STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

January 11, 2012

NC Division of Water Quality
1650 Mail Service Center
Raleigh, NC 27699-1650

ATTN: Mr. Brian Wrenn
NCDWQ Coordinator

Subject: **Request for Modification of the Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 148 over Lamance Creek on SR 1326 in Transylvania County, Federal Aid Project No. BRZ-1326(3); Division 14; TIP No. B-4989. Debit $240.00, WBS 40461.1.1

Reference: Permit Application dated June 30, 2011
Section 401 Permit No. 20110667 issued August 5, 2011

Dear Sir:

This 401 permit modification request is to update the permanent impacts to Lamance Creek and include the avoidance minimization measures that will be required for this project . The previous permit application and subsequent 401 permit listed the impacts incorrectly as 33 linear feet of impacts from the culvert and 17 feet of impact from bank stabilization. The corrected impacts are 53 linear feet for the culvert placement and 20 linear feet for bank stabilization.

Please see attached, the revised PCN, Letter to the USACE Addendum to the June 30, 2011 Application, the EEP Acceptance letter, the revised permit drawings and the email to Mike Parker, DWQ, clarifying the revisions.

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

A copy of this modified permit application will be posted on the NCDOT website at: http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html. If you have any questions or need additional information, please e-mail Jeff Hemphill at jhemphill@ncdot.gov.

Sincerely,

E. L. Lusk

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

Cc: Lori Beckwith, USACE
Mike Parker, NCDWQ

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

Pre-Construction Notification (PCN) Form

A. Applicant Information

1. Processing

1a. Type(s) of approval sought from the Corps:	☒ Section 404 Permit	☐ Section 10 Permit
1b. Specify Nationwide Permit (NWP) number:	or General Permit (GP) number: 198200031	
1c. Has the NWP or GP number been verified by the Corps?	☐ Yes	☒ No

1d. Type(s) of approval sought from the DWQ (check all that apply):

☒ 401 Water Quality Certification – Regular ☐ Non-404 Jurisdictional General Permit

☐ 401 Water Quality Certification – Express ☐ Riparian Buffer Authorization

1e. Is this notification solely for the record because written approval is not required?	For the record only for DWQ 401 Certification: ☐ Yes ☒ No	For the record only for Corps Permit: ☐ Yes ☒ No
1f. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts? If so, attach the acceptance letter from mitigation bank or in-lieu fee program.	☒ Yes	☐ No
1g. Is the project located in any of NC's twenty coastal counties. If yes, answer 1h below.	☐ Yes	☒ No
1h. Is the project located within a NC DCM Area of Environmental Concern (AEC)?	☐ Yes	☒ No

2. Project Information

2a. Name of project:	Replacement of Bridge 148 over Lamance Creek on SR 1326
2b. County:	Transylvania
2c. Nearest municipality / town:	Balsam Grove
2d. Subdivision name:	*not applicable*
2e. NCDOT only, T.I.P. or state project no:	B-4989

3. Owner Information

3a. Name(s) on Recorded Deed:	North Carolina Department of Transportation
3b. Deed Book and Page No.	*not applicable*
3c. Responsible Party (for LLC if applicable):	*not applicable*
3d. Street address:	1598 Mail Service Center
3e. City, state, zip:	Raleigh, NC 27699-1598
3f. Telephone no.:	(919) 707-61
3g. Fax no.:	(919) 212-5785
3h. Email address:	jhemphill@ncdot.gov

4. Applicant Information (if different from owner)	
4a. Applicant is:	☐ Agent ☐ Other, specify:
4b. Name:	*not applicable*
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:	*not applicable*
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):	*not applicable*
1b. Site coordinates (in decimal degrees):	Latitude: 35.2056 (DD.DDDDDD) Longitude: - 82.8856 (-DD.DDDDDD)
1c. Property size:	26 acres
2. Surface Waters	
2a. Name of nearest body of water (stream, river, etc.) to proposed project:	North Fork French Broad River
2b. Water Quality Classification of nearest receiving water:	B;Tr
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: Rural residential - forested	
3b. List the total estimated acreage of all existing wetlands on the property: 0.47	
3c. List the total estimated linear feet of all existing streams (intermittent and perennial) on the property: 203	
3d. Explain the purpose of the proposed project: To replace a structurally deficient (and/ or) functionally obsolete bridge.	
3e. Describe the overall project in detail, including the type of equipment to be used: The project involves replacing a 20.5-foot bridge with a 48-foot, 12 x 6 foot reinforced concrete box culvert (RCBC) on the existing alignment with an off-site detour. 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: Yes	☒ Yes ☐ No ☐ Unknown
4b. If the Corps made the jurisdictional determination, what type of determination was made?	☐ Preliminary ☒ Final
4c. If yes, who delineated the jurisdictional areas? Name (if known): Jeff Hemphill	Agency/Consultant Company: NCDOT Other:
4d. If yes, list the dates of the Corps jurisdictional determinations or State determinations and attach documentation. August 26, 2008	
5. Project History	
5a. Have permits or certifications been requested or obtained for this project (including all prior phases) in the past?	☒ Yes ☐ No ☐ Unknown
5b. If yes, explain in detail according to "help file" instructions. A 401 was issued 8/5/2011. This new request for modification is for a correction and update of total permanent impacts.	
6. Future Project Plans	
6a. Is this a phased project?	☐ Yes ☒ No
6b. If yes, explain.	

C. Proposed Impacts Inventory

1. Impacts Summary

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

☒ Wetlands ☒ Streams - tributaries ☐ Buffers

☐ Open Waters ☐ Pond Construction

2. Wetland Impacts

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

2a. Wetland impact number – Permanent (P) or Temporary (T)	2b. Type of impact	2c. Type of wetland (if known)	2d. Forested	2e. Type of jurisdiction (Corps - 404, 10 DWQ – non-404, other)	2f. Area of impact (acres)
Site 1 ☒ P ☐ T	Fill	Bog forest	☒ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 2 ☒ P ☐ T	Mechanized clearing	Bog Forest	☐ Yes ☐ No	☒ Corps ☐ DWQ	<0.01
Site 3 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 4 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 5 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
Site 6 ☐ P ☐ T			☐ Yes ☐ No	☐ Corps ☐ DWQ	
				2g. **Total wetland impacts**	<0.01 Permanent 0 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 ☒ P ☐ T	RCBC	Lamance Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	10	53
Site 2 ☒ P ☐ T	Bank Stabilization	Lamance Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	10	20
Site 3 ☐ P ☒ T	Dewatering	Lamance Creek	☒ PER ☐ INT	☒ Corps ☐ DWQ	10	55
Site 4 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 5 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
Site 6 ☐ P ☐ T			☐ PER ☐ INT	☐ Corps ☐ DWQ		
					3h. **Total stream and tributary impacts**	73 Perm 55 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 ☐ P ☐ T				
O2 ☐ P ☐ T				
O3 ☐ P ☐ T				
O4 ☐ P ☐ 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?	☐ Yes ☐ No If yes, permit ID no:
5i. Expected pond surface area (acres):	
5j. Size of pond watershed (acres):	
5k. Method of construction:	

6. Buffer Impacts (for DWQ)

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

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

An off site detour will be utilized thus reducing onsite impacts.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques.

Grass shoulders and grass ditches will be used throughout the project to treat stormwater before entering the stream and Class I rip rap wll be used at the proposed culvert outlet to minimize erosion to the stream banks.The North Carolina Wildlife Resource Commission (WRC) issued a Trout Moratorium on February 11, 2008 for in stream construction covering the trout-spawning period from October 15 to April 15. The North Carolina Division of Water Quality (NCDWQ) has designated Lamance Creek as trout waters; therefore, 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?	☒ Yes ☐ No If no, explain:
2b. If yes, mitigation is required by (check all that apply):	☐ DWQ ☒ Corps
2c. If yes, which mitigation option will be used for this project?	☐ Mitigation bank ☒ Payment to in-lieu fee program ☐ Permittee Responsible Mitigation

3. Complete if Using a Mitigation Bank

3a. Name of Mitigation Bank: not applicable

3b. Credits Purchased (attach receipt and letter)	Type	Quantity

3c. Comments:

4. Complete if Making a Payment to In-lieu Fee Program

4a. Approval letter from in-lieu fee program is attached.	☒ Yes
4b. Stream mitigation requested:	53 feet (see attached letter) linear feet
4c. If using stream mitigation, stream temperature:	☐ warm ☒ cool ☐ cold
4d. Buffer mitigation requested (DWQ only):	square feet
4e. Riparian wetland mitigation requested:	acres
4f. Non-riparian wetland mitigation requested:	acres
4g. Coastal (tidal) wetland mitigation requested:	acres

4h. Comments:

5. Complete if Using a Permittee Responsible Mitigation Plan

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

6. **Buffer Mitigation (State Regulated Riparian Buffer Rules) – required by DWQ**				
6a. Will the project result in an impact within a protected riparian buffer that requires buffer mitigation?			☐ Yes	☒ No
6b. If yes, then identify the square feet of impact to each zone of the riparian buffer that requires mitigation. Calculate the amount of mitigation required.				
Zone	6c. Reason for impact	6d. Total impact (square feet)	Multiplier	6e. Required mitigation (square feet)
Zone 1			3 (2 for Catawba)	
Zone 2			1.5	
	6f. **Total buffer mitigation required:**			
6g. If buffer mitigation is required, discuss what type of mitigation is proposed (e.g., payment to private mitigation bank, permittee responsible riparian buffer restoration, payment into an approved in-lieu fee fund).				
6h. Comments:				

E. Stormwater Management and Diffuse Flow Plan (required by DWQ)	
1. Diffuse Flow Plan	
1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?	☐ Yes ☒ No
1b. If yes, then is a diffuse flow plan included? If no, explain why. Comments: if yes, see attached permit drawings.	☐ Yes ☐ No
2. Stormwater Management Plan	
2a. What is the overall percent imperviousness of this project?	N/A
2b. Does this project require a Stormwater Management Plan?	☒ Yes ☐ No
2c. If this project DOES NOT require a Stormwater Management Plan, explain why:	
2d. If this project DOES require a Stormwater Management Plan, then provide a brief, narrative description of the plan: See attached permit drawings.	
2e. Who will be responsible for the review of the Stormwater Management Plan?	☐ Certified Local Government ☐ DWQ Stormwater Program ☒ DWQ 401 Unit
3. Certified Local Government Stormwater Review	
3a. In which local government's jurisdiction is this project?	not applicable
3b. Which of the following locally-implemented stormwater management programs apply (check all that apply):	☐ Phase II ☐ NSW ☐ USMP ☐ Water Supply Watershed ☐ Other:
3c. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
4. DWQ Stormwater Program Review	
4a. Which of the following state-implemented stormwater management programs apply (check all that apply):	☐ Coastal counties ☐ HQW ☐ ORW ☐ Session Law 2006-246 ☐ Other:
4b. Has the approved Stormwater Management Plan with proof of approval been attached?	☐ Yes ☐ No
5. DWQ 401 Unit Stormwater Review	
5a. Does the Stormwater Management Plan meet the appropriate requirements?	☐ Yes ☐ No N/A
5b. Have all of the 401 Unit submittal requirements been met?	☐ Yes ☐ 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?	☒ Yes	☐ No
1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)?	☒ Yes	☐ No
1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) Comments:	☒ Yes	☐ No
2. Violations (DWQ Requirement)		
2a. Is the site in violation of DWQ Wetland Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), DWQ Surface Water or Wetland Standards, or Riparian Buffer Rules (15A NCAC 2B .0200)?	☐ Yes	☒ No
2b. Is this an after-the-fact permit application?	☐ Yes	☒ No
2c. If you answered "yes" to one or both of the above questions, provide an explanation of the violation(s):		
3. Cumulative Impacts (DWQ Requirement)		
3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality?	☐ Yes ☐ No	
3b. If you answered "yes" to the above, submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent DWQ policy. If you answered "no," provide a short narrative description. 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?	☒ Yes	☐ No
5b. Have you checked with the USFWS concerning Endangered Species Act impacts?	☐ Yes	☒ No
5c. If yes, indicate the USFWS Field Office you have contacted.	☐ Raleigh ☐ Asheville	
5d. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? NCDOT field surveys Virginia spiraea, Mountain sweet pitcher plant & Swamp pink - 6/24/09. Small whorled pogonia and Mountain sweet pitcher plant - 8/14/07 and the North Carolina Natural Heritage database determined No Effect		
6. Essential Fish Habitat (Corps Requirement)		
6a. Will this project occur in or near an area designated as essential fish habitat?	☐ Yes	☒ No
6b. What data sources did you use to determine whether your site would impact Essential Fish Habitat? NMFS County Index		
7. Historic or Prehistoric Cultural Resources (Corps Requirement)		
7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)?	☐ Yes	☒ No
7b. What data sources did you use to determine whether your site would impact historic or archeological resources? NEPA Documentation		
8. Flood Zone Designation (Corps Requirement)		
8a. Will this project occur in a FEMA-designated 100-year floodplain?	☒ Yes	☐ No
8b. If yes, explain how project meets FEMA requirements: NCDOT Hydraulics Unit coordination with FEMA		
8c. What source(s) did you use to make the floodplain determination? FEMA Maps		

Dr. Gregory J. Thorpe, Ph D Applicant/Agent's Printed Name	E. L. Lusk Applicant/Agent's Signature (Agent's signature is valid only if an authorization letter from the applicant is provided.)	1.12.12 Date

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

November 8, 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: **Addendum to the Application for Section 404 Regional General Permit 198200031 and Section 401 Water Quality Certification** for the proposed replacement of Bridge No. 148 over Lamance Creek on SR 1326 in Transylvania County, Federal Aid Project No. BRZ-1326(3); Division 14; TIP No. B-4989.

Dear Madam:
This addendum provides supplemental information to the Section 404 Application submitted July 13, 2011. The following Bridge to Culvert Avoidance & Minimization and Hydraulic Design Criteria has been submitted by the NCDOT Hydraulics Unit.

Bridge to Culvert Avoidance and Minimization for B-4989 Transylvania County

Proposed Structure Summary
Drainage Area-*430 acres*
DWQ Stream Classification- *C;Tr*
Culvert Size and Type-*12' x 6' Reinforced Concrete Box Culvert*
Culvert Length-53'
Minimization Efforts-*The proposed culvert will be buried 1 ft. with alternating 8 ft. wide by 0.5 ft. high low flow sills for fish passage. The culvert maintains the existing stream slope, low flow channel dimensions, low flow velocities and provides a smooth transition from upstream to downstream with no sharp bends at the inlet or outlet.*

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

Stream Slope
Existing average stream slope = *0.4%*
Proposed culvert slope =*0.38%,*

Fish and/or Aquatic life Passage
Existing low flow channel dimensions in the stream- *The existing low flow channel width up and downstream of the culvert is approximately 8 ft. with an average depth of 0.5 ft.*
Proposed low flow dimensions through the culvert- *culvert will have alternating low flow sills to facilitate fish passage. The low flow sills will provide an 8 ft. wide by 0.5 ft. deep low flow channel in the culvert.*

Existing low flow velocities in the stream- *existing low flow velocity = 1.4 ft/sec*
Proposed low flow velocities through the culvert- *proposed low flow velocity through culvert = 1.5 ft/sec*

Alternating low flow sills and/or baffles- *culvert will have alternating low flow sills to facilitate fish passage since the proposed total culvert width is larger than the existing low flow channel width.*

Culvert Burial
Existing streambed material- *cobbles, gravel and sand*
Proposed culvert burial-*1 foot*
Proposed sills and or baffles- *Alternating low flow sills will be used. The low flow sills will be spaced approximately 26 ft apart and will provide an 8 ft.wide by 0.5 ft deep low flow channel in the culvert. Culvert slope of 0.38% does not necessitate the use of baffles to hold bed material but they are being used to provide low flow channel through culvert.*

Culvert/Stream Alignment
Stream patterns upstream and downstream of the culvert that could affect fish passage and bank stability- *The stream channel is relatively straight through the reach of the stream where the culvert will be placed with a very slight bend at downstream culvert outlet. The stream slope is also constant through the reach of the stream up and downstream of where the culvert will be placed.*
Bed forms impacted by culvert (riffles, pools glides etc.)- *There is a glide located just upstream of the bridge that transitions through the bridge to a riffle section downstream of the bridge. The culvert will be placed in this glide riffle section.*
Establishment of a low flow floodplain bench- *low flow floodplain bench not required since culvert width fits within the stream channel up and downstream.*
Culvert alignment with stream- *culvert provides a smooth transition from the upstream to downstream with no sharp bends at entrance and outlet.*
Stream realignment necessary- *no*
Sharp bends at entrance and outlet-*no*
Bank stabilization- *Class I rip rap on banks only for 20 ft downstream*

Outlet Velocities
Natural stream channel 2yr velocity-*3.8 ft/sec*
Proposed Culvert 2yr outlet velocity-*2.4 ft/sec*
Natural stream channel 10yr velocity-*4.4 ft/sec*
Proposed Culvert 10yr outlet velocity-*4.3 ft/sec*

Roadway Geometric Considerations
Evaluate/describe roadway geometric constraints-*N/A*

Hydraulic Design Criteria
The design criteria for this road would be 25 year (secondary road). The pre and post construction outlet velocities for the 25yr storm are as follows:

Natural stream channel 25yr velocity=4.6ft/sec
Proposed culvert 25yr outlet velocity=5.3ft/sec

We provided the 2yr velocity for comparison since it is close to what would be considered the bankfull flow. The 10yr velocity was also provided because this discharge is used to evaluate the need for outlet channel protection and or energy dissipation.

Analysis Process
The overall hydrologic analysis for a project begins with review and extrapolation of pertinent information from data sources identified during the pre-design study. Final determination of sources of **watershed areas** and base mapping for drainage area delineation are also made at this time. Primary resources for this information are:

- U.S.G.S. and T.V.A. quadrangle mapping
- U.S.G.S. open file report 83-211 *"Drainage Areas of Selected Sites on Streams in North Carolina"*
- Photogrammetric contour mapping
- Aerial photography
- Special studies (Corps, TVA, FEMA)
- Field reconnaissance (This is required for most non-riverine drainage areas in the coastal plain as well as any small watersheds in other areas.)

The selection of a "**design discharge**" for a drainage feature is a risk based assessment process involving the evaluation of a range of flood magnitudes for such factors as potential damages, costs, traffic service, environmental impact, and flood plain management criteria, to determine an appropriate and acceptable structure for each site. One specific criterion on which the design is evaluated and generally referred to as the "design discharge" is the flood level and frequency which results in inundation of the travelway. Table 4-3 relates desirable minimum levels of protection from travelway inundation to roadway classification. Variation from these minimum design levels must be justified through the assessment process and appropriately documented. When roadway overtopping is not involved, the "design discharge" will be the level of flood used for establishing freeboard and/or backwater limitations.

TABLE 4-3	
ROADWAY CLASSIFICATION	**FREQUENCY**
Interstate (I)	50 year
Primary (US & NC)	50 year
Secondary (Major, City thoroughfare)	50 year
Secondary	25 year

The hydrologic analysis process for a specific drainage feature is accomplished as an integral part of the hydraulic sizing and performance analysis. Specific discharge criteria and

computational needs are addressed in further sections of this guideline for each particular drainage feature. Documentation of the hydrologic data is included with the hydraulic design.

A copy of this permit application addendum will be posted on the NCDOT website at: http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html. If you have any questions or need additional information, please e-mail Jeff Hemphill at jhemphill@ncdot.gov.

Sincerely,

E. L. Lusk

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

Cc: David Chang
File

Ecosystem Enhancement PROGRAM

December 20, 2011

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-4989, Replace Bridge Number 148 over Lamance Creek on SR 1326, Transylvania 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 December 19, 2011, the impacts are located in CU 06010105 of the French Broad River Basin in the Southern Mountains (SM) Eco-Region, and are as follows:

French Broad 06010105 SM	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	53	0	0	0	0	0	0	0

This mitigation acceptance letter replaces the mitigation acceptance letter issued on June 24, 2011. EEP commits to implementing sufficient compensatory stream mitigation credits to offset the impacts associated with this project as determined by the regulatory agencies 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.

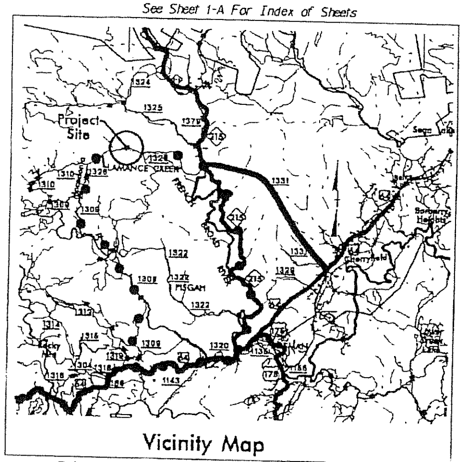
Sincerely,

James B. Stanfill for

Michael Ellison
EEP Deputy Director

cc: Mr. Lori Beckwith, USACE – Asheville Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: B-4989 Revised

See Sheet 1-A For Index of Sheets



Vicinity Map

DETOUR ROUTE ● ● ● ●

*Traffic to be maintained on off site detour

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

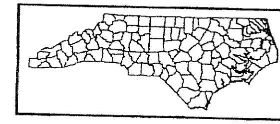
LOCATION: BRIDGE No. 148 ON SR 1326 MACEDONIA CHURCH RD OVER LAMANCE CREEK

TYPE OF WORK: GRADING, PAVING, DRAINAGE, & CULVERT

PERMIT DRAWINGS
SURFACE WATER & WETLAND IMPACTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4989	1	

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
40461.1.1	BRZ-1326(3)	P.E.
40461.2.1	BRZ-1326(3)	R/W & UTIL

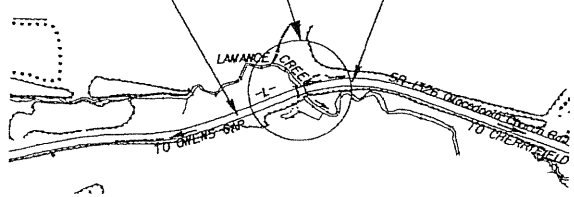


NAD 83/2001

SITE

-L- POT Sta.10+00.00
BEGIN TIP PROJECT B-4989

-L- POC STA 13+00.00
END TIP PROJECT B-4989



NOTES:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: B-4989

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2010 = 475
ADT 2035 = 1100
DHV = 60 %
D = 12 %
T = 6 % *
V = 40 MPH
* TTST 1% DUAL 5%
FUNCTIONAL CLASSIFICATION = RURAL LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT = 0.057 MILES

TOTAL LENGTH OF T.I.P. PROJECT = 0.057 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 18, 2011

LETTING DATE: MARCH 20, 2012

JASON MOORE, P.E.
PROJECT ENGINEER

JEANIE TYSON
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

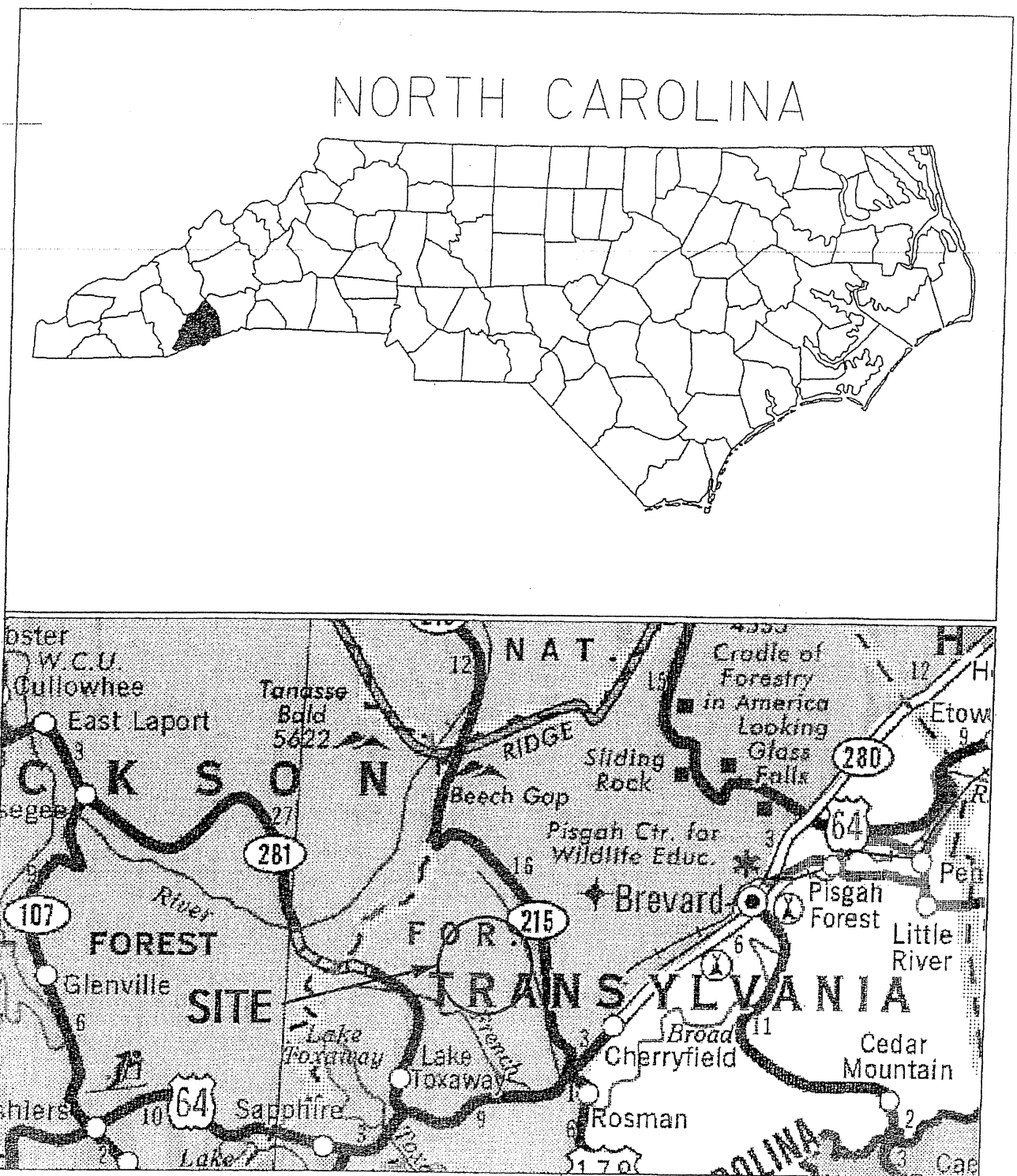
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER P.E.

REV 4/20 Permit Drawing
Sheet 1 of 10



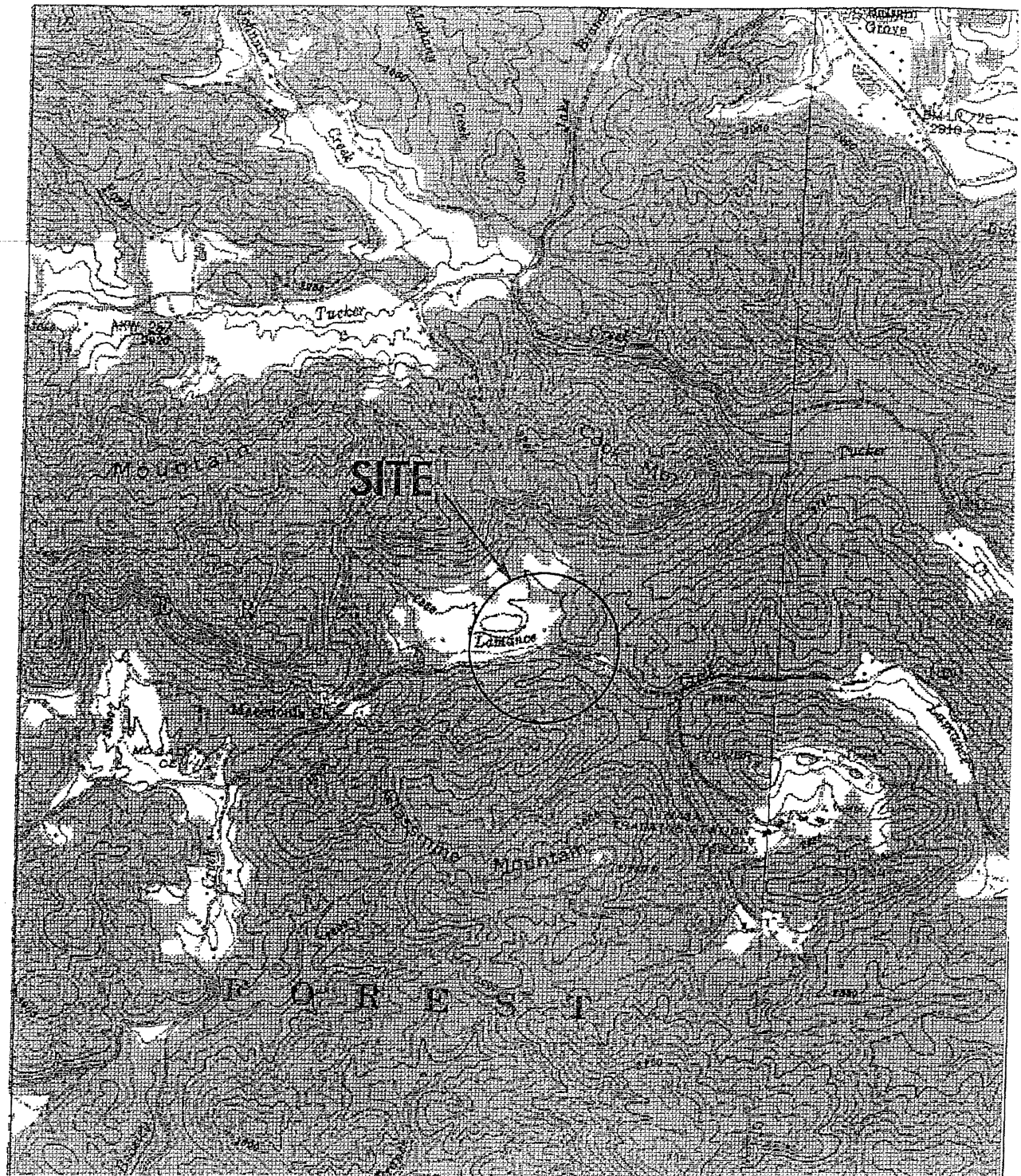
VICINITY MAP

NCDOT

DIVISION OF HIGHWAYS
TRANSYLVANIA COUNTY
PROJECT: 40461.1.1 (B-4989)
SR 1326
MACEDONIA CHURCH RD.
LAMANCE CREEK

SHEET OF 4/7/11

R2V1724 Permit Drawing
Sheet 2 of 10



WETLAND/SURFACE WATER

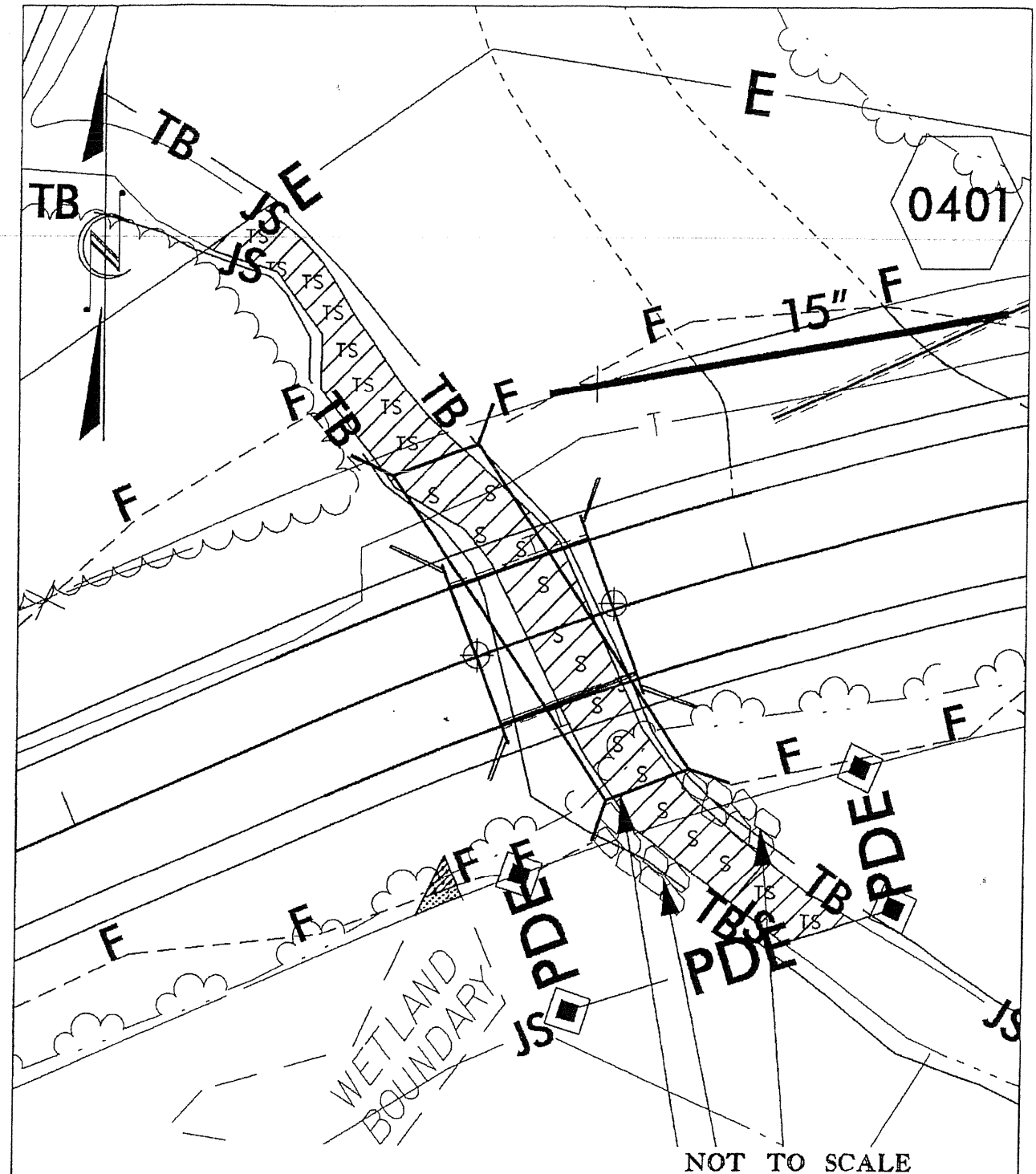
LOCATION MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
TRANSYLVANIA COUNTY

PROJECT: 40461.1.1 (B4989)
SR 1326
MACEDONIA CHURCH RD.
LAMANCE CREEK

4/17/11

R2U1425 Permit Drawing
Sheet 3 of 10



PLAN VIEW

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

NCDOT

DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

PROJECT: 40461.1.1 (B-4989)

SR 1326

MACEDONIA CHURCH RD.

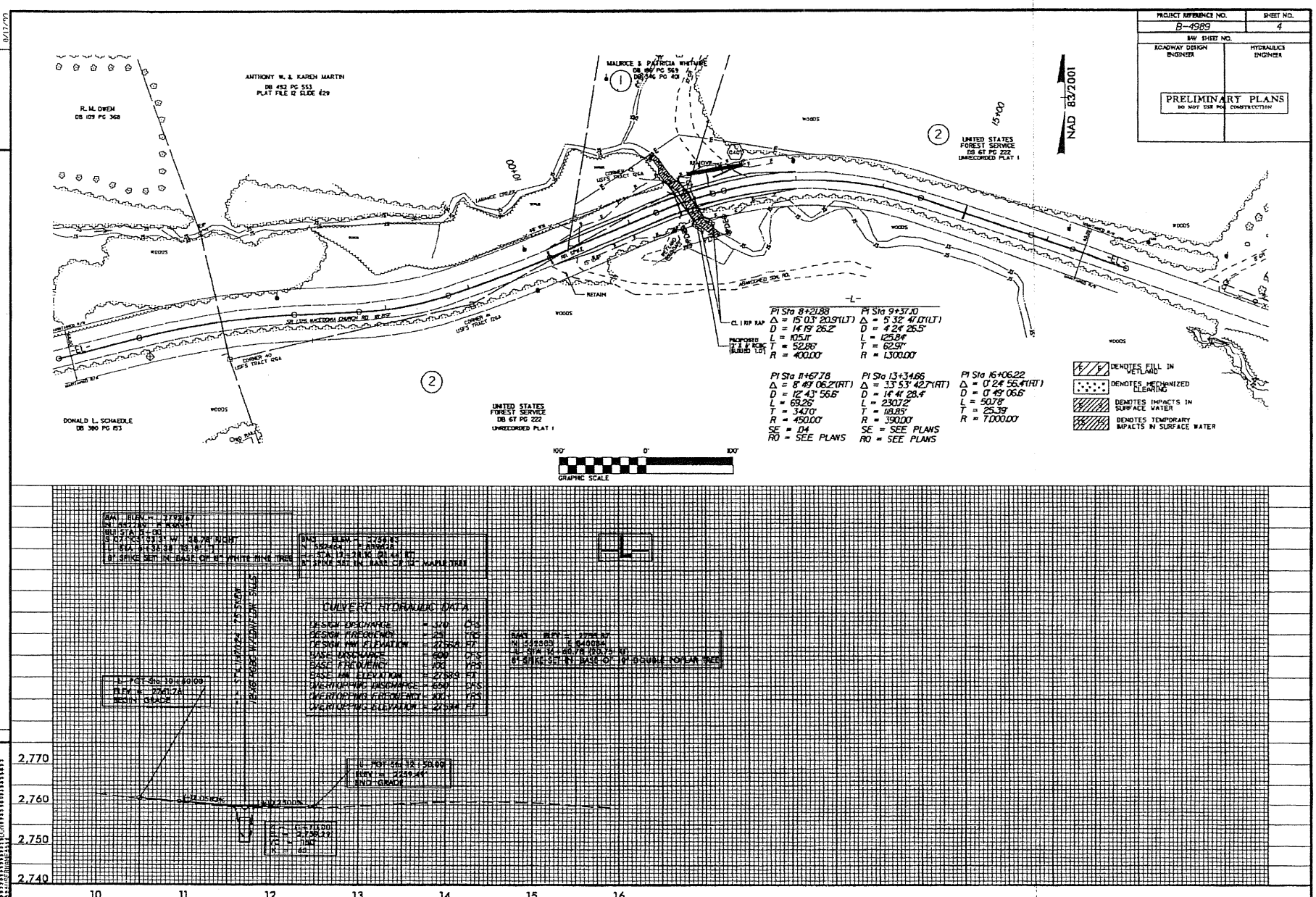
LAMANCE CREEK

REVISED: 08/15/11

SHEET OF 4/8/11

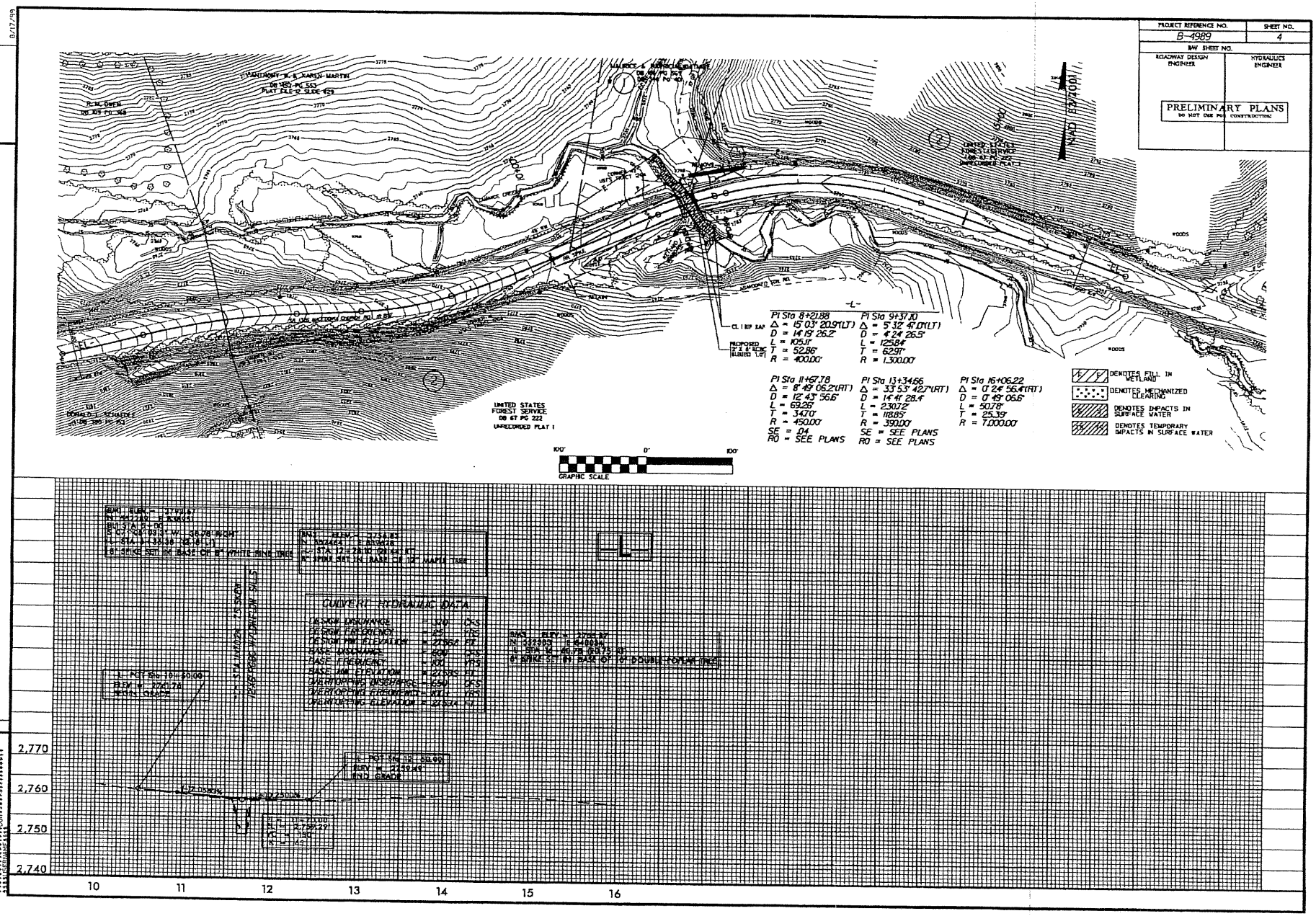
R2U1729

Permit Drawing
Sheet 4 of 10

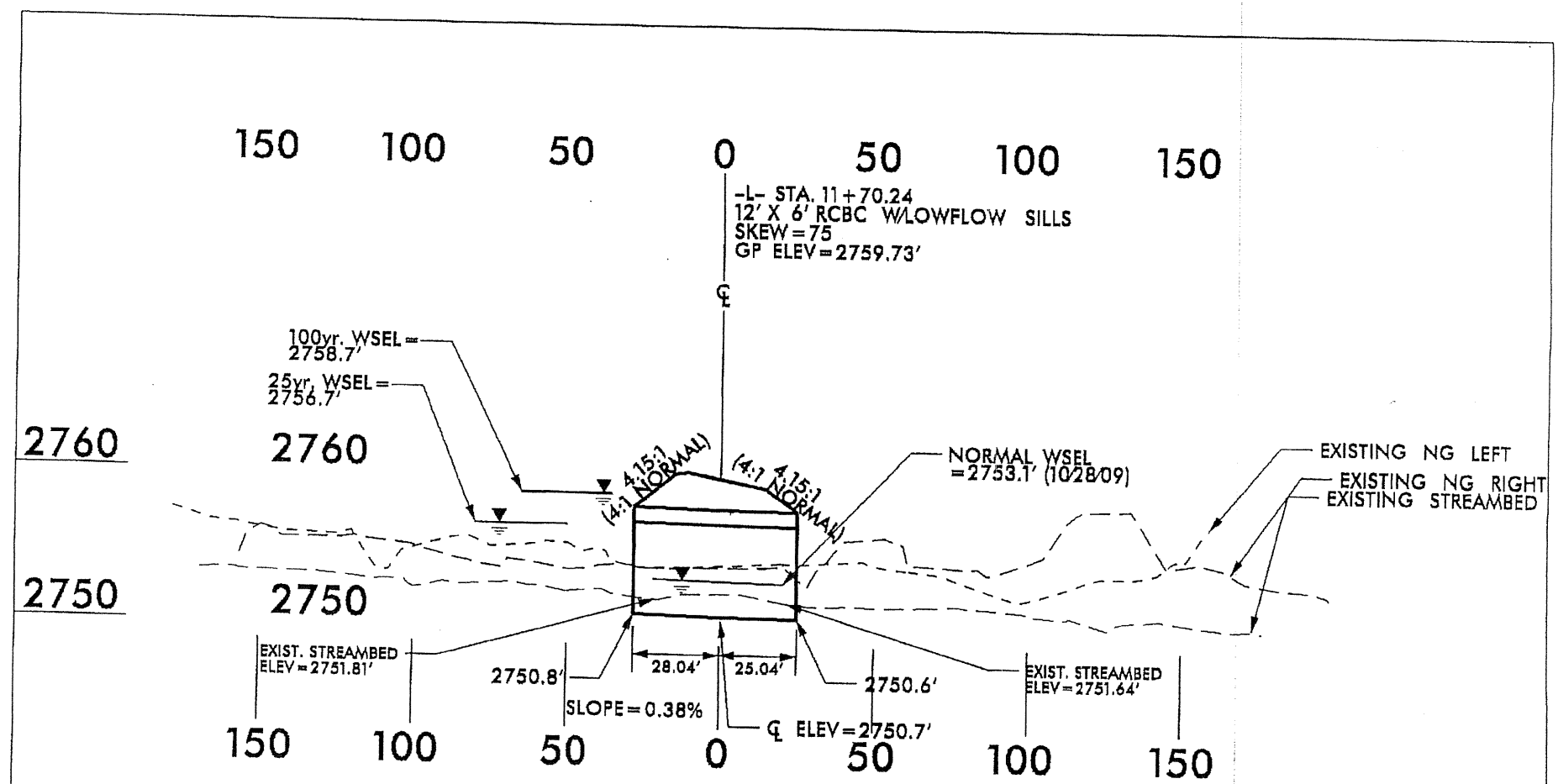


REVISIONS 9/17/99

12/17/99 Permit Drawing Sheet 5 of 10



Permit Drawing
Sheet 6 of 10



PROFILE

NCDOT

DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

PROJECT: 40461.1.1 (B-4989)

SR 1326

MACEDONIA CHURCH RD.

LAMANCE CREEK

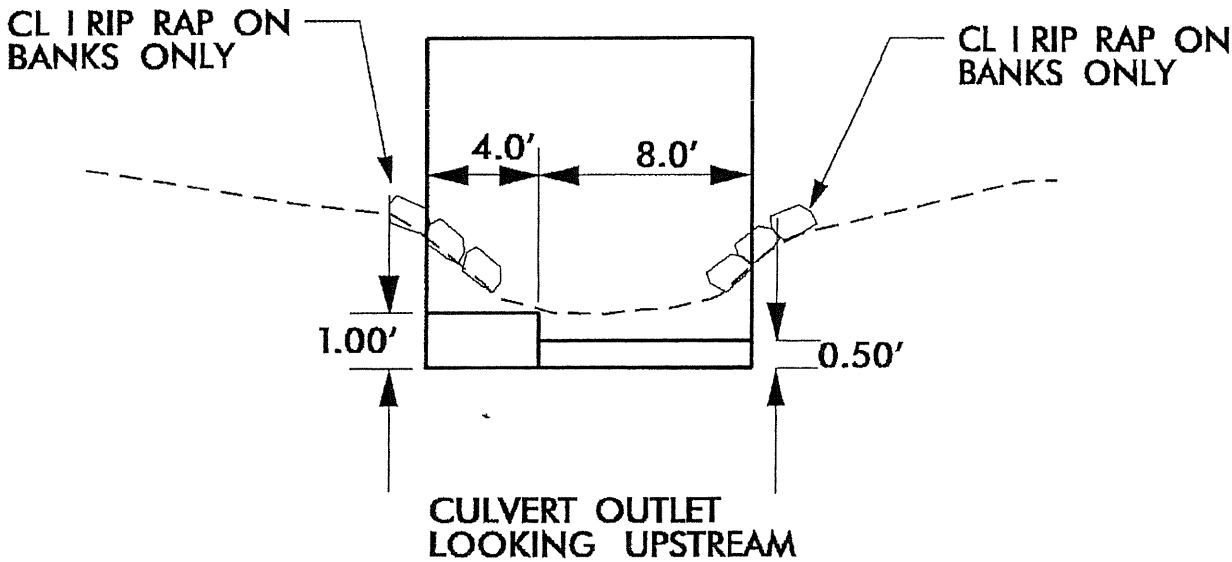
SHEET OF

REVISED 08/15/11
4/11/11

Permit Drawing
Sheet 2 of 10

R2V1/24

DETAIL OF SILLS AT RCBC (NOT TO SCALE)



NOTE: 3 SILLS – 1@ENTRANCE, 1@21', AND 1@OUTLET

NCDOT
DIVISION OF HIGHWAYS
TRANSYLVANIA COUNTY
PROJECT: 40461.1.1 (B-4989)
SR 1326
MACEDONIA CHURCH RD.
LAMANCE CREEK

SHEET OF 4/19/11

12/1/23 Permit Drawing
Sheet 7 of 10

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	Maurice & Patricia Whitmire	507 Highland Ave. Johnson City, Tenn. 37604
2	United States Forest Service	160 Zillicoa St. Ste.A Asheville, NC 28801-1082

NCDOT

DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY

PROJECT: 40461.1.1 (B-4989)

SR 1326

MACEDONIA CHURCH RD.

LAMANCE CREEK

SHEET OF 4/11/11

R2U1521

Permit Drawing Sheet 9 of 10

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
	11+45 -L- RT.	12' x 6' RCBC	<0.01			<0.01		0.02	0.01	53	55	
		Bank Stabilization								20		
TOTALS:			<0.01			<0.01		0.02	0.01	73.0	55.0	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

TRANSYLVANIA COUNTY
WBS - 40461.1.1 (B-4989)

SHEET

Revised: 8/15/2011

ATN Revised 3/31/05

11/4/24

Permit Drawing
Sheet 10 of 40

Dagnino, Carla S

From: Dagnino, Carla S
Sent: Tuesday, January 10, 2012 9:41 AM
To: mike.parker@ncdenr.gov
Cc: Hemphill, Jeffrey L
Subject: B-4989, Transylvania County
Attachments: B-4989 404 Application Addendum.pdf; B-4989 RevisedPermitDrawings.pdf; B-4989 - STR - FB 05 - DOT Revised.pdf; 20120109133448688.pdf; GP 31.pdf

Importance: High

Hi Mike,

We received a 401 from you back in August, 2011 for this project. We did not receive a 404 due to the USACE finding our application and document not complete in respect to alternative selection and avoidance/minimization measures when we go from a bridge to a culvert. Last year several folks at DOT met and worked on the avoidance/minimization measures for projects where culverts are being used in sensitive waters (such as trout).
In addition, while we were in review of this particular project, Lori noticed that the length of impact and culvert length did not match up. We received a new set of drawings and EEP acceptance letter to rectify this oversight in the initial permit application. That information was submitted to Lori and yesterday we received the 404 for this project.

Attachments for your review:

- 404 application addendum sent to USACE November 8, 2011
- Revised permit drawings showing the impacts of 53 feet for the culvert and 20 feet for bank stabilization (previous application had 33 feet for the culvert and 17 feet for bank stabilization)
- Revised EEP acceptance
- Section 404 Permit from USACE
- GP31 Conditions

I am sorry we left you out of the loop. That was a mistake on our part. At this point, I would like to know what you need from us to acquire a modified 401. We are running against a tight clock (January 31 review date for the permit), so any way you can help our would be appreciated.

Thanks.
Carla

Carla Dagnino
Project Management Group
Natural Environment Unit
NCDOT-Project Development and Environmental Analysis
Voicemail 919-707-6110
FAX 919-212-5785