



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

June 2, 2009

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

ATTN: Mr. Richard Spencer
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permits 23 and 33 and Section 401 Water Quality Certifications** for the proposed replacement of Bridge No. 75 over Big Shoe Heel Creek on U.S. 74 Business, Scotland County, Division 8. State Project No. 8.1590701, Federal Aid Project No. BRSTP - 74 (61), T.I.P. Project No. B-4641.

Debit \$240.00 from WBS 33809.1.1

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 75 over Big Shoe Heel Creek on U.S. 74 Business. A Nationwide Permit (NWP) 23 and Section 401 Water Quality Certification (WQC) 3701 will be required for 0.51 acres of permanent wetland impacts resulting from roadway fill, excavation, and mechanized clearing and less than 0.01 acres of permanent stream impacts associated with the placement of an interior bent into the creek. A NWP 33 and WQC 3688 will be required for 0.05 acres of temporary wetland fill and 48 linear feet of temporary stream impacts resulting from the construction of two temporary causeways.

Please see the enclosed copies of the Pre-Construction Notification (PCN), permit drawings, roadway design plans, stormwater management plan, and Ecosystem Enhancement Program (EEP) acceptance letter for the subject project. A Categorical Exclusion (CE) was completed for this project in August 2007 and distributed shortly thereafter. Additional copies are available upon request.

This project is currently scheduled for letting on June 15, 2010 (review date of April 27, 2010).

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

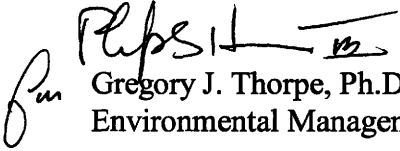
FAX: 919-431-2001

WEBSITE: WWW.NCDOT.ORG

PHYSICAL ADDRESS:
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 contact Jim Mason at either (919) 431-1593 or jmason@ncdot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory J. Thorpe", with a stylized flourish at the end.

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 Project Planning Engineer
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch



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:	☒ Section 404 Permit ☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 23 33 or General Permit (GP) number:	
1c. Has the NWP or GP number been verified by the Corps?	☐ Yes ☒ No
1d. Type(s) of approval sought from the DWQ (check all that apply): ☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit ☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization	
1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No
	For the record only for Corps Permit: ☐ Yes ☒ 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.	☒ Yes ☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes ☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes ☒ No

2. Project Information

2a. Name of project:	Replacment of Bridge No. 75 over Big Shoe Heel Creek on U.S. 74 Business
2b. County:	Scotland
2c. Nearest municipality / town:	Maxton
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4641

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) 431-1593
3g. Fax no.:	(919) 431-2002
3h. Email address:	jsmason@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ 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:	
5. Agent/Consultant Information (if applicable)	
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. Project Information and Prior Project History	
1. Property Identification	
1a. Property identification no. (tax PIN or parcel ID):	<i>not applicable</i>
1b. Site coordinates (in decimal degrees):	Latitude: 34.750525 (DD.DDDDDD) Longitude: - 79.386780 (-DD.DDDDDD)
1c. Property size:	2.63 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Big Shoe Heel Creek
2b. Water Quality Classification of nearest receiving water:	C Sw
2c. River basin:	Lumber
3. Project Description	
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: U.S. 74 Business is classified as a Rural Minor Arterial. Land use within the project vicinity includes heavily developed or disturbed land, cultivated land, hardwood swamp, and mixed deciduous - coniferous forest land.	
3b. List the total estimated acreage of all existing wetlands on the property: 0.875	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 137	
3d. Explain the purpose of the proposed project: To replace a structurally deficient and/or functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing the existing four-span, 168-foot bridge with a five-span, 235-foot bridge on the existing alignment. The proposed structure will be a cored slab bridge with a clear roadway width of 36 feet. An off-site detour will be utilized during construction. Standard road building equipment, such as trucks, dozers, and cranes will be used.	
4. Jurisdictional Determinations	
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: A JD has not been issued for this project. However, all features were verified during a site visit between Regulatory Specialist Richard Spencer and EcoScience biologists on February 14, 2007.	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☐ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): David O'Loughlin	Agency/Consultant Company: EcoScience Corporation Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. February 14, 2007 - site visit only	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☐ Yes ☒ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions.	

6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ 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 ☒ P ☐ T	Roadway Fill	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.30
Site 2 ☒ P ☐ T	Excavation	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.01
Site 3 ☒ P ☐ T	Mechanized Clearing	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.20
Site 4 ☐ P ☒ T	Temporary Causeways	Riverine Swamp Forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	0.05
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
2g. Total wetland impacts					0.51 Permanent 0.05 Temporary

2h. Comments: All impacts are located at Site 1 of the project and are listed above based on impact type.

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 ☐ P ☒ T	Temporary Causeways*	Big Shoe Heel Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	48
Site 2 ☒ P ☐ T	Interior Bent Placement**	Big Shoe Heel Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	45	<0.01 ac.
Site 3 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
3h. Total stream and tributary impacts						<.01ac Perm 48 Temp

3i. Comments: * an existing interior bent will be removed using the temporary causeways.

** The actual permanent impact for the interior bent is 32 square feet (not on wetland summary sheet).

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 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ T				
4f. Total open water impacts				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	Excavat ed	Flooded	Filled	Excavated	Flooded
P1								
P2								
5f. Total								

5g. Comments:

5h. Is a dam high hazard permit required?	☐ Yes ☐ 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.

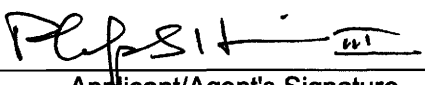
6a. Project is in which protected basin?			☐ Neuse ☐ Catawba	☐ Tar-Pamlico ☐ Randleman	☐ Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 ☐ P ☐ T			☐ Yes ☐ No		
B2 ☐ P ☐ T			☐ Yes ☐ No		
B3 ☐ P ☐ T			☐ Yes ☐ No		
6h. Total buffer impacts				0	0
6i. Comments:					

D. Impact Justification and Mitigation		
1. Avoidance and Minimization		
1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing project. The proposed bridge is 67 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; the project is a replace-in-place with an offsite detour; rip rap energy dissipaters will be used at two pipe outlets draining into the wetlands on the south side of the road; roadway approach work has been reduced to minimize fill slope encroachment into the wetlands.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT will implement Best Management Practices (BMPs) for Bridge Demolition and Removal. NCDOT's BMPs for the Protection of Surface Waters will be strictly enforced during construction of this project.		
2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State		
2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?	☒ Yes ☐ No	
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☒ Corps	
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation	
3. Complete if Using a Mitigation Bank		
3a. Name of Mitigation Bank: not applicable		
3b. Credits Purchased (attach receipt and letter)	Type	Quantity
3c. Comments:		
4. Complete if Making a Payment to In-lieu Fee Program		
4a. Approval letter from in-lieu fee program is attached.	☒ Yes	
4b. Stream mitigation requested:	0 linear feet	
4c. If using stream mitigation, stream temperature:	☐ warm ☐ cool ☐ cold	
4d. Buffer mitigation requested (DWQ only):	0 square feet	
4e. Riparian wetland mitigation requested:	0.51 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 acres	
4h. Comments:		
5. Complete if Using a Permittee Responsible Mitigation Plan		
5a. If using a permittee responsible mitigation plan, provide a description of the proposed mitigation plan.		

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	
6f. Total buffer mitigation required:				
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. Comments:	☐ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	n/a %
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ 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 attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☐ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
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):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☒ Yes ☐ No
5b. Have all of the 401 Unit submittal requirements been met?	☒ Yes ☐ No

F. Supplementary Information	
1. Environmental Documentation (DWQ Requirement)	
1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land?	☒ Yes ☐ 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)?	☒ Yes ☐ 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:	☒ Yes ☐ No
2. Violations (DWQ Requirement)	
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)?	☐ Yes ☒ No
2b. Is this an after-the-fact permit application?	☐ Yes ☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):	
3. Cumulative Impacts (DWQ Requirement)	
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☒ 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. see NEPA document	
4. Sewage Disposal (DWQ Requirement)	
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	

5. Endangered Species and Designated Critical Habitat (Corps Requirement)		
5a. Will this project occur in or near an area with federally protected species or habitat?	☒ Yes	☐ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☒ Yes	☐ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☒ Raleigh ☐ 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, the N.C. Natural Heritage Program database (last updated April 30, 2009), and the U.S. Fish and Wildlife Service website for Scotland County, it has been determined that the proposed project will have No Effect on either Endangered or Threatened Species or Designated Critical Habitat.		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
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)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: Hydraulics 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 (Agent's signature is valid only if an authorization letter from the applicant is provided.)	06/02/09 Date



May 27, 2009

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

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4641, Replace Bridge Number 75 over Big Shoe Heel Creek on US 74
Business, Scotland County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the riparian wetland mitigation for the subject project. Based on the information supplied by you dated May 26, 2009, the impacts are located in CU 03040204 of the Lumber River Basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Riparian Wetland: 0.51 acre

EEP commits to implementing sufficient compensatory riparian wetland mitigation credits to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, fully executed on March 8, 2007. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

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

Sincerely,

A handwritten signature in black ink that reads "James B. Stanfill Jr".

William D. Gilmore, P.E.
EEP Director

cc: Mr. Richard Spencer, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: B-4641

Restoring... Enhancing... Protecting Our State



STORMWATER MANAGEMENT PLAN

Project: 33809.1.1

TIP No. B-4641

Scotland County

04/20/2009

Hydraulics Project Manager: W. Henry Wells, Jr., P.E. (Sungate Design Group),
Marshall Clawson, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project B-4641 consists of constructing a new bridge 235 feet long to replace the existing bridge #75 in Scotland County on US 74 Bus over Big Shoe Heel Creek. The total project length is 0.161 miles. The project creates impacts to Big Shoe Heel Creek, which is located in the Lumber River Basin. The project drainage systems consist of grated inlets with associated pipe systems, and rip rap energy dissipaters at the pipe outlets.

Jurisdiction Stream: Big Shoe Heel Creek

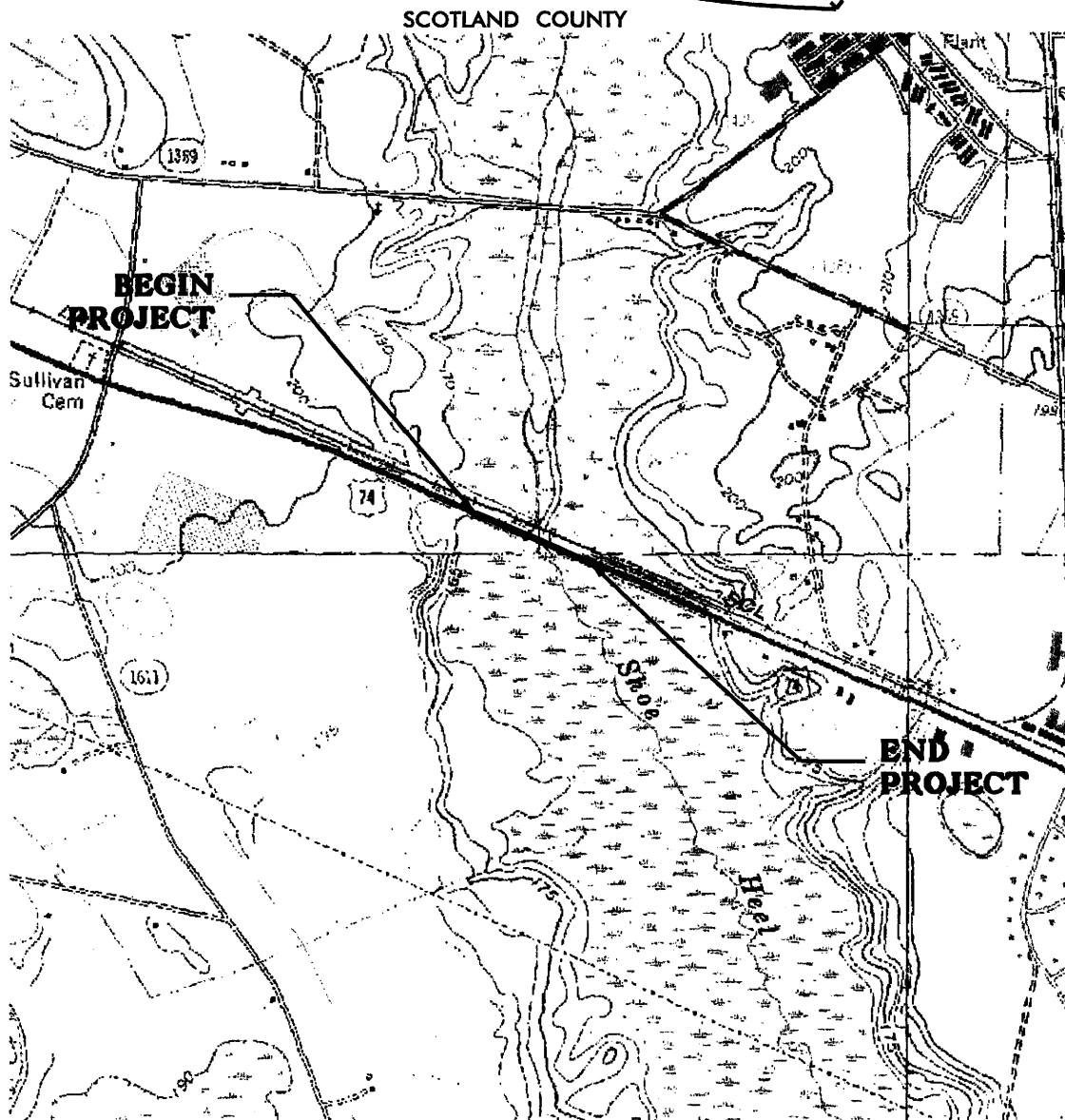
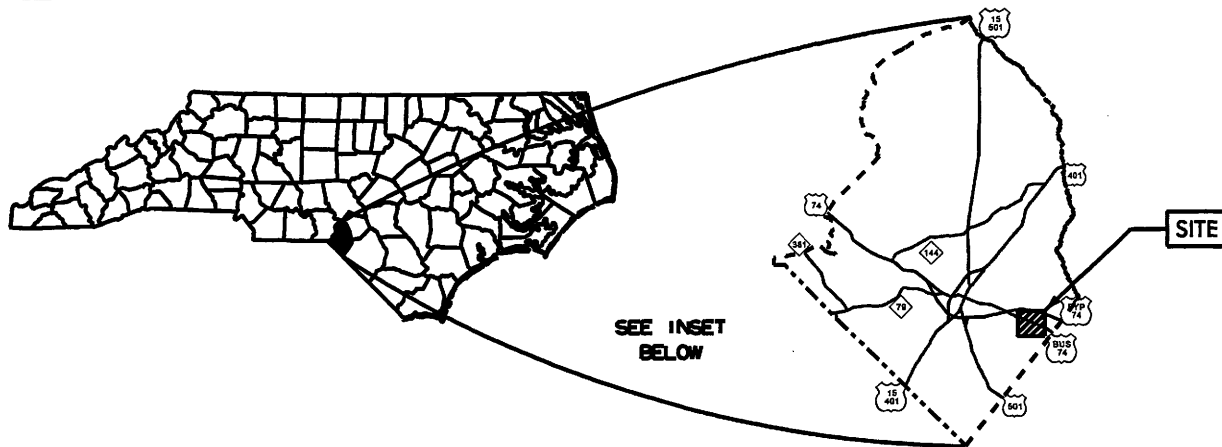
ENVIRONMENTAL DESCRIPTION

The project is located within the Lumber River Basin in Scotland County, which is not a CAMA county. There are wetland sites surrounding the bridge that will be impacted by the proposed project. Impacts have been minimized by and using rip rap energy dissipaters at the pipe outlets and reducing the roadway approach work to minimize fill slopes encroachment into the wetlands.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters by the location, construction and operation of the highway system. The BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. The BMP measures used on this project to reduce stormwater impacts are:

- Rip rap energy dissipaters at pipe outlets.



PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	CITY OF LAURINBURG	P.O. BOX 249 LAURINBURG, NC 28353
2	CHARLES MAYNOR	P.O. BOX 1497 PEMBROKE, NC 28372
3	CSX RAILROAD	500 WATER ST 15TH FLOOR JACKSONVILLE, FL 32202

NCDOT

DIVISION OF HIGHWAYS

SCOTLAND COUNTY

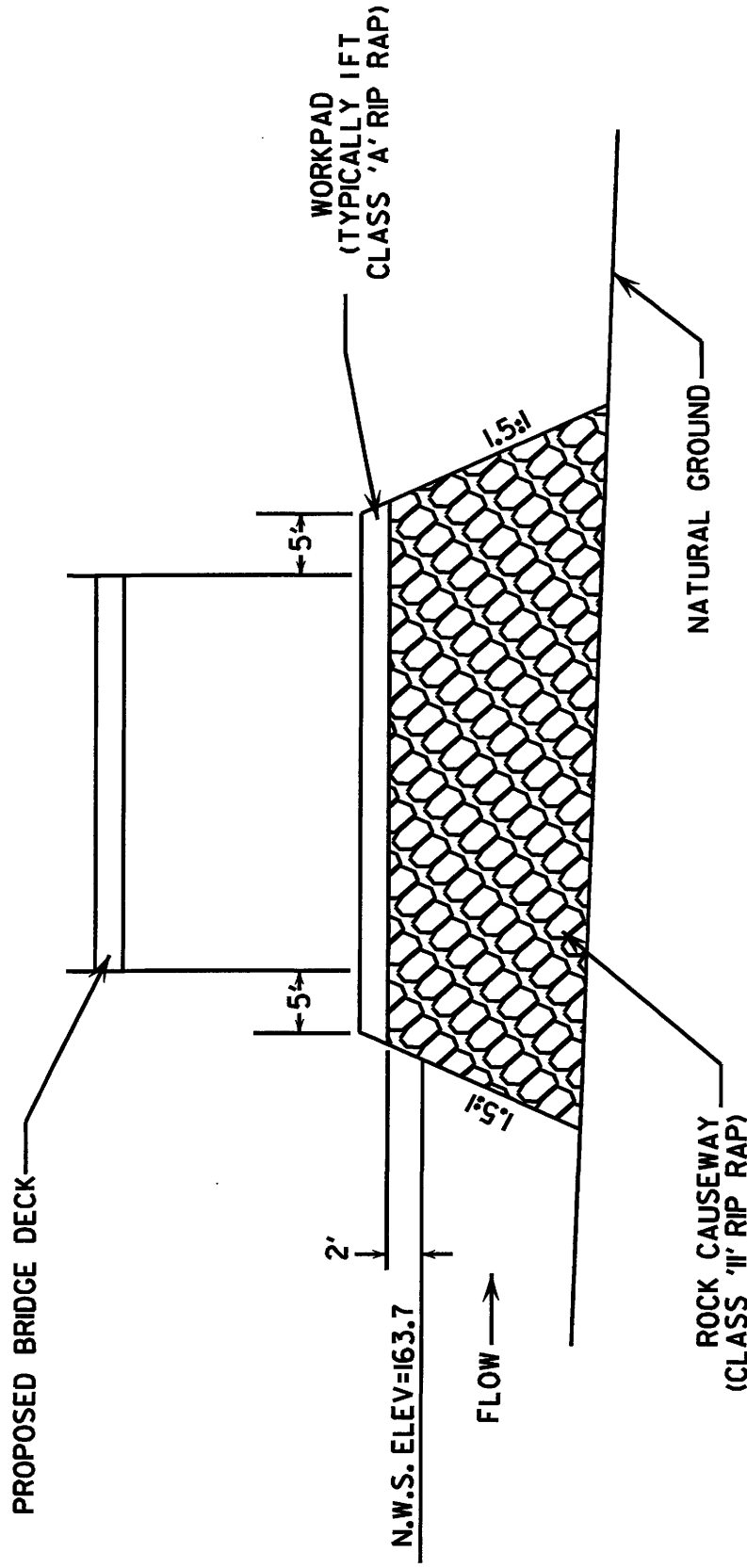
**PROJECT: 33809.1.1 (B-4641)
BRIDGE NO. 75 OVER
BIG SHOE HEEL CREEK
ON US 74 BUSINESS**

SHEET

2 OF 9

3/31/09

WORKPAD DETAIL (NOT TO SCALE)



QUANTITIES OF ESTIMATES

VOLUME OF CLASS II RIP RAP= 385 yds³
 AREA OF CLASS II RIP RAP= 0.164 ac
 Estimate 550 Tons Class 'II' Rip Rap
 Estimate 320 Tons Class 'A' Rip Rap

N.C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SCOTLAND COUNTY

PROJECT: 33809.1.1 (B-4641)
 BRIDGE NO. 75
 OVER BIG SHOE HEEL CREEK
 ON US 74 BUSINESS

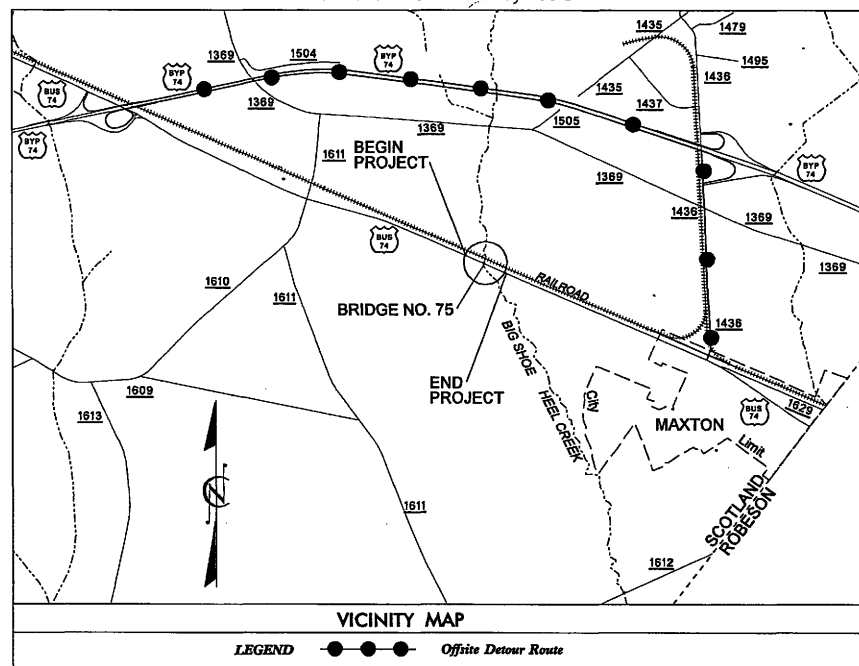
SHEET 3 OF 1 3/31/09

05/08/99
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\$USERNAME\$\$\$\$\$

TIP PROJECT: B-4641

CONTRACT:

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



R/W PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
SCOTLAND COUNTY

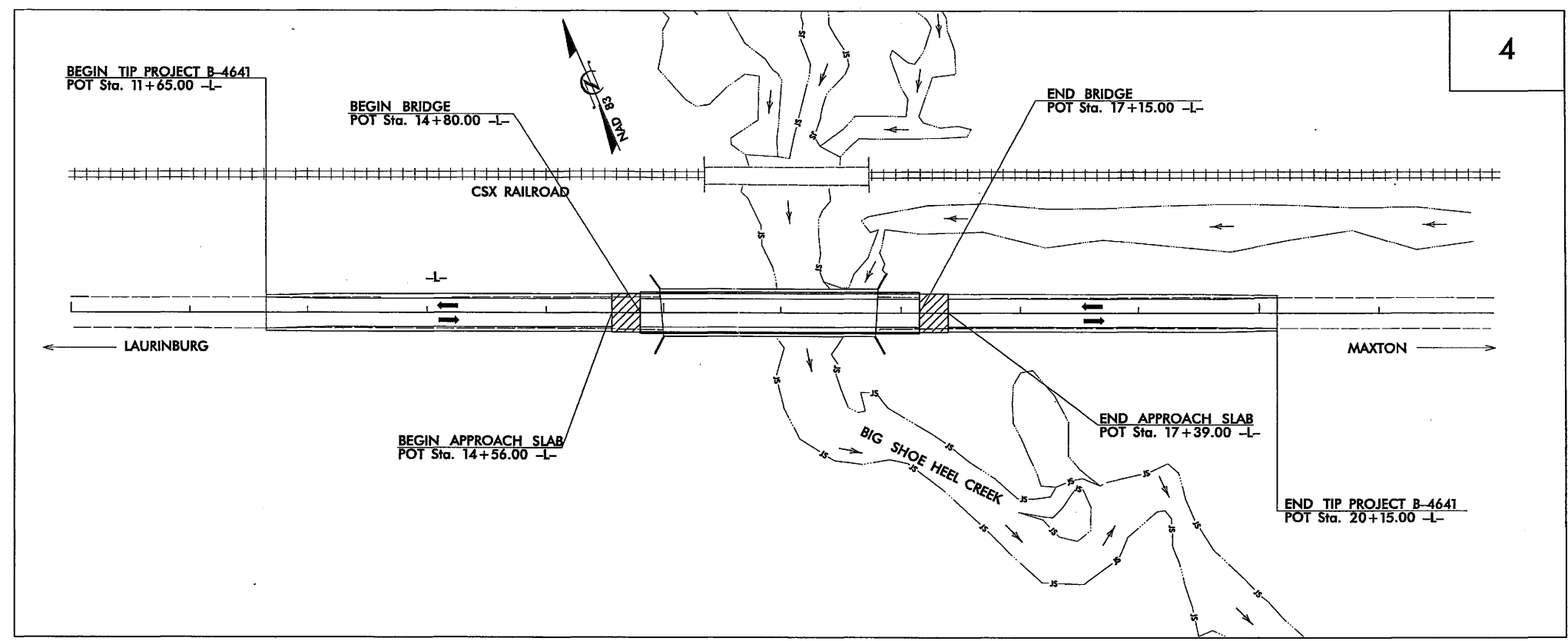
LOCATION: BRIDGE NO. 75 OVER BIG SHOE HEEL CREEK ON US 74 BUSINESS

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4641	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33809.1.1	BRSTP-74(61)	PE	
33809.2.1	BRSTP-74(61)	RW /UTIL	



Permit Drawing
Sheet 5 of 9



4

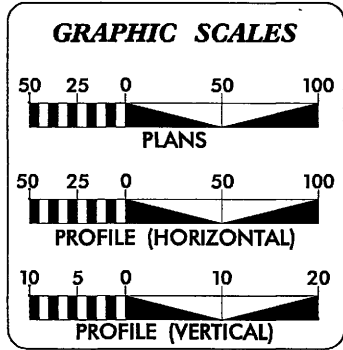
WETLAND/STREAM
IMPACTS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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



DESIGN DATA	
ADT 2010 =	6,800
ADT 2030 =	10,400
DHV =	10 %
D =	60 %
T =	8 % *
V =	60 MPH
FUNC. CLASS =	RURAL MAJOR COLLECTOR
* TTST 3 %	DUAL 5 %

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4641	= 0.116 mi.
LENGTH STRUCTURE TIP PROJECT B-4641	= 0.045 mi.
TOTAL LENGTH TIP PROJECT B-4641	= 0.161 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 20, 2009	CLIFTON T. REGISTER, P.E. PROJECT ENGINEER
LETTING DATE: FEBRUARY 16, 2010	SCOTT L. KENNEDY PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SUNGATE DESIGN GROUP, PA

SIGNATURE: _____ P.E.

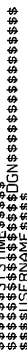
ROADWAY DESIGN
ENGINEER
WANG ENGINEERING

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

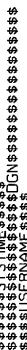
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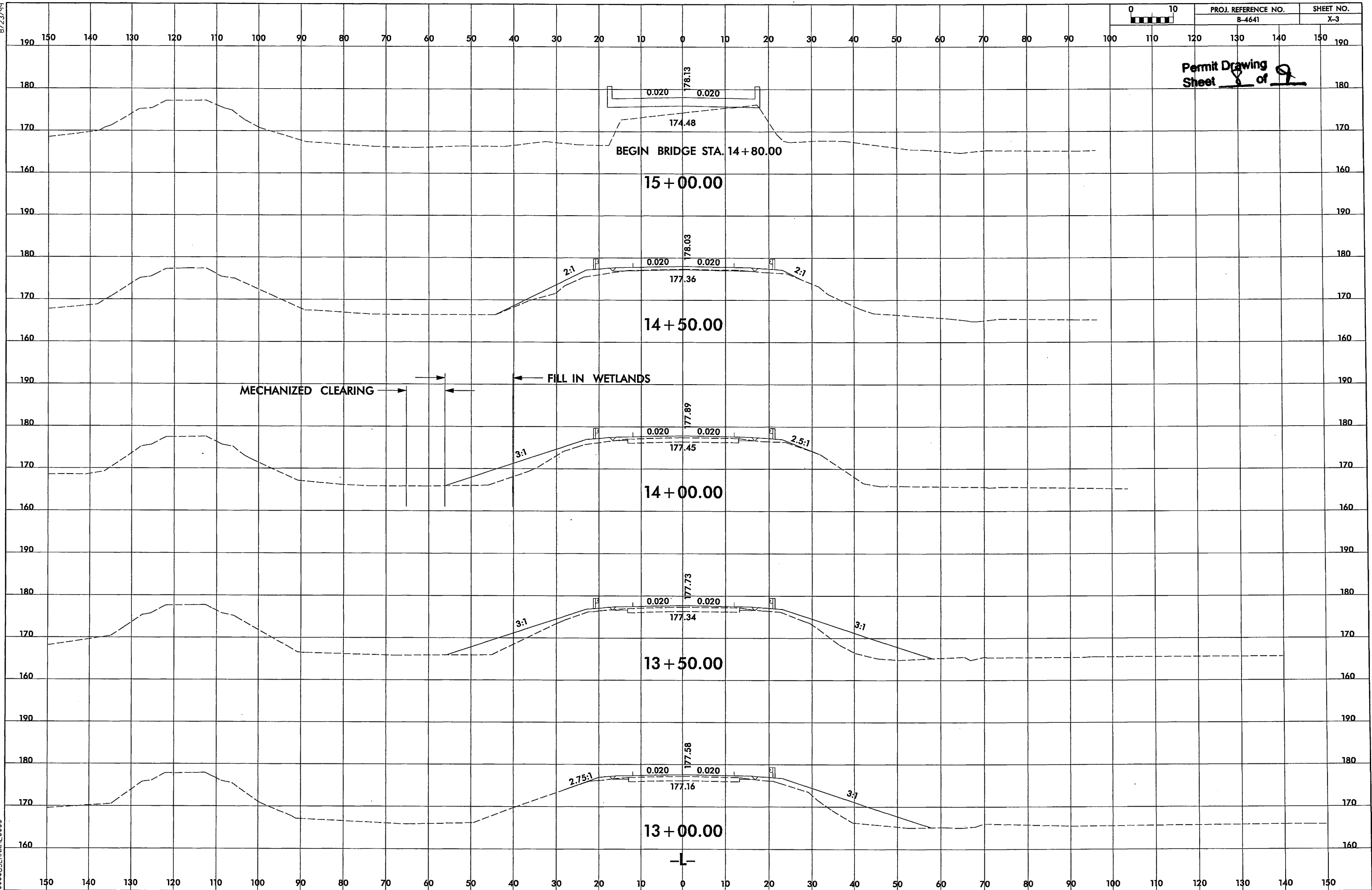
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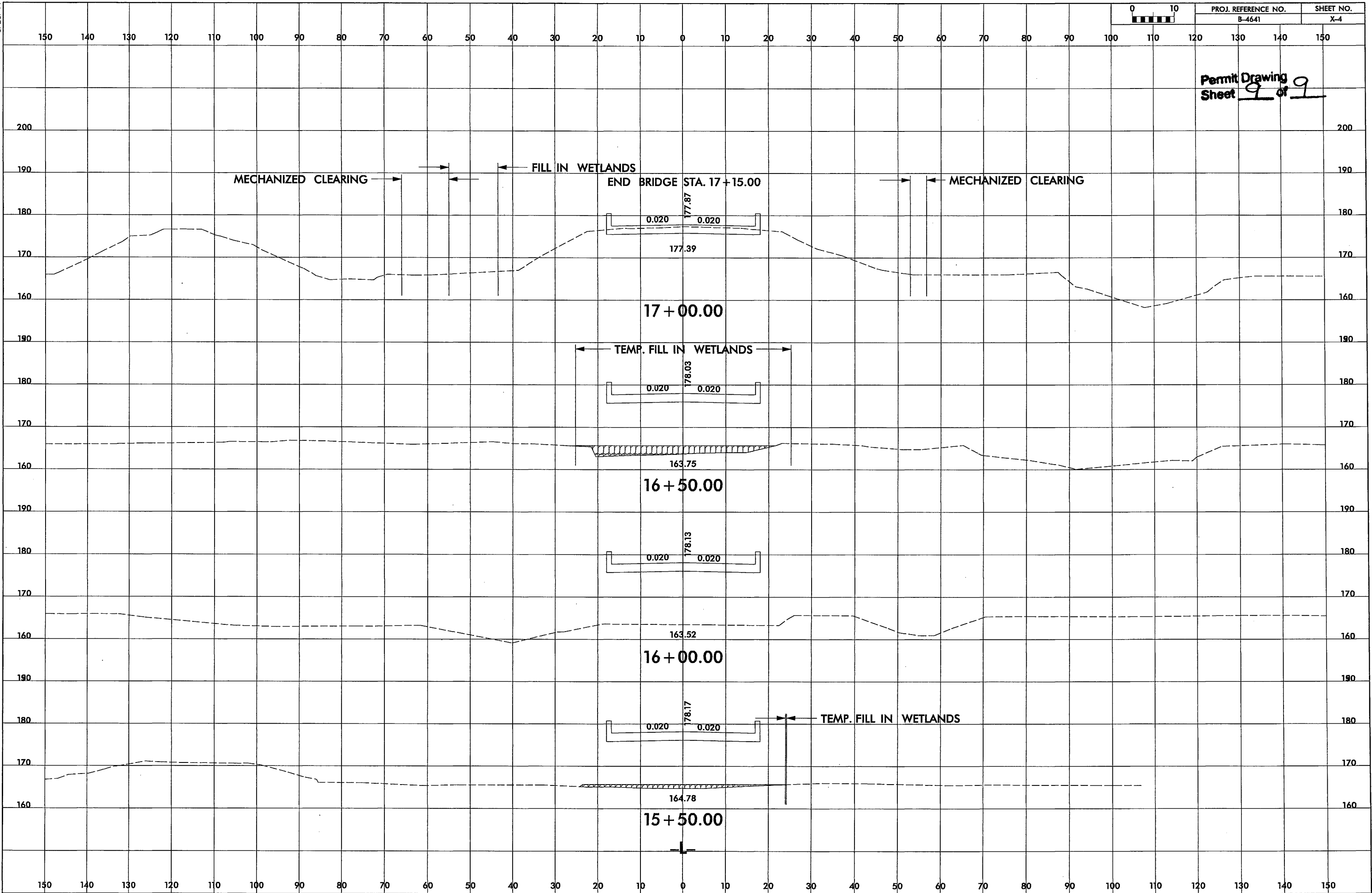
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\$\$\$



\$\$\$\$SYTIME\$\$\$\$
 \$\$\$\$SYTIME\$\$\$\$



8/23/99
\$\$\$\$SYTIME\$\$\$\$
\$\$\$\$SYSDATE\$\$\$\$
\$\$\$\$SYSDOCNAME\$\$\$\$
\$\$\$\$SYSDRAWNAME\$\$\$\$



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4641	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33809.1.1	BRSTP-74(61)	PE	
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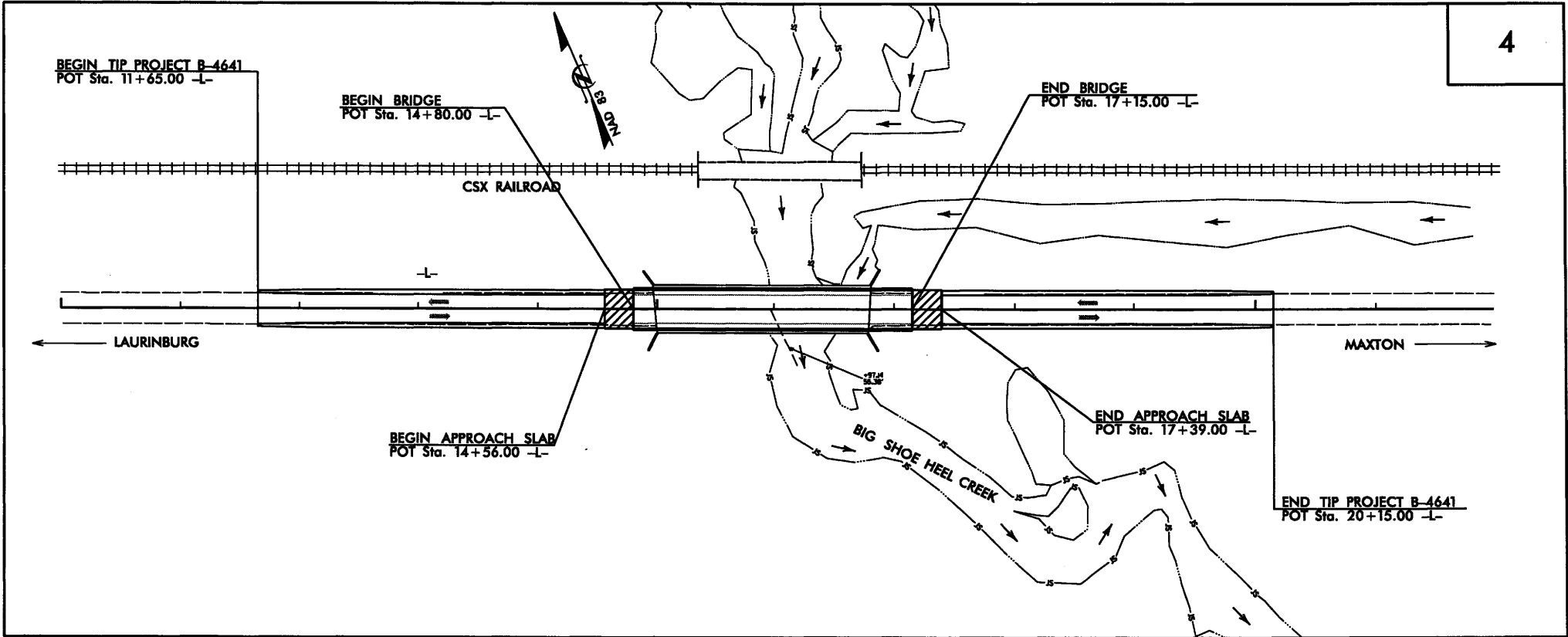
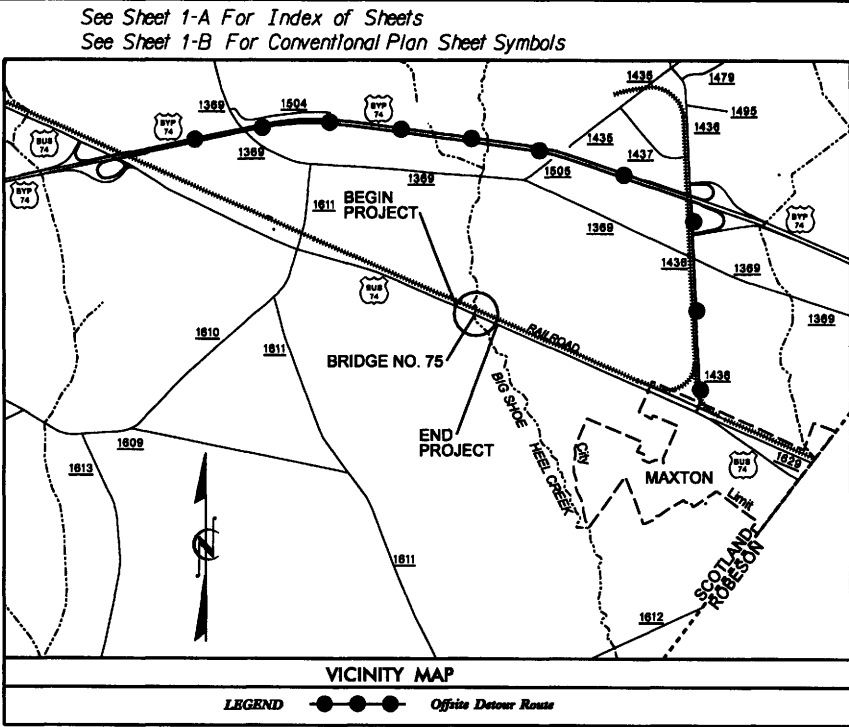
STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

SCOTLAND COUNTY

LOCATION: BRIDGE NO. 75 OVER BIG SHOE HEEL CREEK ON US 74 BUSINESS

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

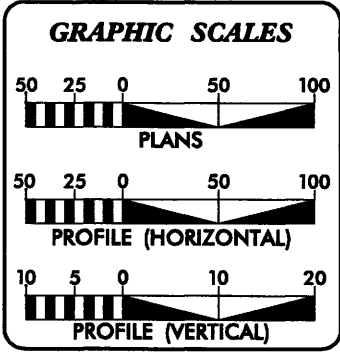


THIS PROJECT IS NOT
WITHIN MUNICIPAL BOUNDARIES.

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 =	6,800
ADT 2030 =	10,400
DHV =	10 %
D =	60 %
T =	8 % *
V =	60 MPH
FUNC. CLASS =	RURAL MAJOR COLLECTOR
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Prepared in the Office of:

WANG ENGINEERING COMPANY, INC.

CARY, N.C.

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 20, 2009

LETTING DATE: FEBRUARY 16, 2010

CLIFTON T. REGISTER, P.E.

PROJECT ENGINEER

SCOTT L. KENNEDY

PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SUNGATE DESIGN GROUP, PA

SIGNATURE: _____

ROADWAY DESIGN ENGINEER

WANG ENGINEERING

SIGNATURE: _____

DIVISION OF HIGHWAYS

STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

TIP PROJECT: B-4641

CONTRACT:

09/08/99
SYSTEM\$\$\$\$\$
EDG\$\$\$\$\$
USER\$\$\$\$\$

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	-o-o-o-
Proposed Chain Link Fence	-□-□-□-
Proposed Barbed Wire Fence	-◇-◇-◇-
Existing Wetland Boundary	-w-w-
Proposed Wetland Boundary	-w-w-
Existing Endangered Animal Boundary	-e-a-
Existing Endangered Plant Boundary	-e-p-

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	⊕
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 UG Power Line	_____
Designated UG 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 UG Telephone Cable	_____
Designated UG Telephone Cable (S.U.E.*)	_____
Recorded UG Telephone Conduit	_____
Designated UG Telephone Conduit (S.U.E.*)	_____
Recorded UG Fiber Optics Cable	_____
Designated UG Fiber Optics Cable (S.U.E.*)	_____

WATER:

Water Manhole	⊕
Water Meter	⊕
Water Valve	⊕
Water Hydrant	⊕
Recorded UG Water Line	_____
Designated UG Water Line (S.U.E.*)	_____
Above Ground Water Line	_____

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
UG TV Cable Hand Hole	⊕
Recorded UG TV Cable	_____
Designated UG TV Cable (S.U.E.*)	_____
Recorded UG Fiber Optic Cable	_____
Designated UG Fiber Optic Cable (S.U.E.*)	_____

GAS:

Gas Valve	⊕
Gas Meter	⊕
Recorded UG Gas Line	_____
Designated UG Gas Line (S.U.E.*)	_____
Above Ground Gas Line	_____

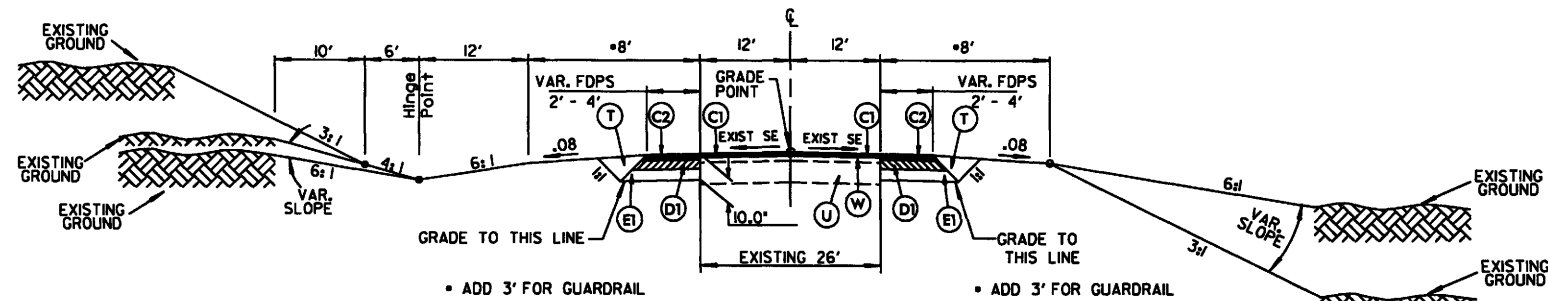
SANITARY SEWER:

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 UG 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.

PROJECT REFERENCE NO.	SHEET NO.
B-4641	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



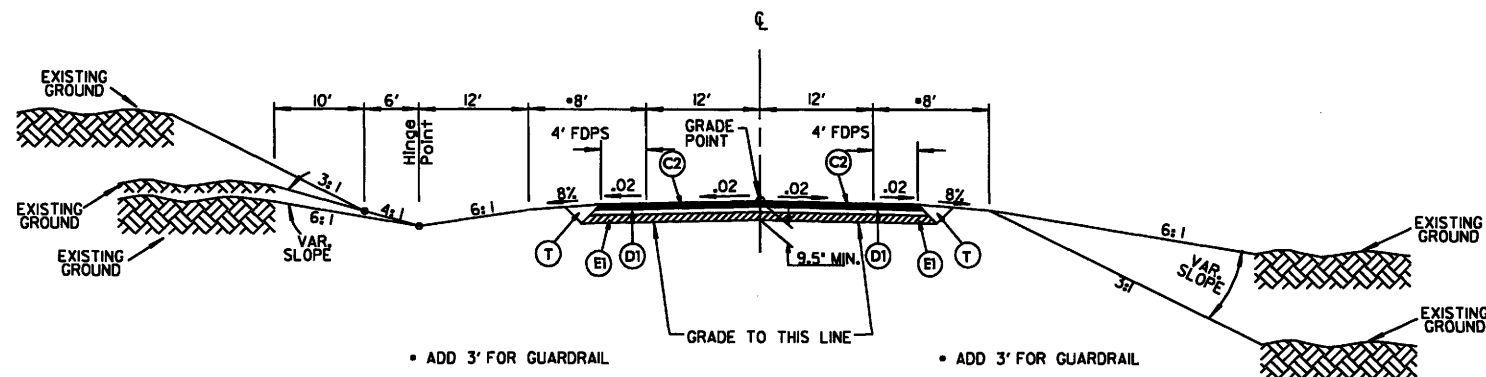
TRANSITION FROM EXIST. TO T.S. NO. 1

- L- Sta. 11+65.00 to Sta. 12+15.00
- L- Sta. 19+65.00 to Sta. 20+15.00

TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AS FOLLOWS

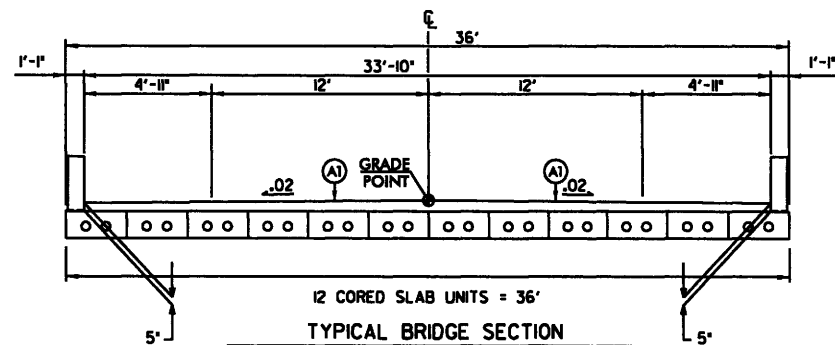
- L- Sta. 12+15.00 to Sta. 14+30.00
- L- Sta. 17+65.00 to Sta. 19+65.00



TYPICAL SECTION NO. 2

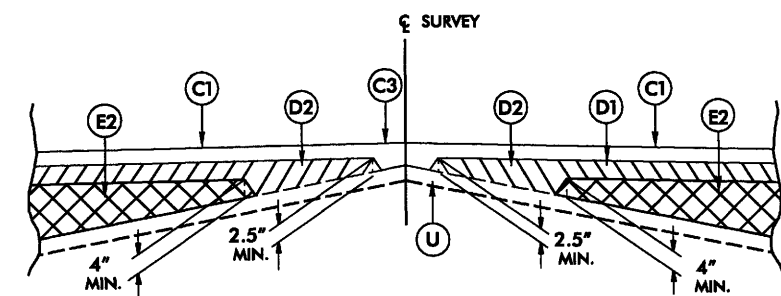
USE TYPICAL SECTION NO. 1 AS FOLLOWS

- L- Sta. 14+30.00 to Sta. 14+80.00 (BEGIN BRIDGE)
- L- Sta. 17+15.00 (END BRIDGE) to Sta. 17+65.00



PAVEMENT SCHEDULE	
A1	5" PROP. PORTLAND CEMENT CONCRETE PAVEMENT
C1	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS PER SQ. YD.
C2	PROP. APPROX. 3.0" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.5" IN DEPTH.
D1	PROP. APPROX. 3.0" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS PER SQ. YD.
D2	PROP. VAR. DEPTH ASPH. CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4.0" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" OR GREATER THAN 5.5" IN DEPTH.
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH PAVEMENT (SEE WEDGING DETAILS)

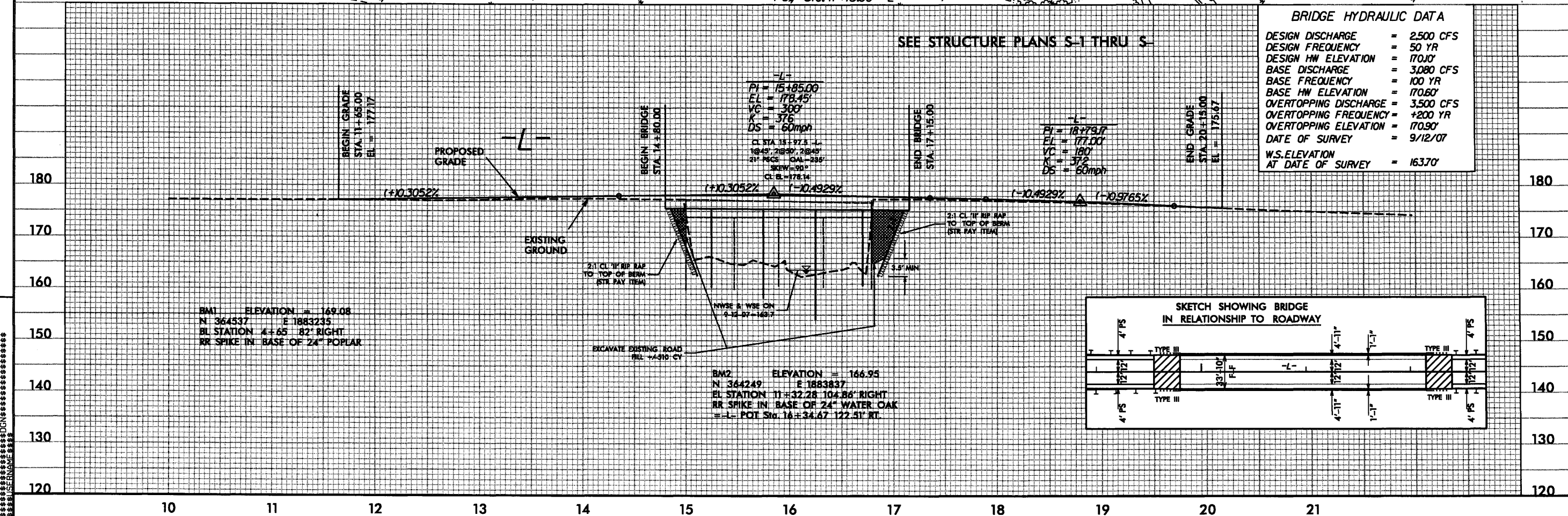
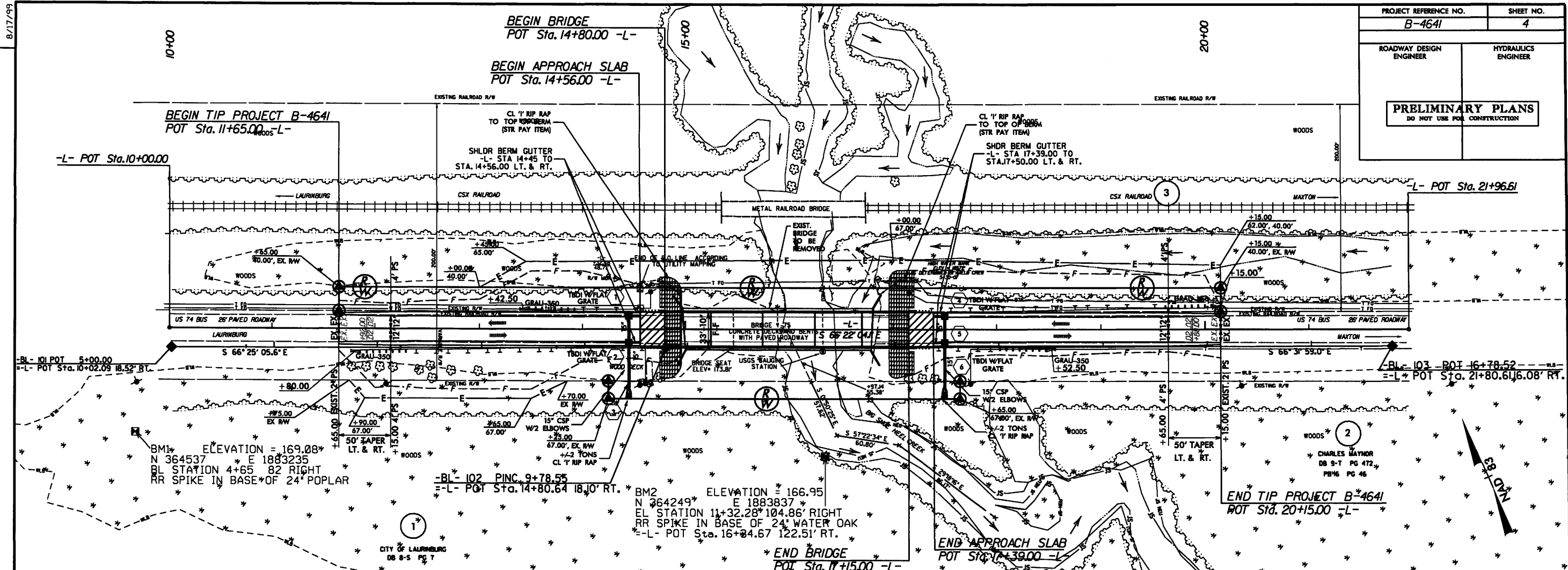
NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED



Detail Showing Method of Wedging

8/17/99

SYSTEMS DESIGN
SERIALS



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

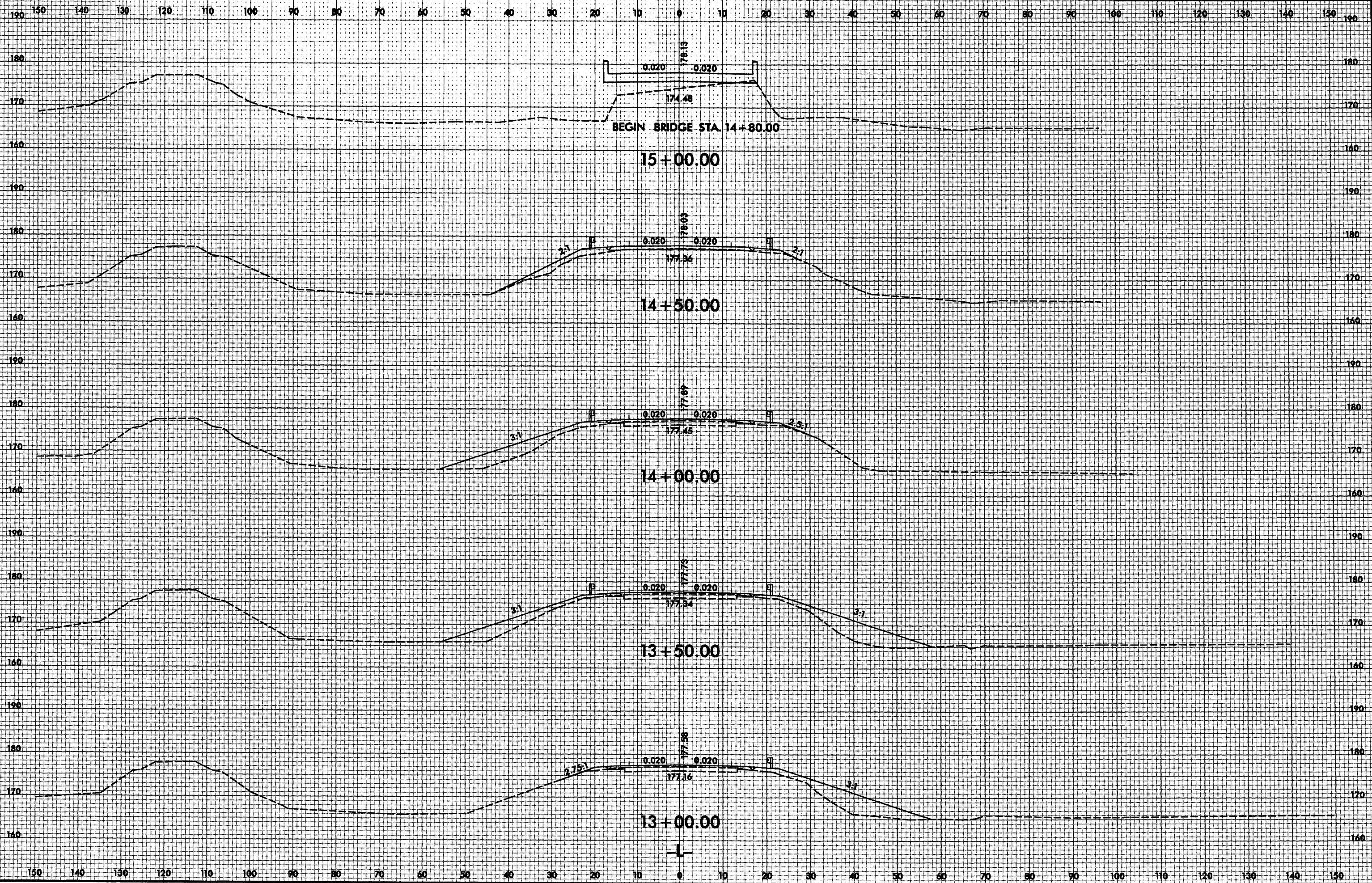
NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

Station -L-	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+65.00	0	0
12+00.00	15	74
12+15.00	12	54
12+50.00	21	118
13+00.00	22	200
13+50.00	22	256
14+00.00	22	279
14+50.00	13	269
14+80.00	2	84
17+15.00	0	0
17+50.00	9	102
18+00.00	28	209
18+50.00	31	73
19+00.00	36	116
19+50.00	40	117
19+65.00	12	36
20+00.00	43	124
20+15.00	14	21

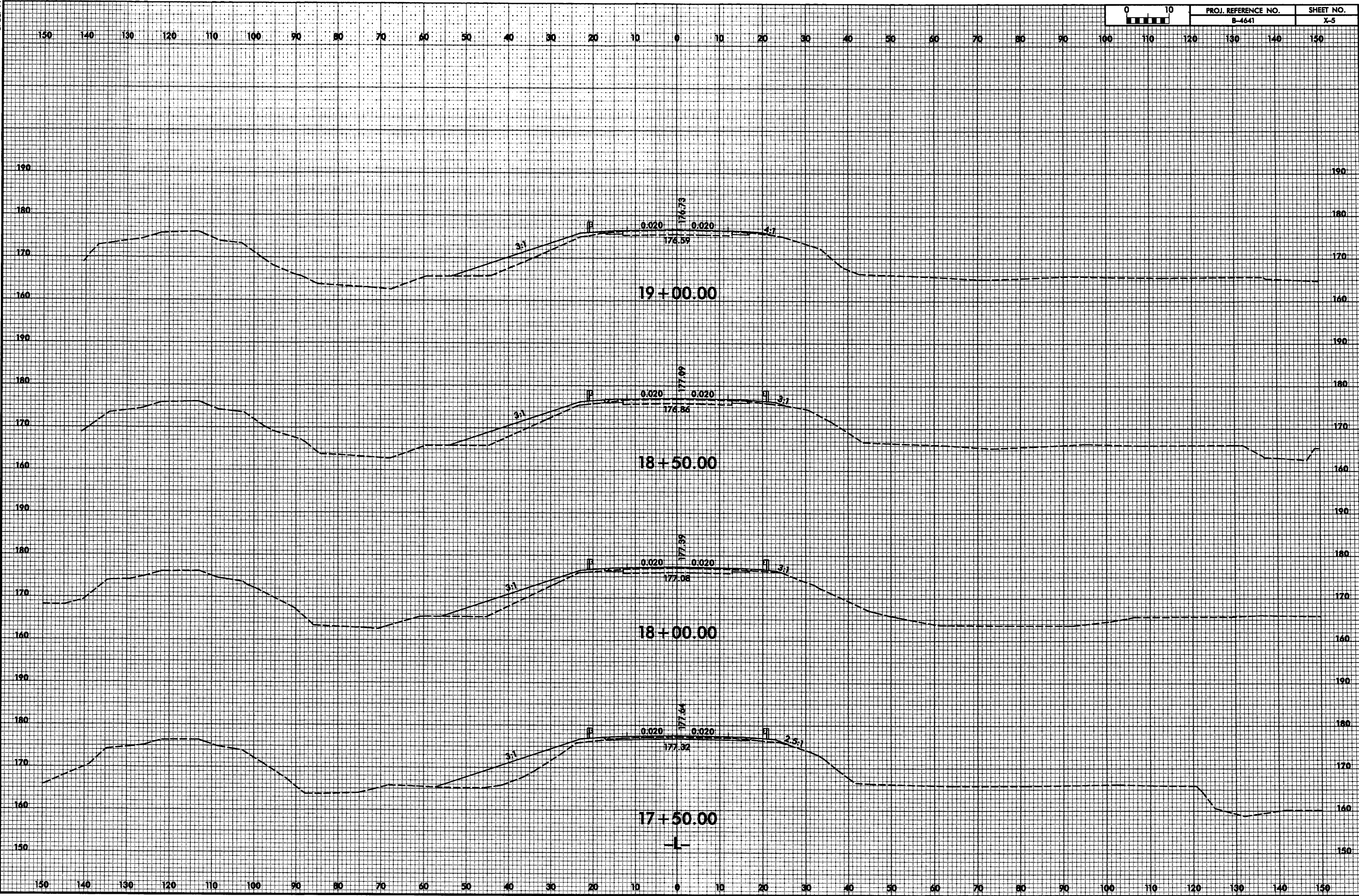
CROSS SECTION INDEX SHEET

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8/23/99



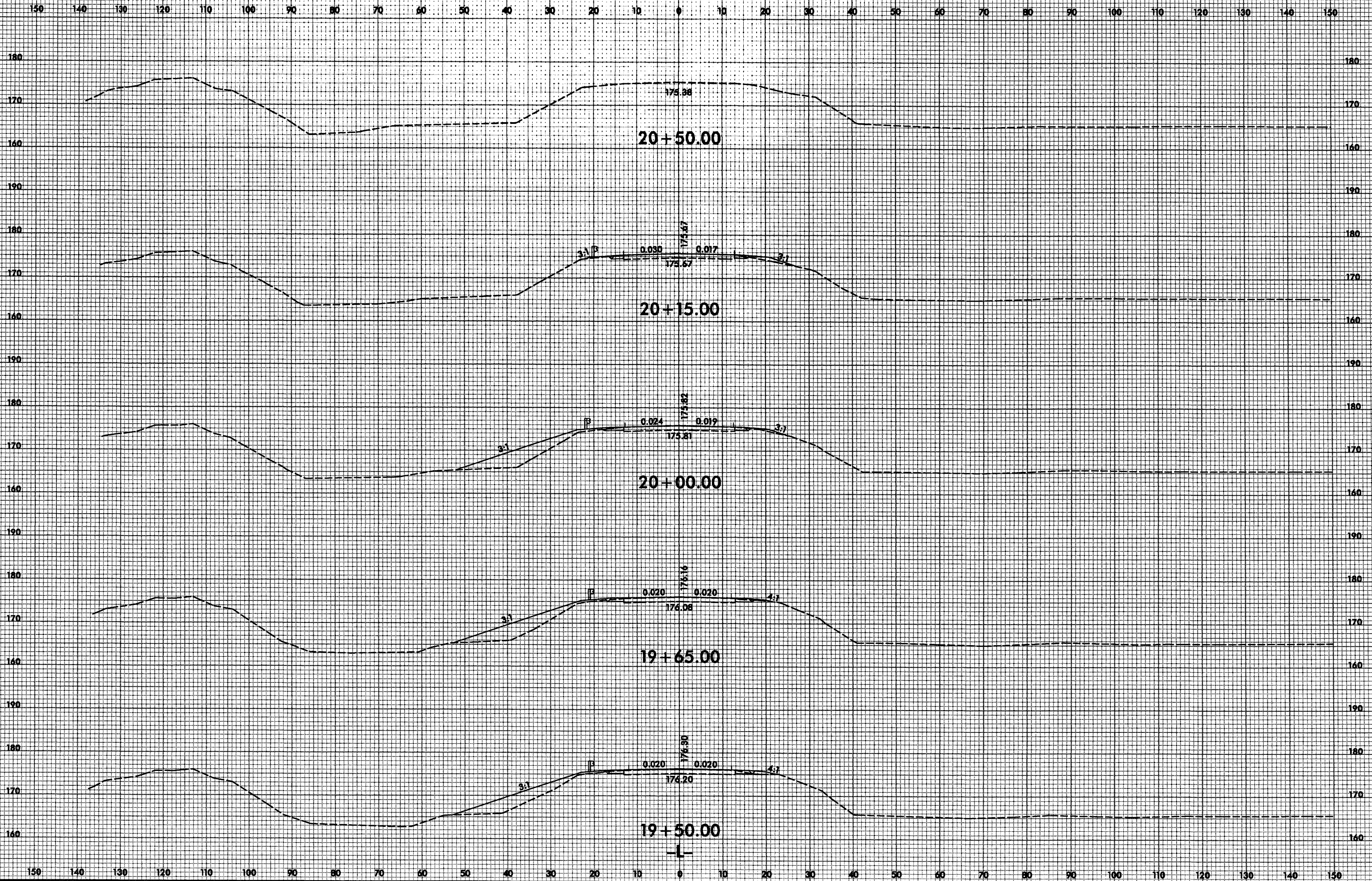
8/23/99



SYSTEM: CADD

USER: JMD

8/23/99



Scotland County
Bridge No. 75 on US 74 Business
Over Big Shoe Heel Creek
Federal-Aid Project No. BRSTP-74(61)
W.B.S. No. 33809.1.1
T.I.P. Project No. B-4641

CATEGORICAL EXCLUSION

UNITED STATES DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

AND

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

08/07/07
DATE

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

08/09/07
DATE

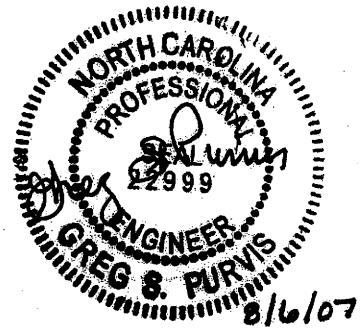
John F. Sullivan, III
For John F. Sullivan, III, P. E.
Division Administrator, FHWA

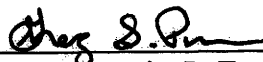
Scotland County
Bridge No. 75 on US 74 Business
Over Big Shoe Heel Creek
Federal-Aid Project No. BRSTP-74(61)
W.B.S. No. 33809.1.1
T.I.P. Project No. B-4641

CATEGORICAL EXCLUSION

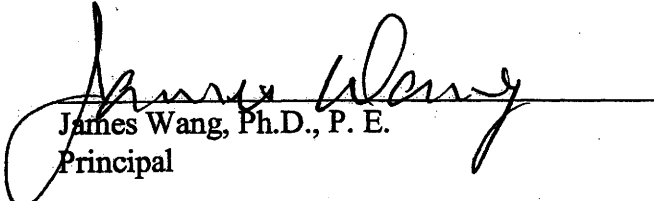
August 2007

Document Prepared by:
Wang Engineering Company, Inc.



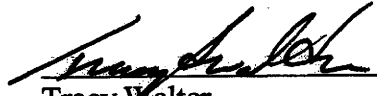

Greg S. Purvis, P. E.
Project Manager

8/6/07
DATE

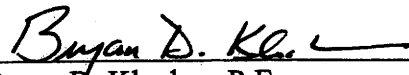

James Wang, Ph.D., P. E.
Principal

8-6-07
DATE

For the North Carolina Department of Transportation


Tracy Walter
Project Manager
Bridge Project Development Unit

8/7/07
DATE


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

8/07/07
DATE

PROJECT COMMITMENTS

**Scotland County
Bridge No. 75 on U.S. 74 Business
Over Big Shoe Heel Creek
Federal-Aid Project No. BRSTP-74(61)
W.B.S. No. 33809.1.1
T.I.P. Project No. B-4641**

Division Eight Construction, Resident Engineer's Office

In order to have time to adequately reroute school busses, Scotland County Schools should be contacted at (910) 277-4355 at least one month prior to road closure.

Scotland County Emergency Services needs to be contacted at (910) 276-1313 at least one month prior to road closure to make the necessary temporary reassignments to primary response units.

The United States Geologic Survey (USGS) – Raleigh Field Office needs to be contacted at (919) 571-4069 at least one month prior to construction. There is a USGS stream gaging station located adjacent to the existing bridge and this will have to be temporarily relocated during construction.

This project is located near the Laurinburg-Maxton Airport. Although this project does not conflict with airport operation, the Laurinburg-Maxton Airport should be contacted at (910) 844-5081 prior to beginning construction.

Hydraulics Unit

Big Shoe Heel Creek is a FEMA regulated stream within a Limited Detailed Study area. Coordination with FEMA will be required.

Scotland County
Bridge No. 75 on US 74 Business
Over Big Shoe Heel Creek
Federal-Aid Project No. BRSTP-74(61)
W.B.S. No. 33809.1.1
T.I.P. Project No. B-4641

INTRODUCTION: The replacement of Bridge No. 75 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 37.6 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.

Components of both the concrete superstructure and substructure have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities. The bridge is approaching the end of its useful life. Replacement of the bridge will result in safer traffic operations.

II. EXISTING CONDITIONS

The project is located northeast of the intersection with SR 1611 (see Figure 1). Land use in the project area is predominantly woodlands. There is industrial use west of the study area. The Seaboard Coastline Railroad runs parallel to US 74 Business north of the existing bridge.

US 74 Business is classified as a rural minor arterial in the Statewide Functional Classification System and it is not a National Highway System Route. This route is not a designated bicycle route and there is no indication that an unusual number of bicyclists use the roadway.

In the vicinity of the bridge, US 74 Business has a 22-foot pavement width with eight-foot shoulders including two-foot paved (see Figure 3). The roadway grade includes a slight crest at the existing bridge. The existing bridge on US 74 Business is located in a tangent. The roadway is situated approximately 15 feet above the creek bed.

Bridge No. 75 is a four-span structure that consists of a concrete deck with asphalt wearing surface on reinforced concrete deck girders. The substructure consists of reinforced concrete abutment end bents with timber caps and timber piles and the interior bents consist of reinforced concrete caps on concrete piers with a crutch pile under one of the girders. The existing bridge (see Figure 3) was constructed in 1924 and widened in 1941. The overall length of the structure is 168 feet. The clear roadway width is 35.8 feet.

On the downstream side of the existing bridge overhead power, cable, and telephone cross Big Shoe Heel Creek. Telephone utilities are underground in the approaches to the bridge on the downstream side of the bridge. Fiber optic utilities are overhead on the upstream side of the

bridge and underground in the approaches to the bridge. USGS Gage Station 02132320 is located on the downstream side of the bridge. Utility impacts are anticipated to be low.

The current traffic volume is 6,100 vehicles per day (VPD) is expected to increase to 10,400 VPD by the year 2030. The projected volume includes three percent truck-tractor semi-trailer (TTST) and five 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. Six school busses cross this bridge daily two times each for a total of 12 trips.

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 220-foot long. The bridge length is based on preliminary design information and is set by hydraulic requirements. The bridge will be of sufficient width to provide for two 12-foot lanes with four-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. Eight-foot shoulders will be provided on each side; four feet of which will be paved in accordance with the current NCDOT Design Policy. This roadway will be designed as a rural major collector. 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 342 feet on the west side of the bridge and approximately 338 feet on the east 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 US 74 Bypass and SR 1436 (Airport Road) approximately 3.52 miles in length. The detour for the average road user would result in 1.5 minutes additional travel time (0.82 miles additional travel). Up to a eighteen-month duration of construction is expected on this project.

Based on the Guidelines, the criteria above indicate that on the basis of delay alone the detour is acceptable. Scotland County Emergency Services along with Scotland 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 existing alignment. During construction, traffic will be maintained by an on-site temporary detour structure located south of the existing bridge. The length of approach work will be approximately 417 feet on the west side of the bridge and approximately 438 feet on the east side of the bridge. The temporary detour structure will be 180 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 US 74 Business.

"Rehabilitation" of the existing bridge is not practical due to its age and deteriorated condition.

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 low human and natural environmental impacts associated with it.

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

IV. DESIGN EXCEPTIONS ANTICIPATED

No design exceptions will be required.

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)	\$ 102,000	\$ 102,000
Structure (proposed)	735,000	735,000
Detour Structure and Approaches	0	609,000
Roadway Approaches	208,000	208,000
Miscellaneous and Mobilization	219,000	388,000
Engineering and Contingencies	236,000	308,000
Total Construction Cost	1,500,000	2,350,000
ROW/Const. Easements:	8,000	13,000
Utilities	0	65,000
	-----	-----
TOTAL	\$ 1,508,000	\$ 2,428,000

VI. NATURAL RESOURCES

A. Physical Characteristics

1. Water Resources

The project study area is located within sub-basin 03-07-55 of the Lumber River Basin (NCDWQ 2003). This area is part of USGS Hydrologic Unit 03040204 (Seaber et al. 1987) of the South Atlantic/Gulf Region. The structure targeted for replacement spans Big Shoe Heel Creek. The portion of Big Shoe Heel Creek traversing the project study area has been assigned Stream Index Number 14-34 by the NCDWQ (NCDWQ 2006b). Big Shoe Heel Creek flows

from north to south through the project study area and enters the project study area as a well-defined, fifth-order, perennial stream with moderate flow over a sand and cobble substrate. A Best Usage Classification of C SW has been assigned to this section of Big Shoe Heel Creek. Big Shoe Heel Creek is currently listed by the NCDWQ as **Supporting** for its designated uses. With respect to temperature regimes, Big Shoe Heel Creek is designated as a warm water stream (USACE et al. 2003). Big Shoe Heel Creek is not listed on the 2006 final Section 303(d) (NCDWQ 2006) lists. No Outstanding Resource Waters (ORW), High Quality Waters (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1 mile of the project study area (NCDWQ 2003, NCDWQ 2006b).

2. Biotic Resources

Three distinct plant communities were identified within the project study area: (1) Cypress-Gum Swamp (Blackwater subtype), (2) mesic mixed forest, and (3) disturbed/maintained land. Plant communities were delineated to determine the approximate area and location of each. These communities are described below in order of their dominance within the project study area.

Cypress-Gum Swamp (Blackwater subtype) – Approximately 10.0 acres (66 percent) of the project study area consists of Cypress-Gum Swamp. This community is described by Schafale and Weakley as occurring on mineral and organic soils in floodplains of blackwater rivers like that, which occupies the vast majority of the project study area. All but the western most edge of the project study area occurs within the 100-year floodplain of Big Shoe Heel Creek (Figure 1).

This community has a canopy dominated by swamp blackgum (*Nyssa biflora*) and pond cypress (*Taxodium ascendens*). The understory contains sweetbay (*Magnolia virginiana*), sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), red bay (*Persea palustris*), and tulip polar (*Liriodendron tulipifera*). The shrub layer is occasionally dense, including titi (*Cyrilla racemiflora*), swamp pepper bush (*Clethra alnifolia*), fetterbush (*Lyonia lucida*), doghobble (*Leucothoe axillaris*), Virginia-willow (*Itea virginica*), giant cane (*Arundinaria gigantea*), and Chinese privet (*Ligustrum sinense*). Where the shrub layer is less dense, the herb layer includes lizard's tail (*Saururus cernuus*), arrow arum (*Peltandra virginica*), netted chain fern (*Woodwardia areolata*), false nettle (*Boehmeria cylindrica*), and Virginia chain fern (*Woodwardia virginica*). Vines, including Virginia creeper (*Parthenocissus quinquefolia*) and hemp-vine (*Mikania scandens*), are plentiful in openings and at the edges of the wettest areas.

This community provides habitat for a wide variety of wildlife. The hydrology of this community is one of its defining characteristics and such frequently flooded areas provide a varied habitat for many invertebrates and the species that depend on them. Amphibians that typify this community include: river frog (*Rana heckshrei*), three-lined salamander (*Eurycea guttolineata*), mud salamander (*Pseudotriton montanus*), many-lined salamander (*Sterochilus marginatus*), and river cooter* (*Pseudemys concinna*). Five-lined skinks (*Eumeces fasciatus*) may also share the insects and small invertebrates provided by this community. Water snakes characteristically exploit the amphibian residents of this community. These include mud snake (*Farancia abacura*), rainbow snake (*Farancia erythrogamma*), redbelly water snake (*Nerodia erythrogaster*), banded water snake* (*Nerodia fasciata*), and brown water snake (*Nerodia taxiapilota*) along with more generalist species like the rat snake* (*Elaphe obsoleta*). Wood ducks (*Aix sponsa*) and mallards (*Anas platyrhynchos*) are among the waterfowl frequenting this community. These two species are known to be breeding, year-round residents. Other avian species utilizing the resources of this community are: red-eyed vireo (*Vireo olivaceus*), white-eyed vireo* (*Vireo griseus*), tufted titmouse* (*Baeolophus bicolor*), Carolina chickadee (*Poecile carolinensis*), mockingbird* (*Mimus polyglottos*), and eastern towhee* (*Pipilo erythrophthalmus*) along with insectivores like yellow-bellied sapsucker* (*Sphyrapicus varius*), Carolina wren* (*Thryothorus ludovicianus*),

prothonotary warbler (*Protonotaria citrea*), and blue-gray gnatcatcher* (*Poliophtila caerulia*). Mammalian species frequently using this community are: marsh rabbit (*Sylvilagus palustris*), beaver (*Castor canadensis*), cotton mouse (*Peromyscus gossypinus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), and white-tailed deer* (*Odocoileus virginianus*). Avian predators surviving on the fish, mammals, birds, and amphibians inhabiting this community include great blue heron* (*Ardea herodias*), red shouldered hawk* (*Buteo lineatus*), and belted kingfisher (*Ceryle alcyon*).

Disturbed/maintained land - Approximately 3.5 acres (23 percent) of the project study area is disturbed/maintained land. This community is composed of roadside shoulders and embankment around the road as well as a railway bed along the northern boundary of the project study area, maintained by some combination of mowing and/or spraying.

The vast majority of this community is colonized by herbaceous weeds with a few species of scattered woody volunteers. Woody species identified include Chinese privet, poison ivy (*Toxicodendron radicans*), Japanese honeysuckle (*Lonicera japonica*), and Virginia creeper. Groundcover includes seeded and native grasses and weedy forbs including fescue (*Festuca* sp.), wild onion (*Allium canadense*), crimson clover (*Trifolium incarnatum*), white clover (*T. repens*), wild geranium (*Geranium maculatum*), pennywort (*Hydrocotyle* sp.), violet (*Viola* sp.), dock (*Rumex crispus*), plantain (*Plantago* sp.), sorrel (*Oxalis* sp.), and common dandelion (*Taraxacum officinale*).

Although this community is made up of maintained areas, it can be expected that there will be some mammalian and avian diversity, as there is low residential density and vehicular traffic. There are several species that are well adapted to using the ecotone between open and forested communities. Opportunistic omnivores consume a wide variety of food such as wild fruit, fish, small mammals, reptiles, and birds. Omnivorous species with such adaptations that would utilize the project study area include red fox, striped skunk (*Mephitis mephitis*), and Virginia opossum. Eastern cottontail (*Sylvilagus floridanus*) is an herbivore that also prefers brushy clearings adjacent to woodlands. Insectivorous species expected to occur within the open portion of the project study area include red bat (*Lasiurus borealis*), and green anole* (*Anolis carolinensis*). The bobcat (*Lynx rufus*) is a carnivorous species that uses disturbed/maintained land for predation. Birds utilizing habitat within the disturbed/maintained land include American crow* (*Corvus brachyrhynchos*) an omnivore, mourning dove* (*Zenaida macroura*) an herbivore-granivore, barn swallow* (*Hirundo rustica*) an insectivore, turkey vulture* (*Cathartes aura*), a scavenger, and northern cardinal (*Cardinalis cardinalis*), an omnivore-granivore. American robins (*Turdus migratorius*) forage for soil invertebrates in these more open spaces. Other species that may occur in the project study area include eastern bluebird (*Sialia sialis*), common grackle (*Quiscalus quiscula*), red-winged blackbird (*Agelaius phoeniceus*), blue jay* (*Cyanocitta cristata*), and eastern meadowlark (*Sturnella magna*).

Mesic mixed forest - Approximately 1.7 acres (11 percent) of the project study area is mesic mixed forest. This community consists of a forest with a well-developed canopy and a dense to very dense understory of successional plant species. This community is located along the northwestern and southwestern quadrants upslope from Shoe Heel Creek.

This community is dominated by loblolly pine (*Pinus taeda*), tulip poplar, sycamore, and sweetgum (*Liquidambar styraciflua*). The subcanopy includes saplings of canopy species as well as dogwood (*Cornus florida*), mockernut hickory (*Carya alba*), sweetbay, American holly (*Ilex opaca*), and red maple. Chinese privet and deerberry (*Vaccinium stamineum*) are frequent members of a scattered shrub layer. The herb layer is essentially absent. A healthy vine population is dominated by Japanese honeysuckle and greenbrier (*Smilax rotundifolia*).

The connectivity of this community to the large Shoe Heel Creek floodplain allows for an increased assemblage of wildlife including forest interior species. This community should support predators such as great horned owl (*Bubo virginianus*), copperhead (*Agkistrodon contortrix*), and ringneck snake (*Diadophis punctatus*); herbivores such as gray squirrel (*Sciurus carolinensis*), and white-tailed deer; and insectivores such as red-eyed vireo, yellow-throated vireo (*Vireo flavifrons*), Carolina chickadee, golden-crowned kinglet (*Regulus satrapa*), ruby-crowned kinglet (*Regulus calendula*), wood thrush (*Hylocichla mustelina*), pine warbler (*Dendroica pinus*), summer tanager (*Piranga rubra*), red bat, five-lined skink, gray treefrog (*Hyla chrysoscelis*), spring peeper (*Pseudacris crucifer*), and American toad (*Bufo americanus*); and omnivores such as eastern box turtle (*Terrapene carolina*) and raccoon. A summary of plant community areas and the potential impacts to each is presented in Table 2.

Table 2. Plant Community Areas Within Alternative Cut-Fill Limits (area in acres)

Plant Community	Alternative A		Alternative B	
	Permanent	Temporary	Permanent	Total
Disturbed/maintained land	0.77	0.09	1.04	1.13
Mesic mixed forest	0.00	0.00	0.00	0.00
Cypress-Gum Swamp	<0.01	0.48	0.22	0.70
Total	0.77	0.57	1.26	1.83

Impacts associated with bridge replacement will primarily affect disturbed/maintained areas. Impacts for Alternate A include 0.77 acre of disturbed/maintained land and 0.001 acre of Cypress-Gum Swamp, entirely within the existing right-of-way. Total impacts for Alternate B consist of 1.13 acres of disturbed/maintained land and 0.7 acre of Cypress-Gum Swamp. Due to the inclusion of a temporary detour, Alternate B will impact a much larger area than Alternate A, with a majority of that area being Cypress-Gum Swamp. Projected permanent impacts to natural plant communities will mostly occur within the disturbed/maintained plant community, mainly along roadside shoulders. No significant habitat fragmentation is expected as a result of project activities since potential improvements will be restricted to adjoining roadside margins. Construction noise and associated disturbances are anticipated to have short-term impacts on avifauna and migratory wildlife movement patterns.

B. Jurisdictional Topics

1. Surface Waters and Wetlands

Big Shoe Heel Creek exhibits characteristics of a well-defined, fifth-order, perennial stream with moderate flow over a sand and cobble substrate. Big Shoe Heel Creek can be classified as riverine, upper perennial, with an unconsolidated bottom composed primarily of sand with some cobble and gravel (R3UB2) (Cowardin et al. 1979). The project study area contains a total of approximately 660 linear feet and 0.6 acre of perennial stream and 8.77 acres of vegetated wetlands.

The project study area contains four vegetated wetland areas: Wetland 1, Wetland 2, Wetland 3, and Wetland 4. Wetlands 1, 2 and 3 are high-quality, riverine, second growth wetlands located in the floodplain of Big Shoe Heel Creek. Wetland 4 is a medium-quality, riverine, second growth wetland.

Alternate A results in less than 0.1 acre of wetland impacts. Alternate B results in temporary impacts of 54 linear feet to Big Shoe Heel Creek and 0.6 acre of total jurisdictional impacts (Table 3).

Table 3. Jurisdictional Areas Within Alternative Cut-Fill Limits

Jurisdictional Area	Cowardin Classification	Rating	Alternate A	Alternate B		
				Temporary	Permanent	Total
Big Shoe Heel Creek	R3UB2	42.5	0.000	54 linear ft. 0.006	0.000	54 linear ft. 0.006
Wetland 1	PFO1C	91	0.037	0.244	0.075	0.319
Wetland 2	PFO1C	91	0.009	0.230	0.037	0.267
Wetland 3	PFO1C	91	0.000	0.000	0.000	0.000
Wetland 4	PFO1C	50	0.000	0.000	0.000	0.000
Total Acreage			0.046	0.480	0.112	0.592

¹Wetland ratings are based on N.C. Division of Environmental Management Method (NCDEM 1995). Stream rating is based on DWQ Stream Quality Assessment Worksheet ratings.

²Areas are given in acres.

It has been estimated that potential temporary fill associated with bridge demolition is approximately 10 cubic yards. The replacement of Bridge No. 75 can be classified as Case 3, where no special restrictions beyond those outlined in *Best Management Practices for Protection of Surface Waters* and the supplements added to the document on bridge demolition (Appendix A). This case classification is subject to *Best Management Practices for Bridge Demolition and Removal* (BMP-BDR).

2. Permits

In accordance with provisions of Section 404 of the Clean Water Act (33 USC 1344), a Section 404 Nationwide Permit (NWP) 23 from the USACE is likely to be applicable for all impacts to Waters of the United States resulting from the proposed project. A NWP No. 33 may be required if temporary construction including cofferdams, access and dewatering are required for this project. A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality General Certification is required prior to the issuance of the Section 404 NWP 23 and/or NWP 33.

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 USFWS currently lists six federally protected species with ranges that extend into Scotland County (as April 27, 2006, Table 4).

Table 4. Federally Protected Species Listed for Scotland County

Common Name	Scientific Name	Federal Status*	Biological Conclusion
American alligator	<i>Alligator mississippiensis</i>	T (S/A)	NA
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	NO EFFECT
American chaffseed	<i>Schwalbea americana</i>	E	NO EFFECT
Canby's dropwort	<i>Oxypolis canbyi</i>	E	NO EFFECT
Michaux's sumac	<i>Rhus michauxii</i>	E	NO EFFECT
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	E	NO EFFECT

*Federal Status: E - Endangered; a taxon "in danger of extinction throughout all or a significant portion of its range;" T (S/A) - Threatened, due to similarity of appearance.

American alligator

The American alligator is listed as Threatened due to the Similarity in Appearance (T[S/A]) to other federally-listed crocodilians; however, there are no other crocodilians within North Carolina. American alligators can be found in a variety of freshwater to estuarine aquatic habitats including swamp forests, marshes, large streams and canals, and ponds and lakes.

T(S/A) species are not subject to Section 7 consultation and **a biological conclusion for this species is not required**. Potential habitat for American alligator exists within the project study area. NCNHP records (reviewed June 12, 2006) document one occurrence of American alligator approximately 2.0 miles downstream of the project study area in Maxton Pond. No American alligators were seen during the field visit. Construction activities may temporarily displace any American alligators in the vicinity; however, no long-term impact to American alligator is anticipated as a result of this project.

Red-cockaded woodpecker

Biological Conclusion:

NO EFFECT

No suitable foraging habitat for RCW within the project study area was identified during field explorations. Pine stands exist in the mesic mixed forest community at the northeastern edge of the project study area, but this community has a dense to very dense understory of pine, hardwoods, and shrubs. NCNHP records (reviewed June 12, 2006) document no occurrences of this species within 2.0 miles of the project study area. No birds were observed during the site visit. Consequently, the proposed project will have "No Effect" on the red-cockaded woodpecker.

American chaffseed

Biological Conclusion:

NO EFFECT

Suitable habitat for American chaffseed does not occur within the project study area. The wet areas within the project study area have a very nearly closed canopy with dense shrub layer along the edges. No moist pine flatwoods, savannas, bog borders, and open oak woods exist within or bordering the project study area. NCNHP records (reviewed June 12, 2006) document no occurrences of this species within 2.0 miles of the project study area. Therefore, the proposed project will have "No Effect" on American chaffseed.

Canby's dropwort**Biological Conclusion:****NO EFFECT**

The project study area contains suitable habitat for Canby's dropwort along some wetland edges bordering wetlands 1, 2, and 3. The NCNHP records (reviewed June 12, 2006) document no instances of Canby's dropwort within 2.0 miles of the project study area. A survey was conducted on August 31, 2006 by ESC biologists Elizabeth Scherrer and David O'Loughlin using systematic transects. The survey revealed no individuals of this species within the project study area. Consequently, the proposed project will have "No Effect" on Canby's dropwort.

Michaux's sumac**Biological Conclusion:****NO EFFECT**

The project area provides habitat preferred by Michaux's sumac along roadsides and upland forest edges. NCNHP records (reviewed June 12, 2006) document no occurrence of this species within 2.0 miles of the project study area. A survey was conducted on June 16, 2006 by ESC biologist David O'Loughlin using systematic transects. The survey revealed no individuals of this species within the project study area. Consequently, the proposed project will have "No Effect" on Michaux's sumac.

Rough-leaved loosestrife**Biological Conclusion:****NO EFFECT**

Suitable habitat for rough-leaved loosestrife does not occur within the project study area. The wet areas within the project study area have a very nearly closed canopy with dense shrub layer along the edges. No sandy longleaf savannas border any of the wet areas. NCNHP records (reviewed June 12, 2006) document no occurrences of this species to occur within 2.0 miles of the project study area. Therefore, the proposed project will have "No Effect" on rough-leaved loosestrife.

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 with in the project area. No facility with underground storage tanks (UST) was identified in the project vicinity.

Scotland County is a participant in the Federal Flood Insurance Program. The bridge is located within a FEMA Limited Detail Study Area, Zone AE. The new structures should be designed to match or lower the existing 100-year storm elevation upstream of the roadway. Since the proposed replacement for Bridge No. 75 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, Scotland County Emergency Services and the Scotland 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 minimized to the extent possible. Equal or greater conveyance will be provided with bridge and wetland impacts will be minimized/avoided to extent practical.

The **N.C. Wildlife Resource Commission** and the **North Carolina Division of Water Quality** had no special concerns for this project.

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

X. PUBLIC INVOLVEMENT

A newsletter has been sent to all those living along US 74 Business between the intersection with SR 1436 and the intersection with US 74 Bypass. No comments have been received to date.

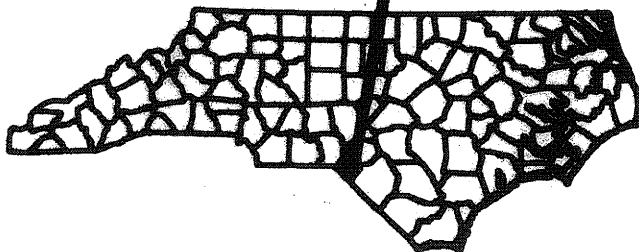
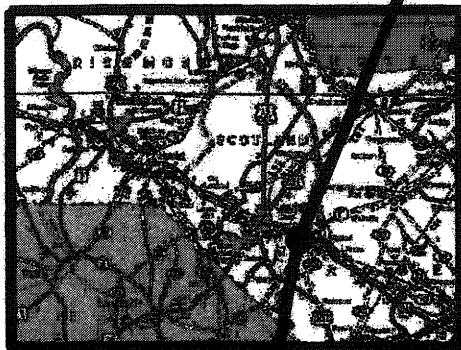
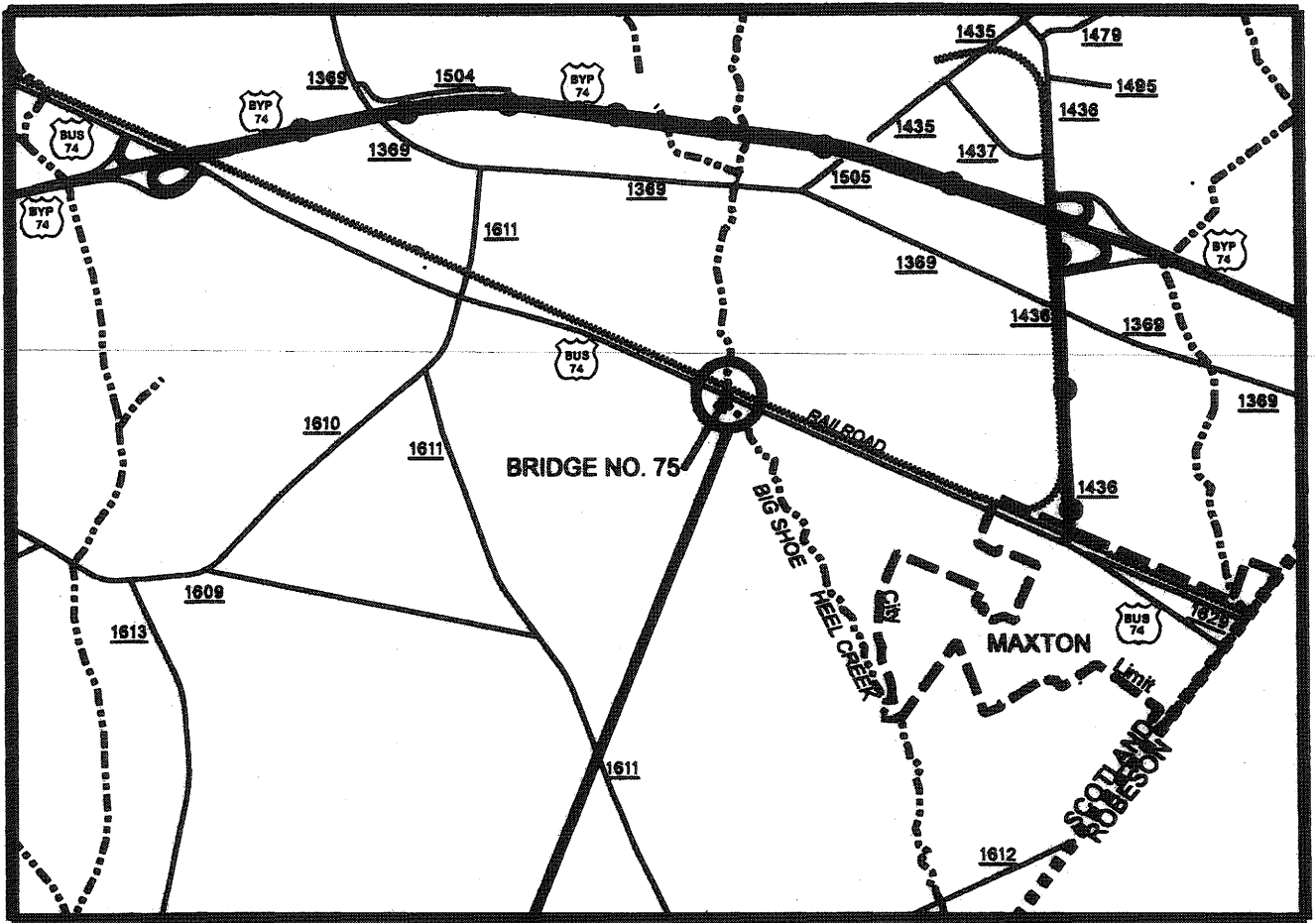
Based on responses to the newsletter, a Citizen's Informational Workshop was determined unnecessary.

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. 75**



LEGEND

 **Studied Detour Route**



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

SCOTLAND COUNTY

**BRIDGE NO. 75 ON US 74 BUS.
OVER BIG SHOE HEEL CREEK**

TIP NO. B-464

**VICINITY MAP
FIGURE 1**

BEGIN TIP PROJECT B-4641

END TIP PROJECT B-4641

BEGIN BRIDGE

END BRIDGE



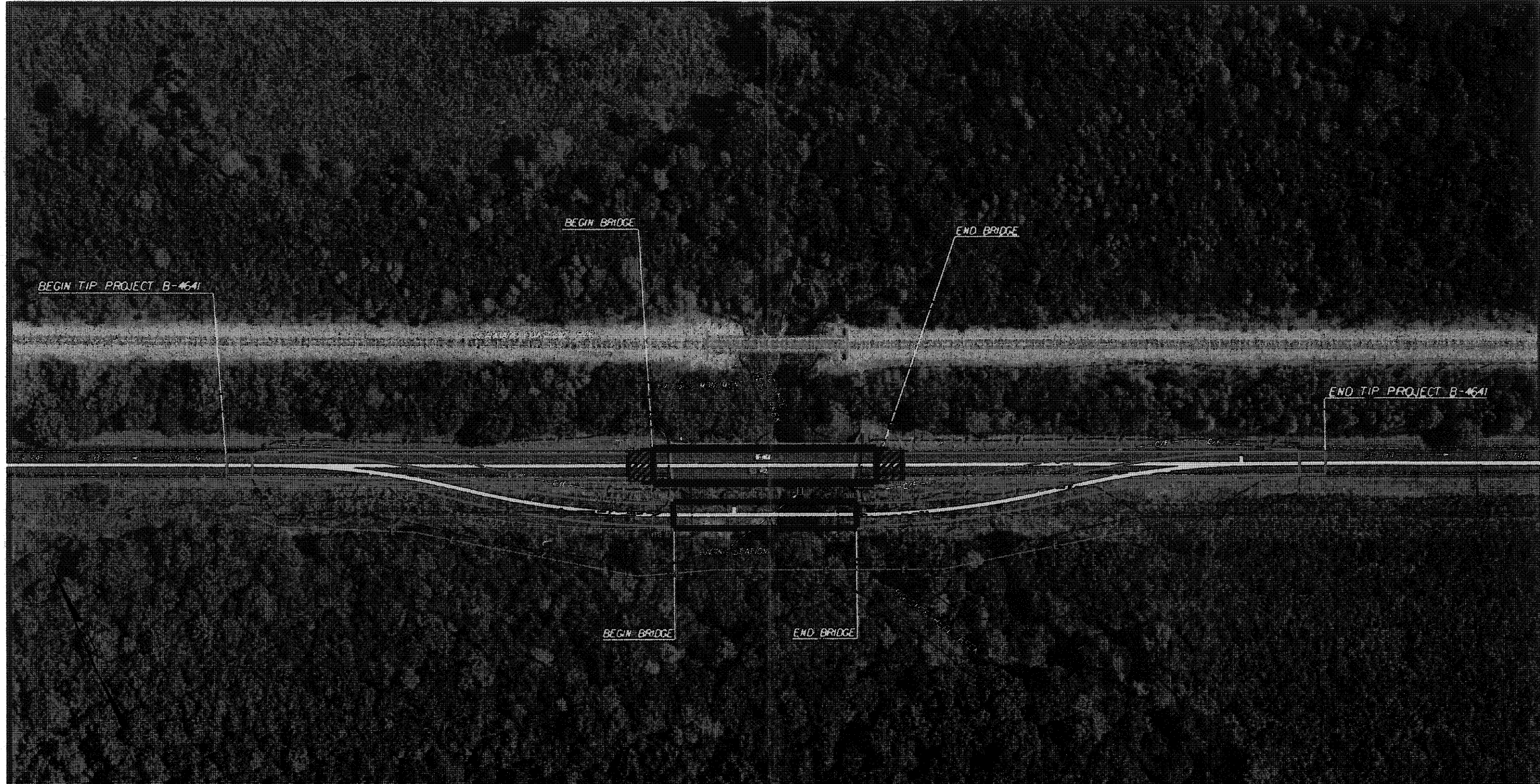
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT &
ENVIRONMENTAL ANALYSIS BRANCH

SCOTLAND COUNTY

BRIDGE NO. 75 ON US 74 BUS.
OVER BIG SHOE HEEL CREEK

TIP NO. B-4641

ALTERNATE A
(PREFERRED)
FIGURE 2



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

SCOTLAND COUNTY

**BRIDGE NO. 75 ON US 74 BUS.
OVER BIG SHOE HEEL CREEK**

TIP NO. B-4641

ALTERNATE B

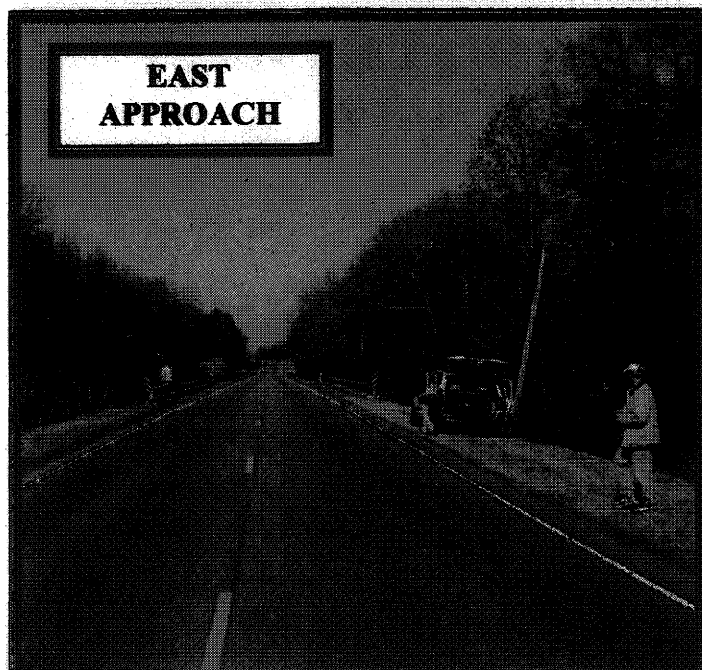
FIGURE 2A



**SOUTH SIDE
OF BRIDGE**



**WEST
APPROACH**



**EAST
APPROACH**

**B-4641
Replacement of Bridge
No. 75 on US 74 BUS.
Over Big Shoe Heel Creek
Scotland County**

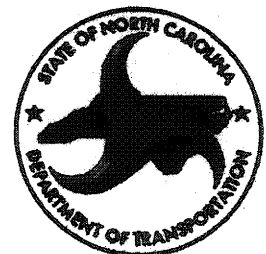
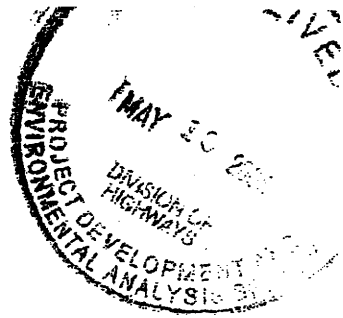


FIGURE 3

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. Basley, 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 *PSE for Peter Sandbeck*

SUBJECT: Replace Bridge 75 on US 74 Business over Big Shoe Heel Creek, B-4641, Scotland County,
ER 06-0831

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.

*Many thanks
Carl Hooley
Proj Eng*

ADMINISTRATION
RESTORATION
SURVEY & PLANNING

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515 N. Blount Street, Raleigh NC
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(919)733-6545/715-4801