U.S. Department of Transportation
Federal Highway Administration

1200 New Jersey Avenue, SE.
Washington, DC 20590

April 22, 2008

In Reply Refer To: HSSD/B-170

Mr. Don S. Turner
Traffic Safety and Design Engineer
South Carolina Department of Transportation
P.O. Box 191
Columbia, SC 29202-0191

Dear Mr. Turner:

This is in response to your letter of September 21, 2007, requesting the Federal Highway Administration's (FHWA) acceptance of South Carolina DOT's temporary concrete barrier wall anchorage. You requested that we find this design acceptable for use on the National Highway System (NHS) under the provisions of the National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features." Mr. Nicholas Artimovich of my office replied via e-mail on October 29, 2007, agreeing that your proposal was acceptable. The purpose of this letter is to document our acceptance of your request for both 10 foot and 12 foot segments, and the subsequent correspondence and telephone conversations between Mr. Mark Bloschock of my office and Mr. Joe Sease on barrier designs and Mr. Barry Bowers on anchor specifications.

Introduction
The FHWA guidance on crash testing of roadside safety hardware is contained in a memorandum dated July 25, 1997, titled "INFORMATION: Identifying Acceptable Highway Safety Features."

Your request was for an anchorage system for ten- and twelve-foot long New Jersey profile barriers with triple loops and drop-in pin connections. This "North Carolina Design" for the temporary concrete barrier wall itself was found acceptable in the FHWA acceptance letter, B-98, dated May 10, 2002. To anchor this barrier you asked to use an anchorage system based on the FHWA acceptance letter, B-5 dated March 14, 1989, for anchorage of pre-cast concrete traffic barriers.

The anchorage described in acceptance letter B-5 consisted of proprietary anchors and grout. Each anchor was a 15 1/2 inch long 1 inch diameter HS Hot Dipped Galvanized "Kelibond" Anchor. The number of anchors required for each section of barrier wall was noted as ten (10) for a 20-foot section and seven (7) for a 15-foot section. Each anchor passed through a slot fabricated into the barrier wall and inserted into an anchor hole drilled to allow an embedment depth of 6 1/2 inches and secured in the anchor hole with "Keligrout. These anchors were only installed on the traffic side of the barrier wall.

The anchor system you requested is equivalent to the system in acceptance letter B-5, except that it will use generic and non-proprietary materials. The anchors will be 16 inch long 1 inch diameter A449 fully threaded galvanized rods. Each 10 foot section of barrier wall will be anchored on the traffic side with four (4) anchors. Each 12 foot section of barrier wall will be anchored on the traffic side with five (5) anchors. The anchor rods will pass through a slot fabricated into the barrier wall and inserted into a 1 1/8" diameter hole 6 1/2" deep into the concrete bridge deck. Each anchor will be secured in the anchor hole with a two-component epoxy-resin bonding agent. Drawings illustrating the temporary concrete barrier wall with the anchorage system are enclosed, as are the epoxy grouting specifications.

Findings
Therefore, the system described above is acceptable for use on the NHS under the range of conditions the original barriers were tested, when proposed by a State.

Please note the following standard provisions that apply to FHWA letters of acceptance:

- This acceptance is limited to the crashworthiness characteristics of the device(s).
- Any changes in the barrier design or anchor specification that may adversely influence the crashworthiness of the device will require a new acceptance letter.
- Should the FHWA discover that in-service performance reveals unacceptable safety problems, it reserves the right to modify or revoke its acceptance.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- Contractors should be expected to certify that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that they will meet the crashworthiness requirements of the FHWA and the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number B-170 shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.
- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented device for which the applicant is not the patent holder. The acceptance letter is limited to the crashworthiness characteristics of the candidate device, and the FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

Sincerely yours,

David A. Nicol, P.E.
Director, Office of Safety Design
Office of Safety