



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

December 9, 2008

1200 New Jersey Avenue, SE.  
Washington, DC 20590

In Reply Refer To: HSSD/B-184

Mr. Rick Mauer  
Outside National Sales Representative  
Nucor Steel Marion Inc.  
P.O. Box 837  
Greenland, NH 03840

Dear Mr. Mauer:

This letter is in response to your request for the Federal Highway Administration (FHWA) acceptance of a modification to a Nucor Steel Marion cable barrier for use on the National Highway System (NHS).

Name of system: Nu-Cable System – Extended Hanging Hook  
Type of system: Cable Barrier  
Test Level: NCHRP Report 350 TL-4  
Testing conducted by: Holmes Solutions of New Zealand  
Date of request: July 25, 2006

You requested that we find this modified system acceptable for use on the NHS under the provisions of the National Cooperative Highway Research Program (NCHRP) Report 350 “Recommended Procedures for the Safety Performance Evaluation of Highway Features.”

### **Requirements**

Roadside safety systems should meet the guidelines contained in the NCHRP Report 350. FHWA Memorandum “ACTION: Identifying Acceptable Highway Safety Features” of July 25, 1997, provides further guidance on crash testing requirements of longitudinal barriers.

### **Description**

The Test Level 4 (TL-4) Nu-Cable barrier system consists of four steel cables mounted on 4 pound/ft Nucor Steel Marion Rib-Bak u-channel posts. This system was found acceptable in the following FHWA Acceptance Letter:

B-167

February 24, 2008

4-strand Nucor Wire Rope Barrier System TL-4



### **Crash Testing**

The Nucor Nu-Cable System consists of four 19-mm (3/4-inch) wire rope cables at heights of 380 mm, 640 mm, and two at 890 mm (15 inch, 25 inch, and 35 inch) above ground level. The lower two cables are attached using locking hook bolts which connect directly to the U-posts. The top two cables are supported by a top clip which engages with the top of the U-post section. The original hanging clip held the top two cables at the same height of 890 mm above the ground. Because these two cables are next to each other the barrier appears to have only 3 cables when viewed from a passing vehicle. Your present request is to revise the hanging clip by lowering one of the cables by 100 mm (4 inches.) This will separate the cables so that all four are visible. As the cable on the near-side of the post will remain at 890 mm there should be no change in performance of the barrier under TL-4 conditions.

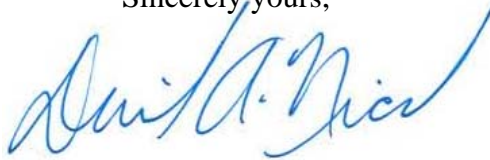
Therefore, the Nucor Nu-Cable System with the revised hanging clip described above and detailed in the enclosed drawings is acceptable for use on the NHS under the range of conditions tested, when such use is acceptable to a highway agency.

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

- This acceptance is limited to the crashworthiness characteristics of the system and does not cover its structural features, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may adversely influence the crashworthiness of the system will require a new acceptance letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the system being marketed is significantly different from the version that was crash tested, we reserve the right to modify or revoke our acceptance.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that it will meet the crashworthiness requirements of the FHWA and the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance is designated as number B-184 and shall not be reproduced except in full. This letter and the test documentation upon which it is based are public information. All such letters and documentation may be reviewed at our office upon request.
- The Nu-Cable barrier systems are patented products and considered proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid projects, except exempt, non-NHS projects, (a) they must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with the existing highway facilities or that no equally suitable alternative exists; or (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411.

- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented system for which the applicant is not the patent holder. The acceptance letter is limited to the crashworthiness characteristics of the candidate system, 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  
Director, Office of Safety Design  
Office of Safety

Enclosures

