



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

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

March 4, 2026

In Reply Refer To:
HSST-1/WZ-466

Al Borchardt
Rent-a-Flash of Wisconsin
139751 Stettin Drive
Marathon City, WI 54448

Dear Mr. Borchardt:

We received your initial correspondence on June 14, 2024, requesting issuance of a Federal-aid reimbursement eligibility letter under the Federal-aid highway program for the roadside safety system, device, design, product, or hardware (collectively “device”) described below. On October 24, 2024, we received a complete set of files needed to initiate our review. We write to inform you that the device Rent-a-Flash Type III L-Channel Barricade is eligible for Federal-aid reimbursement. This letter is assigned Federal Highway Administration (FHWA) control number WZ-466.

ELIGIBILITY LETTERS

The FHWA issues Federal-aid reimbursement eligibility letters for new roadside safety devices that are crash tested in accordance with the industry standard of the American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH).

FHWA, the Department of Transportation, and the United States (government) do not regulate roadside safety devices, crash test facilities, or the manufacturing industry. Issuance of eligibility letters is discretionary and provided only as a service to the states. FHWA may, at its discretion, decline to issue, revise, or rescind an eligibility letter. Eligibility letters are only issued by the FHWA Office of Safety.

Eligibility letters are issued only as notice to the states that a device is eligible for reimbursement under the Federal-aid highway program. They do not establish approval or certification for any other purpose. Issuance of an eligibility letter is not a prerequisite or requirement for state transportation agencies seeking to use Federal-aid funds for roadside safety devices. State agencies may use a device for which an eligibility letter has not been issued and seek Federal-aid reimbursement.

FEDERAL-AID REIMBURSEMENT

The request for issuance of this letter certified the device was crash tested in accordance with the industry standard of AASHTO’s MASH. This eligibility letter is based on that certification and

the material offered in support of its issuance. The device described below is eligible for reimbursement under the Federal-aid highway program.

Name of system: WZ-466 Type III L-Channel Barricade
Type of system: Work Zone
Test Level: Test Level 3
Testing conducted by: Applus IDIADA KARCO Engineering
Date of request: June 14, 2024

The device and as-tested condition(s) is described as follows:

The Rent-A-Flash Type III L-Channel Barricade is a work-zone traffic control device consisting of three (3) 96.0 in. (2440 mm) long, 1.0 in. (25 mm) thick plastic panels. The as-tested device weighed 54.0 lbs (24.5 kg). The Type III L-Channel Barricade was tested with two (2) 20.0 lbs (9.1 kg) sandbags on each leg.

The Type III L-Channel Barricade has a height of 63.0 in. (1600 mm) measured to the top of the vertical L-Channels; the panels are 20.0 in. (508 mm) apart measured from the top of the panels. The panels are attached to the vertical L-Channels with ASTM A307 3/8 in. diameter bolts, each panel requires four (4) bolts, two (2) on each vertical L-Channel. The bolts are 3.5 in. (89 mm) apart. The footprint of the base L-Channels is 58.0 in (1473 mm) by 57.0 in. (1448 mm). A 1/8 in. thick square tube was welded to the base L-Channel so the vertical L-Channel can fit inside the tube. The tube is welded to the base L-Channel 17.75 in. (450 mm) from the edge of the base.

Information about the device, including material such as the eligibility request, crash test reports, drawings, or images are included in one or more attachment(s) to this letter.

Eligibility letter WZ-466 is inapplicable to devices, optional equipment, alternate materials, or other features that were not crash tested in accordance with AASHTO's MASH.

This letter is issued only for the subject device as crash tested under AASHTO's MASH. Later modification(s) of the device are not eligible for Federal-aid reimbursement under this letter. Notice of later modification(s) should be given to transportation agencies, facility owners, and operators (collectively "agencies").

Agencies should be provided appropriate information about the device's design, installation, maintenance, materials, and mechanical properties.

Issuance of this letter is discretionary, and it may be revised or rescinded at FHWA's discretion. This letter is not a determination of compliance with the Build America Buy America Act, the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) or ownership of any intellectual property rights.

This eligibility letter is not a determination by the government that a crash involving the subject device will result in any particular outcome. It is limited to only the device's eligibility for Federal-aid reimbursement.

INTELLECTUAL PROPERTY

Issuance of this eligibility letter does not convey property rights of any sort nor any exclusive privilege. This letter is not authorization or consent by the government for the use, manufacture, or sale of any patented or proprietary system, device, design, product, or hardware for which the requester is not the patent owner. Eligibility letters are not an expression of any view, position, or determination by the government as to the validity, scope, or ownership of any intellectual property rights to a specific device. These letters do not grant, impute, suggest, or otherwise establish any ownership, distribution, or licensing rights to the requester. The government expresses no opinion about the intellectual property rights relating to any device for which this or any other eligibility letter is issued.

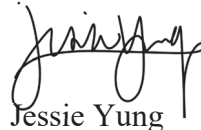
PUBLIC DISCLOSURE

To prevent any misunderstanding, and as discussed above, this Federal-aid eligibility letter is assigned FHWA control number WZ-466. It should only be reproduced in full with its attachment(s). This Federal-aid eligibility letter and the material offered by the requester supporting its issuance is public information. All eligibility letters and supporting material are subject to public disclosure under the Freedom of Information Act (FOIA). Eligibility letters are available to the public at

https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/.

If you have any questions please contact Paul LaFleur at Paul.LaFleur@dot.gov.

Sincerely,



Jessie Yung

Director, Office of Safety Technologies
Office of Safety

Enclosures

Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

Submitter	Date of Request:	June 14, 2024	☒ New ☐ Resubmission
	Name:	Al Borchardt	
	Company:	Rent-a-Flash of Wisconsin Inc.	
	Address:	139751 Stettin Drive, Marathon City, WI 54448	
	Country:	United States of America	
	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	☒ Physical Crash Testing ☐ Engineering Analysis	RAF Type III L-Channel Barricade	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:	Al Borchardt	Same as Submitter ☒
Company Name:	Rent-a-Flash of Wisconsin Inc.	Same as Submitter ☒
Address:	139751 Stettin Drive, Marathon City, WI 54448	Same as Submitter ☒
Country:	United States of America	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.		
Rent-A-Flash is the manufacturer and marketer of device. Applus IDIADA KARCO Engineering, LLC (IDIADA KARCO) is an independent research and testing laboratory having no affiliation with any other entity. IDIADA KARCO is actively involved in data acquisition and compliance/certification testing for a variety of government agencies and equipment manufacturers. The principals and staff of IDIADA KARCO have no past or present financial, contractual or organizational interest in any company or entity directly or indirectly related to the products that KARCO tests. If any financial interest should arise, other than receiving fees for testing, reporting, etc., with respect to any project, the company will provide, in writing, a full and immediate disclosure to the FHWA.		

PRODUCT DESCRIPTION

☒ New Hardware or
Significant Modification ☐ Modification to
Existing Hardware

The Rent-A-Flash Type III L-Channel Barricade is a work-zone traffic control device consisting of three (3) 96.0 in. (2440 mm) long, 1.0 in. (25 mm) thick plastic panels. The as-tested device weighed 54.0 lbs (24.5 kg). The Type III L-Channel Barricade was tested with two (2) 20.0 lbs (9.1 kg) sandbags on each leg. The Type III L-Channel Barricade has a height of 63.0 in. (1600 mm) measured to the top of the vertical L-Channels; the panels are 20.0 in. (508 mm) apart measured from the top of the panels. The panels are attached to the vertical L-Channels with ASTM A307 3/8 in. diameter bolts, each panel requires four (4) bolts, two (2) on each vertical L-Channel. The bolts are 3.5 in. (89 mm) apart. The footprint of the base L-Channels is 58.0 in (1473 mm) by 57.0 in. (1448 mm). A 1/8 in. thick square tube was welded to the base L-Channel so the vertical L-Channel can fit inside the tube. The tube is welded to the base L-Channel 17.75 in. (450 mm) from the edge of the base.

CRASH TESTING

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.

Engineer Name:	Alex Beltran	
Engineer Signature:		Digitally signed by Alex Beltran DN: cn=Alex Beltran, o=IDIADA KARCO, ou=Lab, email=Alex.Beltran@idiada.com, c=US Date: 2024.03.05 17:08:54 -08'00'
Address:	9270 Holly Rd, Adelanto, CA 92301	Same as Submitter ☐
Country:	United States of America	Same as Submitter ☐

A brief description of each crash test and its result:

Required Test Number	Narrative Description	Evaluation Results
3-70 (1100C)	Per MASH 2016, Test 70 is designed to evaluate the ability of small vehicles to activate any breakaway, fracture, or yielding mechanism associated with the work zone feature during low-speed impacts. For free-standing, lightweight features, velocity changes during low-speed impacts will be within acceptable limits, even when a breakaway, fracture, or yielding feature is not incorporated. Therefore, Test 70 is considered optional for work-zone traffic control devices weighing less than 220 lbs (100 kg). The as-tested device weight was 48 lbs (21.8 kg) and therefore Test 70 was not performed.	Non-critical, not conducted

Required Test Number	Narrative Description	Evaluation Results
3-71 (1100C)	Applus IDIADA Test No. P44054-01. Test Date February 9, 2024. Crash Test Report No. TR-P44054-01-NC for MASH 2016 Test 3-71 Crash Test of Rent-A-Flash Type III L-Channel Barricade. Two (2) Rent-A-Flash Type III L-Channel Barricades were impacted in a single test run. The devices were spaced 60.0 ft. (18.3 m) apart and set at two (2) critical impact angles (CIA), 0° and 90°. The first device was positioned at a CIA of 0° and was aligned 16.9 in. (430 mm) to the passenger side of the vehicle's centerline. The second device was aligned so that the center of the barricade hit the centerline of the vehicle. An 1100C test vehicle approached the first sign oriented at 0° at a nominal speed of 62.00 mph (100.00 km/h). The first sign was impacted at a velocity of 61.82 mph (99.49 km/h). The impact location was 17.1 in. (435mm) from the vehicle centerline on the passenger side. The test vehicle then impacted the 90° CIA device at a velocity of 61.54 mph (99.04 km/h). The impact location was 2.7 in. (70 mm) from the vehicle centerline on the driver side. The Rent-A-Flash Type III L-Channel Barricade yielded and broke away in a predictable manner. There was no penetration or deformation into the occupant compartment. The Rent-A-Flash Type III L-Channel Barricade met all the requirements for MASH Test 3-71.	PASS

3-72 (2270P)	Applus IDIADA Test No. P44054-01. Test Date February 9, 2024. Crash Test Report No. TR-P44054-01-NC for MASH 2016 Test 3-72 Crash Test of Rent-A-Flash Type III L-Channel Barricade. Two (2) Rent-A-Flash Type III L-Channel Barricades were impacted in a single test run. The devices were spaced 60.0 ft. (18.3 m) apart and set at two (2) critical impact angles (CIA), 0° and 90°. The first device was positioned at a CIA of 0° and was aligned 19.7 in. (500 mm) to the passenger side of the vehicle's centerline. The second device was aligned so that the center of the barricade hit the centerline of the vehicle. An 2270P test vehicle approached the first sign oriented at 0° at a nominal speed of 62.00 mph (100.00 km/h). The first sign was impacted at a velocity of 61.80 mph (99.46 km/h). The impact location was 20.1 in. (510 mm) from the vehicle centerline on the passenger side. The test vehicle then impacted the 90° CIA device at a velocity of 60.20 mph (96.88 km/h). The impact location was 1.9 in. (50 mm) from the vehicle centerline on the driver side. The Rent-A-Flash Type III L-Channel Barricade yielded and broke away in a predictable manner. There was no penetration or deformation into the occupant compartment. The Rent-A-Flash Type III L-Channel Barricade met all the requirements for MASH Test 3-72.	PASS
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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:	Applus IDIADA KARCO Engineering, LLC.	
Laboratory Signature:		Digitally signed by Alex Beltran DN: cn=Alex Beltran, o=IDIADA KARCO, ou=Lab, email=Alex.Beltran@idiada.com, c=US Date: 2024.03.05 17:09:10 -08'00'
Address:	9270 Holly Road, 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: April 27, 2022 - April 27, 2025	

Submitter Signature*: *Al Borchardt*

Submit Form

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		
Number	Date	Key Words

MASH 2016 Test 3-71 Summary

0° CIA

90° CIA



0.000 seconds

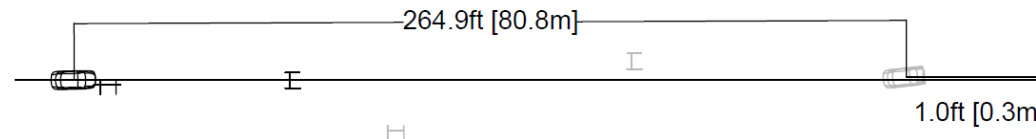
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0.175 seconds

0.703 seconds

0.805 seconds

0.910 seconds



General Information

Test Agency..... Applus IDIADA KARCO
Test No..... P44054-01
Test Designation..... 3-71
Test Date..... 2/9/24

Test Article

Name / Model..... RAF Type III L-Channel Barricade
Type..... Work-Zone Traffic Control Device
Device Height 5.3 ft. (1.6 m)
Key Elements..... RAF L-Channel Type III Barricade
Road Surface..... Smooth, clean concrete

Test Vehicle

Type / Designation..... 1100C
Year, Make, and Model..... 2019 Kia Rio
Curb Mass..... 2,581.6 lbs (1,171.0 kg)
Test Inertial Mass..... 2,383.2 lbs (1,081.0 kg)
Gross Static Mass..... 2,563.9 lbs (1,163.0 kg)

Impact Conditions

Impact Velocity Device 1.... 61.82 mph (99.49 km/h)
Impact Velocity Device 2.... 60.27 mph (96.99 km/h)
Device 1 Angle..... 0.0°
Device 2 Angle..... 90.0°
Impact Location (Target) Device 1... 16.9 in. (430 mm) From Veh. CL. on Pass.
Impact Location (Target) Device 2... Aligned with the Veh. CL
Impact Location (Actual) Device 1... 17.1 in. (435 mm) From Veh. CL. on Pass.
Impact Location (Actual) Device 2... 2.7 in. (70 mm) From Veh. CL. on Driver
Device 1 Kinetic Energy..... 304.5 kip-ft (412.8 kJ)
Device 2 Kinetic Energy..... 289.4 kip-ft (392.3 kJ)
Minimum KE Required..... 288 kip-ft (390 kJ)

Exit Conditions

Device 1 Exit Velocity..... 60.75 mph (97.76 km/h)
Device 2 Exit Velocity..... 59.66 mph (96.01 km/h)
Vehicle Resting Position..... 264.9 ft. (80.8 m) Downstream
1.0 ft. (0.3 m) to Driver side
Vehicle Stability Satisfactory
Maximum Roll Angle..... Not Applicable*
Maximum Pitch Angle..... Not Applicable*
Maximum Yaw Angle..... Not Applicable*

* Not Applicable, device weighs less than 220 lbs (100 kg)

Occupant Risk

Longitudinal OIV..... Not Applicable*
Lateral OIV..... Not Applicable*
Longitudinal RA..... Not Applicable*
Lateral RA..... Not Applicable*
THIV..... Not Applicable*
PHD..... Not Applicable*
ASI..... Not Applicable*

Test Article Deflections

0° Sign Debris Field (longitudinal) ... 91.54 ft. (27.9 m)
0° Sign Debris Field (lateral).... 14.44 ft. (4.4 m)
90° Sign Debris Field (longitudinal).. 108.92 ft. (33.2 m)
90° Sign Debris Field (lateral)..... 5.91 ft. (1.8 m)

Vehicle Damage

Vehicle Damage Scale..... 12-FC-1
CDC..... 12FDEW1
Maximum Deformation..... 0.0 in. (0 mm)

Figure 3: Summary of Test 3-71

MASH 2016 Test 3-72 Summary

0° CIA

90° CIA



0.000 seconds

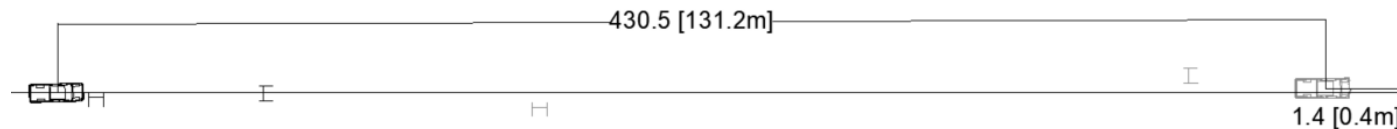
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0.680 seconds

0.785 seconds

0.890 seconds



General Information

Test Agency..... Applus IDIADA KARCO
Test No..... P44055-01
Test Designation..... 3-72
Test Date..... 2/9/24

Test Article

Name / Model..... RAF Type III L-Channel Barricade
Type..... Work-Zone Traffic Control Device
Device Height 5.3 ft. (1.6 m)
Key Elements..... RAF L-Channel Type III Barricade
Road Surface..... Smooth, clean concrete

Test Vehicle

Type / Designation..... 2270P
Year, Make, and Model..... 2019 RAM 1500
Curb Mass..... 4,780.6 lbs (2,168.5 kg)
Test Inertial Mass..... 5,014.3 lbs (2,274.5 kg)
Gross Static Mass..... 5,014.3 lbs (2,274.5 kg)

Impact Conditions

Impact Velocity Device 1.... 61.80 mph (99.46 km/h)
Impact Velocity Device 2.... 60.20 mph (96.88 km/h)
Device 1 Angle..... 0.0°
Device 2 Angle..... 90.0°
Impact Location (Target) Device 1... 19.7 in. (500 mm) From Veh. CL on Pass.
Impact Location (Target) Device 2... Aligned with the Veh. CL
Impact Location (Actual) Device 1... 20.1 in. (510 mm) From Veh. CL on Pass.
Impact Location (Actual) Device 2... 1.9 in. (50 mm) From Veh. CL on Pass.
Device 1 Kinetic Energy..... 640.2 kip-ft (868.1 kJ)
Device 2 Kinetic Energy..... 607.4 kip-ft (823.6 kJ)
Minimum KE Required..... 594.0 kip-ft (806.0 kJ)

Exit Conditions

Device 1 Exit Velocity..... 60.61 mph (97.54 km/h)
Device 2 Exit Velocity..... 59.86 mph (96.34 km/h)
Vehicle Resting Position..... 430.5 ft. (131.2 m) Downstream
1.31 ft. (0.4 m) To Driver Side
Vehicle Stability Satisfactory
Maximum Roll Angle..... Not Applicable*
Maximum Pitch Angle..... Not Applicable*
Maximum Yaw Angle..... Not Applicable*

Occupant Risk

Longitudinal OIV..... Not Applicable*
Lateral OIV..... Not Applicable*
Longitudinal RA..... Not Applicable*
Lateral RA..... Not Applicable*
THIV..... Not Applicable*
PHD..... Not Applicable*
ASI..... Not Applicable*

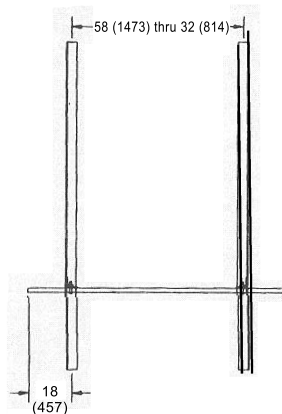
Test Article Deflections

0° Sign Debris Field (longitudinal) ... 150.7 ft. (45.9 m)
0° Sign Debris Field (lateral).... 3.28 ft. (1.0 m)
90° Sign Debris Field (longitudinal).. 314.30 ft. (95.8 m)
90° Sign Debris Field (lateral)..... 5.91 ft. (1.8 m)

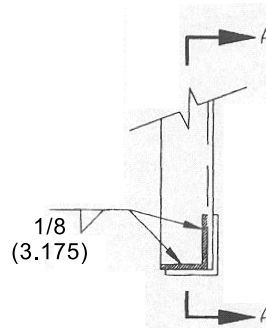
Vehicle Damage

Vehicle Damage Scale..... 12-FD-2
CDC..... 12FDRCL1
Maximum Deformation..... 0.0 in. (0 mm)

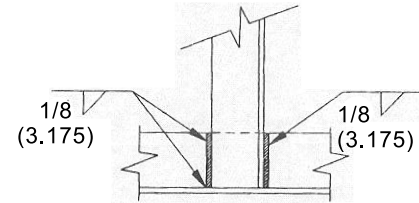
Figure 4: Summary of Test 3-72



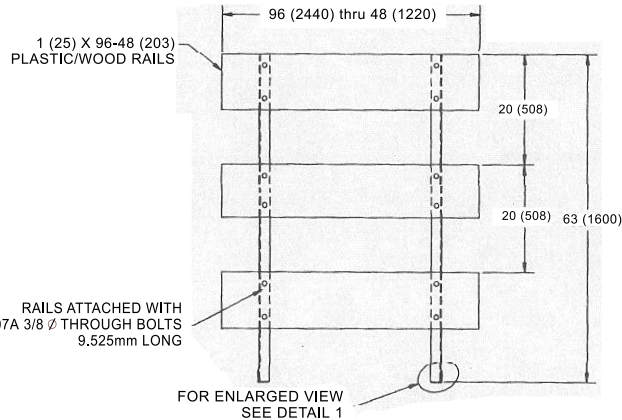
TOP VIEW



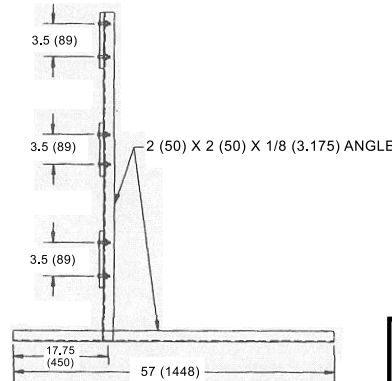
DETAIL 1



SECTION A-A



FRONT VIEW



SIDE VIEW

ALL DIMENSIONS ARE IN INCHES(mm).			
 ROYAL ARMED FORCES OF THE UNITED KINGDOM			
DRAWING No.	Date	Drawn By	
	1/15/24	K.A	
RAF TYPE III L-CHANNEL BARRICADE			Sheet No.
			1 of 1

Details of the RAF L-Channel Type III Barricade.