

May 6, 2016

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

In Reply Refer To: HSST/WZ-340

Mr. Felipe Almanza TrafFix Devices Inc. 160 Avenida La Pata San Clemente, CA 92672

Dear Mr. Almanza:

This letter is in response to your February 26, 2015 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-340 and is valid until a subsequent letter is issued by FHWA that expressly references this device.

Decision

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

· ADA Urbanite Longitudinal Channelizing Device

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' 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 American Association of State Highway and Transportation Officials' Manual for Assessing Safety Hardware (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: ADA Urbanite Longitudinal Channelizing Device

Type of system: Work Zone

Test Level: MASH Test Level 3 (TL3)

Testing conducted by: KARCO Task Force 13 Designator: n/a Date of request: February 26, 2015

Date initially acknowledged: March 26, 2015 Date of completed package: March 26, 2015

FHWA concurs with the recommendation of the accredited crash testing laboratory as stated within 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

If a manufacturer makes any modification to any of their roadside safety hardware that has an existing eligibility letter from FHWA, the manufacturer must notify FHWA of such modification with a request for continued eligibility for reimbursement. The notice of all modifications to a device must be accompanied by:

- o Significant modifications For these modifications, crash test results must be submitted with accompanying documentation and videos.
- o Non-signification modifications For these modifications, a statement from the crash test laboratory on the potential effect of the modification on the ability of the device to meet the relevant crash test criteria.

FHWA's determination of continued eligibility for the modified hardware will be based on whether the modified hardware will continue to meet the relevant crash test criteria.

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 the 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-340 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.
- 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.

Michael S. Fifft

Michael S. Griffith

Director, Office of Safety Technologies

Office of Safety

Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

	Date of Request:	February 26, 2015	© New				
	Name:	Felipe Almanza	Felipe Almanza				
ter	Company:	TrafFix Devices Inc.					
Submitter	Address:	160 Avenida La Pata San Clemente CA 92672					
Suk	Country:	United States					
	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.

!-!-!

System Type	Submission Type	Device Name / Variant	Testing Criterion	Test Level
'WZ': Crash Worthy Work Zone Traffic Control Devices		ADA/Urbanite Longitudinal Channelizing Device	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.

Identification of the individual or organization responsible for the product:

Contact Name:	Felipe Almanza	Same as Submitter 🔀
Company Name:	TrafFix Devices Inc.	Same as Submitter 🔀
Address:	160 Avenida La Pata San Clemente CA 92672	Same as Submitter 🔀
Country:	United States	Same as Submitter 🔀

Enter below all disclosures of financial interests as required by the FHWA 'Federal-Aid Reimbursement Eligibility Process for Safety Hardware Devices' document.

TrafFix Devices Inc. Corporate Office, 160 Avenida La Pata San Clemente, CA 92672 and Karco Engineering LLC, 9270 Holly Road Adelanto, CA 92301 share no (\$0.00) financial interests between the two organizations. This includes no (\$0.00) shared financial interest but not limited to:

- i. Compensation, including wages, salaries, commissions, professional fees, or fees for business referrals (dollar values are not needed);
- ii. Consulting relationships
- iii. Research funding or other forms of research support;
- iv. Patents, copyrights, and other intellectual property interests;
- v. Licenses or contractual relationships; or
- vi. Business ownership and investment interests.

PRODUCT DESCRIPTION

New Hardware or	_ Modification to	-	_	
Significant Modification	Existing Hardware			

The TrafFix Devices ADA/Urbanite Wall is a temporary work zone device designed to be an ADA compliant safety device used to channelize and direct pedestrians through a safe pathway.

Individual wall sections are interconnected to each other to form a continuous unobstructed vertical wall. The connected wall sections are designated with a pedestrian and non-pedestrian side.

The ADA/Urbanite Wall is an ADA compliant device, that has a pedestrian side with no tripping hazards or gaps between the wall segments. The top surface provides a continuous smooth physical hand contact rail used for guidance through a pathway. The bottom surface provides a detectable tapping surface used to tap a long cane by persons with low vision to provide additional guidance in combination with the top hand guide surface. The bottom surface has minimal gaps to prevent canes from snagging but still allows for water to flow freely in the event of a rainy condition. On the non-pedestrian side there are two legs protruding outward, used to support the wall segments. Ballast can be placed on the top of each leg to secure the walls if needed. The Urbanite version of the ADA Wall is a crowd control product which may or may not be ADA compliant.

In between the top and bottom surfaces, is the open middle section designed with ten individual segmented openings to allow service animals to see through the device and to minimize wind loading on the side surfaces.

Each ADA/Urbanite Wall is constructed of polyethylene plastic and weighs approximately 23.0 lbs (10.4 kg). The ADA Wall measures 38.0 in. (965 mm) tall, 72.0 in. (1.8 m) long, and 3.0 in. (76 mm) wide. Each ADA Wall has a "traffic" side and a "pedestrian" side as shown in the accompanying drawing. Each unit has two (2) hinged legs constructed from steel tubing located on the "traffic" side. The legs provide stability and support and can be ballasted. The units interlock by way of two (2) 1.25 in. (32 mm) diameter plastic pins at one end that insert into two (2) mating barrels on the opposite end which allow the units to hinge at each connection. Each ADA/Urbanite Wall has provisions for attaching a barricade light at each end.

The as-tested ADA Longitudinal Channelizing Device consisted of an array of thirty-four (34) ADA Walls which measured 195.8 ft. (59.7 m) in length. A 45.0 lb (22.4 kg) sandbag was placed on each leg of each ADA Wall for stabilization purposes. The as-tested ADA Longitudinal Channelizing Device had barricade lights installed on the impact side of twelve (12) units located in the impact zone. There was one (1) barricade light installed on the impacted unit. Two (2) units upstream and nine (9) units downstream from the impacted unit also had barricade lights installed on them.

CRASH TESTING

A brief description of each crash test and its result:

Required Test Number	Narrative Description	Evaluation Results
3-90 (1100C)	The test article was positioned at an angle of 10.0 deg to the direction of travel of the test vehicle, with the vehicle impacting the center of unit eight (8). The test was conducted using a commercial available 2009 Kia Rio 4-door sedan with a test inertial mass of 2,383.2 lbs (1,081.1 kg). The test vehicle impacted the longitudinal channelizer at a velocity of 60.54 mph (97.43 km/h).	PASS

Required Test Number	Narrative Description	Evaluation Results
3-91 (2270P)	The test article was positioned at an angle of 10.0 deg to the direction of travel of the test vehicle, with the vehicle impacting the center of unit eight (8). The test was conducted using a commercial available 2008 Dodge Ram 4-door truck with a test inertial mass of 4,971.2 lbs (2,254.5 kg) The test vehicle impacted the longitudinal channelizer at a velocity of 61.45 mph (98.89 km/h).	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:		
Laboratory Signature:	Steven Matsusaka	Digitally signed by Steven Matsusaka DN: cn=Steven Matsusaka, o=KARCO Engineering, LLC., ou, email=smatsusaka@karco.com, c=US Date: 201602.16 17:35.34 -08:00*
Address:	9270 Holly Rd, Adelanto, CA 92301	Same as Submitter
Country:	United States of America	Same as Submitter
Accreditation Certificate Number and Dates of current Accreditation period :	TL-371, December 18, 2015	

Submitter Signature*: Felipe Almanza

Digitally signed by Felipe Almanza. DN cn-if-elipe Almanza, o-Traffix Devices. Inc., ou-f-elipe Almanza, email-falmanzastraffuedevices.com, c-t/5. Date: 2016 (02.17.08.11.58-08.00)

Submit Form

ATTACHMENTS

Attach to this form:

- 1) Additional disclosures of related financial interest as indicated above.
- 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:

Eligibili	ty Letter	AASHTO TF13		
Number	Date	Designator	Key Words	
	10,000,000,000,000		oce / consisten	

TrafFix Devices, Inc. 160 Avenida La Pata San Clemente, CA 92673

Attention: Mr. Felipe Almanza

Date: April 20, 2016

Mr. Felipe Almanza,

On July 2, 2015, one Test Level 3, Test 90 was conducted on the TrafFix Devices, Inc. ADA Longitudinal Channelizing Device per the Manual for Assessing Safety Hardware (MASH) test procedure. The test vehicle used for this test was a 2009 Kia Rio 4-door sedan. The test vehicle had a hood height of 31.1 in. (790 mm). The specified hood height dimension measurement as outlined in the MASH test procedure is 24.0 in. \pm 4 in. (600 mm \pm 100 mm). In recent years, the Kia Rio test vehicle's hood height has been increasing with its model year. An Interlaboratory Comparison performed at Task Force 13 has confirmed this observation.

Despite the hood height dimension falling out of the MASH tolerance, KARCO determined that the dimension would not have a significant effect on the performance of the system for this test. For test 3-90, the ADA Longitudinal Channelizing Device engaged the entire front end of the vehicle from the ground all the way to the base of the windshield. Because the test vehicle impacted the test article across its entire height, the location of the hood height had a negligible effect on the impact.

Sincerely yours,

Steven D. Matsusaka

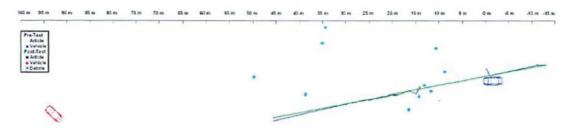
Engineering Department Supervisor

KARCO Engineering, LLC.

MASH TEST 3-90 SUMMARY

Test Article: _	Traffix Devices A	DA Longitudinal Channe	lizing Device	Project No.	P33139-01
Test Program: _	MASH 3-90			Test Date:	10/08/13
		SEQUENTIAL P	HOTOGRAPHS		
					A Sania
0.000 s	0.100 s	0.200 s	0.300 s	0.400 s	0.450 s

PLAN VIEW



TR-P33139-01-A

9

MASH TEST 3-90 SUMMARY ... (CONTINUED)

Test Article:	Traffix Devices ADA Longitudinal Channelizing Device	Project No.	P33139-01
Test Program:	MASH 3-90	Test Date:	10/08/13
	SUMMARY TABLE		

	Somm	ART TABLE		
GENERA	LINFORMATION		IMPA	CT CONDITIONS
TEST AGENCY	KARCO Engineering, LLC.	IMPACT VELOCITY		60.54 mph (97.43 km/h)
TEST NUMBER	P33139-01	IMPACT ANGLE (*)		10.7
TEST DESIGNATION	3-90	IMPACT LOCATION		Center of Unit 8
TEST DATE	10/8/13	VEHICLE SNAGGIN	G	None
TES	ST ARTICLE	VEHICLE POCKETI	NG	None
TEST ARTICLE NAME / MODEL	ADA Longitudinal Channelizing Device	VEHICLE STABILIT	Y	Satisfactory
TEST ARTICLE TYPE	Longitudinal Channelizer	POST IMPACT TRA	JECTORY	Acceptable
INSTALLATION LENGTH	195.8 ft (59.7 m)	9	OCCUP	ANT RISK VALUES
ROAD SURFACE	Concrete / Soil	OCCUPANT IMPACT	Longitudinal	7.2 ft/s (2.2 m/s)
ARTICLE HEIGHT	37.8 in. (962 mm)	VELOCITY	Lateral	6.9 ft/s (2.1 m/s)
ARTICLE WEIGHT	23.0 lbs (10.4 kg)	RIDEDOWN	Longitudinal	-2.4 g
INSTALLATION ANGLE (*)	10.0	ACCELERATION	Lateral	-2.7 g
TES	ST VEHICLE	MAXIMUM ROLL AN	IGLE (°)	23.4
VEHICLE TYPE / DESIGNATION	1100C	MAXIMUM PITCH A	NGLE (*)	-0.9
YEAR, MAKE AND MODEL	2009 Kia Rio	MAXIMUM YAW AN	GLE (*)	-2.6
CURB MASS	2350.1 lbs (1086.0 kg)		VEH	ICLE DAMAGE
TEST INERTIAL MASS	2383.2 lbs (1081.0 kg)	VEHICLE DAMAGE	SCALE	12-FR-1
GROSS STATIC MASS	2545.2 lbs (1154.5 kg)	COLLISION DAMAGE	CLASSIFICATION	12FREW 1
CRASH SEVERITY	292.0 kip-ft. (395.9 kJ)	MAXIMUM DEFORMATION		15.0 in. at C4 to the right of the vehicle centerline the front bumber

^{*}The measured deformations were a result of a post-test secondary impact to bring the vehicle to a stop. The actual test impact caused minimal damage.

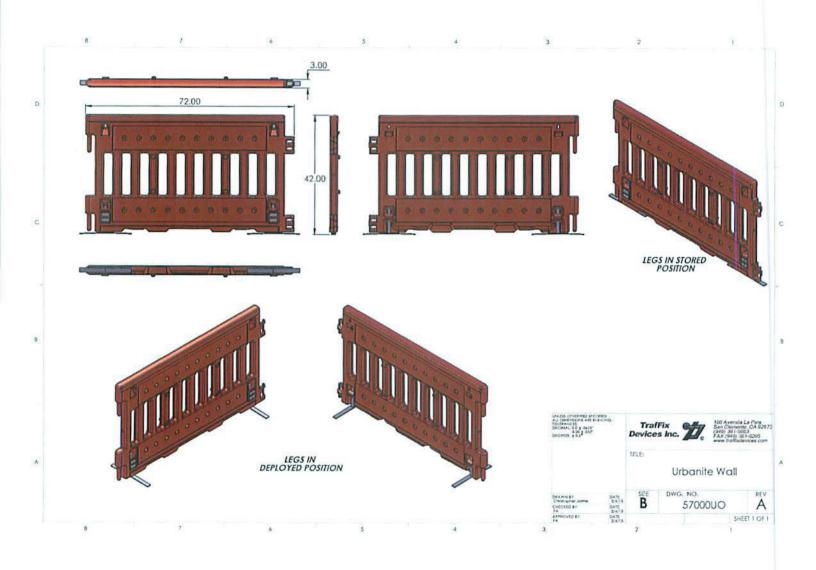
MASH TEST 3-91 SUMMARY Test Article: Traffix Devices ADA Longitudinal Channelizing Device Project No. P33140-01 Test Program: MASH 3-91 Test Date: 10/08/13 SEQUENTIAL PHOTOGRAPHS 0.000 s 0.100 s 0.200 s 0.300 s 0.400 s 0.500 s PLAN VIEW 75 m 70 m 65 m 60 m 55 m

MASH TEST 3-91 SUMMARY ... (CONTINUED)

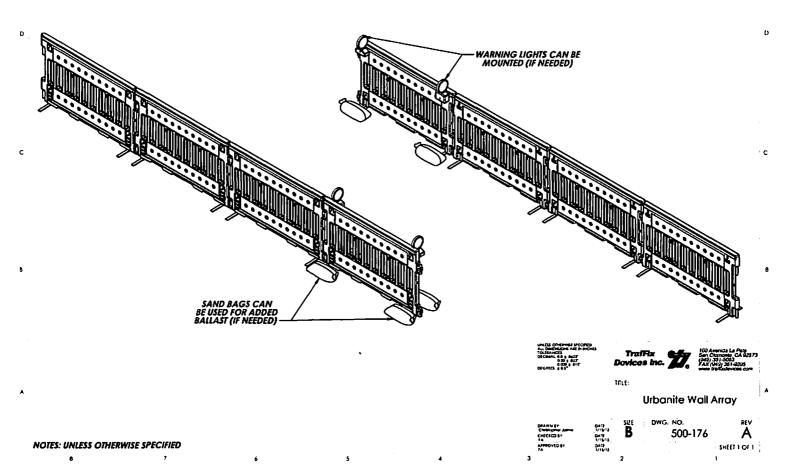
Test Article:	Traffix Devices ADA Longitudinal Channelizing Device	Project No	P33140-01
Test Program:	MASH 3-91	Test Date: _	10/08/13

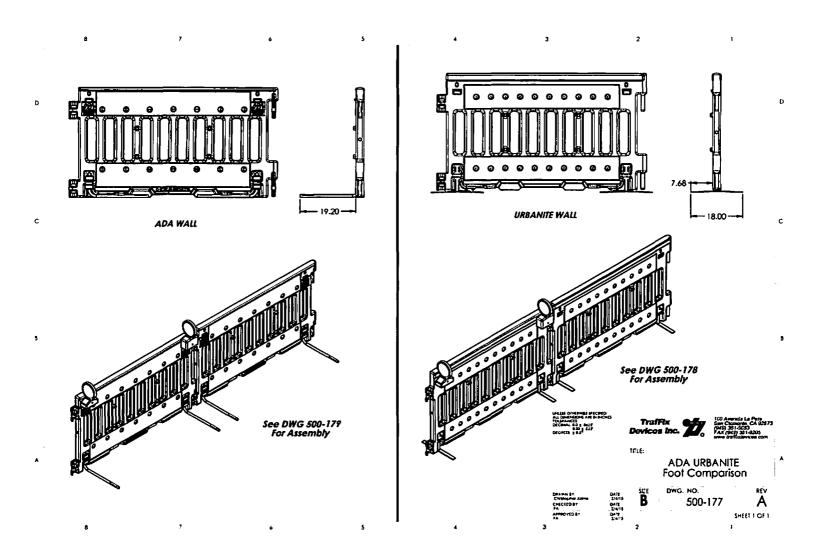
SUMMARY TABLE

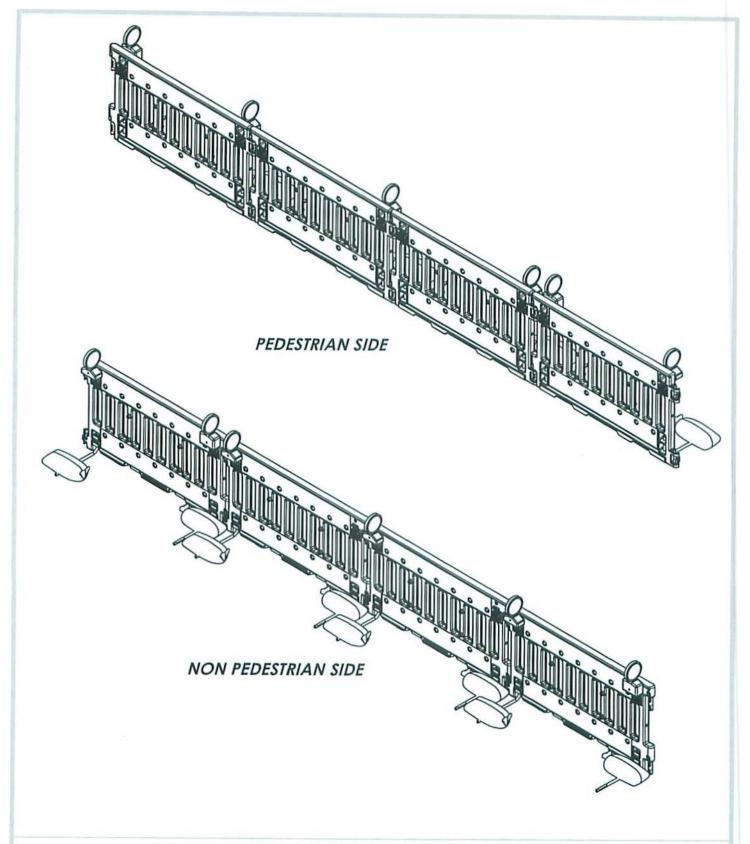
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GENERAL INFORMATION		IMPACT CONDITIONS		
TEST AGENCY	KARCO Engineering, LLC.	IMPACT VELOCITY		61.45 mph (98.89 km/h)
TEST NUMBER	P33140-01	IMPACT ANGLE (°)		10.3
TEST DESIGNATION	3-91	IMPACT LOCATION		Center of Unit 8
TEST DATE	10/8/13	VEHICLE SNAGGIN	G	None
TES	TEST ARTICLE		1G	None
TEST ARTICLE NAME / MODEL	ADA Longitudinal Channelizing Device	VEHICLE STABILITY	1	Satisfactory
TEST ARTICLE TYPE	Longitudinal Channelizer	POST IMPACT TRA	JECTORY	Acceptable
INSTALLATION LENGTH	195.8 ft (59.7 m)		OCCUPA	ANT RISK VALUES
ROAD SURFACE	Concrete / Soil	OCCUPANT IMPACT	Longitudinal	9.8 ft/s (3.0 m/s)
ARTICLE HEIGHT	37,8 in. (962 mm)	VELOCITY	Lateral	-3.3 ft/s (-1.0 m/s)
ARTICLE WEIGHT	23.0 lbs (10.4 kg)	RIDEDOWN	Longitudinal	-1.7 g
INSTALLATION ANGLE (*)	10.0	ACCELERATION	Lateral	1.2 g
TES	ST VEHICLE	MAXIMUM ROLL AN	GLE (*)	-4.1
VEHICLE TYPE / DESIGNATION	2270P	MAXIMUM PITCH AI	VGLE (*)	-1.2
YEAR, MAKE AND MODEL	2008 Dodge Ram	MAXIMUM YAW AN	SLE (*)	-2.5
CURB MASS	4860.0 lbs (2204.5 kg)		VEH	ICLE DAMAGE
TEST INERTIAL MASS	4970.2 lbs (2254.5 kg)	VEHICLE DAMAGE	SCALE	12-FR-1
GROSS STATIC MASS	4970.2 lbs (2254.5 kg)	COLLISION DAMAGE	CLASSIFICATION	12FREW1
CRASH SEVERITY (kJ)	626.8 kip-ft. (850.6 kJ)	MAXIMUM DEFORM	ATION	0.3 in, at C1 to the left of the vehicle centerline or the front bumber



URBANITE WALL TYPICAL INSTALLATION





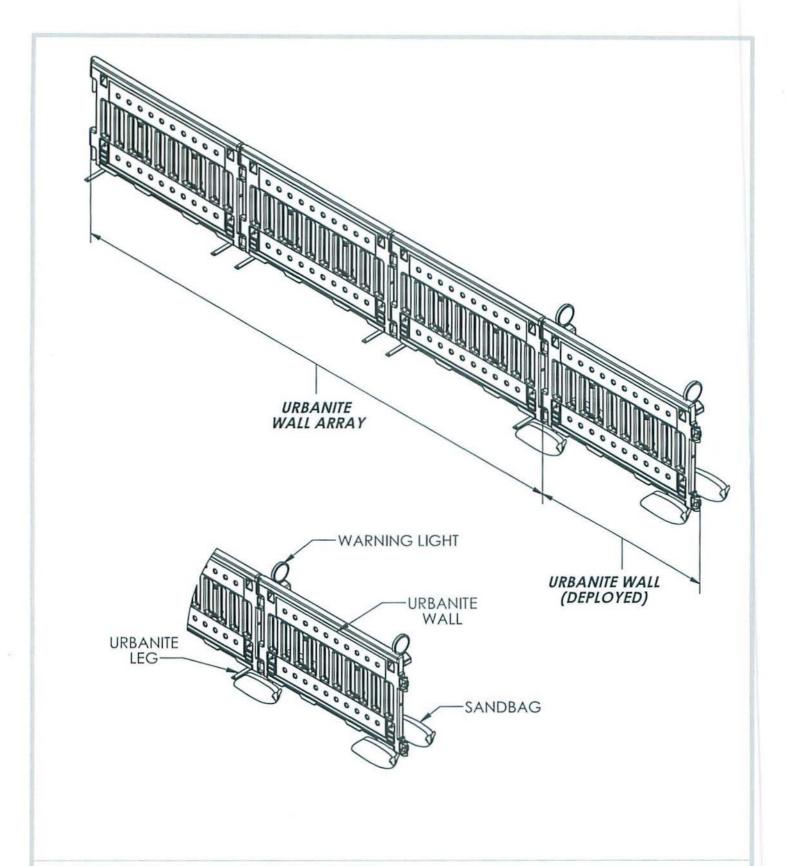


ADA WALL ARRAY





SHEET NO.	DATE:		
1 OF 2	2/16/15		



URBANITE WALL ARRAY





SHEET NO.	DATE:	
1 OF 2	2/24/15	

INTENDED USE

The TrafFix Devices ADA Wall is a temporary work zone device designed to be an ADA compliant safety device used to channelize, guide, and direct pedestrians through a safe pathway. Individual wall sections are interconnected to each other to form a continuous unobstructed vertical wall. The connected wall sections are designated with a pedestrian and non-pedestrian side. On the pedestrian side there are no tripping hazards or gaps between the wall segments.

The top surface provides a continuous smooth physical hand contact rail used for guidance through a pathway. The bottom surface provides a detectable tapping surface used to tap a long cane by persons with low vision to provide additional guidance in combination with the top hand guide surface. The bottom surface has minimal gaps to prevent canes from snagging but still allows water to flow freely in the event of a rainy condition.

On the non-pedestrian side there are two legs protruding outward, used to support the wall segments. Ballast can be placed on the top of each leg to add stability to the walls if needed. In between the top and bottom surfaces, is the open middle section designed with ten individual segmented openings to allow service animals to see through the device and to minimize wind loading on the side surfaces.

The ADA Wall is made from polyethylene material and manufactured using a blow molding process. The blow molded polyethylene produces a durable component with high impact resistance and ideal for use in extreme freezing conditions and extreme high temperature use.

Each ADA Wall is constructed of polyethylene plastic and weighs approximately 23.0 lbs (10.4 kg). The ADA Wall measures 38.0 in. (965 mm) tall, 72.0 in. (1.8 m) long, and 3.0 in. (76mm) wide. Each ADA Wall has a "traffic" side and a "pedestrian" side as shown in the accompanying drawing. Each unit has two (2) hinged legs constructed from steel tubing located on the "traffic" side. The legs provide stability and support and can be ballasted. The units interlock by way of two (2) 1.25 in. (32 mm) diameter plastic pins at one end that insert into two (2) mating barrels on the opposite end which allow the units to hinge at each connection. Each ADA Wall also has provisions for attaching a barricade light at each end.

The ADA is designed to provide pedestrian guidance with as few as one wall section, or an unlimited number of sections.

CONTACT INFORMATION

Traffix Devices, Inc.

Corporate Headquarters 160 Avenida La Pata San Clemente, CA 92673 www.traffixdevices.com

Phone: +1(949)-361-5663 Fax: +1(949)-361-9205 Email: info@traffixdevices.com

ADA WALL ARRAY

