



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI
SECRETARY

December 18, 2012

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

Attention: Bill Biddlecome
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Nationwide Permit 23 and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 16 over Hardison Mill Creek on NC 171, Martin County. TIP No. B-4185; Federal Aid Project No. BRSTP-171(14); State Project No. 8.1090601; Debit \$240.00 from WBS 33532.1.1

Please find enclosed the PCN form, permit drawings, Stormwater Management Plan, utility drawings, roadway plans, B-4185 Mitigation Plan, and EEP request letter. The EEP acceptance letter will be distributed as soon as it is received. A Categorical Exclusion (CE) was completed for this project in April 18, 2012, and distributed shortly thereafter. Additional copies will be made available upon request. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 16 on NC 171 over Hardison Mill Creek in Martin County. The project involves replacement of the existing 100-foot four-span bridge with a 150-foot three-span bridge. The proposed alignment is just west of the existing bridge. Permanent impacts to Waters of the United States associated with this project includes the fill of 0.38 acre, excavation of 0.08 acre, and mechanized clearing of 0.33 acre of riparian wetlands.

The let date for this project is June 18, 2013; however, the let date may advance as additional funds become available.

Regulatory approvals

Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that a Nationwide Permit 23 authorize these activities.

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

TELEPHONE: 919-707-6100
FAX: 919-212-5785

WEBSITE: WWW.NCDOT.ORG

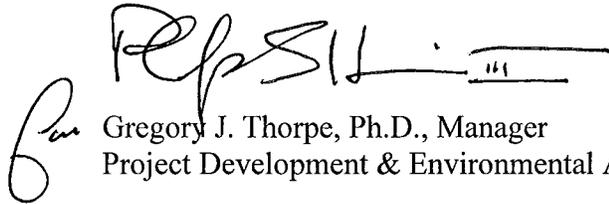
LOCATION:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610-4328

Section 401 Water Quality Certification: We anticipate 401 General Certification number 3701 will apply to this project. All general conditions of the Water Quality Certification will be met. NCDOT is providing two copies of this application to the NCDWQ for their review and approval. Authorization to debit the \$240 Permit Application Fee from WBS Element 33532.1.1 is hereby given.

A copy of this permit application and its distribution list will be posted on the NCDOT website at <http://connect.ncdot.gov/resources/Environmental/>

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Chris Manley at cdmanley@ncdot.gov or (919) 707-6135.

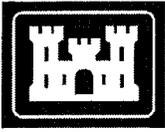
Sincerely,

A handwritten signature in black ink, appearing to read 'Gregory J. Thorpe', with a horizontal line underneath. To the left of the signature is a large, stylized cursive letter 'G'.

Gregory J. Thorpe, Ph.D., Manager
Project Development & Environmental Analysis

cc:

NCDOT Permit Application Standard Distribution List



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 checked="" 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 checked="" type="checkbox"/> Yes	<input 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 <input type="checkbox"/> Non-404 Jurisdictional General Permit <input type="checkbox"/> 401 Water Quality Certification – Express <input type="checkbox"/> 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: <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:	Replacement of Bridge 16 over Hardison Mill Creek on NC 171
2b. County:	Martin
2c. Nearest municipality / town:	Williamston
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no:	B-4185

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) 707-6135
3g. Fax no.:	(919) 212-5785
3h. Email address:	cdmanley@ncdot.gov

4. Applicant Information (if different from owner)	
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:	
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: 35.7369 (DD.DDDDDD) Longitude: - 76.9795 (-DD.DDDDDD)
1c. Property size:	4 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Hardison Mill Creek
2b. Water Quality Classification of nearest receiving water:	C
2c. River basin:	Roanoke
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: The primary natural community found on the site is bottomland hardwood forest, the remainder is maintained/disturbed; the principal land use in the project vicinity includes agriculture and residential development.	
3b. List the total estimated acreage of all existing wetlands on the property: 2.31	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 200	
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 four span 100-foot bridge with a three span 150-foot bridge on new alignment just west of existing. Standard road building equipment, such as trucks, excavators, shovels, 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: 200310361	<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 checked="" type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Ken Roeder	Agency/Consultant Company: H. W. Lochner Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. 4/4/03	
5. Project History	
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.	
6. Future Project Plans	
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):						
<input checked="" type="checkbox"/> Wetlands		<input type="checkbox"/> Streams - tributaries		<input type="checkbox"/> Buffers		
<input type="checkbox"/> Open Waters		<input type="checkbox"/> 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	Cypress-gum Swamp	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.38	
Site 2 <input checked="" type="checkbox"/> P <input checked="" type="checkbox"/> T	excavation	Cypress-gum Swamp	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.08	
Site 3 <input checked="" type="checkbox"/> P <input type="checkbox"/> T	Mechanized Clearing	Cypress-gum Swamp	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	0.33	
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		
2g. Total wetland impacts					0.79 Permanent 0 Temporary	
2h. Comments: There will be 0.27 acre of hand clearing for the aerial power line.						
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 type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> PER <input type="checkbox"/> INT	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
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		
3h. Total stream and tributary impacts						0 Perm 0 Temp
3i. Comments:						

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				
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	Excavated	Flooded	Filled	Excavated	Flooded
P1								
P2								
5f. Total								

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.

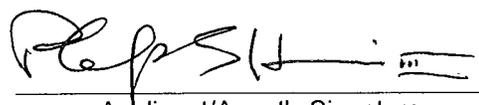
6a. Project is in which protected basin?			<input type="checkbox"/> Neuse <input type="checkbox"/> Catawba	<input type="checkbox"/> Tar-Pamlico <input type="checkbox"/> Randleman	<input type="checkbox"/> Other:
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <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		
B4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
6h. Total buffer impacts					
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 50 feet longer than the existing bridge; the proposed bridge will be at approximately the same grade as the existing structure; the existing four-span bridge will be replaced with a three-span with no bents in the stream. 3:1 slopes will be used in jurisdictional areas. Performed scour holes will be utilized.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. NCDOT Best Management Practices for Protection of Surface Waters; Bridge Demolition, Removal and Construction; Sedimentation and Erosion Control will be adhered to.		
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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:	
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 checked="" type="checkbox"/> Payment to in-lieu fee program <input checked="" type="checkbox"/> 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.	<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:	1.0 acres	
4f. Non-riparian wetland mitigation requested:	acres	
4g. Coastal (tidal) wetland mitigation requested:	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. See attached 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?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments:	<input type="checkbox"/> Yes <input type="checkbox"/> 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?	<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 attached permit drawings.	
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 checked="" type="checkbox"/> 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):	<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
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	<input type="checkbox"/> Coastal counties <input 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 type="checkbox"/> Yes <input type="checkbox"/> No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A
5b. Have all of the 401 Unit submittal requirements been met?	<input type="checkbox"/> Yes <input type="checkbox"/> No N/A

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?	<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
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)?	<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):	
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?	<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.	
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?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input 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? NHP and NCDOT field surveys.		
6. Essential Fish Habitat (Corps Requirement)		
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		
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)?	<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		
8. Flood Zone Designation (Corps Requirement)		
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		
 <u>Dr. Gregory J. Thorpe, Ph D</u> Applicant/Agent's Printed Name	 _____ Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	<u>12/18/12</u> Date



MITIGATION REQUEST FORM TRI-PARTY MOA (NCDOT)



Revised 3/24/2008

Fill in requested information, print out the form, sign and date, and either mail to EEP, 1652 Mail Service Center, Raleigh, NC 27699-1652, or fax to 919-715-2219. Attachments are acceptable for clarification purposes.

Electronic submissions are permissible; however, an acceptance letter cannot be sent until the original signed form has been received.

NCDOT CONTACT INFORMATION		REGULATORY CONTACT INFORMATION	
Agency/Division	NCDOT-Highways	USACE Office	Regulatory Field Office
Branch	PDEA-NEU	USACE Contact	Mr. William J. Biddlecome
Mailing Address	1598 Mail Service Center	Mailing Address	Post Office Box 1000
City, State, Zip	Raleigh, NC 27699-1598	City, State, Zip	Washington, NC 27889-1000
Project Manager	Chris Manley	USACE Fax Number	(252) 975-1399
Telephone Number	(919) 707-6000	NCDWQ Contact	
E-Mail Address	cdmanley@dot.state.nc.us	Mailing Address	
Supervisor	Chris Rivenbark	City, State, Zip	
Telephone Number	(919) 707-6000	NCDWQ Fax Number	

PROJECT LOCATION INFORMATION AND IMPACTS			
TIP Number(s)	B-4185		
TIP Description	Bridge 16 over Hardison Mill Creek on NC 171		
Current Let Date	6/18/13		
NCDOT Highway Division	Division 1		
County(ies)	Martin		
EEP Ecoregion(s)	Northern Inner Coastal Plain		
River Basin(s)	Roanoke		
Cataloging Unit(s) (8-digit)	03010107		
Total Stream (feet)	Warm		
	Cool		
	Cold		
	TOTAL		
Total Riparian Wetland Impact (acres)	0.5		
Total Non-Riparian Wetland Impact (acres)	0		
Total Coastal Marsh Impact (acres)	0		
Total Buffer Impact	Zone 1 (square feet)		
	Zone 2 (square feet)		

OTHER INFORMATION	
USACE Action ID Number (if known)	
NCDWQ Project Number (if known)	
NCDCM Project Number (if known)	
Comments:	

<p>IMPORTANT</p> <p>Check below if this request is a:</p> <p><input checked="" type="checkbox"/> New Mitigation Request</p> <p><input type="checkbox"/> Revision to a current acceptance</p>	<p style="text-align: center;">Signature of Applicant or Agent:</p> <p style="text-align: center;">_____</p> <p>Date: _____</p>
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B-4185 Mitigation Plan

Bridge No.16 on NC 171 over Hardison Mill Creek

Martin County

33532.1.1

11/20/2012

1.0 Baseline:

The North Carolina Department of Transportation (NCDOT) will perform onsite mitigation for wetland impacts associated with STIP B-4185, Bridge No. 16 on NC 171 over Hardison Mill Creek. The project is located in the southeast section of Martin County approximately 0.3 miles from SR 1542 Noah Roberson Road. Development in the area is agricultural and residential in nature. The selected alternative will replace the existing 100 foot bridge with a 150 foot long bridge approximately 15 feet due west of the existing location with two 12 foot lanes and 3 foot offsets on each side. All jurisdictional streams and wetlands in the study area of the bridge are located within USGS HUC 03010107. Permanent wetland impacts for this project are 0.79 acres of Cypress-Gum Swamp also classified by NCWAM as Riverine Swamp Forest. Additional information about this project can be found in the Categorical Exclusion dated April 18, 2012.

2.0 Site Selection:

Hardison Mill Creek has a well-developed floodplain on both the east and west sides of the project area. The wetlands in the floodplain of Hardison Mill Creek paralleling the causeway are Cypress-Gum Swamp. These wetlands consist of a mature forest dominated by water tupelo (*Nyssa aquatica*) and bald cypress (*Taxodium distichum*). The wetland areas comprise approximately 4.5 acres of the project study area and are in all four quadrants of the bridge project. The causeway fill consist of approximately 8 feet of material placed in an area that was historically wetlands.

3.0 Site Protection Instrument:

NCDOT will manage the proposed mitigation site to prohibit all use inconsistent with its use as mitigation property, including any activity that would materially alter the biological integrity or functional and educational value of the site, consistent with the mitigation plan. The site will be placed on the NES mitigation geodatabase and protected in perpetuity.

4.0 Objectives:

The goal of the project is to restore 0.29 acres of Cypress Gum Swamp. The functional restoration of the mitigation site will be accomplished through the removal of approximately 12,632 square feet (0.29 acres) of existing causeway.

5.0 Mitigation Work Plan:

The mitigation site will be constructed in conjunction with STIP B-4185. Construction activities involve pavement, causeway and bridge removal, site grading and site planting. The fill material that will be removed is approximately 8 feet in depth, approximately 22 feet in width at a maximum and approximately 457 feet paralleling the new approach and bridge. Once the pavement and causeway have been excavated, the areas will be graded to match existing adjacent reference wetland elevation as well as being ripped, and disked if necessary. Attached are the design plans of the areas that will be removed.

The Natural Environment Section shall be contacted to provide construction assistance to ensure that the mitigation site is constructed appropriately.

Following the successful completion of site grading, the mitigation site will be planted on 8 foot centers with native species typical of the reference wetland community including water tupelo (*Nyssa aquatica*) and bald cypress (*Taxodium distichum*) depending on seedling availability. Native grass seed and mulch will also be placed on any disturbed areas within the wetland restoration site for stabilization purposes according to the guidance and standard procedures of NCDOT's Roadside Environmental Unit. An as-built report will be submitted within 60 days of completion of the project

6.0 Performance Standards:

Success for vegetation monitoring within the mitigation site is based on the survival of at least 260 stems of five year old trees at year five. Hydrologic success is based on grading the restoration area to the target elevation. The target elevation is based on the adjacent reference wetland areas and will be verified during construction. Constructing the site to the adjacent wetland elevation will ensure the hydrology in the restored area is comparable to the hydrology in the reference area.

7.0 Monitoring Requirements:

Upon successful completion of construction, the vegetation monitoring is proposed for the 0.29 acre wetland restoration. This will consist of counts of planted stems within vegetation plots established within the wetland areas. No specific hydrological monitoring is proposed. These monitoring activities will be conducted annually for over a five year period and documented in an annual report distributed to the regulatory agencies.

8.0 Other Information:

N/A

9.0 Determination of Credits:

Per the NCDOT plans and 401/404 permit application for STIP B-4185; NCDOT proposes to restore 0.29 acres of riparian wetlands to mitigate for permanent impacts associated with the project at a 1:1 ratio. The success of the mitigation area and determination of final credits will be based upon successful completion of the mitigation plan and closeout of the monitoring period.

9.1 Credit Release Schedule:

NCDOT proposes immediate, full release of the proposed 0.29 acres of restored riparian wetlands at a 1:1 ratio as on-site mitigation for the riparian wetland impacts associated with B-4185.

10.0 Geographic Service Area:

The proposed Geographic Service Area (GSA) for the mitigation area is composed of the Hydrologic Cataloging Unit (HUC) (03010107). All wetland credits will be used for B-4185.

11.0 Maintenance Plan:

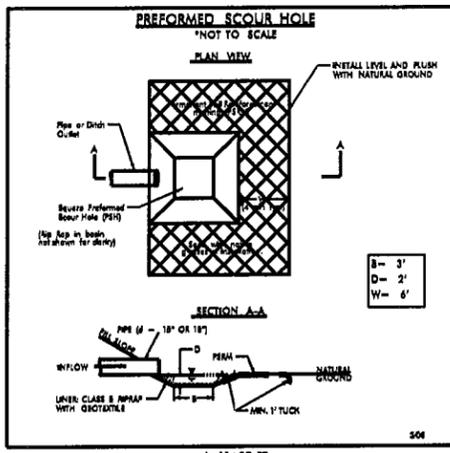
The site will be held by NCDOT and placed on the NES mitigation geodatabase. Once monitoring is completed and the site is closed out, it will be placed in the NCDOT Stewardship Program for long term maintenance and protection.

12.0 LONG TERM ADAPTIVE MANAGEMENT PLAN

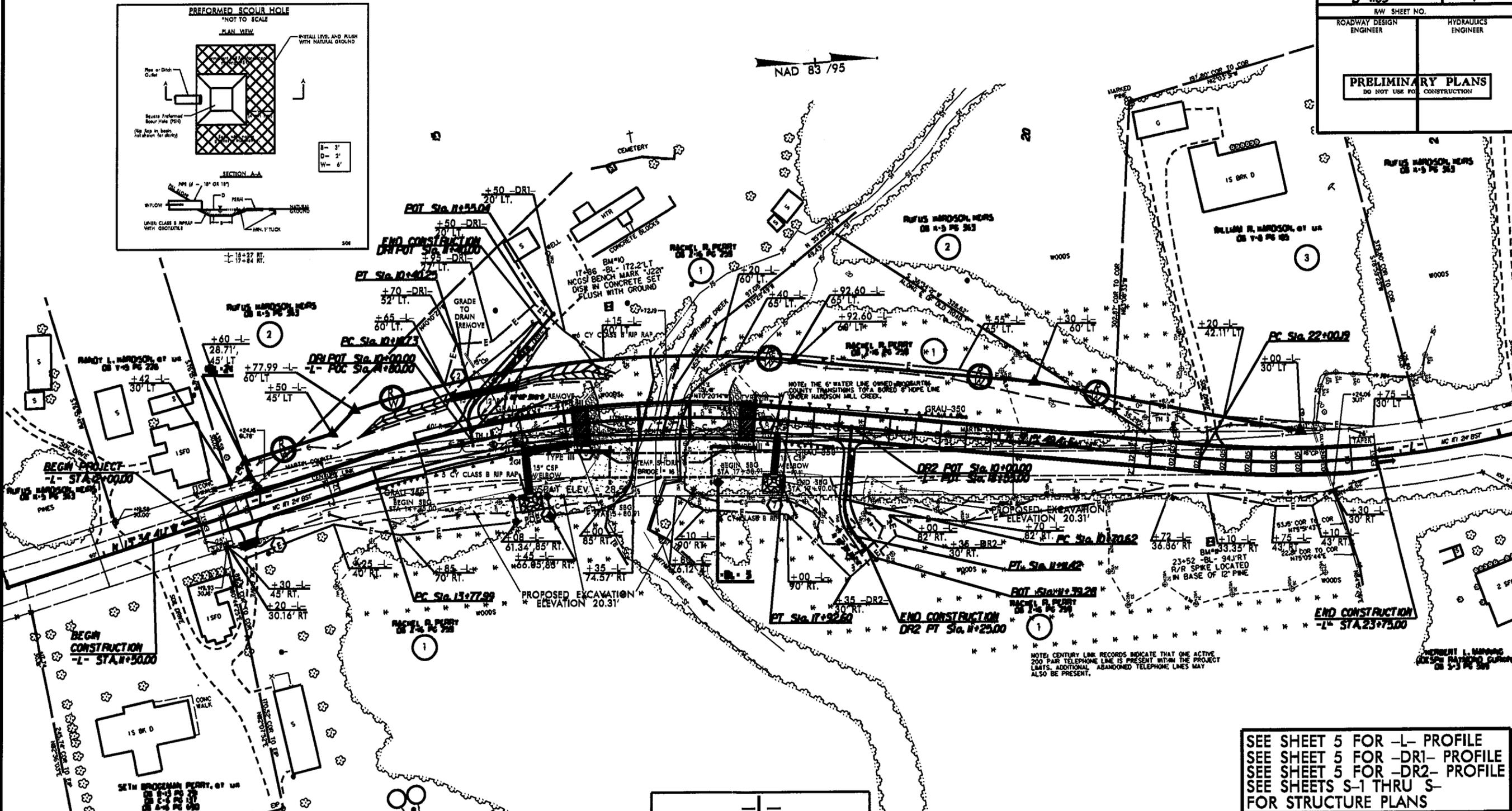
The site will be managed by NCDOT according to the mitigation plan. In the event that unforeseen issues arise that affect the management of the site, any remediation will be addressed by NCDOT in coordination with the Interagency Review Team.

13.0 FINANCIAL ASSURANCES

The site will be managed by NCDOT with its own distinct cost center number within the NCDOT budgeting and financial tracking system. Therefore, all accounting for revenues, contract encumbrances, fund transfers, and expenses will be performed and reported independent from other capital budget or operating budget accounting.



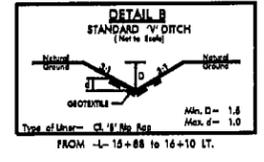
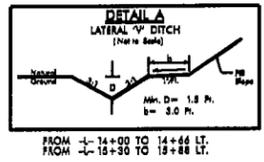
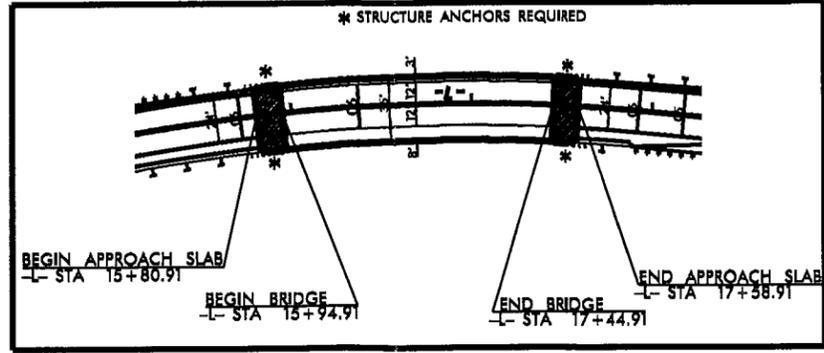
NAD 83/95



SEE SHEET 5 FOR -L- PROFILE
 SEE SHEET 5 FOR -DR1- PROFILE
 SEE SHEET 5 FOR -DR2- PROFILE
 SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

-L-	
PI Sta 15+88.09	PI Sta 24+42.25
$\Delta = 22' 50' 30.5$ (RT)	$\Delta = 28' 20' 00.0$ (LT)
D = 5' 30' 33.2	D = 5' 59' 58.4
L = 446.7	L = 472.26
T = 20.00	T = 24.06
R = 1040.00	R = 955.00
SE = 06	
RO = 50	

-DR1-	-DR2-
PI Sta 10+29.44	PI Sta 10+92.24
$\Delta = 53' 54' 58.2$ (RT)	$\Delta = 48' 45' 09.7$ (LT)
D = 229' 10' 58.2	D = 144' 35' 29.6
L = 235.5	L = 40.80
T = 12.72	T = 2.67
R = 25.00	R = 50.00
SE = NC	SE = NC



STORMWATER MANAGEMENT PLAN

Project: 33532.1.1
TIP No.: B-4185
County: Martin
Date: 7/19/2012

Hydraulics Project Manager: Stephen Morgan, P.E.

ROADWAY DESCRIPTION

NCDOT project B-4185 consists of replacing bridge no.16 in Martin County with a new bridge 150 feet long on new location to the west of the existing bridge on NC 171 over Hardison Mill Creek. The total project length is 0.223 miles. Traffic will be maintained on the existing roadway and bridge during construction.

Jurisdictional Stream: Hardison Mill Creek

ENVIRONMENTAL DESCRIPTION

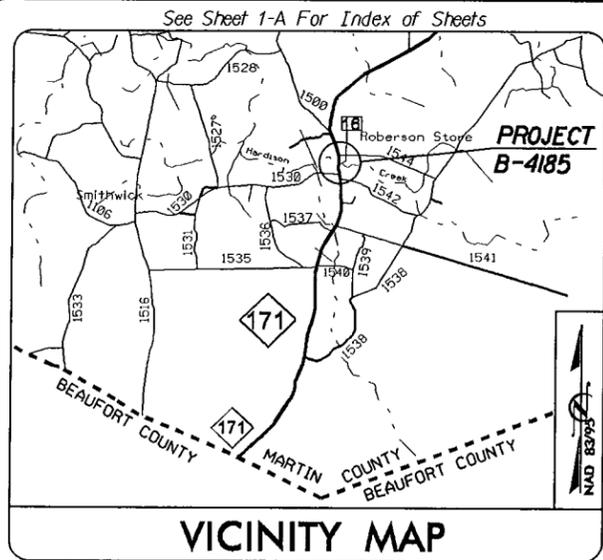
The project is located within the Roanoke River Basin in Martin County. The existing bridge site is surrounded by wetlands. Surrounding land use is primarily agriculture and forest products.

STORMWATER BMP's

Uses of BMP's are non-structural and consist of reducing sedimentation, erosion, and direct discharges to receiving waters. Measures include 3:1 slopes in wetlands, use of preformed scour holes at pipe outlets, and directing runoff away from the creek.

CONTRACT: TIP PROJECT: B-4185

CONTRACT: TIP PROJECT: B-4185



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

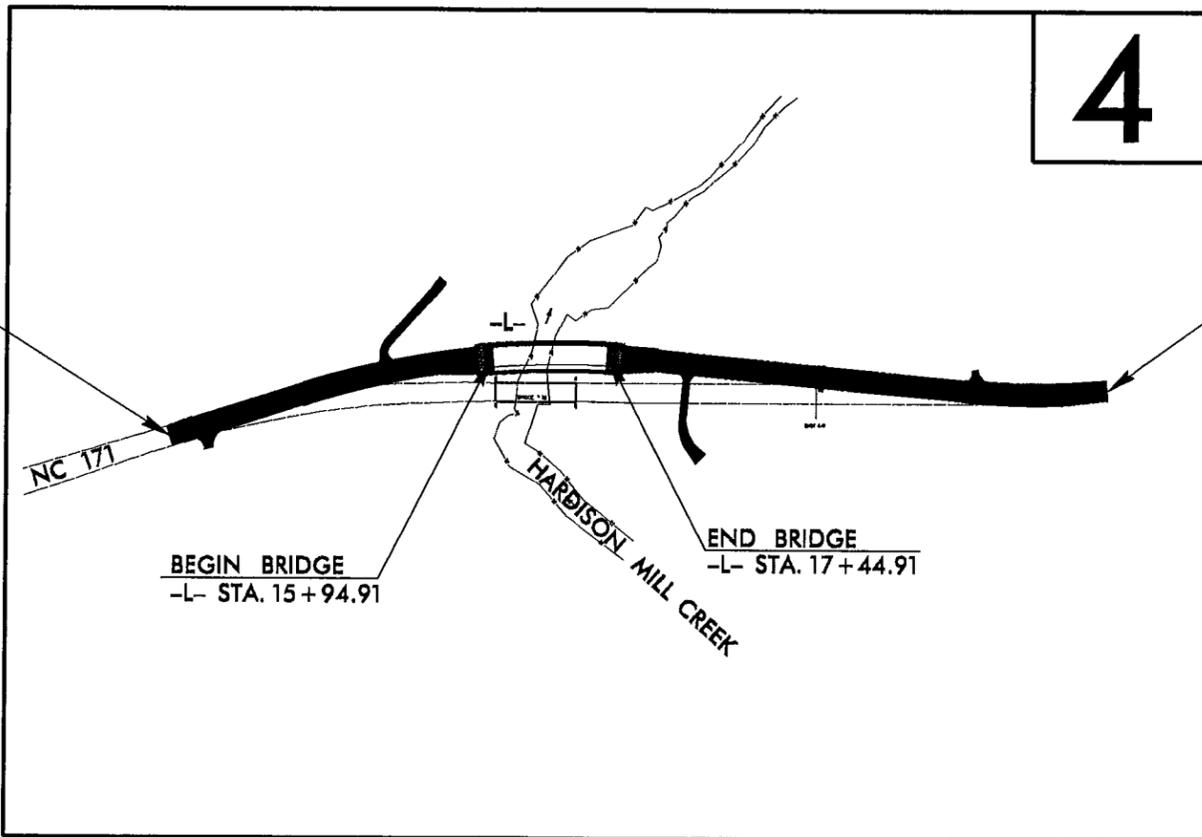
MARTIN COUNTY

Permit Drawing
Sheet 1 of 11

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4185	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33532.1.1	BRSTP-171(14)	PE	
33532.2.1	BRSTP-171(14)	RW & UTIL	



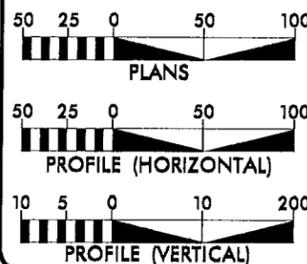
WETLAND AND STREAM IMPACTS



STATEWIDE TIER DESIGN GUIDELINES WERE USED ON THIS PROJECT
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD (II)
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2011 = 2600
ADT 2035 = 3700
DHV = 12 %
D = 55 %
T = 14 % *
V = 50 MPH
FUNC = COLLECTOR
* TTST 9 DUAL 5

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4185 = 0.195 mi.
LENGTH STRUCTURE TIP PROJECT B-4185 = 0.028 mi.
TOTAL LENGTH TIP PROJECT B-4185 = 0.223 mi.

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 27, 2012

LETTING DATE:
JUNE 18, 2013

JIMMY GOODNIGHT, P.E.
PROJECT ENGINEER

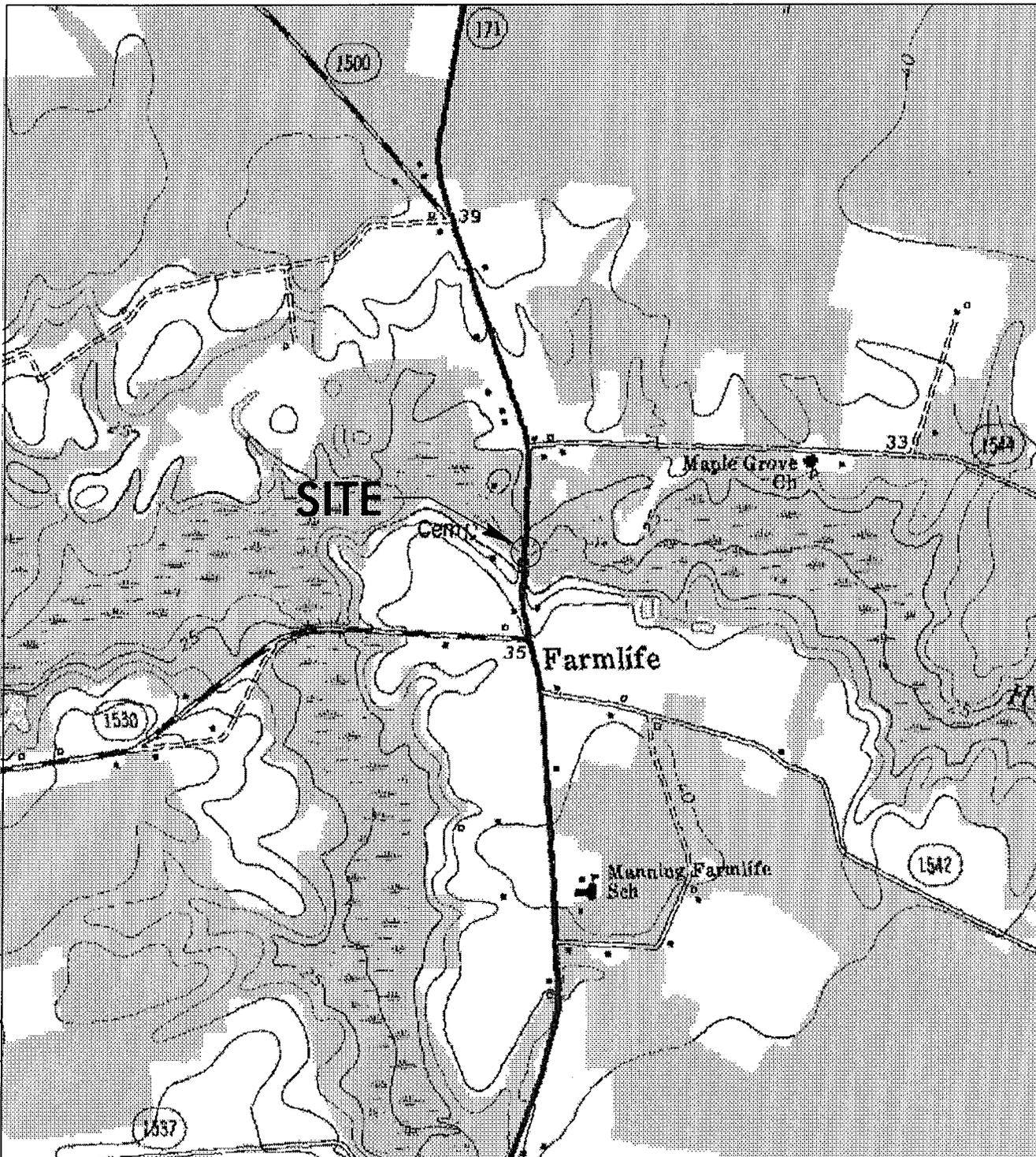
MARK HUSSEY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.





NOT TO SCALE

WETLAND/SURFACE WATER
 LOCATION
 MAP

Permit Drawing
 Sheet 2 of 11

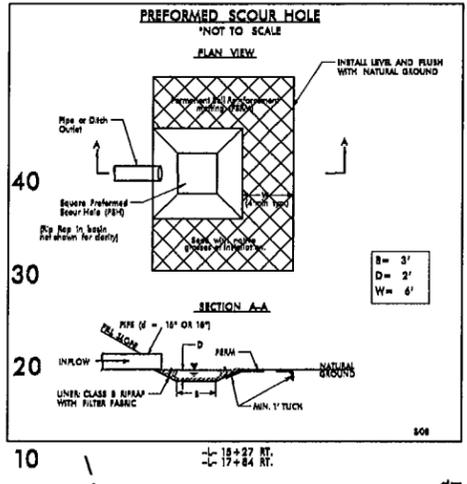
N. C. DEPT. OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MARTIN COUNTY
 PROJECT: 33532.1.1 (B-4185)
 REPLACE BRIDGE #16
 OVER HARDISON MILL CRK.
 ON NC 171

SHEET OF

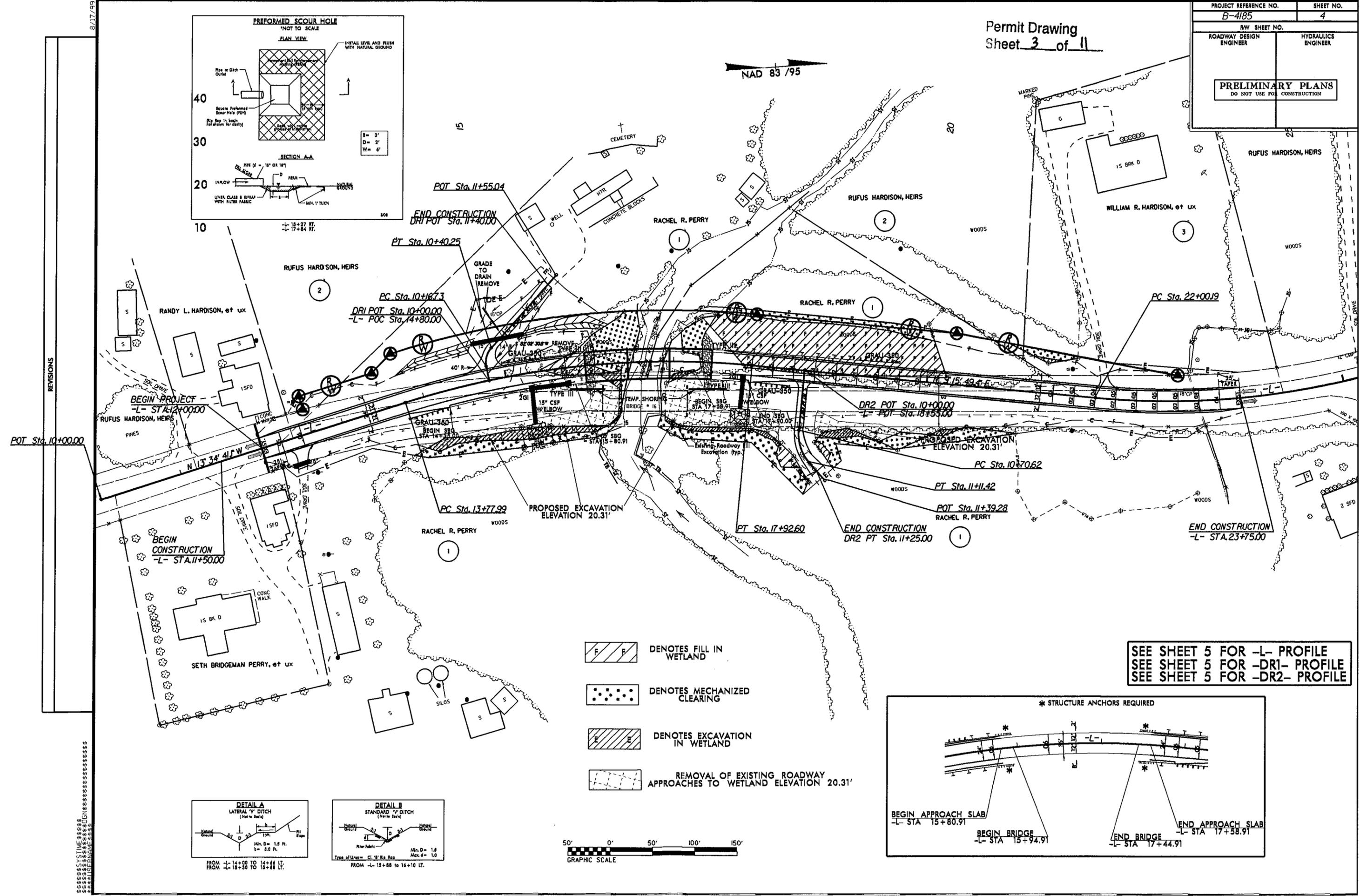
8/17/95

Permit Drawing Sheet 3 of 11

PROJECT REFERENCE NO. B-4185	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



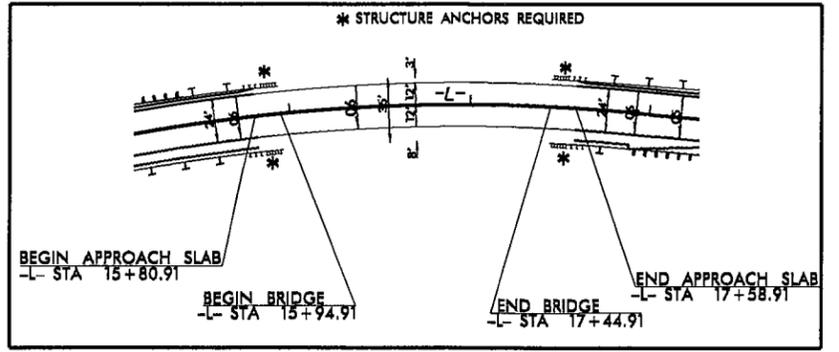
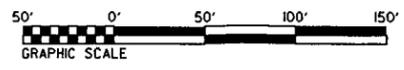
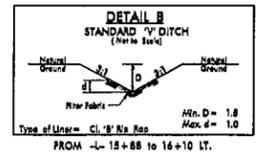
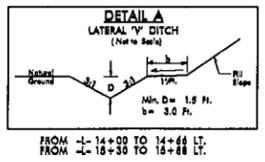
NAD 83 /95



REVISIONS

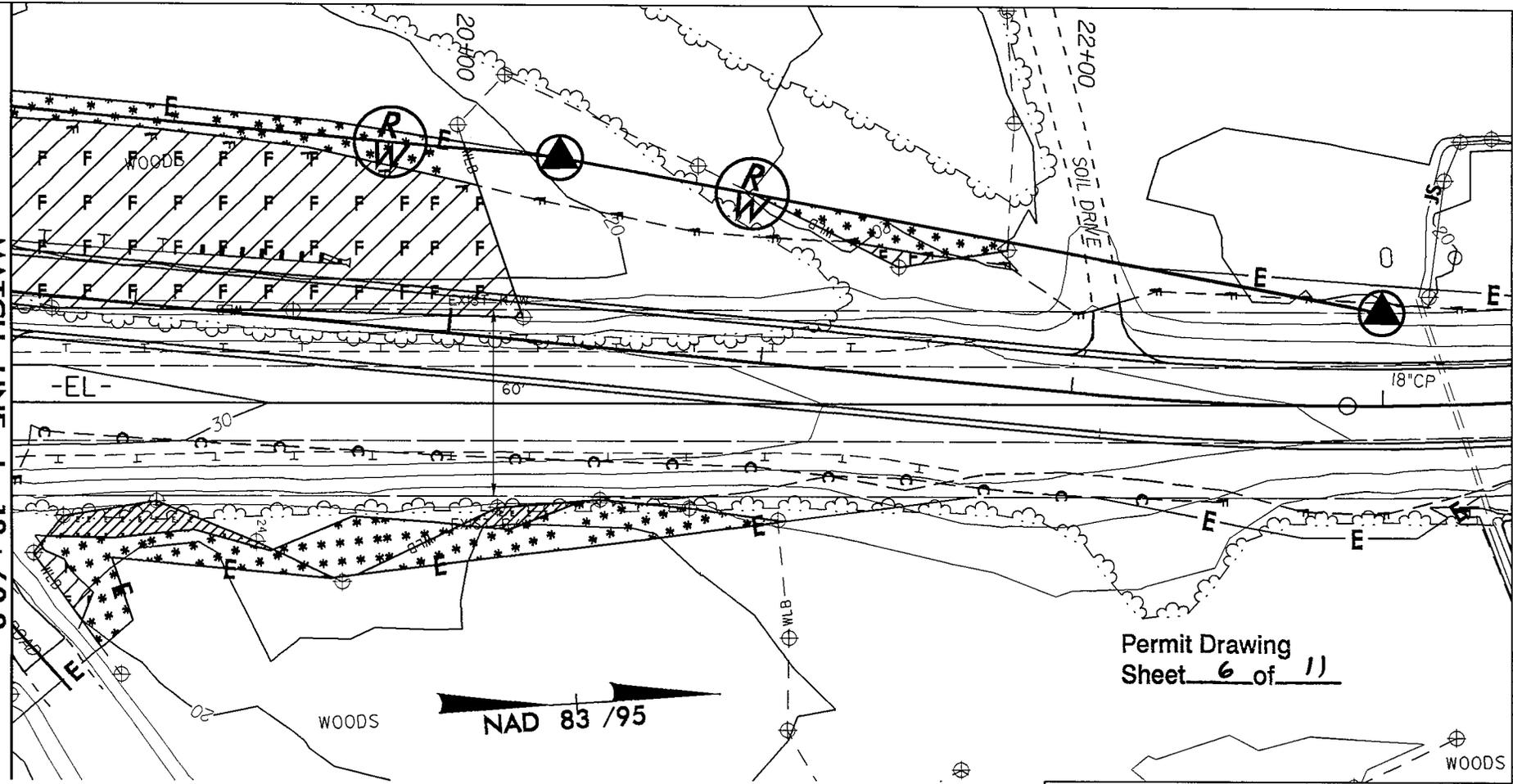
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND
- REMOVAL OF EXISTING ROADWAY APPROACHES TO WETLAND ELEVATION 20.31'

SEE SHEET 5 FOR -L- PROFILE
 SEE SHEET 5 FOR -DRI- PROFILE
 SEE SHEET 5 FOR -DR2- PROFILE

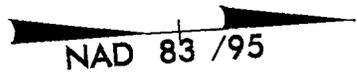


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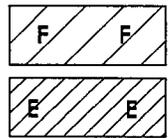
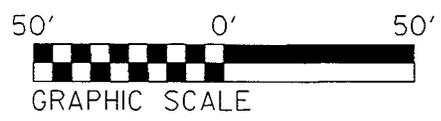
MATCH LINE -L- 18+60.2



Permit Drawing
Sheet 6 of 11

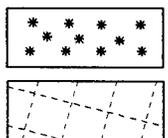


PLAN VIEW
(for Enlargement Only)



DENOTES FILL IN WETLAND

DENOTES EXCAVATION IN WETLAND

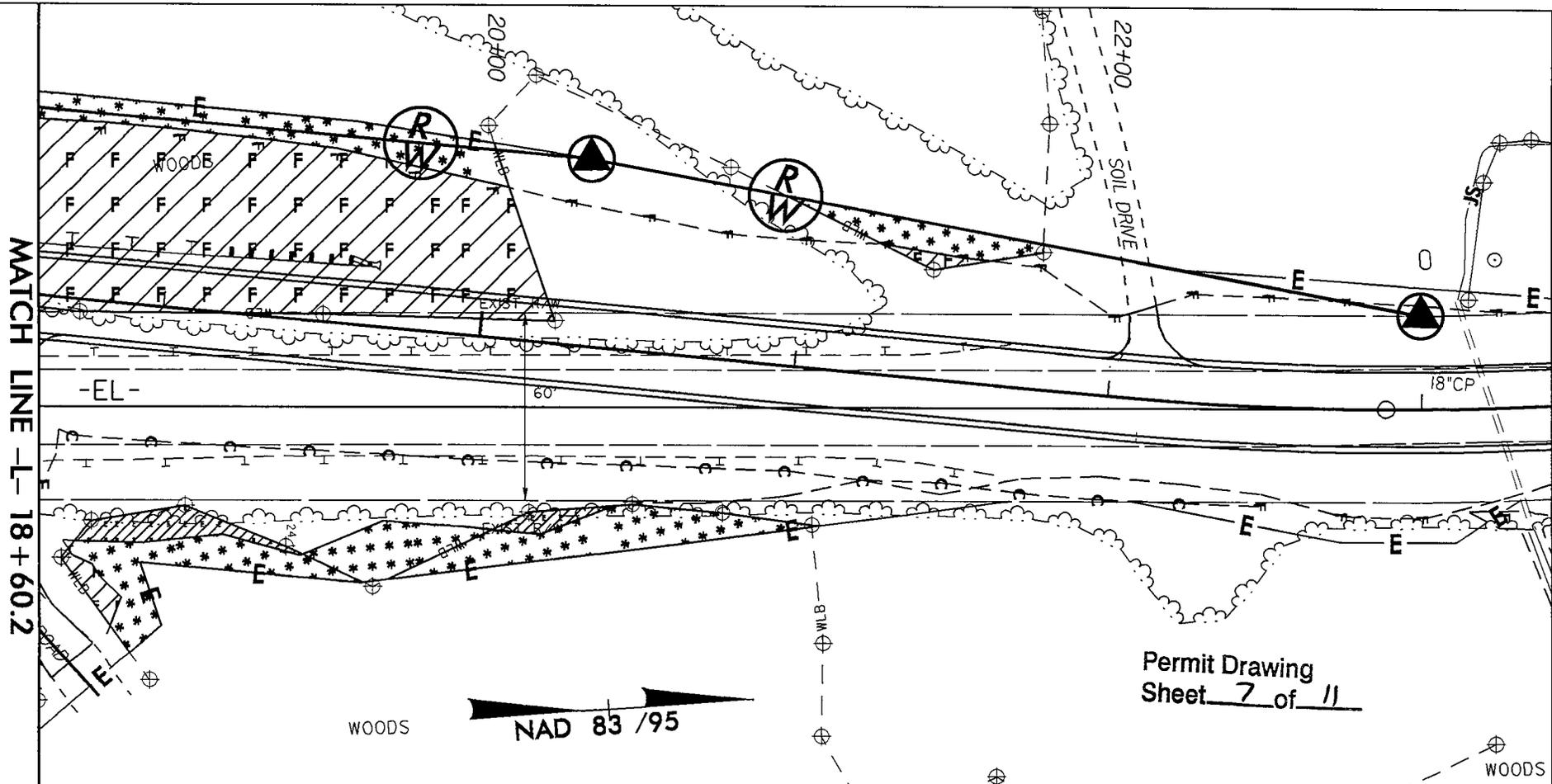


DENOTES MECHANIZED CLEARING

REMOVAL OF EXISTING ROADWAY APPROACHES TO WETLAND ELEVATION 20.31'

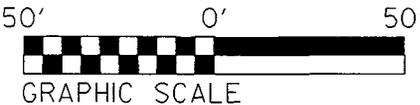
NCDOT
 DIVISION OF HIGHWAYS
 MARTIN COUNTY
 PROJECT: 33532.1.1 (B-4185)
 REPLACE BRIDGE #16
 OVER HARDISON MILL CRK.
 ON NC 171

SHEET OF 9/14/12

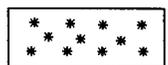


Permit Drawing
Sheet 7 of 11

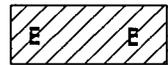
PLAN VIEW
(for Enlargement Only)



DENOTES FILL IN WETLAND



DENOTES MECHANIZED CLEARING



DENOTES EXCAVATION IN WETLAND



REMOVAL OF EXISTING ROADWAY APPROACHES TO WETLAND ELEVATION 20.31'

NCDOT
DIVISION OF HIGHWAYS
MARTIN COUNTY
PROJECT: 33532.1.1 (B-4185)
REPLACE BRIDGE #16
OVER HARDISON MILL CRK.
ON NC 171

SHEET OF 9/14/12

PI = 13+50
 EL = 33.23
 VC = 200'
 G1 = (-)0.4623%
 G2 = (-)0.5940%

Station 16+69.91
 36" Conc. Girder Bridge
 3@50'; Total Length=150'
 Skew=90°
 Grade pt. el.=31.33

PI = 19+95.00
 EL = 29.40
 VC = 200'
 G1 = (-)0.5940%
 G2 = (-)1.2468%

40

40

Proposed Road Grade

Existing Road Grade

30

30

4' DEEP CAP (TYP.)

2:1 Slope with Class I Rip Rap (typ.)

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20

THEORETICAL OVERTOPPING SCOUR

NOTE: SAG AT STATION 24+00
EL = 24.6

Abutment Excavation
approx. 20 cy

Ground along centerline

10

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Note: Floodplain extends 1000'

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16

17

18

PROFILE

Permit Drawing
Sheet 8 of 11



REMOVAL OF EXISTING ROADWAY
APPROACHES TO WETLAND ELEVATION 20.31

NOTE: CLEARING, FILL, AND EXCAVATION IN WETLANDS
NOT SHOWN FOR CLARITY. (SEE PLAN VIEW)

NCDOT

DIVISION OF HIGHWAYS

MARTIN COUNTY

PROJECT: 33532.1.1 (B-4185)

REPLACE BRIDGE #16

OVER HARDISON MILL CREEK

ON NC 171

SHEET

OF

7 / 11 / 12

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	Rachel R. Perry	8817 NC 171 Williamston, NC 27892
2	Rufus Hardison, Heirs	4105 Piney Grove Ch. Rd. Williamston, NC 27892
3	William R. Hardison	8624 NC 171 Williamston, NC 27892

Permit Drawing
Sheet 10 of 11

NCDOT
DIVISION OF HIGHWAYS
MARTIN COUNTY
PROJECT: 33532.1.1 (B-4185)
REPLACE BRIDGE #16
OVER HARDISON MILL CREEK
ON NC 171

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+70/21+75 -L-					0.33						
	13+87/20+47 -L-				0.08							
	15+42/21+59 -L-		0.38									
TOTALS:			0.38		0.08	0.33						

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 MARTIN COUNTY
 WBS - 33532.1.1 (B-4185)

Permit Drawing
 Sheet 11 of 11

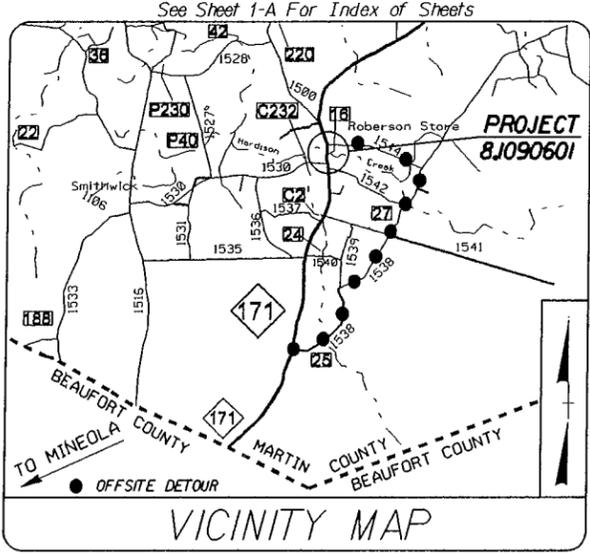
SHEET 9/6/2012

ATN Revised 3/31/05

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**NEU UTILITY RELOCATION PLANS
MARTIN COUNTY**

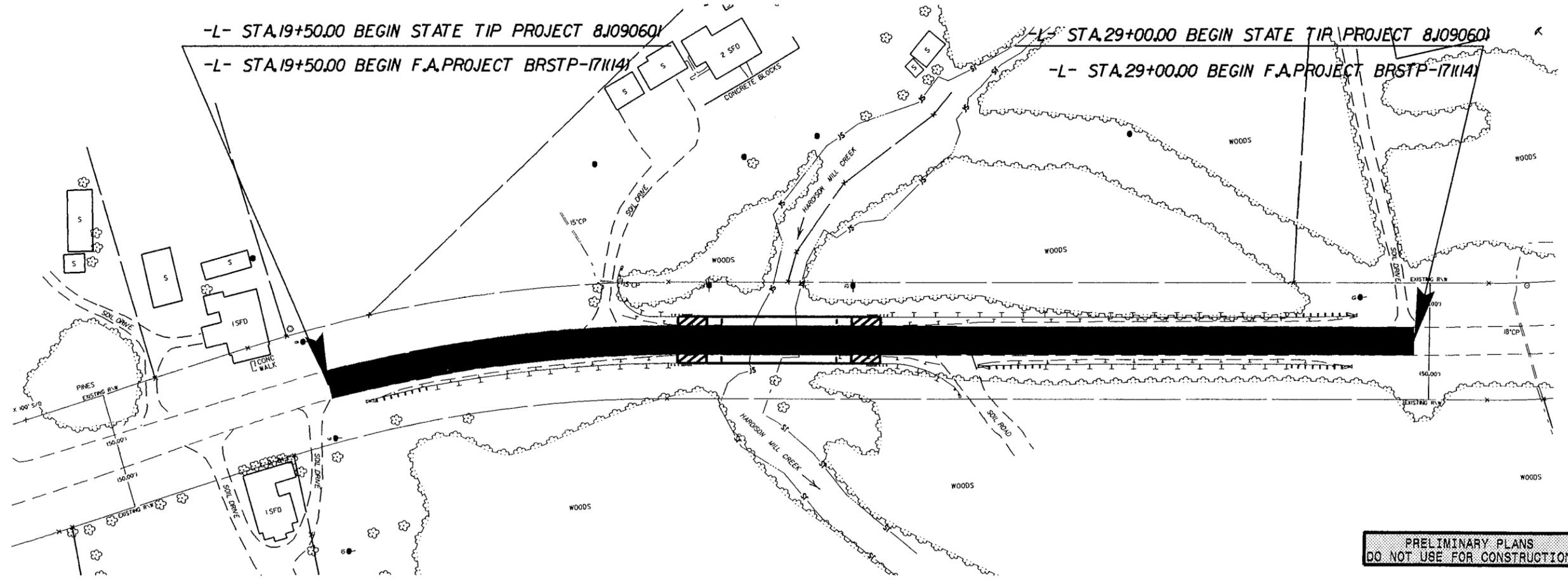
Utility Permit Drawing
Sheet 1 of 3



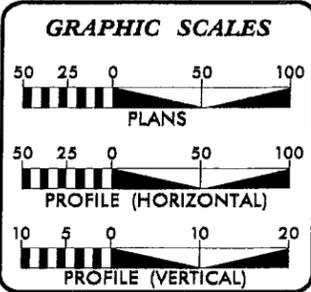
**LOCATION: REPLACEMENT OF BRIDGE NO.16 ON NC 171
OVER HARDISON MILL CREEK**

TYPE OF WORK: RELOCATE WATER, POWER AND TELEPHONE LINES

TIP PROJECT: B-4185



**PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION.**



INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-5 THRU UC-7	UTILITY PROFILE SHEET

UTILITY OWNERS ON PROJECT	
(1)	MARTIN COUNTY WATER DISTRICT - WATER
(2)	CENTURY LINK - TELEPHONE
(3)	DOMINION POWER - POWER



PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Corey Bousquet, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Kifah Kamil UTILITIES PROJECT DESIGNER

16-OCT-2012 15:16
R:\Utilities\proj\NEU\B4185\NEU-1.sh.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

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)
A1	-L-19+60 +- TO 21+55 +/-	AERIAL POWER LINE					0.27					
TOTALS:							0.00	0.27	0.00	0.00	0.00	0.00

Utility Permit Drawing
Sheet 3 of 3

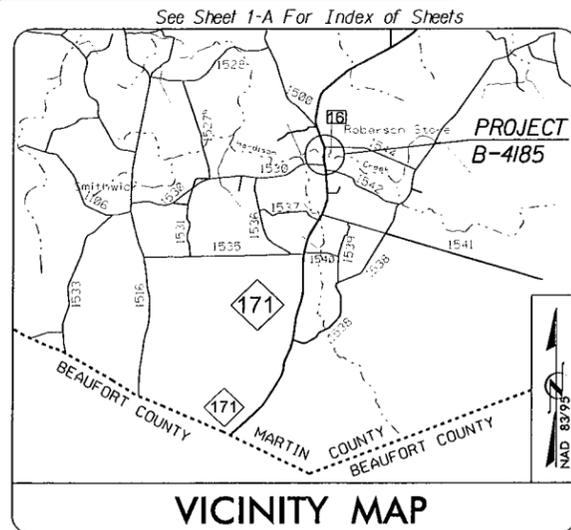
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
Martin County
TIP PROJECT (B-4185)

10/16/2012

ATN Revised 3/31/05

B-17/20/12

TIP PROJECT: B-4185



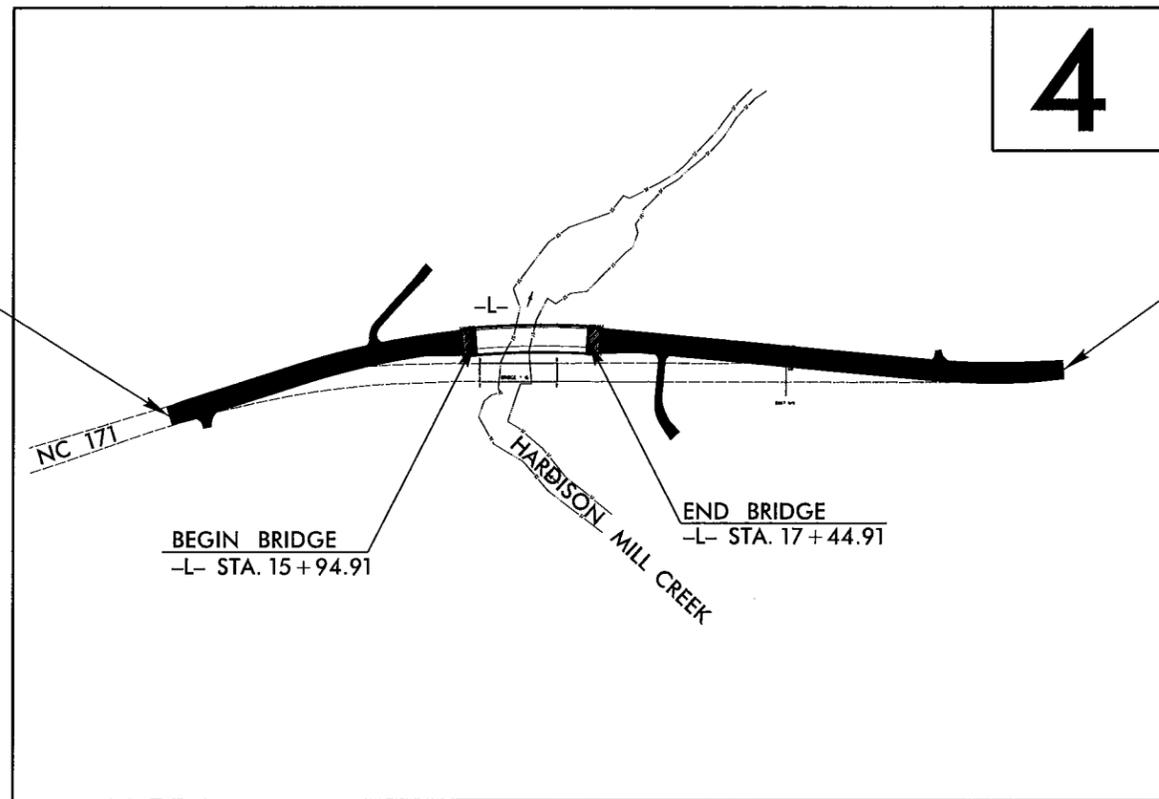
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MARTIN COUNTY

LOCATION: BRIDGE NO.16 OVER HARDISON MILL CREEK ON NC 171

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

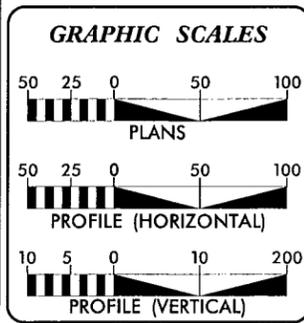
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4185	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33532.1.1	BRSTP-171(14)	PE	
33532.2.1	BRSTP-171(14)	RW & UTIL	



STATEWIDE TIER DESIGN GUIDELINES WERE USED ON THIS PROJECT
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD (II)
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2011 =	2600
ADT 2035 =	3700
DHV =	12 %
D =	55 %
T =	14 % *
V =	50 MPH
FUNC =	COLLECTOR
* TTST 9	DUAL 5

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4185 =	0.195 mi.
LENGTH STRUCTURE TIP PROJECT B-4185 =	0.028 mi.
TOTAL LENGTH TIP PROJECT B-4185 =	0.223 mi.

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

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JUNE 27, 2012

LETTING DATE: JUNE 18, 2013

JIMMY GOODNIGHT, P.E.
PROJECT ENGINEER

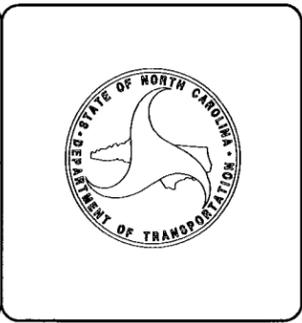
MARK HUSSEY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



27-JULY-2012 14:56
C:\PROJECTS\11-4185_P.DIV.\TIP.DWG
PLOT DATE: 07/27/2012 14:56

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.
B-4185

SHEET NO.
1-B

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	(23)
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-W.B.-
Proposed Wetland Boundary	-W.B.-
Existing Endangered Animal Boundary	-EAB-
Existing Endangered Plant Boundary	-EPB-
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ☠

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or U/G Tank Cap	○
Sign	○
Well	⊕
Small Mine	⊗
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	⊕
Dam	⊕

HYDROLOGY:

Stream or Body of Water	_____
Hydro, Pool or Reservoir	□
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 RW Marker	⊕
Proposed Control of Access Line with Concrete CA 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 Drainage / Utility Easement	-DUE-
Proposed Permanent Utility Easement	-PUE-
Proposed Temporary Utility Easement	-TUE-
Proposed Aerial Utility Easement	-AUE-
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 Curb 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	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW
MINOR:	
Head and End Wall	CONC HW
Pipe Culvert	_____
Footbridge	_____
Drainage Box: Catch Basin, DI or JB	CB
Paved Ditch Gutter	_____
Storm Sewer Manhole	⊕
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	⊕
U/G 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	⊕
U/G 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	A/G Water

TV:

TV Satellite Dish	⊕
TV Pedestal	⊕
TV Tower	⊕
U/G 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:

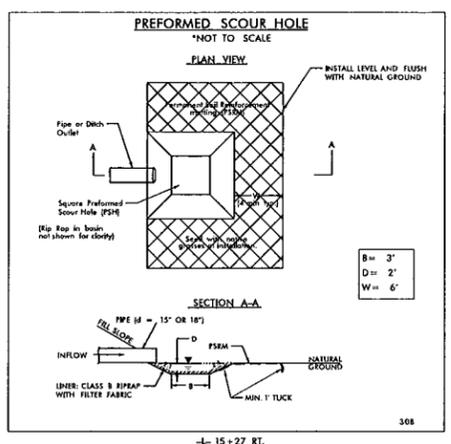
Gas Valve	⊕
Gas Meter	⊕
Recorded U/G Gas Line	_____
Designated U/G Gas Line (S.U.E.*)	_____
Above Ground Gas Line	A/G Gas

SANITARY SEWER:

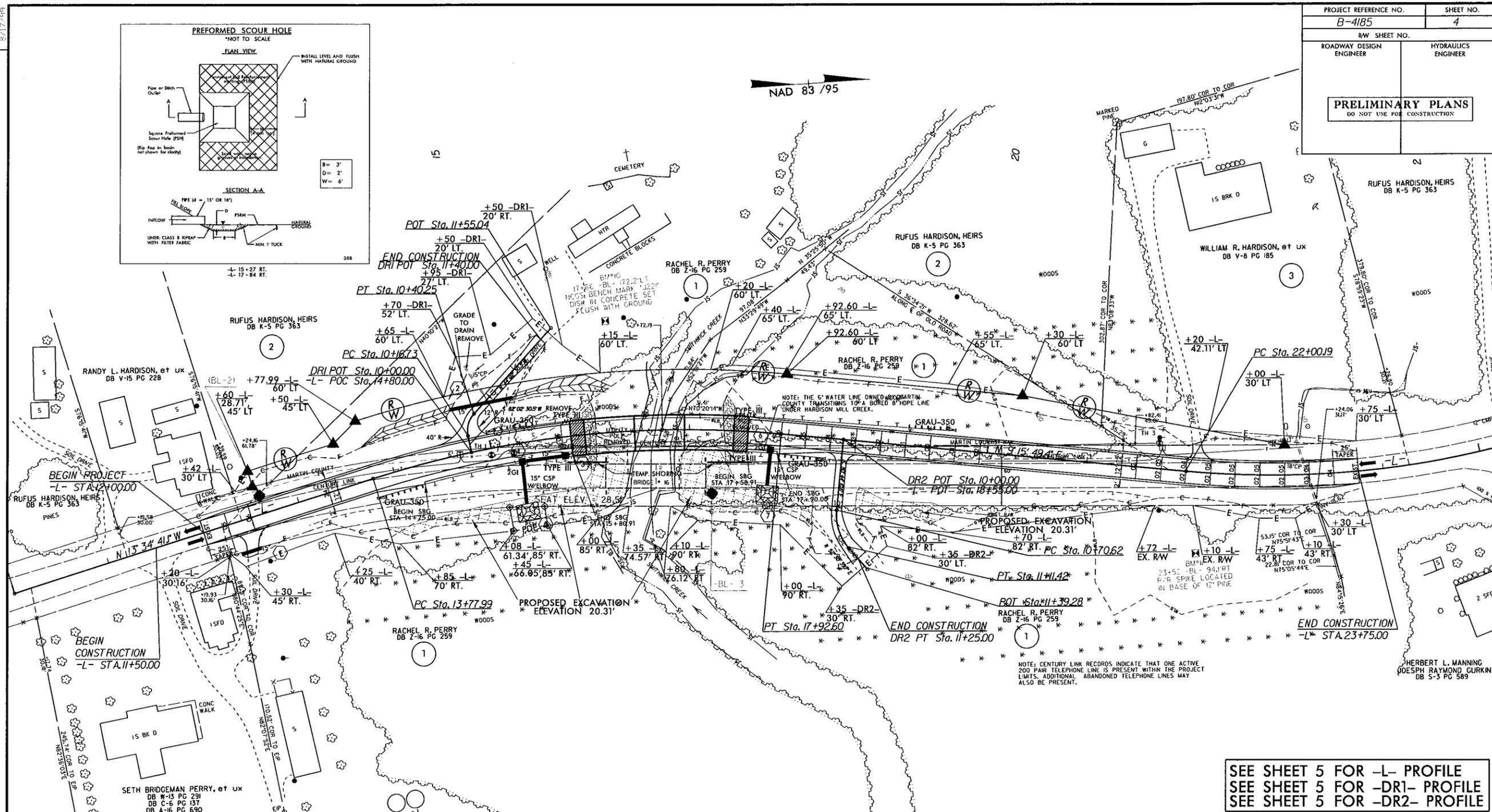
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	SS
Above Ground Sanitary Sewer	A/G Sanitary Sewer
Recorded SS Forced Main Line	SS
Designated SS Forced Main Line (S.U.E.*)	SS

MISCELLANEOUS:

Utility Pole	⊕
Utility Pole with Base	⊕
Utility Located Object	⊕
Utility Traffic Signal Box	⊕
Utility Unknown U/G Line	U/L
U/G Tank; Water, Gas, Oil	⊕
Underground Storage Tank, Approx. Loc.	UST
A/G Tank; Water, Gas, Oil	⊕
Geoenvironmental Boring	⊕
U/G Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.



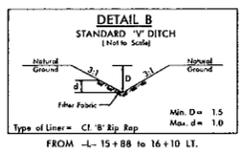
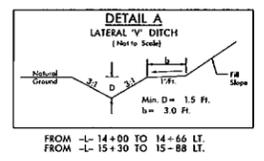
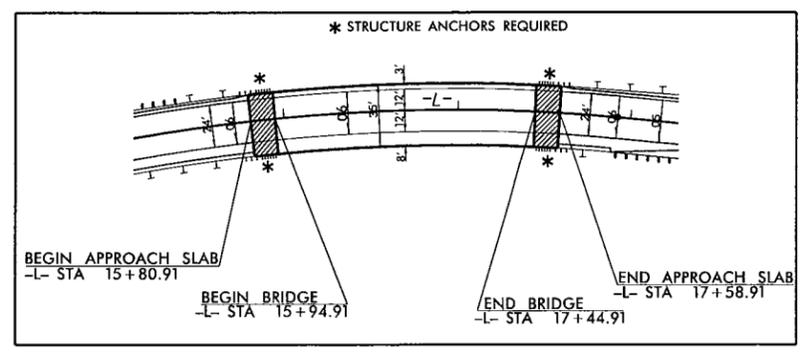
NAD 83 / 95



SEE SHEET 5 FOR -L- PROFILE
SEE SHEET 5 FOR -DRI- PROFILE
SEE SHEET 5 FOR -DR2- PROFILE

-L-	
PI Sta 15+88.09	PI Sta 24+41.25
$\Delta = 22' 50' 30.5''$ (RT)	$\Delta = 28' 20' 00.0''$ (LT)
D = 5' 30' 33.2"	D = 5' 59' 58.4"
L = 414.6'	L = 472.26'
T = 210.10'	T = 241.06'
R = 1,040.00'	R = 955.00'
SE = 06	

-DRI-	-DR2-
PI Sta 10+29.44	PI Sta 10+92.24
$\Delta = 53' 54' 59.2''$ (RT)	$\Delta = 46' 45' 09.7''$ (LT)
D = 229' 10' 59.2"	D = 114' 35' 29.6"
L = 23.53'	L = 40.80'
T = 12.72'	T = 21.61'
R = 25.00'	R = 50.00'



REVISIONS

8/17/99