

DROP AND BLOCK WIRING

SERVICE CABLES

NOTES CONCERNING THIS ADDENDUM

This addendum supplements Section G32.170 with information on the use of drop wire in conduit, six-pair cable, wire terminals, and 200-type connectors. Instructions from previous addendum are included.

"See Addendum" should be marked in G32.170 to indicate the following:

<u>Replaced</u>	<u>Added</u>	<u>Supplemented</u>
1.02	2.05	3.03
1.04		3.04
2.01		4.02
2.02 (in Part)		4.03
2.03		4.04
2.04		4.05
3.12		4.07
4.01		5.01
		5.02
		5.02(2)
		5.02(4)
		5.03

1. GENERAL

1.02 In addition to cables for conduit installations, neoprene jacketed drop wire may be used where one pair is sufficient or where not more than two will be required in any one conduit. When two drop wires are placed in the same conduit, the paralleling length of the two drop wires shall not, in general, exceed about 150 feet. If drop wire is used, report through lines of organization to the general plant supervisor's office the details of any unsatisfactory service or experience resulting from the use of this type of material.

If electrolysis troubles may be expected a polyethylene sheathed cable or drop wire should be used.

1.04 Where a six-pair cable is not sufficient to provide for the ultimate requirement the installation should be referred to the outside plant engineers for instructions.

2. DESCRIPTION OF SERVICE CABLES

2.01 Three types of service cables are available in one, two, and six-pair sizes for underground connection to customer's premises. Type LR consists of rubber insulated 22 AWG annealed copper conductors covered with a tape serving and a lead sheath. Type TR comprises an LR cable covered with two servings of asphalted jute roving, two steel tapes, and an outer layer of asphalted jute roving. Type JR is the same as Type LR with protective coverings of asphalted paper and jute roving over the sheath.

2.02 Conductors which have molded longitudinal ridges in the rubber insulation shall be considered as tracers. One plain and one tracer conductor are twisted together to form the core of the 1-pair cable. Five like pairs are stranded around a central pair in the 6-pair cable with adjacent pairs having different lengths of twist to minimize capacitance unbalance.

The layup of a 2-pair cable is shown in the main Bell System Practices Section. Diagonally opposite conductors form a pair. Excessive crosstalk may be produced between the two pairs particularly when long cable lengths are employed with 500-type sets. Installations requiring 2-pair cable in lengths greater than about 100 feet should be referred to the outside plant engineers for instructions, if both pairs are to be used.

2.03 The following table gives the diameters and weights of service cables.

<u>Type of Cable</u>	<u>Number of Pairs</u>	<u>Over-All Diameter (Inches)</u>	<u>Weight Per 1,000 Ft. (Pounds)</u>
LR	1	.32	210
(Lead Covered)	2	.35	230
	6	.49	480
TR	1	.56	450
(Tape Armored)	2	.58	490
	6	.79	880
JR	1	.50	300
(Jute Protected)	2	.52	330
	6	.71	630

C Drop Wire has a major diameter of .33 in. maximum and a minor diameter of .22 in.

Minimum breaking strengths are as follows:

LR	1 pr.	190 lbs.
	2 pr.	205 lbs.
	6 pr.	350 lbs.
C Drop Wire		400 lbs.

2.04 Type LR Cable is intended for installation in conduit. Type TR is designed to be buried directly in the ground where conduit is not provided and mechanical protection is needed. Type JR has a limited use as a buried cable on account of rodents.

2.05 All conductor joints in service cables should be soldered to prevent the possible formation of corrosion films from the rubber insulation.

3. PLACING SERVICE CABLE IN CONDUIT

3.03 A 1/2-inch Cable Placing Grip, similar to the 3/8-inch type illustrated in the main section, should be used for pulling 6-pair LR cables.

Drop wire may be attached to the pulling-in line with a wire splice to the conductors.

3.04 The 1/2-inch Cable Placing Grip may be substituted for the 3/8-inch size on some sizes of cables.

3.12 After the cable (or drop wire) has been placed, seal the conduit around the conductors at the manhole and also at the customer's premises in accordance with other Sections of the Practices.

4. TERMINATING SERVICE CABLE AT POLE

4.01 Attach the service cable or wire to the pole at not greater than two-foot intervals by means of cable clamps and strap nails, selecting the proper size clamp from the following table:

<u>Cable Diameter</u>	<u>Cable Clamp Number</u>
5/16 - (.3125)	4
3/8 - (.375)	6
15/32 - (.469)	7
1/2 - (.500)	8
9/16 - (.563)	9
11/16 - (.688)	11
7/8 - (.875)	13

4.02 Service cable or wire whether connected to cable, open wire or drop wire should be terminated in a wire terminal and then cross-connected to the main line.

When connecting service cable or wire to sheath mounted terminals run bridle wires from the wire terminal in the same manner as drop or block wires.

Multiple service cables may be grouped together in one ground clamp. (Applies also to construction in Paragraph 4.03).

4.03 In lightning areas protect the service cable as provided for in G10.340, Cable Protection.

Service cable or wire should be terminated in a wire terminal.

4.04 Multiple service cables may be grouped together in one ground clamp.

4.05 Refer to Section on 83A Protector Mounting for areas where 83A Protector Mountings should be used.

4.07 Service cable or wire should be terminated in a wire terminal.

5. TERMINATING SERVICE CABLES AT MANHOLE

5.01 Refer to G53 Section, Anchoring Devices for Attaching Cables to Walls, for size of cable clamp and anchoring device.

Note: Where several service cables are being terminated in a manhole, group them together and attach them to the manhole wall by means of No. 30 Cable Clamps to form a horizontal ring run from the service pipe to the underground terminal. Space the clamps approximately 17 inches apart, and about one inch from the ceiling. Individual clamps, of the proper size, may be used adjacent to the terminal, if necessary, to anchor the service cables.

5.02 The stuffing box referred to is now coded a Connector. The 200A Connector is suitable for use with parallel drop wire and one and two-pair lead covered cable. The 200C-6X Connector has a brass ring or spacer with a larger opening and is for use with six-pair lead covered service cable. The bodies and packing nuts of both connectors are identical and the compression details are interchangeable. Replacement parts are tabulated below:

<u>Connector</u>	<u>Bushing</u>	<u>Spacer</u>
200A	P375373	P475438
200C-6X	P340301	P475438 Special

5.02(2) It is desirable to tag or identify the conductors inside the terminal with the address of the customer served.

Delete the words "two-pair" in the third line.

5.02(4) Delete the words "two-pair" in the first line.

5.03 The following replacement parts may be ordered:

P-375292 Cover

P-340293 Eyebolt

P-340294 Wing Nut

P-210861 Washer

Gasket, Rubber, Gum, for UG-16 Cable Terminal.

Pin, Cotter, 5/16 in. x 1-1/2 in., #430 C.R. Steel, for eyebolts.

Pin, Cotter, 1/4 in. x 1-1/2 in., #430 C.R. Steel, for terminal cover.