

July 25, 2007

In Reply Refer To: HSSD/SS-151

Mr. Darrell Heald
Vice President
SHUR-TITE Products
P.O. Box 2283
Round Rock, TX 78680

Dear Mr. Heald:

In your letter of December 14, 2006, you requested the Federal Highway Administration's (FHWA) acceptance of your SHUR-TITE® multiple mailbox mount at the National Cooperative Highway Research Program (NCHRP) Report 350 test level 3 (TL-3). In support of your request, you provided a copy of the Texas Transportation Institute report dated November 2006, entitled "Crash Testing and Evaluation of the SHUR-TITE® Multiple Mailbox Mount" and digital video of the crash test conducted on the device.

Requirements

Mailbox supports should meet the guidelines contained in the NCHRP Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features." FHWA Memorandum "ACTION: Identifying Acceptable Highway Safety Features" of July 25, 1997, provides further guidance on crash testing requirements of support structures.

Product description

The SHUR-TITE® multiple mailbox mount is designed to support as many as 4 or 5 mailboxes (depending on their size and total weight) on a support frame that is fabricated from 2-3/8 inch (60.3 mm) diameter and 0.065 inch (1.7 mm) thick steel tubing. The top portion of the support frame consists of a horizontal tube, which is welded at both ends to a 25 inch (63.5 cm) radius, semi-circular shaped tube. The bottom of the semi-circular tube is welded to a 22.5 inch (57.2 cm) long vertical tube. Two detailed drawings of the multiple mailbox support are enclosed for reference.

Test article installation

The test installation had four mailboxes mounted on its top. Two of these mailboxes were smaller, measuring approximately 9 inches by 7 inches by 19 inches (229 mm x 178 mm x 483 mm) and weighing 7 lb (3.2 kg). The remaining two mailboxes were a larger size, measuring approximately 15 inches by 11.5 inches by 23.5 inches (381 mm x 292 mm x

597 mm) and weighing 13 lb 10 oz (6.2 kg). The small mailboxes were directly attached to the standard Texas Department of Transportation bracket mount with four 1/4 inch (6.4 mm) diameter bolts.

The mailbox frame was placed into a 12 inch (305 mm) diameter by 30 inch (762 mm) deep concrete footing. At the center of this concrete footing, a 3 inch (76.2 mm) diameter by 17 inch (43.2 cm) long plastic tube socket was used for mounting the mailbox support frame. Once the mailbox support frame was inserted into the footing, it was secured in place with a plastic wedge placed between the vertical support frame tube and the plastic socket in the concrete footing.

Testing

The criteria in the NCHRP Report 350 for mailbox supports specifies that to meet TL-3 they must successfully pass tests 3-60 and 3-61. These tests involve the standard 820 kg passenger car impacting the support head-on and at the critical impact angle at a speed of 35 km/h (test 3-60) and 100 km/h (test 3-61).

Both tests were conducted on your mailbox support. In test 3-60, the test vehicle impacted the device at an impact angle of 0 degrees and with the left quarter point of the vehicle aligned with the centerline of the mount. Upon impact, the support pulled out of the ground socket as designed. Contact with the windshield was made but no damage resulted. In test 3-61, the test vehicle contacted the device at an impact angle of 0 degrees and with the right quarter point of the vehicle aligned with the centerline of the support. Upon impact, the support pulled out of the ground base as designed and the mailboxes contacted the windshield. The windshield shattered an area of 5 square feet and depressed 3.2 inches (81 mm) inward without any holes or penetration into the occupant compartment. A summary of the test results is enclosed.

Based on the crash testing results, I agree that the SHUR-TITE® multiple mailbox mount meets the evaluation criteria for NCHRP 350 TL-3 for mailbox supports and may be used at all appropriate locations on the National Highway System (NHS) when selected by the contracting authority. The SHUR-TITE® multiple mailbox mount was tested in a configuration that included two small mailboxes weighing 7 pounds (3.2 kg) each and two large mailboxes weighing 13.6 pounds (6.18 kg) each. The total weight of the mailboxes is approximately 41 pounds (18.6 kg). Alternate mailbox arrangements are considered acceptable, provided that the total weight of the mailboxes does not exceed the total tested weight of 41 lb (18.6 kg).

Standard provisions

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 include 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.

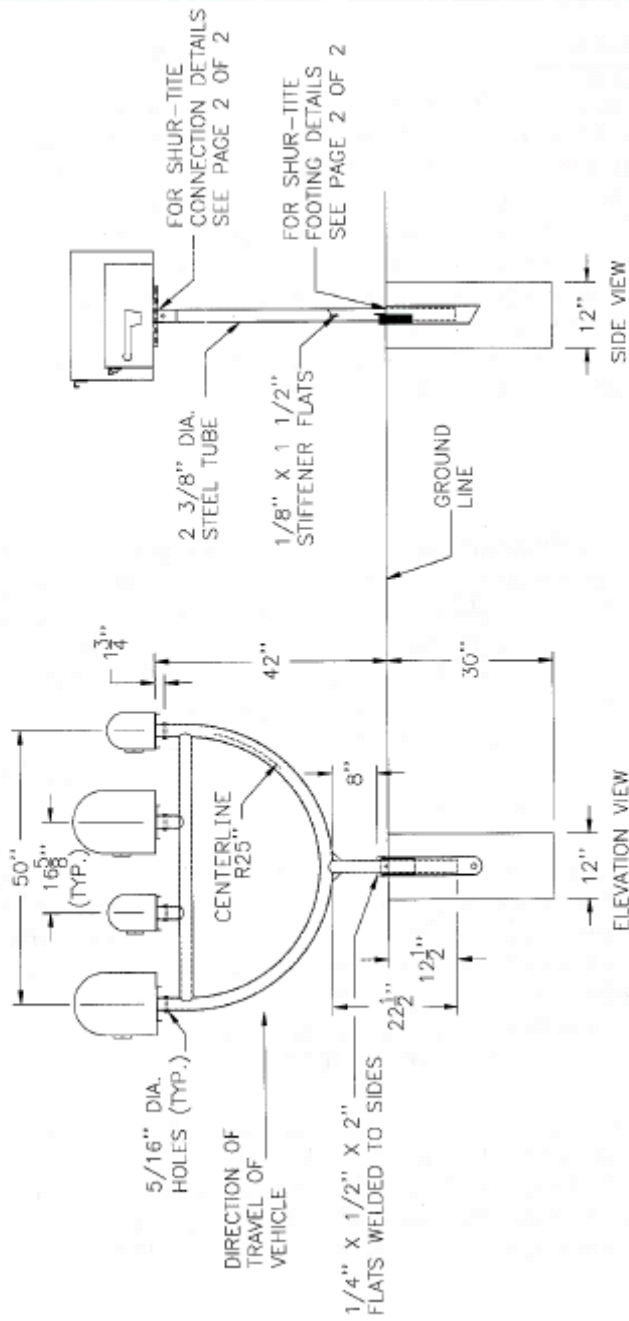
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.
- You 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 the FHWA and the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance designated as number SS-151 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.
- The SHUR-TITE® multiple mailbox mount is a patented product and considered proprietary. If proprietary devices are specified by a highway agency for use on Federal-aid projects, except exempt, non-NHS 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 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.
- 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,

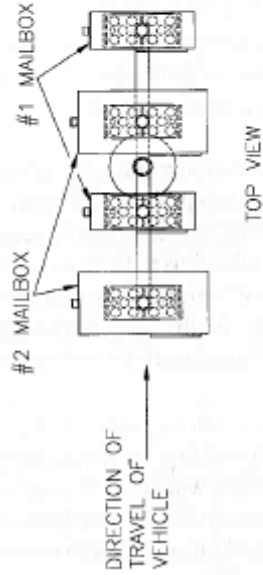
A handwritten signature in blue ink, reading "George E. Rice, Jr." with a stylized flourish at the end.

George E. Rice, Jr.
Acting Director, Office of Safety Design
Office of Safety

Enclosures



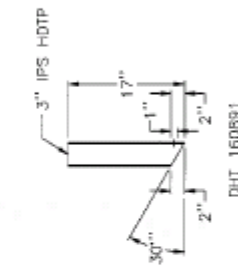
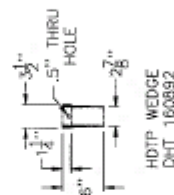
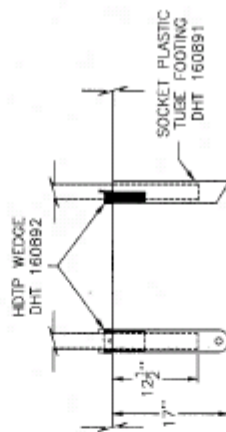
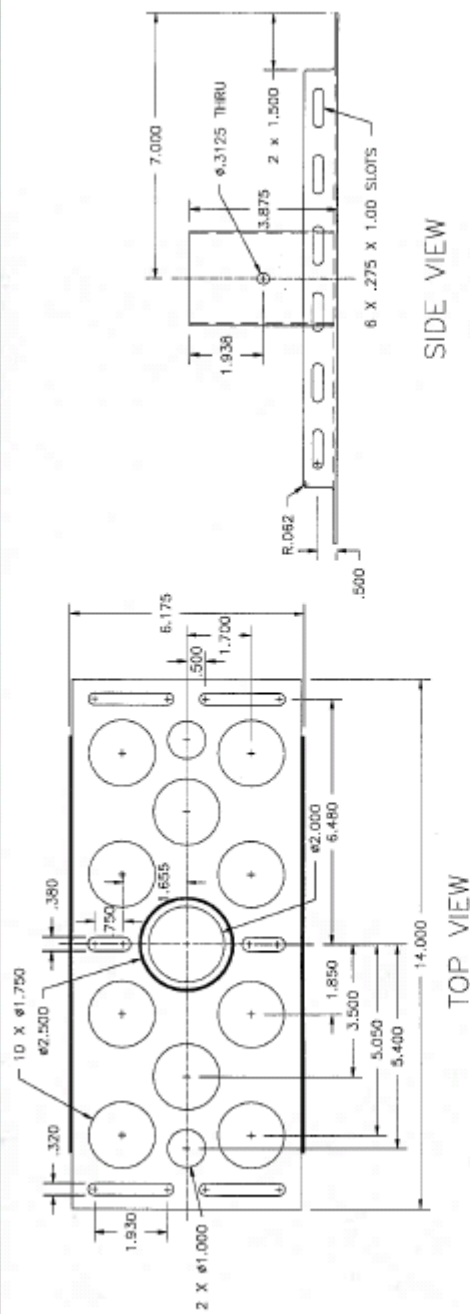
NOTE: -ALL WELDS 1/4" AROUND
ALL JOINTS
-POWDERCOAT WHITE



The Texas A&M University System			
Texas Transportation Institute			
College Station, Texas 77843			
No.	Date	By	State
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5.			

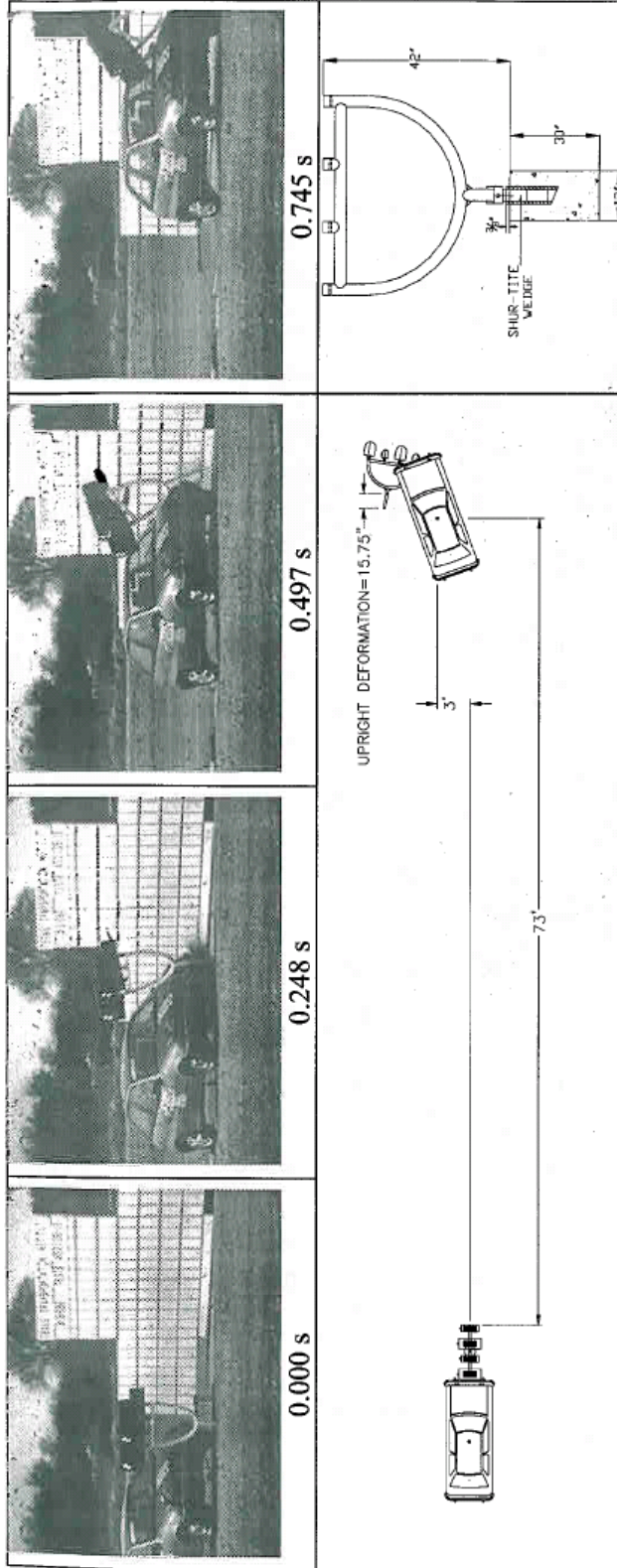
Project No.	Date	Drawn by	State
432106	5/06	JTA	

432106 SHUR-TITE	Sheet No.
MAILBOX DETAILS	1 of 2

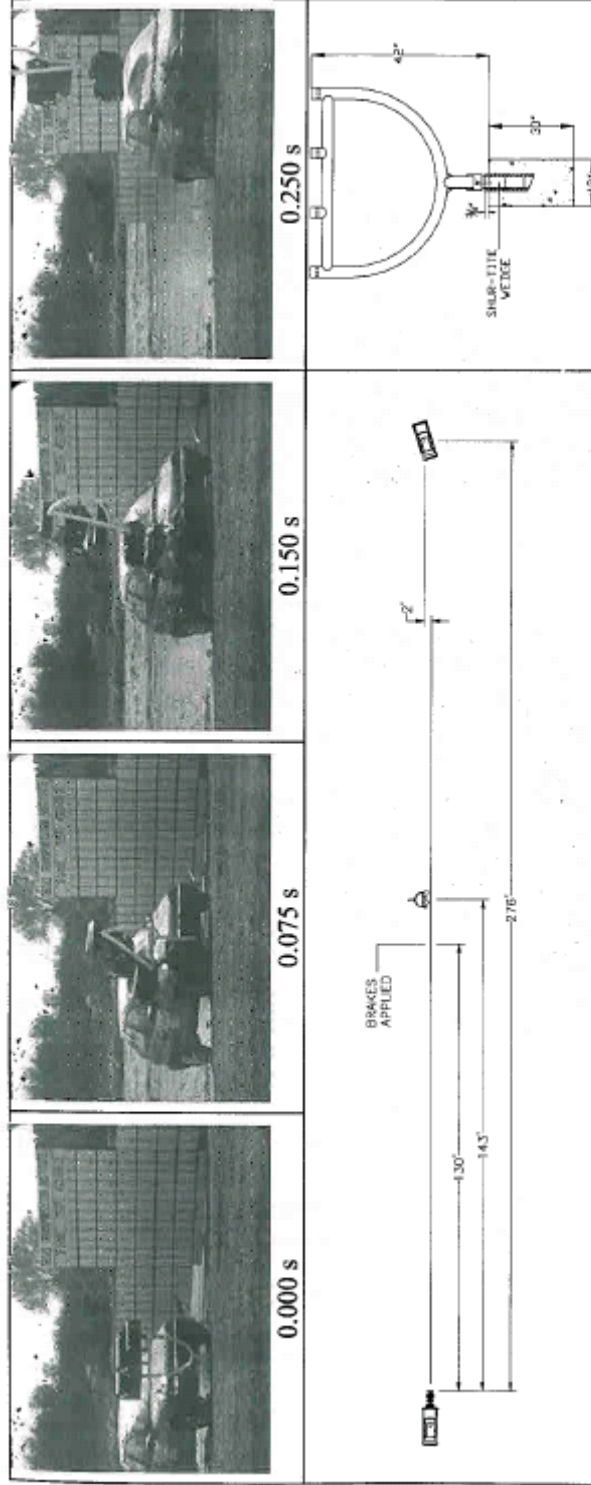


FOOTING DETAILS

The Texas A&M University System											
TEXAS TRANSPORTATION INSTITUTE COLLEGE STATION, TEXAS 77843											
Revisions		Project No.		Date		Drawn By		Scale		Sheet No.	
No	Date	452106		5/06		JFA				452106 SHUR-HYE MAILBOX DETAILS	
1										2 of 2	
2											
3											
4											
5											



General Information		Impact Conditions		Test Article Debris Pattern (ft)	
Test Agency.....	Texas Transportation Institute	Speed (mi/h).....	22.1	Longitudinal.....	73.0
Test No.....	452106-1	Angle (deg).....	0	Lateral.....	3.0
Date.....	03-03-2006	Exit Conditions		Vehicle Damage	
Test Article		Speed (mi/h).....	N/A	Exterior.....	
Type.....	Mailbox Support	Angle (deg).....	0	VDS.....	12FD1
Name.....	Shur-Tite® Multiple-Mailbox Mount	Occupant Risk Values		CDC.....	12FDEW1
Installation Height (inches).....	42.0 to Bottom of Mailboxes	Impact Velocity (ft/s)		Maximum Exterior.....	
Material or Key Elements.....	Four Mailboxes Mounted using Standard	Longitudinal.....	3.9	Vehicle Crush (inches).....	nil
Soil Type and Condition		Lateral.....	1.0	Interior.....	
Test Vehicle		THIV (km/h).....	4.4	OCDI.....	FS0000000
Type.....	Production	Ridedown Accelerations (g's)		Maximum Occupant.....	
Designation.....	820C	Longitudinal.....	-0.2	Crmp. Deformation (inches).....	0
Model.....	1995 Geo Metro	Lateral.....	-0.2	Post-Impact Behavior	
Mass (lb)		PHD (g's).....	0.3	(during 1.0 sec after impact)	
Curb.....	1755	ASI.....	0.09	Max. Yaw Angle (deg).....	-1
Test Inertial.....	1808	Max. 0.050-s Average (g's)		Max. Pitch Angle (deg).....	1
Dummy.....	170	Longitudinal.....	-1.1	Max. Roll Angle (deg).....	-1
Gross Static.....	1978	Lateral.....	-0.4		
		Vertical.....	-0.7		



General Information		Impact Conditions		Test Article Debris Pattern (ft)	
Test Agency.....	Texas Transportation Institute	Speed (mi/h).....	62.6	Dynamic.....	276.0
Test No.....	452106-2	Angle (deg).....	0	Permanent.....	2.0
Date.....	03-03-2006	Exit Conditions		Vehicle Damage	
Test Article		Speed (mi/h).....	57.7	Exterior.....	
Type.....	Mailbox Support	Angle (deg).....	0	VDS.....	12FD2
Name.....	Shur-Tite® Multiple-mailbox Mount	Occupant Risk Values		CDC.....	12FDEW2
Installation Height (inches).....	42.0 to Bottom of Mailboxes	Impact Velocity (ft/s)		Maximum Exterior.....	
Material or Key Elements.....	Four Mailboxes Mounted using Standard	Longitudinal.....	4.9	Vehicle Crush (inches).....	nil
Soil Type and Condition		Lateral.....	2.3	Interior.....	
Test Vehicle		THIV (km/h).....	5.8	OCDI.....	RF00000000
Type.....	Production	Ride-down Accelerations (g's)		Maximum Occupant.....	
Designation.....	820C	Longitudinal.....	-0.3	CrmpL Deformation (inches).....	3.2
Model.....	1995 Geo Metro	Lateral.....	-0.4	(windshield)	
Mass (lb (kg)).....	1755	PHD (g's).....	0.5	Post-Impact Behavior	
Curb.....	1755	ASI.....	0.18	(during 1.0 sec after impact)	
Test Inertial.....	1808	Max. 0.050-s Average (g's)		Max. Yaw Angle (deg).....	3
Dummy.....	170	Longitudinal.....	-2.1	Max. Pitch Angle (deg).....	-2
Gross Static.....	1978	Lateral.....	0.3	Max. Roll Angle (deg).....	2
		Vertical.....	0.9		

Summary of Results for NCHRP Report 350 Test 3-61 on the Shur-Tite® Multiple-mailbox Mount.