US Department
of Transportation
**Federal Highway
Administration**

400 Seventh St. S.W.
Washington, D.C. 20590

Refer to: HSA-1

May 26, 2000

Mr. David White
Cogent Enterprises, Inc.
38269 Mound Road, Suite 600
Sterling Heights, Michigan 48310

Dear Mr. White:

Thank you for your letter of February 1,2000, requesting Federal Highway Administration (FHWA) acceptance of your company's Cordonator tm as a crashworthy traffic control device for use in work zones on the National Highway System (NHS). Accompanying your letter was a report from the Texas Transportation Institute, and videos of the crash tests. You requested that we find the device 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." On May 17,2000, 'you supplied additional information which we had requested, including an isometric drawing of the device.

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The fist, dated July 25, 1997, titled "Information: Identifying Acceptable Highway Safety Features," established four categories of work zone devices: Category I devices were those lightweight devices which could be self-certified by the vendor, Category II devices were other lightweight devices which needed individual crash testing, Category III devices were barriers and other fixed or massive devices also needing crash testing, and Category IV devices were trailer mounted lighted signs, arrow panels, etc. The second guidance memorandum was issued on August 28, 1998, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This later memorandum lists devices that are acceptable under Categories I, II, and III.

The "Cordonator tm channelizer is a simulated drum consisting of two high density polyethylene pieces fitted together to form a cross when viewed from above. Several mounting holes near the top are provided for mounting light/battery units. The device can be folded flat for storage. It can be internally ballasted with sand, or be weighted with a tire ring.

Full-scale automobile testing was conducted on your company's channelizers. Two stand-alone examples of the device were tested in tandem one head-on and the next placed 6 meters downstream turned at 90 degrees, as called for in our guidance memoranda. Because the CordonatorTM is essentially symmetrical, the position of the attached warning light varied. The complete device as tested is shown in the Enclosure 1.

The crash test is summarized in the table below:

Test Article	Cordonator™
Test Number	400001-CEI1
Height to Top of unit	997 mm
Height to Top of handle	1041 mm
Flags or lights	1.96 kg warning light
Test Article Mass, no light	6.4 kg
Test Article Mass, with light	8.36 kg
Ballast Added (head-on)	13.6 kg tire ring
Ballast Added (90 deg.)	13.6 kg of sand
Vehicle Inertial Mass	820 kg
Impact Speed, Head-on	100.9 km/h
Impact Speed, 90 Deg.	100.3 km/h
Exit Velocity	98.4 km/h
[illegible]	[illegible]
Velocity Change, 90 Deg.	0.5 m/s
Vehicle crush	20 mm dent to hood
Occupant Compart. Intrusion	None
Windshield Damage Head-on	No contact
Windshield Damage 90 Deg.	No contact

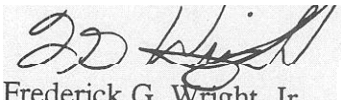
Damage to the vehicle was limited to the dent in the hood from the first drum. Neither the test articles nor the lights showed potential for penetrating the occupant compartment. The results of this testing met the FHWA requirements and, therefore, the Cogent Cordonator tm channelizer is acceptable for use as a Test Level 3 device on the MIS under the range of conditions tested, when proposed by a State.

Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices. You will be expected to supply potential users with sufficient information on design

and installation requirements to ensure proper performance, You will also be expected to supply certification from Cogent Enterprises 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 FHWA and NCHRP Report 350. Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter. To prevent misunderstanding by others, this letter of acceptance, designated as number Wz-42, shall not be reproduced except in full.

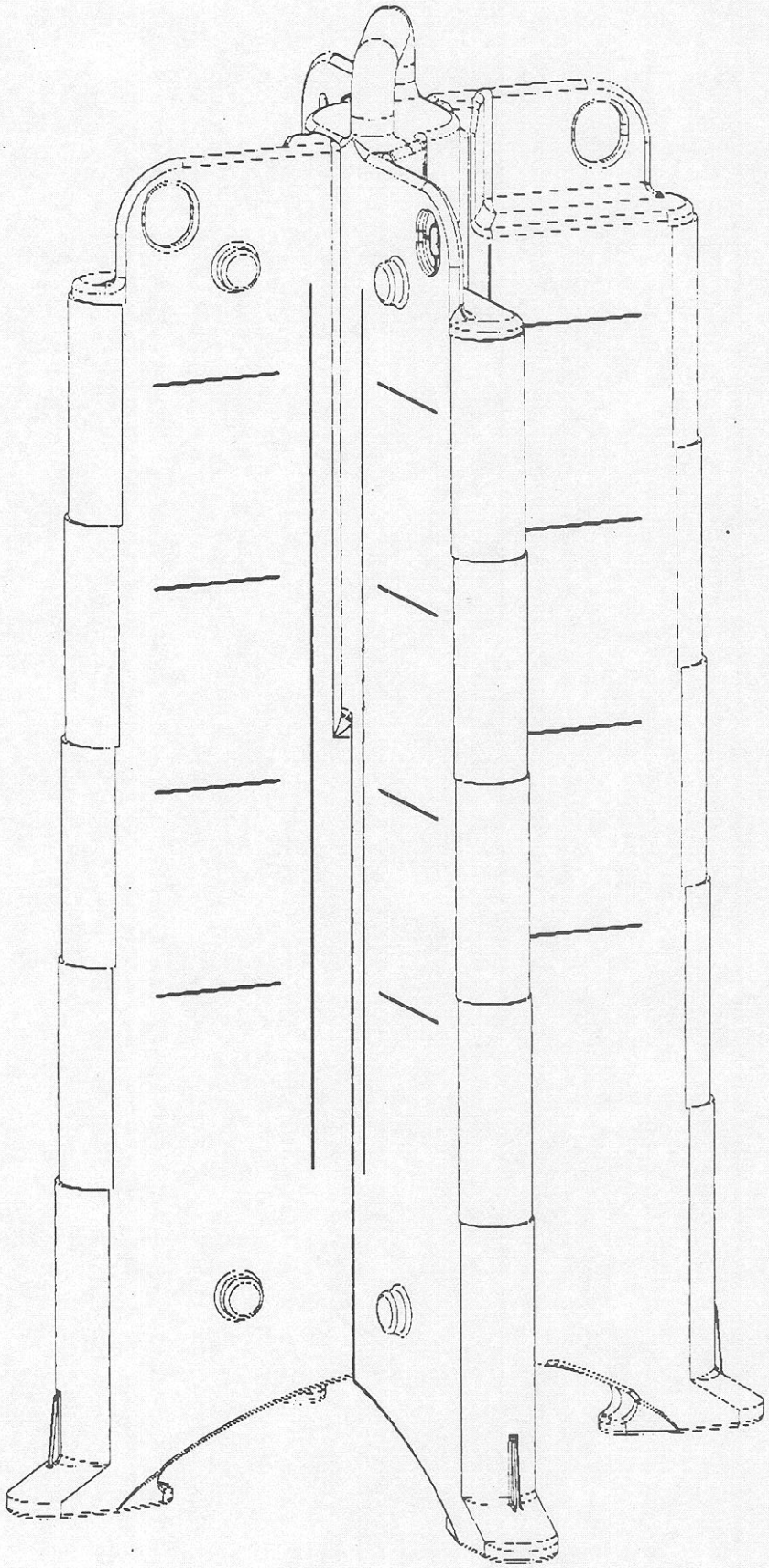
The Cogent Cordonator tm is a patented product and considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified 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 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, a copy of which is enclosed.

Sincerely yours,



Frederick G. Wright, Jr.
Program Manager, Safety

Enclosure



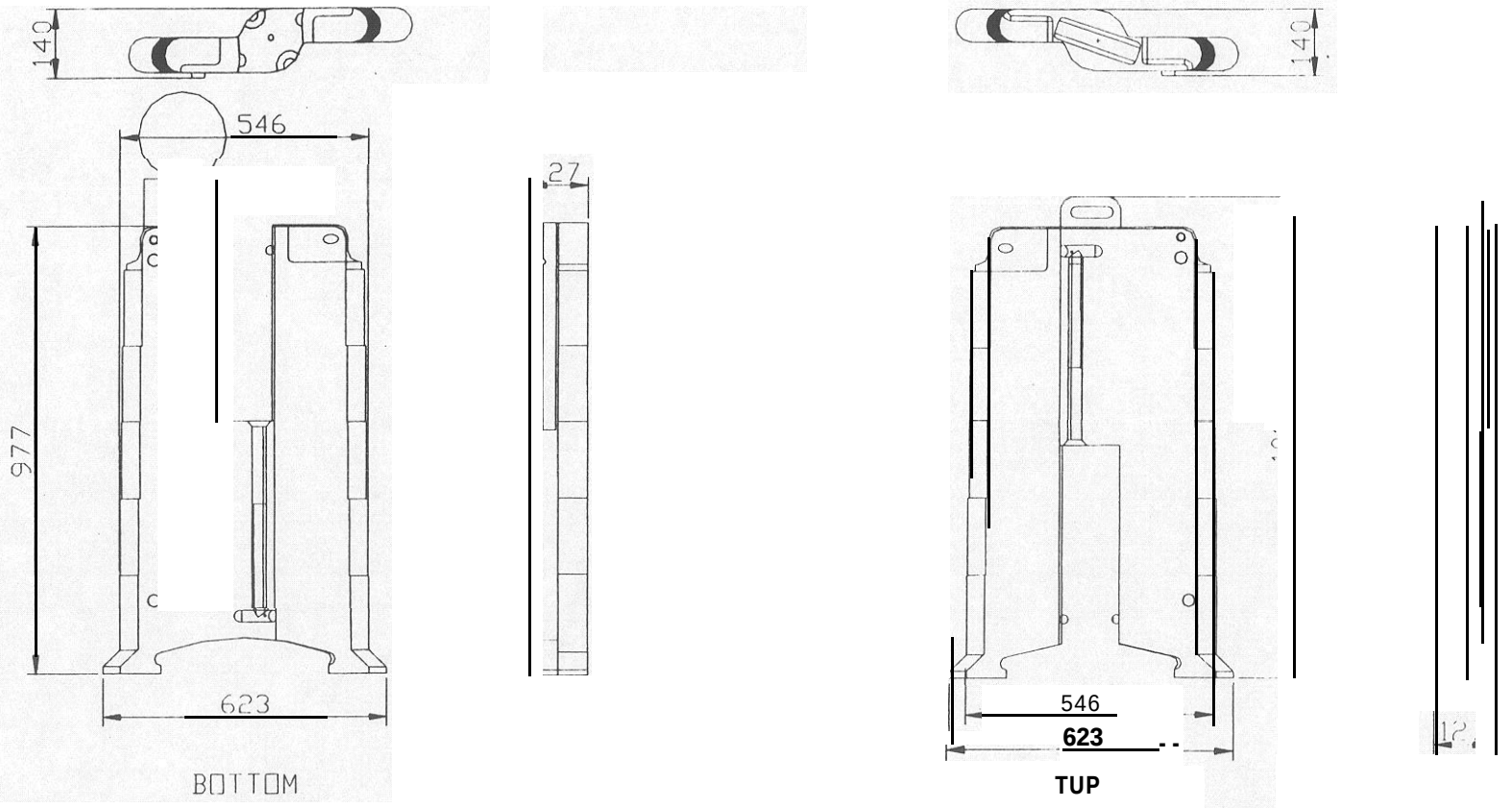


Figure 1. Detail of Cogent Enterprises, Inc. Cordonator tm