



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

1200 New Jersey Ave., S.E.
Washington, DC 20590

August 4, 2008

In Reply Refer To:
HSSD/WZ-273

Mr. Tom Brady
Vice President
Bob's Barricades
921 Shotgun Road
Sunrise, FL 33326

Dear Mr. Brady:

In your letter of April 25, 2008 that was received July 7, 2008 you requested the Federal Highway Administration (FHWA) acceptance of the Type I barricade with a sign attached 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 barricade, a test report, and videos of the crash test. The drawing is enclosed with the acceptance form for the Type I barricade. You requested that we find this device 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

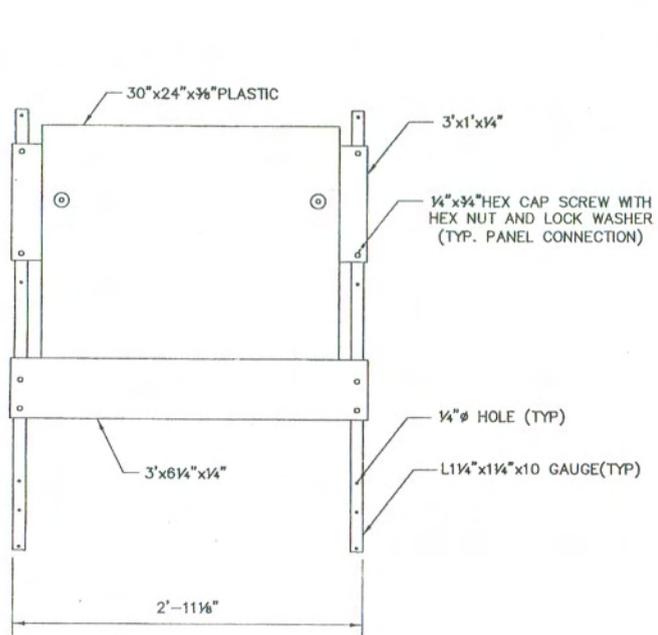


**Federal Highway Administration
Office of Safety Design
Category 2 Work Zone Device Acceptance Letter**

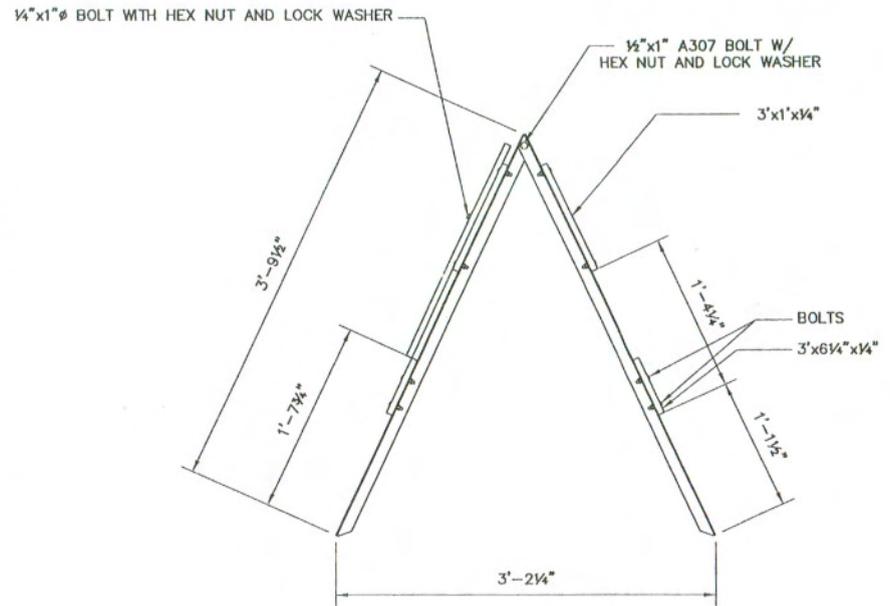
Letter Number: **WZ-273**
Date: **7/28/2008**

CONTACT INFORMATION:	Petitioner / Developer Name: <u>TOM BRADY</u> Title: <u>VICE PRESIDENT</u> Company: <u>BOB'S BARRICADES</u> Street: <u>921 SHOTGUN ROAD</u> City, State, and Zip Code: <u>SUNRISE, FL 33326</u>	
	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: 	
	Telephone Number: <u>(954) 423-2327</u> E-mail Address: <u>tbrady@bobsbarricades.com</u>	
	Engineer Name: <u>KELSEY CHIU</u> Laboratory Name: <u>KARCO ENGINEERING, LLC</u> Street: <u>9270 HOLLY RD.</u> City, State, and Zipcode: <u>ADELANTO, CA 92301</u>	
	Check One:	
	<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: 	
KEYWORDS	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	Type of Device: <u>TYPE I BARRICADE</u>

	<p>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) Other (Please describe on form)</p>													
	<p>Please Select from the following Keywords for Composition of Sign or Rail Substrate:</p> <p>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</p>	<p>Composition of Sign or Rail Substrate:</p> <p><i>CORRUGATED PLASTIC</i></p>												
<p>Thickness of substrate (inches): <i>0.375 INCHES</i></p>														
	<p>Indicate the height of sign from the ground (inches), if applicable:</p>	<table border="0"> <tr> <td>Low</td> <td>12 to 18 inches above the pavement</td> </tr> <tr> <td>Mid-A</td> <td>20 to 24 inches above the pavement</td> </tr> <tr> <td>Mid-B</td> <td>25 to 36 inches above the pavement</td> </tr> <tr> <td>Mid-C</td> <td>37 to 59 inches above the pavement</td> </tr> <tr> <td>Tall</td> <td>60 to 71 inches above the pavement</td> </tr> <tr> <td>Oversized</td> <td>72 inches and taller</td> </tr> </table> <p>Height of Sign:</p> <p><i>LOW – 12 TO 18 INCHES ABOVE THE PAVEMENT</i></p>	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
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Oversized	72 inches and taller													
<p>Flags and or lights present during test? Indicate number of each:</p>														
<p># of flags: <i>0</i></p>	<p># of lights: <i>0</i></p>	<p>Weight of lights: ea. <i>N/A</i></p>												



FRONT VIEW



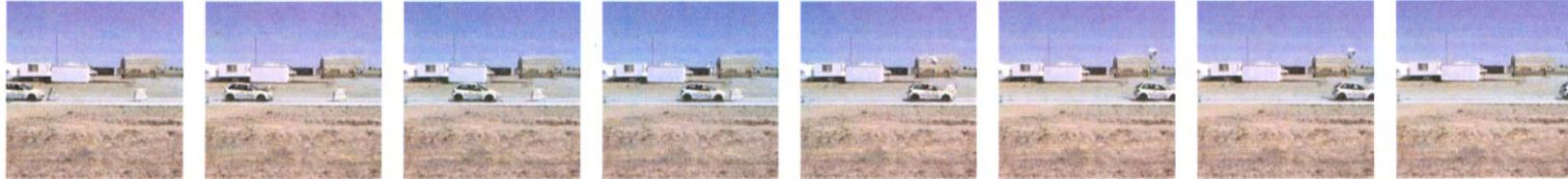
SIDE VIEW

REVISIONS			SHEET TITLE:	DRAWING NO.
DATE	BY	DESCRIPTION		
03/20/08	M.M.	FOR APPROVAL	TYPE I BARRICADE WITH SIGN	SHT-002
				PROJECT NAME: BOB'S BARRICADES, INC. - BARRICADE TESTING

DATA SHEET 4
SUMMARY OF RESULTS

Test Article: Bob's Barricades Type I Barricade with Sign
 Test Program: NCHRP 350 3-71
 Test Vehicle: 1997 Geo Metro

Project No.: P28077-01
 Test Date: 04/25/08



GENERAL INFORMATION		OCCUPANT RISK VALUES	
TEST AGENCY	KARCO Engineering, LLC	FLAIL SPACE VELOCITY (m/sec)	
TEST NO.	3-71	X DIRECTION	*
DATE	4/25/2008	Y DIRECTION	*
TEST ARTICLE		THIV (Optional)	N/A
TYPE	Work Zone Traffic Control Device	RIDEDOWN ACCELERATION (g's)	
INSTALLATION LENGTH	N/A	X DIRECTION	*
SIZE AND/OR DIMENSION OF KEY ELEMENTS	12.5 kg (28.0 lbs)	Y DIRECTION	*
SOIL TYPE AND CONDITION	Concrete	PHD (Optional)	N/A
TEST VEHICLE		ASI (Optional)	N/A
TYPE	Production Model	TEST ARTICLE DEFLECTIONS (m)	
DESIGNATION	820C	DYNAMIC	N/A
MODEL	1997 Geo Metro	PERMANENT	N/A
MASS (CURB)	859.0 kg (1894 lbs)	VEHICLE DAMAGE	
MASS (TEST INERTIAL)	823.5 kg (1815 lbs)	EXTERIOR	
DUMMY MASS	75.0 kg (165 lbs)	VDS	
MASS (GROSS STATIC)	897.0kg (1978 lbs)	CDC	
IMPACT CONDITIONS		INTERIOR	
VELOCITY (km/h)	97.8 km/h (60.8 mph) / 96.9 km/h (60.2mph)	OCDI	FS0011000
ANGLE (°)	90 / 0		
IMPACT SEVERITY (kJ)	300.7	POST-IMPACT VEHICULAR BEHAVIOR	
EXIT CONDITIONS		MAXIMUM ROLL ANGLE (°)	0.8
VELOCITY (km/h)	94.5 km/h (58.8 mph)	MAXIMUM PITCH ANGLE (°)	0.1
ANGLE (°)	90 / 0	MAXIMUM YAW ANGLE (°)	0.9

* - Values not calculated due to occupant not contacting the vehicle's interior.

¹ - Information was effected by secondary impact.