

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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TERMINATING K CARRIER CABLES

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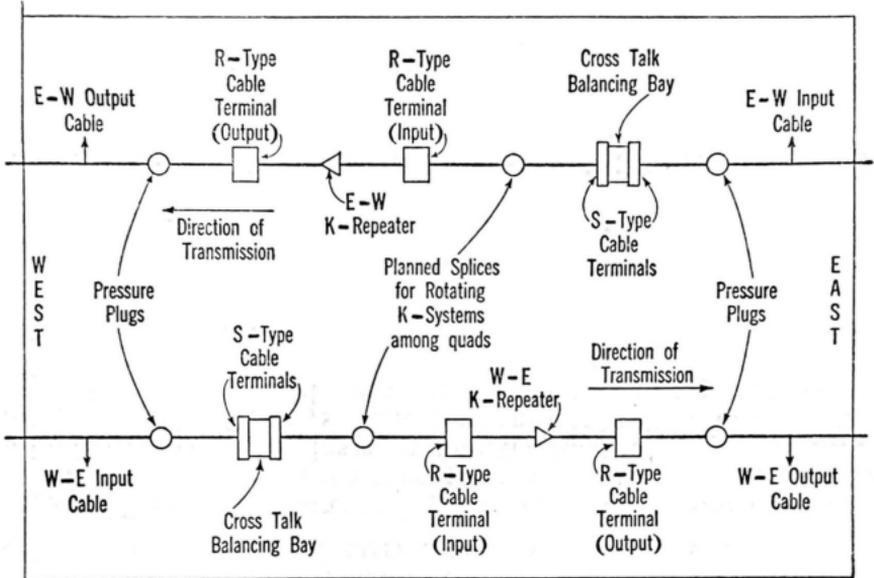
1. GENERAL

1.01 This section covers the general methods of terminating at auxiliary and main repeater and terminal stations the cable pairs used for K carrier telephone operation.

1.02 The detail plans will generally indicate the location of the gas pressure plugs, the code numbers of the terminals that are to be installed and the location of the terminals on the equipment bays. The illustrations in this section show typical layouts of cable and the arrangement of terminals.

2. EQUIPMENT LAYOUT AT A REPEATER STATION

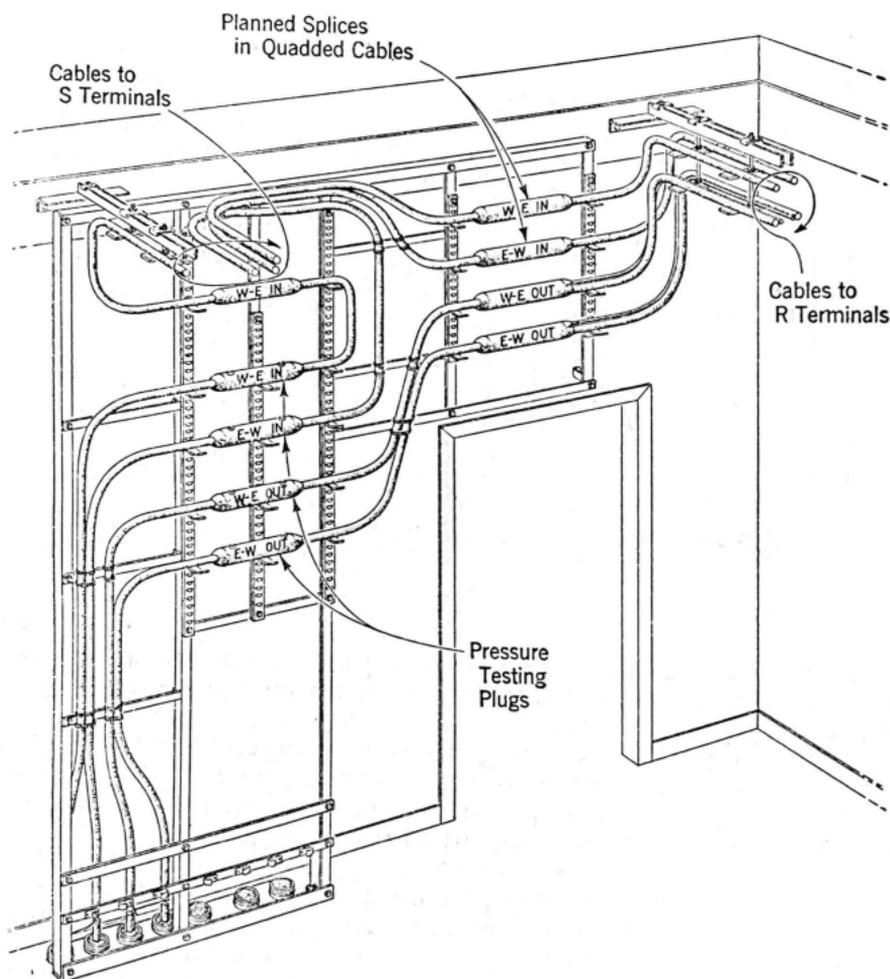
2.01 The figure below shows a schematic cable layout for a K repeater station.



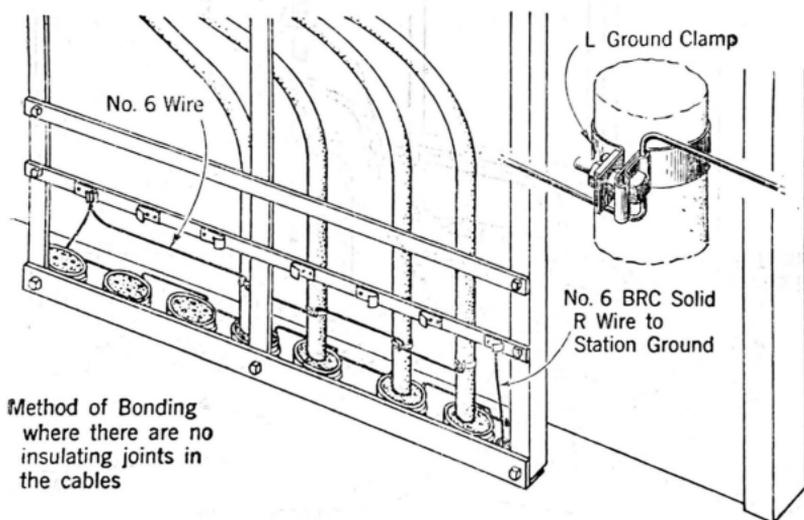
SCHMATIC LAYOUT OF K REPEATER STATION

3. LOCATION OF GAS PRESSURE PLUGS

3.01 The method of racking the cables entering the building and the location of the gas pressure plugs for 60, 80 or 100-pair ultimate capacity repeater stations are illustrated in the following sketch. At stations having cable vaults, the gas pressure plugs should be located in the cable vault. The instructions for making the planned splices indicated in the sketch are contained in Section G71.190.

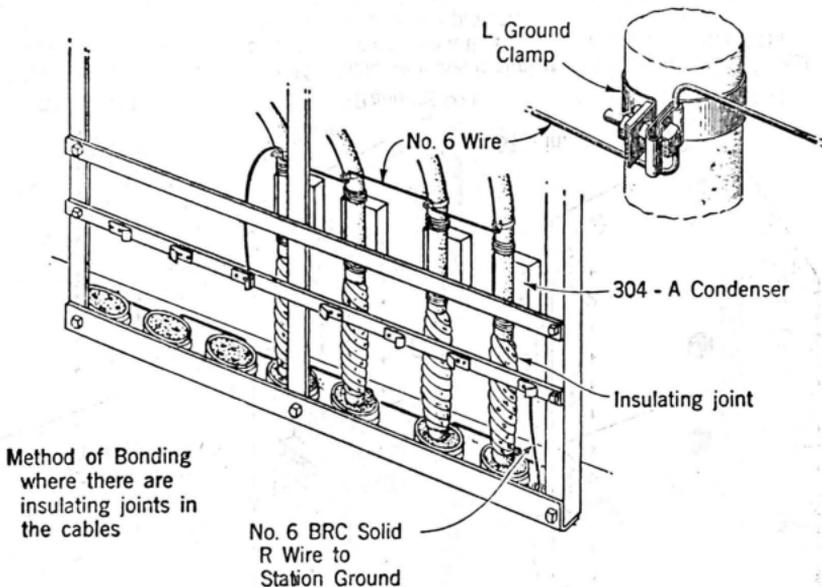


3.02 Bonding: Where the station ground bar is located on the entrance cable rack and there are no insulating joints in the cables inside the building, all cables and the iron pipe ducts should be bonded to the station ground bar as shown in the following sketch. The bonding ribbon or wire should be soldered to the sheath or duct or connected by means of a ground clamp. In soldering, an acid flux and a hot copper should be used to tin the duct. The use of the soldering copper may be avoided by connecting the wire to the duct or cable by means of L-Ground Clamps, as shown in the illustration. The ducts, of course, need not be bonded in those cases where the ducts are made of non-metallic materials. The bonding ribbon or wire should be soldered to the lug on the station ground bar or the connection should be made by loosening a bolted joint on the framework, inserting the bond under the nut and retightening the bolt.



3.03 If there are insulating joints in the cables, the sheaths above the insulating joints should be bonded together and connected to the ground bar, as shown below. The sheaths below the insulating joints and the iron pipe ducts should also be bonded together but no connection should be made to the station ground. The bonding ribbon or wire should be soldered or connected by means of L-Ground Clamps. The working plans will indicate whether insulating joints should be bridged with 304A Condensers. Care should be taken to ensure that the iron pipe ducts and the cables below the insulating joint are insulated

from the cable rack and that the insulating joints are not short-circuited through metal reinforcements in the building. The presence of a short circuit may be determined by testing across the joint with a voltmeter and battery. If the test indicates that the ducts are electrically connected to the cable rack, the bolts in the floor should be relocated and if this does not correct the condition, the insulating joints should be located outside the building.



4. TERMINALS AT BALANCING EQUIPMENT BAYS

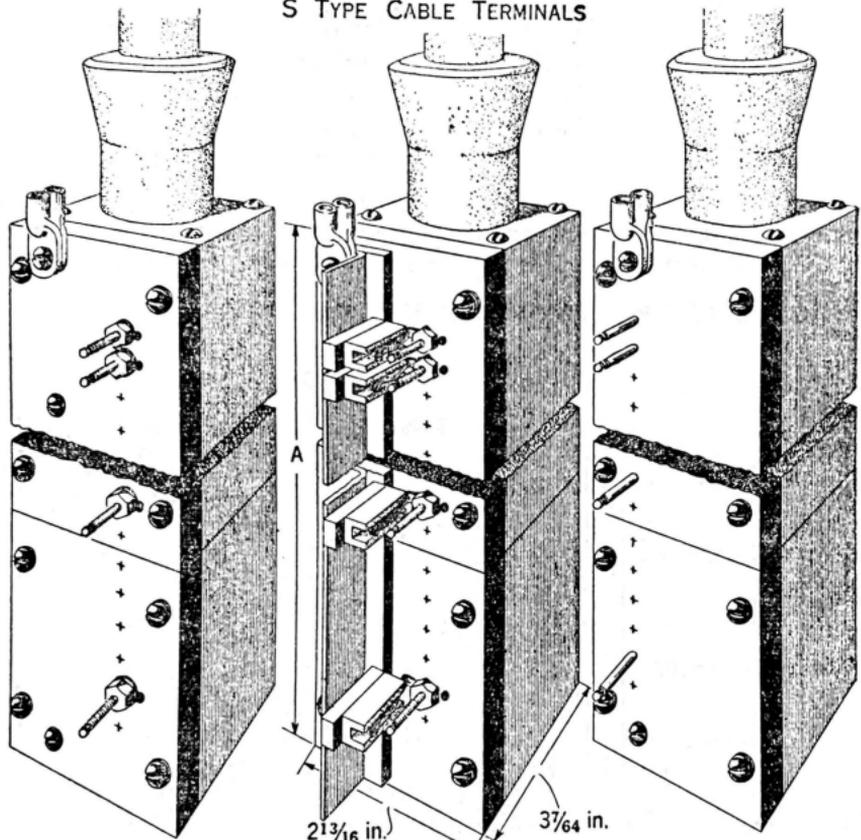
4.01 The code designations of the terminals designed for terminating K carrier cables at the crosstalk balancing equipment bays are as follows:

SA24	SB24	SC24	SG44
SA44	SB44	SC44	SH44
SA64L	SB64L	SC64L	SJ44
SA64R	SB64R	SC64R	
SA84L	SB84L	SC84L	
SA84R	SB84R	SC84R	
SD104L	SE104L	SF104L	
SD104R	SE104R	SF104R	

The numerals in the code designations indicate the number of pairs in the terminal and the L and R designations in the larger sizes indicate the direction (looking at the face of the terminal)

in which the stub is coiled. The pair numbers of the conductors are marked on the face plate of these terminals. The SA to SF type Cable Terminals, inclusive, are illustrated below. The SG, SH and SJ terminals differ from the SA, SB and SC, respectively, only in that the position of the binding posts and protectors is reversed.

S TYPE CABLE TERMINALS



SA and SD

The SG44 Cable Terminal is similar to the SA44 type except that the terminal posts are on the opposite side.

SB and SE

The SH44 Cable Terminal is similar to the SB44 type except that the terminal posts and protectors are on the opposite side.

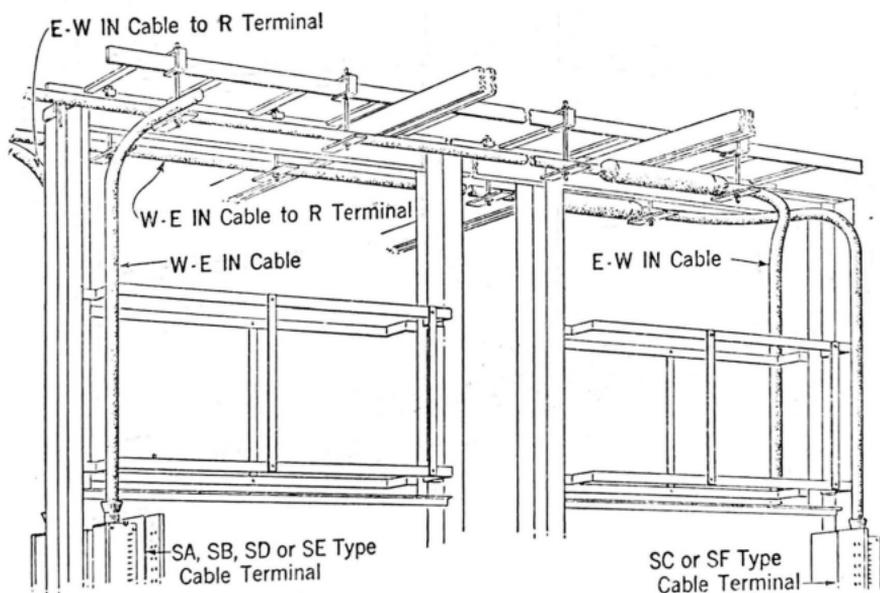
SC and SF

The SJ44 Cable Terminal is similar to the SC44 type except that the terminal posts are on the opposite side.

Size of Terminal (Pairs)	Length "A" (Inches)
24	22½
44	40
64	57½
84	75
104	92½

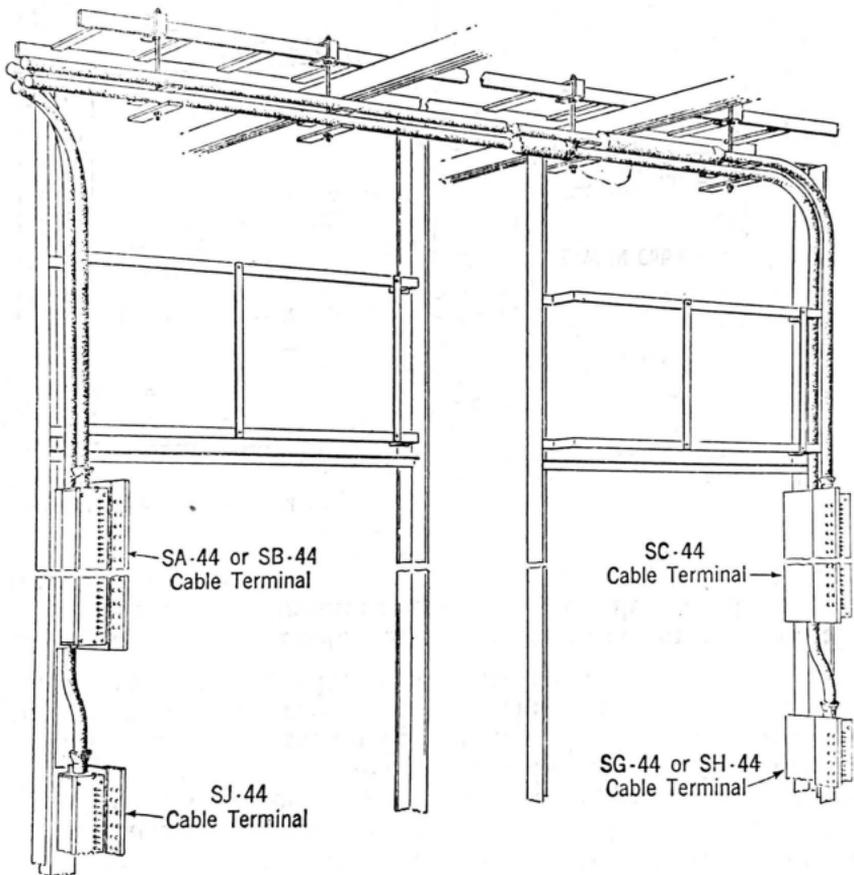
4.02 The SA and SD terminals are used to terminate the outside cable when protector blocks are not required. They are designed to be mounted at the left-hand end of the cabinet as viewed from the front. Provision has been made so that protector springs and ground strips for 28 and 29 protector blocks can be added if protection should be required later. The SB and SE types are mounted in the same position for the same service and differ only in that they have springs and ground strips for 28 and 29 protector blocks. The SC and SF types are designed to be mounted at the right-hand ends of the cabinets. They are used to terminate the office cables and are not equipped to accommodate protectors. The terminals for the E-W input cable are generally mounted in one crosstalk balancing cabinet and the terminals for the W-E input cable are mounted in another crosstalk balancing cabinet. These two cabinets are generally placed back to back.

4.03 Two S-type cable terminals mounted in a crosstalk balancing equipment cabinet are illustrated in the sketch below.



4.04 Where, in the case of a 40 pair system installation, it is necessary to mount the input terminals for one direction of transmission above the input terminals for the other direction of transmission in the same cabinet, the SA44 or SB44 terminal

should be mounted at the upper left-hand side of the cabinet and the SC44 terminal for terminating the office cable at the upper right-hand side. The SG44 or SH44 terminal should be mounted at the lower right-hand side of the cabinet and the SJ44 terminal at the lower left-hand side. The arrangement of these terminals in a cabinet is shown in the following sketch.

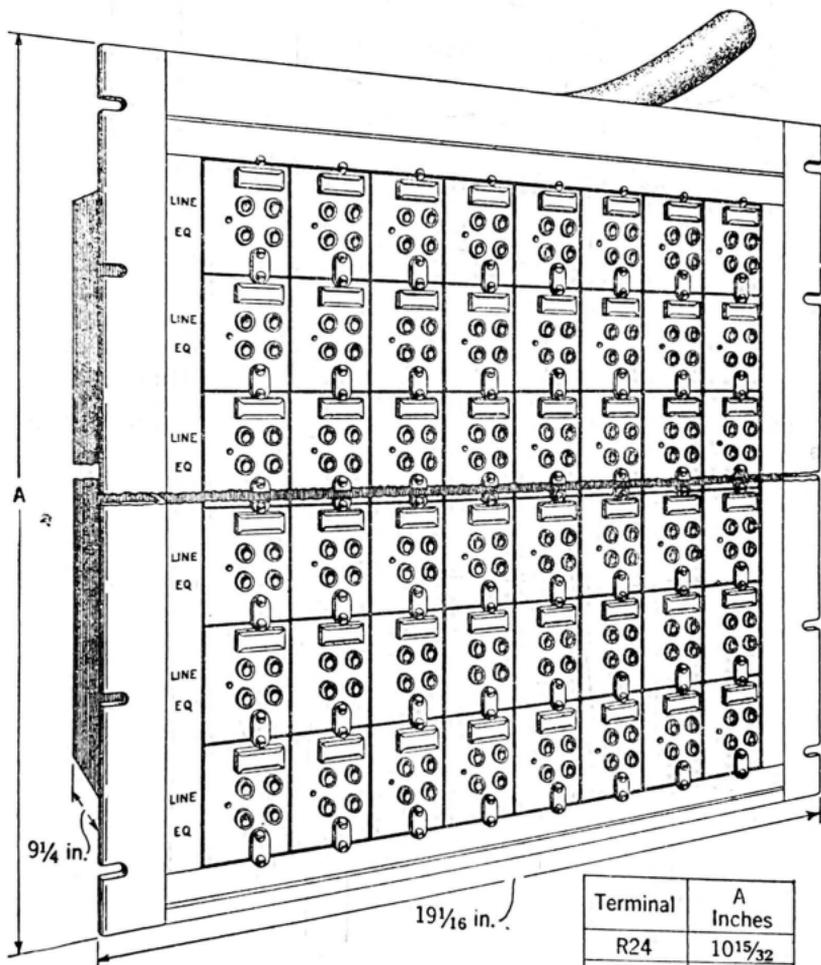


5. TERMINALS AT TEST BAYS

5.01 The R-type cable terminals are intended for terminating office cables at amplifier equipment. The R terminals are available in 24, 32, 40, 48, 64 and 80-pair sizes and are shown in the following sketch. The terminal consists of a sealed chamber with stub, a test jack panel which forms the face of the

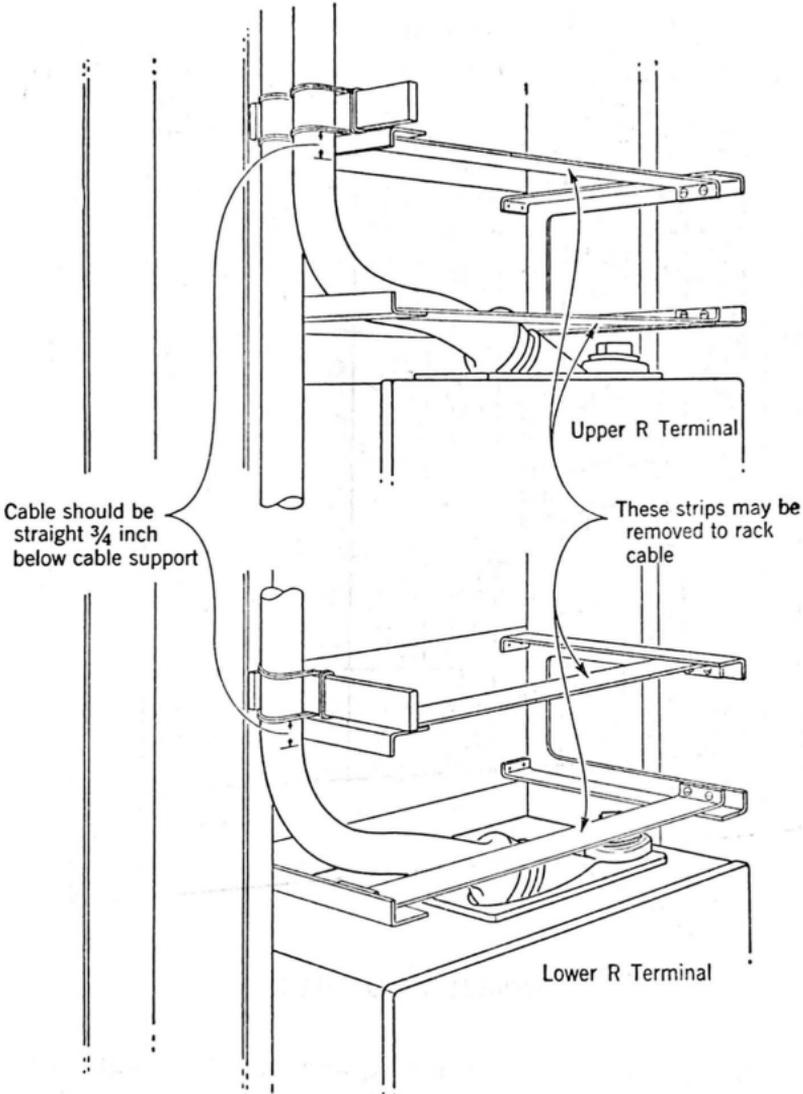
terminal and protector mountings (for 26 and 27 protector blocks) at the rear of the panel. The mountings have lugs for making soldered connections to the office equipment. Two R-type terminals can be mounted in the same bay with the exception of the 80-pair size which should be mounted alone in order that the top jacks may be within convenient reach.

R TYPE CABLE TERMINAL



Terminal	A Inches
R24	$10\frac{15}{32}$
R32	$12\frac{7}{32}$
R40	$13\frac{31}{32}$
R48	$17\frac{15}{32}$
R64	$20\frac{15}{16}$
R80	$26\frac{7}{32}$

5.02 The stub of R-type terminals should be racked on the sealed test terminal bay, as shown in the following diagram, so that it will not interfere with the line or amplifier equipment installed above the terminal.



DUCT-TYPE BAY

6. TERMINATING PILOT WIRES AND ALARM PAIRS

6.01 The pilot wires and alarm pairs in the output cable are terminated in a W8 cable terminal mounted at the top of the output sealed test terminal bay. The method of mounting the terminal on the output test bay is illustrated below.

