



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

December 10, 2003

MEMORANDUM TO: Mr. S. P. Ivey, P.E.  
Division 9 Engineer

FROM:  Philip S. Harris, III, P.E., Manager   
Office of Natural Environment  
Project Development and  
Environmental Analysis Branch

SUBJECT: Rowan County, US 70 from 0.626 km West of SR 1953 (Kepley Road) to US 601 in Salisbury; Work Order Number 8.1631801; TIP Number R-2911E

Attached are the U. S. Army Corps of Engineers Individual Permit and the NCDWQ 401 Water Quality Certification for the above referenced project. All environmental permits have been received for the construction of this project. .

PSH/eah

Attachment

cc: Ms. Debbie Barbour, P.E.  
Mr. Jay Bennett, P.E.  
Mr. David Chang, P.E.  
Mr. Randy Garris, P.E.  
Mr. Greg Perfetti, P.E.  
Mr. Mark Staley  
Mr. John F. Sullivan, III, FHWA  
Mr. Omar Sultan  
Ms. Diane Hampton, P.E., Division 9 DEO



## PROJECT COMMITMENTS

Rowan County  
US 70 widening to a multi-lane facility from 0.4 mile west of SR 1953 (Kepley Road) to  
US 601 (Jake Alexander Boulevard) in Salisbury  
Federal Project STP-70(39)  
State Project 8.1631801  
TIP No. R-2911E

### Commitments Developed Through Project Development and Design

*Current status, changes, or additions to the project commitments as shown in the environmental document for the project are printed in italics.*

#### ***Project Development & Environmental Analysis Branch (PDEA)***

Bicycle accommodations will include 4.3m (14ft) outside lanes for the entire length of Section E, from Kepley Road to US 601.

New sidewalk will be constructed on the north and south side of US 70 from US 601 to Hurley School Road. In accordance with NCDOT's Pedestrian Policy, the City of Salisbury will be required to participate in the funding of this sidewalk.

*City of Salisbury has agreed to participate in the funding of the sidewalks.*

### Commitments Developed Through Permitting

#### ***Division 9 Construction, Roadside Environmental Unit (REU)***

Construction will be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.

The erosion and sediment control measures for the R-2911E project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*. These devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the R-2911E project.

For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface Mining Manual*. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.

### ***Division 9 Construction***

NCDOT and its contractors and/or agents shall not excavate, fill, or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by the Water Quality Certification, or any modification to the Certification. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with the Certification without appropriate modification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.

Excavation of stream crossings should be conducted in the dry unless demonstrated by the applicant or its authorized agent to be unfeasible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.

Stormwater shall be transported by vegetated conveyance or other means that are appropriate to the site conditions before being discharged into the streams.

Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.

Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.

The natural dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or changing the depth of the stream.

### ***Division 9 Construction, REU***

The removal of vegetation in riparian areas should be minimized. NCDOT is encouraged to use existing on-site vegetation and materials for stream bank stabilization and to minimize the use of rip rap. Riprap shall not be placed in the stream bottom.

Riparian vegetation, using native trees and shrubs, must be re-established within the construction limits of the project by the end of the growing season following completion of construction to reestablish the riparian zone and to provide long-term erosion control.

### ***Division 9 Construction***

Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.

Heavy equipment should be operated from the bank rather than in the stream channel unless demonstrated by the applicant or its authorized agent to be unfeasible. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic substances.

### ***PDEA***

Compensatory mitigation shall be the same as that approved by the US Army Corps of Engineers as long as the mitigation required equals a ratio of 1:1 restoration or creation of lost wetland acres as described in 15A NCAC 2H.0506 (h)(6).

### ***Division 9 Construction, REU***

On-site stream relocation of 180.4 linear feet consisting of *natural channel design*:

The relocation must be constructed in a dry work area, and stabilized before the stream flow is diverted. The relocation shall be completed and stabilized prior to diverting water into the new channel. The channel must be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30-foot wide wooded and an adjacent 20-foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating coir fiber and seedling establishment is allowable. Rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the Applicant must provide written justification and the calculations used to determine the extent of rip-rap coverage requested.

If the on-site stream relocation or the associated riparian area has been determined to be unstable, the stream shall be repaired or stabilized using only natural channel design techniques. Additionally, the vegetation in the riparian area shall be maintained and/or replaced according to the approved plans. Rip-rap and other hard structures may *only* be used if required by the Division of Land Resources or a Delegated Local Program. Additionally, all repair designs must be submitted to and receive written approval from the Division before the repair work is performed.

NCDOT shall provide evidence of channel stability and vegetative success through an annual photographic survey for five (5) years. In addition, during years 1, 3, and 5, a riffle cross-section and longitudinal profile shall be performed and provided to NCDWQ.

***Division 9 Right of Way***

Since the on-site stream relocations are proposed as compensatory mitigation for project impacts, the restored portions and associated riparian buffer areas shall be preserved in perpetuity through a deed notification, preservation easement or some other legally binding mechanism or agreement. The above easement or other legally binding mechanism or agreement must be in place before any construction impacts approved under this Certification can take place. The NCDOT Division 9 Right of Way Office shall provide NCDWQ with evidence that the additional right of way has been purchased within two (2) months of issuance of the US Army Corps of Engineers 404 Permit.

***Division 9 Construction, PDEA***

The on-site stream relocation must be completely constructed and maintained according to the plans approved by the Division before the road is opened and any mitigation credit is given.

Compensatory mitigation in HU 03040102 for the remaining 196.8 linear feet of stream impacts shall be provided by the NC Ecological Enhancement Program (EEP). EEP has indicated in a letter dated September 19, 2003 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project.

In accordance with 15A NCAC 2R.0500, this contribution will satisfy NC Division of Water Quality's compensatory mitigation requirements under 15A NCAC 2H.0506(h). Until plans are received and approved for the proposed mitigation sites, wetland or stream fill shall not occur.

Upon completion of the project, the NCDOT shall complete and return the "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.

***Division 9 Construction***

NCDOT shall require its contractors (and/or agents) to comply with all of the terms of the 401 Certification, and shall provide each of its contractors (and/or agents) a copy of the 401 Certification.

Violations of any condition herein set forth may result in revocation of the 401 Certification and may result in criminal and/or civil penalties. The 401 Certification shall become null and void unless the above conditions are made conditions of the Department

of the Army Permit. The 401 Certification shall expire upon the expiration date of the Department of the Army Permit.

### ***Division 9 Construction***

All work authorized by the Department of the Army permit must be prepared in strict compliance with the plans, which are a part of the permit. NCDOT will ensure that the construction design plans for this project do not deviate from the permit plans attached to the authorization. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Raleigh Regulatory Field Office prior to any active construction in waters or wetlands.

### ***PDEA, Division 9 Construction***

NCDOT shall mitigate for 377 linear feet of important stream impact, as described below (180 linear feet of onsite stream relocation, and 1,968 linear feet of stream preservation in the Central Piedmont Eco-Region through the North Carolina Ecosystem Enhancement Program (EEP)).

NC-EEP STREAM MITIGATION: Compensatory mitigation for 196.8 linear feet of stream impacts associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in a letter from William D. Gilmore, dated October 7, 2003. The EEP will provide 1,968 linear feet of preservation of riverine streams, in the Central Piedmont Eco-Region, at the Haw River St. Pk./Phillips Site (Guilford County) Mitigation Site, which will be acquired and protected by the EEP within 30 days of the date of the Department of the Army permit. Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the United States Army Corps of Engineers signed July 22, 2003, the EEP will provide a minimum of 197 linear feet of restoration of riverine streams in Cataloging Unit 03020102 by July 22, 2005, and half of the proposed preservation mitigation would be available at that time for mitigation for other impacts. Construction within streams on the permitted highway project shall begin only after the EEP has made written confirmation to the District Engineer, that EEP, and not NCDOT, is responsible for providing the compensatory mitigation required, pursuant to Paragraph VI.B.7. of the MOA. NCDOT shall, within 30 days of the issue date of the Department of the Army permit, certify sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

### **ONSITE STREAM RELOCATION**

#### ***Division 9 Construction, REU***

IMPLEMENTATION: NCDOT shall mitigate for 312 linear feet of unavoidable impacts to perennial stream channel associated with this project by completing 312 linear feet of onsite stream relocation, as described in the permit application. All stream relocations shall be constructed in accordance with the North Carolina Wildlife Resources Commission's (NCWRC) "Stream Relocation Guidelines." NCDOT shall consult with

NCWRC on all stream relocations and implement all practicable recommendations in the design of specific site requirements for re-establishment of bank vegetation, and placement of meanders and habitat structures. Vegetation shall be used to the maximum extent practicable to stabilize banks, and riprap and other man-made structural measures shall be minimized.

***REU, PDEA, Division 9 Construction***

AS-BUILT SURVEY: NCDOT shall complete an as-built channel survey within sixty days of completion of the stream relocation construction. NCDOT shall document changes in the dimension, pattern, profile, vegetation plantings, and structures installed, of the relocated channel from the proposed design. NCDOT shall also include in the as-built survey: photo documentation at representative segments and structures; and a plan view diagram.

MONITORING SCHEDULE: NCDOT shall perform the following components of Level I monitoring each year for the 5-year monitoring period: Reference photos; plant survival (i.e., identify specific problem areas (missing, stressed, damaged or dead plantings), estimated causes, and proposed/required remedial action); visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. NCDOT shall submit the monitoring reports to the Corps of Engineers, Raleigh Regulatory Field Office Project Manager, within sixty days after completing the monitoring. If less than two bankfull events occur during the first 5 years, the permittee shall continue monitoring until the second bankfull event is documented. The bankfull events must occur during separate monitoring years. In the event that the required bankfull events do not occur during the five-year monitoring period, the Corps of Engineers, in consultation with the resource agencies, may determine that further monitoring is not required. It is suggested that all bankfull occurrences be monitored and reported through the required monitoring period. NCDOT shall perform and submit photo documentation twice each year (summer and winter) for the 5-year monitoring period, and for any subsequently required monitoring period.

MONITORING DATA/REPORT: NCDOT shall include the following information in the Level I monitoring report for the site: reference photos; plant survival notes and recommendations, as appropriate; and a report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. NCDOT shall complete the Monitoring Data Record, Sections 1, 2 and 3, for each representative segment of the channel, and for each year of monitoring (twice each year (summer and winter) for reference photos). NCDOT shall include in the monitoring reports a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

STREAM RELOCATION SUCCESS CRITERIA: The relocation success criteria, and required remediation actions, will be generally based on the Appendix II, and the Photo Documentation, Ecological Function, and Channel Stability criteria in the "Stream Mitigation Guidelines", dated April, 2003 (available on the internet at

[http://www.saw.usace.army.mil/wetlands/Mitigation/stream\\_mitigation.html](http://www.saw.usace.army.mil/wetlands/Mitigation/stream_mitigation.html)), pages 24 and 25, under “Success Criteria: ”.

Failure to institute and carry out the details of the conditions above may result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with TIP R-2911E, or such other remedy as the District Engineer or his authorized representatives may seek.

### **PRE-CONSTRUCTION**

#### ***Division 9 Construction***

Prior to commencing construction within jurisdictional waters of the United States, NCDOT shall forward the latest version of project construction drawings to the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings are acceptable.

NCDOT shall schedule an environmental preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within the Department of the Army Permit. NCDOT shall provide the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. NCDOT shall schedule the environmental preconstruction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. NCDOT shall invite the Corps and NCDWQ Project Managers a minimum of four weeks in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

NCDOT and its contractors and/or agents shall not excavate, fill, or perform mechanized landclearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this permit, or any modification to this permit. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project.

To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by the Department of the Army permit, NCDOT shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. NCDOT shall ensure that all such areas comply with preceding conditions of the Department of the Army permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project.

This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with preceding conditions. All information will be available to the Corps of Engineers upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

NCDOT shall require its contractors and/or agents to comply with the terms and conditions of the Department of the Army permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of the Department of the Army permit.

NCDOT shall implement the recommendations (1 – 12) in the September 22, 2003 letter from the North Carolina Wildlife Resources Commission.

NCDOT shall comply with the conditions specified in the water quality certification, No.3434, issued by the North Carolina Division of Water Quality on September 25, 2003.

***Division 9 Construction, REU***

NCDOT shall conduct construction in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standards.

NCDOT shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

***Division 9 Construction***

NCDOT shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened.

If NCDOT discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he will immediately notify the Wilmington District Engineer who will initiate the required State/Federal coordination.

No excavated or fill material will be placed at any time in waters or wetlands outside the permitted construction areas, nor will it be placed in any location or in any manner so as to impair surface water flow into or out of any wetland area.

NCDOT will maintain the authorized work in good condition and in conformance with the terms and conditions of the Department of the Army permit. NCDOT is not relieved of this requirement if he abandons the permitted activity without transferring it to a third party.

All fill material will be clean and free of any pollutants except in trace quantities. Metal products, organic materials, or unsightly debris will not be used.

***PDEA, Division 9 Construction***

The Department of the Army permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

The Department of the Army permit does not grant any property rights or exclusive privileges.

In issuing the Department of the Army permit, the Federal Government does not assume any liability for: damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes, damages to the permitted project or uses thereof as a result of current or future Federal activities initiated on behalf of the general public, damages to other permitted or unpermitted activities or structures caused by the authorized activity, design and construction deficiencies associated with the permitted work, or damage claims associated with any future modification, suspension, or revocation of this permit.

Any violation of these conditions or violations of Section 404 of the Clean Water Act must be reported in writing to the Wilmington District, U. S Army Corps of Engineers, within 24 hours of the violation.





DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

December 4, 2003

IN REPLY REFER TO

Regulatory Division

Action ID. 200221536

Dr. Gregory J. Thorpe, Ph.D.  
Environmental Management Director, PDEA  
N.C. Department of Transportation  
1548 Mail Service Center  
Raleigh, NC 27699-1548

Dear Dr. Thorpe:

In accordance with the written request of July 18, 2003, and the ensuing administrative record, enclosed is a permit to authorize the discharge of dredged and fill material into waters of the United States, for construction of Section E of improvements to US 70 (T.I.P. No. R-2911E), crossing Setman Branch, from 0.4 miles west of SR 1953 (Kepley Road) to US 601 (Jake Alexander Boulevard), west of Salisbury, in Rowan County, North Carolina.

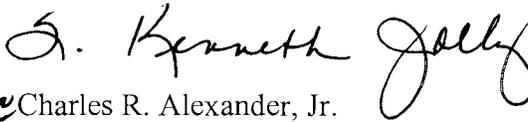
If any change in the authorized work is required because of unforeseen or altered conditions or for any other reason, the plans revised to show the change must be sent promptly to this office. Such action is necessary, as revised plans must be reviewed and the permit modified.

Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant general conditions require that:

- a. You must complete construction before December 31, 2006.
- b. You must notify this office in advance as to when you intend to commence and complete work.
- c. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

Should you have questions, contact Mr. Eric Alsmeyer of my Raleigh Field Office regulatory staff at telephone (919) 876-8441, extension 23.

Sincerely,

  
for Charles R. Alexander, Jr.  
Colonel, U.S. Army  
District Engineer

Enclosures

Copy Furnished with enclosures:

Chief, Source Data Unit  
NOAA/National Ocean Service  
ATTN: Sharon Tear N/CS261  
1315 East-West Hwy., Rm 7316  
Silver Spring, MD 20910-3282

Copies Furnished with special conditions and plans:

Mr. Garland Pardue, Field Supervisor  
U.S. Fish and Wildlife Service  
Fish and Wildlife Enhancement  
Post Office Box 33726  
Raleigh, North Carolina 27636-3726

Mr. Ron Sechler  
National Marine Fisheries  
Service, NOAA  
Pivers Island  
Beaufort, North Carolina 28516

Mr. David Rackley  
National Marine Fisheries  
Service, NOAA  
219 Fort Johnson Road  
Charleston, South Carolina 29412-9110

Mr. Ronald Mikulak, Chief  
Wetlands Section - Region IV  
Water Management Division  
U.S. Environmental Protection Agency  
Atlanta Federal Center  
61 Forsyth Street, SW  
Atlanta, Georgia 30303

Mr. Doug Huggett  
Division of Coastal Management  
North Carolina Department of  
Environment and Natural Resources  
1638 Mail Service Center  
Raleigh, North Carolina 27699-1638

Mr. Ronald E. Ferrell, Program Manager  
Wetlands Restoration Program  
Division of Water Quality  
1619 Mail Service Center  
Raleigh, North, Carolina 27699-1619

Mr. William D. Gilmore, P.E.  
EEP Transition Manager  
Ecosystem Enhancement Program  
1652 Mail Service Center  
Raleigh, NC 27699-1652

DEPARTMENT OF THE ARMY PERMIT

RECEIVED

NC Department of Transportation

DEC 03 2003

REGULATORY

Permittee \_\_\_\_\_  
200221536

Permit No. \_\_\_\_\_  
USAED, Wilmington

Issuing Office \_\_\_\_\_

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

Place fill material impacting 377 linear feet of stream, for construction of Section E of improvements to US 70 (T.I.P. No. R-2911E), crossing Setman Branch.

Project Location:

From 0.4 miles west of SR 1953 (Kepley Road) to US 601 (Jake Alexander Boulevard), west of Salisbury, in Rowan County, North Carolina.

Permit Conditions:

General Conditions:

December 31, 2006

1. The time limit for completing the work authorized ends on \_\_\_\_\_ . If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

**Special Conditions:**

See enclosed sheet.

**Further Information:**

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
  - ( ) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
  - (x) Section 404 of the Clean Water Act (33 U.S.C. 1344).
  - ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
  - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
  - b. This permit does not grant any property rights or exclusive privileges.
  - c. This permit does not authorize any injury to the property or rights of others.
  - d. This permit does not authorize interference with any existing or proposed Federal project.
3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:
  - a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.
  - b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
  - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
  - d. Design or construction deficiencies associated with the permitted work.



**SPECIAL CONDITIONS (Action ID. 200221536; NCDOT/TIP R-2911E)**

a. All work authorized by this permit must be prepared in strict compliance with the attached plans, which are a part of this permit. The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Raleigh Regulatory Field Office prior to any active construction in waters or wetlands.

b. The permittee shall mitigate for 377 linear feet of important stream impact, as described below (180 linear feet of onsite stream relocation, and 1,968 linear feet of stream preservation in the Central Piedmont Eco-Region through the North Carolina Ecosystem Enhancement Program (EEP)).

c. NC-EEP STREAM MITIGATION: Compensatory mitigation for 196.8 linear feet of stream impacts associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in a letter from William D. Gilmore, dated October 7, 2003. The EEP will provide 1,968 linear feet of preservation of riverine streams, in the Central Piedmont Eco-Region, at the Haw River St. Pk./Phillips Site (Guilford County) Mitigation Site, which will be acquired and protected by the EEP within 30 days of the date of this permit. Pursuant to the EEP Memorandum of Agreement (MOA) between the State of North Carolina and the United States Army Corps of Engineers signed July 22, 2003, the EEP will provide a minimum of 197 linear feet of restoration of riverine streams in Cataloging Unit 03020102 by July 22, 2005, and half of the proposed preservation mitigation would be available at that time for mitigation for other impacts. Construction within streams on the permitted highway project shall begin only after the EEP has made written confirmation to the District Engineer, that EEP, and not NCDOT, is responsible for providing the compensatory mitigation required, pursuant to Paragraph VI.B.7. of the MOA. NCDOT shall, within 30 days of the issue date of this permit, certify sufficient funds have been provided to EEP to complete the required mitigation, pursuant to Paragraph V. of the MOA.

**ONSITE STREAM RELOCATION**

d. IMPLEMENTATION: The permittee shall mitigate for 312 linear feet of unavoidable impacts to perennial stream channel associated with this project by completing 312 linear feet of onsite stream relocation, as described in the permit application. All stream relocations shall be constructed in accordance with the North Carolina Wildlife Resources Commission's (NCWRC) "Stream Relocation Guidelines." NCDOT shall consult with NCWRC on all stream relocations and implement all practicable recommendations in the design of specific site requirements for re-establishment of bank vegetation, and placement of meanders and habitat structures. Vegetation shall be used to the maximum extent practicable to stabilize banks, and riprap and other man-made structural measures shall be minimized.

e. AS-BUILT SURVEY: The permittee shall complete an as-built channel survey within sixty days of completion of the stream relocation construction. The permittee shall document changes in the dimension, pattern, profile, vegetation plantings, and structures installed, of the relocated channel from the proposed design. The permittee shall also include in the as-built survey: photo documentation at representative segments and structures; and a plan view diagram.

f. MONITORING SCHEDULE: The permittee shall perform the following components of Level I monitoring each year for the 5-year monitoring period: Reference photos; plant survival (i.e., identify specific problem areas (missing, stressed, damaged or dead plantings), estimated causes, and proposed/required remedial action); visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. The permittee shall submit the monitoring reports to the Corps of Engineers, Raleigh Regulatory Field Office Project Manager, within sixty days after completing the monitoring. If less than two bankfull events occur during the first 5 years, the permittee shall continue monitoring until the second bankfull event is documented. The bankfull events must occur during separate monitoring years. In the event that the required bankfull events do not occur during the five-year monitoring period, the Corps of Engineers, in consultation with the resource agencies, may determine that further monitoring is not required. It is suggested that all bankfull occurrences be monitored and reported through the required monitoring period. The permittee shall perform and submit photo documentation twice each year (summer and winter) for the 5-year monitoring period, and for any subsequently required monitoring period.

g. MONITORING DATA/REPORT: The permittee shall include the following information in the Level I monitoring report for the site: reference photos; plant survival notes and recommendations, as appropriate; and a report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. The permittee shall complete the Monitoring Data Record, Sections 1, 2 and 3 (pages 1, 2 and 3, attached), for each representative segment of the channel, and for each year of monitoring (twice each year (summer and winter) for reference photos). The permittee shall include in the monitoring reports a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

h. STREAM RELOCATION SUCCESS CRITERIA: The relocation success criteria, and required remediation actions, will be generally based on the attached Appendix II, and the Photo Documentation, Ecological Function, and Channel Stability criteria in the “Stream Mitigation Guidelines”, dated April, 2003 (available on the internet at [http://www.saw.usace.army.mil/wetlands/Mitigation/stream\\_mitigation.html](http://www.saw.usace.army.mil/wetlands/Mitigation/stream_mitigation.html)), pages 24 and 25, under “Success Criteria: ”.

i. Failure to institute and carry out the details of special conditions a. - h., above, may result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with TIP R-2911E, or such other remedy as the District Engineer or his authorized representatives may seek.

## PRE-CONSTRUCTION

j. Prior to commencing construction within jurisdictional waters of the United States, the permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings are acceptable.

k. The permittee shall schedule an environmental preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall provide the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the environmental preconstruction meeting for a time when the Corps of Engineers and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall invite the Corps and NCDWQ Project Managers a minimum of four weeks in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.

l. The permittee and its contractors and/or agents shall not excavate, fill, or perform mechanized landclearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this permit, or any modification to this permit. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project.

m. To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall ensure that all such areas comply with the preceding condition (l.) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the preceding condition (l.). All information will be available to the Corps of Engineers upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

n. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit.

o. The permittee shall implement the recommendations (1 – 12) in the attached September 22, 2003 letter from the North Carolina Wildlife Resources Commission.

p. The permittee shall comply with the conditions specified in the water quality certification, No.3434, issued by the North Carolina Division of Water Quality on September 25, 2003.

q. The permittee shall conduct construction in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standards.

r. The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

s. The permittee shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened.

t. If the permittee discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he will immediately notify the Wilmington District Engineer who will initiate the required State/Federal coordination.

u. No excavated or fill material will be placed at any time in waters or wetlands outside the permitted construction areas, nor will it be placed in any location or in any manner so as to impair surface water flow into or out of any wetland area.

v. The permittee will maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without transferring it to a third party.

w. All fill material will be clean and free of any pollutants except in trace quantities. Metal products, organic materials, or unsightly debris will not be used.

x. This Department of the Army permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

y. This permit does not grant any property rights or exclusive privileges.

z. In issuing this permit, the Federal Government does not assume any liability for:

1. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

2. Damages to the permitted project or uses thereof as a result of current or future Federal activities initiated on behalf of the general public.

3. Damages to other permitted or unpermitted activities or structures caused by the authorized activity.

4. Design and construction deficiencies associated with the permitted work.

5. Damage claims associated with any future modification, suspension, or revocation of this permit.

aa. Any violation of these conditions or violations of Section 404 of the Clean Water Act must be reported in writing to the Wilmington District, U. S Army Corps of Engineers, within 24 hours of the violation.



Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director  
Division of Water Quality  
Coleen H. Sullins, Deputy Director  
Division of Water Quality

September 25, 2003

RECEIVED

OCT 07 2003

REGULATORY

Mr. Gregory J. Thorpe, Ph.D., Environmental Director  
NCDOT Planning and Environmental Branch  
1548 Mail Service Center  
Raleigh, NC, 27699-1548

Dear Dr. Thorpe:

Re: Water Quality Certification Pursuant to §401 of the Federal Clean Water Act,  
US 70 widening from 0.4 mi. west of SR 1953 (Kepley Road) to US 601 (Jake Alexander  
Boulevard) in Salisbury, Rowan County.  
F.A. Project No. STP-70(39); State Project No. 8.1631801  
TIP No. R-2911E  
DWQ Project No. 030908

Attached hereto is a copy of Certification No. 3434 issued to The North Carolina Department of  
Transportation dated September 25, 2003.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

for Alan W. Klimek, P.E.

Attachments

cc: Wilmington District Corps of Engineers  
Eric Alsmeyer, USACE Raleigh Field Office  
NCDWQ Mooresville Regional Office  
Christopher Militscher, US Environmental Protection Agency – Region IV  
William Gilmore, NC Ecological Enhancement Program  
Central Files  
File Copy

## NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, .0500. This certification authorizes the NCDOT to incur the following permanent impacts:

- 377.2 linear feet of stream channel at Setman Branch in Hydrologic Unit 03040102 of the Yadkin River Basin in Cleveland County.

The R-2911E project shall be constructed pursuant to the application dated July 18, 2003 to construct the widening of US 70 from 0.4 miles west of SR 1953 (Kepley Road) to US 601 (Jake Alexander Boulevard) in Salisbury, Rowan County.

The Application provides adequate assurance that the discharge of fill material into the waters of the state with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your Application. All work authorized by this Certification must be done in strict compliance with the plans attached to the Application. If this project changes, incurring additional impacts to streams or wetlands, you are required to notify the DWQ *in writing*, and you may be required to submit a new application. Additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion Control, Non-discharge and Water Supply watershed regulations.

This Certification shall expire three (3) years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Corps of Engineers Permit, whichever is later.

### Condition(s) of Certification:

1. Construction will be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.
  - a. The erosion and sediment control measures for the R-2911E project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*. These devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the R-2911E project.
  - b. For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface Mining Manual*. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

2. Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.
3. NCDOT and its contractors and/or agents shall not excavate, fill, or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this Certification, or any modification to this Certification. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this Certification without appropriate modification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.
4. Excavation of stream crossings should be conducted in the dry unless demonstrated by the applicant or its authorized agent to be unfeasible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
5. Stormwater shall be transported by vegetated conveyance or other means that are appropriate to the site conditions before being discharged into the streams.
6. Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.
7. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
8. The natural dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or changing the depth of the stream.
9. The removal of vegetation in riparian areas should be minimized. NCDOT is encouraged to use existing on-site vegetation and materials for stream bank stabilization and to minimize the use of rip rap. Riprap shall not be placed in the stream bottom.
10. Riparian vegetation, using native trees and shrubs, must be re-established within the construction limits of the project by the end of the growing season following completion of construction to reestablish the riparian zone and to provide long-term erosion control.
11. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.
12. Heavy equipment should be operated from the bank rather than in the stream channel unless demonstrated by the applicant or its authorized agent to be unfeasible. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic substances.

13. *Mitigation*: Compensatory mitigation shall be the same as that approved by the US Army Corps of Engineers as long as the mitigation required equals a ratio of 1:1 restoration or creation of lost wetland acres as described in 15A NCAC 2H.0506 (h)(6).

- On-site stream relocation of 180.4 linear feet consisting of *natural channel design*.
  - The relocation must be constructed in a dry work area, and stabilized before the stream flow is diverted. The relocation shall be completed and stabilized prior to diverting water into the new channel. The channel must be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30-foot wide wooded and an adjacent 20-foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating coir fiber and seedling establishment is allowable. Rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the Applicant must provide written justification and the calculations used to determine the extent of rip-rap coverage requested.
  - If the on-site stream relocation or the associated riparian area has been determined to be unstable, the stream shall be repaired or stabilized using only natural channel design techniques. Additionally, the vegetation in the riparian area shall be maintained and/or replaced according to the approved plans. Rip-rap and other hard structures may *only* be used if required by the Division of Land Resources or a Delegated Local Program. Additionally, all repair designs must be submitted to and receive written approval from the Division before the repair work is performed.
  - NCDOT shall provide evidence of channel stability and vegetative success through an annual photographic survey for five (5) years. In addition, during years 1, 3, and 5, a riffle cross-section and longitudinal profile shall be performed and provided to NCDWQ.
  - Since the on-site stream relocations are proposed as compensatory mitigation for project impacts, the restored portions and associated riparian buffer areas shall be preserved in perpetuity through a deed notification, preservation easement or some other legally binding mechanism or agreement. The above easement or other legally binding mechanism or agreement must be in place before any construction impacts approved under this Certification can take place. The NCDOT Division 9 Right of Way Office shall provide NCDWQ with evidence that the additional right of way has been purchased within two (2) months of issuance of the US Army Corps of Engineers 404 Permit.
  - The on-site stream relocation must be completely constructed and maintained according to the plans approved by the Division before the road is opened and any mitigation credit is given.
- Compensatory mitigation in HU 03040102 for the remaining 196.8 linear feet of stream impacts shall be provided by the NC Ecological Enhancement Program (EEP). EEP has indicated in a letter dated September 19, 2003 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project.

In accordance with 15A NCAC 2R.0500, this contribution will satisfy NC Division of Water Quality's compensatory mitigation requirements under 15A NCAC 2H.0506(h). Until plans are received and approved for the proposed mitigation sites, wetland or stream fill shall not occur.

14. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.

NCDOT shall require its contractors (and/or agents) to comply with all of the terms of this Certification, and shall provide each of its contractors (and/or agents) a copy of this Certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal Permit. This Certification shall expire upon the expiration of the 404 Permit.

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This certification and its conditions are final and binding unless you ask for a hearing.

This the 25<sup>th</sup> day of September 2003

DIVISION OF WATER QUALITY

  
Alan W. Klimek, P.E.

WQC No. 3434

**COPY**

2002-2-1536

**RECEIVED**

SEP 23 2003



RALEIGH REGULATORY FIELD OFFICE

☒ North Carolina Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

TO: Eric Alsmeyer, DOT Coordinator  
Raleigh Regulatory Field Office, USACE

FROM: Marla Chambers, Highway Projects Coordinator *Marla Chambers*  
Habitat Conservation Program, NCWRC

DATE: September 22, 2003

SUBJECT: Review of a Section 404 Individual Permit application by NCDOT for the proposed widening of US 70 to a multi-lane facility from 0.4 miles west of SR 1953 (Kepley Road) to US 601 (Jake Alexander Boulevard) in Salisbury, Rowan County. TIP No. R-2911E.

North Carolina Department of Transportation (NCDOT) has submitted an application to obtain a Section 404 Individual Permit from the U.S. Army Corps of Engineers (USACE). Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

The NCDOT proposes to widen US 70 to a multi-lane facility from 0.4 miles west of SR 1953 (Kepley Road) to US 601 (Jake Alexander Boulevard) in Salisbury for a project length of approximately 3.8 miles. The proposed project, Section E of R-2911, is the eastern end of the 19-mile long US 70 improvement project from Statesville to Salisbury. Section E consists of widening to a four-lane, 18-foot median divided curb and gutter roadway with 14-foot outside pedestrian lanes for the entire length. A total of 377.2 linear feet of stream channel impacts at Setman Branch are planned, which include extending the existing culvert 196.8 feet and relocating 180.4 linear feet of channel downstream of the culvert. NCDOT does not plan to submit a monitoring plan or conduct biological monitoring for the stream relocation. The NCDOT and North Carolina Division of Water Quality have corresponded regarding this issue. We recommend this issue be resolved in such a manner that will verify success of the relocation in order to receive credit. Setman Branch is classified as WS-IV.

We can concur with the permit issuance if the following conditions are implemented:

1. Sediment and erosion control measures shall adhere to the design standards for sensitive watersheds (15A NCAC 4B .0124 (a)-(d)) and be strictly maintained until project completion to avoid impacts to downstream aquatic resources. Temporary or permanent herbaceous vegetation should be planted on all bare soil within 10 days of ground disturbing activities to provide long-term erosion control. Tall fescue should not be used in riparian areas. We encourage NCDOT to utilize onsite vegetation and materials for streambank stabilization when practicable. Erosion control matting should be used in riparian areas, instead of straw mulch.
2. Culverts that are less than 48-inch diameter should have the floor of the barrel installed 20% of the diameter of the culvert below the level of the stream bottom. Culverts that are 48-inch diameter or larger should be placed with the floor of the barrel approximately 12 inches below the stream bottom to allow natural stream bottom materials to become established in the culvert following installation and to provide aquatic life passage during periods of low flow. This may require increasing the size of the culvert to meet flow conveyance requirements. These measurements must be based on natural thalweg depths. Any perched outlets should be corrected during construction.
3. The natural dimension, pattern, and profile of the stream above and below the crossing should not be modified by widening the stream channel or changing the depth of the stream.
4. Removal of vegetation in riparian areas should be minimized. Native trees and shrubs should be planted along the stream banks to reestablish the riparian zone and to provide long-term erosion control.
5. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for fish and wildlife. Backfill materials should be obtained from upland sites.
6. Riprap should be minimized and installed in a manner so as not to interfere with aquatic life passage during low flow conditions. Riprap placed for bank stabilization should be limited to the stream bank below the high water mark, and vegetation should be used for stabilization above the high water elevation.
7. Excavation of the stream crossings should be conducted in the dry, if possible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
8. Rock check dams at culvert outlets should be removed at project completion. These structures could impede movement of aquatic life.
9. Stormwater should be directed to buffer areas or retention basins and should not be routed directly into streams.

10. If concrete will be used during construction, work must be accomplished so that wet (uncured) concrete does not contact surface waters. This will lessen the chance of altering the water chemistry and causing a fish kill.
11. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
12. Heavy equipment should be operated from the bank rather than in the stream channel whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the stream. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic materials.

Thank you for the opportunity review and comment on this project. If you have any questions regarding these comments, please contact me at (704) 485-2384.

cc: Marella Buncick, USFWS  
Cynthia Van Der Wiele, NCDWQ

**Channel Mitigation Monitoring Sheets I, II, III, AND IV  
Monitoring Data Record**

Project Title: \_\_\_\_\_ COE Action ID: \_\_\_\_\_

Stream Name: \_\_\_\_\_ DWQ Number: \_\_\_\_\_

City, County and other Location Information: \_\_\_\_\_

Date Construction Completed: \_\_\_\_\_ Monitoring Year: ( ) of 5

Ecoregion: \_\_\_\_\_ 8 digit HUC unit \_\_\_\_\_

USGS Quad Name and Coordinates: \_\_\_\_\_

**Rosgen Classification:** \_\_\_\_\_

Length of Project: \_\_\_\_\_ Urban or Rural: \_\_\_\_\_ Watershed Size: \_\_\_\_\_

Monitoring DATA collected by: \_\_\_\_\_ Date: \_\_\_\_\_

Applicant Information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Email address: \_\_\_\_\_

Consultant Information:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_ Email address: \_\_\_\_\_

Project Status: \_\_\_\_\_

---

---

**Monitoring Level required by COE and DWQ (404/Sect. 10 permit/ 401 Cert.):** Level 1 2 3

Monitoring Level 3 requires completion of *Section 1* (circle one)

Monitoring Level 2 requires completion of *Section 1 and Section 2*

Monitoring Level 1 requires completion of *Section 1, Section 2 and Section 3*

If biological monitoring is required by DWQ, then Section 4 should also be completed

---

---

**Section 1. PHOTO REFERENCE SITES**

*(Monitoring at all levels must complete this section)*

Attach site map showing the location and angle of all reference photos with a site designation (name, number, letter, etc.) assigned to each reference photo location. Photos should be provided for all structures and cross section locations, should show both banks and include an upstream and downstream view. Photos taken to document physical stability should be taken in winter. Photos taken to document vegetation should be taken in summer (at representative locations). Attach photos and a description of each reference photo or location. We recommend the use of a photo identification board in each photo to identify location.

**Total number of reference photo locations at this site:** \_\_\_\_\_

**Dates reference photos have been taken at this site:** \_\_\_\_\_

**Individual from whom additional photos can be obtained (name, address, phone):** \_\_\_\_\_

Other Information relative to site photo reference: \_\_\_\_\_

**If required to complete Level 3 monitoring only stop here; otherwise, complete section 2.**

**Section 2. PLANT SURVIVAL**

Attach plan sheet indicating plots and sample area locations and reference photos.

**Survival plots:**

/	DATE:				
Area within the easement is:					
Area sampled by survival plots:					
Number of survival plots sampled:					
Random or nonrandom site selection:					
% Coverage within survival plots is:					
Photos of reference plots taken: yes/no					

Provide a written description of specific data or findings and photos as needed for clarity.

**Live Stake counts:**

	DATE:				
Area within the easement is:					
Area sampled for stake survival:					
Number of plots sampled:					
Random or nonrandom site selection:					
Average number of surviving stakes:					
Range of survival for all plots:					

Provide a written description of specific data or findings as needed for clarity.

**Tree counts:**

	DATE:				
Area within the easement is:					
Area sampled for tree survival:					
Number of plots sampled:					
Random or nonrandom site selection:					
Average number of surviving trees:					
Range of survival for all plots:					

Provide a written description of specific data or findings as needed for clarity.

**Bankfull Events:**

	Date measured:				
	Method of Verification:				

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

If required to complete Level 1 and Level 2 monitoring only stop here; otherwise, complete section 3.

**Section 3. CHANNEL STABILITY**

Attach plan sheet(s) indicating the locations of cross-sections and beginning and ending of longitudinal profiles if the entire reach is not profiled. Year to year changes in cross-sections, longitudinal profile and bed material should be plotted and submitted. Comparison overlays from previous years for profile and cross-section monitoring should be provided.

**Cross-sections:** attach plots of each cross-section showing year to year changes.

Provide the following data for each cross-section:

Date measured					
Cross-section being measured					
Cross-sectional area: as-built/present					
Bankfull width: as-built/present					
Floodprone Width: as-built/present					
Width/depth: as-built/present					
Entrenchment ratio: as-built/present					
Stream Type: as-built/present*					

\* only required for riffle cross-sections

**Longitudinal profiles:** attach plots of the longitudinal profile showing year to year changes and the locations of installed or natural structures that affect profile.

Date measured	
Avg. slope riffles: as-built/present	
Avg. slope pools: as-built/present	
Number of riffles: as-built/present	
Number of pools: as-built/present	

**Pebble counts:** Attach a printout of pebble count data and a graphical plot of bed material showing the cumulative % finer than X millimeters and the number of particles in standard size classes. Year to year changes in bed material should also be plotted and provided.

Date measured					
Cross-section being measured					
D16: as-built/present					
D50: as-built/present					
D84: as-built/present					

**Visual Inspection:** The entire stream project as well as each instream structure and bank stabilization/revetment structure must be evaluated and problems addressed.

Date Inspected	Station Number				
Structure /Type					
Is water piping through or around structure?					
Head cut or down cut present?					
Bank or scour erosion present?					
Other problems noted?					

**NOTE:** Attach separate narrative sheets to each monitoring report describing/discussing the overall monitoring results. Include the identification of specific problem areas/channel failures, estimated cause and proposed/required remedial action. This should include a brief discussion of any parameter that has changed significantly from as-built. (See success criteria discussion in Section 11.)

Appendix II. General criteria used to evaluate the success or failure of activities at mitigation sites and required remedial actions to be implemented should monitoring indicate failure of a component.

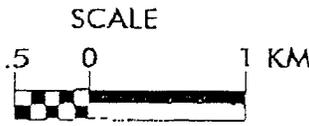
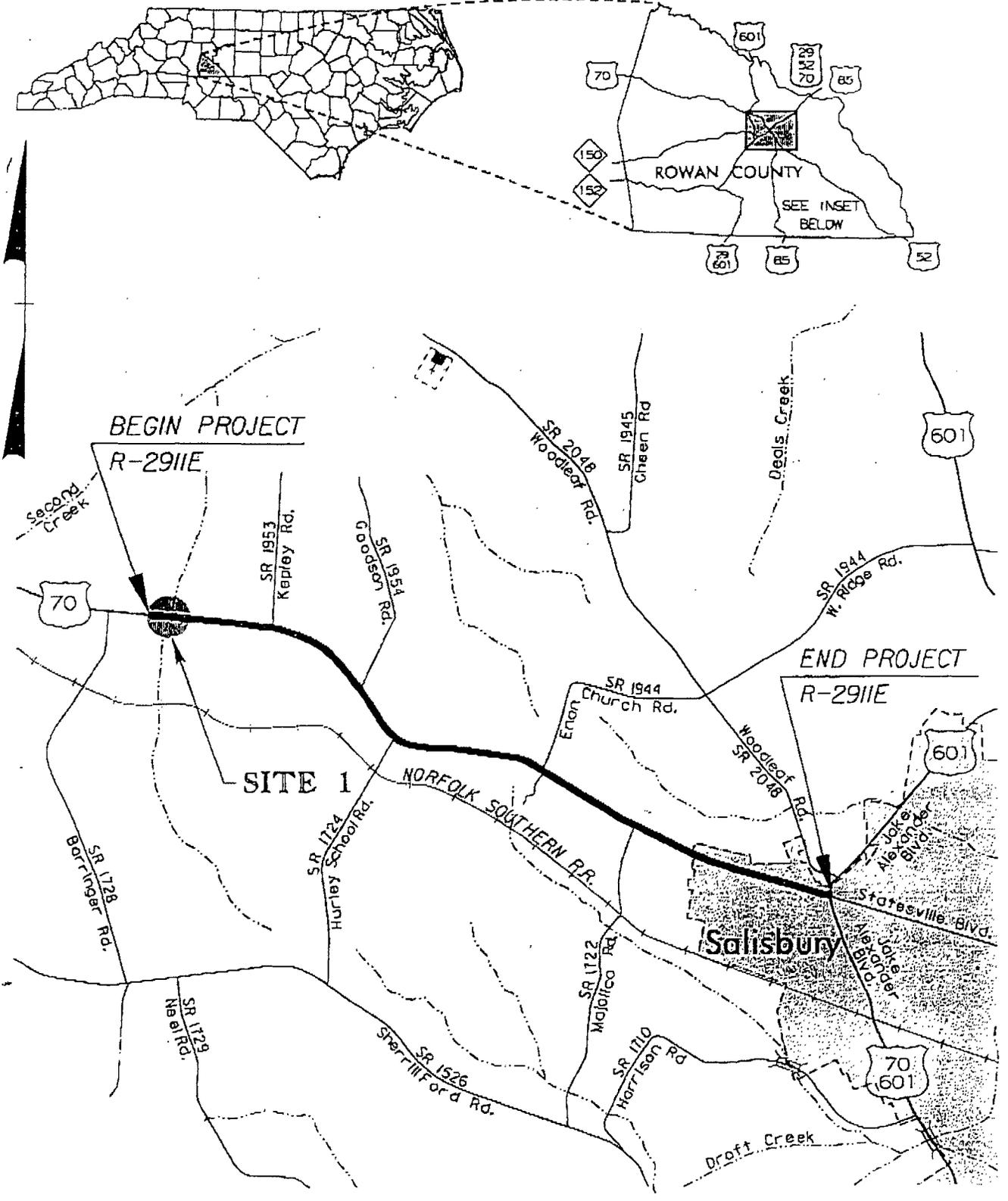
Mitigation Component	Success (requires no action)	Failure →	Action
(1.) <u>Photo Reference Sites</u> Longitudinal photos Lateral photos	No substantial* aggradation, degradation or bank erosion.	Substantial aggradation, degradation or bank erosion.	When substantial aggradation, degradation or bank erosion occurs, remedial actions will be planned, approved, and implemented.
(2.) <u>Plant Survival</u> Survival plots Stake counts Tree counts	≥ 75% Coverage in Photo Plots  Survival and growth of at least 320 trees/acre through year 3, then 10% mortality allowed in year 4 (288 trees/acre) and additional 10% mortality in year 5 for 260 trees/acre through year 5.	< 75% coverage in photo plots for herbaceous cover.  Survival of less than 320 trees per acre through year 3 and then less than the success criteria for years 4 and 5.	Areas of less than 75% coverage will be re-seeded and or fertilized, live stakes and bare rooted trees will be planted to achieve desired densities.
(3.) <u>Channel Stability</u> Cross-sections Longitudinal profiles Pebble counts	Minimal evidence of instability (down-cutting, deposition, bank erosion, increase in sands or finer substrate material).	Substantial* evidence of instability.	When Substantial evidence of instability occurs, remedial actions will be planned, approved, and implemented.
(4.) <u>Biological Indicators</u> Invertebrate populations Fish populations	Population measurements remain the same or improve, and species composition indicates a positive trend.	Population measurements and species composition indicate a negative trend.	Reasons for failure will be evaluated and remedial action plans developed, approved, and implemented.

\*Substantial or subjective determinations of success will be made by the mitigation sponsor and confirmed by COE and review agencies.

Monitoring Level 1 will include items 1, 2, and 3, and may include item 4 based on the project review.

Monitoring Level 2 will include items 1 and 2, and may include item 3 based on the project review.

Monitoring Level 3 will include only item 1.



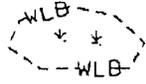
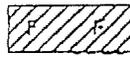
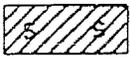
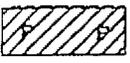
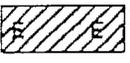
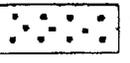
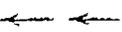
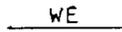
N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

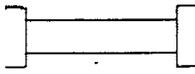
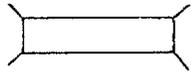
ROWAN COUNTY

PROJECT: 8.1631801 (R-2911E)  
US 70 WIDENING

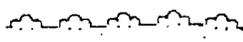
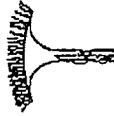
SHEET 1 OF 13 12/04/01

# WETLAND LEGEND

- WLB--- WETLAND BOUNDARY
-  WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN SURFACE WATER (POND)
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY FILL IN SURFACE WATER
-  DENOTES MECHANIZED CLEARING
- BZ — RIPARIAN BUFFER ZONE
-  FLOW DIRECTION
-  TOP OF BANK
-  EDGE OF WATER
-  PROP. LIMIT OF CUT
-  PROP. LIMIT OF FILL
-  PROP. RIGHT OF WAY
- NG — NATURAL GROUND
- PL — PROPERTY LINE
- TDE — TEMP. DRAINAGE EASEMENT
- PDE — PERMANENT DRAINAGE EASEMENT
- EAB — EXIST. ENDANGERED ANIMAL BOUNDARY
- EPB — EXIST. ENDANGERED PLANT BOUNDARY
-  WATER SURFACE
-  LIVE STAKES
-  BOULDER
- — COIR FIBER ROLLS

-  PROPOSED BRIDGE
-  PROPOSED BOX CULVERT
-  PROPOSED PIPE CULVERT

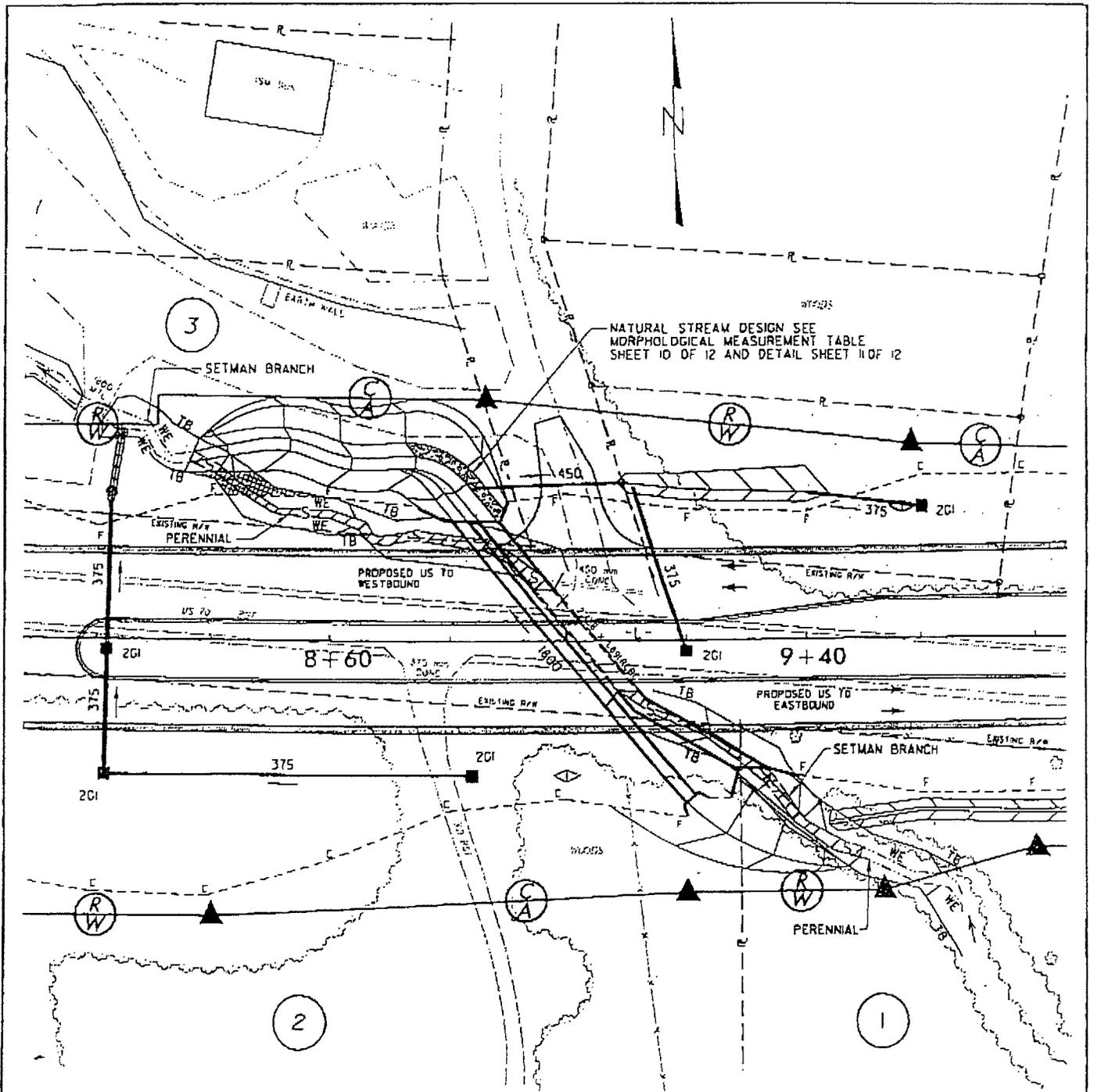
(DASHED LINES DENOTE EXISTING STRUCTURES)

-  SINGLE TREE
-  WOODS LINE
-  DRAINAGE INLET
-  ROOTWAD
-  RIP-RAP
-  ADJACENT PROPERTY OWNER OR PARCEL NUMBER IF AVAILABLE

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

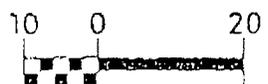
ROWAN COUNTY

PROJECT: 8.1631801 (R-2911E)  
US 70 WIDENING



NATURAL STREAM DESIGN SEE  
MORPHOLOGICAL MEASUREMENT TABLE  
SHEET 10 OF 12 AND DETAIL SHEET 11 OF 12

PLAN VIEW  
SITE 1



DENOTES FILL IN  
SURFACE WATERS



N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

ROWAN COUNTY

PROJECT: 8.1631801 (R-2911E)  
US 70 WIDENING

SHEET 3 OF 13

10/04/02

NCDOT Project No. 8.1631803

T.I.P No. R-2911E

Rowan County, NC

Portion of US 70 From SR1953 (Kepley Road)  
to US 601 (Jake Alexander Blvd.) in Salisbury, NC

## NATURAL STREAM DESIGN

### SETMAN BRANCH

Left of Project Station 8+60 -L-

Prepared by:

TranSite Consulting Engineers, Inc.

1300 Paddock Dr., Suite G10

Raleigh, NC 27609

## NATURAL STREAM DESIGN

### SETMAN BRANCH

Left of Project Station 8+60 -L-

The widening of US 70 will require that a portion of Setman Branch be relocated from left of Project Station 8+35 to left of Project Station 8+85. The proposed stream will be 55 meters (180') in length starting at the outlet of the proposed 1 @ 2.43m x 1.89m (8'x 6') RCBC extension and continue downstream intersecting the existing stream in a bend. The proposed stream relocation is designed according to "natural channel" design principles proposed by Dave Rosgen.

This portion of Setman Branch drains 181 hectares (447 acres) in Rowan County and is located within the Piedmont Physiographic Region. Existing land use in the drainage basin is predominantly low density residential with commercial along US 70. Zoning Maps for Rowan County indicate that development within the drainage basin is expected to be predominantly commercial, business and low density residential.

There is no hydraulic data available on this stream. Discharges were estimated using procedures outlined in USGS Water-Resources Report 96-4084, Estimation of Flood-Frequency Characteristics of Small Urban Watersheds in North Carolina.

### EXISTING STREAM

The existing stream along the reach from the outlet of the existing 2.43m x 1.89m (8'x 6') RCBC to a point approximately 50 meters (164') downstream has been altered by the construction of US 70 in the left overbank and commercial development in the right overbank. In the right overbank, the floodplain vegetation has been removed and a gravel lot constructed up to the top of bank. The existing stream was surveyed in detail to determine it's morphological characteristics. These characteristics include bankfull discharge, width, depth and area.

Based on the field survey data gathered, this stream reach was classified as a G5c stream. The bed material for this reach was found to be predominantly a medium sand with some gravel. The

HEC-RAS computer model was used to determine the hydraulic characteristics of the stream such as velocity, shear stress and stream power.

### REFERENCE REACH

Because of the altered state of the existing stream and since the NC Stream Restoration Institute does not currently have regional curves or equations for urban areas within the piedmont region, a "reference reach" of the stream was also surveyed in detail to determine its unaltered morphological characteristics. This natural stream reach is 110m (361') in length and is located downstream of the "existing" reach of Setman Branch. This reach was chosen because it has the same drainage area as the existing reach. Based on the field survey data gathered, this stream reach was classified as an E5 stream. Design and morphological data for the Existing, Reference and Proposed streams are shown in the "Morphological Measurement Table".

### PROPOSED STREAM

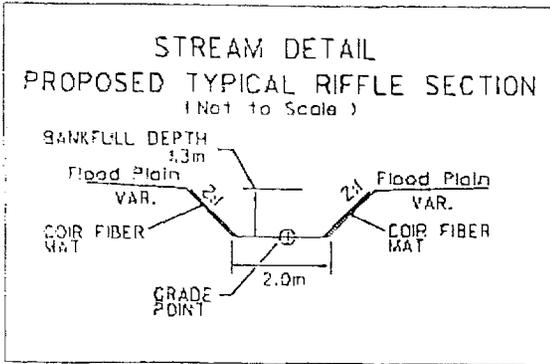
The proposed stream is designed to have an E5 classification. The gradient for the proposed stream is controlled upstream by the outlet elevation of the RCBC extension and downstream by the tie to the existing stream. The proposed stream is designed to retain the bankfull characteristics of the reference stream including velocities, shear stress/stability and sediment transport. To facilitate formation of a natural streambed through the RCBC, the upstream and downstream inverts will be buried a minimum of 0.3m (1.0').

Proposed stream stabilization is shown on the attached detail sheet. It is anticipated that the stream banks will be planted with native trees and shrubs above bankfull depth. Class "I" Rip Rap and filter fabric is required along the outside of the channel bend directly downstream of the RCBC to protect the channel from erosion. To aid in stability and reduce stream gradient, cross vane rock weirs with 0.15m (0.5') channel drops will be placed downstream of all meanders. Along the outside of the bends, root wads will be placed and coir fiber mat will line both stream banks. The stream bottom will match the characteristics of the existing channel.

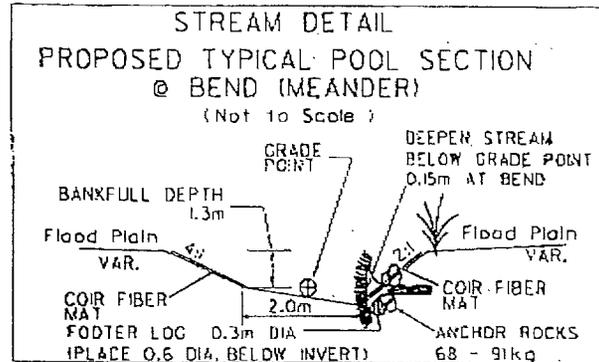
### SEDIMENT TRANSPORT ANALYSIS

The proposed stream has a bankfull stream power of 1.30 lb/ft-s and a shear stress of 0.48 lb/ft<sup>2</sup> as compared to 4.42 lb/ft-s and 1.08 lb/ft<sup>2</sup> for the existing stream. While the proposed values are less than those of the existing stream, they indicate that the proposed stream will transport the current sediment load and reduce degradation of the stream bed and banks. Additionally, the 2-yr and 10-yr velocities and shear stresses were evaluated and found to be within acceptable limits.

# NATURAL STREAM DESIGN TYPICALS



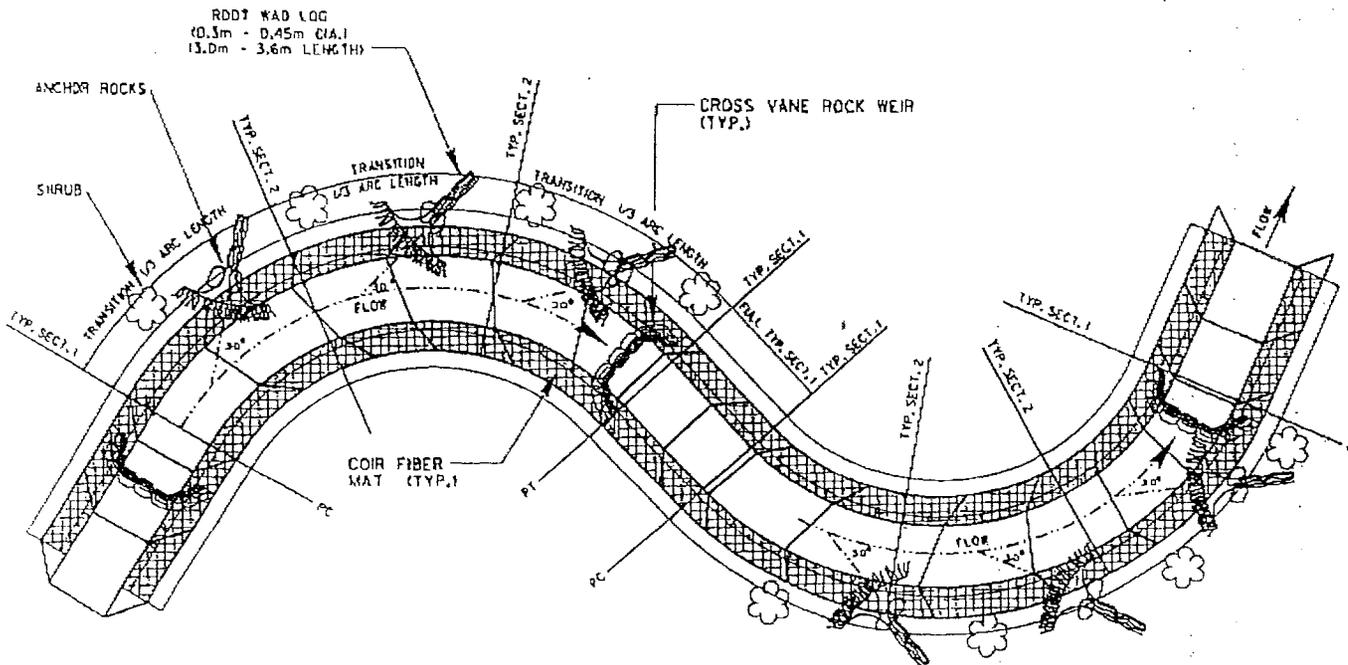
TYPICAL SECTION 1 BETWEEN BENDS



TYPICAL SECTION 2 AT BENDS

### NOTES:

- NUMBER OF ROOTWADS INSTALLED TO BE DETERMINED ON SITE.
- NUMBER OF CROSS VANES TO BE DETERMINED ON SITE.
- ROOTWADS TO BE SPACED 4x DIAMETER OF ROOT BASE.
- FOOTER LOG ANCHOR ROCK TO BE PLACED ON THE DOWNSTREAM END OF EACH FOOTER LOG SO THAT IT IS LEANING AGAINST THE LOG ON THE SIDE AWAY FROM THE STREAM.
- WHEN BACKFILLING OVER AND AROUND FOOTER LOGS, ROOTWAD LOGS AND ANCHOR ROCKS FIRMLY SECURE ALL COMPONENTS INCLUDING JOINTS, CONNECTIONS AND GAPS.
- PLANTINGS SHOULD BE PLACED ABOVE BANKFULL DEPTH.



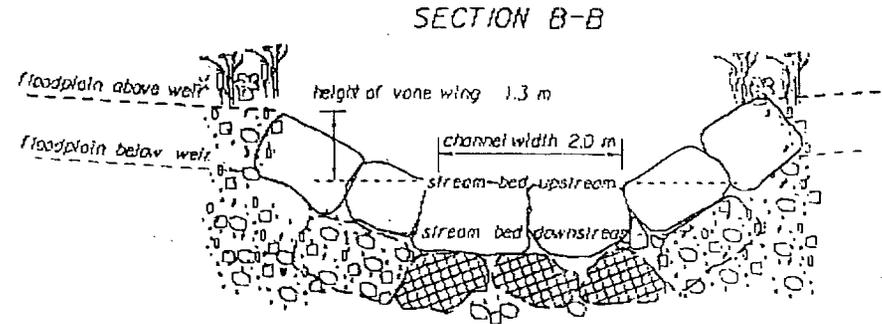
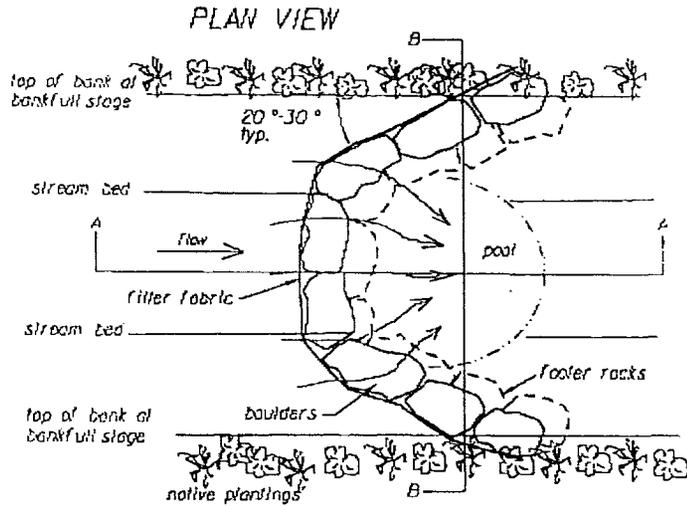
## STREAM PLAN VIEW

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

ROWAN COUNTY

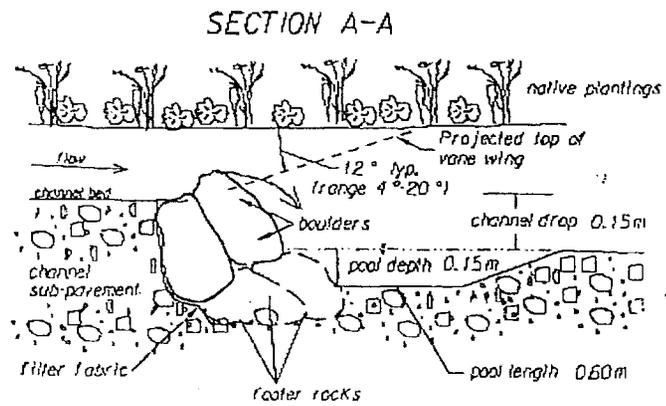
PROJECT: 8.1631801 (R-2911B)  
US 70 WIDENING

# CROSS VANE ROCK WEIR DETAIL



Note: Boulders should be native stone or shot rock, angular and oblong with axis approximately 0.30 m in length

Note: Rocks should fit tightly. Trim filter fabric flush with top of rocks. When drop between upstream floodplain and downstream flood plain exceeds 0.3 m, a boulder sill is recommended in the floodplain.



N.C. DEPT. OF TRANSPORTATION  
 DIVISION OF HIGHWAYS

ROWAN COUNTY

PROJECT: 8.1631801 (R-2911E)  
 US 70 WIDENING

SHEET 9 OF 13

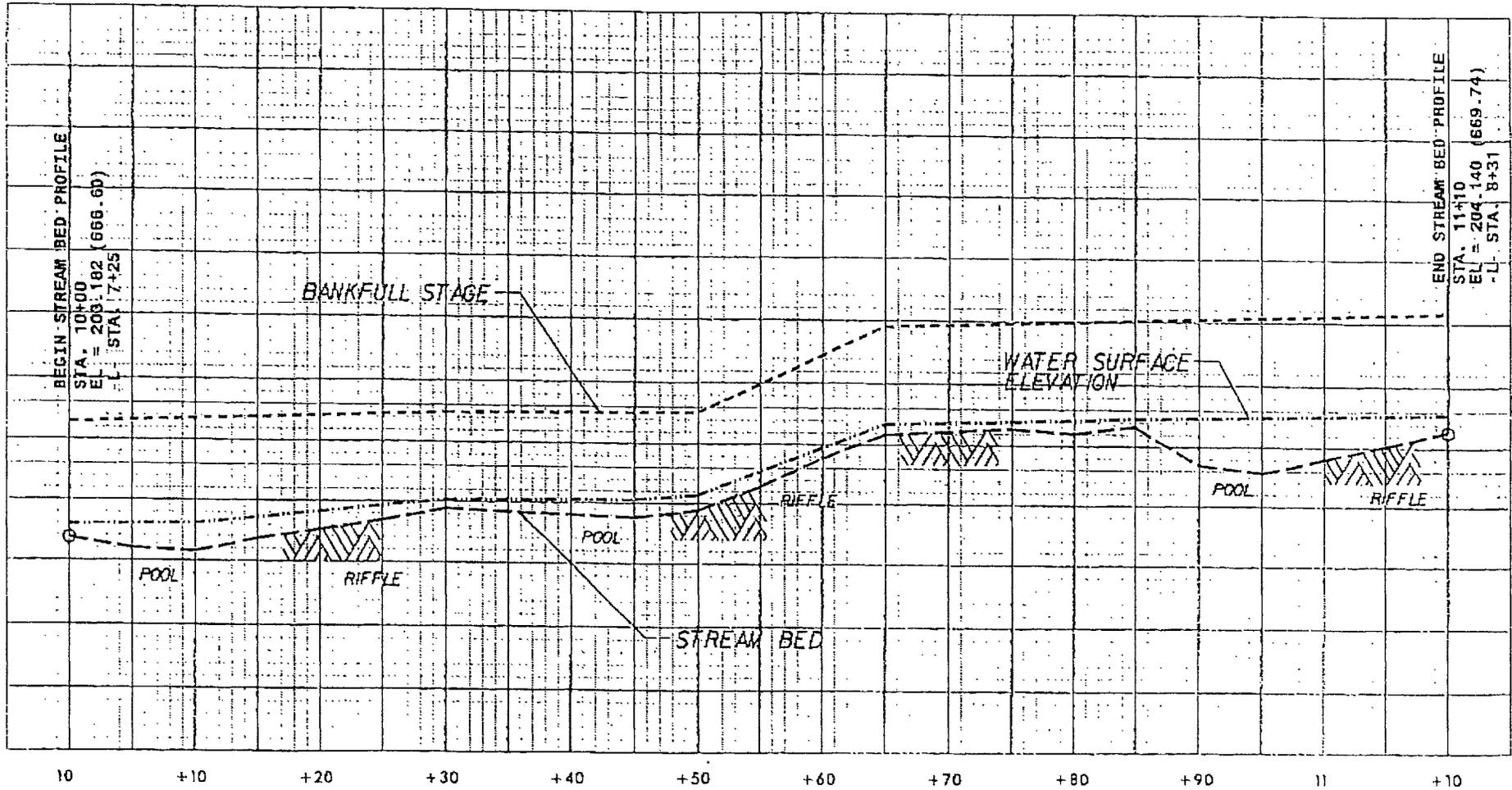
10/04/02

## Appendix B

Morphological Measurement Table  
R-2911E, Rowan Co.

Variables	Existing Channel	Proposed Reach	USGS Station	Reference Reach
1. Stream Type	G5c	E5	N/A	E5
2. Drainage Area (D.A.)	181 ha / 447 ac	181 ha / 447 ac	-	181 ha / 447 ac
3. Bankfull Width ( $W_{bki}$ )	4.07 m / 13.35 ft	7.11 m / 23.33 ft	-	5.87 m / 19.3 ft
4. Bankfull Mean Depth ( $d_{bki}$ )	0.94 m / 3.08 ft	0.81 m / 2.65 ft	-	0.79 m / 2.59 ft
5. Width/Depth Ratio ( $W_{bki}/d_{bki}$ )	4.33	8.78	-	7.43
6. Bankfull Cross-Sectional Area ( $A_{bki}$ )	3.84 m <sup>2</sup> / 41.3 ft <sup>2</sup>	5.75 m <sup>2</sup> / 61.9 ft <sup>2</sup>	-	4.66 m <sup>2</sup> / 50.2 ft <sup>2</sup>
7. Bankfull Mean Velocity ( $V_{bki}$ )	1.25 m/s / 4.10 ft/s	0.83 m/s / 2.72 ft/s	-	1.03 m/s / 3.38 ft/s
8. Bankfull Discharge ( $Q_{bki}$ )	4.80 m <sup>3</sup> /s / 169 ft <sup>3</sup> /s	4.80 m <sup>3</sup> /s / 169 ft <sup>3</sup> /s	-	4.80 m <sup>3</sup> /s / 169 ft <sup>3</sup> /s
9. Bankfull Max Depth ( $d_{mbki}$ )	1.80 m / 5.91 ft	1.30 m / 4.27 ft	-	1.10 m / 3.61 ft
10. Width of Floodprone Area ( $W_{fpa}$ )	44 m / 144 ft	34 m / 112 ft	-	46 m / 151 ft
11. Entrenchment Ratio ( $W_{fpa}/W_{bki}$ )	10.81	4.78	-	7.84
12. Meander Length ( $L_m$ )	24.0 m / 78.7 ft	23.0 m / 75.5 ft	-	30.0 m / 98.4 ft
13. Ratio of Meander Length to Bankfull Width ( $L_m/W_{bki}$ )	5.9	3.23	-	5.11
14. Radius of Curvature ( $R_c$ )	6.52 m / 21.7 ft	9.77 m / 32.0 ft	-	8.63 m / 28.3 ft
15. Ratio of Radius of Curvature to Bankfull Width ( $R_c/W_{bki}$ )	1.63	1.37	-	1.47
16. Belt Width ( $W_{bl}$ )	9.0 m / 29.5 ft	11.0 m / 36.1 ft	-	8.0 m / 26.2 ft
17. Meander Width Ratio ( $W_{bl}/W_{bki}$ )	2.21	1.55	-	1.36
18. Sinuosity (K) (stream length/valley length)	1.06	1.03	-	1.06
19. Valley Slope (VS)	1.06%	1.12%	-	0.94%
20. Average Slope (CS)	1.00%	1.09%	-	0.89%
21. Pool Slope	0.68%	0.00%	-	0.80%
22. Ratio of Pool Slope to Average Slope	0.68	0.00	-	0.90
23. Maximum Pool Depth ( $dp_{max}$ )	1.80 m / 5.91 ft	1.45 m / 4.76 ft	-	1.41 m / 4.63 ft
24. Ratio of Pool Depth to Average Bankfull Depth ( $dp/d_{bki}$ )	1.91	1.79	-	1.78
25. Pool Width ( $W_p$ )	12.0 m / 39.4 ft	10.1 m / 33.1 ft	-	9.54 m / 31.3 ft
26. Ratio of Pool Width to Bankfull Width ( $W_p/W_{bki}$ )	2.95	1.42	-	1.63
27. Pool to Pool Spacing	18.0 m / 59.0 ft	12.0 m / 39.4 ft	-	35 m / 115 ft
28. Ratio of Pool to Pool Spacing to Bankfull Width	4.42	1.69	-	5.96
29. Ratio of Lowest Bnk Height to Bankfull Height (or Max Bankfull Depth) ( $Bh_{low}/d_{mbki}$ )	0.95	0.76	-	0.65

# REFERENCE REACH PROFILE



N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

ROWAN COUNTY

PROJECT: 8.1631801 (R-2911E)  
US 70 WIDENING

NOTE: ELEVATIONS IN ( ) ARE IN FEET.  
ALL OTHER STATION AND ELEVATION  
DATA IS IN METERS.

SHEET 11 OF 13

10/02/02

## Project No. 8.1631801 (R-2911E)

## Property Owner List

Site NO.	Property NO.	Name DB and Pg	Address
1	(1)	James R. Carscaddon DB 621 PG 358	5175 Statesville Blvd. Salisbury, N.C. 28147
	(2)	Charles Glenn Pethel & Frances Rabon Bethel DB 706 PG 769	5325 Statesville Blvd. Salisbury, N.C. 28144
	(3)	Shed Time Inc. & Kenneth I. Schwendinger DB 811 PG 495	5350 Statesville Blvd. Salisbury, N.C. 28144

N.C. DEPT. OF TRANSPORTATION  
DIVISION OF HIGHWAYS

ROWAN COUNTY

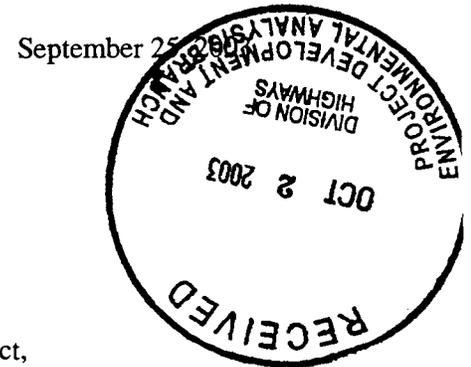
PROJECT: 8.1631801 (R-2911E)  
US 70 WIDENING





Michael F. Easley, Governor  
William G. Ross Jr., Secretary  
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E., Director  
Division of Water Quality  
Coleen H. Sullins, Deputy Director  
Division of Water Quality



Mr. Gregory J. Thorpe, Ph.D., Environmental Director  
NCDOT Planning and Environmental Branch  
1548 Mail Service Center  
Raleigh, NC, 27699-1548

Dear Dr. Thorpe:

Re: Water Quality Certification Pursuant to §401 of the Federal Clean Water Act,  
US 70 widening from 0.4 mi. west of SR 1953 (Kepley Road) to US 601 (Jake Alexander  
Boulevard) in Salisbury, Rowan County.  
F.A. Project No. STP-70(39); State Project No. 8.1631801  
TIP No. R-2911E  
DWQ Project No. 030908

Attached hereto is a copy of Certification No. 3434 issued to The North Carolina Department of  
Transportation dated September 25, 2003.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

for Alan W. Klimek, P.E.

Attachments

cc: Wilmington District Corps of Engineers  
Eric Alsmeyer, USACE Raleigh Field Office  
NCDWQ Mooresville Regional Office  
Christopher Militscher, US Environmental Protection Agency – Region IV  
William Gilmore, NC Ecological Enhancement Program  
Central Files  
File Copy



## NORTH CAROLINA 401 WATER QUALITY CERTIFICATION

**THIS CERTIFICATION** is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H, .0500. This certification authorizes the NCDOT to incur the following permanent impacts:

- 377.2 linear feet of stream channel at Setman Branch in Hydrologic Unit 03040102 of the Yadkin River Basin in Cleveland County.

The R-2911E project shall be constructed pursuant to the application dated July 18, 2003 to construct the widening of US 70 from 0.4 miles west of SR 1953 (Kepley Road) to US 601 (Jake Alexander Boulevard) in Salisbury, Rowan County.

The Application provides adequate assurance that the discharge of fill material into the waters of the state with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your Application. All work authorized by this Certification must be done in strict compliance with the plans attached to the Application. If this project changes, incurring additional impacts to streams or wetlands, you are required to notify the DWQ *in writing*, and you may be required to submit a new application. Additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion Control, Non-discharge and Water Supply watershed regulations.

This Certification shall expire three (3) years from the date of the cover letter from DWQ or on the same day as the expiration date of the corresponding Corps of Engineers Permit, whichever is later.

### Condition(s) of Certification:

1. Construction will be conducted in such a manner as to prevent a significant increase in turbidity outside the area of construction or construction-related discharge. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to assure compliance with the appropriate turbidity water quality standard.
  - a. The erosion and sediment control measures for the R-2911E project must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*. These devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the R-2911E project.
  - b. For borrow pit sites, the erosion and sediment control measures must equal or exceed the proper design, installation, operation and maintenance outlined in the most recent version of the *North Carolina Surface Mining Manual*. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.

2. Sediment and erosion control measures shall not be placed in wetlands or waters to the maximum extent practicable. If placement of sediment and erosion control devices in wetlands and waters is unavoidable, they shall be removed and the natural grade restored within 30 days after the Division of Land Resources has released the project.
3. NCDOT and its contractors and/or agents shall not excavate, fill, or perform mechanized land clearing at any time in the construction or maintenance of this project within waters and/or wetlands, except as authorized by this Certification, or any modification to this Certification. There shall be no excavation from or waste disposal into jurisdictional wetlands or waters associated with this Certification without appropriate modification. If this occurs, compensatory mitigation will be required since it is a direct impact from road construction activities.
4. Excavation of stream crossings should be conducted in the dry unless demonstrated by the applicant or its authorized agent to be unfeasible. Sandbags, cofferdams, flexible pipe, or other diversion structures should be used to minimize excavation in flowing water.
5. Stormwater shall be transported by vegetated conveyance or other means that are appropriate to the site conditions before being discharged into the streams.
6. Live or fresh concrete shall not come into contact with waters of the state until the concrete has hardened.
7. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
8. The natural dimension, pattern and profile of the stream above and below the crossing should not be modified by widening the stream channel or changing the depth of the stream.
9. The removal of vegetation in riparian areas should be minimized. NCDOT is encouraged to use existing on-site vegetation and materials for stream bank stabilization and to minimize the use of rip rap. Riprap shall not be placed in the stream bottom.
10. Riparian vegetation, using native trees and shrubs, must be re-established within the construction limits of the project by the end of the growing season following completion of construction to reestablish the riparian zone and to provide long-term erosion control.
11. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed to allow low flow passage of water and aquatic life unless it can be shown to DWQ that providing passage would be impractical. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium shall be maintained if requested in writing by DWQ.
12. Heavy equipment should be operated from the bank rather than in the stream channel unless demonstrated by the applicant or its authorized agent to be unfeasible. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids or other toxic substances.

13. *Mitigation:* Compensatory mitigation shall be the same as that approved by the US Army Corps of Engineers as long as the mitigation required equals a ratio of 1:1 restoration or creation of lost wetland acres as described in 15A NCAC 2H.0506 (h)(6).
- On-site stream relocation of 180.4 linear feet consisting of *natural channel design*.
    - The relocation must be constructed in a dry work area, and stabilized before the stream flow is diverted. The relocation shall be completed and stabilized prior to diverting water into the new channel. The channel must be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30-foot wide wooded and an adjacent 20-foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. A transitional phase incorporating coir fiber and seedling establishment is allowable. Rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the Applicant must provide written justification and the calculations used to determine the extent of rip-rap coverage requested.
    - If the on-site stream relocation or the associated riparian area has been determined to be unstable, the stream shall be repaired or stabilized using only natural channel design techniques. Additionally, the vegetation in the riparian area shall be maintained and/or replaced according to the approved plans. Rip-rap and other hard structures may *only* be used if required by the Division of Land Resources or a Delegated Local Program. Additionally, all repair designs must be submitted to and receive written approval from the Division before the repair work is performed.
    - NCDOT shall provide evidence of channel stability and vegetative success through an annual photographic survey for five (5) years. In addition, during years 1, 3, and 5, a riffle cross-section and longitudinal profile shall be performed and provided to NCDWQ.
    - Since the on-site stream relocations are proposed as compensatory mitigation for project impacts, the restored portions and associated riparian buffer areas shall be preserved in perpetuity through a deed notification, preservation easement or some other legally binding mechanism or agreement. The above easement or other legally binding mechanism or agreement must be in place before any construction impacts approved on this Certification can take place. The NCDOT Division 9 Right of Way Office shall provide NCDWQ with evidence that the additional right of way has been purchased within two (2) months of issuance of the US Army Corps of Engineers 404 Permit.
    - The on-site stream relocation must be completely constructed and maintained according to the plans approved by the Division before the road is opened and any mitigation credit is given.
  - Compensatory mitigation in HU 03040102 for the remaining 196.8 linear feet of stream impacts shall be provided by the NC Ecological Enhancement Program (EEP). EEP has indicated in a letter dated September 19, 2003 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project. In accordance with 15A NCAC 2R.0500, this contribution will satisfy NC Division of Water Quality's compensatory mitigation requirements under 15A NCAC 2H.0506(h). Until plans are received and approved for the proposed mitigation sites, wetland or stream fill shall not occur.
14. Upon completion of the project, the NCDOT shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed. The responsible party shall complete the attached form and return it to the 401/Wetlands Unit of the Division of Water Quality upon completion of the project.

NCDOT shall require its contractors (and/or agents) to comply with all of the terms of this Certification, and shall provide each of its contractors (and/or agents) a copy of this Certification.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal Permit. This Certification shall expire upon the expiration of the 404 Permit.

If you do not accept any of the conditions of this certification, you may ask for an adjudicatory hearing. You must act within 60 days of the date that you receive this letter. To ask for a hearing, send a written petition that conforms to Chapter 150B of the North Carolina General Statutes to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. This certification and its conditions are final and binding unless you ask for a hearing.

This the 25<sup>th</sup> day of September 2003

DIVISION OF WATER QUALITY

  
per Alan W. Klimek, P.E.

WQC No. 3434

DWQ Project No.: \_\_\_\_\_  
Applicant: \_\_\_\_\_

County: \_\_\_\_\_

Project Name: \_\_\_\_\_

Date of Issuance of 401 Water Quality Certification: \_\_\_\_\_

**Certificate of Completion**

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

***Applicant's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Agent's Certification***

I, \_\_\_\_\_, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

***Engineer's Certification***

\_\_\_\_\_ Partial      \_\_\_\_\_ Final

I, \_\_\_\_\_, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the 401 Water Quality Certification, the approved plans and specifications, and other supporting materials.

Signature \_\_\_\_\_ Registration No. \_\_\_\_\_

Date \_\_\_\_\_