



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

January 7, 2011

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue Room 208
Asheville, NC 28801-5006

ATTN: Ms. Lori Beckwith
NCDOT Coordinator

Subject: **Replacement Permit Application for Section 404 Nationwide Permits 23, 33, 13 and 401 General Water Quality Certification** for the proposed replacement of Bridge No. 28 over Crooked Creek and Bridge No. 29 over Middle Fork Creek on SR 1526 in Madison County, Federal Aid Project No. BRZ-1526(2); Division 13; TIP No. B-4183; WBS 33530.1.1; **Debit order \$570.00**

Dear Madam:

The North Carolina Department of Transportation (NCDOT) proposes to replace two bridges. The project totals 345 feet of permanent stream impacts and 118 of temporary stream impacts.

- Bridge No. 28, a 36-foot one-span bridge over Crooked Creek on Crooked Creek Road (SR 1526), with a 58-foot long double barrel, 10-foot by 7-foot Reinforced Concrete Box Culvert (RCBC). The new structure will be located to the east resulting in the relocation of Crooked Creek. There will be 210 linear feet of permanent stream impacts and 69 linear feet of temporary stream impacts from the installation of the culvert.
- NCDOT also proposes to replace Bridge No. 29, a 36-foot one-span bridge over Middle Fork Creek on Crooked Creek Road (SR 1526), with a 51-foot long triple barrel, 9-foot by 10-foot RCBC. There will be 50 linear feet of permanent impacts, 49 linear feet of temporary stream impacts and 85 linear feet of bank stabilization due to the installation of this culvert.

The original design proposed a single span bridge over Middle Fork Creek and a box culvert on Crooked Creek. During final design, it was determined that the bridge over Middle Fork Creek is not practicable due to construction constraints. There is an existing three barrel, 9-foot by 10-foot RCBC upstream and a triple barrel, 10-foot by 10-foot RCBC downstream of the proposed site.

Comments from the North Carolina Wildlife Resources Commission (NCWRC) will be required prior to authorization by the Corps of Engineers. By copy of this letter and attachment, NCDOT hereby requests NCWRC review. NCDOT request that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

Please see enclosed copies of the Pre-Construction Notification (PCN) Form, EEP Mitigation Acceptance Letter, Stormwater Management Plan, Stormwater Permit, Approved Jurisdictional Determination Form, Permit drawings and Design plans. The Categorical Exclusion (CE) was completed on November 11, 2009. Documents were distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of December 20, 2011 and a review date of November 1, 2011; however the let date may advance as additional funding becomes available.

A copy of this permit application will be posted on the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please call Jennifer Harrod at (919) 431-6672.

Sincerely,



for

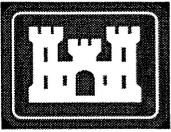
Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDE

w/attachment

Mr. Brian Wrenn, NCDWQ (5 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Dr. Charles Nicholson, TVA

w/o attachment

Dr. David Chang, P.E., Hydraulics
Mr. Dewayne Sykes, P.E., Utilities Unit
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. J.J. Swain, P.E., Division 13 Engineer
Mr. Roger Bryan, Division 13 Environ. 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
Ms. Brenna Poole, Project Planning Engineer
Ms. Beth Harmon, EEP
Mr. Phillip Ayscue, 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:	<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Section 10 Permit
1b. Specify Nationwide Permit (NWP) number: 13 23 33 or General Permit (GP) number:		
1c. Has the NWP or GP number been verified by the Corps?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
1d. Type(s) of approval sought from the DWQ (check all that apply):		
<input checked="" type="checkbox"/> 401 Water Quality Certification – Regular	<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 No. 28 over Crooked Creek and Bridge No. 29 over Middle Fork Creek on Crooked Creek Road (SR 1526)
2b. County:	Madison
2c. Nearest municipality / town:	Mars Hill
2d. Subdivision name:	<i>not applicable</i>
2e. NCDOT only, T.I.P. or state project no.:	B-4183

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) 431-6672
3g. Fax no.:	(919) 431-2002
3h. Email address:	jwharrod@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: 35.85 Longitude: - 82.48 (DD.DDDDDD) (-DD.DDDDDD)
1c. Property size:	419.57'L x 196.85' W = 82,592 sq. ft. (82,592) / (43,650) = 1.89 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	Crooked Creek & Middle Fork Creek
2b. Water Quality Classification of nearest receiving water:	WS-II; HQW
2c. River basin:	French Broad
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: Maintained/Disturbed mostly and scrub-shrub communities	
3b. List the total estimated acreage of all existing wetlands on the property: 0	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 383	
3d. Explain the purpose of the proposed project: To replace two structurally deficient bridges.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing two 36-foot bridges; one with 2@10' 7" RCBC to the east of existing location. The other with 3@9' 10" RCBC at existing location. An offsite detour will be utilized during the replacement. 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: Request has been made per this application; Rapanos attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	<input type="checkbox"/> Preliminary <input type="checkbox"/> Final
4c. If yes, who delineated the jurisdictional areas? Name (if known):	Agency/Consultant Company: Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation.	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
5b. If yes, explain in detail according to "help file" instructions. Design revisions address constructability and changes to impact amounts as Bank stabilization impacts were incorrectly counted twice in impact amounts in the original Permit Application dated October 15, 2010. Revisions have been made to the Impact Summary Table, PCN pages 5,8 and 12 and resulted in a Revised EEP Acceptance Letter.	

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 type="checkbox"/> Wetlands <input checked="" 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 type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 2 <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 3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 4 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 5 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
Site 6 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Corps <input type="checkbox"/> DWQ		
2g. Total wetland impacts					X Permanent X Temporary	
2h. Comments:						
3. Stream Impacts						
If there are perennial or intermittent stream impacts (including temporary impacts) proposed on the site, then complete this question for all stream sites impacted.						
3a. Stream impact number - Permanent (P) or Temporary (T)	3b. Type of impact	3c. Stream name	3d. Perennial (PER) or intermittent (INT)?	3e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	3f. Average stream width (feet)	3g. Impact length (linear feet)
Site 1 <input checked="" type="checkbox"/> P <input checked="" type="checkbox"/> T	3@9' x 10" RCBC	Middle Fork Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	12	50 perm. 49 temp. 85 bank stabilization
Site 2 <input checked="" type="checkbox"/> P <input checked="" type="checkbox"/> T	2@ 10' X 7"	Crooked Creek	<input checked="" type="checkbox"/> PER <input type="checkbox"/> INT	<input checked="" type="checkbox"/> Corps <input type="checkbox"/> DWQ	8	210 perm. 69 ft. temp
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		
Site 6 <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						345 Perm 118 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						X Permanent X 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"/> Tar-Pamlico <input type="checkbox"/> Other: <input type="checkbox"/> Catawba <input type="checkbox"/> Randleman			
6b. Buffer impact number – Permanent (P) or Temporary (T)	6c. Reason for impact	6d. Stream name	6e. Buffer mitigation required?	6f. Zone 1 impact (square feet)	6g. Zone 2 impact (square feet)
B1 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B2 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
B3 <input type="checkbox"/> P <input type="checkbox"/> T			<input type="checkbox"/> Yes <input type="checkbox"/> No		
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. A low flow channel has been created in both culverts; sills are present in both structures.		
1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques. The Stormwater Management Plan states that there will be no direct discharge into the stream; Sheet flow will be utilized as much as practicable and discharged onto grassed surfaces; Runoff from the proposed structures will be discharged into grass lined ditches and as far away from the stream as practicable. Design Standards in Sensitive Watersheds will be implemented for 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, explain:	
2b. If yes, mitigation is required by (check all that apply):	<input checked="" 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 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 checked="" type="checkbox"/> Yes	
4b. Stream mitigation requested:	520 (260 @ 2:1) linear feet	
4c. If using stream mitigation, stream temperature:	<input type="checkbox"/> warm <input type="checkbox"/> cool <input checked="" type="checkbox"/> cold	
4d. Buffer mitigation requested (DWQ only):	0 square feet	
4e. Riparian wetland mitigation requested:	0 acres	
4f. Non-riparian wetland mitigation requested:	0 acres	
4g. Coastal (tidal) wetland mitigation requested:	0 acres	
4h. Comments: USACE mitigation requirements are 260 @ 2:1 = 520 linear feet DWQ mitigation requirements are 345 @1:1 = 345 linear feet; We are providing mitigation for the greater amount		
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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments: if yes, see attached permit drawings.	<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 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 checked="" type="checkbox"/> HQW <input type="checkbox"/> ORW <input type="checkbox"/> Session Law 2006-246 <input type="checkbox"/> Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Stormwater Permit Attached
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Stormwater Permit Attached
5b. Have all of the 401 Unit submittal requirements been met?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Stormwater Permit Attached

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 impacts resulting from these bridge replacements, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect and 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
5c. If yes, indicate the USFWS Field Office you have contacted.	<input type="checkbox"/> Raleigh <input checked="" type="checkbox"/> Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? USFWS web page of T/E species for Madison County; NHP database of element occurrences		
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 - memo from NC Dept. of Cultural Resources dated June 6, 2005.		
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 w/ FEMA		
8c. What source(s) did you use to make the floodplain determination? NCDOT Hydraulics Unit Coordination w/ FEMA		
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.)	1.14.11 12/13/2010 Date



October 27, 2010

Mr. Gregory J. Thorpe, Ph.D.
Manager, 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-4183, Replace Bridge Number 29 over Middle Fork Creek and Bridge Number 28 over Crooked Creek on SR 1526, Madison County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory stream mitigation for the subject project. Based on the information supplied by you on October 22, 2010, the impacts are located in CU 06010105 of the French Broad River Basin in the Northern Mountains (NM) Eco-Region, and are as follows:

French Broad 06010105 NM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1 (at 3:1)	Zone 2 (at 1.5:1)
Impacts (feet/acres)	345	0	0	0	0	0	0	0
Mitigation Units (at 2:1)	520	0	0	0	0	0	0	0
Mitigation Units (at 1:1)	85	0	0	0	0	0	0	0
Mitigation Units (TOTAL)	605	0	0	0	0	0	0	0

EEP commits to implementing sufficient compensatory riparian wetland mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. 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,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Scott Jones, USACE – Asheville Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: B-4183 Revised

Restoring... Enhancing... Protecting Our State



STORMWATER MANAGEMENT PLAN

B-4183, State Project 33530.1.1

Date:8/18/10

Madison County

Hydraulics Project Engineer: R.C. Henegar, PE

ROADWAY DESCRIPTION

This project involves replacing Bridge No. 28 over Crooked Creek and Bridge No. 29 on SR 1526 (Crooked Creek Rd.) in Madison County. The overall length of the project is 0.08miles (0.128 km). The existing 18-foot paved road is a two-lane road with 3-foot grassed shoulders. Bridge No. 28 is a 36 ft. one span bridge (1@36) with a clear roadway width of 25 feet. Bridge No. 29 is a 36 ft. one span bridge (1@36) with a clear roadway width of 25 feet. The project will be a two-lane section with 10 foot lanes and 3 foot grassed shoulders. The replacement structure for Bridge No. 28 will be a Double 10-foot by 7- foot Reinforced Concrete Box Culvert approximately 60 feet long with a clear roadway width of 27 feet. The replacement structure for Bridge No. 29 will be a Triple 9-foot by 10-foot Reinforced Concrete Box Culvert approximately 50 feet long.

ENVIRONMENTAL DESCRIPTION

This project is located in the French Broad River Basin. There is two river crossings on this project, which has a WS-II; HQW classification. This river is not on the 303(d) list. Wetlands will not be impacted by the proposed project.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

There will be no direct discharge into the stream. Sheet flow will be utilized as much as practicable and discharged onto grassed surfaces. Runoff from the proposed structures will be discharged into grass lined ditches and as far away from the stream as practicable.



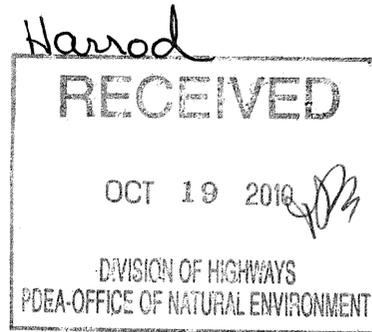
North Carolina Department of Environment and Natural Resources
Division of Water Quality

Beverly Eaves Perdue
Governor

Coleen H. Sullins
Director

Dee Freeman
Secretary

October 12, 2010



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

Subject: Permit No. SW1100901
TIP No. B-4183, NCSR 1526
Bridges Nos. 28 and 29
State Stormwater Permit
N C Department of Transportation
Madison County

Dear Dr. Thorpe:

The Asheville Regional Office received a completed Stormwater Application for the subject project on September 30, 2010. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H.1000. We are forwarding Permit No. SW1100901 dated October 12, 2010 to the NC Department of Transportation for the proposed replacement of Bridges Nos. 28 and 29 on NCSR 1526 over Crooked Creek and Middle Fork Creek in Madison County.

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

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact **Mr. Mike Parker** at (828) 296-4500.

Sincerely,

Roger Edwards, Regional Supervisor
Surface Water Protection Section
Asheville Regional Office

Dr. Greg Thorpe, Ph.D.

October 12, 2010

Page Two

cc: Randy Henegar, P.E., DOT Hydraulics Unit
Ed Green, Division 13 Maintenance Engineer
Roger Bryan, Division 13 DEO
DWQ Transportation Permitting Unit
Mike Parker, Asheville Regional Office

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

STATE STORMWATER MANAGEMENT PERMIT

STORMWATER PERMIT

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

PERMISSION IS HEREBY GRANTED TO

NC Department of Transportation

Madison County

FOR THE

Construction of a public road/bridge in compliance with the provisions of 15A NCAC 2H.1000 (hereafter referred to as the "*stormwater rules*") and the approved stormwater management plans and specifications and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit for replacement of Bridges Nos. 28 and 29 over Crooked Creek and Middle Fork Creek on NCSR 1526 in Madison County.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the following specified conditions and limitations:

I. DESIGN STANDARDS

1. The runoff from the impervious surfaces has been directed away from surface waters as much as possible.
2. The Amount of built-upon area has been minimized as much as possible.
3. Best management Practices are employed which minimizes water quality impacts.
4. Approved plans and specifications for this project are incorporated by reference and are enforceable parts of the permit.
5. Vegetated roadside ditches are 3:1 slopes or flatter except for slopes near the box culverts which are 2:1.

6. The temporary driveway for the church onto US 19, concentrates stormwater into a ditch (Station 10+30 to 11+41) and discharges through a 600 mm pipe onto a riprap disbursement pad. The pad is located 52 meters from Middle Fork Creek.

II. SCHEDULE OF COMPLIANCE

1. The permittee shall at all times provide adequate erosion control measures in conformance with the approved Erosion Control Plan.
2. The Director may notify the permittee when the permitted site does not meet one or more of the minimum requirements of the permit. Within the time frame specified in the notice, the permittee shall submit a written time schedule to the Director for modifying the site to meet minimum requirements. The permittee shall provide copies of revised plans and certification in writing to the Director that the changes have been made.
3. The permittee shall submit all information requested by the Director or his representative within the time frame specified in the written information request.
4. The permittee shall submit to the Director and shall have received approval for revised plans, specifications, and calculations prior to construction for the following items:
 - a. Major revisions to the approved plans, such as road realignment, deletion of any proposed BMP, changes to the drainage area or scope of the project, etc.
 - b. Project name change.
 - c. Redesign of, addition to, or deletion of the approved amount of built-upon area, regardless of size.
 - d. Alteration of the proposed drainage.
5. The Director may determine that other revisions to the project should require a modification to the permit.

III. GENERAL CONDITIONS

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

6. The permit issued shall continue in force and effect until revoked or terminated.
7. The permittee shall notify the Division of any name, ownership or mailing address changes within 30 days.

Permit issued this the 12th day of October 2010.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Coleen H. Sullins, Director
Division of Water Quality
By Authority of the Environmental Management Commission

Permit Number SW1100901

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: NC County/parish/borough: Madison City: Mars Hill
Center coordinates of site (lat/long in degree decimal format): Lat. 35.85 ° N, Long. -82.48° W.
Universal Transverse Mercator:

Name of nearest waterbody: Middle Fork Creek and Crooked Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Crooked Creek flows into Middle Fork Creek which flows into Little Ivy Creek (River) which flows into The French Broad River

Name of watershed or Hydrologic Unit Code (HUC): 06010105

- Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
 Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- Office (Desk) Determination. Date:
 Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Pick List** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

- Waters subject to the ebb and flow of the tide.
 Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
 Wetlands adjacent to TNWs
 Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
 Non-RPWs that flow directly or indirectly into TNWs
 Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
 Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
 Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
 Impoundments of jurisdictional waters
 Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: Middle Fork Creek is approx. 67.29 linear feet and Crooked Creek is approx. 127.59 linear feet:
width (ft) and/or acres.
Wetlands: 0 acres.

c. Limits (boundaries) of jurisdiction based on: Pick List

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is “adjacent”:

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are “relatively permanent waters” (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW⁵:

Tributary stream order, if known:

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: Pick List

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: Pick List

Estimate average number of flow events in review area/year: Pick List

Describe flow regime:

Other information on duration and volume:

Surface flow is: Pick List. Characteristics:

Subsurface flow: Pick List. Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

- Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

TNWs: li near feet width (ft), Or, acres.

Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:

Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

Tributary waters: linear feet width (ft).

Other non-wetland waters: acres.

Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: 0 acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

Demonstrate that impoundment was created from "waters of the U.S.," or

Demonstrate that water meets the criteria for one of the categories presented above (1-6), or

Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰**

which are or could be used by interstate or foreign travelers for recreational or other purposes.

from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.

which are or could be used for industrial purposes by industries in interstate commerce.

Interstate isolated waters. Explain: .

Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width h (ft).
- Other non-wetland waters: acres.
Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): li near feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

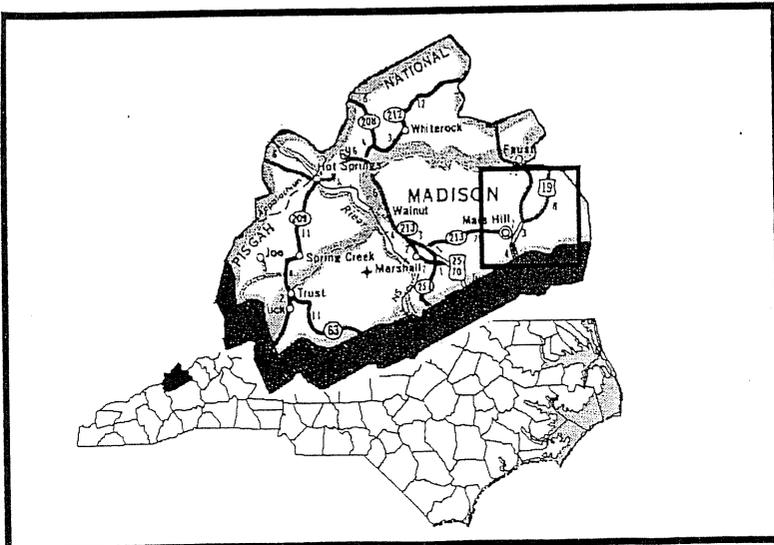
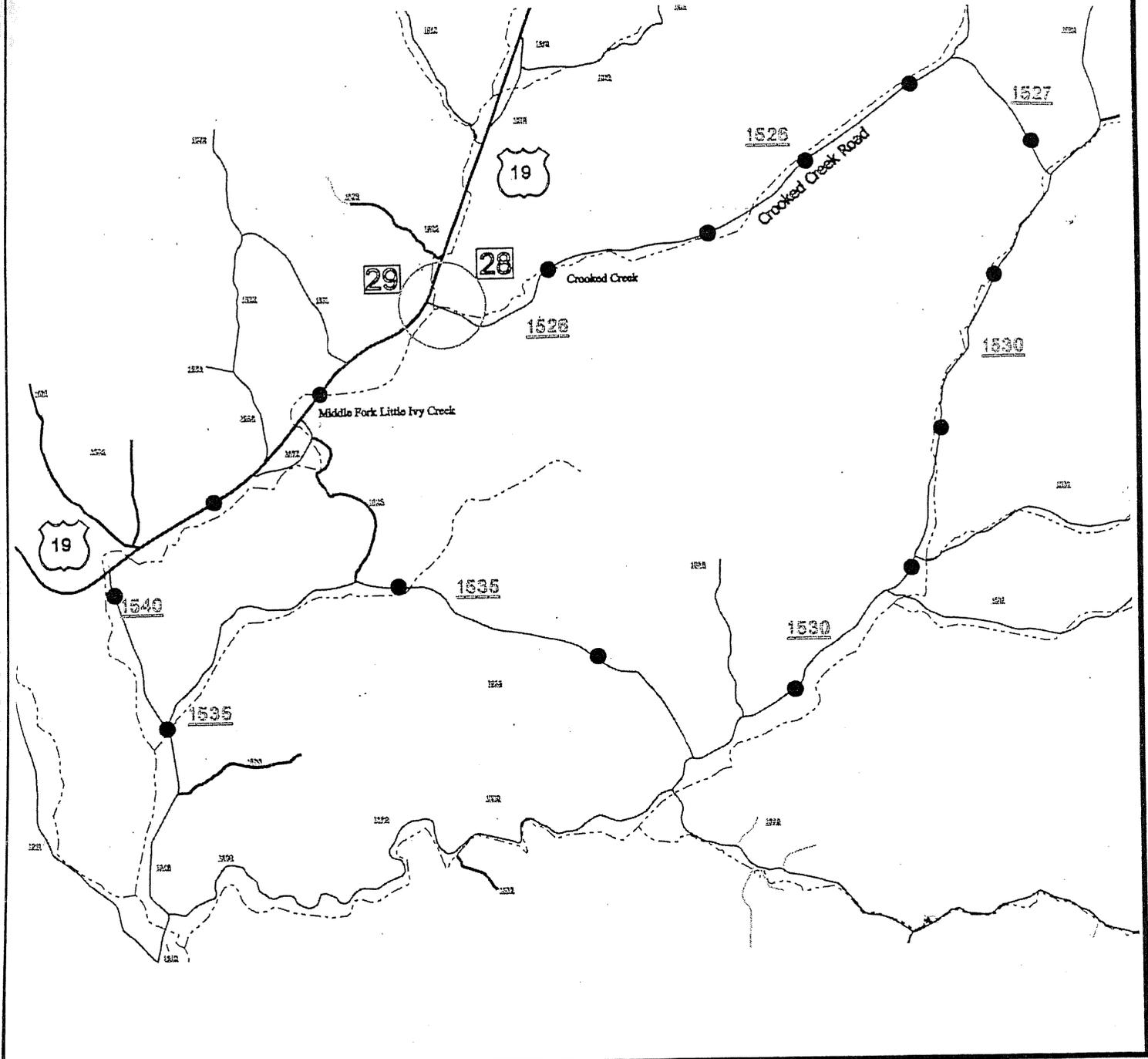
- Non-wetland waters (i.e., rivers, streams): li near feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Topographic and Vicinity Map.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name:
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD:

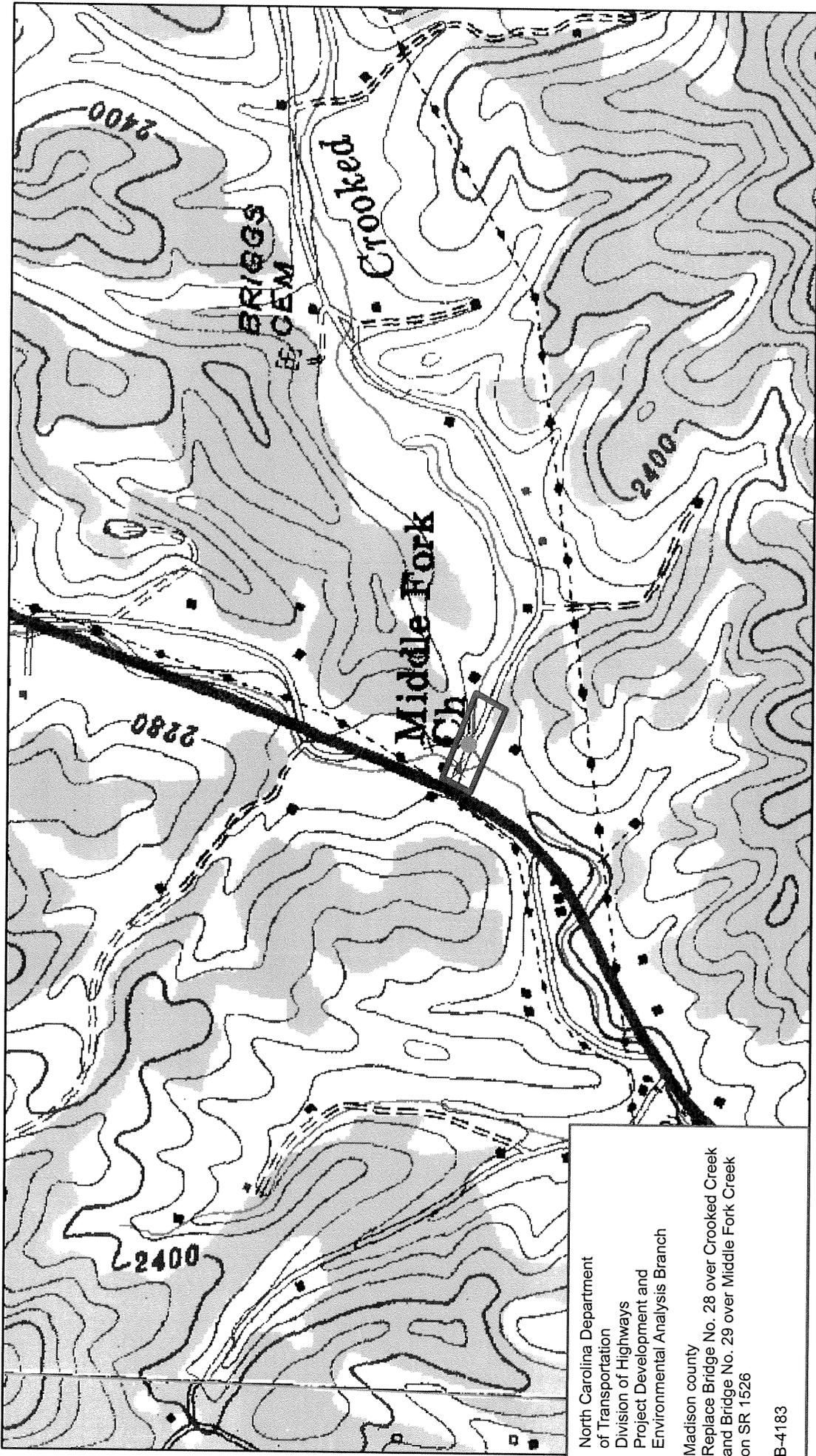


	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS PROJECT DEVELOPMENT & ENVIRONMENTAL ANALYSIS BRANCH
	MADISON COUNTY REPLACE BRIDGE NO. 29 OVER MIDDLE FORK CREEK AND BRIDGE NO. 28 OVER CROOKED CREEK ON SR 1526 B-4183

Offsite Detour 	Figure 1
--	----------

Permit Drawing
 Sheet 1 of 11

B-4183 Topographical Map



North Carolina Department
of Transportation
Division of Highways
Project Development and
Environmental Analysis Branch
Madison county
Replace Bridge No. 28 over Crooked Creek
and Bridge No. 29 over Middle Fork Creek
on SR 1526
B-4183

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	LINDA BUCKNER GREENE GAIL ANITA	2427 US HIGHWAY 19 MARS HILL, NC 28754
2	RICKY CLEMENTS, KATHY SMITH VICKI KELLEY	7398 S. HIGHWAY 341 CHICKAMAUGA, GA 30707
3	MIDDLE FORK BAPTIST CHURCH	111 CROOKED CREEK RD. MARS HILL, NC 28754
4	VICKI KELLEY	235 BACKHOLLOW RD. MARS HILL, NC 28754
5	SHELBY RAY	111 CROOKED CREEK RD. MARS HILL, NC 28754

NCDOT

DIVISION OF HIGHWAYS

MADISON COUNTY

PROJECT: 33530.1.1 (B-4183)

REPLACE BRG[#]29 AND BRG[#]28 OVER
MIDDLE FORK CREEK ON SR 1526

Permit Drawing
Sheet 3 of 4

SHEET

OF

6 / 29 / 10

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)			
I	10+52.5 -L- Middle Fork Creek	3 @9'x10' RCBC									0.04	0.02	50	49	
		Bank Stabilization											85		
II	11+16.5 -L- Crooked Creek	2 @10'x7' RCBC									0.04	0.01	210	69	
TOTALS:											0.08	0.03	345	118	

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MADISON COUNTY
 WBS -33530.1.1 (B-4183)

SHEET 10/18/2010

ATN Revised 3/5/05

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS						SURFACE WATER IMPACTS			
			Permanent Fill In Wetlands (ha)	Temp. Fill In Wetlands (ha)	Excavation in Wetlands (ha)	Mechanized Clearing in Wetlands (ha)	Hand Clearing in Wetlands (ha)	Permanent SW impacts (ha)	Temp. SW impacts (ha)	Existing Channel Impacts Permanent (m)	Existing Channel Impacts Temp. (m)	Natural Stream Design (m)
I	10+52.5 -L- Middle Fork Creek	3 @2.7mx3.0m RCBC	0.000	0.000	0.000	0.000	0.000	0.016	0.007	15	15	0
		Bank Stabilization								26		
II	11+16.5 -L- Crooked Creek	2 @3.0mx2.1m RCBC	0.000	0.000	0.000	0.000	0.000	0.018	0.005	64	21	0
TOTALS:								0.034	0.012	105	36	

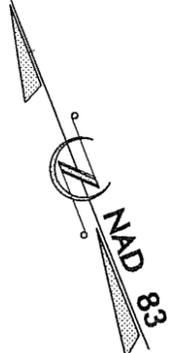
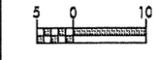
NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 MADISON COUNTY
 WBS -33530.1.1 (B-4183)

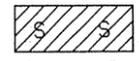
SHEET

10/18/2010

WHE Revised 5/21/2008

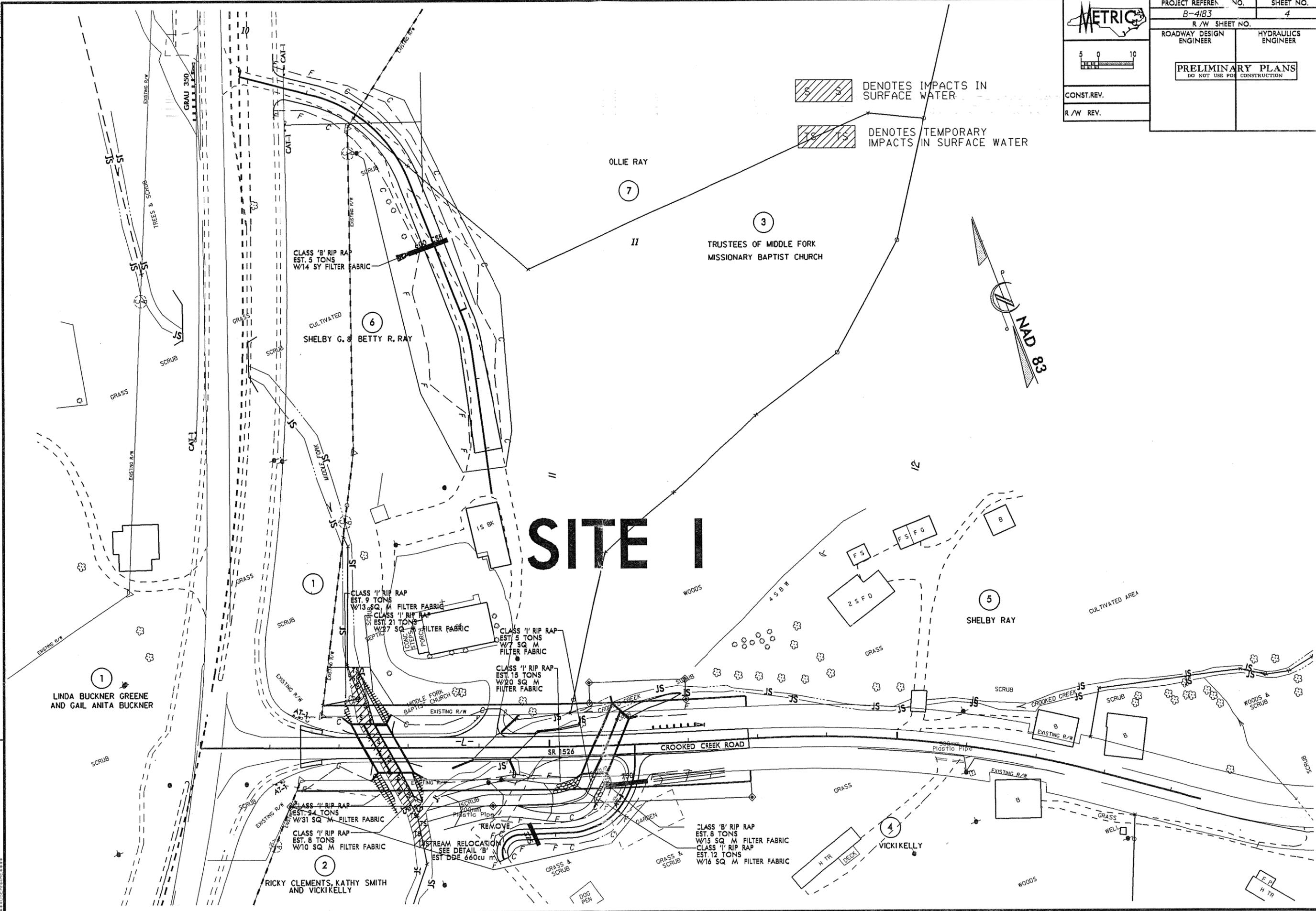
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	B-4183	4
R/W SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		
CONST. REV.		
R/W REV.		



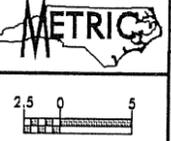
 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

SITE I

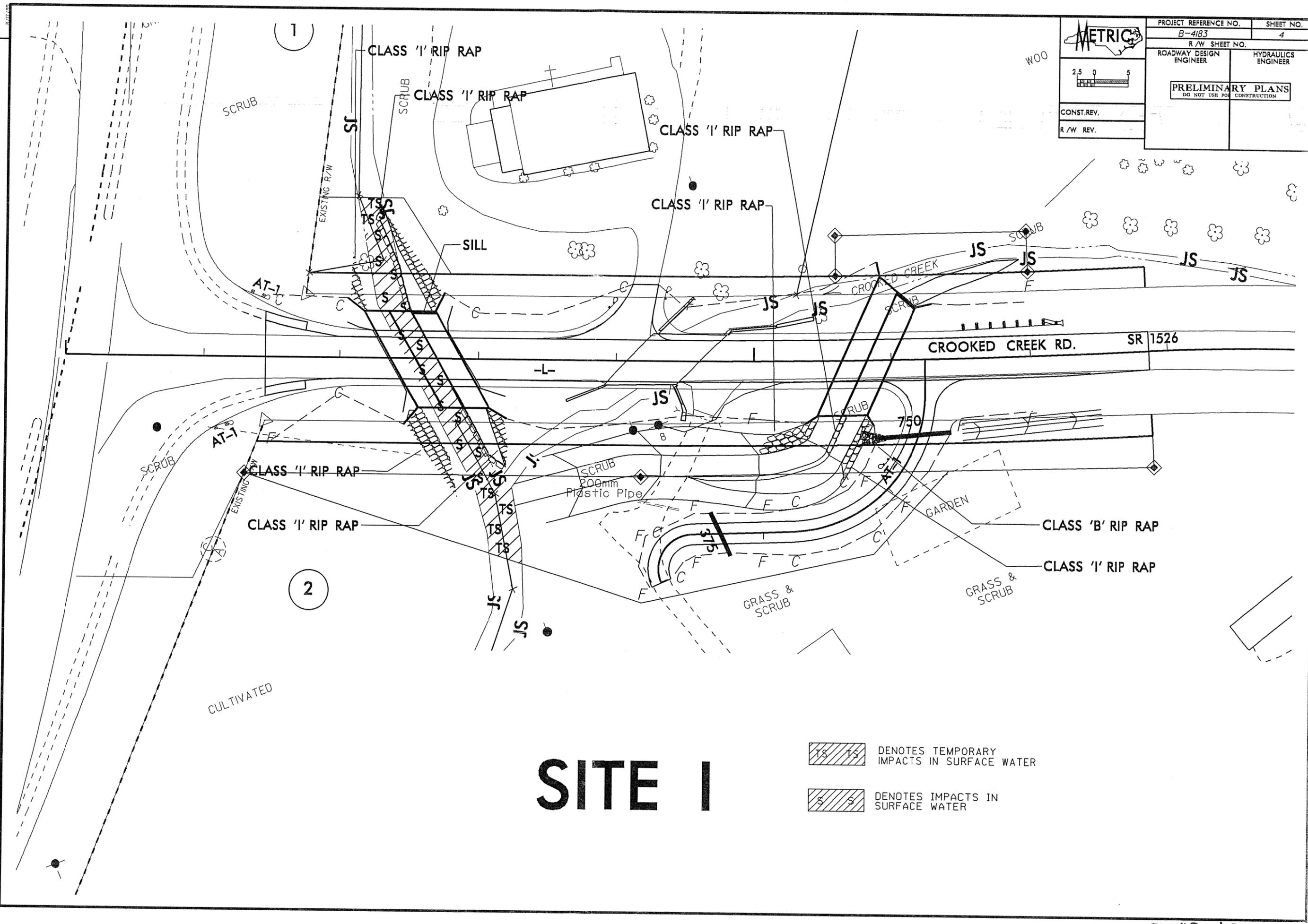
REVISIONS



PROJECT REFERENCE NO. B-4183		SHEET NO. 4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV.			



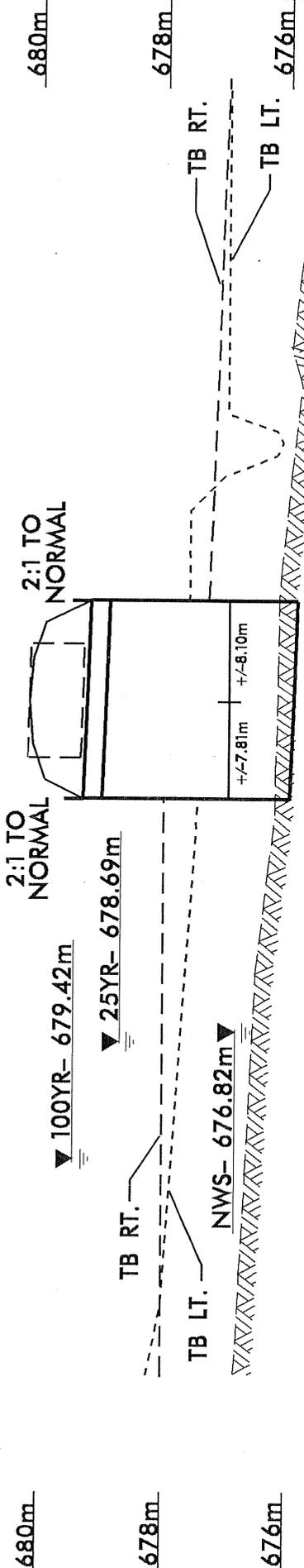
REVISIONS



SITE I

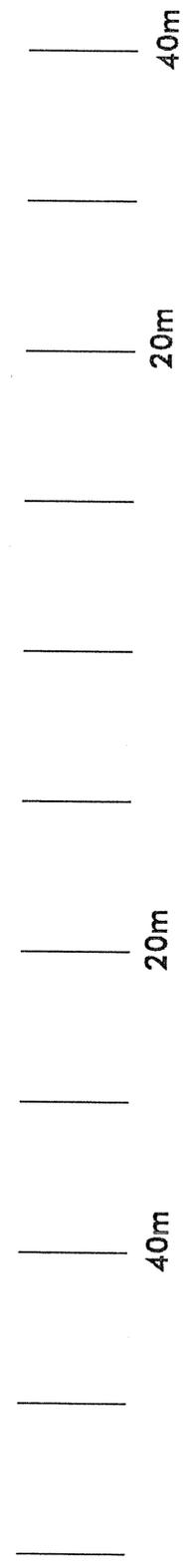
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER

STA. 10+52.5 -L-
 3@ 2.7m x 3.0m RCBC
 W/0.6m SILL IN THE OUTER BARREL
 SKEW 60°
 GRADE POINT ELEV- 680.16m



680m
 678m
 676m

ELEV- 675.90m
 So- .007m/m



SITE I

NCDOT
 DIVISION OF HIGHWAYS
 MADISON COUNTY
 PROJECT: 33530.1.1 (B-4183)
 REPLACE BRG#29 AND BRG#28
 OVER MIDDLE FORK CREEK
 ON SR 1526

SHEET OF 7 / 29 / 10

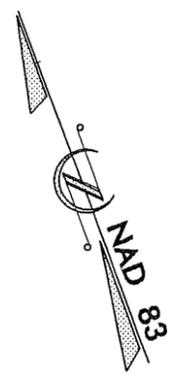
METRIC

CONST. REV. _____
R/W REV. _____

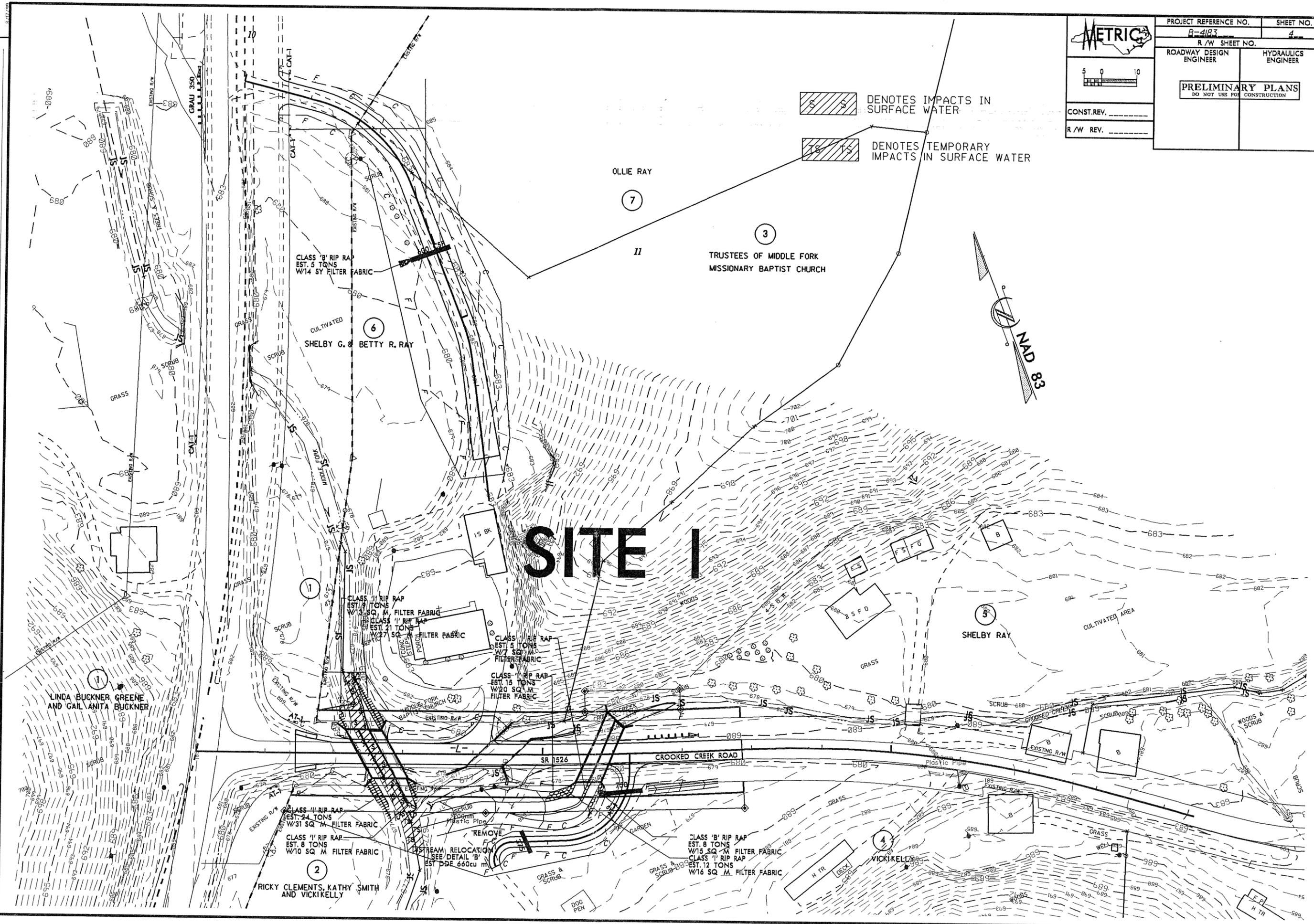
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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

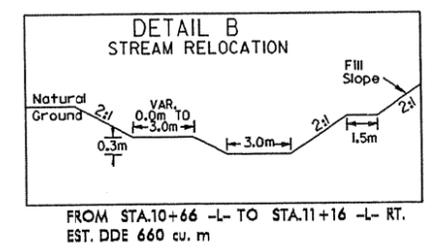
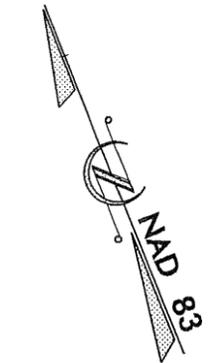
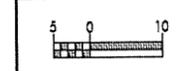


REVISIONS

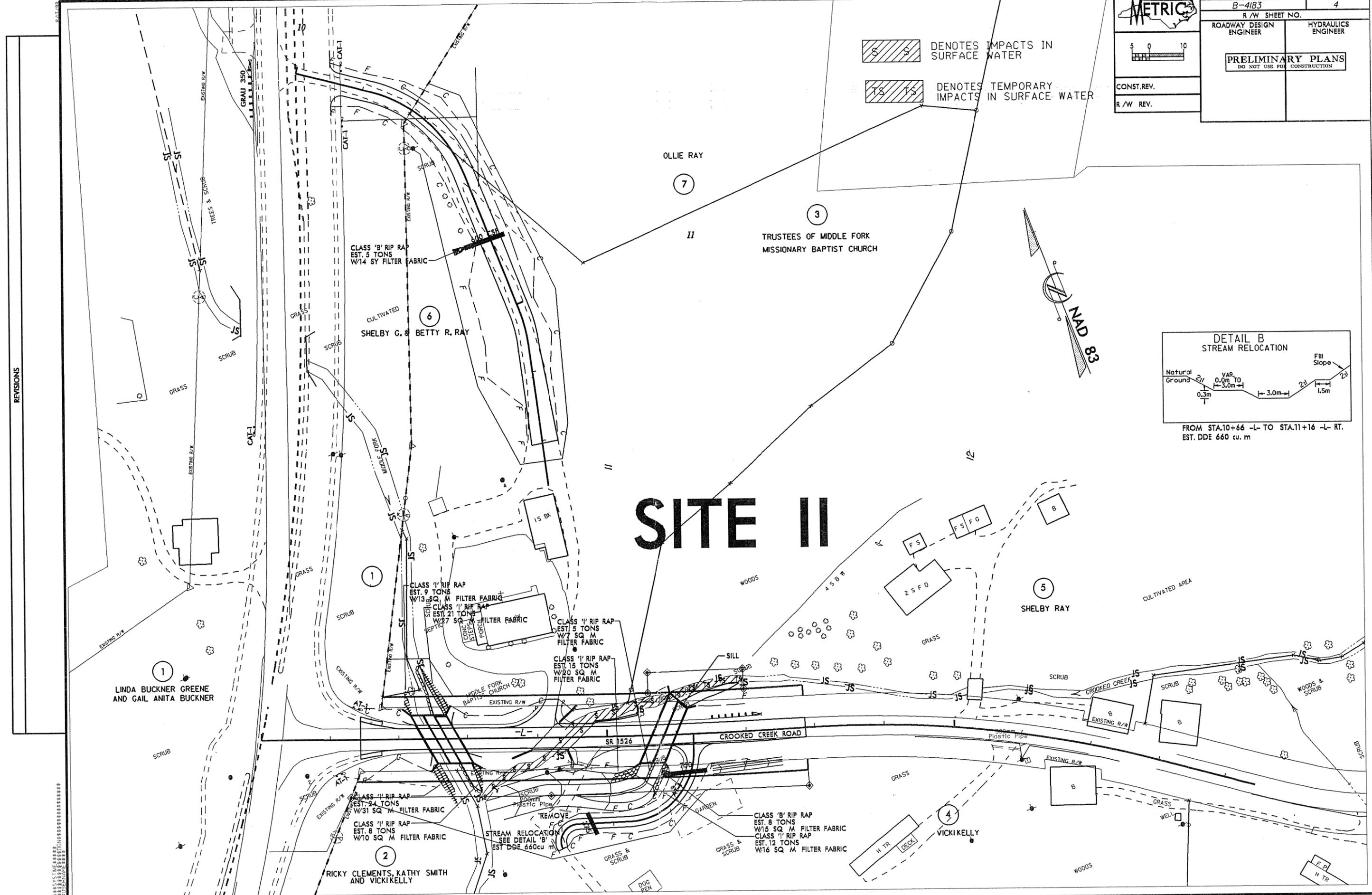


SITE I

PROJECT REFERENCE NO. B-4183		SHEET NO. 4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV.			

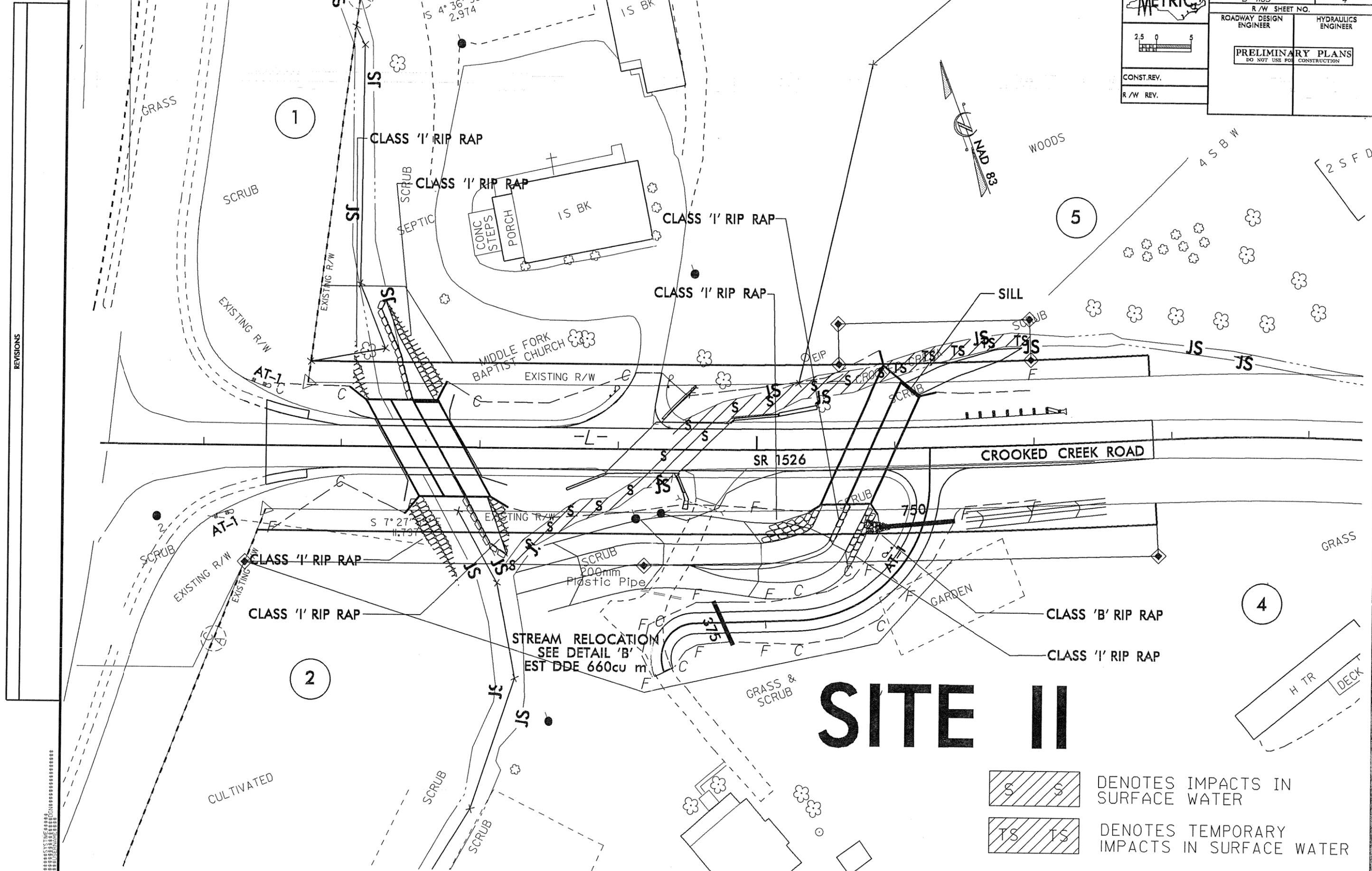
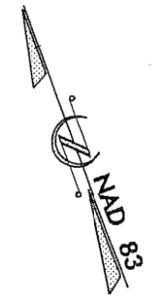
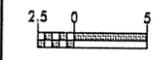


SITE II

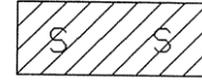
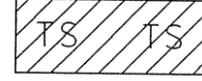


REVISIONS

PROJECT REFERENCE NO. B-4183		SHEET NO. 4	
R/W SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
CONST. REV.			
R/W REV.			



SITE II

-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

*****SYTIME*****
*****CADD*****
*****PLOT*****

STA. 11+16.5 -L-
 2@3.0m X 2.1m RCBC
 GRADE POINT EL. 680.05m
 SKEW - 115°

2:1 NORMAL
 100 YR WSEL 679.83m
 25 YR WSEL 679.08m

2:1 NORMAL

10.76 m +/-

8.77 m +/-

NWS

EXISTING BED

INVERT ELEV. 676.52 m
 SLOPE 0.021 m/m

PROPOSED BED

680m

678m

676m

40m

20m

20m

40m

SITE II

NCDOT

DIVISION OF HIGHWAYS
 MADISON COUNTY

PROJECT: 35530.1.1 (B-4183)

REPLACE BRG#29 AND BRG#28
 OVER MIDDLE FORK CREEK
 ON SR 1526

SHEET OF 7 / 29 / 10

Permit Drawing
 Sheet 13 of 14

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



PROJ. REFERENCE NO. B-4183
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	123
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	—E.A.B.—
Existing Endangered Plant Boundary	—E.P.B.—

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 Marker	—
Existing Control of Access	—
Proposed Control of Access	—
Existing Easement Line	—E—
Proposed Temporary Construction Easement	—E—
Proposed Temporary Drainage Easement	—TDE—
Proposed Permanent Drainage Easement	—PDE—
Proposed Permanent Utility Easement	—PUE—
Proposed Temporary Utility Easement	—TUE—
Proposed Permanent Easement with Iron Pin and Cap Marker	—

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	—C—
Proposed Slope Stakes Fill	—F—
Proposed Wheel Chair Ramp	—WCR—
Proposed Wheel Chair Ramp Curb Cut	—WCC—
Curb Cut for Future Wheel Chair Ramp	—CCFR—
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	—
Above Ground Sanitary Sewer	—A/G Sanitary Sewer—
Recorded SS Forced Main Line	—
Designated SS Forced Main Line (S.U.E.*)	—

MISCELLANEOUS:

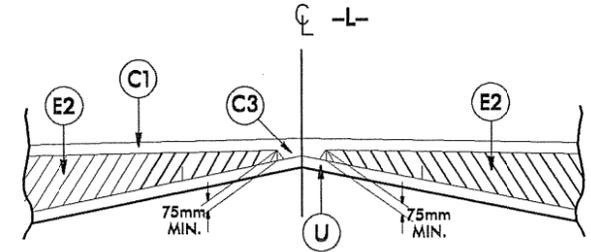
Utility Pole	—
Utility Pole with Base	—
Utility Located Object	—
Utility Traffic Signal Box	—
Utility Unknown U/G Line	—
U/G Tank; Water, Gas, Oil	—
A/G Tank; Water, Gas, Oil	—
U/G Test Hole (S.U.E.*)	—
Abandoned According to Utility Records	—AATUR—
End of Information	—E.O.I.—



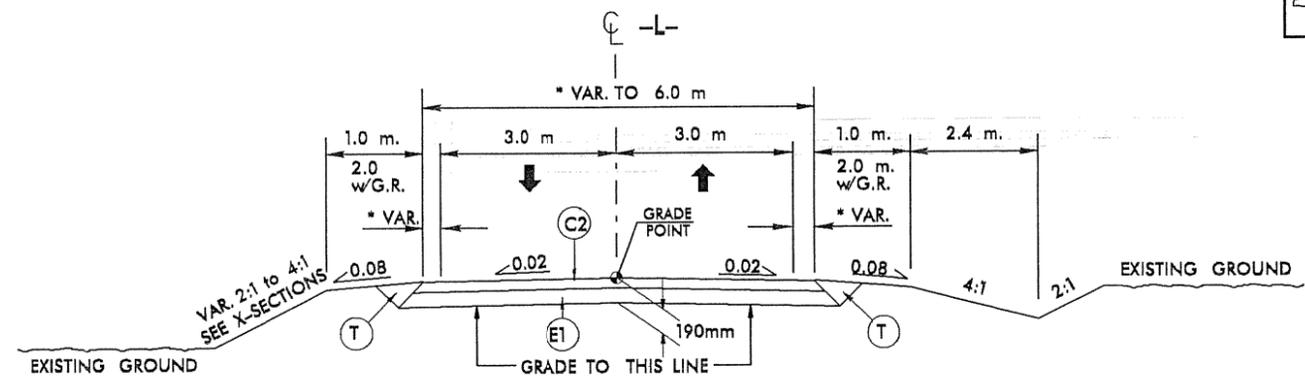
PROJECT REFERENCE NO. B-4183	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 40 mm ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 94 kg PER SQ. METER.
C2	PROP. APPROX. 80 mm ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 94 kg PER SQ. METER IN EACH OF TWO LAYERS
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 2.35 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 40 mm IN DEPTH.
E1	PROP. APPROX. 110 mm ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 269.5 kg PER SQ. METER.
E2	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 2.45 kg PER SQ. METER PER 1 mm DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 75 mm IN DEPTH OR GREATER THAN 140 mm IN DEPTH.
J	PROP. 200 mm AGGREGATE BASE COURSE.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT

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



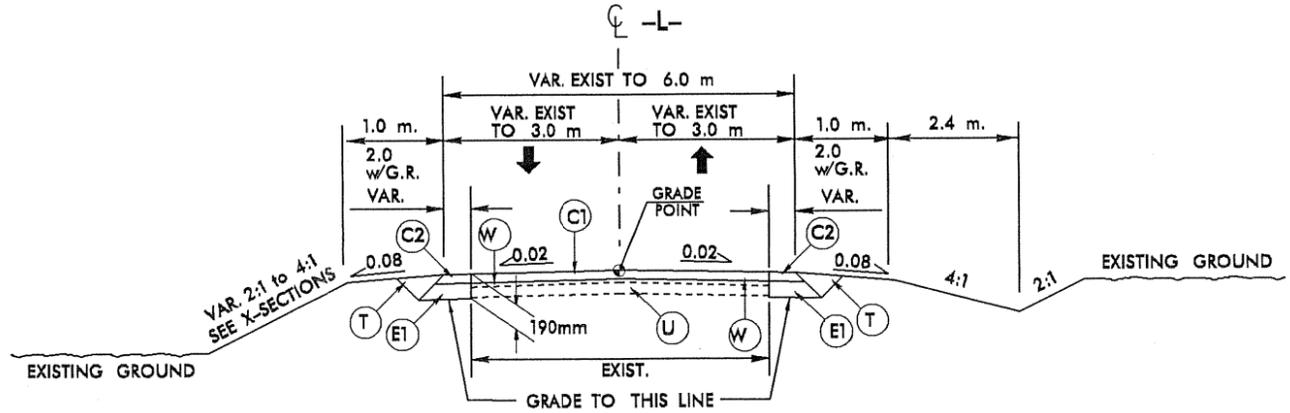
Detail Showing Method of Wedging



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

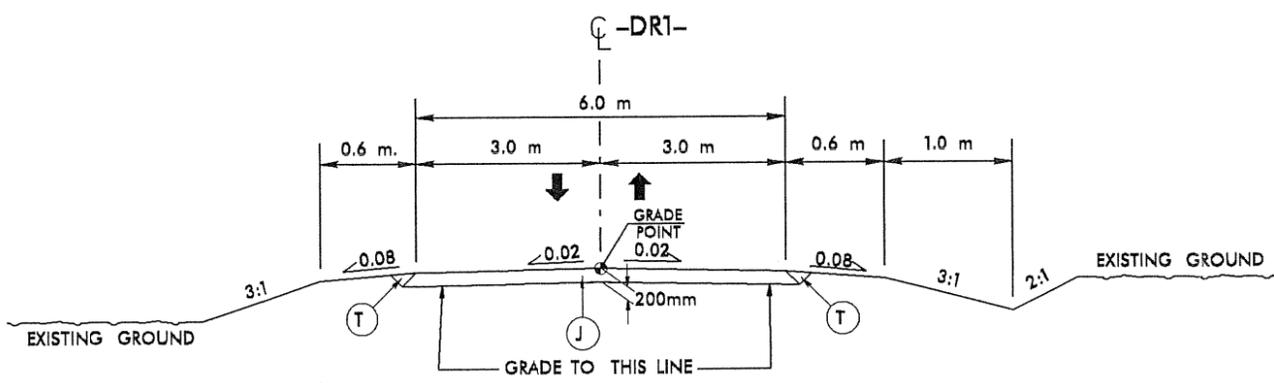
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-L- STA. 10+40.864 TO 11+45.000



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

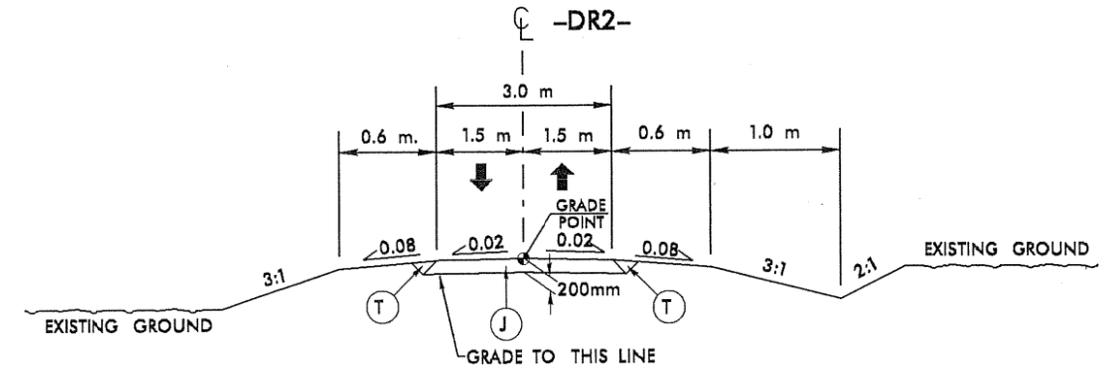
-L- STA. 11+45.000 TO STA. 11+57.202



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3

-DR1- STA. 10+11.44 TO STA. 11+41.00

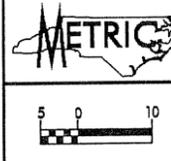


TYPICAL SECTION NO. 4

USE TYPICAL SECTION NO. 4

-DR2- STA. 10+03.000 TO STA. 10+60.102

05-JUL-2010 14:04
B:\1183\1183.dgn



-L-

PI Sta 11+20.512 Δ = 3° 30' 17.1" (LT) L = 73.404 T = 36.713 R = 1,200.000 SEE PLANS FOR SE & RO	PI Sta 12+07.936 Δ = 18° 04' 23.1" (RT) L = 100.624 T = 50.733 R = 319.000
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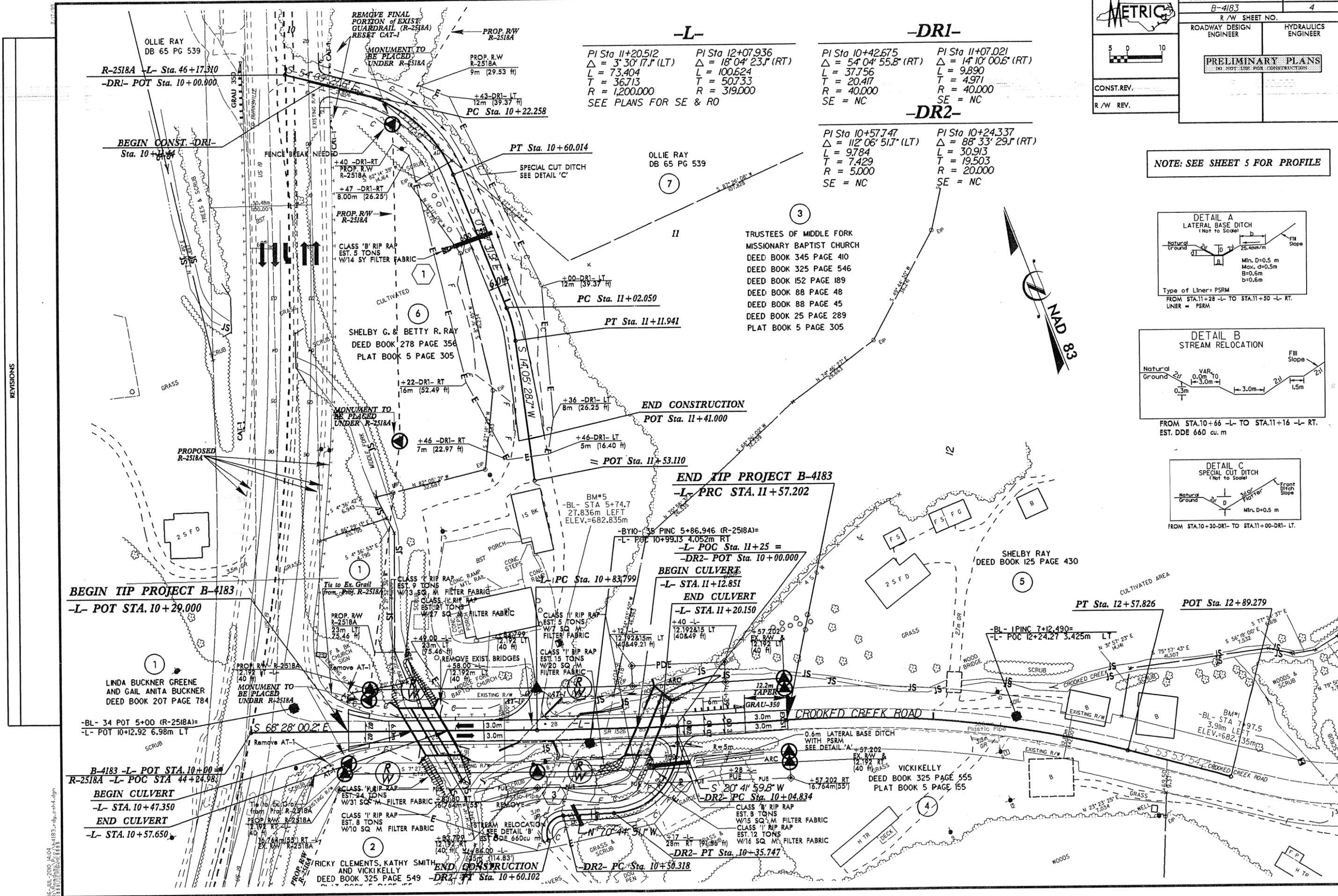
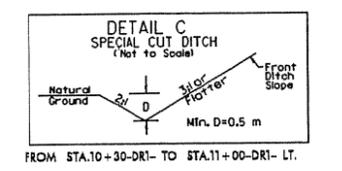
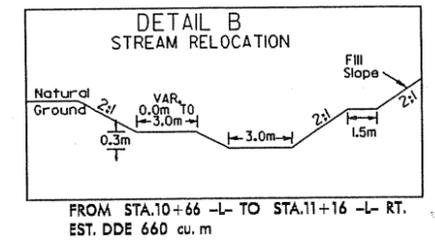
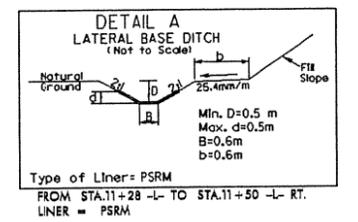
-DRI-

PI Sta 10+42.675 Δ = 54° 04' 55.8" (RT) L = 37.756 T = 20.417 R = 40.000 SE = NC	PI Sta 11+07.021 Δ = 14° 10' 00.6" (RT) L = 9.890 T = 4.971 R = 40.000 SE = NC
---	---

-DR2-

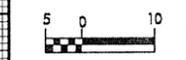
PI Sta 10+57.747 Δ = 112° 06' 51.7" (LT) L = 9.784 T = 7.429 R = 5.000 SE = NC	PI Sta 10+24.337 Δ = 88° 33' 29.1" (RT) L = 30.913 T = 19.503 R = 20.000 SE = NC
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NOTE: SEE SHEET 5 FOR PROFILE



REVISIONS

05-10-2006, M404
 R-2518A, B-4183, dlu, eph, 4.dgn
 1:1000



CONST. REV.
R/W REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CULVERT #1 HYDRAULIC DATA

DESIGN DISCHARGE	= 49.80	CMS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 678.69	M
BASE DISCHARGE	= 74.90	CMS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 679.42	M
OVERTOPPING DISCHARGE	= 86.6	CMS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 680.00	M

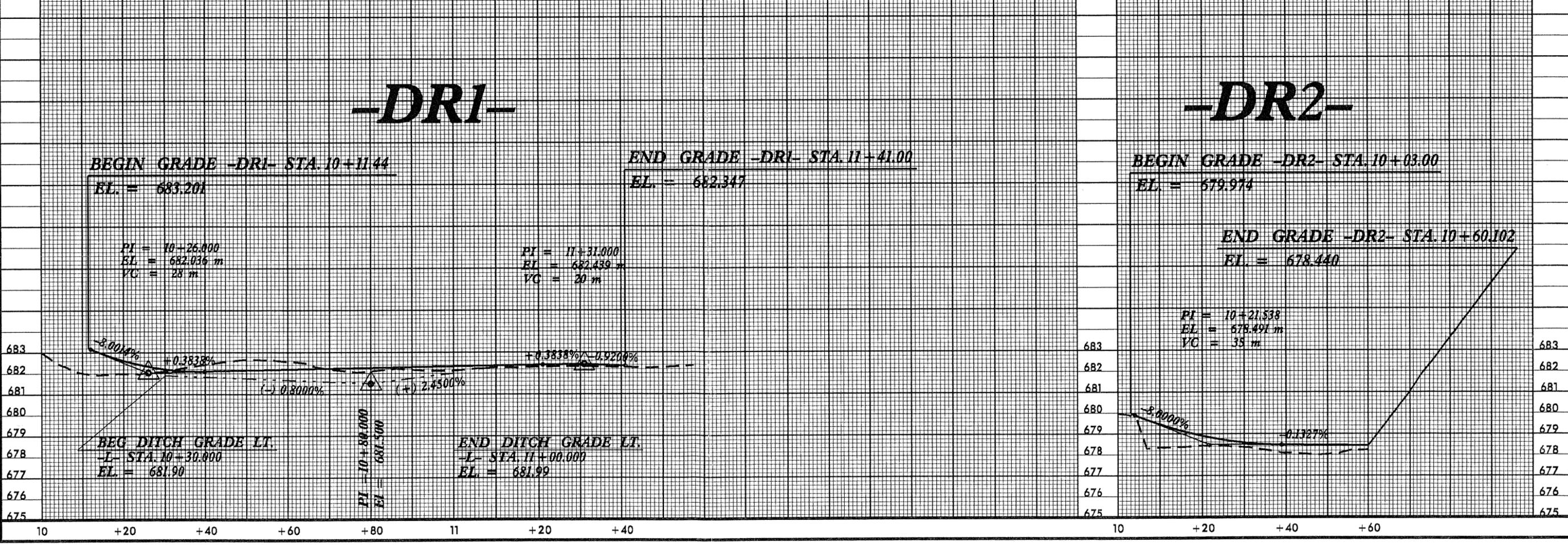
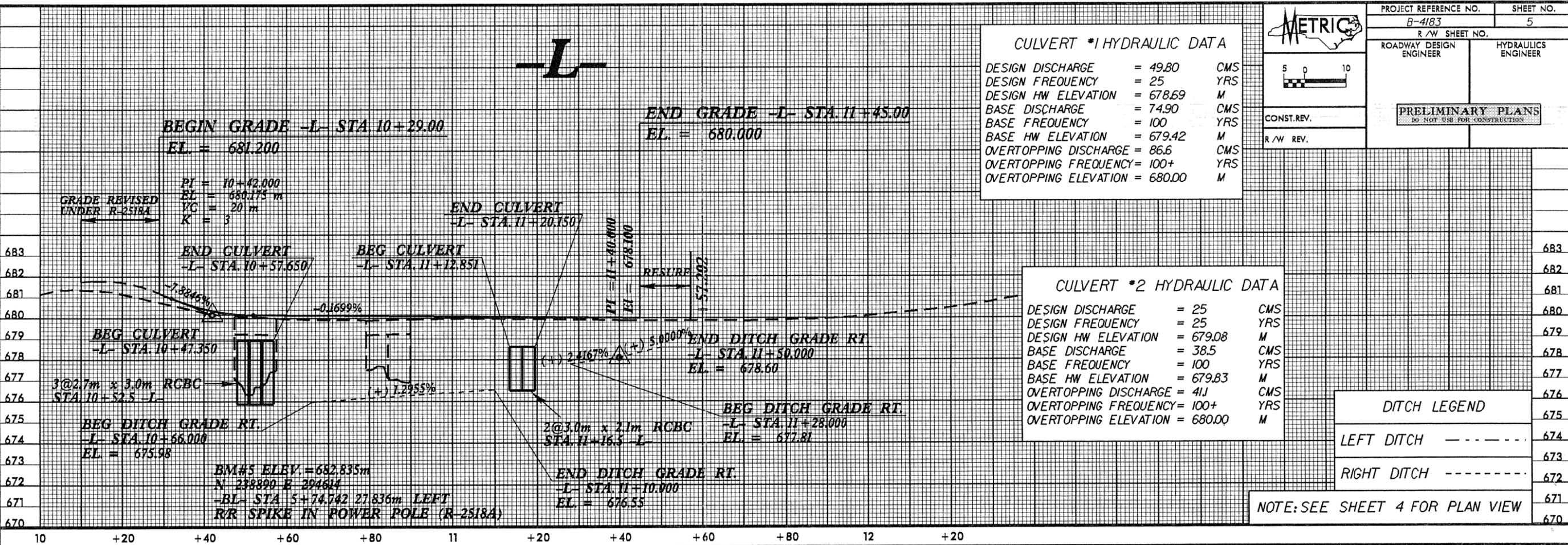
CULVERT #2 HYDRAULIC DATA

DESIGN DISCHARGE	= 25	CMS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 679.08	M
BASE DISCHARGE	= 38.5	CMS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 679.83	M
OVERTOPPING DISCHARGE	= 41J	CMS
OVERTOPPING FREQUENCY	= 100+	YRS
OVERTOPPING ELEVATION	= 680.00	M

DITCH LEGEND

LEFT DITCH	-----
RIGHT DITCH	-----

NOTE: SEE SHEET 4 FOR PLAN VIEW



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