Federal Aviation Agency

AC NO: AC 150/5340-8
AIRPORTS
EFFECTIVE: 6/11/64

ADVISORY CIRCULAR

SUBJECT: AIRPORT 51-FOOT TUBULAR BEACON TOWER

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1. PURPOSE. This advisory circular presents guidance to the public on the subject beacon tower. The design and installation details described are acceptable in accomplishing a project meeting the eligibility requirements of the Federal-aid Airport Program (FAAP).

2. BACKGROUND. During the past three years, several tubular steel beacon towers have been installed under FAAP projects as trial installations. They were used in lieu of the standard structural steel tower specified in Item L-103 of Advisory Circular No. 150/5370-1, "Standard Specifications for Construction of Airports". As a result of the performance of the tubular beacon tower at the several locations, it was determined to be satisfactory for a 51-foot beacon tower.

3. DESIGN AND INSTALLATION. The design and installation details are shown on Figure No. 1.

   a. Beacon Platform. As a design requirement, provision is made for the 36-inch beacon, weighing approximately 500 pounds, which is placed on the tower platform. The beacon is installed under Item L-101 of Advisory Circular No. 150/5370-1, "Standard Specifications for Construction of Airports".

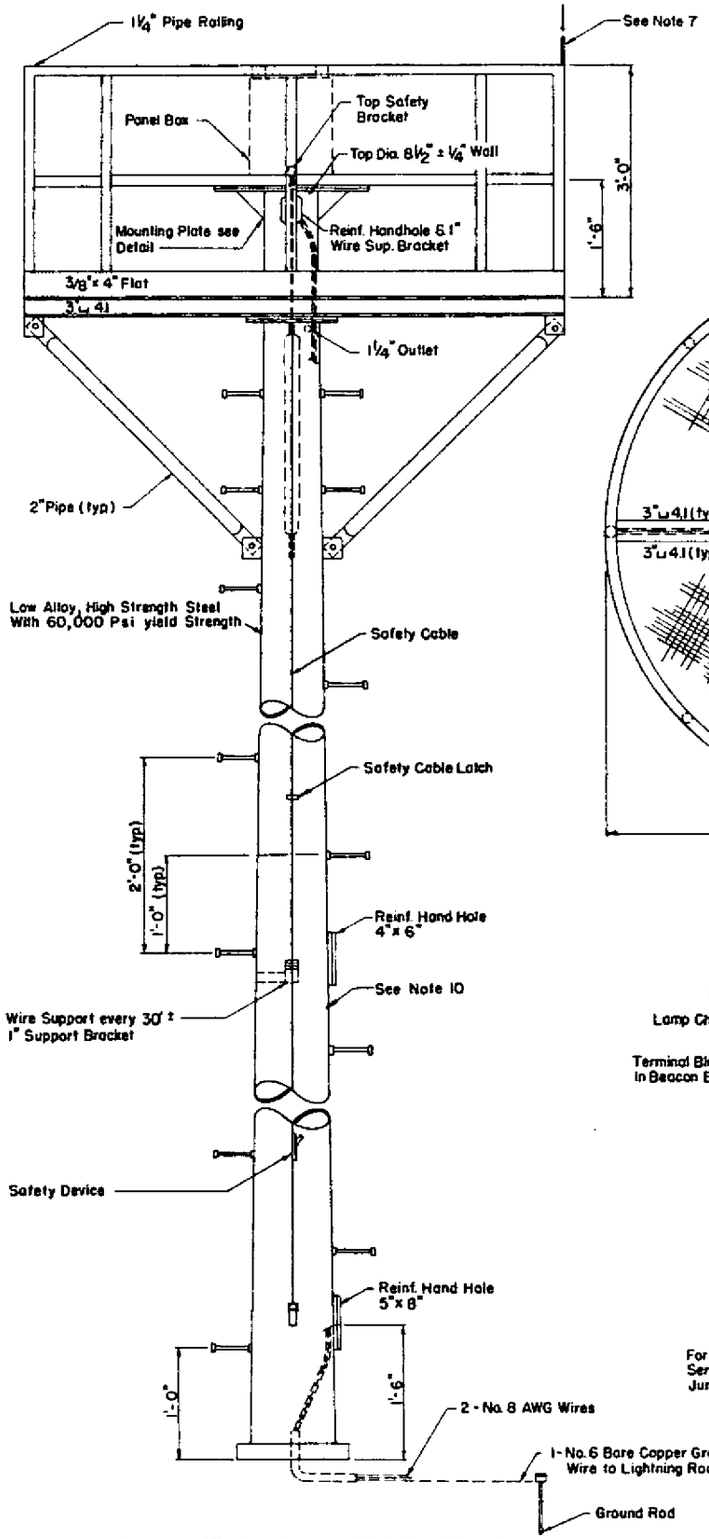
   b. Safety Device. Figure No. 1 provides for a safety device consisting of a cable, locking clip, and belt combination which permits a workman to climb the tower and to secure him instantly if he should fall. A device similar to that furnished by Meyer Machine, Incorporated, is acceptable.

   c. Construction Details. The tubular beacon tower may be prefabricated at the factory and erected at the site. Applicable portion of Item L-103 of Advisory Circular No. 150/5370-1 and Change 1, "Supplement No. 2", should be used for field installation.

4. AVAILABILITY. The tubular tower may be obtained from Meyer Machine, Incorporated, Red Wing, Minnesota, or other companies that may furnish equipment equal to that shown on the drawing.

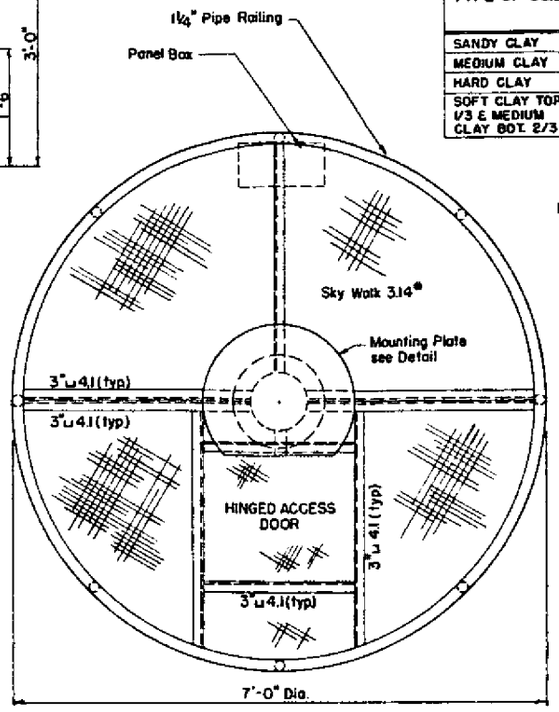
5. HOW TO GET THIS CIRCULAR. Obtain additional copies of this circular, AC 150/5340-8 , "Airport 51-Foot Tubular Beacon Tower", from the Federal Aviation Agency, Distribution Section, HQ-438, Washington, D. C. 20553.

for Cole Morrow, Director
Airports Service

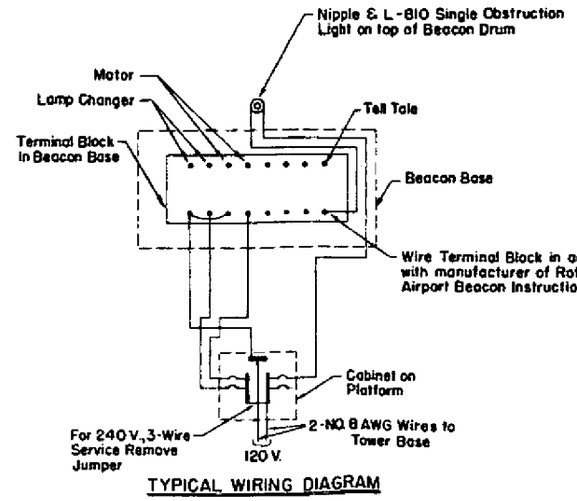


TUBULAR STEEL AIRPORT BEACON TOWER

(SEE TABLE 2)



MOUNTING PLATFORM



TYPICAL WIRING DIAGRAM

TABLES OF DESIGN REQUIREMENTS

(TABLE 1)
FOOTINGS

TYPE OF SOIL	SQUARE TYPICAL FOOTING DIM. "A"	SQUARE TYPICAL FOOTING DIM. "D"	ROUND TYPICAL FOOTING DIM. "A"	ROUND TYPICAL FOOTING DIM. "D"
SANDY CLAY	2'-0"	5'-0"	27"	5'-0"
MEDIUM CLAY	2'-2"	5'-6"	27"	5'-6"
HARD CLAY	1'-10"	4'-0"	27"	4'-0"
SOFT CLAY TOP 1/3 & MEDIUM CLAY BOT. 2/3	4'-0"	8'-0"	48"	8'-0"

(TABLE 2)
MAXIMUM LOADING CONDITIONS

	M FT. LBS.	UNIT STRESS PSI	O.D. IN.	WALL THK. IN.
0	0	0	8	.250"
-10	3,635	2,850	9	
-20	8,765	5,265	10	
-30	15,580	8,430	11	
-40	24,260	11,000	12	
-50	34,900	13,400	13	
-51	35,920			.250"

51'-0"

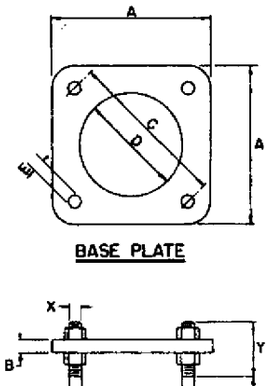
(TABLE 3)
ANCHORAGE

HEIGHT OF BEACON	BASE PLATES SIZE SQ. "A"	BASE PLATES THKN. "B"	BASE PLATES BOLT CIRCLE "C"	BASE PLATES TOWER DIA. "D"	BASE PLATES SIZE HOLE "E"	ANCHOR BOLTS BOLT DIA. "X"	ANCHOR BOLTS BOLT PROJ. "Y"	ANCHOR BOLTS BOLT LG. "Z"	ANCHOR BOLTS BOLT MAX. SPEC.
51'	19"	1-3/4"	19"	13"	1-7/8"	1-1/2"	7	36"	1020

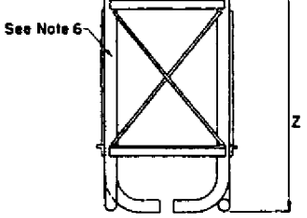
10. Load test - The pole must show no signs of local buckling or evidence of failure when 2500 pounds is applied transversely to the top of the pole with the bottom of the pole secured. Upon release of the load, pole must return to its original location with no permanent set in the pole Eg. deflection upon release of load = 0.

Notes

1. The tower conforms to applicable sections of FAA standard specification for construction of airports, Item L-103.
2. The same anchor bolt cluster is used for both square and round footings.
3. Paint for Beacon Tower conforms to FAA Spec. L-103.
4. Top of footings are to bottom of topsoil. Increase "D" for thickness of topsoil and desired height of footing above grade.
5. Moment at bottom of tower = 35,920 ' lbs.
6. Dimensions for base plate, anchor bolts, and footings conform to dimensions shown on this sheet unless otherwise specified for special soil conditions.
7. The lightning rod installed on the tower is either galvanized steel, copper, or copper - clad and drawn to a point. It extends at least 6" above the highest point on the beacon.
8. Dimensions for both footings are minimum dimensions.
9. The voids between the base plate and the concrete footing are sealed with grout after installation of the tower.

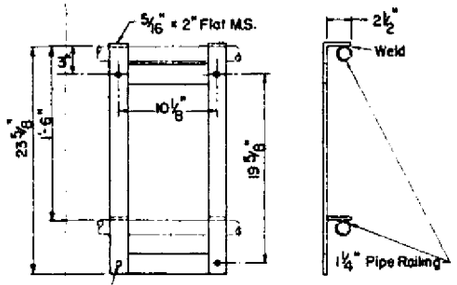


BASE PLATE

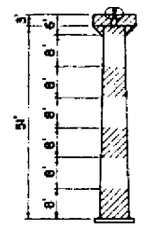


ANCHOR BOLT CLUSTER

(SEE TABLE 3)

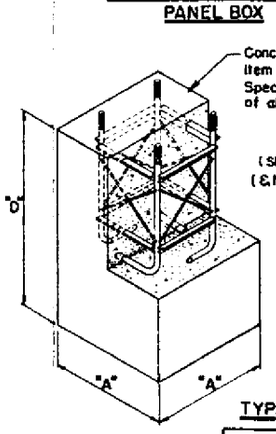


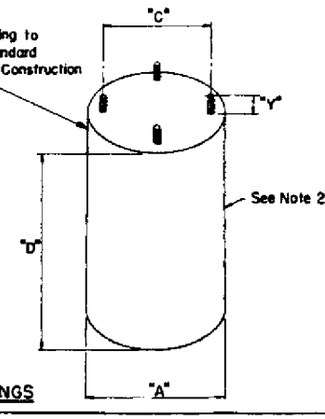
MOUNTING BRACKET FOR PANEL BOX



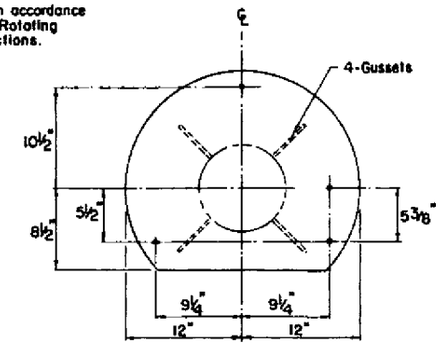
COLOR SCHEME

Orange
White
(See Note 3)





TYPICAL FOOTINGS



MOUNTING PLATE W/HOLES FOR 36" ROTATING DRUM TYPE AIRPORT BEACON

FEDERAL AVIATION AGENCY
AIRPORTS SERVICE
AIRPORT STANDARDS DIVISION

FAA AIRPORT 51 FOOT TUBULAR BEACON TOWER

REV		
	APPROVED	
	REVIEWED Henry J. Lightfield	
	SUBMITTED Roy B. Drake	
	CHECKED Alphonse J. Barr	DRAWN BY: M. RYMOND JR
	DATE JUNE 11, 1964 SHEET 1 OF 1	DWG. NO L1-64-1

FIGURE 1