



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 31, 2003

US Army Corps of Engineers
Raleigh Regulatory Field Office
6508 Falls of the Neuse Road, Suite 120
Raleigh, North Carolina 27615

ATTENTION: Mr. Eric Alsmeyer
NCDOT Coordinator

Dear Mr. Alsmeyer:

Subject: **Supplement to the Nationwide 23 and 33 applications**, submitted on August 15, 2003, for the replacement of Bridge No. 404 over South Potts Creek on SR 1147, Davidson County. Federal Aid Project No. BRSTP-1147(3), State Project No. 8.2604401, TIP Project No. B-4334.

On August 15, 2003, the NCDOT submitted a Nationwide 23 and 33 application for the replacement of Bridge No. 404 over South Potts Creek on SR 1147. On September 22, 2003 through email communication the USACE requested that the NCDOT provide more information regarding the stream relocation.

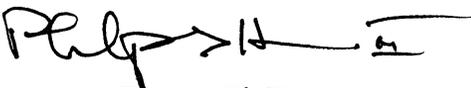
The USACE requested that the NCDOT provide more information on the length of proposed relocation, how the relocation of the unnamed tributary was designed, if the relocation is within the Right-of-way, how the NCDOT plans on stabilizing the stream, and a planting plan. A revised permit sheet 3 has been included showing a cross section of the relocation, sheet 3B showing the stream relocation at a larger scale, sheet 3C showing how the channel block will be constructed and a revised summary sheet. The above mentioned questions are answered below.

Currently, the unnamed tributary meanders around the existing interior bents of the existing bridge. The interior bents of the new bridge would impact the existing stream. There is no other practical place to put the bents due to underground structures. Therefore, the stream will be relocated to avoid the interior bent from the new bridge.

The stream relocation for the 56-foot portion of the unnamed tributary to South Potts Creek was designed to match the existing stream cross sectional area of 35 square feet. The entire portion of the stream relocation is located within the proposed right-of-way. The proposed stream has a cross sectional area of 42 square feet. The area is slightly larger because 3:1 side slopes were used to decrease erosion. Coir fiber matting will be used to stabilize the side slopes of the stream relocation. The five-foot base width and three-foot depth of the proposed stream is the same as the existing stream. The drainage area for the stream is 3.63 square miles. Using the Manning equation for the open channel hydraulics for a stream section with a five-foot base, 3:1 side slopes, three-foot depth and a slope of 1.09 percent, yields a discharge of 210 cubic feet per second with a velocity of 5.0 feet per second. The 2 year discharge calculated using the USGS Report 01-4207 for the Rural Blue Ridge-Piedmont region yields a discharge of 330 feet per second. The area surrounding the stream relocation will be seeded with grasses to minimize erosion.

If you have any questions or need additional information, please call Brett Feulner at 715-1488.

Sincerely,

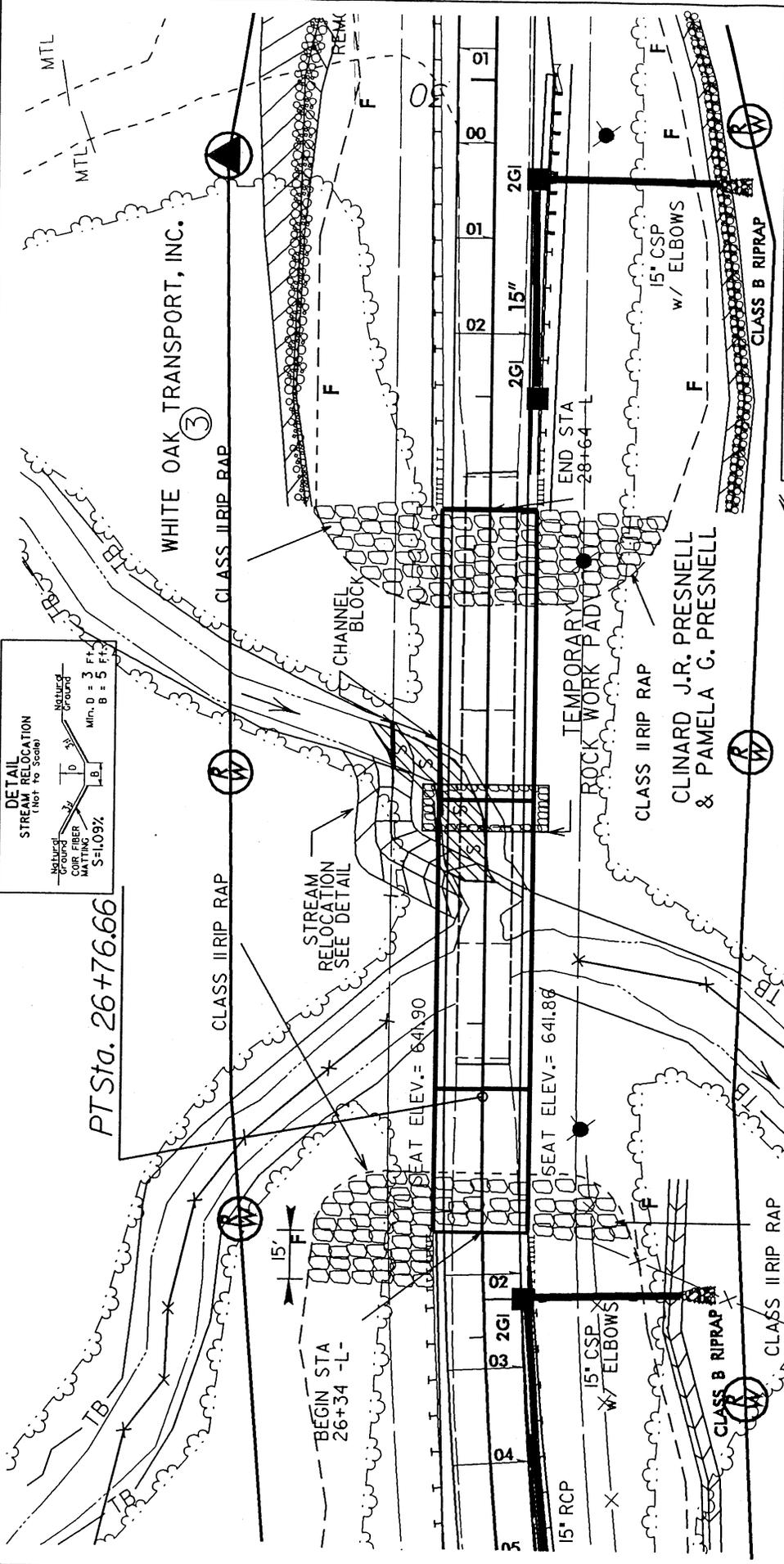

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

w/ attachment:

Mr. John Dorney, NC Division of Water Quality (2 copies)
Ms. Marla Chambers, NCWRC
Ms. Marella Buncick, USFWS
Mr. Greg Perfetti, P.E., Structure Design
Mr. John Conforti, Project Planning Engineer

w/o attachment

Mr. David Franklin, USACE, Wilmington
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Ms. Debbie Barbour, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. S.P. Ivey, P.E., Division 9 Engineer
Ms. Diane Hampton, P.E., DEO



NCDOT
 DIVISION OF HIGHWAYS
 DAVIDSON COUNTY
 PROJECT: 8.2604401 (B-4334)
 REPLACE BRIDGE NO.404
 OVER SOUTH POTTS CREEK
 ON SR 1147

SHEET 3 OF 6
 10/27/05
Revised

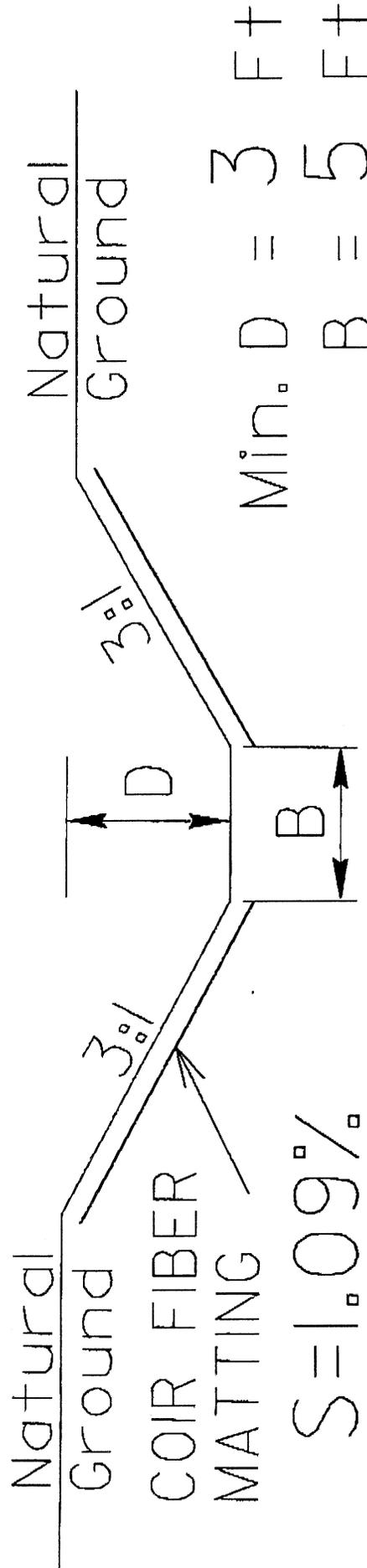
PLAN VIEW

JAMES R. SWING, III

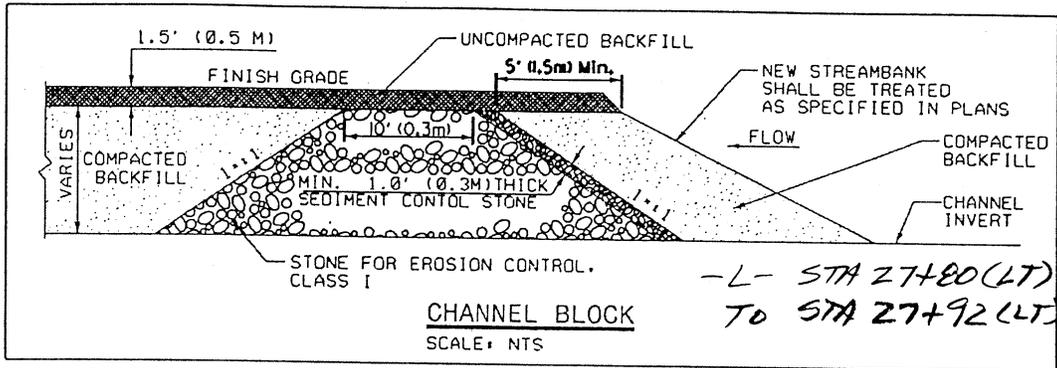


SCALE: 1" = 50' HORIZ.
 50
 25
 50

DETAIL STREAM RELOCATION (Not to Scale)



Sheet 3-B of 6
Oct 2, 2003



Sheet 3C of 6
10/27/03

