

Refer to: HSA-10/WZ-131

Mr. Brian A. Brown
Paedia
499 Carolina Street
San Francisco, California 94107

Dear Mr. Brown

Thank you for your letter of June 20, 2002, requesting Federal Highway Administration (FHWA) acceptance of the SonoBlaster work zone intrusion alarm as a crashworthy traffic control device for use on the National Highway System (NHS). Accompanying your letter was a report of crash testing conducted by the California Department of Transportation and a CD-ROM disc with a video of the tests. You requested that we 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."

Introduction

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, 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 SonoBlaster Work Zone Intrusion Alarm is portable safety alarm designed to be attached to cones, drums, or other channelizing devices to provide an audible warning to personnel in work zones. Weighing approximately 4 pounds, the lightweight unit is powered by CO₂ cartridges and is activated by shock, impact, or tilt.

Testing

Because of the unique nature of the SonoBlaster you contacted us to discuss what testing would demonstrate the crashworthiness of the device. As it is an attachment to be used with cones or drums, it is considered to be a Category II work zone traffic control device eligible for reduced testing/reporting procedures than those normally required by NCHRP Report 350. Due to the very small mass and the low placement of the device, we agreed that informal testing with any vehicle would be sufficient to demonstrate what effect the SonoBlaster attachment would have. A cone was chosen as the “worst case scenario” for this testing.

Two live-driver tests were run, each using a 28-inch tall traffic cone with the SonoBlaster attached. A Ford Excursion impacted the device at 45 mph and 60 mph. In both cases the device rolled underneath the vehicle. The cone and SonoBlaster caused no damage to the vehicle and showed no potential for occupant compartment intrusion. The vehicle’s velocity was also unaffected.

Findings

The results of the testing met the FHWA requirements and, therefore, the SonoBlaster described above and shown in the enclosed drawings for reference are acceptable for use on the NHS under the range of conditions tested, when proposed by a State. We consider the SonoBlaster to be acceptable when attached to the base of conventional traffic cones, plastic drums, or large base road tubes or delineators (i.e., the “Navigator[®]” manufactured by Plastic Safety Systems).

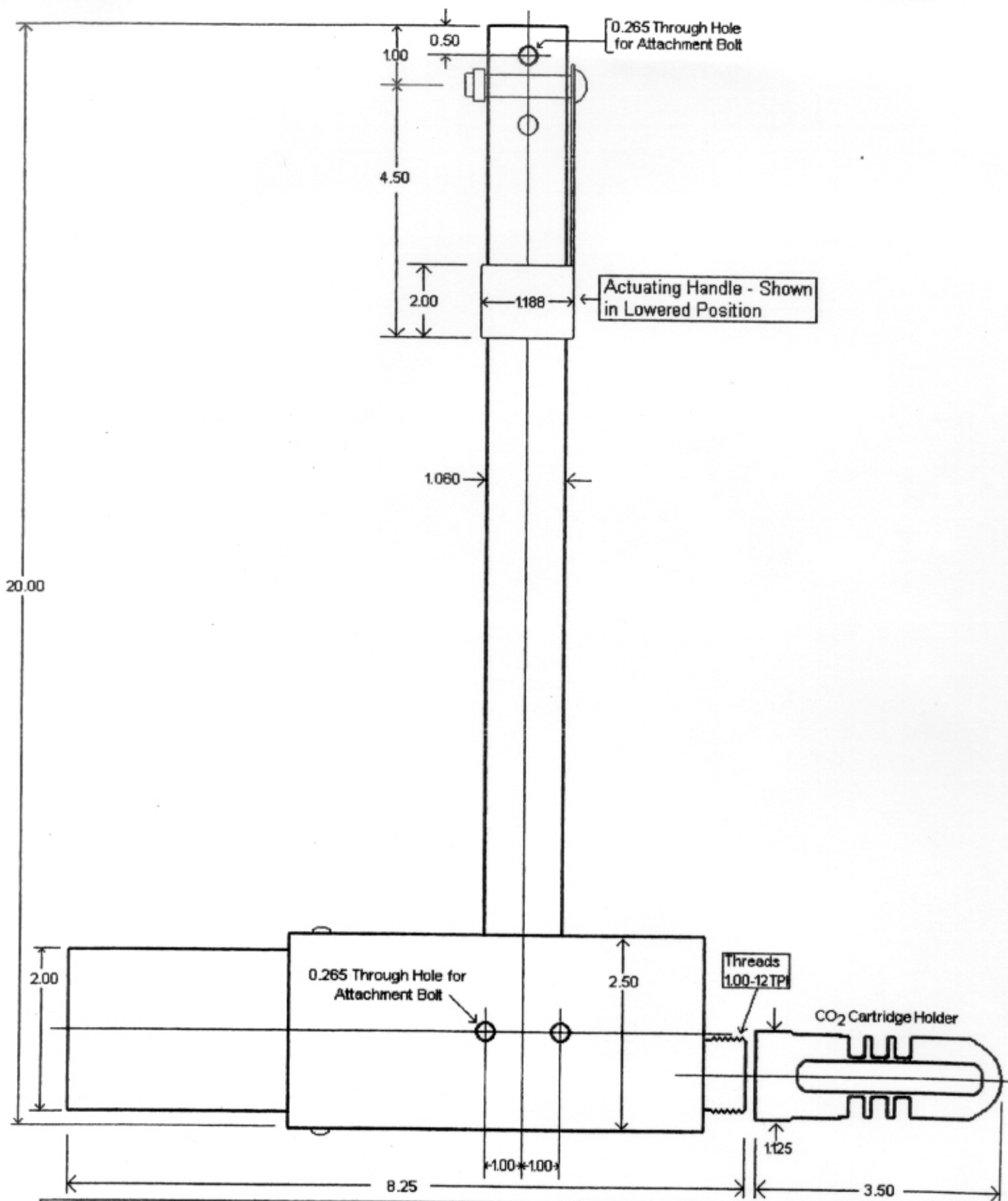
Please note the following standard provisions that apply to FHWA letters of acceptance:

- 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.
- 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 FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-131 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 SonoBlaster is a patented product and is 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,

Carol H. Jacoby, P.E.
Director, Office of Safety Design



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Housing Materials: Aluminum,
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 Fasteners: Steel

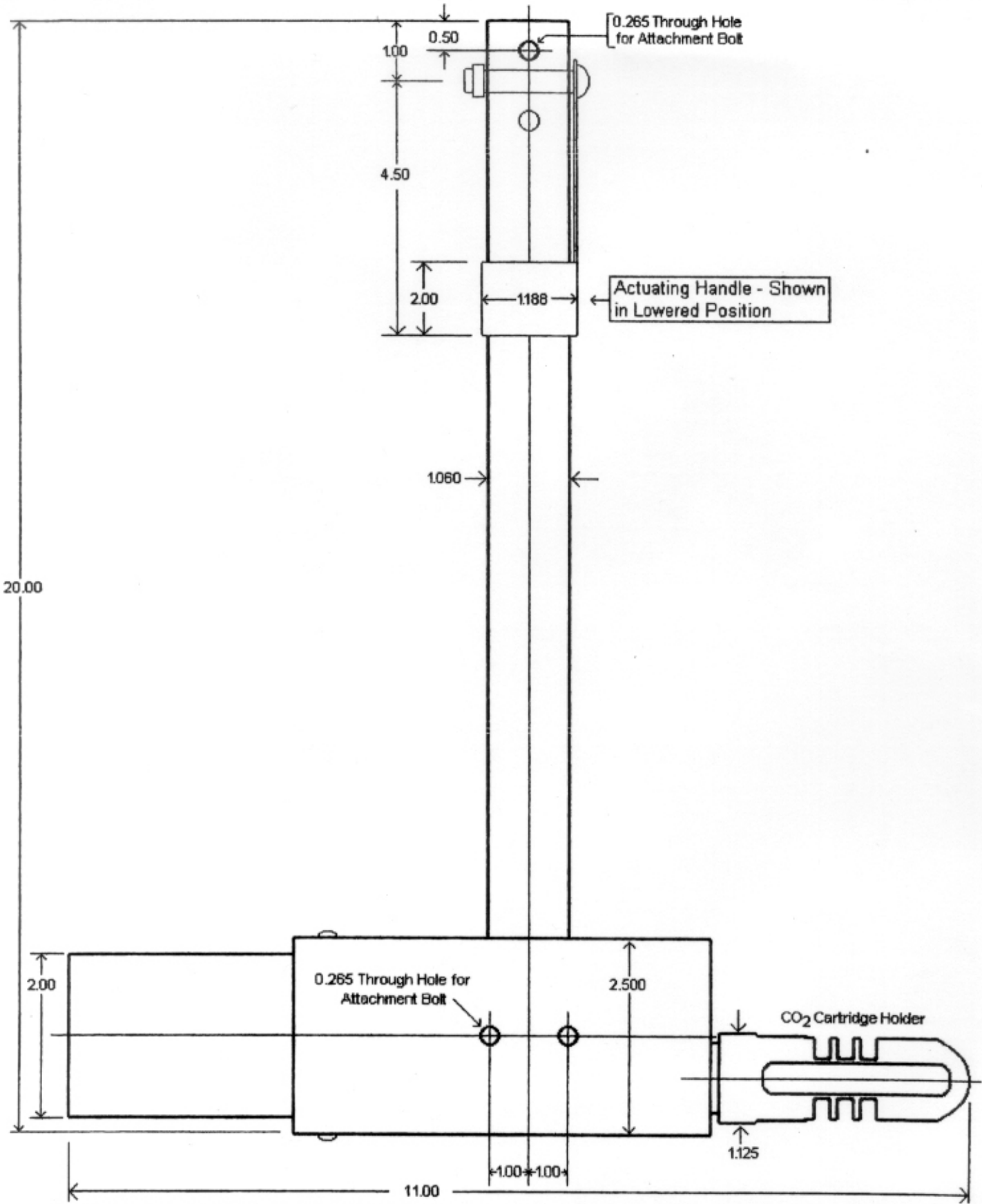
All Dimensions in Inches

SonoBlaster!®
 Model SB3H - Rev 10

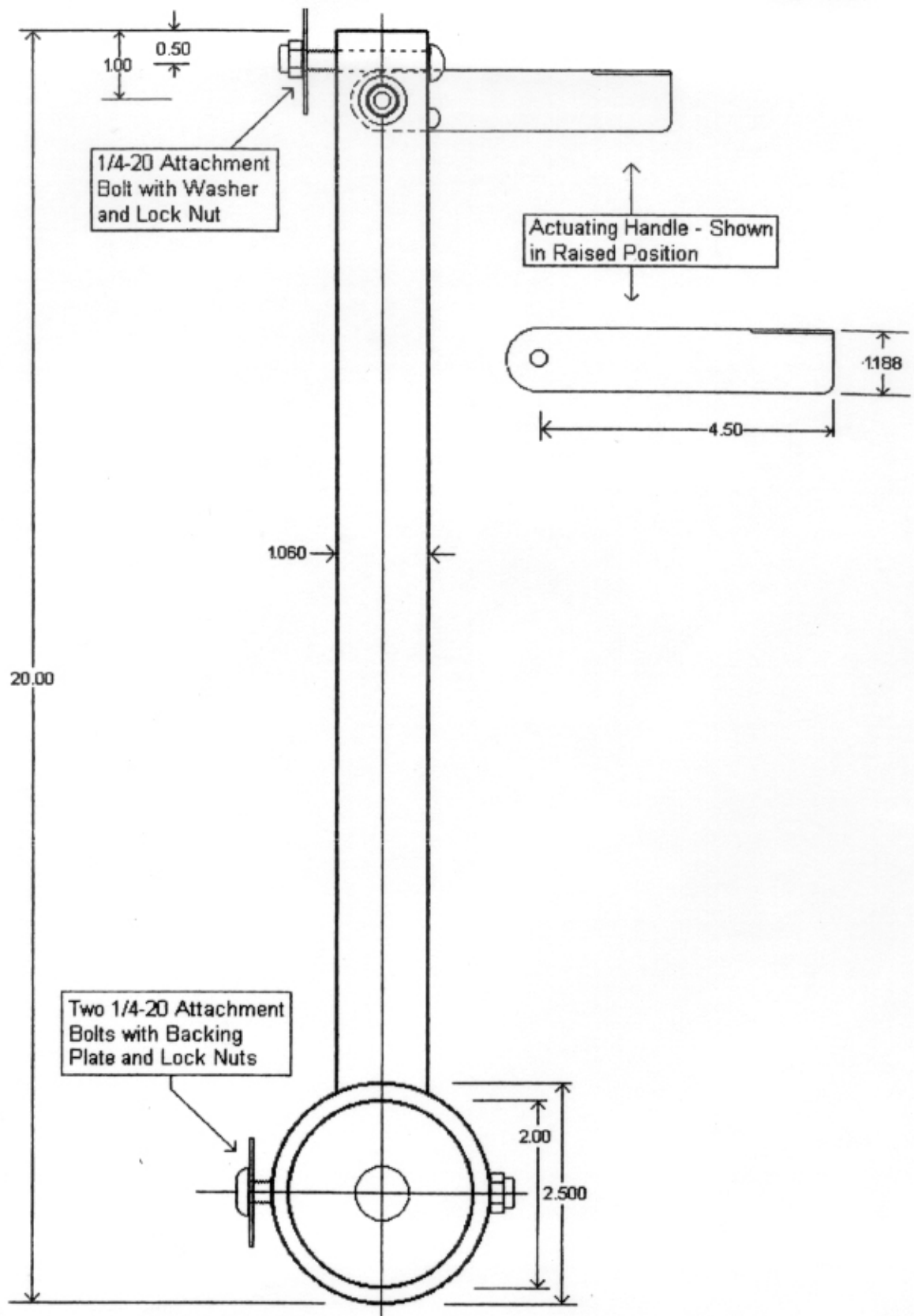
Not to Scale

Drawing No. SBH-10-061902-01
 Brian A. Brown
 June 19, 2002

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Paedia Corporation 499 Carolina Street San Francisco, CA 94107 415-861-8097 - 415-861-8893 Fax	Housing Materials: Aluminum, PVC and Injection Molding Plastic Internal Parts: Steel, Brass & Plastic Fasteners: Steel All Dimensions in Inches	SonoBlaster!® Model SB3H - Rev 10	Drawing No. SBH-10-061902-02 Brian A. Brown June 19, 2002
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SonoBlaster![®]
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Drawing No. SBH-10-061902-03
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