UNIT**

North Carolina Department of Transportation-Hydraulics Unit  
Attn: D. R. Henderson, PE, State Hydraulics Engineer  
1590 Mail Service Center  
Raleigh, NC 27699-1590

**Subject: Stormwater Management Permit SW6090202  
Replacement of Bridge No. 11 on SR 1864 over Little River  
NCDOT Project Number B-4584  
Other Stormwater Permit  
Linear Public Road / Bridge Project  
Moore County**

Dear Mr. Henderson:

The Fayetteville Regional Office of the Division of Water Quality received a complete Stormwater Management Permit Application for the **Replacement of Bridge No. 11 on SR 1864 over Little River (NCDOT Project Number B-4584)** project on February 26, 2009. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H .1000. Therefore, we are forwarding herewith Stormwater Management Permit SW6090202, dated March 6, 2009, for the construction of the subject project.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) calendar days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, P.O. Drawer 27447, Raleigh, NC 27611-7447. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact Mike Lawyer or myself at (910) 433-3300.

Sincerely,

*Belinda S. Henson*

Belinda S. Henson  
Regional Supervisor  
Surface Water Protection Section

BSH: ML/ml

cc: FRO-Surface Water Protection  
Sonia Gregory-401 Wetlands Unit/DOT Group  
DWQ Central Files

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WATER QUALITY

**STATE STORMWATER MANAGEMENT PERMIT**

**OTHER PERMIT**

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO  
*NC Department of Transportation-Hydraulics Unit*  
*Replacement of Bridge No. 11 on SR 1864 over Little River*  
*Moore County*  
FOR THE

construction of a public road / bridge in compliance with the provisions of 15A NCAC 2H .1000 (hereafter referred to as the "*stormwater rules*") and the approved stormwater management plans and specifications, and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit.

The Permit shall be effective from the date of issuance until rescinded and shall be subject to the following specific conditions and limitations:

**I. DESIGN STANDARDS**

1. The runoff from the impervious surfaces has been directed away from surface waters as much as possible.
2. The amount of built-upon area has been minimized as much as possible.
3. Best Management Practices are employed, which minimize water quality impacts.
4. Approved plans and specifications for projects covered by this permit are incorporated by reference and are enforceable parts of the permit.
5. Vegetated roadside ditches are 3:1 slopes or flatter.

**II. SCHEDULE OF COMPLIANCE**

1. The permittee shall at all times provide adequate erosion control measures in conformance with the approved Erosion Control Plan.
2. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.

3. The permittee shall submit all information requested by the Director or his representative within the time frame specified in the written information request.
4. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction for the following items:
  - a. Major revisions to the approved plans, such as road realignment, deletion of any proposed BMP, changes to the drainage area or scope of the project, etc.
  - b. Project name change.
  - c. Redesign, addition, or deletion of the approved amount of built-upon area, regardless of size.
  - d. Alteration of the proposed drainage.
5. The Director may determine that other revisions to the project should require a modification to the permit.

### III. GENERAL CONDITIONS

1. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division of Water Quality, in accordance with North Carolina General Statutes 143-215.6A to 143-215.6C.
2. The permit issued shall continue in force and effect until revoked or terminated.
3. The permit may be modified, revoked and reissued or terminated for cause. The filing of a request for a permit modification, revocation and reissuance, or termination does not stay any permit condition.
4. The issuance of this permit does not prohibit the Director from reopening and modifying the permit, revoking and reissuing the permit, or terminating the permit as allowed by the laws, rules, and regulations contained in Title 15A of the North Carolina Administrative Code, Subchapter 2H .1000; and North Carolina General Statute 143-215.1 et. al.
5. The permit is not transferable to any person except after notice to and approval by the Director. The Director may require modification or revocation and reissuance of the permit to change the name and incorporate such other requirements as may be necessary. A formal permit request must be submitted to the Division of Water Quality accompanied by the appropriate fee, documentation from both parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits, and may or may not be approved. The permittee is responsible for compliance with the terms and conditions of this permit until such time as the Director approves the transfer.
6. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances, which may be imposed by other government agencies (local, state and federal), which have jurisdiction.
7. The permittee shall notify the Division of any name, ownership, or mailing address changes within thirty (30) calendar days.

Permit issued this the sixth day of March 2009.

#### NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Coleen H. Sullins, Director

Division of Water Quality

By Authority of the Environmental Management Commission

**Stormwater Management Permit SW6090202**

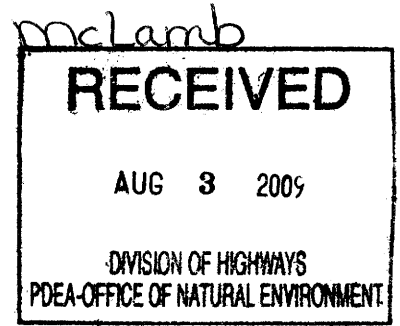


EcoScience

1101 Haynes Street Suite 101 Raleigh, NC 27604 Telephone: 919.828.3433 Fax: 919.828.3518

July 26, 2006

Mr. Richard Spencer  
Wilmington Regulatory Field Office  
U.S. Army Corps of Engineers  
Post Office Box 1890  
Wilmington, NC 28402-1890



RE: Jurisdictional Delineations for NCDOT Bridge Group 58 Replacements

05-238

Dear Richard:

EcoScience Corporation has been contracted to conduct field surveys at selected highway bridges the N.C. Department of Transportation (NCDOT) is proposing to replace. Tasks completed during our field investigation include Section 404 jurisdictional area delineations and location of delineation flags with Global Positioning System (GPS) technology. As part of our contract, we have been asked to obtain regulatory agency verification of our delineations. To this end, I am providing you information concerning three bridges proposed for replacement in NCDOT Division 8.

Bridge replacement B-4583 crosses Aberdeen Creek in Moore County. Bridge replacement B-4584 crosses Little River in Moore County. Bridge replacement B-4642 crosses Juniper Creek in Scotland County. Vegetated wetlands were identified within the project study area for all three bridge replacements. Attached to this letter is a packet of information for each bridge and a table of coordinates for all bridges. Included in each packet is a location map, a depiction of the GPS survey of the jurisdictional area delineation, and completed U.S. Army Corps of Engineers (USACE) routine onsite delineation data forms, if applicable. Locations where data forms were completed are depicted on the GPS survey maps by red circles.

Again, I am interested in obtaining USACE verification of the delineations. Please let me know if you would like for us to join you in a visit to these bridges, and if you need further documentation concerning the delineations. Thank you for your attention to these important projects.

Sincerely,

ECOSCIENCE CORPORATION

Layna Thrush  
Senior Scientist

Attachments

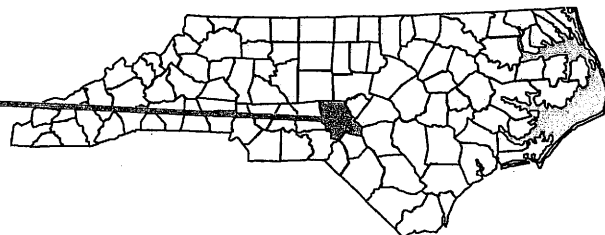
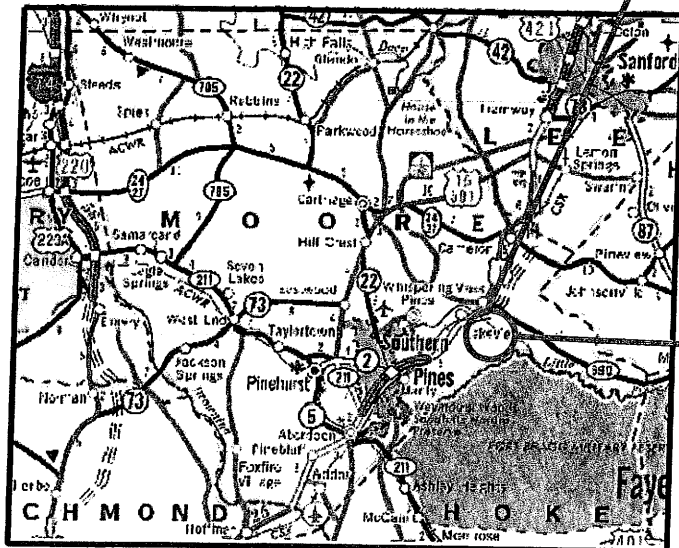
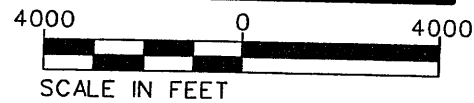
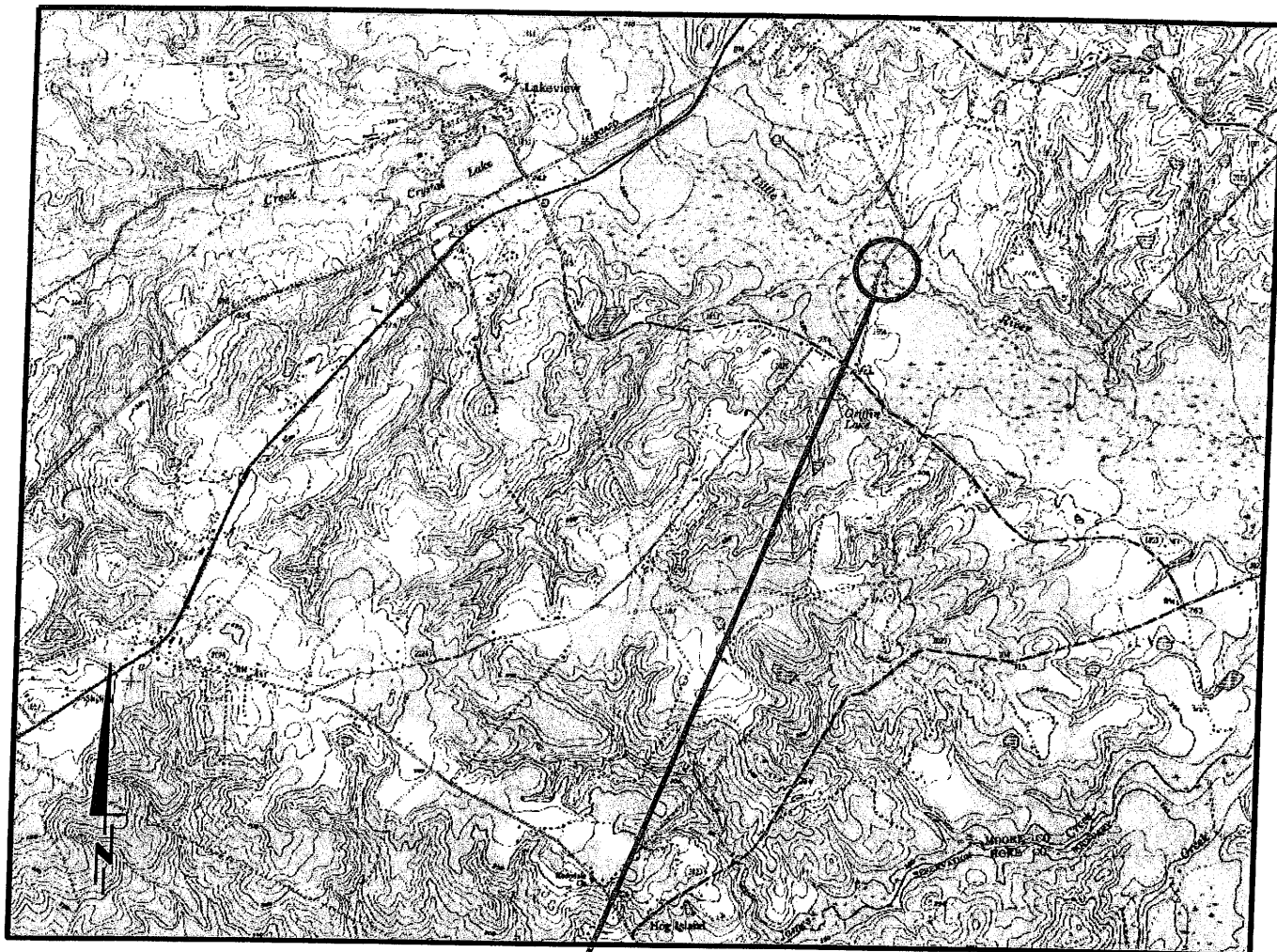
Locations of NCDOT Group 58 bridges which occur in NCDOT Division 8.  
Positions are located at the approximate center of each bridge and reported in feet.

NCDOT TIP#	Latitude*	Longitude*
B-4583	35.0816°N	79.4624°W
B-4584	35.2345°N	79.2791°W
B-4642	34.7976°N	79.3973°W

\*Located within US State Plane 1983 Coordinate System, North Carolina 3200 Zone.

**B-4584**  
**Bridge No. 11 over Little River**  
**Moore County**





Client:



Project:

**PROJECT VICINITY MAP**  
**Replacement of Bridge No. 11 (B-4584)**  
**over Little River**

**Moore County, North Carolina**

Dwn By:

MAF

Ckd By:

LET

FIGURE

Date:

JUL 2006

Scale:

AS SHOWN

ESC Project No.:

05-238

**1**

**BRIDGE NO. 11**

**LITTLE RIVER**

**LONG POINT ROAD**

**SR 1864**



<b>LEGEND</b>	
	GPS POINT
	COMPLETED USACE DATA FORM
	FLOW DIRECTION
	PROJECT STUDY AREA BOUNDARY
	JURISDICTIONAL STREAM BOUNDARY
	JURISDICTIONAL WETLAND BOUNDARY
	BRIDGE



Client:

Project:

**JURISDICTIONAL AREAS**  
**Replacement of Bridge No. 11 (B-4584)**  
**over Little River**  
**Moore County, North Carolina**

Dwn By:	MAF	Ckd By:	CBT
Date:	JUL 2006		
Scale:	1" = 200'		
ESC Project No.:	05-238		

FIGURE

**3**

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

Project/Site: <u>B-4584 Moore County</u>	Date: <u>5/25/06</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Moore</u>
Investigator: <u>EL Science</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Forested W</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>WG14</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>Wetland</u>
(If needed, explain on reverse.)	

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. <u>Swamp Laurel oak</u>	<u>Canopy</u>	<u>FACW</u>	9. _____	_____	_____
2. <u>Water Oak</u>	<u>"</u>	<u>FAC</u>	10. _____	_____	_____
3. <u>Willow Oak</u>	<u>"</u>	<u>FACW-</u>	11. _____	_____	_____
4. <u>Yellow Poplar</u>	<u>"</u>	<u>FAC</u>	12. _____	_____	_____
5. <u>American Holly</u>	<u>Undersbry</u>	<u>FAC-</u>	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 80%

Remarks:

**HYDROLOGY**

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available	<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators:</b> <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 Inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands <b>Secondary Indicators (2 or more required):</b> <input type="checkbox"/> Oxidized Root Channels in Upper 12 Inches <input checked="" type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
<b>Field Observations:</b> Depth of Surface Water: <u>1</u> (in.) Depth to Free Water in Pit: <u>—</u> (in.) Depth to Saturated Soil: <u>0</u> (in.)	
Remarks:	

VVC 17 - Upland

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

Project/Site: <u>B-4584 Moore County</u>	Date: <u>5/25/06</u>
Applicant/Owner: <u>NCDOT</u>	County: <u>Moore</u>
Investigator: <u>SLO Science</u>	State: <u>NC</u>
Do Normal Circumstances exist on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Community ID: <u>Hardwood F.</u>
Is the site significantly disturbed (Atypical Situation)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Transect ID: <u>WEL4</u>
Is the area a potential Problem Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Plot ID: <u>Upland</u>
(If needed, explain on reverse.)	

**VEGETATION**

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indic.
1. <u>Yellow Poplar</u>	<u>Canopy</u>	<u>FAC</u>	9. _____	_____	_____
2. <u>American Holly</u>	<u>Understory</u>	<u>FAC-</u>	10. _____	_____	_____
3. <u>Red Maple</u>	<u>Understory</u>	<u>FAC</u>	11. _____	_____	_____
4. <u>Smilax (Common)</u>	<u>Vine</u>	<u>FAC</u>	12. _____	_____	_____
5. _____	_____	_____	13. _____	_____	_____
6. _____	_____	_____	14. _____	_____	_____
7. _____	_____	_____	15. _____	_____	_____
8. _____	_____	_____	16. _____	_____	_____

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-) 7590

Remarks:

**HYDROLOGY**

- Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
  - Aerial Photographs
  - Other
- No Recorded Data Available

Field Observations:

Depth of Surface Water: — (in.)

Depth to Free Water in Pit: >12 (in.)

Depth to Saturated Soil: >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

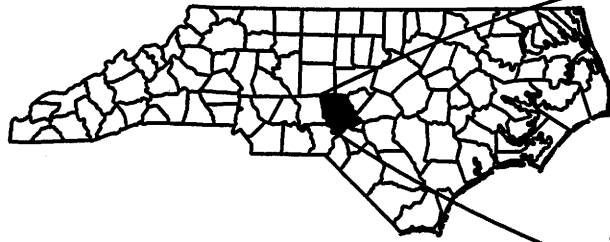
- Inundated
- Saturated in Upper 12 Inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

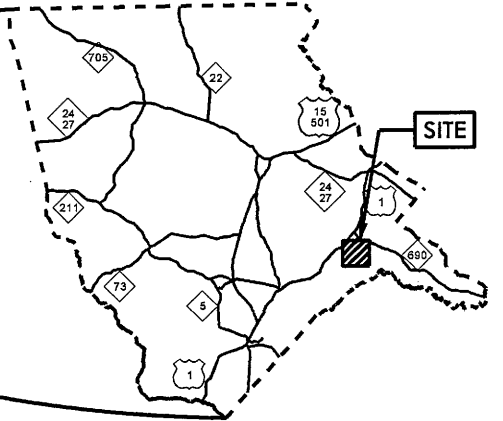
- Oxidized Root Channels in Upper 12 Inches
- Water-Stained Leaves
- Local Soil Survey Data
- FAC-Neutral Test
- Other (Explain in Remarks)

Remarks:

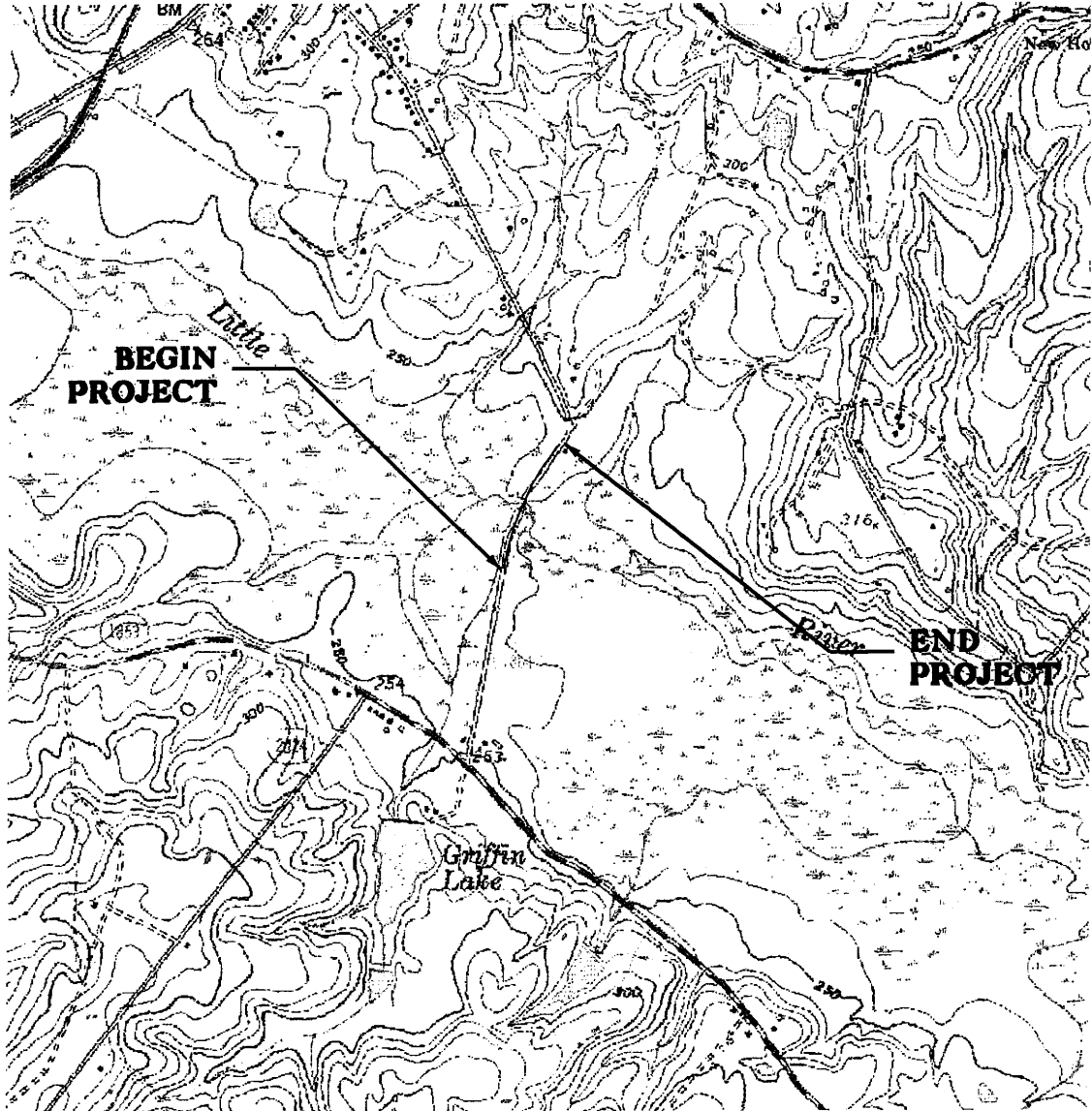
No hydrologic indicators



SEE INSET  
BELOW



MOORE COUNTY



WETLAND/STREAM  
IMPACTS

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

MOORE COUNTY  
PROJECT: 33785.1.1 (B-4584)  
BRIDGE NO. 11  
OVER LITTLE RIVER  
ON SR 1864 (LONG POINT ROAD)

SHEET 1 OF 7

7-10-09

**PROPERTY OWNERS**  
**NAMES AND ADDRESSES**

<b>PARCEL NO.</b>	<b>NAMES</b>	<b>ADDRESSES</b>
1	BETTYRENE RICHARDSON	136 UNION CHURCH RD CARTHAGE NC, 28327
2	BONITA BLUE	1045 LOBELIA LANE VASS, NC 28394
3	MACK BLUE	525 MAIN STREET VASS, NC 28394

**NCDOT**  
**DIVISION OF HIGHWAYS**  
MOORE COUNTY  
PROJECT: 33785.1.1 (B-4584)  
BRIDGE NO. 11  
OVER LITTLE RIVER  
ON SR 1864 (LONG POINT ROAD)

**WETLAND PERMIT IMPACT SUMMARY**

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS								
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)					
	13+00 to 15+10 L RT	Roadway Fill	<0.01			0.04											
	14+20 to 15+55 L LT	Roadway Fill	0.03			0.03											
	17+65 to 18+12 L RT	Roadway Fill	<0.01			<0.01											
<b>TOTALS:</b>			<b>0.04</b>			<b>0.07</b>											

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 MOORE COUNTY  
 WBS - 33785.1.1 (B-4584)  
 SHEET 3 of 7 7/10/2009

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	<b>B-4584</b>	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33785.1.1	BRZ-1864(1)	PE	
33785.2.1	BRZ-1864(1)	RW, UTIL	



Permit Drawing  
Sheet 4 of 7

WETLAND/STREAM  
IMPACTS

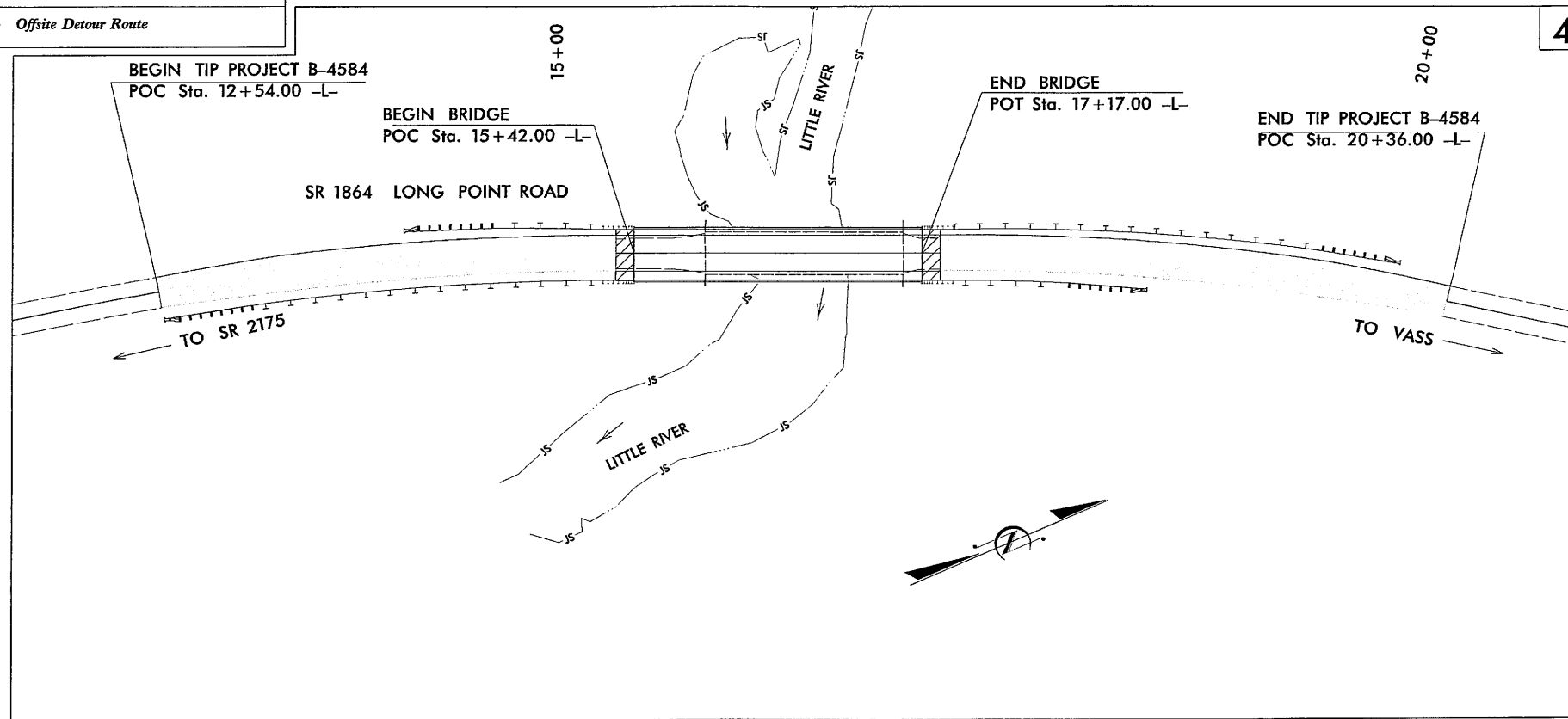
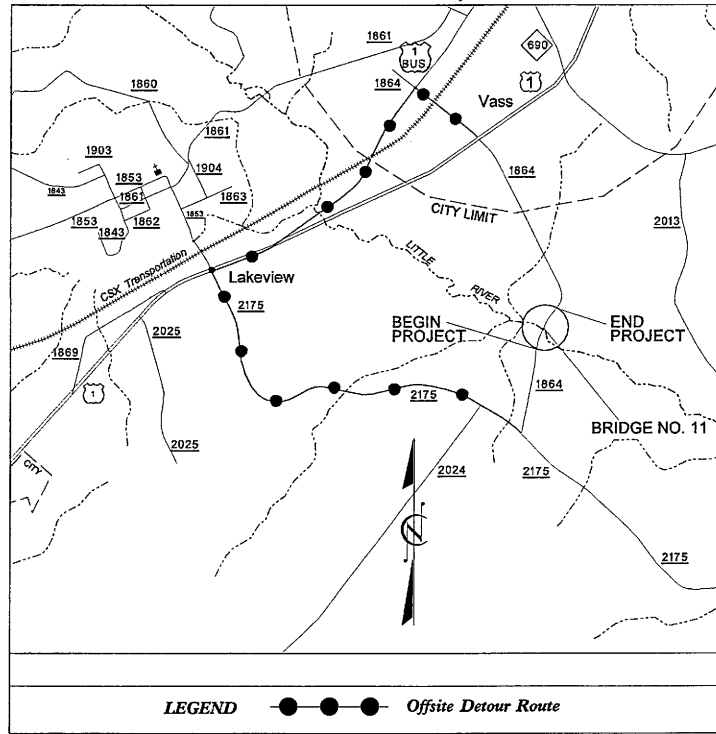
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**MOORE COUNTY**

LOCATION: BRIDGE NO. 11 OVER LITTLE RIVER  
ON SR 1864 (LONG POINT ROAD)

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

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



THIS PROJECT IS NOT WITHIN  
MUNICIPAL BOUNDARIES.

NCDOT CONTACT: DOUG TAYLOR, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

CONTRACT: TIP PROJECT: B-4584

<p><b>GRAPHIC SCALES</b></p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p><b>DESIGN DATA</b></p> <p>ADT 2010 = 900 ADT 2030 = 1,600 DHV = 13 % D = 60 % T = 3 % * V = 60 MPH FUNC. CLASS = RURAL LOCAL * TTST 1% DUAL 2%</p>	<p><b>PROJECT LENGTH</b></p> <p>LENGTH ROADWAY TIP PROJECT B-4584 = 0.115 mi. LENGTH STRUCTURE TIP PROJECT B-4584 = 0.033 mi. TOTAL LENGTH TIP PROJECT B-4584 = 0.148 mi.</p>	<p>Prepared in the Office of: <b>WANG ENGINEERING COMPANY, INC.</b> CARY, N.C. FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION</p> <p>2006 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: MAY 15, 2009 LETTING DATE: JUNE 15, 2010</p> <p>CLIFTON T. REGISTER, P.E. PROJECT ENGINEER</p> <p>SCOTT L. KENNEDY PROJECT DESIGN ENGINEER</p>	<p>HYDRAULICS ENGINEER SUNGATE DESIGN GROUP, PA</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER WANG ENGINEERING</p> <p>SIGNATURE: _____ P.E.</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p> <p>STATE HIGHWAY DESIGN ENGINEER P.E.</p>
--	---	---	---	---	---

\$\$\$\$\$ SYSTEM \$\$\$\$\$\$  
\$\$\$\$\$ USERNAME \$\$\$\$\$\$



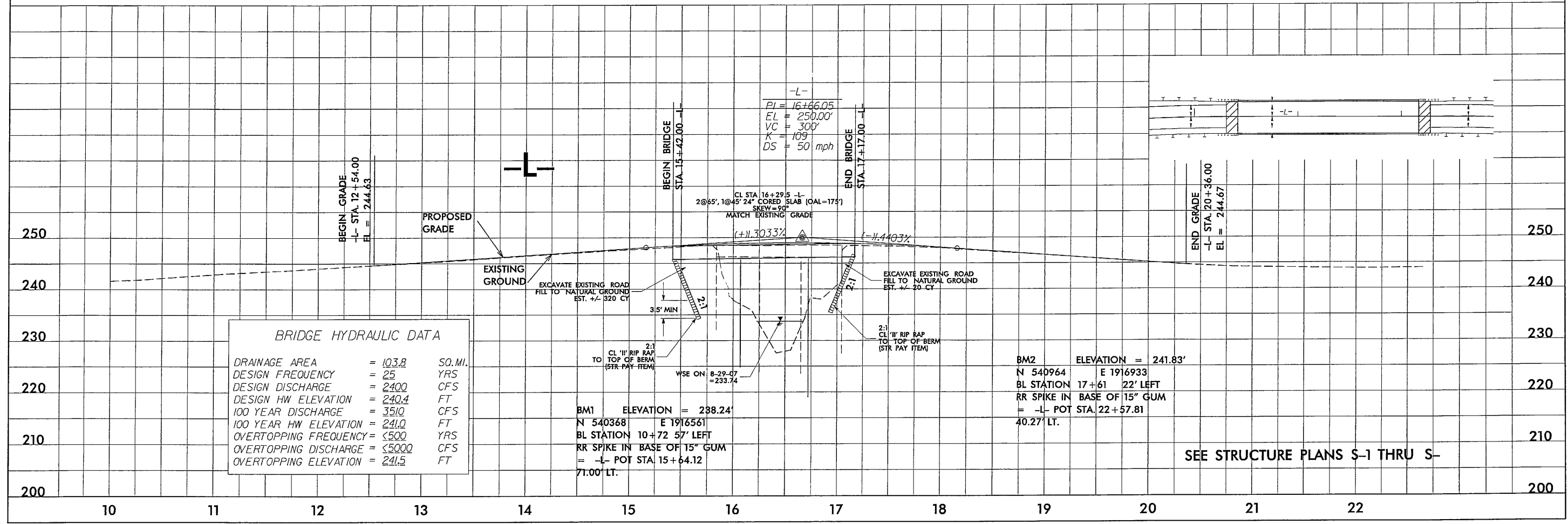
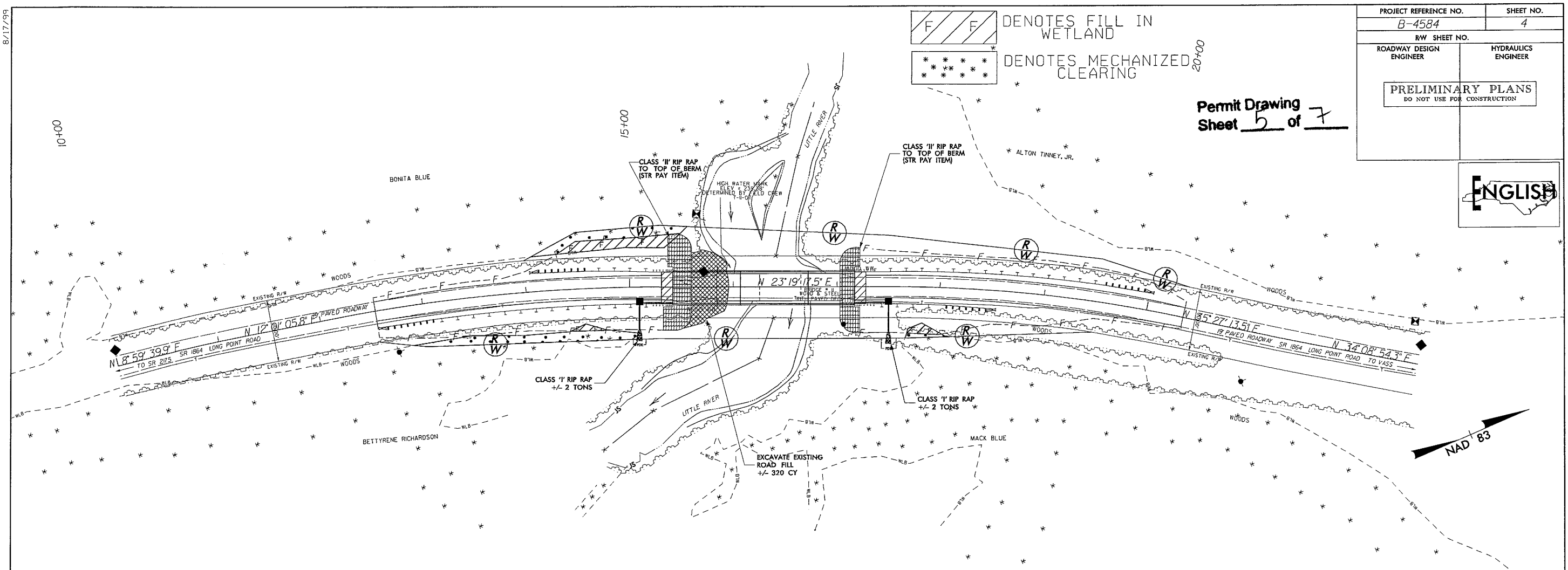
8/17/99

PROJECT REFERENCE NO. B-4584	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

 DENOTES FILL IN WETLAND

 DENOTES MECHANIZED CLEARING

Permit Drawing  
Sheet 5 of 7





DRAINAGE AREA	= 103.8	SO. MI.
DESIGN FREQUENCY	= 25	YRS
DESIGN DISCHARGE	= 2400	CFS
DESIGN HW ELEVATION	= 240.4	FT
100 YEAR DISCHARGE	= 3510	CFS
100 YEAR HW ELEVATION	= 241.0	FT
OVERTOPPING FREQUENCY	= <500	YRS
OVERTOPPING DISCHARGE	= <5000	CFS
OVERTOPPING ELEVATION	= 241.5	FT

BM1 ELEVATION = 288.24'  
 N 540368 E 1916561  
 BL STATION 10+72 57' LEFT  
 RR SPIKE IN BASE OF 15" GUM  
 = -L- POT STA. 15+64.12  
 71.00' LT.

BM2 ELEVATION = 241.83'  
 N 540964 E 1916933  
 BL STATION 17+61 22' LEFT  
 RR SPIKE IN BASE OF 15" GUM  
 = -L- POT STA. 22+57.81  
 40.27' LT.

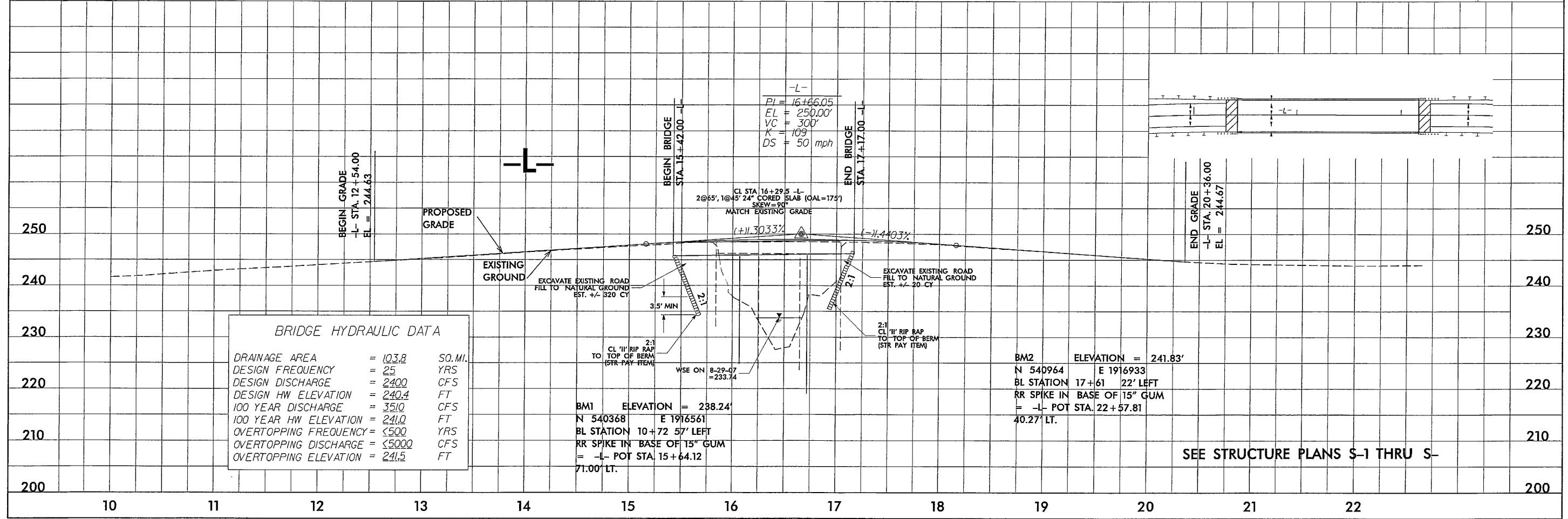
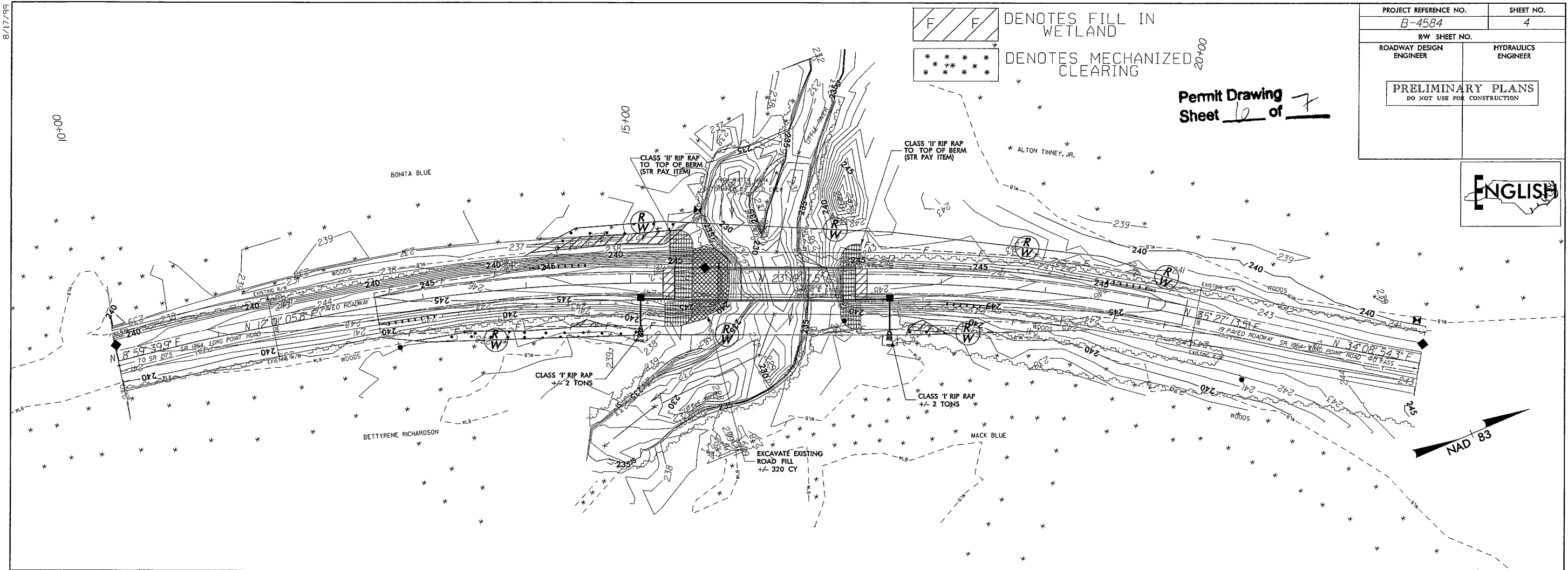
SEE STRUCTURE PLANS S-1 THRU S-

8/17/99

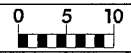
 DENOTES FILL IN WETLAND  
 DENOTES MECHANIZED CLEARING

PROJECT REFERENCE NO. B-4584	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing Sheet 10 of 7

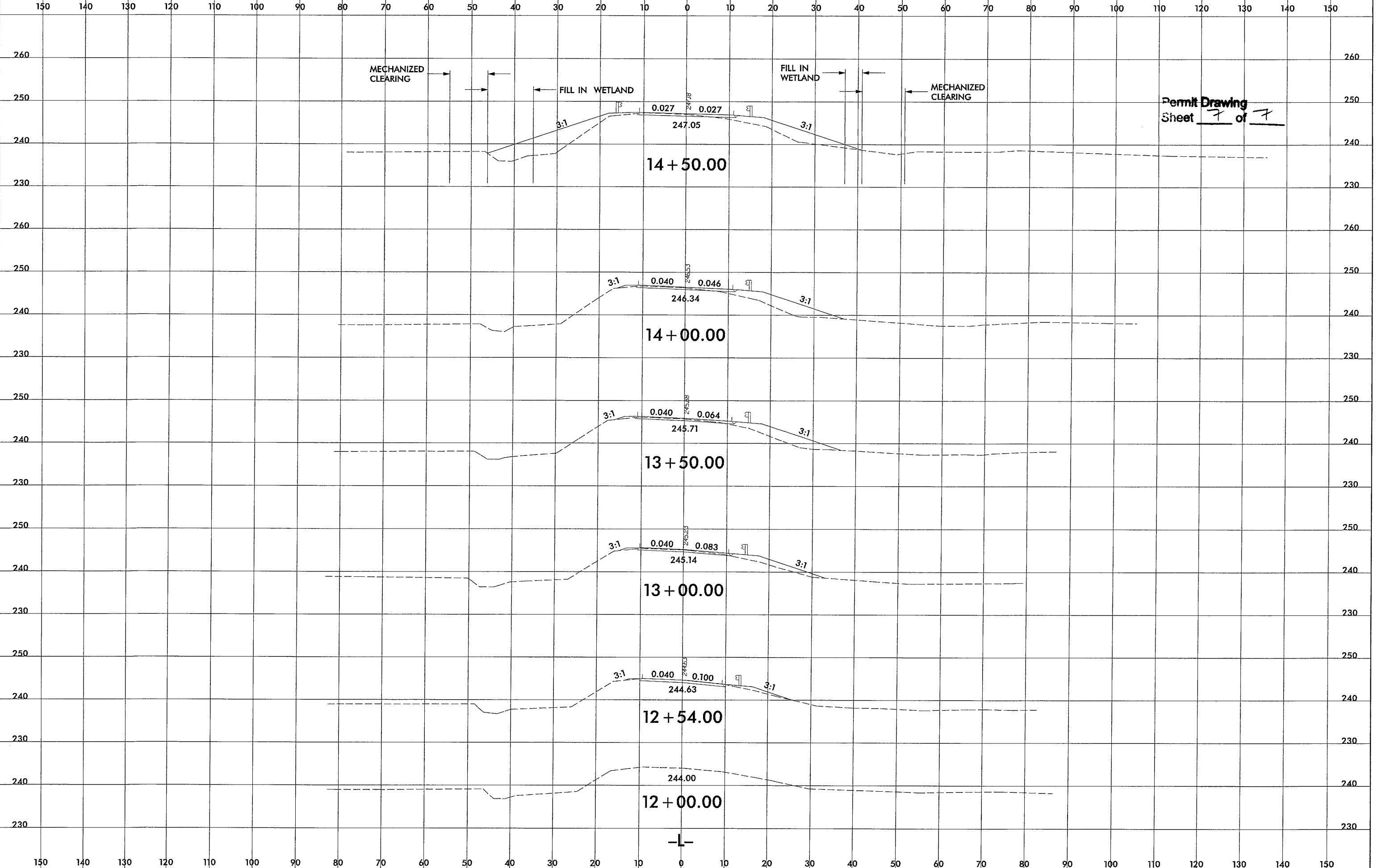


8/23/99



PROJ. REFERENCE NO.  
B-4584

SHEET NO.  
X-2



Permit Drawing  
Sheet 7 of 7

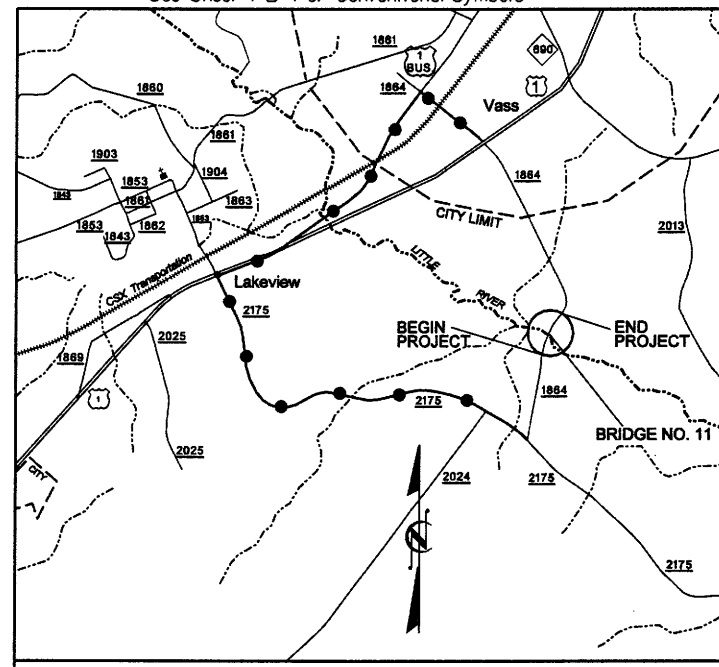
\*\*\*\*\*  
SYTIME  
\*\*\*\*\*  
SUBMIT  
\*\*\*\*\*

09/08/09

TIP PROJECT: B-4584

CONTRACT:

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



VICINITY MAP

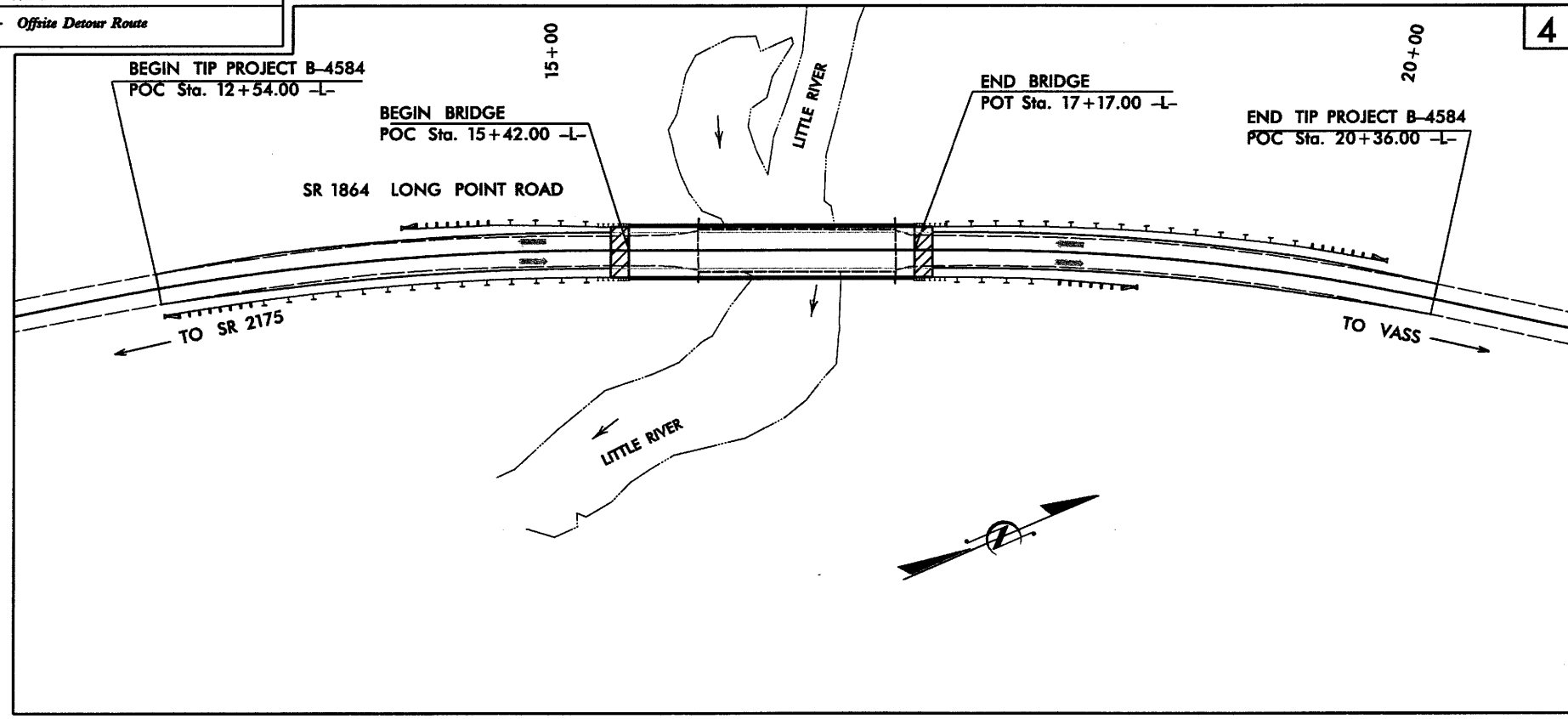
LEGEND ●—● Offsite Detour Route

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**MOORE COUNTY**

LOCATION: BRIDGE NO. 11 OVER LITTLE RIVER  
ON SR 1864 (LONG POINT ROAD)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4584	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33785.1.1	BRZ-1864(1)	PE	
33785.2.1	BRZ-1864(1)	R/W, UTIL	

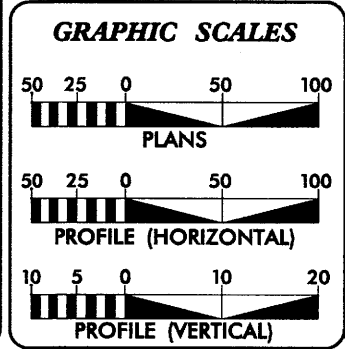


THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.

NCDOT CONTACT: DOUG TAYLOR, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



**DESIGN DATA**

ADT 2010	= 900
ADT 2030	= 1,600
DHV	= 13 %
D	= 60 %
T	= 3 % *
V	= 60 MPH
FUNC. CLASS	= RURAL LOCAL
* TTST	1% DUAL 2%

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4584	= 0.115 mi.
LENGTH STRUCTURE TIP PROJECT B-4584	= 0.033 mi.
TOTAL LENGTH TIP PROJECT B-4584	= 0.148 mi.

Prepared in the Office of:  
**WANG ENGINEERING COMPANY, INC.**  
CARY, N.C.  
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY DATE: MAY 15, 2009  
LETTING DATE: JUNE 15, 2010

CLIFTON T. REGISTER, P.E.  
PROJECT ENGINEER

SCOTT L. KENNEDY  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER  
SUNGATE DESIGN GROUP, PA

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER  
WANG ENGINEERING

SIGNATURE: \_\_\_\_\_ P.E.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

\$\$\$\$\$SYTIME\$\$\$\$\$  
\$\$\$\$\$>\$\$\$\$\$  
\$\$\$\$\$DGN\$\$\$\$\$  
\$\$\$\$\$USERNAME\$\$\$\$\$

3/15/06

**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	○
Property Corner	⊠
Property Monument	⊠
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	⊠
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-W.S.-
Proposed Wetland Boundary	-W.S.-
Existing Endangered Animal Boundary	-E.A.B.-
Existing Endangered Plant Boundary	-E.P.B.-

**BUILDINGS AND OTHER CULTURE:**

Gas Pump Vent or UG Tank Cap	○
Sign	⊙
Well	⊙
Small Mine	⊗
Foundation	⊠
Area Outline	⊠
Cemetery	⊠
Building	⊠
School	⊠
Church	⊠
Dam	⊠

**HYDROLOGY:**

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
Jurisdictional Stream	-JS-
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	⋆
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

**RAILROADS:**

Standard Gauge	-----
RR Signal Milepost	○
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-
Proposed Temporary Utility Easement	-TUE-
Proposed Permanent Easement with Iron Pin and Cap Marker	◆

**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
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	⊗

**VEGETATION:**

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

**EXISTING STRUCTURES:**

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	-----
Paved Ditch Gutter	-----
Storm Sewer Manhole	⊙
Storm Sewer	-----

**UTILITIES:**

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
Power Line Tower	⊗
Power Transformer	⊗
UG Power Cable Hand Hole	⊠
H-Frame Pole	●
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

**TELEPHONE:**

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊙
Telephone Booth	⊠
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
UG Telephone Cable Hand Hole	⊠
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

**WATER:**

Water Manhole	⊙
Water Meter	○
Water Valve	⊗
Water Hydrant	⊙
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

**TV:**

TV Satellite Dish	⊠
TV Pedestal	⊠
TV Tower	⊗
UG TV Cable Hand Hole	⊠
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

**GAS:**

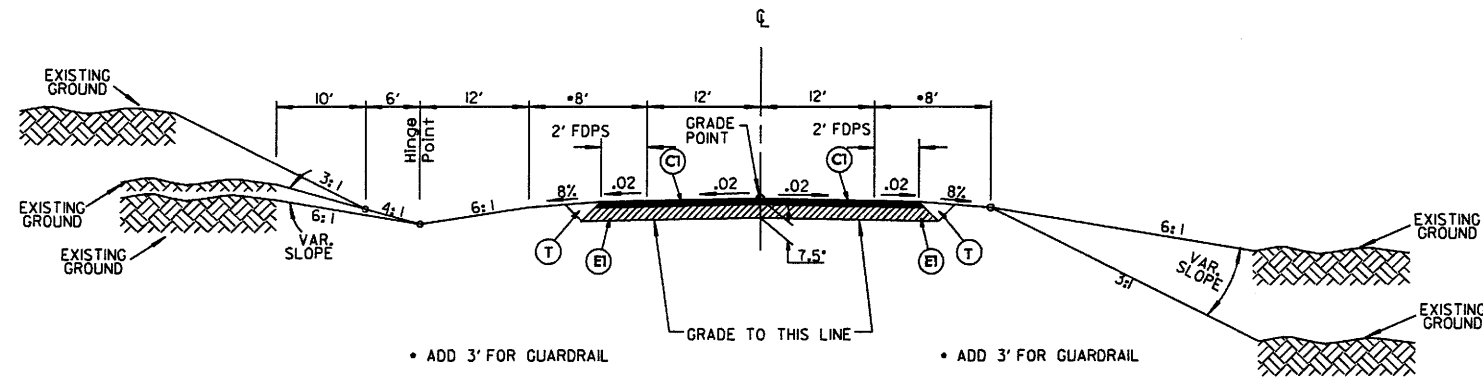
Gas Valve	◇
Gas Meter	⊙
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

**SANITARY SEWER:**

Sanitary Sewer Manhole	⊙
Sanitary Sewer Cleanout	⊙
UG Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

**MISCELLANEOUS:**

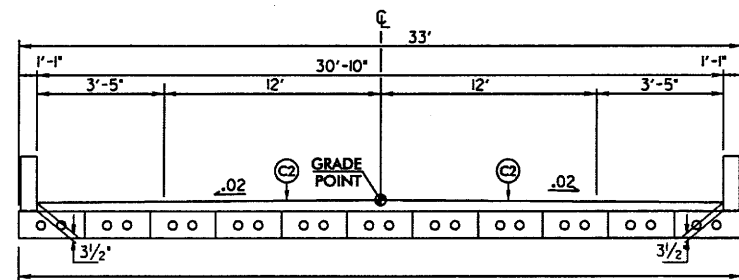
Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line	-----
UG Tank; Water, Gas, Oil	⊠
AG Tank; Water, Gas, Oil	⊠
UG Test Hole (S.U.E.*)	⊙
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



**TYPICAL SECTION NO. 1**  
 USE TYPICAL SECTION NO. 1 AS FOLLOWS  
 -L- Sta. 11+75.00 to Sta. 14+85.00 (BEGIN BRIDGE)  
 -L- Sta. 16+15.00 (END BRIDGE) to Sta. 19+15.00

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 2.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 3.5" ASPHALT CONC. SURFACE COURSE, TYPE SF9.6A, AT AN AVERAGE RATE OF 192.5 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 5" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS PER SQ. YD.
T	EARTH MATERIAL

NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED



1/2 CORED SLAB UNITS = 33'  
**TYPICAL BRIDGE SECTION**  
 -L- Sta. 14+85.00 to Sta. 16+15.00

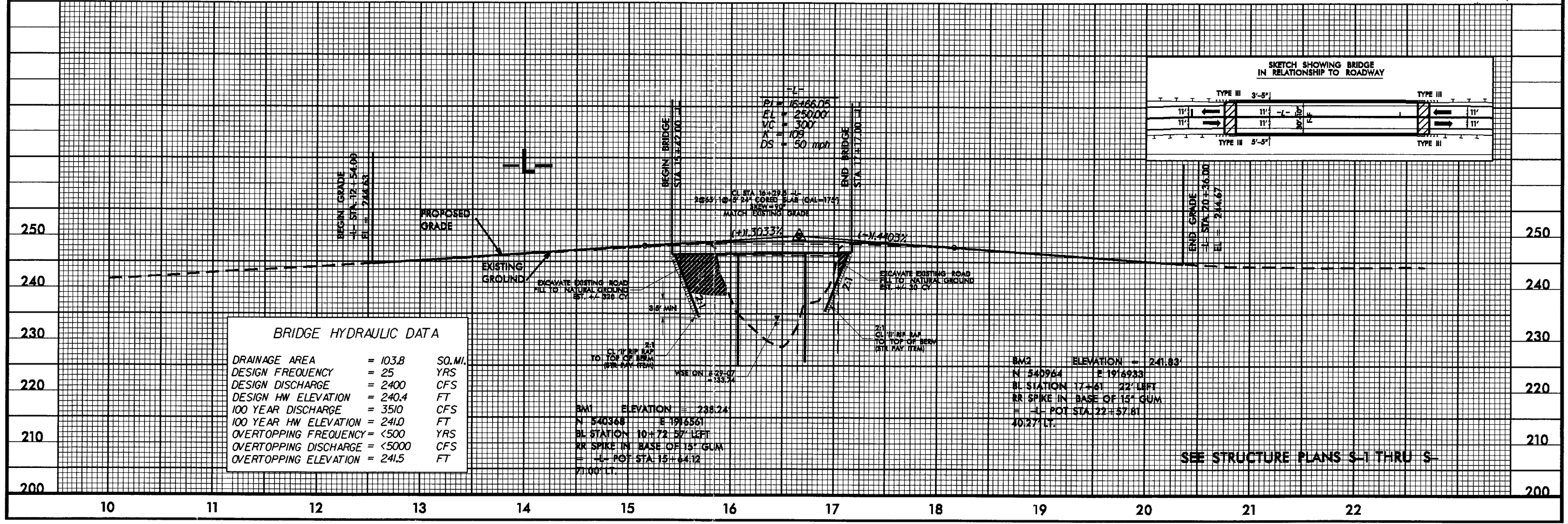
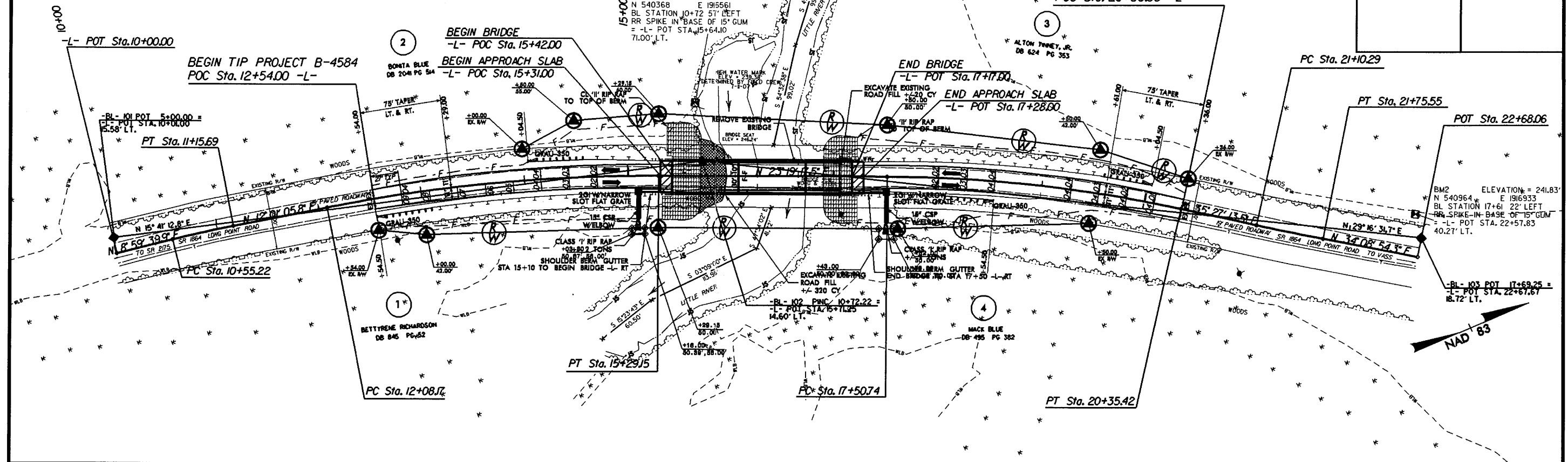




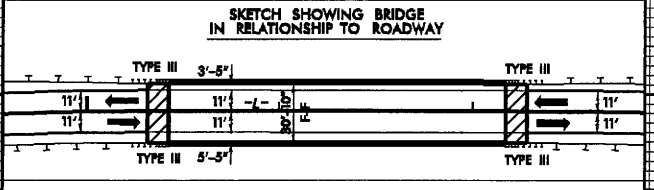
8/17/99

PI Sta 10+85.46 Δ = 3° 01' 25.9" (RT) D = 4' 59' 59.9" L = 60.48' T = 30.25' R = 1,45.92' DS = 50MPH	PI Sta 13+69.18 Δ = 1° 18' 11.7" (RT) D = 3' 31' 17.6" L = 320.97' T = 161.01' R = 1627.00' DS = 60MPH	PI Sta 18+93.62 Δ = 12° 07' 55.9" (RT) D = 4' 15' 42.1" L = 284.68' T = 142.87' R = 1,344.44' DS = 55MPH	PI Sta 21+42.92 Δ = 1° 18' 19.1" (LT) D = 2' 00' 00.0" L = 65.27' T = 32.63' R = 2,864.79' DS = 60MPH
--	--	--	---

PROJECT REFERENCE NO. B-4584	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	



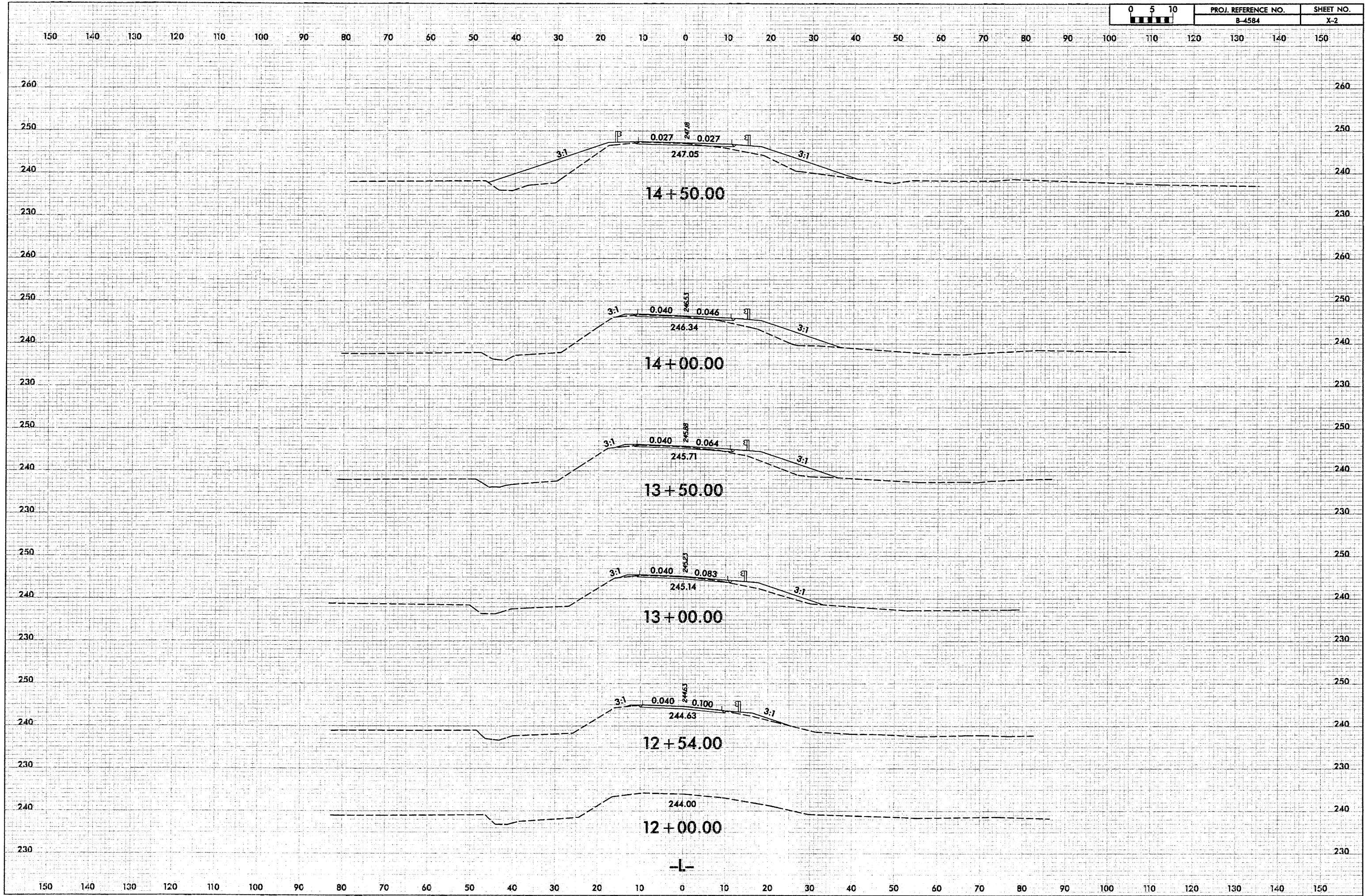
34584  
McLamb  
**RECEIVED**  
AUG 4 2009  
DIVISION OF HIGHWAYS  
POEA-OFFICE OF NATURAL ENVIRONMENT



SEE STRUCTURE PLANS S-1 THRU S-

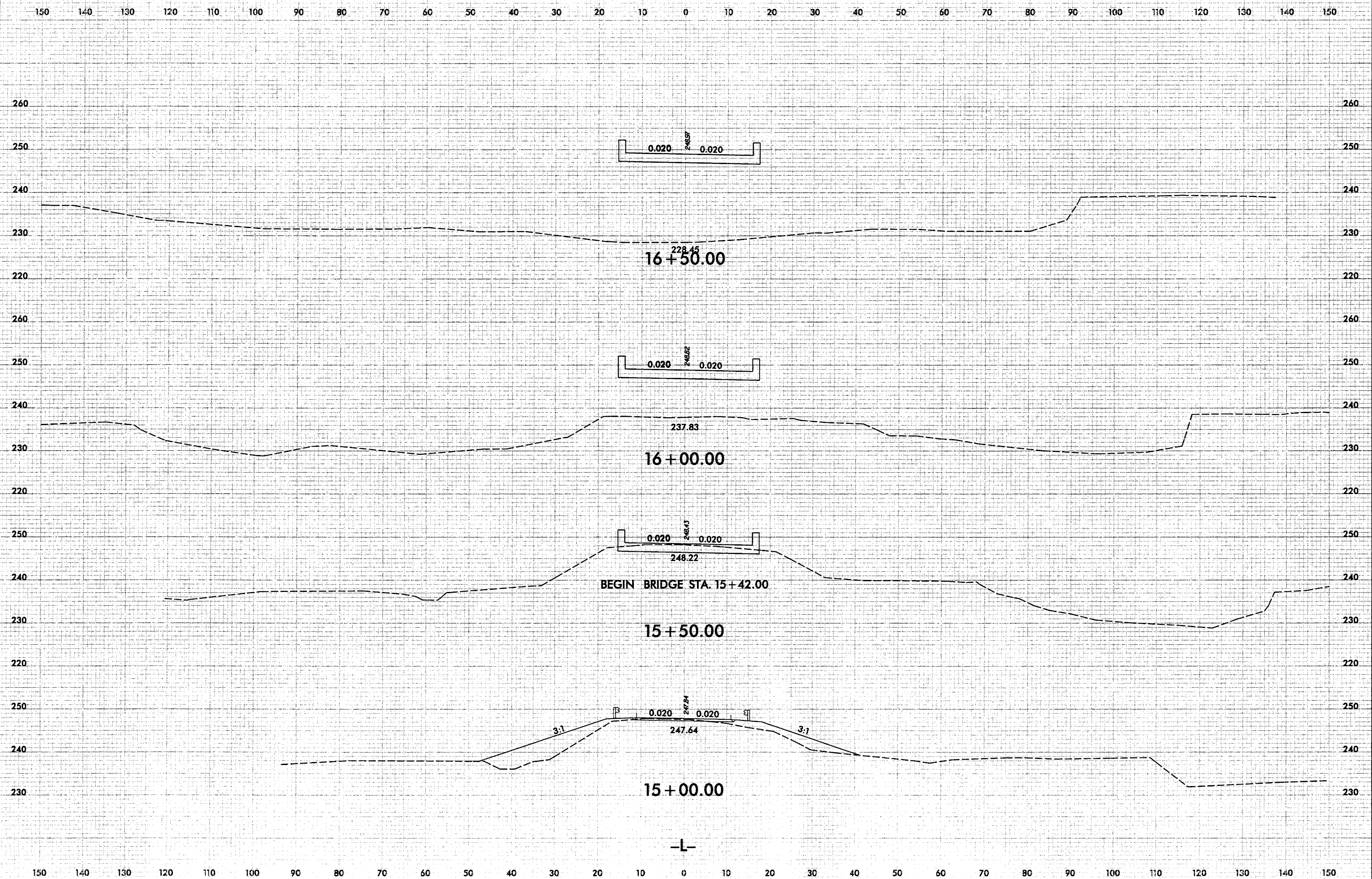




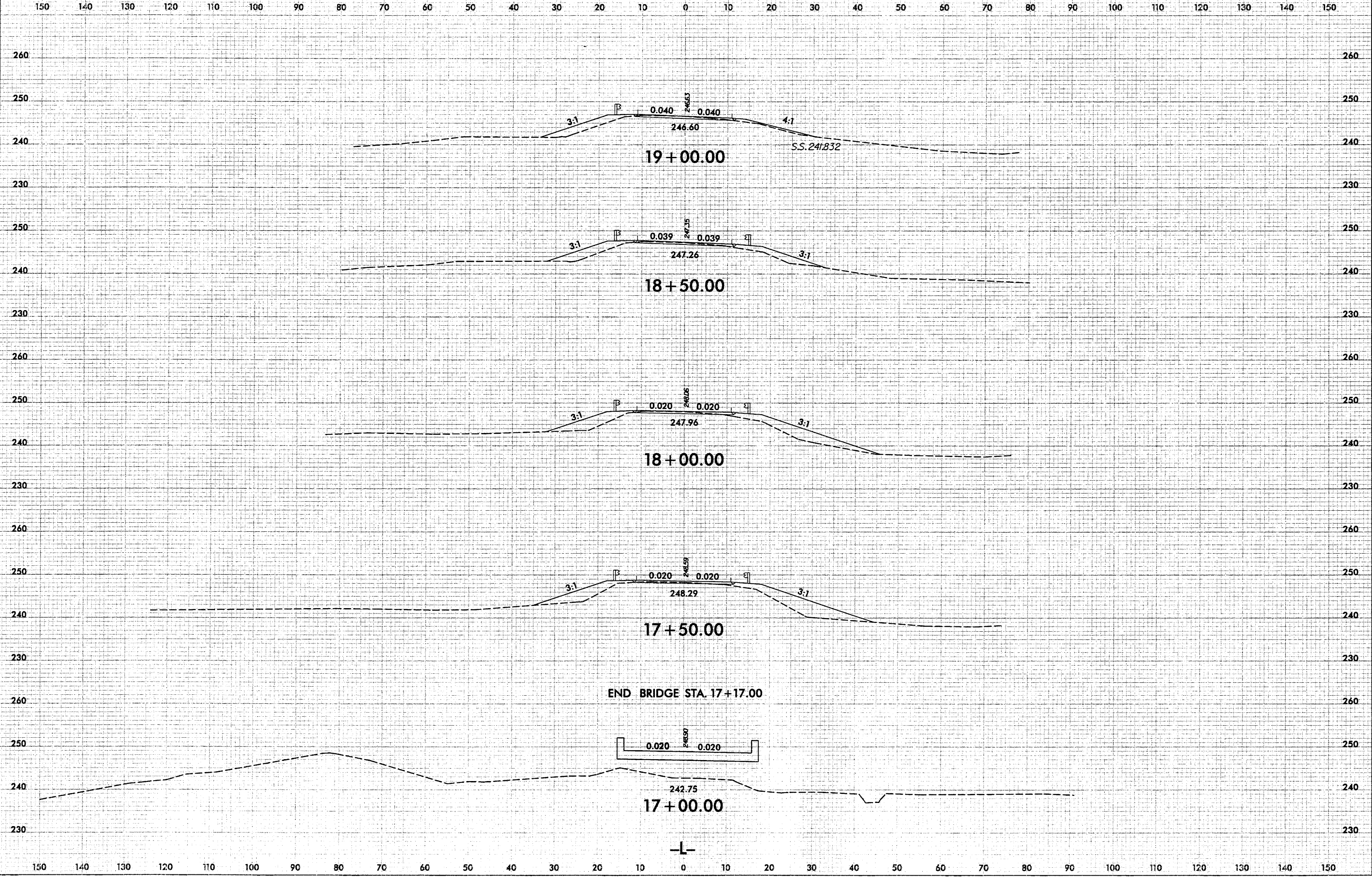
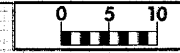


-L-

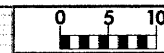




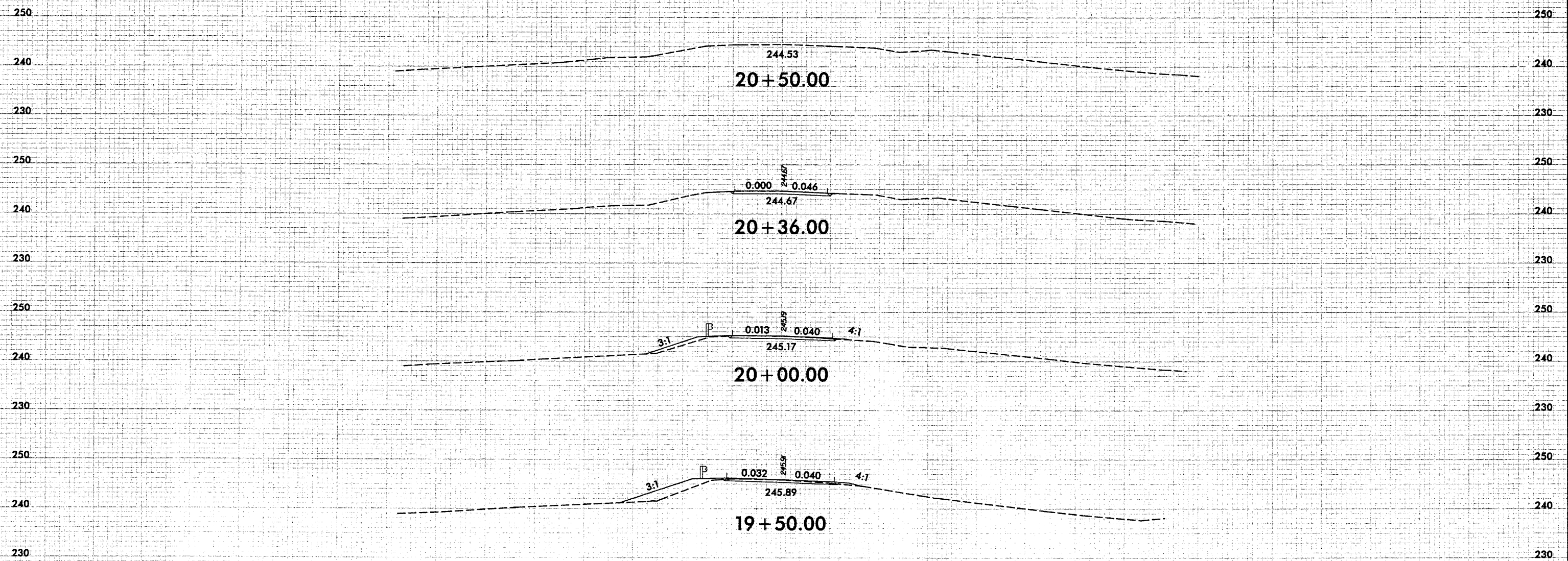
-L-







150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Moore County  
Bridge No. 11 on SR 1864 (Long Point Road)  
Over Little River  
Federal-Aid Project No. BRZ-1864(1)  
W.B.S. No. 33785.1.1  
T.I.P. Project No. B-4584

CATEGORICAL EXCLUSION  
UNITED STATES DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
AND  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

9/27/07  
DATE

*for* William J. Thorpe  
Gregory J. Thorpe, Ph. D., Environmental Management Director  
Project Development and Environmental  
Analysis Branch, NCDOT

9/27/07  
DATE

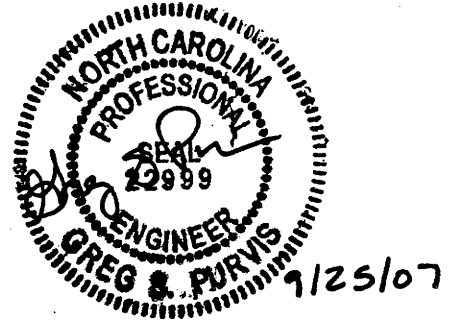
*for* Felix D. Sullivan  
John F. Sullivan, III, P. E.  
Division Administrator, FHWA

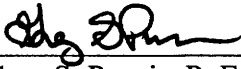
Moore County  
Bridge No. 11 on SR 1864 (Long Point Road)  
Over Little River  
Federal-Aid Project No. BRZ-1864(1)  
W.B.S. No. 33785.1.1  
T.I.P. Project No. B-4584

CATEGORICAL EXCLUSION

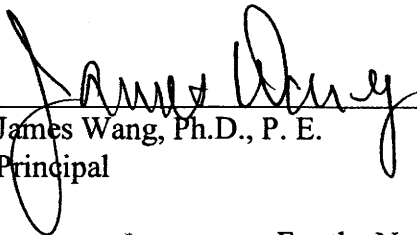
September 2007

Document Prepared by:  
Wang Engineering Company, Inc.




  
\_\_\_\_\_  
Greg S. Purvis, P. E.  
Project Manager

9/25/07  
DATE

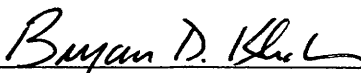
  
\_\_\_\_\_  
James Wang, Ph.D., P. E.  
Principal

9-25-07  
DATE

For the North Carolina Department of Transportation

  
\_\_\_\_\_  
Tracy Walter  
Project Manager  
Bridge Project Development Unit

9/26/07  
DATE

  
\_\_\_\_\_  
Bryan D. Kluchar, P.E.  
Project Engineer  
Bridge Project Development

9/26/07  
DATE

## **PROJECT COMMITMENTS**

**Moore County  
Bridge No. 11 on SR 1864 (Long Point Road)  
Over Little River  
Federal-Aid Project No. BRZ-1864(1)  
W.B.S. No. 33785.1.1  
T.I.P. Project No. B-4584**

### **Division Eight Construction, Resident Engineer's Office – Offsite Detour**

In order to have time to adequately reroute school busses, Moore County Schools should be contacted at (910) 947-2976 at least one month prior to road closure.

Moore County Emergency Services needs to be contacted at (910) 947-6500 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

### **Roadside Environmental Unit, Division Eight Resident Engineer – Sensitive Watersheds**

The portion of the Little River in the project study area is designated as WS-III;HQW waters. Sedimentation and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds.

### **Hydraulics Unit**

Little River is a FEMA regulated stream within a Limited Detailed Study area. Coordination with FEMA will be required.

A State Stormwater permit will be required.



**Moore County**  
**Bridge No. 11 on SR 1864 (Long Point Road)**  
**Over Little River**  
**Federal-Aid Project No. BRZ-1864(1)**  
**W.B.S. No. 33785.1.1**  
**T.I.P. Project No. B-4584**

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

**I. PURPOSE AND NEED**

Bridge Maintenance Unit records indicated the bridge has a sufficiency rating of 38.9 out of a possible 100 and a structural appraisal of 2 out of a possible 9. Therefore, based on Federal Highway Administration (FHWA) standards, the bridge is considered structurally deficient. In addition, the existing structure is considered functionally obsolete due to a deck geometry appraisal of 4 out of a possible 9.

Bridge No. 11 is composed of timber, concrete and steel. Timber typically does not last beyond 40 to 50 years due to the natural deterioration rates of wood. Rehabilitation of a timber structure is generally practical only when a few members are damaged or prematurely deteriorated. The condition of Bridge No. 11, built in 1961, has deteriorated to the point that makes rehabilitation impractical. Replacement of the bridge will result in safer traffic operations.

**II. EXISTING CONDITIONS**

The project is located northeast of the intersection with SR 2175 (see Figure 1). Land use in the project area is predominantly woodlands and light residential. Undeveloped woodlands are adjacent on the north and south sides of the study area.

SR 1864 (Long Point Road) is classified as a rural local in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists and/or pedestrians use the roadway. Therefore, bicycle and pedestrian accommodations are not accounted for.

In the vicinity of the bridge, SR 1864 has an 18-foot pavement width with four-foot grass shoulders (see Figure 3). The roadway grade has a slight crest at the existing bridge. The existing bridge on SR 1105 is located in a tangent with horizontal curves located on both approaches. The roadway is situated approximately 19 feet above the creek bed.

Bridge No. 11 is a three-span structure that consists of a timber deck with asphalt wearing surface on I-beams. The substructure consists of end bents with timber caps on timber piles and interior bents with reinforced concrete caps on timber piles. The existing bridge (see Figure 3) was constructed in 1961. The overall length of the structure is 121 feet. The clear roadway width is 24.3 feet. The posted weight limit on this bridge is 14 tons for single vehicles and 19 tons for TTST's.

On the downstream side of the bridge overhead telephone and power cross the stream. There are no utilities attached to the bridge. Utility impacts are anticipated to be low.

The current traffic volume of 775 vehicles per day (VPD) is expected to increase to 1,600 VPD by the year 2030. The projected volume includes one percent truck-tractor semi-trailer (TTST) and two percent dual-tired vehicles (DT). The speed limit in the vicinity of the bridge is not posted and therefore a statutory 55 miles per hour (mph) is assumed. There is a 35 mph advisory sign for horizontal curve on north approach. Three school busses cross this bridge daily.

There were no accidents reported during a recent three-year period.

### III. ALTERNATIVES

#### A. Project Description

The replacement structure will consist of a bridge approximately 175-foot long. The bridge length is based on preliminary design information and is set by hydraulic requirements. The opening size of the proposed structure may increase or decrease as necessary to accommodate peak flows as determined from a more detailed hydraulic analysis to be performed during the final design phase of the project. The bridge will be of sufficient width to provide for two 12-foot lanes with three-foot offsets on each side. The roadway grade of the new structure will be approximately the same as the existing grade.

The existing roadway will be widened to a 24-foot pavement width to provide two 12-foot lanes. Six-foot shoulders will be provided on each side in accordance with the current NCDOT Design Policy. This roadway will be designed as a rural local. The proposed design speed is 60 mph.

#### B. Reasonable and Feasible Alternatives

Two (2) alternatives studied for replacing the existing bridge are described below.

**Alternate A (Preferred)** replaces the bridge at the existing location. Traffic will be detoured offsite (see Figure 1) during the construction period. The length of approach work will be approximately 330 feet on the south side of the bridge and approximately 330 feet on the north side of the bridge.

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 SR 2175 (Aiken Road) and US 1 approximately 3.08 miles in length. The detour for the average road user would result in 2 minutes additional travel time (1.31 miles additional travel). Up to a twelve-month duration of construction is expected on this project. No additional funds will be required for upgrading or improving the offsite detour.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone the detour is acceptable. Moore County Emergency Services along with Moore County Schools Transportation have also indicated that the detour is acceptable. NCDOT Division 8 has indicated the condition of all roads, bridges and intersections on the offsite detour are acceptable without improvement and concurs with the use of the detour.

**Alternate B** replaces the bridge on new location east of the existing bridge. During construction, traffic will be maintained on the existing bridge. The length of approach work will be approximately 460 feet on the south side of the bridge and approximately 468 feet on the north side of the bridge. The proposed structure would be 325 feet long.

**C. Alternatives Eliminated From Further Study**

The "Do-Nothing" Alternative will eventually necessitate removal of the bridge and closing of the road. This is not desirable due to the traffic service provided by SR 1864.

"Rehabilitation" of the existing bridge is not practical due to being composed mainly of timber and the natural deterioration of timber.

Staged construction is not practical due to the availability of an offsite detour.

**D. Preferred Alternative**

Alternate A, replacing the existing bridge in the existing location while maintaining traffic on an offsite detour during the construction period is the preferred alternate. Alternate A was selected because of the comparatively lower human and natural environmental impacts associated with it.

NCDOT Division Eight Engineer concurs with Alternate A as the preferred alternative.

**IV. DESIGN EXCEPTIONS ANTICIPATED**

A design exception will be required for the horizontal curve on the north approach for Alternate A. A design exception will be required for the horizontal curves on both approaches for Alternate B and also for the sag vertical curve k value.

**V. ESTIMATED COSTS**

The estimated costs, based on current 2007 prices, are as follows:

**Table 1. – Estimated Costs**

	Alternate A (Preferred)	Alternate B
Structure Removal (existing)	\$ 30,000	\$ 30,000
Structure (proposed)	554,000	1,002,000
Detour Structure and Approaches	0	0
Roadway Approaches	199,000	314,000
Miscellaneous and Mobilization	177,000	296,000
Engineering and Contingencies	140,000	258,000
Total Construction Cost	1,100,000	1,900,000
ROW/Const. Easements:	10,000	16,000
Utilities	21,000	35,000
	-----	-----
<b>TOTAL</b>	<b>\$ 1,131,000</b>	<b>\$ 1,951,000</b>

## VI. NATURAL RESOURCES

### A. Physical Characteristics

#### 1. Water Resources

The project study area is located within sub-basin 03-06-14 of the Cape Fear River Basin. This area is part of USGS Hydrologic Unit 03030004 (Seaber et al. 1987) of the South Atlantic - Gulf Region. Little River, the only stream within the project study area, is spanned by Bridge No. 11. The portion of Little River that lies within the project study area has been assigned Stream Index Number 18-23-(10.7) by North Carolina Division of Water Quality (NCDWQ) (NCDWQ 2004). Little River is designated as a warm water stream.

Classifications are assigned to waters of the State of North Carolina based on the existing or contemplated best usage of various streams or segments of streams in the basin. A Best Usage Classification of WS-III has been assigned to Little River along with the supplemental classification of High Quality Waters (HQW). No Water Supply I (WS-I), Water Supply II (WS-II), Outstanding Resource Waters (ORW), or watershed Critical Areas (CA) occur within 1.0 mile of the project study area. This portion of Little River is listed on the N.C. 2006 Section 303(d) Final list. The impaired use is aquatic life support and the reason for listing is low pH.

#### 2. Biotic Resources

Plant communities within the project study area were delineated to determine the approximate area and location of each (Figure 2). A summary of the plant community areas within the project study boundary is presented in Table 2.

**Table 2. Plant Communities within Project Study Area (Acres)**

Plant Community	Coverage	Percent of Total Area
Coastal Plain Bottomland Hardwoods	11.5	75
Disturbed/maintained Land	1.9	13
Impervious Surfaces	1.6	12
Total	15.0	100

### B. Jurisdictional Topics

#### 1. Surface Waters and Wetlands

Within the project study area there is one jurisdictional stream: Little River. Most of the remainder of the project study area is comprised of Coastal Plain Bottomland Hardwoods. Surface waters within the project study area are subject to jurisdictional consideration under Section 404 of the Clean Water Act. Potential impacts to waters of the United States resulting from replacement of this bridge consist of fill associated with bridge demolition and minor impacts to wetlands within the Coastal Plain Bottomland Hardwoods. A summary of jurisdictional areas within the project study area is presented in Table 3. The maximum potential fill that may be deposited into Little River during bridge demolition is approximately 9 cubic yards.

**Table 3. Jurisdictional Areas within the Project Study Area**

Jurisdictional Area	Cowardin Classification	Linear Distance (feet)	Total Area (acres)	Wetland Rating Status
Little River (Perennial)	R2UB2	576	0.75	--
Coastal Plain Bottomland Hardwoods (Riverine)	PFO1C	--	8.0	61
Total		576	8.75	

## 2. Permits

The United States Army Corps of Engineers (USACE) has made available Nationwide Permit (NWP) 23 for CEs due to minimal impacts to waters of the United States expected with bridge construction. A NWP No. 33 may be required if temporary construction including cofferdams, access and dewatering are required for this project. NCDWQ has made available a General 401 Water Quality Certification for NWP 23 and/or NWP 33. Potential impacts to waters of the United States resulting from replacement of this bridge consist of fill associated with bridge demolition and minor impacts to wetlands within the Coastal Plain Bottomland Hardwoods.

## 3. Federally Protected Species

Species with the federal classification of Endangered (E), Threatened (T), Threatened due to Similarity of Appearance (T [S/A]), or officially Proposed (P) for such listing are protected under the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The term "Endangered Species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range," and the term "Threatened Species" is defined as "any species which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532). The term "Threatened due to Similarity of Appearance" is defined as a species which is not "Endangered" or "Threatened," but "closely resembles an Endangered or Threatened species" (16 U.S.C. 1532).

The project study area was walked and visually surveyed for significant features including potential protected species habitat. The field work for this investigation was conducted on May 25, 2006, and May 26, 2006 by EcoScience Corporation biologists Craig Terwilliger and Justin Wright.

The USFWS lists four federally protected species for Moore County (USFWS 2006, see Table 4).

Common Name	Scientific Name	Status*	Habitat Present	Biological Conclusion
American chaffseed	<i>Schwalbea americana</i>	E	Y	No Effect
Cape Fear shiner	<i>Notropis mekistocholas</i>	E	N	No Effect
Michaux's sumac	<i>Rhus michauxii</i>	E	Y	No Effect
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	N	No Effect

**AMERICAN CHAFFSEED****BIOLOGICAL CONCLUSION: NO EFFECT**

Within the project study area there is suitable habitat for American chaffseed within some of the forested areas that are open and dominated by oak species. During the May 25, 2006 field visit, a systematic plant-by-plant survey was conducted within suitable habitat by EcoScience Corporation biologists. No specimens were observed. NCNHP records (reviewed May 2006) document no occurrence of American chaffseed within 2.0 miles of the project study area. Based on the plant survey identifying that the species was not present and NCNHP records, the proposed project will have No Effect on American chaffseed.

**CAPE FEAR SHINER****BIOLOGICAL CONCLUSION: NO EFFECT**

Within the project study area there is no suitable habitat for the Cape Fear shiner in the form of streams with gravel, cobble, and boulder substrates with pools, riffles, and shallow runs. The habitat at the project site is sand and silt and the water is tannin in color with little flow. The stream has more of a coastal plain appearance. There are no slackwater areas with large rock outcrops and pools with water of good quality with relatively low silt loads (USFWS 2006). NCNHP records (reviewed May 2006) document no occurrence of Cape Fear shiner within 2.0 miles of the project study area. The effect of this project on Cape Fear shiner is No Effect.

**MICHAUX'S SUMAC****BIOLOGICAL CONCLUSION: NO EFFECT**

The project study area contains suitable habitat for Michaux's sumac along the roadway within the disturbed/maintained land. During the May 25, 2006 field visit, a systematic plant-by-plant survey was conducted within suitable habitat by EcoScience Corporation biologists. No specimens were observed. NCNHP records (reviewed May 2006) document no occurrence of Michaux's sumac within 2.0 miles of the project study area. Based on the plant survey identifying that the species was not present and NCNHP records, the proposed project will have No Effect on Michaux's sumac.

**RED-COCKADED WOODPECKER****BIOLOGICAL CONCLUSION: NO EFFECT**

The majority of the project study area is Coastal Plain Bottomland Hardwoods. This plant community lacks the open shrub layer of pine savanna or pine woods habitat required by this species for foraging and nesting. NCNHP records (reviewed May 2006) document no occurrence of red cockaded woodpecker within 2.0 miles of the project study area. Based on NCNHP records and lack of suitable habitat, this project will have No Effect on red cockaded woodpecker.

**VII. HUMAN ENVIRONMENT****Section 106 Compliance Guidelines**

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

### **Historic Architecture**

The Historic Preservation Office (HPO) reviewed the subject project and determined that no surveys are required (see letter dated May 1, 2006).

### **Archaeology**

The Historic Preservation Office (HPO) reviewed the subject project. There are no known archaeological sites within the proposed project area, and no archaeological investigation needed to be conducted (see letter dated May 1, 2006).

### **Community Impacts**

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

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

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

The Farmland Protection Policy Act requires all federal agencies or their representatives to consider the potential impacts to prime and important farmland soils by all land acquisition and construction projects. Prime and important farmland soils are defined by the Natural Resources Conservation Service (NRCS). Since there are no prime or important farmlands in the immediate vicinity of the proposed bridge the Farmland Protection Policy does not apply.

The project will not have a disproportionately high and adverse human health and environmental effect on any minority or low-income population.

### **Noise & Air Quality**

This project is an air quality neutral project in accordance with 40 CFR 93.126. It is not required to be included in the regional emissions analysis (if applicable) and project level CO or PM2.5 analyses are not required. This project will not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-build alternative. Therefore, FHWA has determined that this project will generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special MSAT concerns. Consequently, this effort is exempt from analysis for MSATs. Any burning of vegetation shall be performed in accordance with applicable local laws and regulations of the North Carolina State Implementation Plan (SIP) for air quality compliance with 15 NCAC 2D.0520.

Noise levels may increase during project construction; however, these impacts are not expected to be substantial considering the relatively short-term nature of construction noise and the limitation of construction to daytime hours. The transmission loss characteristics of nearby natural elements and man-made structures are believed to be sufficient to moderate the effects of intrusive construction noise.

## VIII. GENERAL ENVIRONMENTAL EFFECTS

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

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

The proposed project will not require right-of-way acquisition or easement from any land protected under section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303).

An examination of records at the North Carolina Department of Environment and Natural Resources, Division of Water Quality, Groundwater Section and the North Carolina Department of Human Resources, Solid Waste Management Section revealed no hazardous waste sites, no regulated or unregulated landfills or dumpsites within the project area. No facility with underground storage tanks (UST) was identified in the project vicinity.

Moore County is a participant in the Federal Flood Insurance Program. The bridge is located within a Limited Detail Study Area. The new structure should be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement for Bridge No. 11 would be a structure similar in waterway opening size, it is not anticipated that it will have any significant adverse impact on the existing floodplain and floodway. The proposed alternatives will not modify flow characteristics and will have a minimal impact on floodplains due to roadway encroachment. The existing drainage patterns and groundwater will not be affected.

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

## IX. OTHER AGENCY COMMENTS

NCDOT has sought input from the following agencies as a part of the project development: U.S. Army Corps of Engineers, N. C. Department of Cultural Resources, U. S. Fish & Wildlife Service, N. C. Division of Water Quality, N. C. Wildlife Resources Commission, National Marine Fisheries, U. S. Forest Service, Moore County Emergency Services and the Moore County Public Schools.

The **U.S. Fish & Wildlife Service** in a standardized letter provided a request that they prefer any replacement structure to be a spanning structure.

**Response:** The existing bridge will be replaced with a bridge and bents in the stream will be minimized to the extent possible. Equal or greater conveyance will be provided with the bridge and wetland impacts will be minimized/avoided to extent practical.

The **N.C. Wildlife Resource Commission** had no special concerns for this project.

The **North Carolina Division of Water Quality** stated that NCDOT will be required to design, construct, and maintain hazardous spill catch basins in the project area and that they prefer an offsite detour to avoid temporary impacts.

**Response:** The NCDOT Hydraulics unit has stated that these items should not apply to this project.

The **Moore County Public Schools and Moore County Emergency Services** indicated that an offsite detour is acceptable.



## **X. PUBLIC INVOLVEMENT**

A newsletter has been sent to all those living along SR 1864 between the intersection with SR 2175 and the intersection with US 1. There have been three comments received to date including one in support of Alternate A.

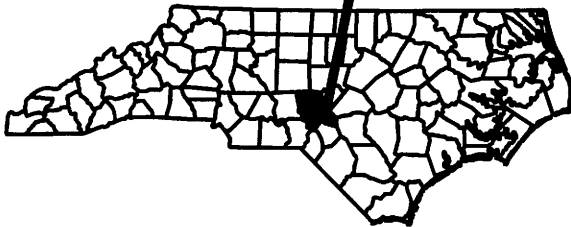
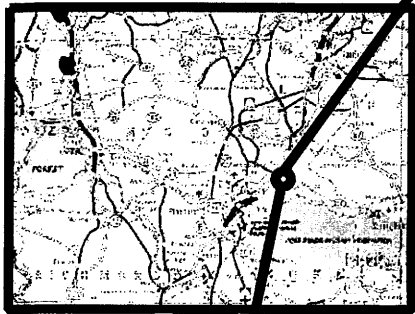
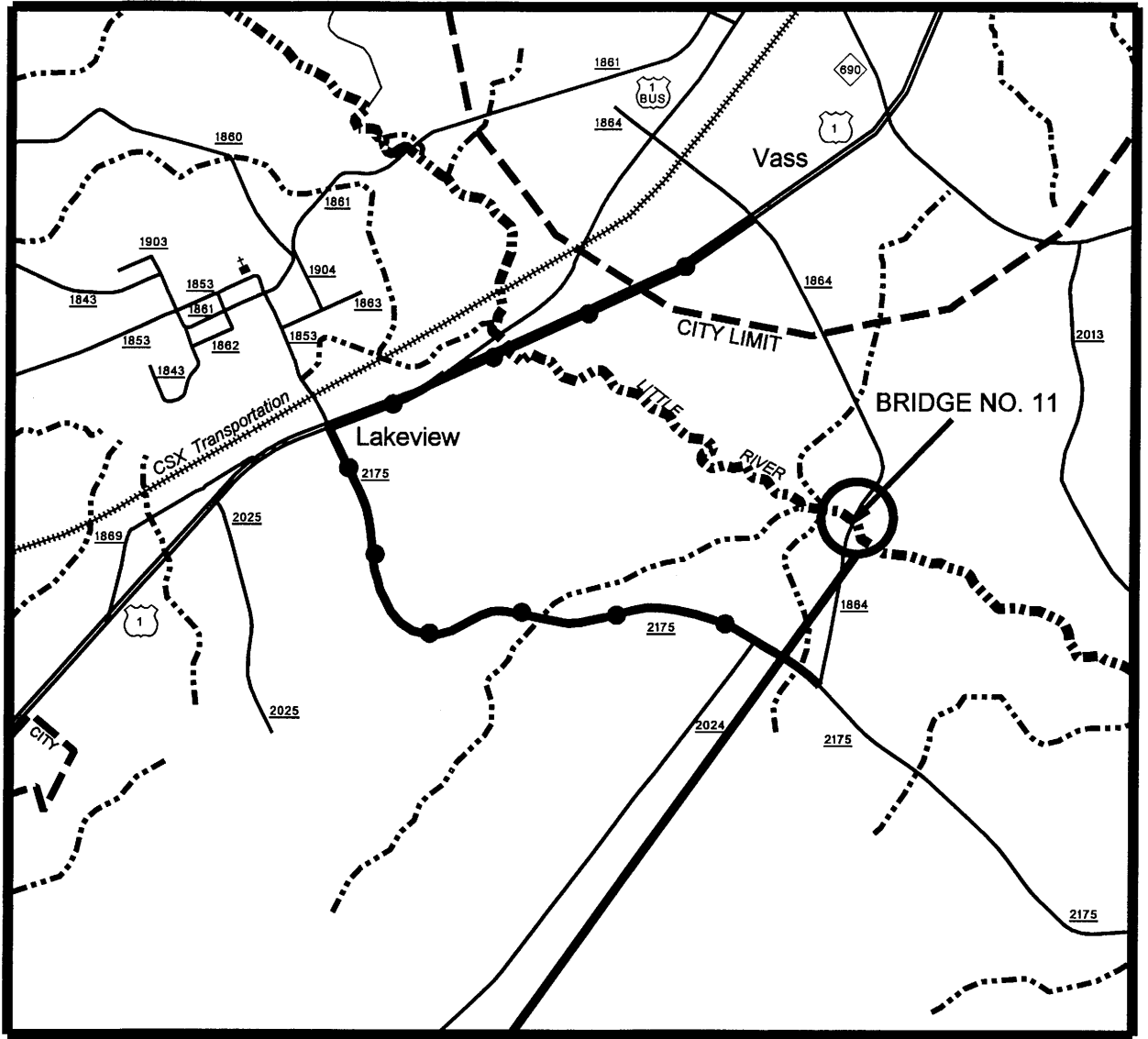
There is not substantial controversy on social, economic, or environmental grounds concerning the project.

## **XI. CONCLUSION**

On the basis of the above discussion, it is concluded that no substantial adverse environmental impacts will result from implementation of the project. The project is therefore considered to be a federal "Categorical Exclusion" due to its limited scope and lack of substantial environmental consequences.

# FIGURES

- Figure 1 - Vicinity Map**
- Figure 2 - Alternate A (Preferred)**
- Figure 2A - Alternate B**
- Figure 3 - Photographs of Bridge No. 11**
- Figure 4 - Typical Roadway Section**



**LEGEND**


*Studied Detour Route*



NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 PROJECT DEVELOPMENT  
 & ENVIRONMENTAL ANALYSIS

**MOORE COUNTY**  
**BRIDGE NO. 11 ON SR 1864**  
**OVER LITTLE RIVER**

TIP NO. B-4584  
 VICINITY MAP  
 FIGURE 1





**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH**

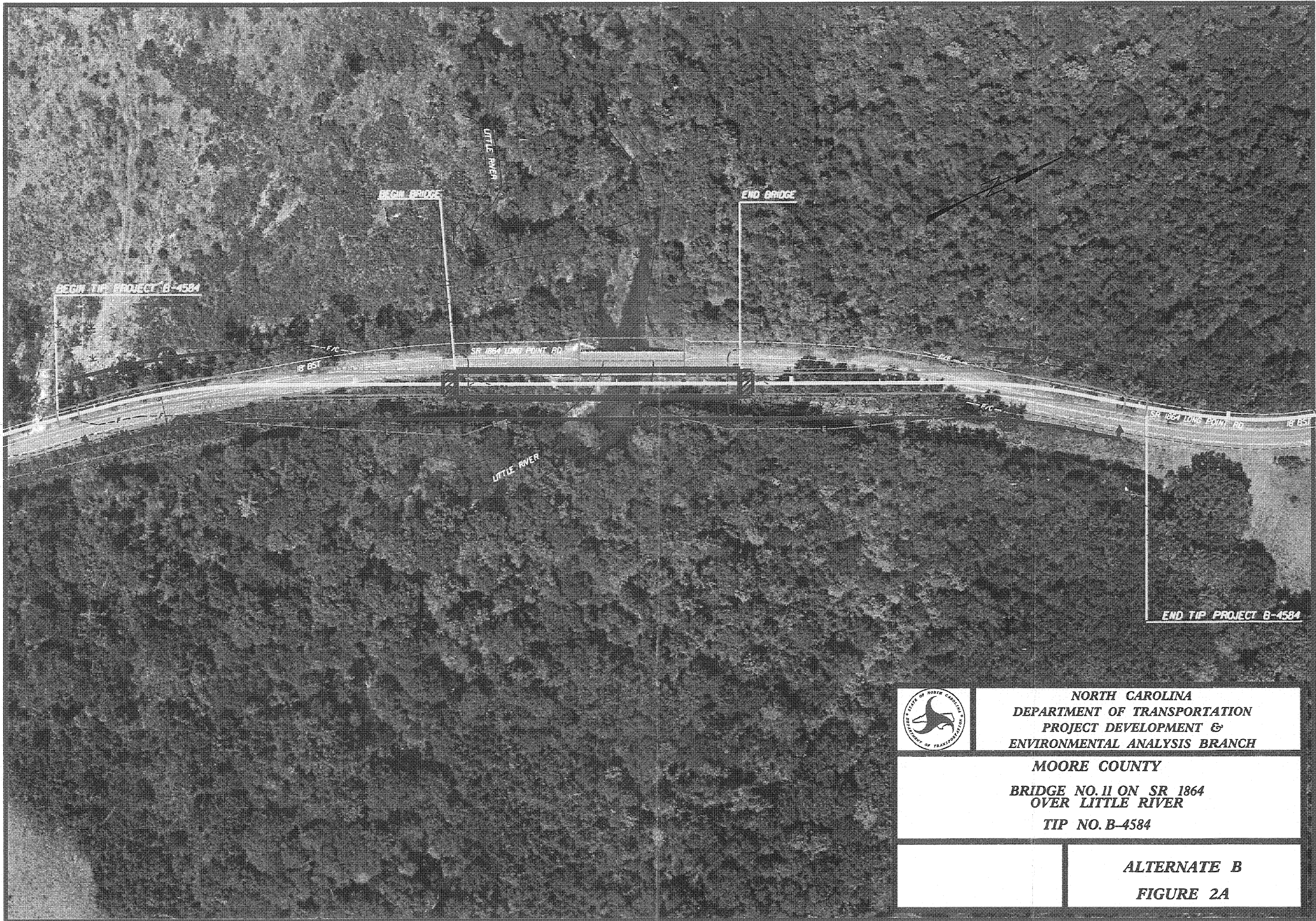
**MOORE COUNTY**

**BRIDGE NO. 11 ON SR 1864  
OVER LITTLE RIVER**

**TIP NO. B-4584**

**ALTERNATE A  
(PREFERRED)  
FIGURE 2**





**NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
PROJECT DEVELOPMENT &  
ENVIRONMENTAL ANALYSIS BRANCH**

**MOORE COUNTY**

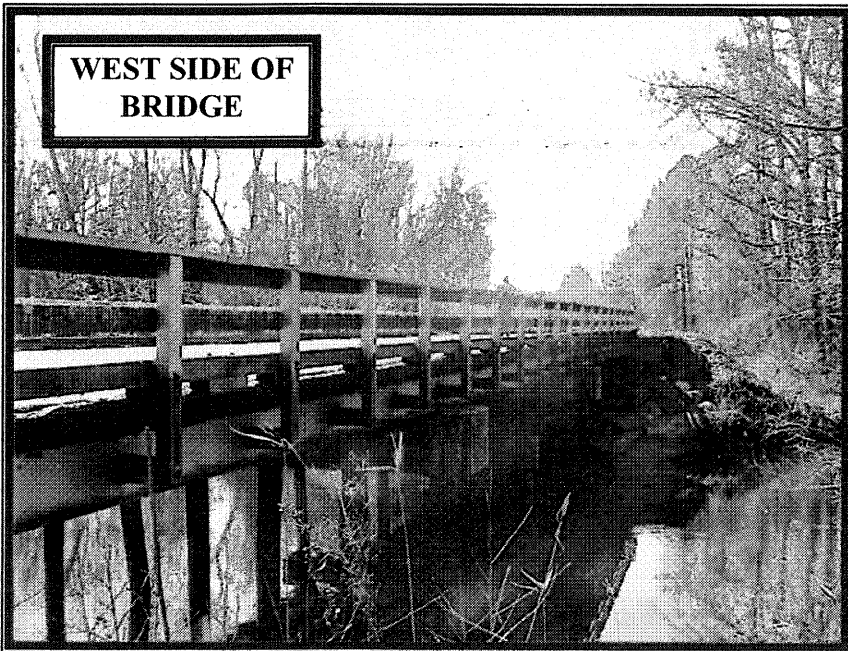
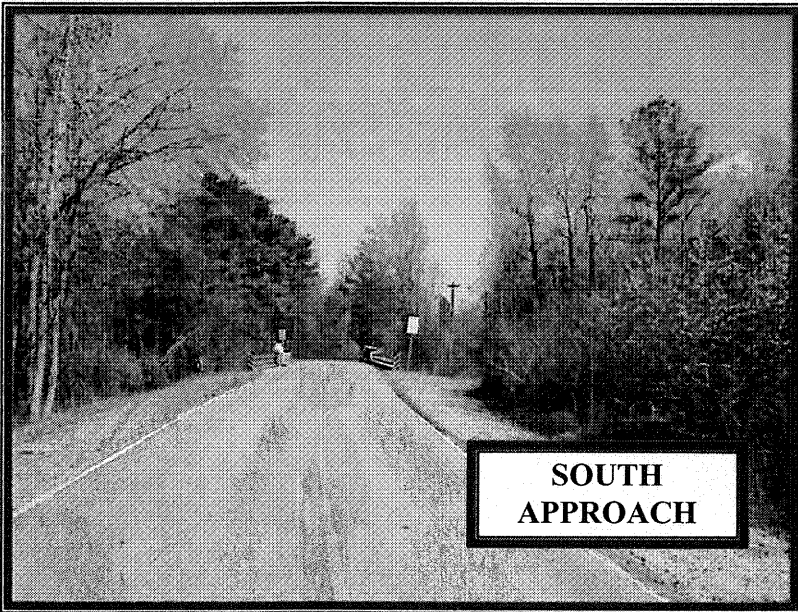
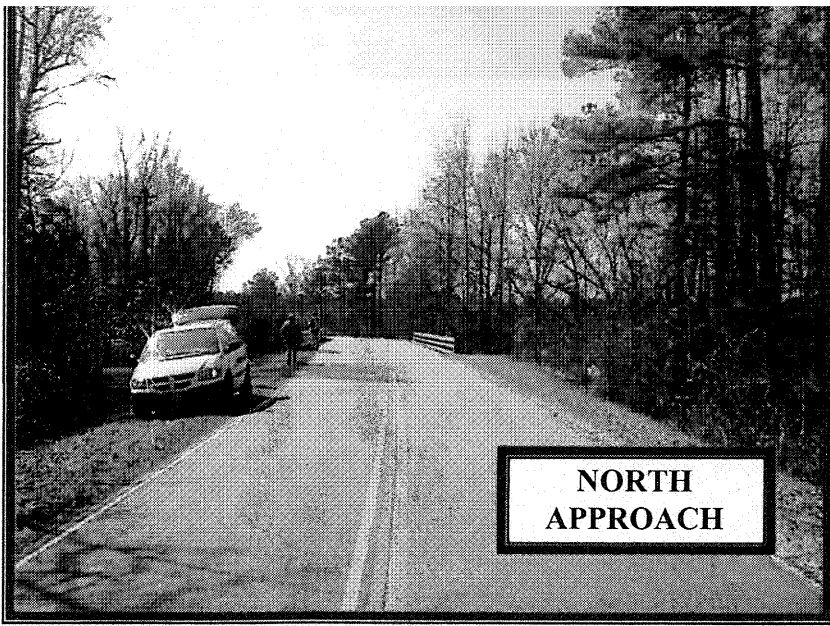
**BRIDGE NO. 11 ON SR 1864  
OVER LITTLE RIVER**

**TIP NO. B-4584**

**ALTERNATE B**

**FIGURE 2A**



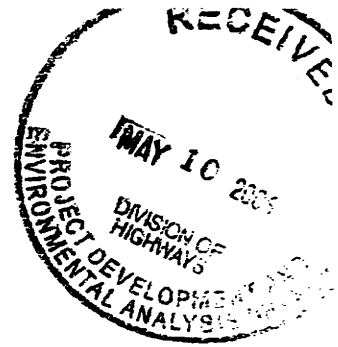


**B-4584  
Replacement of Bridge  
No. 11 on SR 1864  
Over Little River  
Moore County**

**FIGURE 3**

# **APPENDIX A**

**Comments received from Federal, State, and Local Agencies**



North Carolina Department of Cultural Resources  
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor  
Lisbeth C. Evans, Secretary  
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History  
Division of Historical Resources  
David Brook, Director

May 1, 2006

MEMORANDUM

TO: Greg Thorpe, Ph.D., Director  
Project Development and Environmental Analysis Branch  
NCDOT Division of Highways

FROM: Peter Sandbeck *PBS for Peter Sandbeck*

SUBJECT: Replace Bridge 11 on SR 1864 over Little River, B-4584, Moore County, ER 06-0830

Thank you for your letter of March 21, 2006, concerning the above project.

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

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above-referenced tracking number.

*cc: Mary Pope Lane  
Carl Houde  
Proj Eng*

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-4763/733-8655
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801