

PROTECTION

B URBAN WIRE

CONTENTS

PAGE

1. GENERAL.	1
2. GROUNDING STEEL SUPPORT WIRE	1
3. PROTECTION AND GROUNDING.	2

1. GENERAL

1.01 This section outlines the protection and grounding requirements for exposed B Urban Wire. In unusual or special cases the protection and grounding details shall be specified by the Plant Engineer.

1.02 B Urban Wire shall not be constructed in joint use with power supply lines in excess of 12,500 volts except as provided in paragraph 3.05.

2. GROUNDING STEEL SUPPORT WIRE

2.01 The 109E steel support wire in B Urban Wire shall be kept electrically continuous along the lead. If the method of terminating the support wire results in an electrical separation between the ends, the gap should be bridged with a length of 109 steel wire.

2.02 If B Urban Wire is fed from aerial cable, the steel support wire shall be connected to the cable suspension strand with a length of 109 steel wire.

2.03 When B Urban Wire is carried on the same pole line with an aerial cable on a grounded suspension strand, the steel support wire should be bonded to the cable suspension strand at intervals of approximately one-quarter mile.

2.04 The steel support wire shall be connected to the ground posts of all protected terminals by means of a piece of 109 steel wire.

2.05 The steel support wire or 109 steel wire should be attached to the pole with 1-1/4 inch B staples when extending it along the pole to the ground connection. Wood molding shall be placed as required in the G10 section on Clearances for Aerial Plant.

3. PROTECTION AND GROUNDING

3.01 At junctions with cable, B Urban Wire shall be connected to the cable through full count protection using B-3698 protected terminals under the following conditions unless the wire is served from a protected cable terminal.

(a) Where the cable is an exchange cable in a lightning area and the B Urban Wire is over one-half mile in length. The Imperial Valley, Mojave Desert, and certain mountainous sections are considered as lightning areas for this practice.

(b) Where the B Urban Wire is constructed in joint use for distances of one-quarter mile or more, with power supply lines in excess of 5,000 volts. For an exception to this requirement see paragraph 3.05.

3.02 When B Urban Wire is constructed in joint use for lengths one-quarter mile or more with power supply lines in excess of 5,000 volts, protection shall be provided by placing protected terminals as follows. For an exception to this requirement see paragraph 3.05.

(a) Place full count protected type terminals using B-3698 Protected terminals at each end of the joint use section and at approximately one-quarter mile intervals. When possible these intermediate protected terminals should be placed at present or future distribution locations in order to reduce the required number of terminals.

3.03 Where joint use construction with supply lines in excess of 5,000 volts is involved and a protected terminal is required, the ground lug of the protector shall be connected to a low resistance

ground, such as a grounded suspension strand, a water pipe, etc. Where these grounds are not available consult your supervisor. In the area served by the Imperial Irrigation District the power multi-grounded neutral wire shall be used as a low resistance ground and attachment shall be made by a power man.

3. 04 Protected terminals shall be equipped with protectors which have a breakdown voltage of 700 volts. These protectors are covered in the practices on Protector Blocks.

3. 05 In various sections of the Southern California Area, the Southern California Edison Company is at this time operating some substations and associated power lines (in the 11, 500 to 16, 500 volt range) which are equipped with sensitive ground relays and ground fault current limiting impedances. Because of these protection features on the power lines, protected terminals will not be required on the B Urban Wire in the joint use sections with these power circuits. The following list, intended for information only, shows the power substations which are now equipped as described above and the corresponding telephone area. In these areas the Plant Engineer will determine from the Protection Engineer that the power circuit involved is protected as described above and if so, will note on the detail plans: "Protected terminals not required."

<u>Telephone Exchange Area</u>	<u>S. C. E. Co. Substation Area</u>	<u>Voltage</u>
Canoga Park	Malibu, Crater	16, 500
Reseda	Malibu, Crater	16, 500
Palmdale	Saugus, Anaverde, Little Rock (Certain Circuits only)	16, 500 and 11, 500
Newhall	Saugus, Agua Dulce	16, 500 and 11, 500
Crescenta	La Canada	16, 500
Pasadena (Foothill, Lake)	La Canada, Arroyo, Eaton (Certain Circuits only)	16, 500
Los Angeles (Lafayette, Adams, Angelus)	City of Vernon	6, 600
Orange County Exchanges	Atwood, Crown, Fullerton, Fairview, Irvine, Katella, La Palma, Sullivan, Villa Park	11, 500