



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

April 21, 2005

NC Department of Environment and Natural Resources  
Division of Water Quality  
Winston-Salem Regional Office  
585 Waughtown St.  
Winston-Salem, NC 27107

Attn: Ms. Sue Homewood  
NCDOT Coordinator

Dear Madam:

Subject: Revised Stream relocation/restoration information for replacement of Bridge Nos. 74 and 76 over SR 1242 and Michael's Branch. Davidson County; Federal Aid No. BRSTP-29(10); State Project No. 8.1601401; TIP No. B-3157  
USACE Action ID 200020843; DWQ Water Quality Certification No. 3467

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge Nos. 74 and 76 in their existing locations and improve the interchange at US 29-64-70 and I-85 Bus. in Lexington, Davidson County, North Carolina. A Section 404 Permit was issued on August 24, 2004 and Water Quality Certification issued on July 28, 2004. Prior to the start of construction of the new stream channel in Michael's Branch, the Office of Natural Environment-Natural Environment Engineering Unit reviewed the construction plans. At that time, it was determined that based on the valley slope, stream slope, and urban setting, the stream design needed to be a step-pool system instead of the riffle-pool sequence shown on the plans. The changes to the design consisted of reducing the sinuosity, the addition of rock cross vanes, and deletion of rock vanes. The typical sections of this project will remain the same with the only adjustments being made to the stream pattern and profile. On April 19, 2005, Army Corps of Engineers, Division of Water Quality, Wildlife Resource Commission, and NC Department of Transportation personnel met on site to review and discuss the proposed changes to the design. All parties were in agreement that these changes were justified. Per this meeting, enclosed with this letter are the proposed changes to the plans. This includes revised permit drawings for Natural Channel Design Typicals (Sheet 20 of 31), Channel Plan View Segment #1 (Sheet 21 of 31), Channel Plan View Segment #2 (Sheet 22 of 31) and Curve Data Information (Sheet 24 of 31). The proposed revisions are only for stream segments #1 and #2 at this time. Stream

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LOCATION:  
2728 CAPITAL BLVD.  
PARKER LINCOLN BUILDING, SUITE 168  
RALEIGH NC 27604

segment #3 will be addressed at a later date. This is due to the fact that the contractor is ready to proceed with the construction in this area immediately.

If you have any questions, or need additional information, please contact Mr. Jamie Lancaster at (919) 715-1441.

Sincerely,

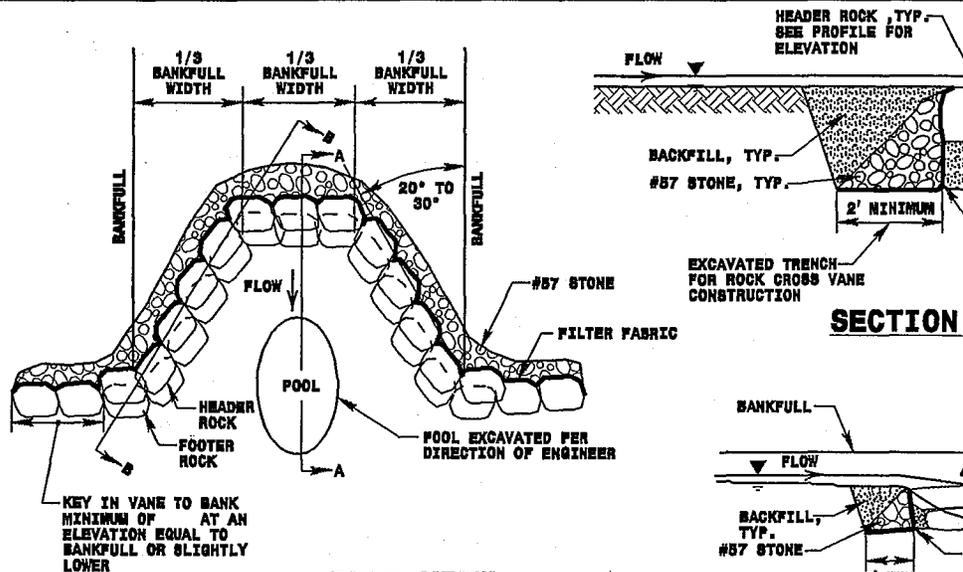
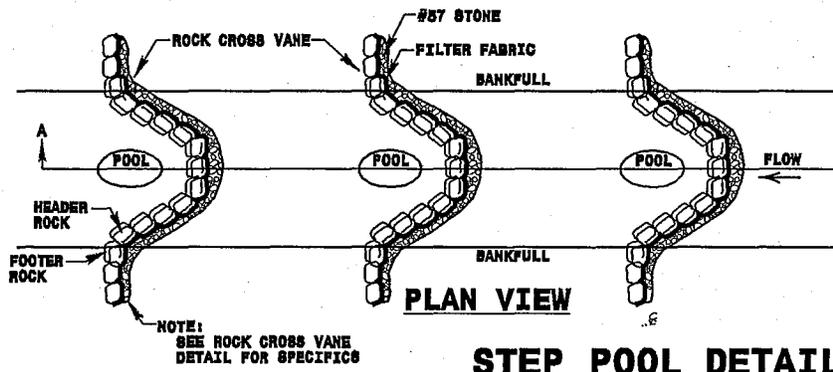
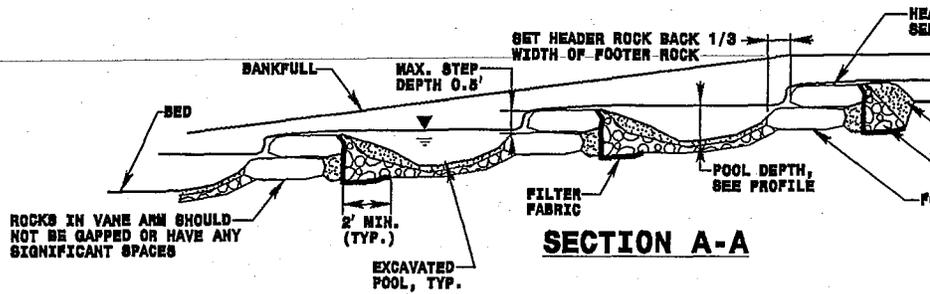


Gregory J. Thorpe, Ph.D, Manager  
Project Development and Environmental Analysis Branch

cc: w/attachment

Ms. Marla Chambers, NCWRC  
Mr. Eric Alsmeyer, USACE  
Ms. Marella Buncick, USFWS  
Mr. Keith Raulston, Division 9 Construction Engineer  
Mr. Darin Waller, Resident Engineer  
Ms. Diane Hampton, DEO Division 9  
Mr. David Harris, Roadside Environmental  
Mr. Randy Griffin, Natural Environment Engineering Unit

# NATURAL CHANNEL DE NOT TO SCALE



STATION	BOULDER DIMENSIONS (FEET)		
	HEIGHT	LENGTH	WIDTH
BEGIN	2	4	3
TO END	2	4	3

## ROCK CROSS VANE DETAIL FOR STEP POOLS

NOT TO SCALE

- NOTES:**
1. DEEP VANE
  2. DO NOT
  3. CLAS
  4. CON
  5. POOL

# SEGMENT #1

# SEGMENT

	STA. (-NCD-)	ELEV.
CV 1	10+00	715.5
CV 2	10+50	715.0
CV 3	11+00	714.5
CV 4	11+50	714.0
CV 5	12+00	713.5
CV 6	12+50	713.0

	STA. (-NCD-)	ELEV.
CV 7	13+00	712.5
CV 8	13+50	712.0

## CURVE DATA SEG

*PI Sta 10+30.98*  
 $\Delta = 16^{\circ} 17' 35.0''$  (LT)  
 $D = 76^{\circ} 23' 39.7''$   
 $L = 21.33'$   
 $T = 10.74'$   
 $R = 75.00'$

*PI Sta 10+63.08*  
 $\Delta = 32^{\circ} 00' 06.9''$  (RT)  
 $D = 76^{\circ} 23' 39.7''$   
 $L = 41.89'$   
 $T = 21.51'$   
 $R = 75.00'$

*PI Sta 11+09.28*  
 $\Delta = 46^{\circ} 33' 20.5''$   
 $D = 95^{\circ} 29' 34.0''$   
 $L = 48.75'$   
 $T = 25.81'$   
 $R = 60.00'$

*PI Sta 12+14.58*  
 $\Delta = 22^{\circ} 14' 58.1''$  (RT)  
 $D = 76^{\circ} 23' 39.7''$   
 $L = 29.12'$   
 $T = 14.75'$   
 $R = 75.00'$

*PI Sta 12+36.46*  
 $\Delta = 15^{\circ} 31' 29.3''$  (LT)  
 $D = 104^{\circ} 10' 26.9''$   
 $L = 14.90'$   
 $T = 7.50'$   
 $R = 55.00'$

*PI Sta 12+70.33*  
 $\Delta = 44^{\circ} 18' 59.4''$   
 $D = 88^{\circ} 08' 50.0''$   
 $L = 50.28'$   
 $T = 26.47'$   
 $R = 65.00'$