



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

1200 New Jersey Avenue, SE.
Washington, DC 20590

May 8, 2008

In Reply Refer To: HSSD/WZ-272

Mr. Robert D. Francis
Telematics Services LLC
1607 Sand Key Estates Ct
Clearwater, Florida 33767

Dear Mr. Francis:

In your letter of April 25 you requested the Federal Highway Administration (FHWA) acceptance of the iCone Intelligent Traffic Beacon as a crashworthy traffic control device for use in work zones on the National Highway System (NHS). Accompanying your letter was the FHWA Office of Safety Design form that included a drawing and a detailed description of the channelizer, a test report, and videos of the crash test. The drawings are enclosed with the acceptance form for the iCone Intelligent Traffic Beacon. You requested that we find these devices acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features".

This letter is the acknowledgement of the FHWA's acceptance of your requests. The original completed forms have been modified by the addition of the FHWA acceptance letter number and the date of our review. The form will be posted on our Web site in the near future.

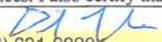
Sincerely yours,

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

Enclosures



Attachment 1

Page 1	FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN	Letter Number
	Category 2 Work Zone Device Acceptance Letter	WZ-272
		Date
		5/11/08
Contact Info	Petitioner / Developer Name and Address:	
	Robert D Francis, Managing Partner Telematics Services LLC 620 Old Liverpool Road, Liverpool, NY 13088	
	I hereby certify that the device(s) covered by this Acceptance Letter meet(s) the crash – worthiness test and evaluation requirements of the FHWA and NCHRP Report 350.	
Signature	 Robert D Francis 2008.04.25 11:23:26 -04'00'	
Telephone #	(315) 579-3519	
Email Address	Bob@TelematicsServices.net	
	Laboratory / Engineer Name and Address	
	David Travale, Senior Staff Engineer Calspan Corporation, P.O. Box 400, Buffalo, NY 14225	
<input checked="" type="checkbox"/>	I hereby certify that the testing that supports this Acceptance Letter was conducted in accordance with NCHRP Report 350 guidelines, that the device(s) tested is/are accurately described on this form, and that the test results indicate that the device meets all applicable NCHRP Report 350 evaluation criteria.	
<input type="checkbox"/>	I have evaluated the requested modifications to these devices previously found acceptable by the FHWA in Acceptance Letter WZ-___, and hereby certify that, in my opinion, the modifications do not adversely affect the crash performance of the devices. I also certify that these devices are accurately described on this form.	
Signature		
Telephone #	(716) 631-6920	
Email Address	David.Travale@Calspan.com	
Keywords:		
	Type of Device (See page 3)	
	Drum	
	Composition of Sign or Rail substrate (See Page 3)	
	Extruded Plastic	
	Thickness of substrate (inches): 0.20	
	Height of sign from the ground (inches), if applicable: (See Page 3)	
	Flags and or lights present during test? Indicate number of each:	
	# of flags: 0 # of lights: 0 Weight of lights: 0.00 ea.	
Device Name	iCone Intelligent Traffic Beacon	
Detailed Desc. Of Device, Materials, sizes, Fasteners, Substrates Foundation, Aux. Features Ballast, etc.	(May be attached on separate page(s) See Appendix C of Calspan Final Report dated 10/30/2007	

Attachment 1

Page 2	FEDERAL HIGHWAY ADMINISTRATION		Letter Number
	OFFICE OF SAFETY DESIGN		WZ-272
	Category 2 Work Zone Device Acceptance Letter		Date
			5/1/08
	Mandatory Attachments		
	Attachment # 1: Test data summary page(s)		
	Attach. #1a	Test #	See Calspan
	Attach. #1b	Test #	Final Test
	Attach. #1c	Test #	Report dated
	Attach. #1d	Test #	10/30/2007
Alternative	Attachment # 1: Description and discussion of modification(s) to crash tested and/or accepted device.		
	Date:		
	Attachment # 2: PDF drawing(s) of device(s)		
	Attach. #2a	Drawing Title:	
		Drawing #:	
	Attach. #2b	Drawing Title:	
		Drawing #:	
	Attach. #2c	Drawing Title:	
		Drawing #:	
	Attach. #2d	Drawing Title:	
		Drawing #:	
	Attach. #2e	Drawing Title:	
		Drawing #:	
	Attach. #2f	Drawing Title:	
		Drawing #:	
	Attach. #2g	Drawing Title:	
		Drawing #:	

Attachment 1

Page 3	FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN Category 2 Work Zone Device Acceptance Letter	Letter Number WZ-272
		Date 5/1/08

Please select from the following Keywords for "Type of Device":

Longitudinal Channelizing Barricade
 Curb (Curb channelizer system with or without road tubes or other channelizers)
 Drum
 H-Footprint Sign Stand
 X-Footprint Sign Stand
 Trailer Mounted Signs (Does not include arrow boards or variable message signs or other Category 4 trailer mounted devices.)
 Automated Flagger Device (not trailer mounted)
 Tripod Sign Stand
 Type I Barricade
 Type II Barricade
 Type III Barricade
 Vertical Panel
 Intrusion Detector
 Ballast (Action relates to ballast on one or more devices)
 Channelizer (Individual units unlike cones, road tubes, or drums)

Please select from the following Keywords for "Sign Substrate":

Roll-up / Fabric (with fiberglass spreaders – aluminum or steel spreaders are not allowed.)
 Plywood
 Aluminum – Solid
 Aluminum – Laminate
 Corrugated Plastic
 Extruded Plastic
 Waffleboard Plastic
 Wood / Lumber

Please select from the following Keywords for "Height of Sign":

The distance to the lowest point on the sign is:

Low 12 to 18 inches above the pavement
 Mid-A 20 to 24 inches above the pavement
 Mid-B 25 to 36 inches above the pavement
 Mid-C 37 to 59 inches above the pavement
 Tall 60 to 71 inches above the pavement
 Oversized 72 inches and taller

Attachment 1

Page 4	FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN Category 2 Work Zone Device Acceptance Letter	Letter Number
		WZ-272
		Date
		5/1/08

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

- Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, or 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, 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.
- 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 they will meet the crashworthiness requirements of FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance 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.
- If the subject of this letter is a patented device it is considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are *selected by the contractor* for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are *specified by a highway agency* for use on Federal-aid projects they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with 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, a copy of which is enclosed.
- This Acceptance Letter shall not be construed as authorization or consent by the Federal Highway Administration 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.

APPENDIX C

iCone™ Drawings and Description

The iCone™ Intelligent Traffic Beacon, manufactured by Telematics Services LLC, Liverpool, NY 13088, consists of a set of electronics modules and a battery sealed in a standard 36 inch traffic drum as defined in MUTCD Section 6F.58 Channelizing Devices. This drum is manufactured by TrafFix Devices, Inc, San Clemente, CA 92672, and is certified by the manufacturer to meet NCHRP-350 TL-3 crash test criteria.

This drum is designed to use the TrafFix San-Fil base that would normally contain approximately 50 pounds of sand. For the iCone application, this base has been modified to accommodate the EnerSys Genesis XE-60 Valve Regulated Sealed Lead Acid Battery. This battery is 10.85" long x 6.75" wide x 7.12" high and weighs 49.4 pounds. The case is flame retardant to UL94 V-0 standards. All of the sulfuric acid electrolyte is fully absorbed into the glass mat plate separators. It is approved as non-spillable and non-hazardous cargo for ground, sea and air transportation in accordance with US DOT regulation 49 and ICAO & IATA Packing Instruction 806. The battery is firmly attached to the base with a metal hold down bracket that is bolted through the bottom of the San-Fil base. See the photographs on the following pages. The electrical connection between the battery and the electronics modules is fused and fitted with a quick disconnect connector so that it easily separates in the event of a crash that causes the top of the drum to separate from the base.

The Mounting Plate holds the electronic components including the Iridium Satellite Modem, Radar Unit, System Controller, Iridium Antenna and GPS Antenna. The plate itself is made from aluminum to provide mechanical strength as well as electrical properties to increase the efficiency of the antennas.

The sealing plate is held in place by the high strength sealant (3m 5200).

All components for iCone have been selected to provide the optimum performance at the lowest possible weight. The total weight calculation is as follows:

Drum and Base	7.3 pounds
Battery	49.4 pounds
Mounting Plate and electronics	4.8 pounds
Sealing Plate	1.0 pounds
Miscellaneous Hardware	1.4 pounds
Total Weight	63.9 pounds

The drawing below shows the internal placement of iCone components. This mounting plate is held in place by three angle brackets and bolts through the side of the drum. The total weight of the Mounting Plate and all components is approximately 4.8 pounds.

iCone Cutaway View--Side

