U.S. Department of Transportation
Federal Highway Administration

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

April 1, 2010

In Reply Refer To:
HSSD/WZ-290

Mr. Ron Riker
Founder
SHUR-TITE® Products Co.
P.O. Box 2283
Round Rock, TX 78680

Dear Mr. Riker:

This is in response to your January 28, 2010, letter requesting the Federal Highway Administration's (FHWA) acceptance of your company's SHUR-CURB™ longitudinal channelizing curb as a crashworthy traffic control device for use in work zones and elsewhere on the National Highway System. Accompanying your letter was the FHWA Office of Safety Design form and test report documentation of the relevant testing observed by Charles W. Heald, P.E. You requested that we find this longitudinal channelizing curb 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 request. The original completed form has been modified by the addition of the FHWA acceptance letter number and the date of our review. The form, of which a copy is enclosed for reference, 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

FHWA:HSSD:NArtimovich:tb:x61331:3/25/10
File: s://directory folder/nartimovich/WZ-290.doc
cc: HSSD (Reader, HSA; Chron File, HSSD; N.Artimovich, HSSD; MMcDonough, HSSD; WLongstreet, HSSD; DNicol, HSSD)

Page 1	**FEDERAL HIGHWAY ADMINISTRATION** **OFFICE OF SAFETY DESIGN** **Category 2 Work Zone Device Acceptance Letter**	Letter Number Date
Contact Info	Petitioner / Developer Name and Address: Shur-Tite Products, Ron Riker V.P. Sales and Marketing PO Box 2283 Round Rock, TX. 78680	
	I herby 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	Ron Riker	
Telephone #	(512) 218-9500	
Email Address	ron@shur-tite.com	
	Laboratory / Engineer Name and Address Charles W. Heald, P.E. PO Box 57 Walburg, TX. 78673	
☑	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.	
☐	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	Charles W. Heald	
Telephone #	(512) 863-7865	
Email Address	wheald@ecpi.com	
Keywords:		
	Type of Device (See page 3) Longitudinal Channelizing Barricade Curb (Curb channelizer system with or without road	
	Composition of Sign or Rail substrate (See Page 3)	
	Thickness of substrate (inches):	
	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: # of lights: Weight of lights: ea.	
Device Name	SHUR-CURB™	
Detailed Desc. Of Device, Materials, sizes, Fasteners, Substrates Foundation, Aux. Features Ballast, etc.	(May be attached on separate page(s) See Attached	

Detailed Description of Device, Materials, Sizes, Fasteners,etc.

Shur-Curb™ is an injection molded high impact polyolefin polymer mountable curb measuring 10 in. wide by 2 3/8 in. tall by 40 in. long. Each curb section has 2 each 3M raised pavement markers attached to the top of the curb. Each curb is anchored with six -½ in. by 3 ½ in. lag bolts that are threaded into 5/8 in. by 3 ½ in. plastic anchor sleeves placed into the roadway. The curb sections are spaced no less than ½ in. apart to form a continuous longitudinal appearance. Each 40 in. Shur-Curb™ is molded with a ramped up section on each end so a separate end section is not required. The tubular delineators are attached to the center of the curb section utilizing a flexible, self righting joint. The connection is made using a 3/8 in by 2 ¾ in. clevis pin and cotter.

A single v-shaped test installation was constructed for the conduct of tests 1, 4 and 5 reported herein. A primary leg of 100 ft. was used for the conduct of tests 2 and 3. The formation assembled for the tests allowed a lane separation configuration and gore type configuration to be tested. The total length of longitudinal (parallel to traffic flow) Shur-Curb™ installed was 100 ft. The parallel leg was comprised of 30 curb segments. The take-off leg of the vee was 20 ft. long and angled 30 degrees off of the longitudinal leg. The curb was anchored to the concrete apron. Road Tubes were not installed for tests one through four. Test five was performed with vertical Road Tubes installed. Photographs of the test installation are shown in Appendix B and photographs of the vehicle before and after testing are shown in Appendix C.

Page 2	**FEDERAL HIGHWAY ADMINISTRATION** **OFFICE OF SAFETY DESIGN** **Category 2 Work Zone Device Acceptance Letter**		Letter Number Date
	Mandatory Attachments		
	Attachment # 1: Test data summary page(s)		
	Attach. #1a	Test # Certification Le	
	Attach. #1b	Test # Crash Summary	
	Attach. #1c	Test # Crash Layout	
	Attach. #1d	Test #	
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: Details of the Shur-Curb™	
		Drawing #: Appendix A	
	Attach. #2b	Drawing Title: Photographs of Shur-Curb™	
		Drawing #: Appendix B	
	Attach. #2c	Drawing Title: Photographs of the Test Vehicle	
		Drawing #: Appendix C	
	Attach. #2d	Drawing Title:	
		Drawing #:	
	Attach. #2e	Drawing Title:	
		Drawing #:	
	Attach. #2f	Drawing Title:	
		Drawing #:	
	Attach. #2g	Drawing Title:	
		Drawing #:	

SHUR-TITE® PRODUCTS

January 28, 2010

Nicholas Artimovich, II
Highway Engineer, Office of Safety Design
Federal Highway Administration HSSD
1200 New Jersey Avenue SE, Room E71-322
Washington, DC 20590

Dear Nick,

I am writing this letter to request the Federal Highway Administration (FHWA) acceptance of our company's SHUR-CURB™ channelizing system as a crashworthy traffic control device for use in work zones and permanent installations on the National Highway System (NHS). Accompanying our letter are reports of live driver crash testing that we conducted and video of these tests. In addition we are providing independent certification of these tests. We are requesting that you find these devices 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".

SHUR-TITE® Products submits the following facts and data for proof of the crashworthiness characteristics of design of the SHUR-CURB™ System. With the facts and data presented we are asking for this acceptance providing our own independently certified Crash Test and based on the fact that since its design, dimensions, and material composition are similar to two other curb systems that have already been crash tested and accepted. We are submitting the following documentation to substantiate our request:

1. Copy of FHWA acceptance with dimensions and material composition of the Dura-Curb™.
2. Copy of FHWA acceptance with dimensions and material composition of the Tuff-Curb™.
3. Engineering drawing and material composition of the SHUR-TITE® Curb System.
4. Crash Test installation layout and description of how each test was conducted.
5. Crash Test video with accompanying independent certification letter.

PO Box 2283, Round Rock, TX 78680 Phone: 512-218-9500 Fax: 512-388-0417
www.shur-tite.com

SHUR-TITE® Products manufactures the Curb System referred to in this acceptance request. SHUR-TITE® Products does not desire any shortcuts in the assessment of the safety of its products. However, we respectfully request due to our own extensive testing, your acceptance of like products, and the documentation either provided or referenced; that your office issue SHUR-CURB™ its concurrence and acceptance to the crashworthiness characteristics of design. All of our products incorporate design aspects to allow for long field life, enhanced roadway traffic safety, and quick, easy change-outs by DOT maintenance personnel to reduce their exposure to traffic.

We sincerely appreciate your consideration of this request.

Respectfully,

Ron Riker
Founder
SHUR-TITE® Products Co.
P. O. Box 2283
Round Rock, Texas 78680

Attachment 1A

February 5, 2010

Shur-Tite® Products
Mr. Ron Riker
PO Box 2283
Round Rock, TX. 78680

Dear Mr. Riker,

On Tuesday, January 12, 2010, SHUR-TITE® Products crash tested their Shur-Curb™ Traffic Channelizers Part #SF0200. They were installed per the attached manufacturer's recommendations. The temperature varied from 34-41 degrees during the crash. The crash test was performed using a 1990 Oldsmobile Cutlass Ciera with an average speed of 62 MPH. The bumper height on the car was 17".

Shur-Curb™ is an injection molded high impact polyolefin polymer mountable curb measuring 10 in. wide by 2 3/8 in. tall by 40 in. long with 2 each 3M raised pavement markers. Each curb section was anchored with six -½ in. by 3 ½ in. lag bolts that are threaded into 5/8 in. by 3 ½ in. plastic anchor sleeves placed into the roadway. The curb sections were installed end to end to form a continuous longitudinal line. Each 40 in. Shur-Curb™ is molded with a ramped up section on each end so separate end sections are not required. The tubular delineators are attached to the center of the curb section utilizing a flexible, self righting joint. The connection is made using a 3/8 in by 2 ¾ in. clevis pin and cotter.

A single v-shaped test installation was constructed for the conduct of tests 1, 4 and 5 reported herein. A primary leg of 100 ft. was used for the conduct of tests 2 and 3. The formation assembled for the tests allowed a lane separation configuration and gore type configuration. The total length of longitudinal (parallel to traffic flow) Shur-Curb™ installed was 100 ft. The parallel leg was comprised of 30 curb segments. The take-off leg of the vee was 20 ft. long and angled 30 degrees off of the longitudinal leg. The curb was anchored to the concrete apron. Road Tubes were not installed for tests one through four. Test five was performed with the vertical Road Tubes installed.

I observed the crash test and certify that SHUR-TITE® Products performed the test as summarized in this letter and on the enclosed attachments.

Sincerely,

Charles W. Heald

Charles W. Heald, P.E.

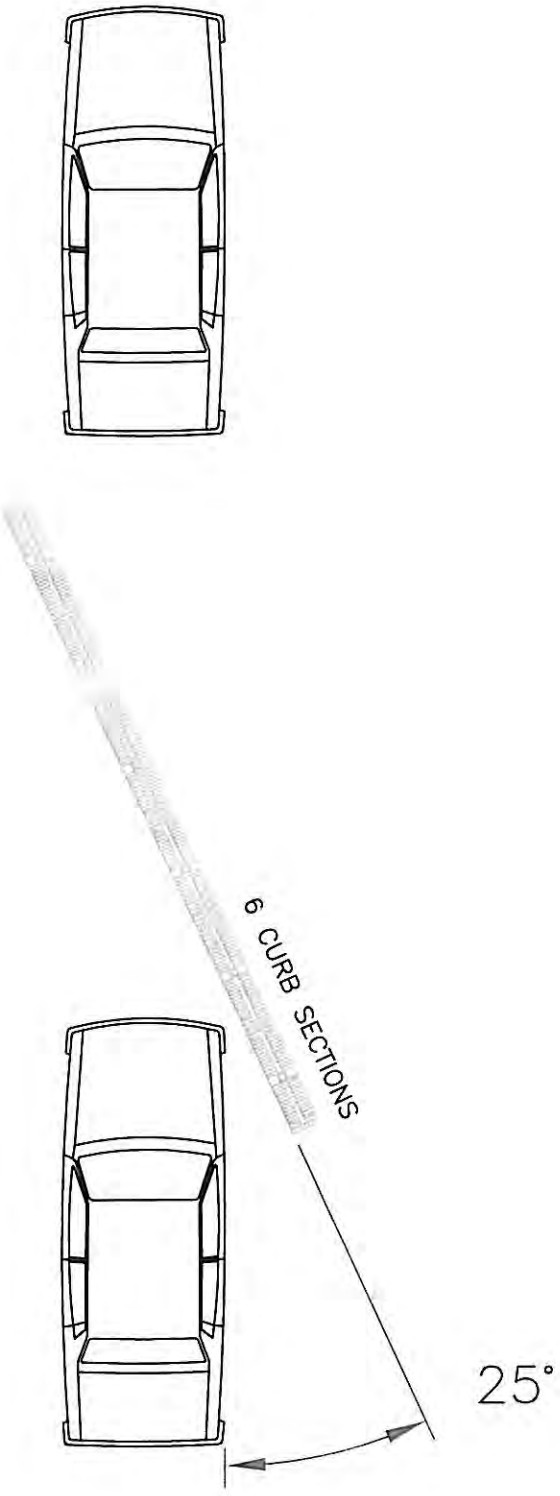
HALFF ASSOCIATES, INC.
TBPE FIRM #F-312

Attachment 1B

SHUR-CURB™ CRASH TEST SUMMARY
01/12/2010

1. All Tests
    a. 62 mph
    b. 1990 Oldsmobile Cutlass Ciera
2. Installation for tests 1, 4, and 5
    a. Vee installation
    b. Primary leg ~100' + long
    c. Secondary leg ~20' + long
    d. 30 deg angle between legs
3. Installation for tests 2 and 3
    a. Primary leg ~100' + long
4. Test #1
    a. 25 deg cross over
    b. Performed on 20' length of installation
    c. Road Tubes to be removed along 100' installation
5. Test #2
    a. 0 deg impact
    b. Driver wheel over impact
    c. Performed on 100' length of installation
    d. Road Tubes to be removed
6. Test #3
    a. Lane change maneuver (right to left)
    b. Lane change maneuver (left to right)
    c. Performed on 100' length of installation
    d. Road Tubes to be removed
7. Test #4
    a. Traversal of "vee" at 0 degrees
    b. Road Tubes to be removed
8. Test #5
    a. 0 degree impact
    b. Car centered over impact
    c. Performed on 100' length of installation
    d. Road Tubes (30 ea) to be installed along 100' installation
    e. 2 impacts

Attachment 1C



TEST 1
TRAVERSAL OF CURB
AT TWENTY FIVE DEGREES

SHUR-TITE® PRODUCTS P. O. BOX 2283 ROUND ROCK, TEXAS 78680 (512) 218-9500	TYPE: CURB TEST #1	DRAWN BY: PH	DATE: 01/29/10	
		CHECKED BY: DWH	REVISION: 1	SHEET: 1 OF 5

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TEST 2
TRAVERSAL OF CURB
AT ZERO DEGREES

DRIVER SIDE TIRES ON THE CURB

SHUR-TITE®
PRODUCTS
P O BOX 2283
ROUND ROCK, TEXAS 78680
(512) 218-9500

TYPE: CURB TEST #2

DRAWN BY:	DATE:
PH	01/29/10
CHECKED BY:	REVISION: / SHEET:
DWH	1 / 2 OF 5

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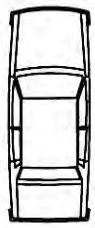
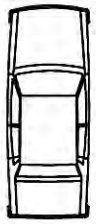
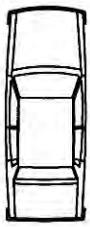




30 CURB SECTIONS



TEST 3
LANE CHANGE MANEUVER
IMPACT 1 (RIGHT TO LEFT)
IMPACT 2 (LEFT TO RIGHT)

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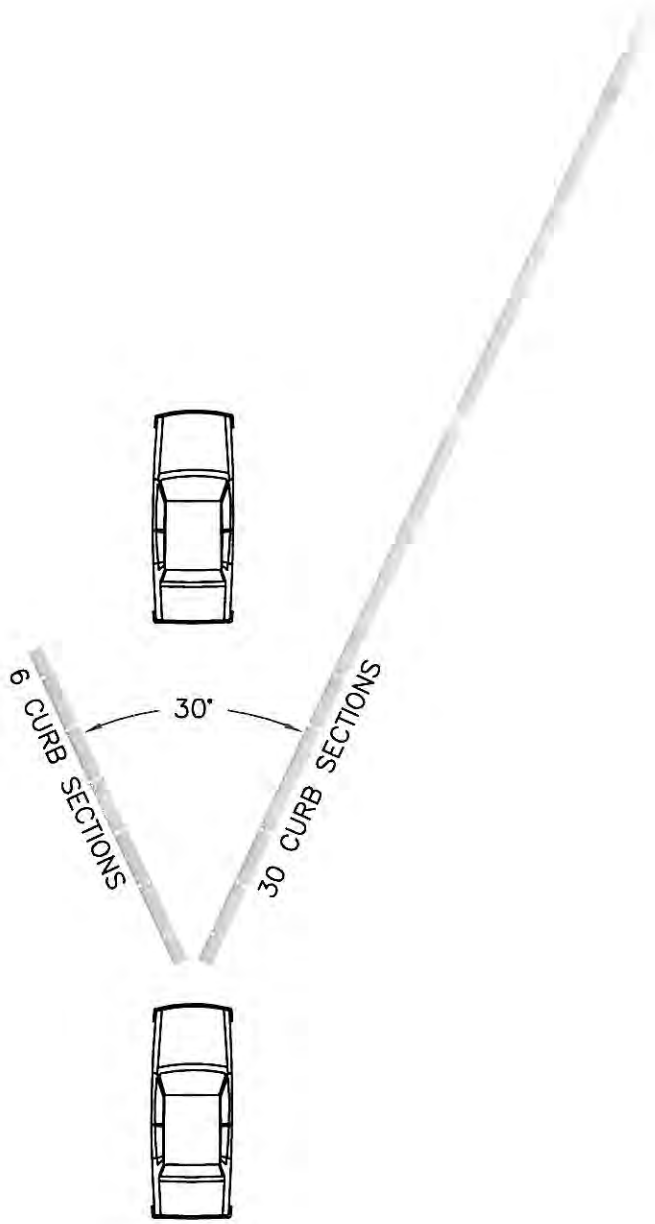
SHUR–TITE® PRODUCTS
P O BOX 2283
ROUND ROCK, TEXAS 78680
(512) 218-9500

TYPE:	DRAWN BY:	DATE:
CURB TEST #3	PH	01/29/10
	CHECKED BY: DWH	REVISION: 1
		SHEET: 3 OF 5

TEST 4
TRAVERSAL OF "VEE"
AT ZERO DEGREES



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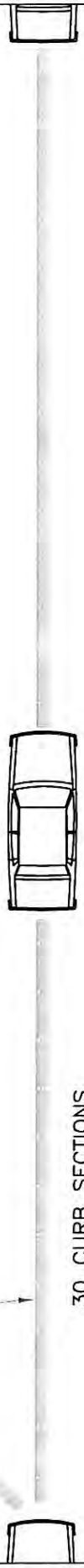
SHUR–TITE® PRODUCTS P. O. BOX 2283 ROUND ROCK, TEXAS 78680 (512) 218-9500	TYPE: CURB TEST #4	DRAWN BY: PH	DATE: 01/29/10	
		CHECKED BY: DWH	REVISION: 1	SHEET: 4 OF 5



TEST 5
TRAVERSAL OF CURB
AT ZERO DEGREES
ROAD TUBES INSTALLED
(2 IMPACTS)

SHUR-TITE®
PRODUCTS
P. O. BOX 2283
ROUND ROCK, TEXAS 78680
(512) 218-9500

TYPE: CURB TEST #5

DRAWN BY:	DATE:
PH	01/29/10
CHECKED BY:	REVISION: / SHEET:
DWH	1 / 5 OF 5

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