March 27, 2008

Dear Mr. Lowery:

This letter is in response to your request for Federal Highway Administration (FHWA) acceptance of a roadside safety device for use on the National Highway System (NHS).

Name of device: Permatile Precast Concrete Barrier 10 foot length
Type of device: Portable concrete barrier
Test Level: NCHRP Report 350 TL-3
Prior Testing conducted by: Texas Transportation Institute (TTI)
Date of request: March 14, 2008

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

Requirements


Description

You requested formal acceptance of the Virginia Department of Transportation (VDOT) 10 foot F-shape Concrete Barrier with the pin and loop positive connection. A 20 foot version of this design (Scan01.tif, enclosed for reference) was tested and accepted for use as a TL-3 NCHRP 350 temporary barrier in FHWA Acceptance Letter B-54 dated May 18, 1999. Permatile Concrete Products Company manufactured and supplied this barrier that was tested by TTI under NCHRP report 350 Test 3-11, Contract No. T99011 and Project No. 402041. The drawings “Scan02.tif” and “Scan03.tif” include the details of the 10’ version and are enclosed for reference.
Crash Testing

The 20-foot long version of the VDOT barrier was successfully crash tested as noted above. Through the observation of crash testing of numerous portable concrete barrier segments of varying lengths over the years FHWA has learned that the length of the barrier plays little, if any, role in the successful performance. As long as the steel reinforcing and the integrity of the end connections are maintained, the shorter barrier length will be acceptable for use.

Findings

The 10-foot long VDOT barrier described above and detailed in the enclosed drawings is acceptable for use on the NHS under the range of conditions that the 20-foot barrier was 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 devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.

• Any changes that may adversely influence the crashworthiness of the device 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 device 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.

• We expect you will wish to have suppliers of this device certify 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-151 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.
• 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

2 Enclosures
NOTE: ALL NOTES SHOWN ON MB-7D PC SHALL APPLY TO THIS BARRIER SHAPE.

PLAN VIEW

SECTION A-A

ELEVATION VIEW

END VIEW

PRECAST TRAFFIC BARRIER SERVICE CONCRETE

CONNECTOR

PRECAST TRAFFIC BARRIER SERVICE CONCRETE

CONNECTOR

CONCRETE PRODUCTS COMPANY
P.O. Box 2046, 100 Beacon Road, Bristol, VA/VA 24203
(771) 885-3232 FAX: (771) 885-2120
NOTES:

1. ALL CONCRETE = 27.50 Mpa (4000 psi) MIN. COMpressive STRENGTH AT 28 DAYS.
2. ALL STEEL REINFORCEMENT SHALL CONFORM TO ASTM A615M GRADE 420, (GRADE 60).
3. MINIMUM CLEAR CONCRETE COVER OVER ALL STEEL SHALL BE 60mm (2").
4. REFLECTIVE BARRIER DELINEATOR SIZE, COLOR, AND SPACING TO BE IN ACCORDANCE WITH PREVAILING D.O.T. SPECIFICATIONS.
5. REFLECTIVE BARRIER DELINEATORS FURNISHED AND INSTALLED BY OTHERS.
6. 200mm x 300mm BARRIER VERTICAL PANELS MAY BE ADDED TO TOP BARRIER AS REQUIRED.

7. ALL PIN & LOOP POSITIVE CONNECTION HARDWARE SHALL CONFORM TO CURRENT V.D.O.T. SPECIFICATIONS. FOR POSITIVE CONNECTION DETAILS AND DIMENSIONS SEE SPECIAL DESIGN DRAWING NO. A-105 & STD. DWG. NO. MB-INS (SHEET 1 OF 4) OF V.D.O.T. ROAD AND BRIDGE STANDARDS & SPECS.
8. BARRIER DESIGN AND MANUFACTURE MEETS OR EXCEEDS REQUIREMENTS OF V.D.O.T. STD. DWG. NO. MB-7D PC. (SPECIFICATION REFERENCE 105, 512)
9. UNIT WEIGHT: 6100mm UNIT = 4,318 kg
   (20'-0" UNIT = 8500 lb.)

BARRIER
VERTICAL PANELS
OPTIONAL AS REQUIRED

SECTION R1-R1
NO SCALE

END VIEW
NO SCALE
NOT: ALL DIMENSIONS ARE IN MILLIMETERS.

PRECAST TRAFFIC BARRIER SERVICE CONCRETE
V.D.O.T. STD. MB-7D PC (METRIC F-STYLE)

DATE: 6-11-98
DRAWN BY: RAY
DWG NO.: VD07BF.DWG

PRODUCT: TRAFFIC BARRIER
CHECKED BY: DJR
SCALE: AS NOTED

CONTRACTOR:
CUSTOMER NO.: SHEET 1 OF 1

PRECAST TRAFFIC BARRIER SERVICE CONCRETE
V.D.O.T. STD. MB-7D PC (METRIC F-STYLE)
NOTES:
1. All concrete = 27.50 Mpa (4000 psi) min. compressive strength at 28 days.
2. All steel reinforcement shall conform to ASTM A615M grade 420 (Grade 60).
3. Minimum clear concrete cover over all steel shall be 50mm (2").
4. Reflective barrier delineator size, color, and spacing to be in accordance with prevailing V.D.O.T. specifications.
5. Reflective barrier delineators furnished and installed by others.
6. 200mm x 300mm barrier vertical panels may be added to top barrier as required.

7. All pin & loop positive connection hardware shall conform to current V.D.O.T. specifications. For positive connection details and dimensions see special design drawing no. A-105 & std. dwg. no. MB-INS (sheet 1 of 4) of V.D.O.T. road and bridge standards & specs.
8. Barrier design and manufacture meets or exceeds requirements of V.D.O.T. std. dwg. no. MB-7D PC (specification reference 105, 512).
9. Unit weight - 2,159 kg (10'-0" unit = 4750 lbs.).

SIDE ELEVATION
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS.

PERMATELE CONCRETE PRODUCTS COMPANY
P.O. Box 2048, 100 Beacon Road, Driford, VA/INN. 24203
1-800-983-5332 FAX 1-840-689-2120

DATE: 8-11-98 DRAWN BY: BDW Dwg No: V0071F.DWG
PRODUCT: TRAFFIC BARRIER CHECKED BY: CUR SCALE: AS NOTED
CONTRACTOR: PERMATELE ORDER NO.
CUSTOMER NO. SHEET 1 OF 1

END VIEW NO SCALE
NOTE: ALL DIMENSIONS ARE IN MILLIMETERS.

SECTION R1-R1 NO SCALE

PLAN VIEW NO SCALE

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS.

END VIEW NO SCALE