

4159-TYPE NETWORK

DESCRIPTION AND INSTALLATION

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1. GENERAL

1.01 The 4159-type network is intended for use in U1 Carrier System installations where the built-in filter of the 700B Subscriber Set cannot be utilized, ie, when the physical and derived lines are located on separate premises.

1.02 This section is reissued to include information on the 4159B Network which supersedes the 4159A Network. The 4159B Network blocks dc current to prevent dialing over the physical line by an unauthorized telephone connected to the derived line. This 4159B Network incorporates additional high-pass filtering to increase voice frequency isolation to about 80 dB at 1 kHz to prevent the possibility of eavesdropping. This new design replaces the 4159A Network which will be rated "Manufacture Discontinued".

1.03 ♦The network is not required when the carrier system is used to provide a second line to the same customer or premises, ie, two-family houses, apartment buildings, etc.♦

1.04 Information on associated equipment and the 700B Subscriber Set is described in Section 502-203-100.

2. DESCRIPTION

2.01 The 4159B Network consists of the encapsulated circuitry, six binding posts for wire terminations, and six 2A1A Protector Units. The two mounting studs are internally connected to the protectors to facilitate grounding (Fig. 1).

2.02 ♦Where protection is not required, the 2A1A Protector units may be replaced with 2A1D

(dummy) Protector Units. Protector units are described in Section 638-400-205.♦

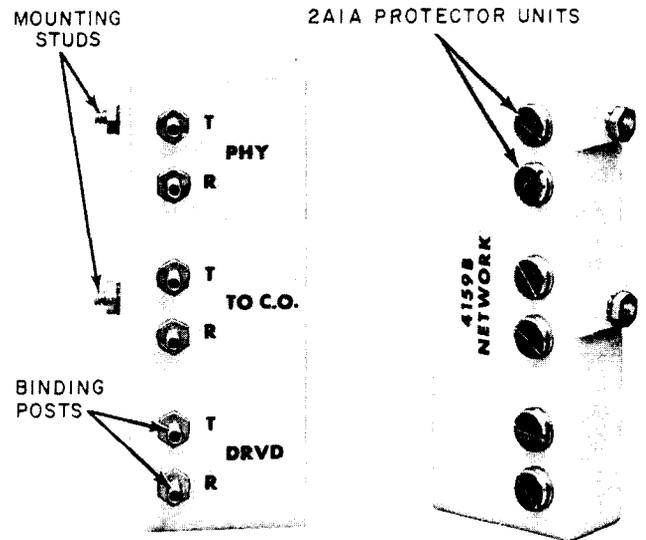


Fig. 1—♦4159B Network♦

3. INSTALLATION

3.01 The derived line station must be located within 1000 feet of the 4159B Network.

3.02 The 4159B Network is intended to be installed:

- In most buried cable enclosures using the mounting studs
- In a 117A1A Apparatus Box when pole mounted or placed at building or distribution terminals.

Note: ♦The 4159B Network is approximately one-half times larger than the superseded 4159A Network. Because of the increased size of the 4159B Network, the mounting bracket in the 117A1A Apparatus Box has been redesigned to house the new network. The new bracket (P-22E110) can be installed in the present 117A1A Apparatus Box where it is desirable to replace an existing 4159A

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Network. *It is not possible, however, to mount the 4159A Network in the 117A1A Apparatus Box equipped with the new bracket.* The grounding, entrance of drop and jumper wires, and external features of the 117A1A Apparatus Box are unchanged.♦

3.03 All wiring is brought into the 117A1A Apparatus Box through the grommets and terminated on the network as shown in Fig. 2 which shows a pole-mounted installation. Ground the network to the cable strand when available or connect to a 10-foot ground rod driven at the base of the pole. When located at inside terminals, connect to an approved ground. Use a #6 ground wire for each network, fastened under the ground clamp on the 117A1A Apparatus Box.

3.04 When the 700B Subscriber Set is located at an inside building terminal and commercial power is available, the built-in filter of the 700B Subscriber Set should be utilized rather than installing a 4159B Network (Fig. 3A and 3B). When power is not available at these locations and the 700B Subscriber Set must be installed at the derived station location, a network must be used (Fig. 3C).

3.05 When using a 4159B Network at inside terminals, provide a means of making the necessary connections between network, cable facilities, and station wiring such as a 66B3-50 Connecting Block or equivalent. Connect as shown in Fig. 4.

117A1A
APPARATUS BOX

SERVICE DROP
TO SUBSCRIBER #1
(PHYSICAL LINE)

GROUNDING LUG

TO STRAND OR
OTHER APPROVED
GROUND

DROP OR BLOCK
WIRE TO CABLE
DISTRIBUTION
TERMINAL

SERVICE DROP
TO SUBSCRIBER #2
(DERIVED LINE)

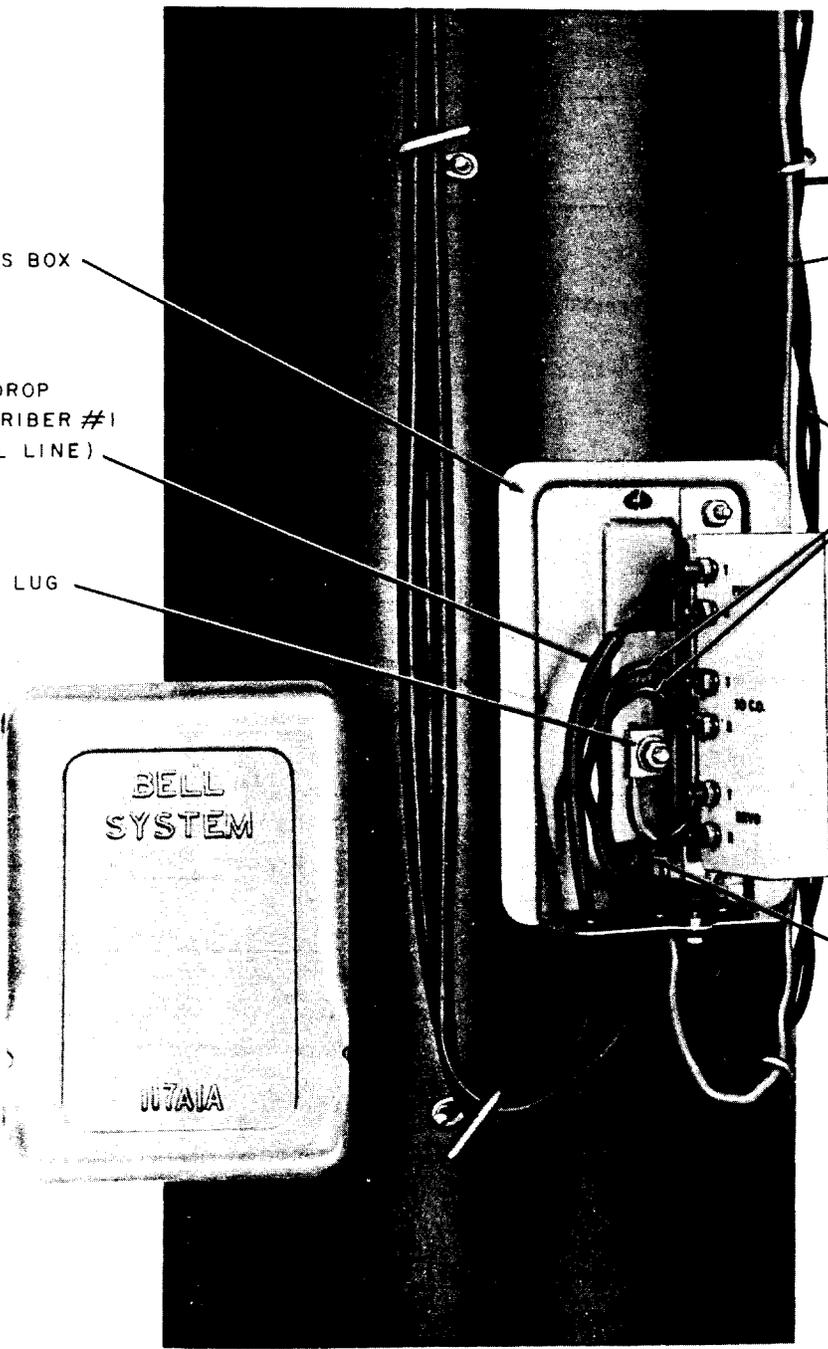
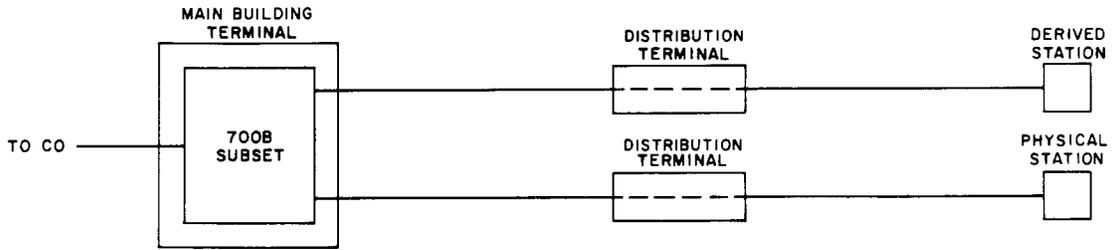
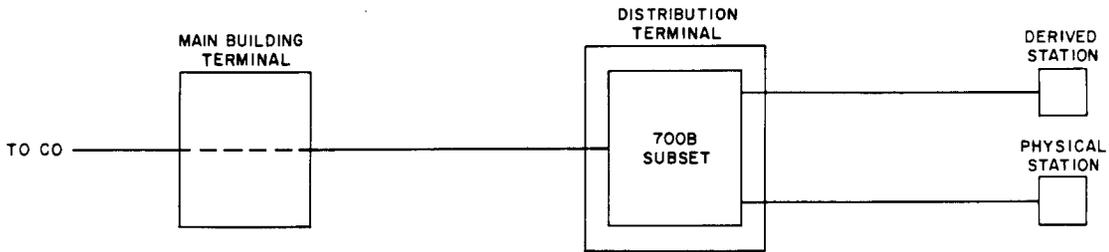


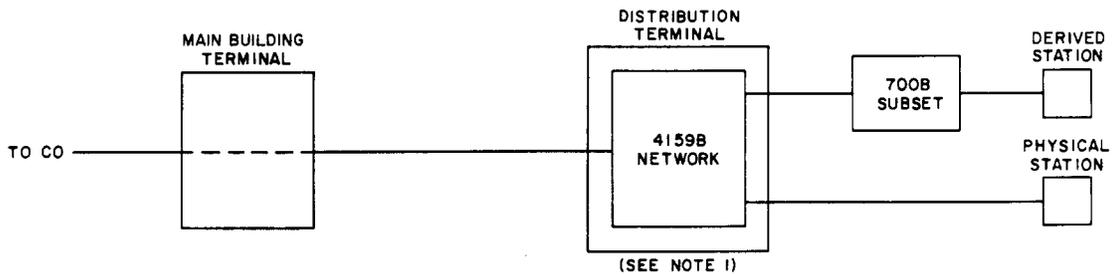
Fig. 2—Typical Pole Mounted Installation



A. CARRIER REPLACING CENTRAL OFFICE CABLE PAIR-4159B NETWORK NOT USED



B. CARRIER REPLACING BUILDING CABLE PAIR-4159B NETWORK NOT USED



C. CARRIER REPLACING BUILDING CABLE PAIR-4159B NETWORK REQUIRED

NOTES:

1. SEE FIG. 4 FOR WIRING OF FILTER IN THIS CONFIGURATION.
2. WHEN THE CO CABLE IS EXPOSED AND PROTECTION IS PROVIDED AT THE MAIN TERMINAL IN THE BUILDING, REPLACE THE 2A1A PROTECTOR UNITS IN THE 4159B NETWORK WITH 2A1D (DUMMY) UNITS.

Fig. 3—Typical Arrangements Using U1 Carrier System in Buildings

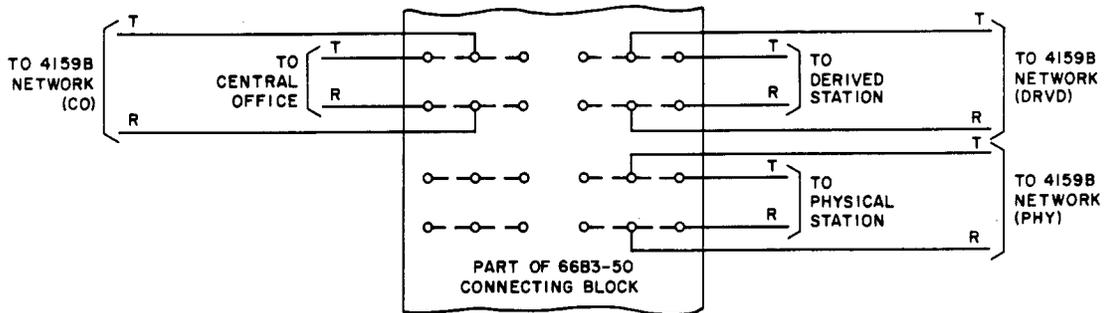


Fig. 4—Wiring to 4159B Network Using 66B3-50 Connecting Block