



RCA Antenaplex System

RCA Victor Company, Inc.



RCA ANTENAPLEX SYSTEM

RCA ANTENSIFIER

RCA CABLOY

RCA TAPLET

RCA TERMINET

RCA RADIO OUTLET

153 EAST 24 ST. - NEW YORK CITY

100 W. MONROE ST.
CHICAGO - ILL.

RCA VICTOR COMPANY INC.
ENGINEERING PRODUCTS DIVISION
CAMDEN N.J.

235 MONTGOMERY ST.
SAN FRANCISCO CALIF.

The New

RCA ANTENAPLEX SYSTEM

The RCA Antenaplex System has been designed to provide efficient Antenna and Ground connections to a multiplicity of Radio Receivers from a single Antenna.

The usual antenna rules and instructions apply to this type of installation but ONLY ONE ANTENNA is required for the entire building. See antenna drawing herewith.

The antenna should be installed at the highest practical location, between suitable supports, which will raise the antenna high and clear above surrounding objects and so that the insulated portion will be approximately horizontal, and about 75 to 80 feet in length. The down-lead, taken from one end of this wire, should be about 20 to 25 feet in length, should enter the wall or roof of the building through a suitable weatherproof lead-in insulator, and should terminate at the nearest "Antensifier" box. An approved lightning arrester, properly grounded, should be installed therewith.

The "RCA Antensifiers" should be located in a pent-house or other interior portion of the building protected from the weather and from excessive heat where they will be conveniently accessible. A 110 volt power supply line, with suitable fused cut-out for each Antensifier, should be installed and connected to the Antensifier with metal conduit, "BX", Greenfield, Wiremold, or other materials, to meet the requirements of the Underwriters. Each Antensifier requires 120 watts, approximately. The Radio frequency output of each Antensifier may be "piped" around the building through "RCA Cabloy" to the various apartments or rooms where it is desired to locate the RCA Radio Outlets for the tenants' radio sets. At each of these outlets, the Cabloy is tapped for this purpose and connected to the outlet device through an "RCA Taplet" installed in the outlet box. In the last outlet box on each Cabloy line, an "RCA Terminet" also is installed, in addition to the Taplet, and a ground connection is made to the cold water supply pipe as near earth as practical, in addition to the ground connection to the nearest cold water supply pipe at each Antensifier.

Each radio receiver connected to an RCA Antenaplex System will receive signals equal to 100% or better of the signals obtainable by individual antenna connection.

RCA Cabloy solves the problem of economical antenna distribution. Cabloy may be run exposed on the surface of walls, along base-boards, - it may be fished thru walls or it may be installed in rigid conduit, Greenfield, Wiremold or other familiar types of duct. Cabloy may be also installed on the exterior surfaces of buildings, but it should either be looped into the interior of the building where splices are to be made, or else due care should be exercised to make the splices especially waterproof by application of pitch over tape.

The only connections to the 110 volt lighting supply are at the Antensifier boxes. No other connections to the 110 volt supply are required, but if desired, a convenience current tap may be supplied in combination with the radio outlet, to furnish line power to the radio set.

The Antensifier requires three Radiotrons UX-245 and one UX-280. One Antensifier will supply as many as fifty Taplets, and where the Cabloy does not exceed 250 feet in length, as many as twentyfive additional Taplets may be employed.

Where Cabloy up to 500 feet is to be employed and where not more than fifty Taplets are to be used, one Antensifier will be sufficient.

Where more than fifty Taplets are to be employed and the Cabloy is to be longer than 250 feet, two Antensifiers should be employed, one at the Antenna end, and one midway between the antenna and the far end of the Cabloy. However, if the layout of the system makes it possible, - divide the Cabloy into two approximately equal lengths, and locate both Antensifiers at the antenna end. The Cabloy will then be run in two legs, starting at the same antenna, and each energized by an individual Antensifier. As many as five Antensifiers may be connected on one antenna.

At the far end of each and every Cabloy line, a Terminet should be installed in addition to the Taplet in the last outlet box. The Terminet should be connected across the end of the Cabloy, from the insulated conductor to the copper ribbon.

The lead sheath of the Cabloy and copper strip which is in contact with the lead sheath should be well grounded to the cold water supply line at a point as close to the earth as possible. For example, if the Cabloy terminates in the ground floor or basement apartment,

a good ground connection employing #10 copper wire should be soldered to the sheath and copper ribbon and run from this point on the Cabloy to the cold water supply line in the basement, where an approved ground clamp should be employed.

In running the Cabloy from one outlet to another, it is not necessary to cut the Cabloy completely in two. It is only necessary to make an incision two inches long in the lead sheath, in such a manner that the insulated conductor and the copper ribbon may be withdrawn from the sheath to facilitate making the necessary connections to the Taplets. However, it may be more convenient in some cases to cut entirely thru the Cabloy in which case it is highly important to make a good electrical union between the two insulated conductor ends and between the two copper ribbon ends.

Whether the Cabloy is cut entirely thru or merely opened up for these connections, it is highly important to carefully insulate the cotton covered conductor from the copper ribbon and lead sheath, by means of rubber tape wrapping. Rubber tape should also be applied over the entire splice, and should be run well up and over the ends of the lead sheath with a view toward keeping all moisture out of the Cabloy. After this rubber tape has been applied, a layer of friction tape should be applied in the same manner with a view toward keeping the rubber tape in place and eliminating moisture.

The use of soldering torches of any kind at these splices should be carefully avoided as the temporarily exposed portion of the cotton covering will catch fire and carbonize. Any soldering operations should be done with soldering copper and resin flux. No soldering acids of any kind should be employed. It is permissible to use clamping ears for these connections, provided care is employed in insuring good contact. Care should be exercised in preventing loose strands from coming in contact with the lead sheath or copper ribbon.

See accompanying drawings for illustrations of the above described apparatus and devices, and also of typical layouts of the entire RCA Antenaplex System.

E. Jay Quinby
E. Jay Quinby
National Sales Engineer
Centralized Radio

GENERAL SUMMARY

The number of RCA Antensifiers permissible on one antenna is five for all ordinary installations. Under certain conditions, more than this number may be permitted provided the Engineering Department is advised of existing conditions.

The length of line that may be used with one Antensifier is a slightly variable quantity depending on the number of set loads on the line itself but an arbitrary maximum is stated as 500 feet with 50 sets. The limiting factor of the line is the loading caused by the number of sets which should never exceed 50 in any case.

There may be cases where the line loading may not reach 50 sets and in such cases, it will be possible wherever desirable to extend the length of line further than 500 feet within certain limitations. In cases where side branch lines are desired, there are limitations as to just where these side branch lines may be tapped on. That is, if the main distribution line is 500 feet long and fully loaded with its maximum of 50 sets, it would not be feasible to tap any branch line in at a distance greater than 200 feet from the antenna, if results comparable to the main line are desired.

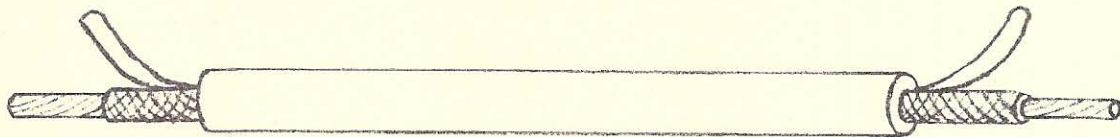
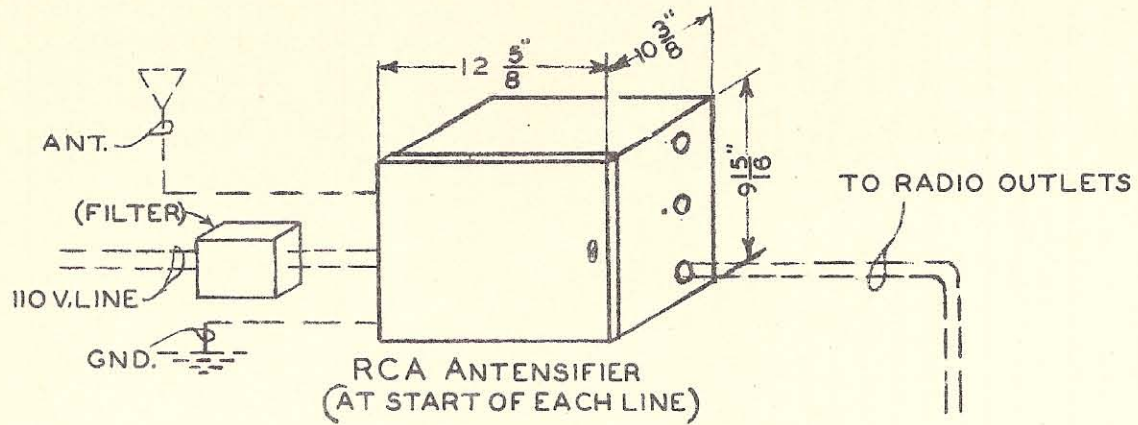
This branch line should not extend more than a total of 500 feet from its terminating unit to the antenna. That is, if the branch were tapped on the main feeder at 200 feet, it could only be run 300 feet to its terminating unit assuming it to be fully loaded with its maximum load of 30 sets.

It is suggested that the Engineering Department be consulted on all installations deviating from the standard practice of 50 sets on a 500 foot line.

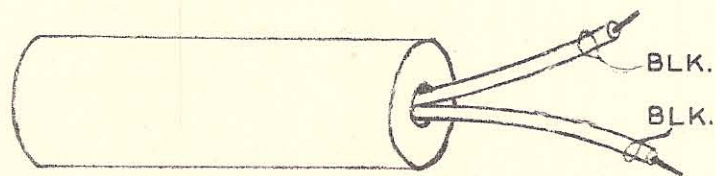
The antenna can be any high grade installation, that is, approximately 75 ft. long and as high as possible above surrounding objects, preferably similar to the type used with the present RF system.

Two ground points are imperative on this system. They are at the Antensifier and at the end of the line. These points should have the best possible type of ground, that is to say, they should be as near actual ground as possible. For this purpose, a water supply pipe with running water should be used, but not a drain pipe.

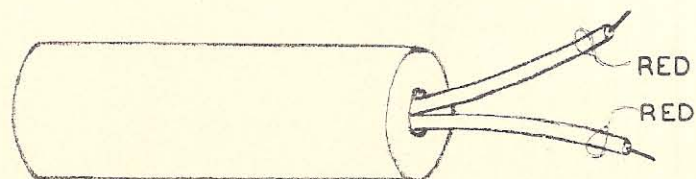
RCA ANTENAPLEX SYSTEM



RCA CABLOY
(FOR ALL LINES)

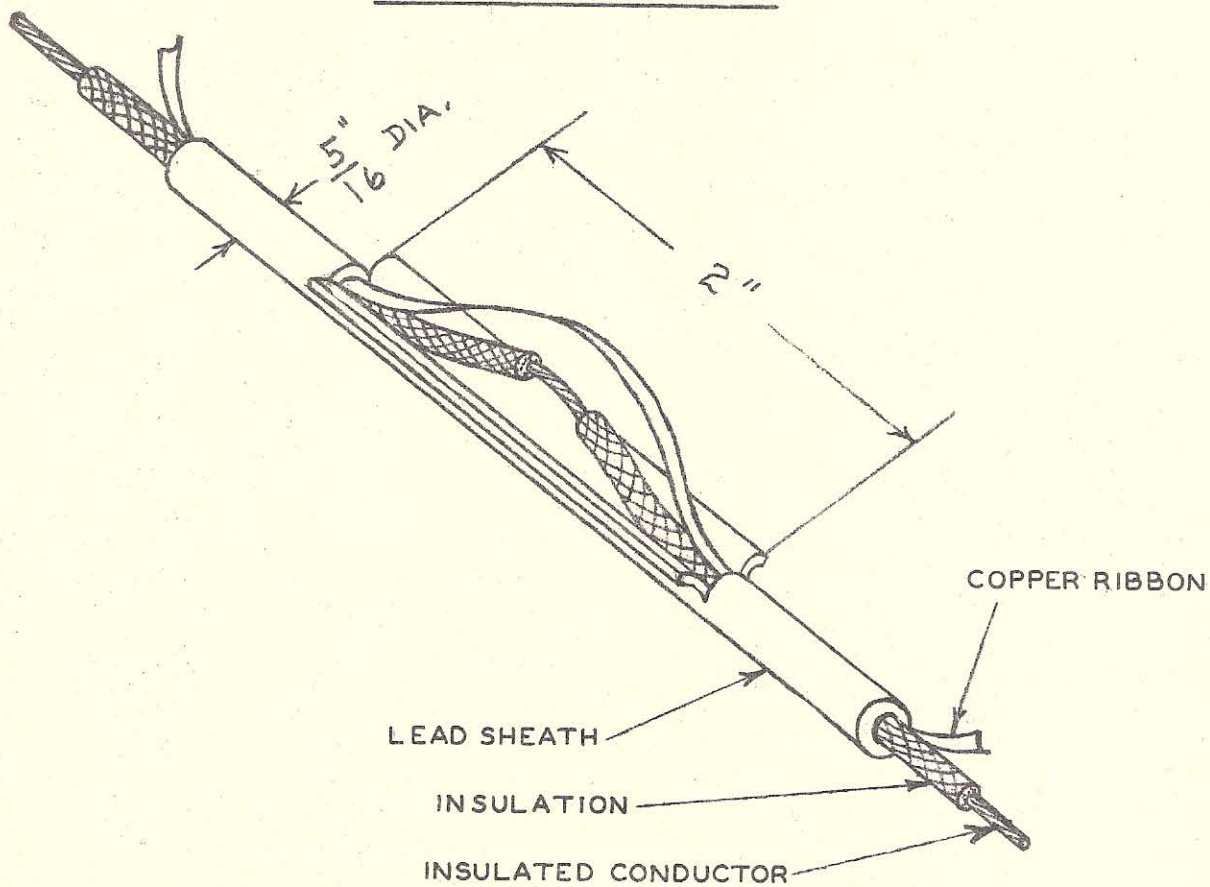


RCA TAPLET
(IN EVERY RADIO OUTLET BOX)



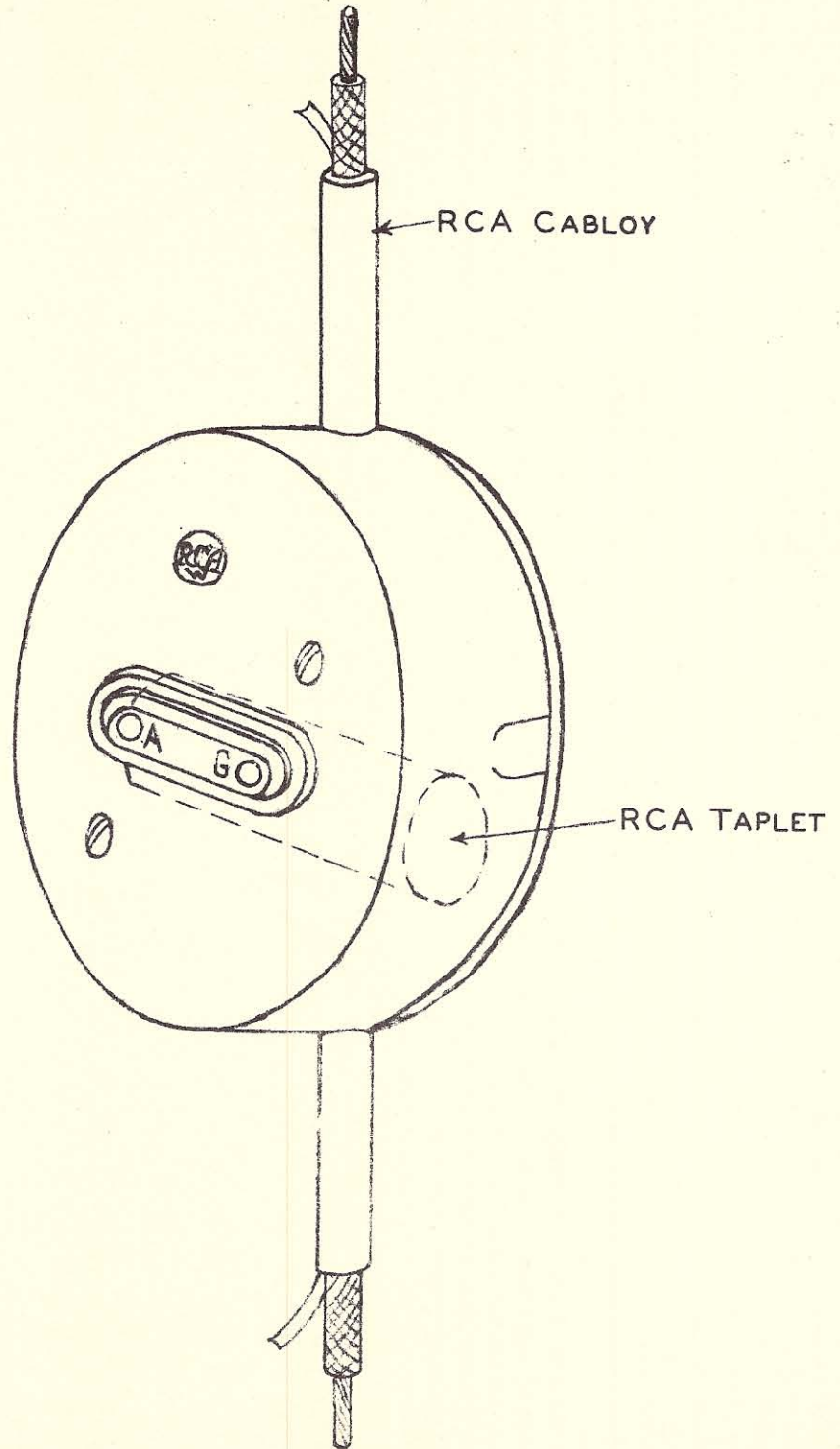
RCA TERMINET
(IN LAST RADIO OUTLET
BOX ON EACH LINE)

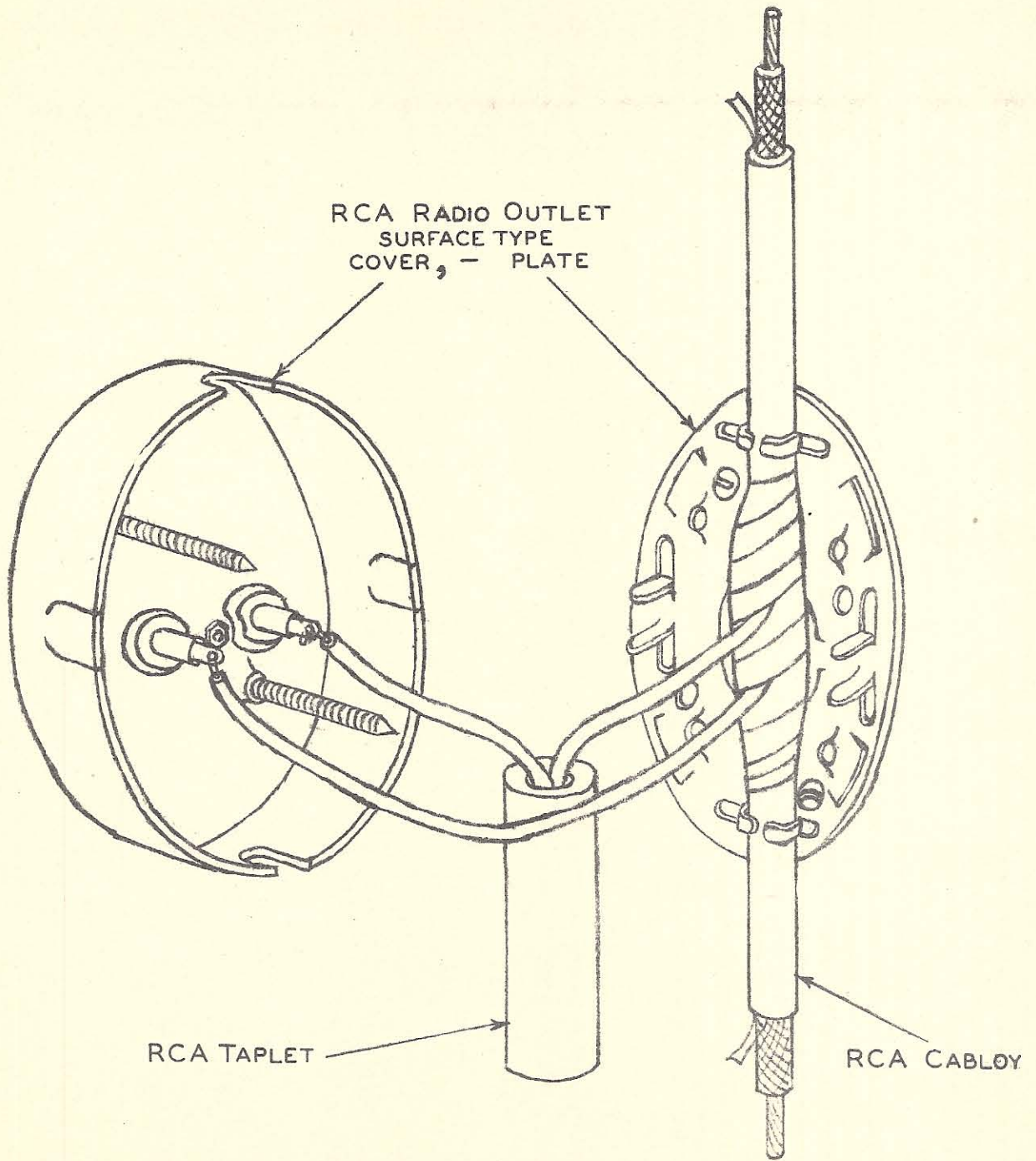
RCA CABLOY

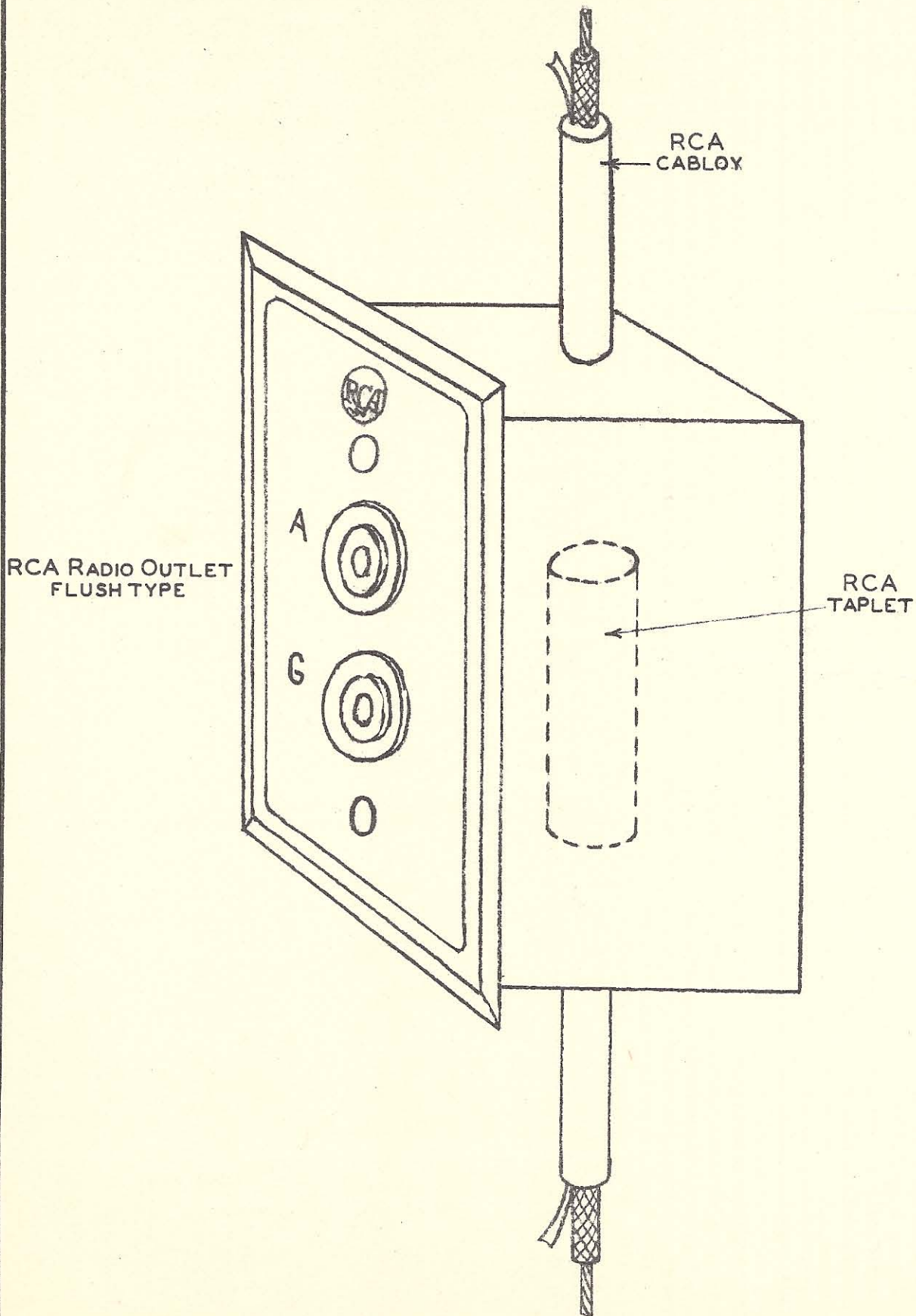


WEIGHT PER 500' REEL, 125 LBS. APPROX.

RCA RADIO OUTLET
SURFACE TYPE





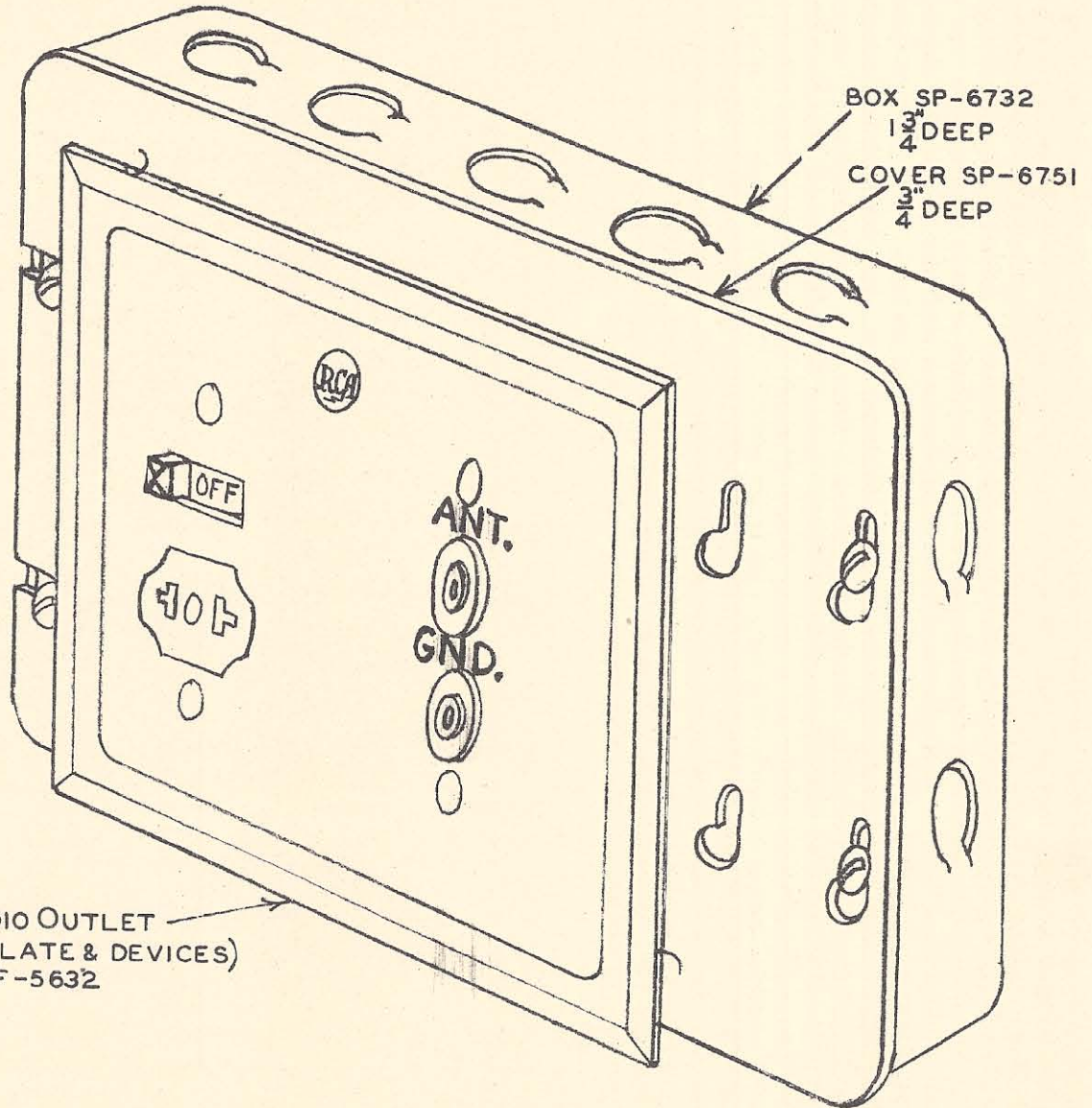


File. 1-30-31

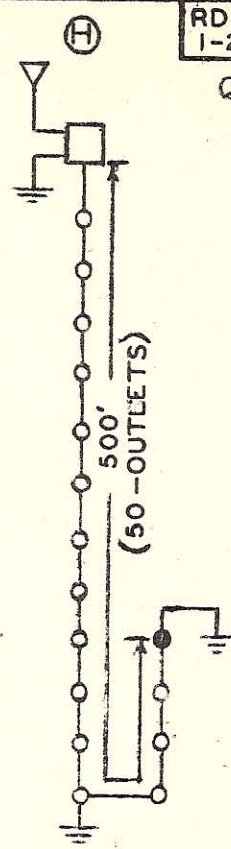
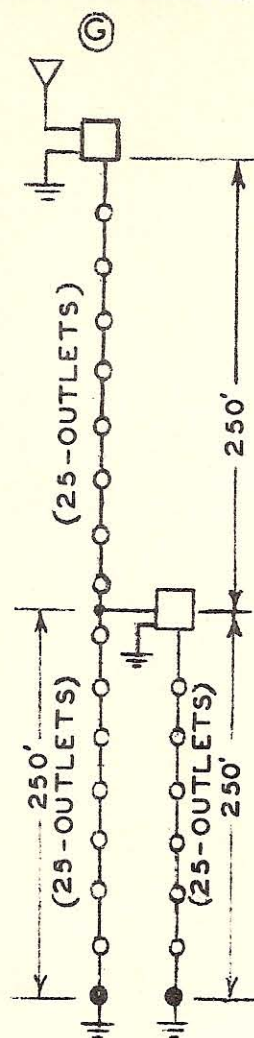
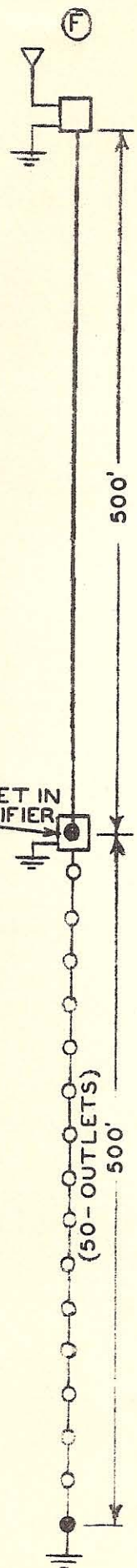
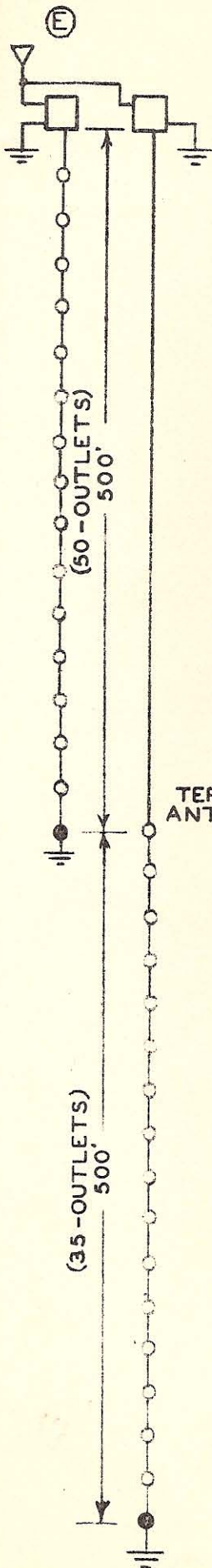
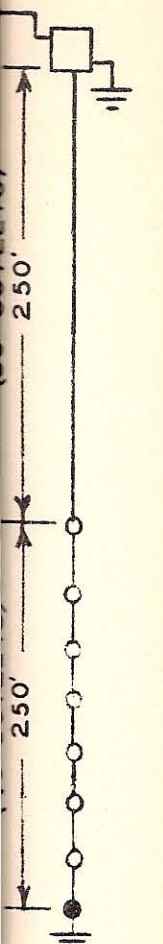
QUINBY

RCA RADIO OUTLET

WITH CURRENT TAP SWITCH
FLUSH TYPE

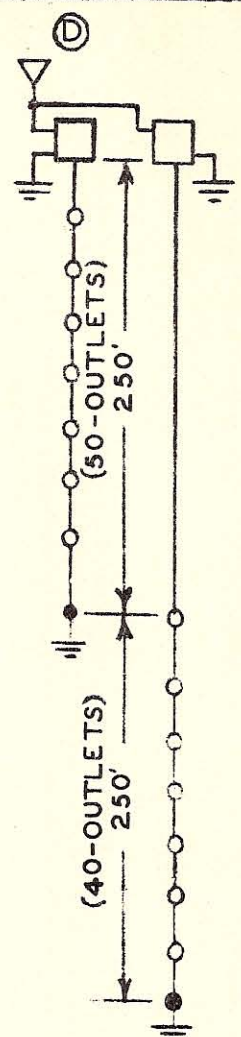
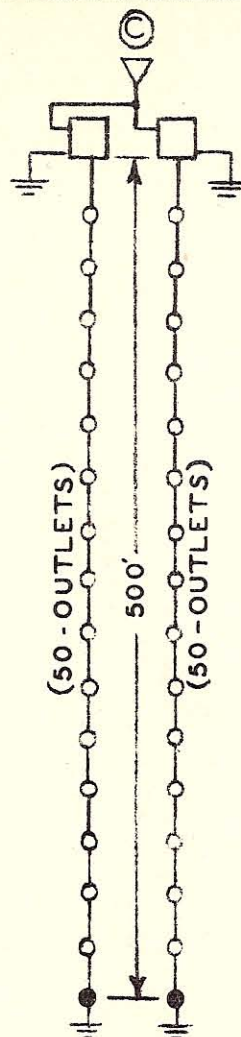
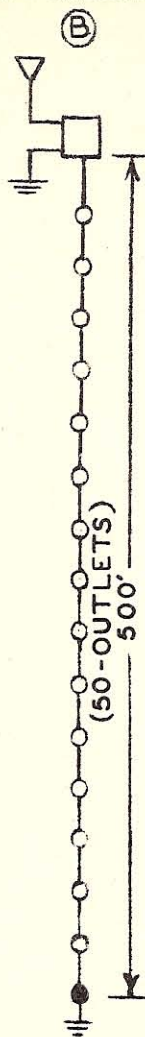
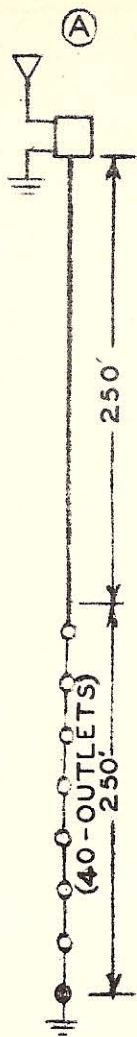


NOTE:- POWER TAP AND SWITCH ARE PROVIDED FOR CONVENIENCE, BUT HAVE NO CONNECTION TO RCA ANTENAPLEX SYSTEM, AND SHOULD BE SEPARATED FROM ANTENNA AND GROUND SIDE OF BOX BY SUITABLE METAL BARRIER.



LOWEST POINT
OTHER
AUXILIARY.

RCA ANTENAPLEX SYSTEM



LEGEND

 = ANTENNA

 = GROUND

 = ANTENNA AMPLIFIER

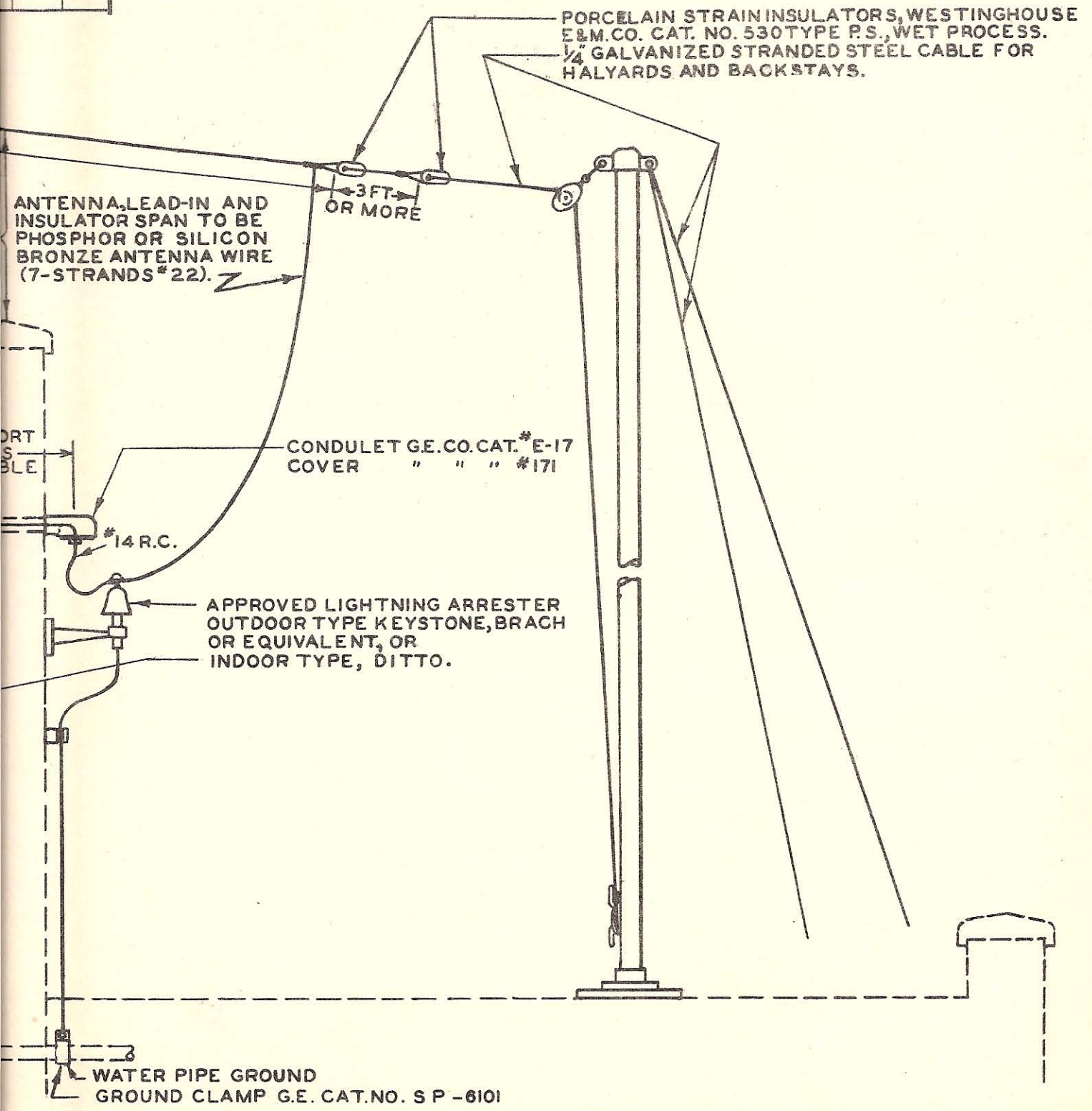
 = RADIO OUTLET WITH TAPLET

 = RADIO OUTLET WITH TAPLET AND TERMINET

NOTE:— GROUND CONNECTION AT LOWEST POINT ON EACH LINE IS IMPORTANT, OTHER GROUND CONNECTIONS ARE AUXILIARY.

049B

REV.	APP.	INIT.
1	2-29	E-D-Q
2	1-31-31	E-D-Q



RCA VICTOR COMPANY,
INC.
ENGINEERING PRODUCTS
DIVISION

DATE OCTOBER 1-1929

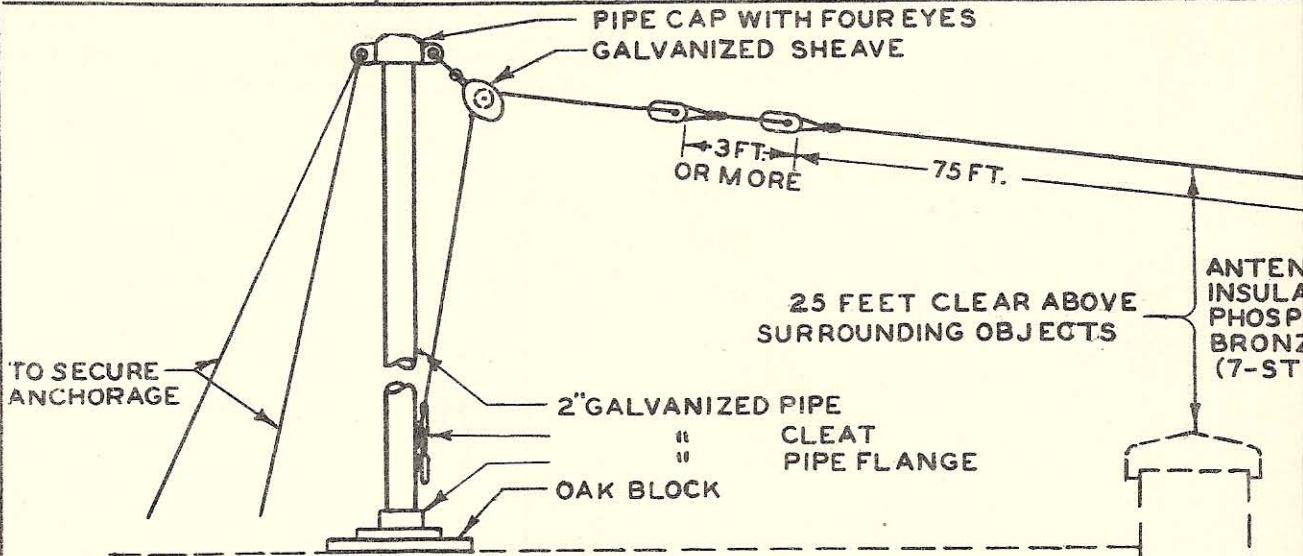
SCALE _____

**CENTRALIZED RADIO
TYPICAL ANTENNA INSTALLATION**

DRAWN BY 5-8-29 CH. D'FTSM'N _____
 TRACED BY Enoch 10-1-29 APPROVED _____
 CH'CK'D BY G. G. S. INITIAL _____

No. **RD5049E**

	DATE	CH. DR.	APP.	IP
1	5-16-29	CORP. TITLE		
2	5-27-29	CAT. NOS.		
3		RETURNS	10-2-29	E-2
4			1-31-31	E-2



TO LOCATION OF RADIO EQUIPMENT.
 TOTAL LENGTH OF ANTENNA MEASURED
 FROM THIS POINT SHOULD BE APPROX.
 100 - 125 FT.

