Federal Aviation Agency

ADVISORY CIRCULAR

AC NO:	AC 150/5345-14
	AIRPORTS
EFFECTIVE:	2/13/64

SUBJECT: SPECIFICATION FOR L-827 "A" FRAME HINGED SUPPORT FOR 12-FOOT WIND CONE

1. PURPOSE. This circular describes the subject specification requirements for a hinged support for a 12-foot wind cone. The specification is for the guidance of the public, and its use is required for project activity under the Federal-aid Airport Program.

2. CANCELLATION. This circular replaces Federal Aviation Agency Specification L-827, "A" Frame Hinged Support for 12-Foot Wind Cone, dated December 1, 1948, without substantive change.

3. SCOPE OF SPECIFICATION. The specification requirements are for a hinged support for a 12-foot illuminated wind cone assembly. The unit consists essentially of an "A" frame fixed support and a pivoted center pipe support as shown on Figure 1 and Figure 2 of this specification. Figure 3 depicts the wind cone assembly mounted on an "A" frame hinged support. The wind cone assembly is not a part of this specification.

4. APPLICABLE SPECIFICATIONS AND STANDARD. The following specifications and standard, of the issue in effect on the date of application for qualification (see paragraph 10), apply to this circular. This circular shall govern in case of conflict.

   a. Federal Specifications.

      (1) QQ-A-591 - Aluminum Alloy Die Castings.

      (2) QQ-A-601 - Aluminum-Alloy Sand Castings.

      (3) QQ-S-775 - Steel, Sheets, Carbon, Zinc-Coated.

      (4) TT-R-191 - Red Lead, Dry and Paste-In-Oil.

(5) TT-P-465 - Pigment, Zinc-Yellow (Zinc Chromate), Dry.

(6) TT-P-641 - Primer, Paint; Zinc Dust-Zinc Oxide (For Galvanized Surfaces).

b. Federal Standard No. 595, Colors.

5. SOURCE OF APPLICABLE SPECIFICATIONS AND STANDARD. Obtain copies of the Federal specifications and standard from the Regional General Services Administration Office.

6. SIZE AND TYPE. The hinged support shall be built in one size and type.

7. PERFORMANCE REQUIREMENTS.

a. The support shall be designed for use with a standard 12-foot wind cone assembly. The support shall be hinged so as to permit the wind cone assembly to be lowered for cleaning, relamping, and servicing from the ground or from a platform at the base elevation.

b. The entire unit when installed with the wind cone assembly shall be designed and constructed for continuous service under the following operating conditions:

(1) Temperature. Any ambient temperature from a minimum of -45° F. to a maximum of +120° F. at sea level.

(2) Weather. Continuous outdoor operation under all normal weather conditions.

(3) Wind. Wind velocities up to 75 miles per hour shall not cause any discernible permanent deformation of any part of the unit.

8. DETAIL REQUIREMENTS.

a. "A" Frame. The "A" frame section of the hinged support shall be constructed of 3-inch seamless steel pipe, with cross members of 6-inch, 8.2-pound channel iron welded to the steel pipe, as shown on Figures 1 and 2. A braced sheet steel footing shall be welded to each leg of the "A" frame. A 1/2-inch diameter U-bolt shall be inserted through the lower channel cross member to rigidly hold the pivoted center pipe support in a vertical position. A 1-inch, Type C, condulet, or equal, with gasketed cover, shall be mounted on one leg of the "A" frame near the pipe support hinge. The 1-inch power supply conduit shall be furnished by others. A cable connector with rubber bushing for cable 1/2-inch to 5/8-inch outside diameter shall be provided in the top of the condulet and in the wall of the pipe

support to provide entrances for a loop of No. 12 AWG, 600-volt, 2-conductor, Type S, flexible rubber-covered cable. A 20-foot length of the above-mentioned cable shall be furnished with the support. The cable connectors shall be so arranged that the loop of flexible cable will not foul when the hinged support is lowered or raised. The base of the "A" frame shall be arranged to be mounted with 3/4-inch anchor bolts embedded in concrete footing.

b. Center Pipe Support. The pivoted support shall be constructed of 3-inch standard seamless steel pipe, mounted on the "A" frame in accordance with Figures 1 and 2. A sleeve for receiving the wind cone assembly shall be welded in the top of the pipe support. Six 3/8-inch diameter setscrews shall project through the pipe support and sleeve to rigidly hold in place the wind cone shaft. A cable connector, as mentioned in paragraph 8a, shall be provided in the pipe support near the pivot point for the flexible cable wiring entrance. Four 3/8-inch diameter bars, 12 inches long, extending through the pipe support at the lower end, shall be provided to hold a cast concrete counterweight or metal counterweights. The counterweight shall be provided by others and mounted on the pipe support at the time of installation. A 9/16-inch hole shall be provided at the lower end of the pipe support for the operating chain. Twelve feet of No. 10 AWG galvanized coil chain and two 1/2-inch diameter by 2-inch bolts with two nuts and washers shall be furnished.

c. Guy Brackets. Two guy brackets, as shown in Figure 2, shall be furnished. The guy brackets shall be so constructed that they may be rigidly held to the "A" frame by means of the hinge bolt.

d. Materials. Aluminum sand castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214, and aluminum die castings to * Federal Specification QQ-A-591, Alloy 13, A13, or 360. The support * assembly shall be of steel and shall have its exterior surfaces painted for corrosion protection. Pipe shall be standard seamless steel pipe. Metal parts shall be nonferrous metal or ferrous metal treated after fabrication by galvanizing or zinc plating in accordance with Federal Specification QQ-S-775. All copper or copper alloy parts installed in contact with aluminum alloy shall be nickel or cadmium plated.

e. Paint. One prime, one body, and one finish coat of paint shall be applied to the exterior surfaces of metal parts of the hinged support assembly. Priming paints shall be red lead in oil or zinc chromate for bare metal surfaces and zinc dust-zinc oxide for galvanized metal surfaces conforming respectively to Federal Specification TT-R-191, TT-P-465, and TT-P-641. Paint for body and finish coats shall be ready-mixed, bright, nonfading Aviation Orange, conforming to Federal Standard No. 595, Colors, Table X, Aviation Orange No. 12197.

f. Parts List and Installation Instructions. A complete parts list and installation instructions shall be furnished with each unit. Sufficient drawings or illustrations shall be provided to indicate clearly the method of installation.

9. TESTING.

a. Qualification Testing.

(1) A production-run model shall be subjected to the test described below and to the applicable detail requirements under paragraph 8.

(a) The ability of the unit to withstand a wind velocity of 75 miles per hour without discernible permanent deformation shall be determined by applying a static load of 150 pounds in a horizontal direction on the top of the pipe support for a period of 10 minutes. This test shall be made with the "A" frame hinged support equipped with a 12-foot wind cone assembly and rigidly held in an operating position.

(2) Additional inspections and tests shall be made as deemed necessary by the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, to determine compliance with this specification.

10. QUALIFICATION.

a. The manufacturer shall install a production-run model, at any location convenient to the manufacturer, to be tested as described herein to obtain certification regarding the ability to manufacture an "A" frame hinged support meeting the requirements of this specification. All tests shall be witnessed by an FAA representative. The manufacturer shall furnish two certified factory test reports to the Airports Service for review and approval consideration. Upon approval of the test reports which show satisfactory certification of compliance, the Airports Service will list the name of the qualified manufacturer and a description of their "A" frame hinged support in Advisory Circular No. 150/5345-1, "Approved Airport Lighting Equipment". The cost of testing shall be borne by the manufacturer offering the equipment for qualification.

b. Parts list and installation instructions shall be submitted to the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, for review and approval.

c. At any time after approval has been granted under the above conditions, a certified factory test report on the latest production-run model produced under this specification shall be made available by the manufacturer upon written request by the Federal Aviation Agency, Airports Service, Washington, D. C. 20553.

11. HOW TO GET THIS CIRCULAR. Obtain copies of this circular, AC 150/5345-14, "Specification for L-827 "A" Frame Hinged Support for 12-Foot Wind Cone", from the Federal Aviation Agency, Distribution Section, HQ-438, Washington, D. C. 20553.

for Cole Morrow, Director
Airports Service

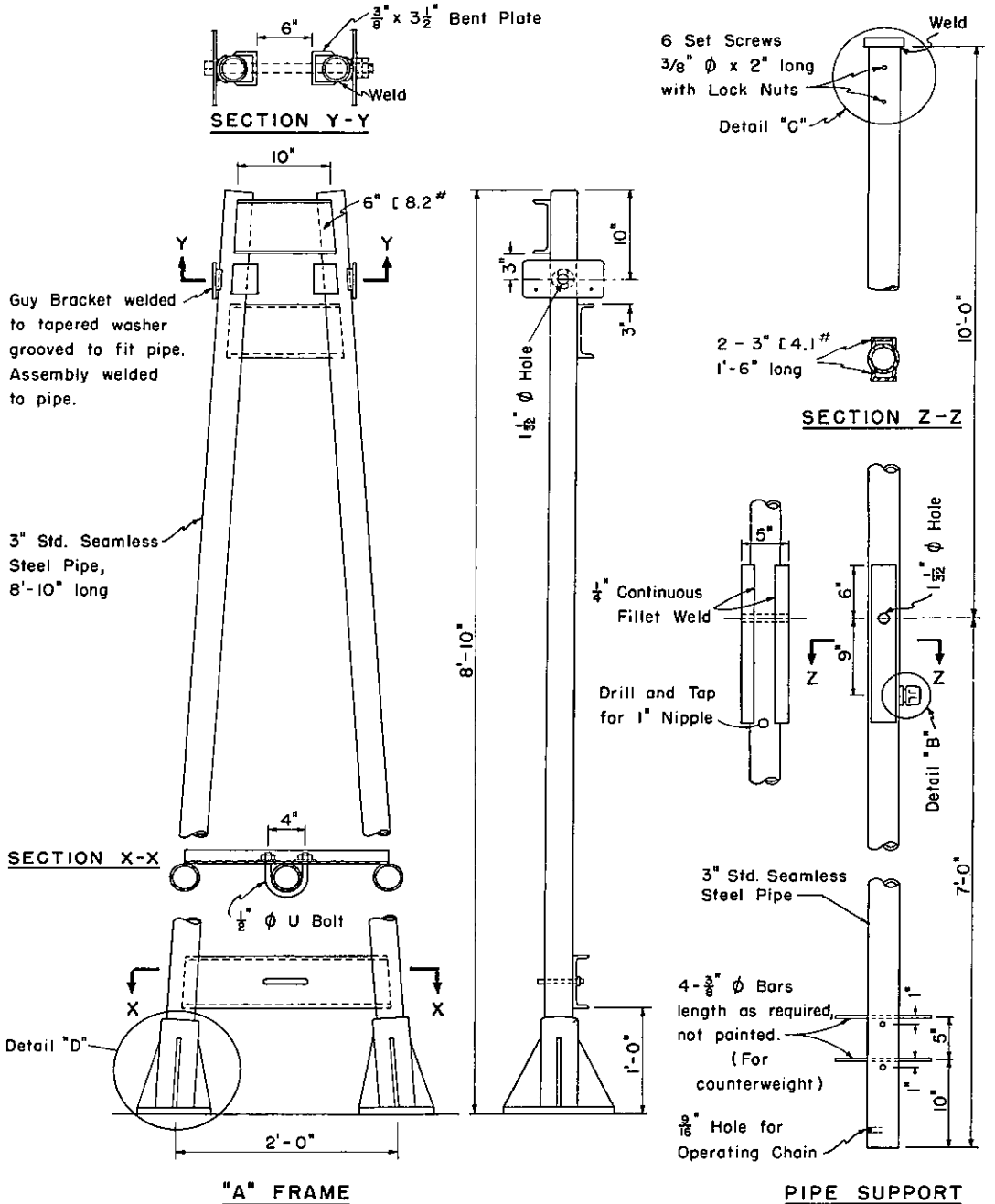
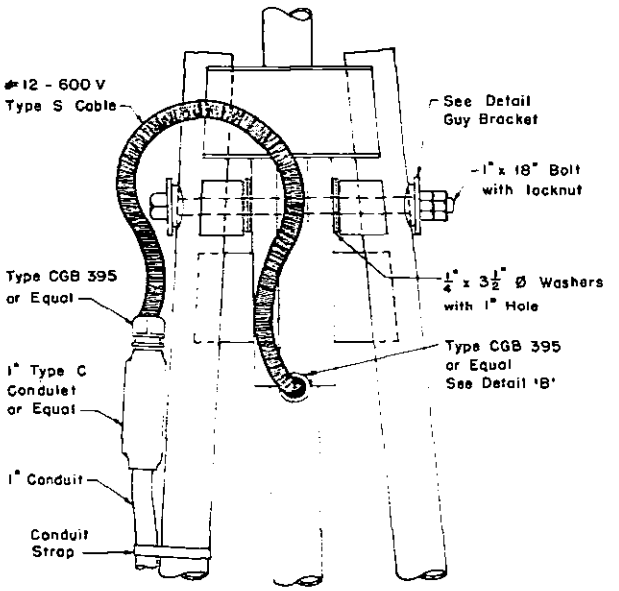
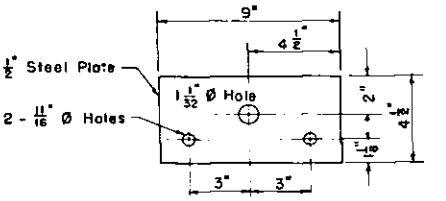


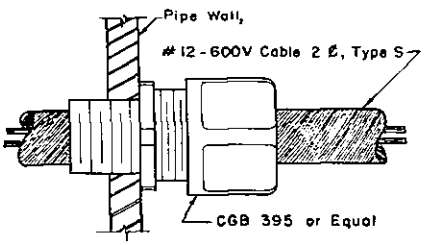
FIGURE 1. "A" FRAME HINGED SUPPORT FOR 12-FOOT WIND CONE



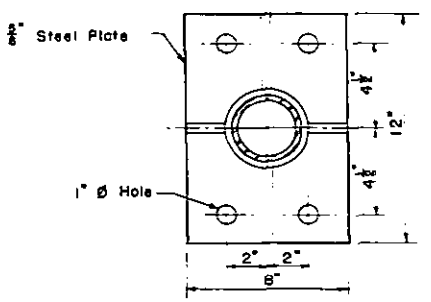
HINGE DETAIL



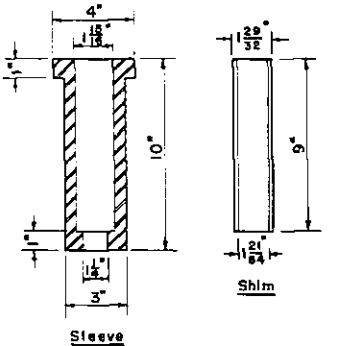
GUY BRACKET DETAIL



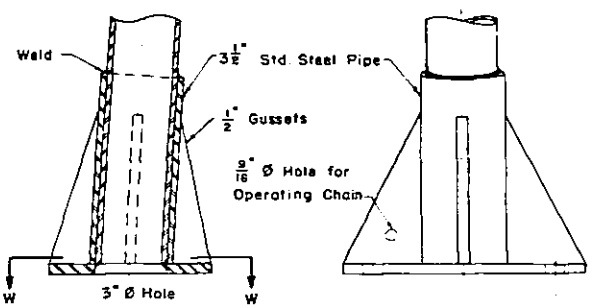
DETAIL "B"



SECTION W-W



DETAIL "C"



DETAIL "D"

NOTES

Install sleeve for 1 1/2" pipe, use sleeve and shim insert for 1" pipe. (Shim to be furnished only upon request.)

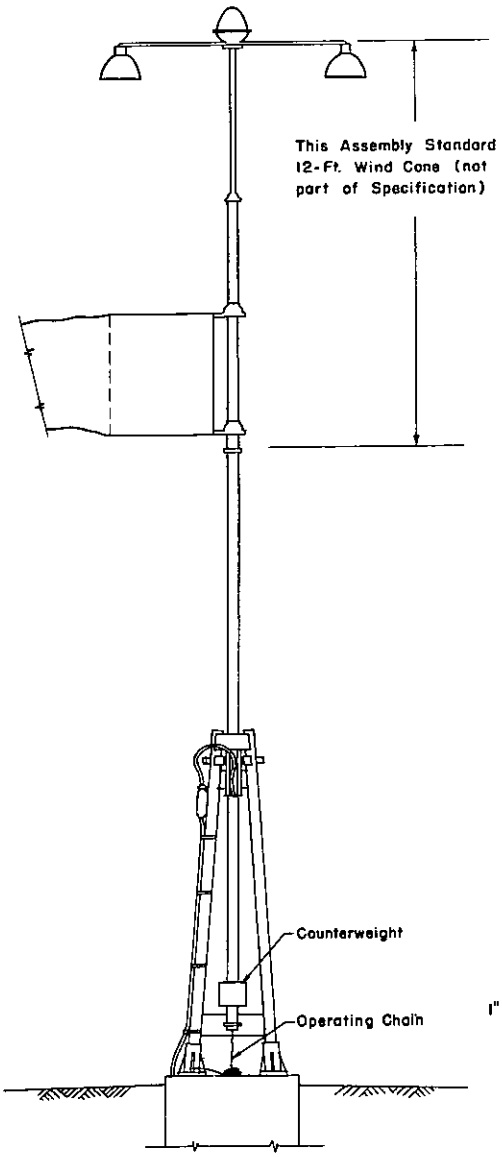
Supply 12 feet of No. 10 galvanized coil chain, 2 - 1/2" x 2" bolts with 2 nuts and 2 washers.

Pipes to be standard seamless steel.

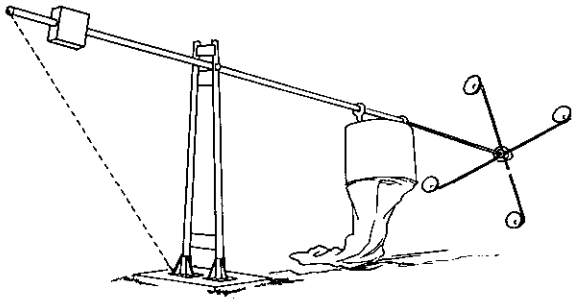
All unbolted joints to be continuous welded by electric arc.

Conduit to be furnished by others.

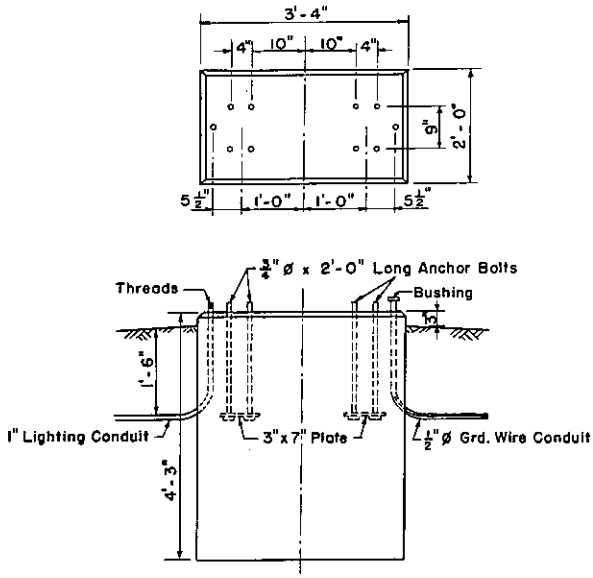
FIGURE 2. DETAILS - "A" FRAME HINGED SUPPORT



UNGUYED GROUND INSTALLATION



POSITION FOR SERVICING



RECOMMENDED
FOOTING DETAIL

FIGURE 3. WIND CONE ASSEMBLY MOUNTED ON "A" FRAME SUPPORT