



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

1200 New Jersey Ave., SE  
Washington, D.C. 20590

**MAR 06 2019**

In Reply Refer To:  
HSST-1/WZ-371

Mr. Matthew Schindler  
QWICK KURB, INC.  
1916 US Highway 41 South  
Ruskin, FL. 33570

Dear Mr. Schindler:

This letter is in response to your January 2, 2019 request for the Federal Highway Administration (FHWA) to review a roadside safety device, hardware, or system for eligibility for reimbursement under the Federal-aid highway program. This FHWA letter of eligibility is assigned FHWA control number WZ-371 and is valid until a subsequent letter is issued by FHWA that expressly references this device.

### **Decision**

The following device is eligible within with details provided in the form which is attached as an integral part of this letter:

- QWICK KURB Continuous Curbing with L104 MEGA-MARKER, Epoxied Longitudinal Channelizer

### **Scope of this Letter**

To be found eligible for Federal-aid funding, new roadside safety devices should meet the crash test and evaluation criteria contained in the American Association of State Highway and Transportation Officials' (AASHTO) Manual for Assessing Safety Hardware (MASH). However, the FHWA, the Department of Transportation, and the United States Government do not regulate the manufacture of roadside safety devices. Eligibility for reimbursement under the Federal-aid highway program does not establish approval, certification or endorsement of the device for any particular purpose or use.

This letter is not a determination by the FHWA, the Department of Transportation, or the United States Government that a vehicle crash involving the device will result in any particular outcome, nor is it a guarantee of the in-service performance of this device. Proper manufacturing, installation, and maintenance are required in order for this device to function as tested.

This finding of eligibility is limited to the crashworthiness of the system and does not cover other structural features, nor conformity with the Manual on Uniform Traffic Control Devices.

### **Eligibility for Reimbursement**

Based solely on a review of crash test results and certifications submitted by the manufacturer, and the crash test laboratory, FHWA agrees that the device described herein meets the crash test and evaluation criteria of the AASHTO's MASH. Therefore, the device is eligible for reimbursement under the Federal-aid highway program if installed under the range of tested conditions.

Name of system: QWICK KURB Continuous Curbing with L104 MEGA-MARKER,  
Epoxied Longitudinal Channelizer

Type of system: Work Zone

Test Level: MASH Test Level 3 (TL3)

Testing conducted by: Transportation Research Center, Inc. (TRC)

Date of request: January 10, 2019

FHWA concurs with the recommendation of the accredited crash testing laboratory on the attached form.

### **Full Description of the Eligible Device**

The device and supporting documentation, including reports of the crash tests or other testing done, videos of any crash testing, and/or drawings of the device, are described in the attached form.

### **Notice**

This eligibility letter is issued for the subject device as tested. Modifications made to the device are not covered by this letter. Any modifications to this device should be submitted to the user (i.e., state DOT) as per their requirements.

You are expected to supply potential users with sufficient information on design, installation and maintenance requirements to ensure proper performance.

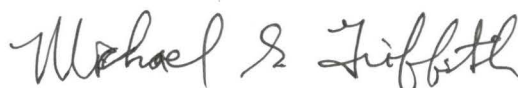
You are expected to certify to potential users that the hardware furnished has the same chemistry, mechanical properties, and geometry as that submitted for review, and that it will meet the test and evaluation criteria of AASHTO's MASH.

Issuance of this letter does not convey property rights of any sort or any exclusive privilege. This letter is based on the premise that information and reports submitted by you are accurate and correct. We reserve the right to modify or revoke this letter if: (1) there are any inaccuracies in the information submitted in support of your request for this letter, (2) the qualification testing was flawed, (3) in-service performance or other information reveals safety problems, (4) the system is significantly different from the version that was crash tested, or (5) any other information indicates that the letter was issued in error or otherwise does not reflect full and complete information about the crashworthiness of the system.

### Standard Provisions

- To prevent misunderstanding by others, this letter of eligibility designated as FHWA control number WZ-371 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 upon request.
- This 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.
- This FHWA eligibility letter is not an expression of any Agency view, position, or determination of validity, scope, or ownership of any intellectual property rights to a specific device or design. Further, this letter does not impute any distribution or licensing rights to the requester. This FHWA eligibility letter determination is made based solely on the crash-testing information submitted by the requester. The FHWA reserves the right to review and revoke an earlier eligibility determination after receipt of subsequent information related to crash testing.
- If the subject device is a patented product it may be considered to be proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid 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.

Sincerely,



Michael S. Griffith  
Director, Office of Safety Technologies  
Office of Safety

Enclosures

## Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

<b>Submitter</b>	Date of Request:	January 02, 2019	<input checked="" type="radio"/> New <input type="radio"/> Resubmission
	Name:	Matthew Schindler	
	Company:	QWICK KURB, INC.	
	Address:	1916 US Highway 41 South, Ruskin, FL 33570	
	Country:	USA	
	To:	Michael S. Griffith, Director FHWA, Office of Safety Technologies	

I request the following devices be considered eligible for reimbursement under the Federal-aid highway program.

**Device & Testing Criterion** - Enter from right to left starting with Test Level

!-!-!

System Type	Submission Type	Device Name / Variant	Testing Criterion	Test Level
'WZ': Crash Worthy Work Zone Traffic Control Devices	<input checked="" type="radio"/> Physical Crash Testing <input type="radio"/> Engineering Analysis	QWICK KURB Continuous Curbing with L104 MEGA-MARKER, Epoxyed / Longitudinal Channelizer	AASHTO MASH	TL3

By submitting this request for review and evaluation by the Federal Highway Administration, I certify that the product(s) was (were) tested in conformity with the AASHTO Manual for Assessing Safety Hardware and that the evaluation results meet the appropriate evaluation criteria in the MASH.

**Individual or Organization responsible for the product:**

Contact Name:	Matthew Schindler	Same as Submitter <input checked="" type="checkbox"/>
Company Name:	QWICK KURB, INC.	Same as Submitter <input checked="" type="checkbox"/>
Address:	1916 US Highway 41 South, Ruskin, FL 33570	Same as Submitter <input checked="" type="checkbox"/>
Country:	USA	Same as Submitter <input checked="" type="checkbox"/>
Enter below all disclosures of financial interests as required by the FHWA 'Federal-Aid Reimbursement Eligibility Process for Safety Hardware Devices' document.		
<p>QWICK KURB®, INC. sponsored and fully paid for testing of its longitudinal channelizing system by TRC. No other financial exchange with TRC or its employees, including consultants, was made. There is no patent, license, copyright, investment or other intellectual property interest between QWICK KURB®, INC. and TRC. There are no consulting, research funding or other compensation included wages, salaries, commissions, professional fees for business referrals.</p>		

## PRODUCT DESCRIPTION

<input checked="" type="radio"/> New Hardware or Significant Modification	<input type="radio"/> Modification to Existing Hardware
<p>The QWICK KURB Continuous Curbing L60 Bases are approximately 36 inches long and weigh 40 lbs. The L61 Male End pieces and L62 Female End pieces are each approximately 18 inches long and weigh approximately 13 lbs. The L104 MEGA-MARKER vertical channelizing device is plastic, weighs approximately 5 lbs, and is 43 inches tall when mounted in the L60.</p>	
<h3>CRASH TESTING</h3>	
<p>By signature below, the Engineer affiliated with the testing laboratory, agrees in support of this submission that all of the critical and relevant crash tests for this device listed above were conducted to meet the MASH test criteria. The Engineer has determined that no other crash tests are necessary to determine the device meets the MASH criteria.</p>	
<b>Engineer Name:</b>	Jason Jenkins
<b>Engineer Signature:</b>	<div style="display: flex; align-items: center;"> <div style="flex: 1;"> <h2 style="margin: 0;">Jason Jenkins</h2> </div> <div style="font-size: 0.8em; margin-left: 10px;"> <small>Digitally signed by Jason Jenkins            DN: cn=Jason Jenkins, o=Transportation Research Center Inc., ou=Impact Laboratory, email=jenkinj@trcpg.com, c=US            Date: 2019.01.03 08:31:39 -05'00'</small> </div> </div>
<b>Address:</b>	10820 State Route 347 East Liberty, OH 43319
<b>Country:</b>	USA
	Same as Submitter <input type="checkbox"/>
	Same as Submitter <input type="checkbox"/>

A brief description of each crash test and its result:

Required Test Number	Narrative Description	Evaluation Results
3-90 (1100C)	Transportation Research Center, Test# 171017-16, 10/17/17. The products were positioned in an array of three L60 Longitudinal Channelizers, bracketed with an L61 or L62 curb end piece on each end of the array. The center front of the impacting 1100C vehicles struck the approximate center of the face of the channelizing device. Test 3-90 met all conditions of MASH16 and is considered a pass.	PASS
3-91 (2270P)	Transportation Research Center, Test# 181004-2, 10/4/18. The products were positioned in an array of three L60 Longitudinal Channelizers, bracketed with an L61 or L62 curb end piece on each end of the array. The center front of the impacting 2270P vehicles struck the approximate center of the face of the channelizing device. Test 3-90 met all conditions of MASH16 and is considered a pass.	PASS

Full Scale Crash Testing was done in compliance with MASH by the following accredited crash test laboratory (cite the laboratory's accreditation status as noted in the crash test reports.):

Laboratory Name:	Transportation Research Center, Inc.	
Laboratory Signature:	<b>Jason Jenkins</b>	Digitally signed by Jason Jenkins DN: cn=Jason Jenkins, o=Transportation Research Center Inc., ou=Impact Laboratory, email=jenkinsj@trcpg.com, c=US Date: 2019.01.03 08:32:00 -05'00'
Address:	10820 State Route 347 East Liberty, OH 43319	Same as Submitter <input type="checkbox"/>
Country:	USA	Same as Submitter <input type="checkbox"/>
Accreditation Certificate Number and Dates of current Accreditation period :	Certificate Number: L2187 01/17/2018-01/26/2021	

Submitter Signature\*:

Matthew Schindler  
2019.01.02 14:36:54  
-05'00'

<b>Submit Form</b>
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## ATTACHMENTS

Attach to this form:

- 1) Additional disclosures of related financial interest as indicated above.
- 2) A copy of the full test report, video, and a Test Data Summary Sheet for each test conducted in support of this request.
- 3) A drawing or drawings of the device(s) that conform to the Task Force-13 Drawing Specifications [[Hardware Guide Drawing Standards](#)]. For proprietary products, a single isometric line drawing is usually acceptable to illustrate the product, with detailed specifications, intended use, and contact information provided on the reverse. Additional drawings (not in TF-13 format) showing details that are relevant to understanding the dimensions and performance of the device should also be submitted to facilitate our review.

FHWA Official Business Only:

Eligibility Letter		Key Words
Number	Date	






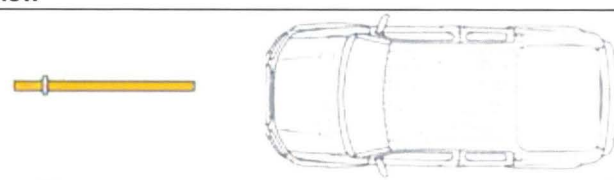

<b>1. Sequential photographs</b>					
					
0.000 s		0.50 s		0.100 s	
					
0.150 s		0.200 s			
<b>2. Plan View</b>			<b>3. Cross-Sectional View</b>		
					
<b>4. General Information:</b>			<b>9. Exit Conditions:</b>		
Test Agency	Transportation Research Center Inc.		Speed	Not Applicable	
Test Number	171017-16		Angle	0 degrees (estimated)	
Date	October 17, 2017		Exit Box Criterion	Not Applicable	
<b>5. Test Article:</b>			<b>10. Post-Impact Trajectory:</b>		
Type	Type-III Longitudinal Channelizer		Vehicle Stability	Satisfactory	
Installation Length	13.0 Feet		Stopping Distance	Not Applicable	
Key Elements	L60 Longitudinal Channelizers/End Curbs/L104 post/Epoxy Channelizers and End Curbs to Pavement		<b>11. Occupant Risk:</b>		
			Longitudinal OIV	4.99 ft/s (1.52 m/s)	
<b>6. Soil Conditions:</b>			Lateral OIV	-4.89 ft/s (-1.49 m/s)	
Type of Soil	Not Applicable		Longitudinal RA	0.60 G	
Soil Strength	Not Applicable		Lateral RA	0.39 G	
<b>7. Test Vehicle:</b>			<b>12. Test Article Damage:</b>		
Type/Designation	Production Model 1100C		L104 post and L60 Longitudinal Channelizer remained intact.		
Make and Model	2011 Chevrolet Aveo LT		<b>13. Test Article Deflections:</b>		
Test Inertial	1172.6 kg		Permanent Set	None	
Gross Static	1172.6 kg		Dynamic	Not Applicable	
<b>8. Impact Conditions:</b>			Working Width	Not Applicable	
Speed	97.70 km/h		<b>14. Vehicle Damage:</b>		
Angle	0 degrees		VDS	No additional damage	
Location/Orientation	Center front of vehicle to the center of face		CDC	Not Applicable	

Figure 120 Summary of results for test 171017-16






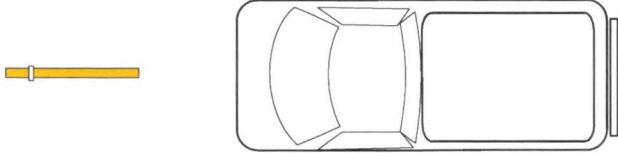

1. Sequential photographs			
			
0.000 s		0.50 s	
			
0.100 s		0.150 s	
			
0.200 s			
2. Plan View		3. Cross-Sectional View	
			
4. General Information:		9. Exit Conditions:	
Test Agency	Transportation Research Center Inc.	Speed	Not Applicable
Test Number	181004-2	Angle	0 degrees (estimated)
Date	October 4, 2018	Exit Box Criterion	Not Applicable
5. Test Article:		10. Post-Impact Trajectory:	
Type	Type-III Longitudinal Channelizer	Vehicle Stability	Satisfactory
Installation Length	13.0 Feet	Stopping Distance	Not Applicable
Key Elements	L60 Longitudinal Channelizers/End Curbs/L104 post/Epoxy Channelizers and End Curbs to Pavement	11. Occupant Risk:	
		Longitudinal OIV	0.03 ft/s (0.01 m/s)
		Lateral OIV	0.20 ft/s (0.06 m/s)
		Longitudinal RA	0.00 G
		Lateral RA	0.00 G
6. Soil Conditions:		12. Test Article Damage:	
Type of Soil	Not Applicable	The L104 and the array of L60 Longitudinal Channelizer remained intact	
Soil Strength	Not Applicable		
7. Test Vehicle:		13. Test Article Deflections:	
Type/Designation	Production Model 2270P	Permanent Set	Not Applicable
Make and Model	2018 Dodge Ram 1500	Dynamic	Not Applicable
Test Inertial	2310.8 kg	Working Width	Not Applicable
Gross Static	2402.4 kg	14. Vehicle Damage:	
8. Impact Conditions:		VDS	Not Applicable
Speed	100.55 km/h	CDC	Not Applicable
Angle	0 degrees		
Location/Orientation	Center front of vehicle to the center of face		

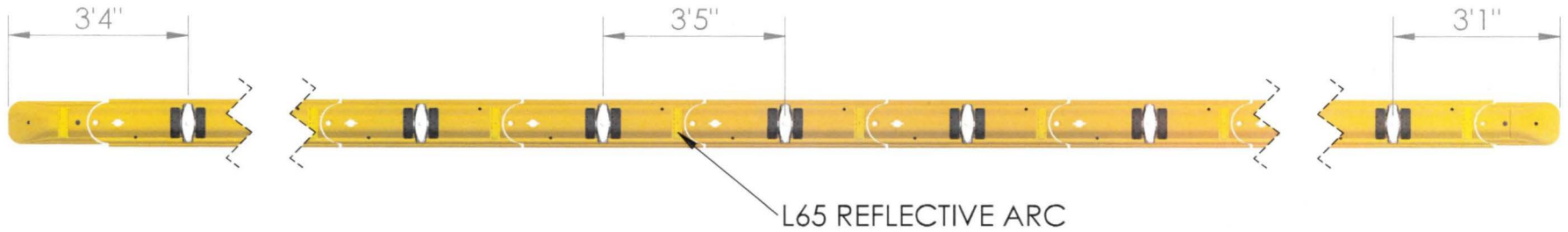
Figure 123 Summary of results for test 181004-2



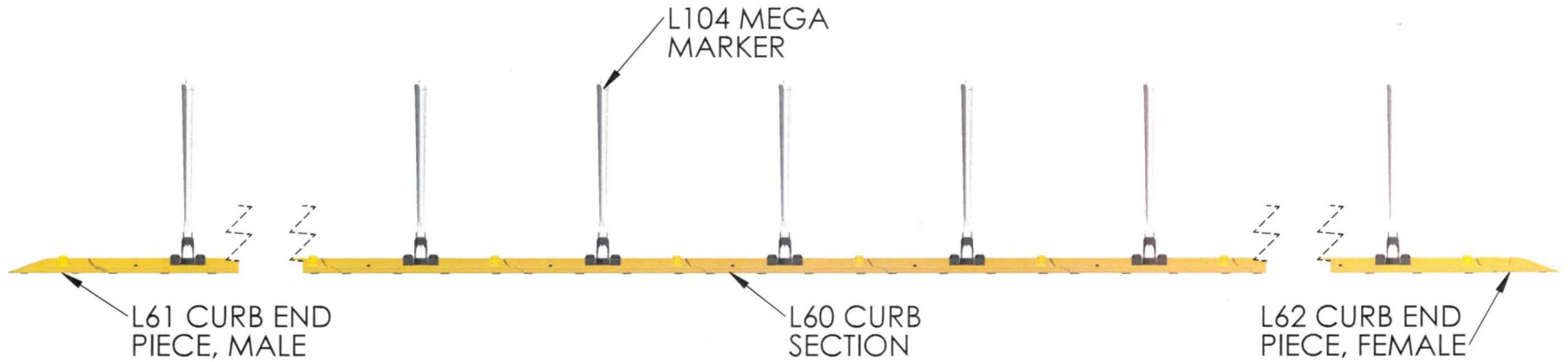
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- DEPICTED ABOVE WITH PANELS EVERY 3.5' (NOMINAL SPACING). CAN BE CONFIGURED WITH OTHER SPACING
- SHOWN WITH YELLOW CURBING AND ACCESSORIES. OTHER COLORS AVAILABLE.
- L65 REFLECTIVE ARC TYPICALLY PLACED ON EACH L60 CURB PIECE AND L61 MALE END PIECE, NOT ON L62 FEMALE END PIECE
- REFER TO INSTALLATION MANUAL FOR ANCHORING OPTIONS

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QWICK KURB®. INC.

DRAWING QWICK KURB Continuous Curbing with MEGA-MARKER, Epoxied

SIZE A

SCALE:1:36 SHEET 1 OF 1

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