

Refer to: HSA-10/WZ-117

Mr. Henry Ross
United Rentals Highway Technologies
880 North Addison Road
P.O. Box 7050
Villa Park, Illinois 60181-7050

Dear Mr. Ross:

This is in response to letters from your company requesting Federal Highway Administration (FHWA) acceptance of Type III Barricades as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). These barricades are variations to barricade designs that have already been crash tested by others and accepted by the FHWA. The letter dated January 18, 2002, was written by David E. Gingrey of Fargo, North Dakota, and the letter dated February 28, 2002, was from your Villa Park, Illinois, location. Accompanying these letters were drawings of the barricades or the modified barricade elements. These drawings are enclosed for reference. 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." As you are the coordinator for United Rentals on NCHRP Report 350 matters you have requested that we respond directly to you for both letters.

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.

A brief description of the devices follows:

January 18, 2002, request.

Type III barricade using extruded aluminum panels similar to the one tested at Midwest Roadside Safety Facility for the State of Minnesota, which was found acceptable in FHWA letter WZ-55 (dated December 18, 2000). The overall height of the barricade is 60-1/2 inches, and uses three 8-inch wide rails bolted to the frame. The vertical members of the frame are 72 inches on center leaving a one-foot overhang of the rails. The frame of the United Rentals barricade differs from the Minnesota design only in that the square steel tubes are not perforated or galvanized. The overall length of the United Rentals barricade is 8 feet rather than the 6 foot barricade tested for Minnesota.

February 28, 2002, request.

Type III barricade using hot-rolled high-carbon steel “angle-iron” frame similar to the “generic Type III” barricade found acceptable in FHWA letters WZ-54 (September 15, 2000) and WZ-85 (November 15, 2001). The difference is the use of 1-1/2 inch x 2 inch angles (of ASTM A-499 steel) rather than the tested 1-1/2 inch x 1-1/2 inch angles. The result of this change will be to add minimal weight to the barricade but to stiffen the structure so that it is more resistant to separating on impact.

Findings

The Type III barricades described above and illustrated in the enclosed drawings for reference are similar to barricades that have been crash tested and accepted by the FHWA. We concur that the modifications detailed above are not likely to adversely affect the crashworthy performance of the barricades, and therefore are acceptable for use on the NHS under the range of conditions tested, when proposed by a State.

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.
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- 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-117 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.

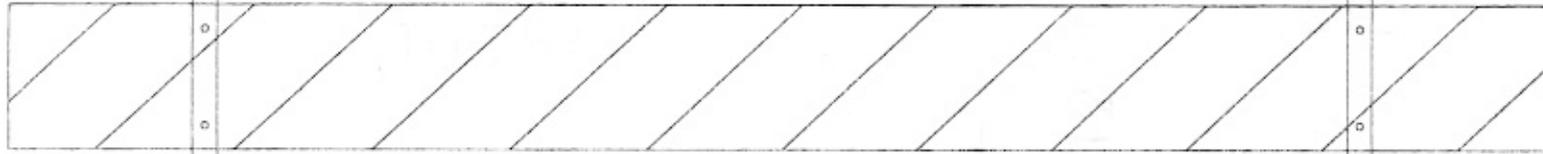
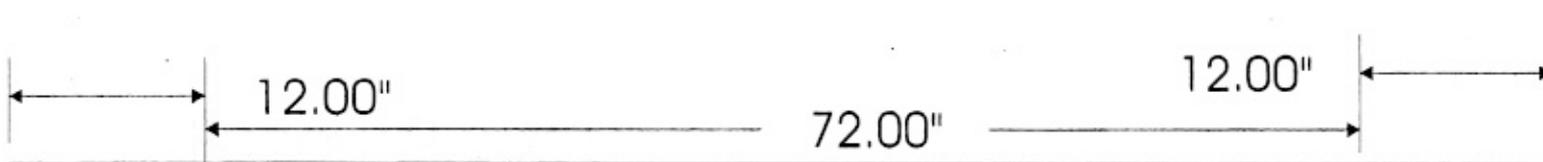
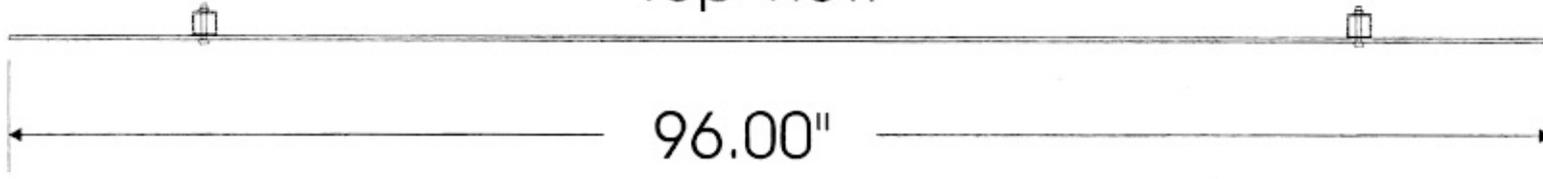
Sincerely yours,

A. George Ostensen
Program Manager, Safety

Enclosure

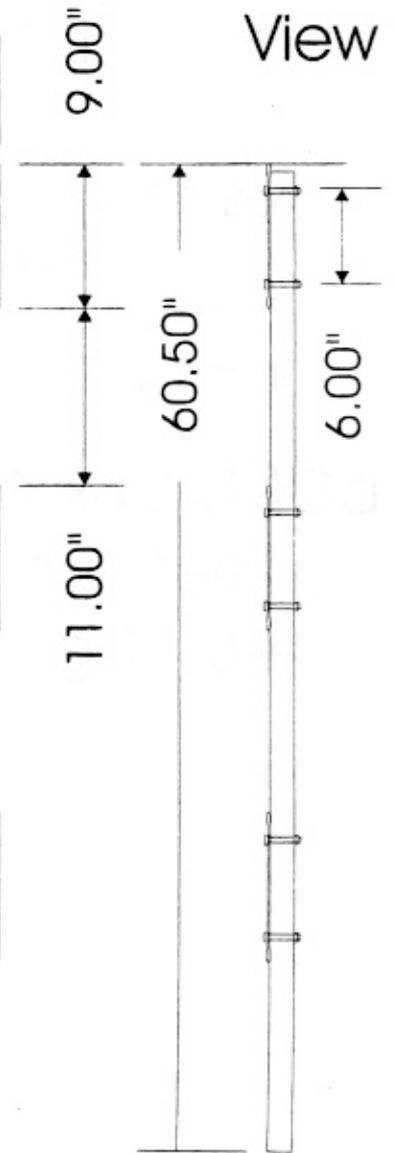
8' Type III Barricade

Top View



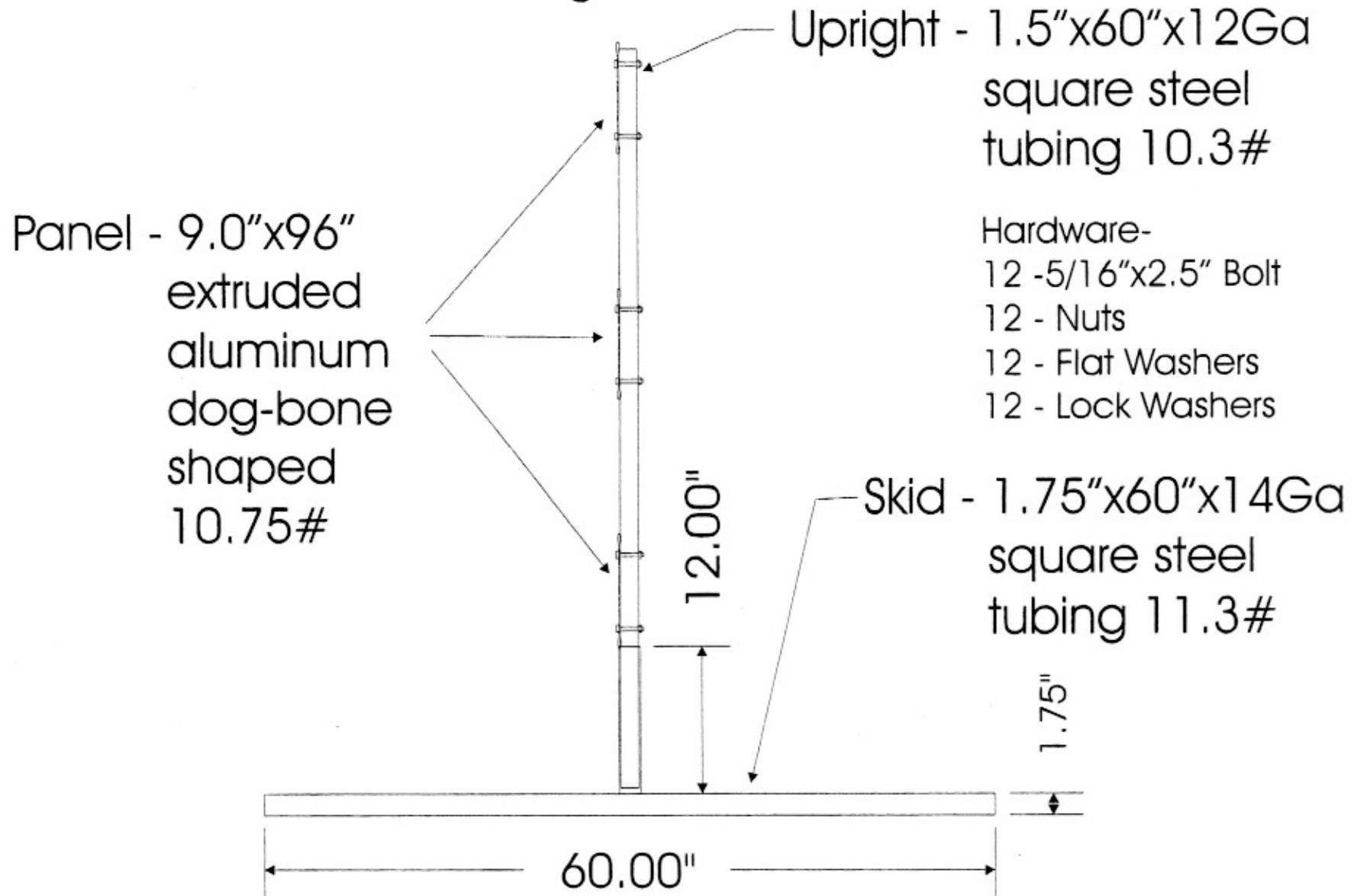
Front View

Side View

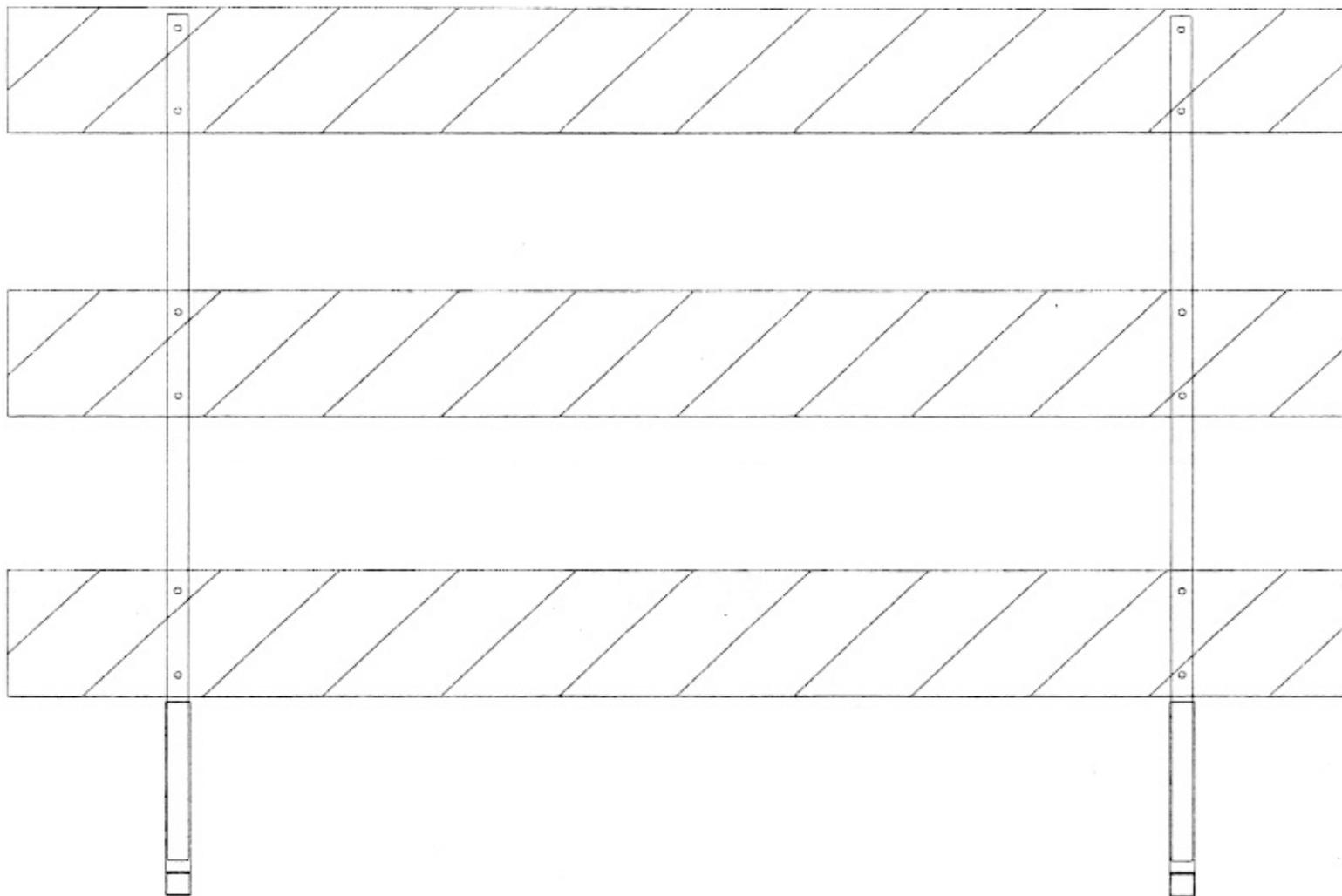


Type III Barricade Side View with Skid

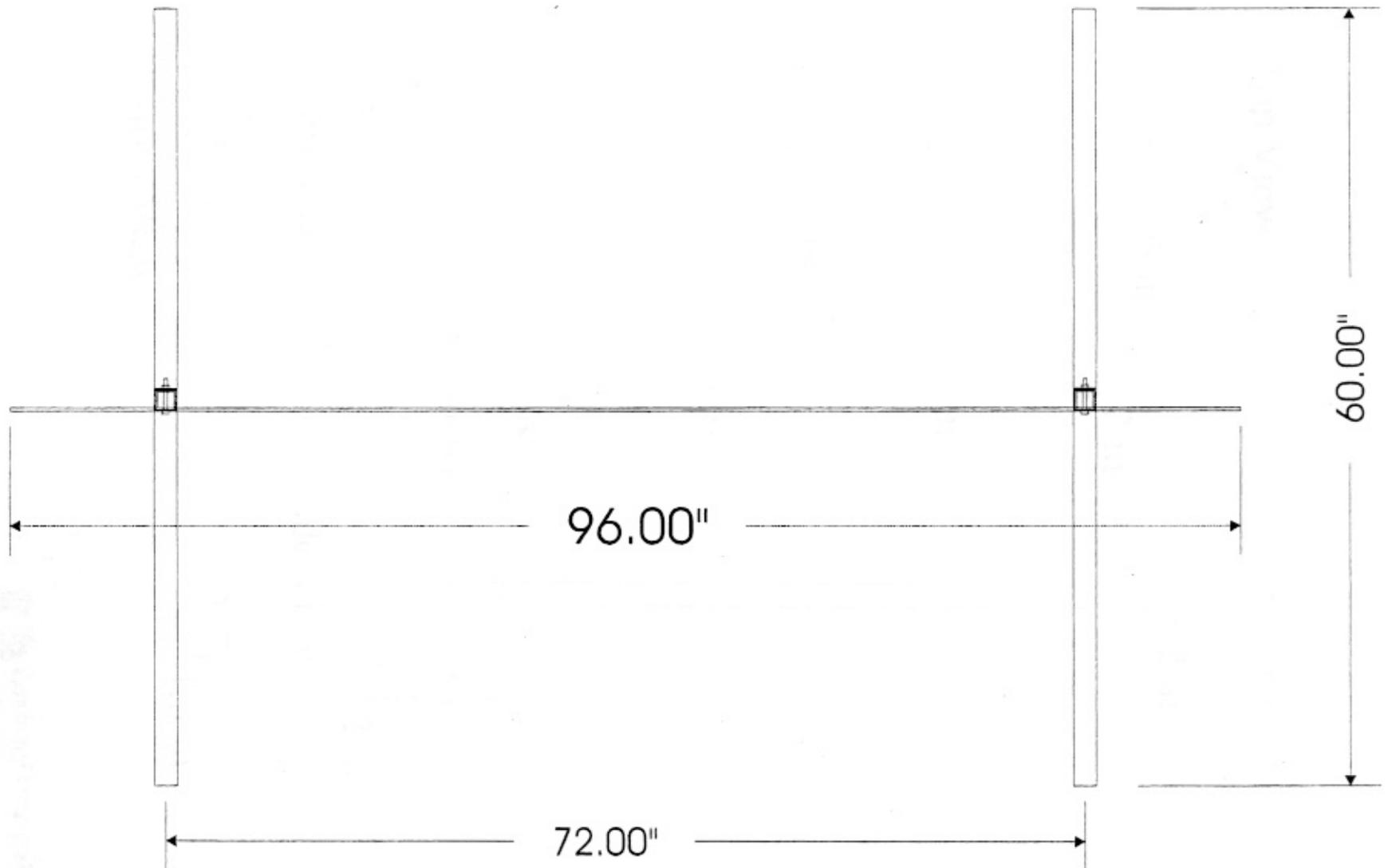
Total Weight - 76#

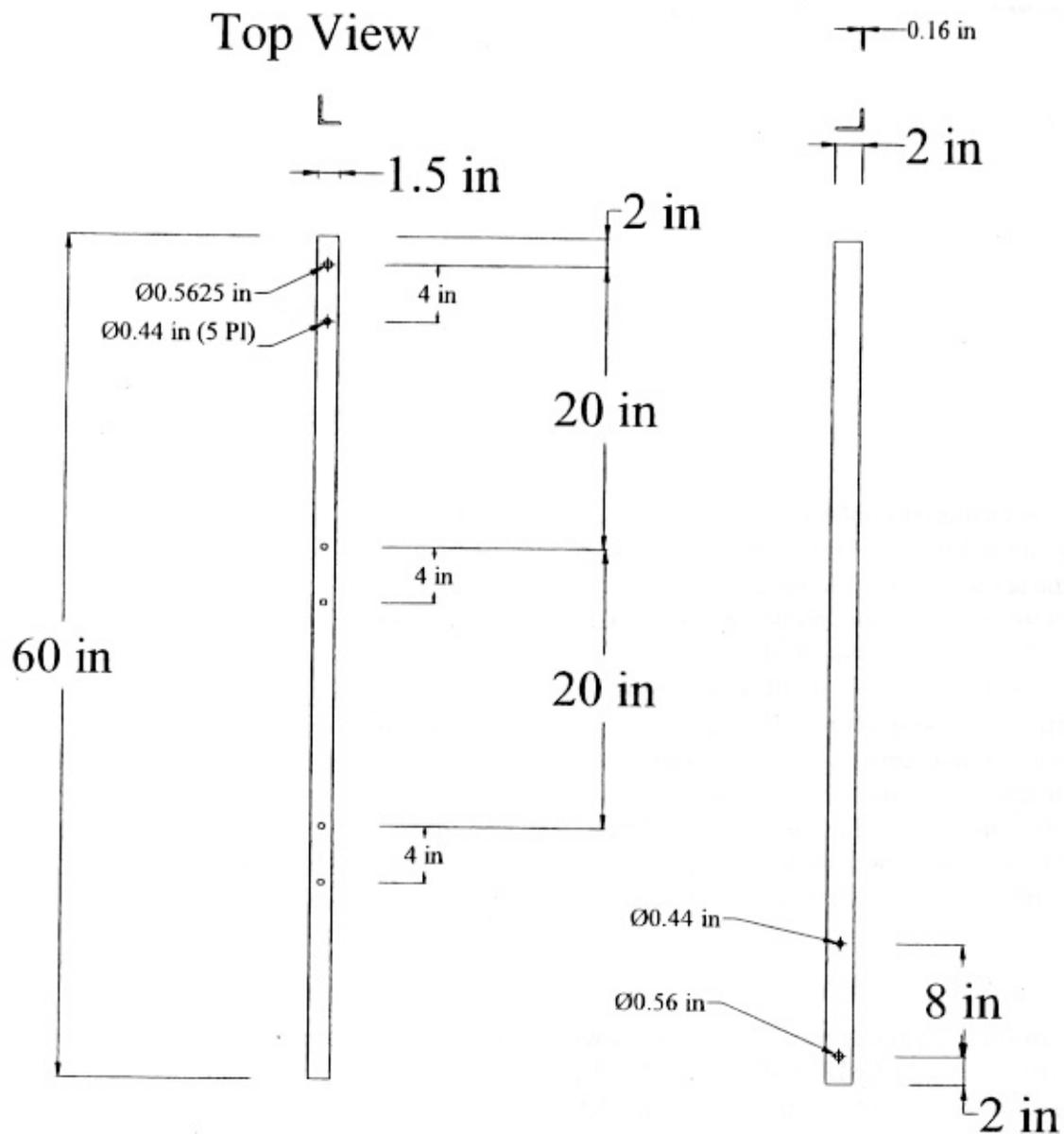


Type III Barricade Front View with Skid



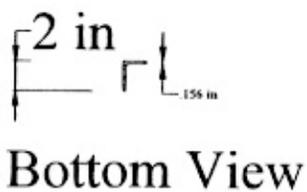
Type III Barricade Top View with Skid





Front View

Side View



Material
 1-1/2" x 2" x 5/32 ASTM A-499
 High Carbon Steel



Type III Upright 1 Piece Metal
 Item # BXXBN06003

Revised 2-20-02